



THE J. PAUL GETTY MUSEUM LIBRARY





THE ARCHITECTURAL JOURNAL

BEING THE JOURNAL OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

VOL. I. THIRD SERIES, 1894

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.

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

NOVEMBER 1893—OCTOBER 1894



VOLUME I. THIRD SERIES

LONDON
CONDUIT STREET, HANOVER SQUARE, W.
1894

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

INDEX TO VOLUME I. THIRD SERIES.

The names of the principal Contributors are printed in black type.

Α

A. A. Curriculum, The, 7, 644.

Adams, Maurice B.: BLICKLING
HALL, NORFOLK: ITS DRAINAGE,
WATER-SUPPLY, AND OTHER WORKS,
157; Reply to the Discussion, 197.
ADDRESS TO STUDENTS, The President's,
171.

Advertisements in Rural Highways, Proposed Legislation against, 128.

African Structures, Notes on Some [J. T. Last], 635; Masai Houses, 636; Nyika House, ib.; Tembe of Ugogo, ib.; Sango, Sagala, Makua, and Lomwe Houses, 637; Swahili Houses, 638; Circular House Ground Plan, ib.; Plan of Smelting House, 639; Description of Native Methods of Mining, Working, and Smelting Iron, 640; Note by William Simpson on points of resemblance between African and Indian Structures, 641.

Aitchison, Professor: The Grecian House, 47; Lectures at the Royal Academy on the Advancement of Architecture, 243, 279, 320, 363; An American Essay (Review), 505. Aldwinckle, T. W.: Gift of a Travel-

ling Studentship, 617.

Alexander Thomson Memorial, 77.
ALLIED SOCIETIES. — Architectural Provinces Scheme, 4; Map showing district allocated to each Society, 6; Educational Facilities, 7; Representation on the Council, 8; The York Architectural Society and the Cardiff, South Wales, and Monmouthshire Architects' Society admitted to alliance, 16; Students' Lectures at Liverpool, 185; Exhibition of R.I.B.A. Prize Drawings, 232; D. H. S. Cranage's Lectures at Newcastle, 644.

BIRMINGHAM: Officers, 546, 571. BRISTOL: Officers, 545.

Cardiff: Annual Dinner, 277; J. Coates Carter's Retrospect of the work of the Society, ib.; Officers, 546. Devon and Exeter: Officers, 546,

571; Conference at Plymouth, 600.

DUNDEE: William Mackison on the Architectural Provinces Scheme, 62: Exhibition of the Prize Drawings, 410; Officers, 546.

GLASAOW: W. Forrest Salmon's Address, 26; W. J. Anderson on Italian Renaissance Architecture, 126, 156, 243, 319, 363; C. Gourlay's Lectures, 515; Officers, 545.

IRELAND: Officers, 545.

LEEDS AND YORKSHIRE: G. Bertram Bulmer's Address, 62; The Annual Dinner, Toasts and Speeches, 198; J. Lane on English Cathedrals, 242; E. Guy Dawber's Notes

on Some Bavarian Towns, 278; William Henman's Paper on Hospitals, 439; Officers, 546.

LEICESTER: Prize Distribution,

319; Officers, 545.

LIVERPOOL: Henry Hartley's Address, 60; W. H. Bidlake's Paper on Imagination in Planning, 240; Basil Champneys on the Relations of the Practical and the Ideal in Architecture, 278; J. H. Cook's Three Years' Architectural Experience in America, 362; Officers, 545.

Manchester: H. W. Chubb on the History and Development of Locks and Safes, 278; Officers, 545.

New South Wales: Officers, 657. Northern: J. H. Morton's Address, 90; Officers, 545; Annual Excursion, 600.

Nottingham: Officers, 545.

SHEFFIELD: E. M. Gibbs's Address, 26; H. W. Lockwood on Architectural Practice in America, 90; Professor Anderson on the Architecture of Dalmatia, 125; H. W. Lockwood on Symbolic Architecture, 242; The late John Brightmore Mitchell-Withers: Memoir by C. Hadfield, 409; Officers, 545.

C. Hadfield, 409; Officers, 545.
York: Annual Report, 90; J. T.
Pegge on the Lighting of Dwelling-Houses by Electricity, and its Uses for Domestic Purposes, 319; Officers,

546.

America: Architectural Education for, 503; Professional Practice in, 90; Three Years' Architectural Experience in, 362.

American Uniform Contract, The, 465. Anderson, J. Macvicar: Opening Address, 1; The Grecian House, 49; Replies to S. Vacher's questions, 88; Address to Students: SOME ASPECTS OF THE MUTUAL RE-LATIONSHIP OF ARCHITECTS, 171; The late César Daly, 183; The Drainage of Blickling Hall, 196; The Plan of Dwelling-Houses in Towns, 231; Mosaic and Fresco, 264; The New Buildings at University College, 306; The First Election by Voting Papers, 361, 362; The Council Chamber and its Accessories, 378; The Streets and Buildings Bill, 404, 406; Furniture, 432; The Annual Report, 471; The Influence of the Hanseatic League on Architecture, 497; With the deputation to the L.C.C. Bridges Committee, 498; The Teaching University for London, 521; The Presidential change of office: Speech on vacating the Chair, 520; Speech at the Anniversary Dinner, 2nd July, 588; Proposed portrait of, 595.

Anderson, Professor: The Architecture of Dalmatia, 125.

Anderson, W. J.: Italian Renaissance Architecture, 126, 156, 243, 319, 363. Annyersary Dinner, 2nd July, 521; List of guests and members present, 583; Toasts and Speeches, 585; The Ambassador U.S.A. 585. The

List of guests and members present, 583; Toasts and Speeches, 585; The Ambassador U.S.A., 585; The Bishop of Peterborough, ib.; Lord Kelvin, 586; Sir Frederic Leighton, 587; The ex-President, 588, &c.

Annual Elections, The, 520, 541; Scrutineers' Reports, ib.

Annual Report, 445; Discussion, 467. Appellate Tribunal: see Tribunal of Appeal.

Arabic Buildings in Egypt, Painting of, 600, 654.

Archæological Congress, France, 435. Archæological Survey of India, 54, 144, 563.

Architects and Artisans, 653.

Architects and Assistants, Intercommunication between, 17.

Architect's and Clerk of Works' Supervision, 25, 28.

Architects and Master-Workmen, 463, 511, 535.

Architects and Plumbers: Letter from the Clerk to the Plumbers' Company, 546; Edwin Seward on the separation of Plumbers' work from the work of other trades in architects' specifications, 546.

Architects' Benevolent Society, 16, 309, 341; Annual Report, &c., 363

Architects' Charges, 10.

Architects' Drawings: A Suggestion,

Architects' Functions, A Builder's Estimate of the, 656.

Architects, Mutual Relationship of, 171.

Architects, Registration of, Protest against Bill for, 9.

Architectural Provinces Scheme explained and illustrated, 4; Professional Enrolment, 16.

Architecture, Contemporary, 12.
Architecture, The Advancement of, 243, 279, 320, 363.

Architecture, The Relations of the Practical and the Ideal in, 278.

ART COMMITTEE: annual report, 451; Deputation to the L.C.C. Bridges Committee, 498; Election, 1894-95, 541.

Art Treasures, 52.

Artisans, Architects and, 653.

Ashpitel Prize 1893, 116; Presentation, 198.

Auditors 1893-94: F. W. Marks elected, 309; Auditors 1894-95, 541.
Aumonier, —: Furniture, 431.
Australian Artists, 435.

Australian Timbers, 194.

В

Baker, Arthur: The Blickling Hall Drainage, 197.

Balance Sheet, 454.

Bamian Statues and Caves, The [Wm. Simpson]—The Great Statue, 528; The Second Statue, 529; Sketch Plan of the Bamian Valley, 530; Sections of Caves, Arches, and Niches, 531; The Fourth Statue: "The Bachâ," 533; General View of Caves and Statues, 534.

Barr Ferree on Architectural Educa-

tion for America, 503.

Barry, Charles: Vote of Thanks to the retiring President, 520.

Baumann, A. A.: his book on Betterment, 317.

Bavarian Towns, Notes on, 278.

Bayard, Thomas F., Ambassador U.S.A.: Speech at Anniversary Dinner, 585.

Beacheroft, Alderman, on Overcrowded

London, 274.

Beare, Professor T. Hudson: The New Science Laboratories at University College: The Mechanical Engineering Department, 290.

Beauty in Towns, The Sentiment of, 567.

Begg, John: The Treatment of Sculpture in relation to Architecture, 325.

Belcher, John: Furniture, Domestic and Ecclesiastical, 413, 431.

Betterment, 622; The House of Lords on, 602; Betterment, Worsement, and Recoupment, 317.

Bidlake, W. H.: IMAGINATION IN PLANNING, 240.

Birch, Charles Bell; obituary notice,16. Birds' Wiugs as Thatch, 24.

Blashill, Thomas: The Council Chamber and its Accessories, 365; Reply to the Discussion on, 378; Dwellings for Enpropriated Alti-Ficers, 658.

BLICKLING HALL, NORFOLK: ITS DRAINAGE, WATER-SUPPLY, AND OTHER WORKS [Maurice B. Adams], 157; Relative Levels of Sump, Pumphouse, Man-hole, Old Culvert, and Basement of the Mansion, 161; Pump-house, Water-wheel, and Sump, 162; Plan and Sections, 163; General Plan of the Old Drainage, 164.

Discussion: The President, 196; P. Gordon Smith, ib.; H. W. Burrows, ib.; Robert Williams, 197; Arthur Baker, ib.; The Author's Reply, ib.

Bolton, A. T.: Mosaic and Fresco, 264; Summary of his Report as Soane

Medallist 1893, 339.

Booth, Lawrence: obituary notice, 618. Brewer, H.W.: Influence of the Hanseatic League on Northern Europe Architecture, 496.

Brick Architecture: in Great Britain, 438, 539, 511; in Northern Europe,

479; Influence of the Hanseatic League on, 477 et seq., 495, 497; "The Tylery," near Upsala, 481; Twelfth-Century Brickwork at Quedlinburg and Jerichow, 495.

Bricks and Brickwork, Proposed Systematic Tests: Science Committee's Report, 55; Suggested Fund for Experiments, 463; Subscriptions promised, 598, 626; Experiments at Liverpool, illustrated, 627.—Brick and Concrete Walls, 58, 85, 155; Thin Waterproof Walls, 85.—Brick-Crushing Tests at University College, 293.

Bridges Committee of the L.C.C.: Deputation from Art Committee, 498.

British Antiquities, 595.

British Honduras, Ancient Mouuments in, 409.

Brock, E. P. Loftus: The Grecian House, 47; Ancient Roman Mortar, 56; Elementary Design (Review), 269.

Bruce, Wallace: The Streets and

Buildings Bill, 356.

Brydon, J. M.: Hospital Construction (Review), 235; Mosaic and Fresco, 263; The Council Chamber and its Accessories, 375; Architecture of London Bridges, 499.

Buldhist Inscriptions, 341.

Builder's (A) Estimate of the Architect's Functions, 656.

Building, Free Lectures on, 267.

Building Law, 596; Consolidation see London Streets and Buildings Bill.

Bulmer, G. Bertram: Presidential Address at Leeds, 62; Speech at the Leeds and Yorkshire Annual Dinner, 199.

Burgess, Jas.: The Classical Influence in Indian Architecture, 112; James Fergusson, 438.

Burlington-Devonshire Collection, 11. Burrows, II. W.: Blickling Hall Drainage, 196; The Council Chamber and its Accessories, 376; The Annual Report, 471.

Business Meletinos. I. 4 Dec. 1893, 86. II. 8 Jan. 1894, 195.— III. 12 March, 1894, 360.—IV. 11 June, 1894, 541.

Butler, D. B.: The late Henry Faija, 645.

C

Cairo Museum Competition, The, 502; Necessity for an International Jury, 615; Programme of Conditions, Plan of Site, &c., 628.

Campbell. Mr., of Stracathro, M.P.: Vote of Thauks to President, 14. Cauterbury, New Zealand, The Curri-

culum at, 457.

Capper, Professor: The New Buildings at University College, 304.

Caruot, President, Assassination of: Resolution of Condolence with the French Architects, 583; Monsieur Daumet's Reply, ib. Caroe, W. D.: Party-Wall Parapets, 316; The Streets and Buildings Bill, 405; Church Furniture, 423; Architecture of London Bridges, 499.

Carter, J. Coates: Retrospect of the work of the Cardiff. S. Wales, and Monmouthshire Society, 277.

Cates, Arthur: The Story of Regent Street, 228; Review of the London Streets and Buildings Consolidation and Amendment Bill 1894, 343; Report as Representative of the Institute on the Tribunal of Appeal, 433.

Cawston, Arthur: The Height of Corner Buildings in London, 126; Londou aud its Council, 315; The Streets and Buildings Bill, 407; The Regeneration of London, 461, 512, 537; His Decease, 541; Vote of Condolence with his family, ib.

Centenarian Architect, A, 139. Ceylon, Archaeological Survey of, 267. Chadwick, T.: The late Lawrence

Booth, 618.

Chair of Architecture, Liverpool, 556.
Champneys, Basil: The Relations of the Practical and the Ideal in Architecture, 278.

Charges, Architects', 10.

Charles, B. A.: Protestant Churches from the Reformation to the Present Day (Review), 648.

Charles, Ethel: The Castle of Milan under the Visconti and the Sforza (Review), 649.

Chicago Exhibition: Report of the British Judge in Architecture, 65.

CHRONICLE. The York Society, 16, 77; The Cardiff Society, 16; Professional Enrolment in the Provinces, 16; Architects' Benevolent Society, 16, 309, 341; The late Mr. Birch, A.R.A. [H.4.], 16; Monographs of New Buildings, 17; The late Sir William Smith, 17; Additions to the Library, 17, 51, 76, 139, 186, 234, 267, 309, 382, 459, 504, 521, 561, 595, 619; Intercommunication between Architects and Assistants, 17; The Intermediate Examination (Student), 50, 308; The Qualifying Examination (Associate), 50, 76, 115, 379; The Appellate Tribunal, 50,453, 501; Proposed Consolidation of the Building Acts, 50; The late Heiurich Lang [Hon. Corr. M.], 51; The Preliminary Examination (Probatiouer), 75, 338; Mr. Falkener's Paintings and Drawiugs, 76; Buildiugs in South Africa, 77; "Alexander Thomson" Memorial, Glasgow, 77; The late General Sir Alexander Cuuningham, K.C.I.E., 77; The Ashpitel Prize 1893, 116; Mr. Simpson's Paper, 116; The late William Charles Tuke [F.] and James Maxwell [F.], 116; The Travelling Students' Work 1893, 139; The late W. John Mettaun [A.], 139; A Centenarian Architect, 139; The Prizes and Studentships 1894, 184;

The Essay Medal, 184; The late Carl von Hasenauer [Hon. Corr. M.], 184; The late Lord Crewe [H.A.], 185; The Liverpool Society-Students' Lectures, 185; Technical Instruction for House-Painters, 185; The Esthétique des Villes: A Civic View, 186; The London Streets and Buildings Bill, 232, 265, 432, 458, 539, 556, 589, 617; The Illustrations to Professor Kerr's Paper, 232; The Prize Drawings at Allied Centres, 232; The late César Daly, 232, 433; The Tiber from the Ponte Sisto, Rome, 234; The Spring Examinations, 265; The Royal Gold Medal 1894, 265, 380; Visit to the Works of Decoration at St. Paul's, 265, 309; Illustrations to the Papers on Mosaic and Fresco, 266; A Teaching University for London, 266, 521, 594; Free Lectures on Building, &c., 267; Election of an Auditor 1893-94, 309; Hygiene and Demography, 309, 617; Tour of the Soane Medallist 1893, 339; Tour of the Owen-Jones Student 1893, 340: The Value of Intellectual Training, 379: The Prizes and Studentships 1894-95, 380; The late Andrew Heiton [F.], 381; The late John Brightmore Mitchell-Withers [F.], 382; The late Lord Hannen [H.A.], 382; The late William Haywood [F.], 434; Congress of Protestant Church Architecture, Berlin, 434; The French Arehæological Congress, 435; Flemish Art, 435; Australian Artists, 435; Architecture in Sydney, 435; House Drainage, &c., 435; Education at the Antipodes: Curriculum at Canterbury, New Zealand, 457; The Sanitary Institute Con-gress, 458, 617; A Defence Fund for Architects in France, 458; The London County Council: Conference with the Bridges Committee, 498; The L.C.C. New Tribunal of Appeal, 501; District Surveyors: Qualification as Fellows (Counsel's Opinion), 501; Suggested International Competition, 502; Probationers at the Glasgow Technical College, 503; Architectural Education for America, 503; Architects' Drawings: a Suggestion, 504; The Dictionary of Architecture, 504; The Annual Elections, 520; The Presidential Change of Office, 520; The Festival Dinner, Monday, 2nd July, 1894, 521, 583; The Iron and Steel Institute Autumn Meeting, 521; The Chair of Architecture, Liverpool, 556; The Godwin Bursary Report 1893, 557; The late W. Calder Marshall, R.A. [H.A.], 560, 595; The late President of the French Republic, 583; The late Austen Henry Layard [H.F.], 592; The late William Jackson [F.], 594; Proposed Portrait of the ex-President, 595; The Cairo Competition:

Immediate Necessity for an International Jury, 615; Nubia and its Future, 615; Preservation of the Temples of Karnak, 616; The Congress at Budapest, 617; New Travelling Studentship, 617; The late Wyatt Papworth [F.], 618, 643; The late Lawrence Booth [F.], 618; Museum for Sanitary Appliances at King's, 619; The Decimal System of Measurement, 619; The Condition of London Streets. 643; The A. A. Curriculum 1894-95, 644; Professor Banister Fletcher's Classes, 644; Mr. Cranage's Lectures at Newcastle, 644; The late Henry Faija, M.Inst.C.E. [H.A.], 645; The Labour Congress, 645; The Gohna Dam and the Suggested Nile Dam, 646; The Howard Lectures of Prof. Unwin [H.A.], F.R.S., 646.

Chronology: Architectural, 79; Summary of principal events during Greek and Persian Dominion of South-west Asia, B.C. 334-A.D. 641, 147; Chronology of the Hanseatic

League, 493. Chubb, H. W.: History and Development of Locks and Safes, 278.

Clarke, C. Purdon: The Classical Influence in Indian Architecture, 113. Clarke, Somers: Painting of Arabic

Buildings in Egypt, 654. Clarkson, S. Flint: The Streets and

Buildings Bill, 406.

CLASSICAL INFLUENCE, THE, IN THE ARCHITECTURE OF THE INDUS REGION AND AFGHANISTAN [Wm. Simpson], 93; The Hada Tablet, ib.; Base of Column found at Maliar-Ka-Mora, 95; Fragments of Cornice, Capitals, &c., from the Peshawar Valley, 97-99; Form of Doric Column at Marttand, 100; Temple at Mulot, 101; The Great Buddhist Statue at Bamian, 104; Sculpture from the Peshawar Valley, 106, 108; Pilaster of Great Gateway, Palmyra, 109; Pillar at Srinagar, Kashmir, 110; The Temple at Marttand, 111.

Discussion: Jas. Burgess, 112; Professor T. Hayter Lewis, 113; C. Purdon Clarke, ib.; Hugh Leonard, 114; J. Tavenor Perry, ib.; E. P. Loftus Brock, ib.; William White, ib.; R. Phené Spiers, ib.; Wm.

Emerson, 115.

_ ___ [J. L. Kipling], 134; A. Parthian Fire-worshipper, ib.; Gandhara Sculptures, 136-138.

[J. Tavenor Perry].—Chro-nological Summary of principal events during Greek and Persian Dominion of South-west Asia, 147. - [R. Phené Spiers].—Sculpture from the Peshawar Valley, 150; Wall of Theodosius II., Constantinople, 151; Portion of Eighthcentury Ciborium on Tomb at Bologna, 152; Rabbath-Ammon, ib.; Kahrije Djami, 153.

- — The Author's Reply, 191.

Clayton, John: Furniture, 431. Clere, F. de J.: Concrete Pile-Driving, 570.

Cockrill, J. W.: Brick and Concrete Walls, 85

Cole, R. Langton: Architectural Chronology (Review), 79. Coles, Wm. R. E.: The National Re-

gistration of Plumbers, 546. Collard, Allan O.: The R.I.B.A.

Mottoes, 60. Collins, H. H.: The Streets and Buildings Bill, 404.

Competitions, Architectural, 173; Abuses, Past and Present, 623.

Concrete Pile-Driving, 570.

Contract, The American Form of, 465. Cook, J. H.: Three Years' Architectural Experience in America, 362.

COUNCIL CHAMBER, THE, AND ITS ACCES-SORIES [Thomas Blashill], 365; General Plan and Sections, 368-69; The L.C.C. Council Chamber, 371.

Discussion: Aston Webb, 374; J. M. Brydon, 375; Wm. White, 376; Charles Fowler, ib.; H. W. Burrows, ib.; Wm. Woodward, 377; Sir John Hutton, ib.; Professor Kerr, ib.; J. Macvicar Anderson, 378; The Author's Reply, ib.

Council: Representation of Allied Societies on the, 8; Annual Report,

445; Election of, 541.

Crace, J. D.: Portrait of Palladio, 24; Art Treasures (Review), 52; Mosaic and Fresco, 262; The late John G. Crace on Fresco, 312; Mr. Lethaby on Leadwork (Review), 389; Furniture, 431; Augustus Welby Pugin and Furniture, 517.

Cranage, D. H. S.: his lectures at

Newcastle, 644.

Crewe, Lord: obituary notice, 185. Cunningham, General Sir Alexander: obituary notice, 77.

Curtius, Professor E.: Hypæthral Temples, 80.

Dalmatia, The Architecture of, 125. Daly, César: Decease of, 183; President's Remarks on, ib.; Reminiscences of, 232; Letter from his Son, 433.

DAMME, A CITY OF THE NETHERLANDS [J. Tavenor Perry], 609; Notre-Dame, Damme, 610; Notre-Dame, Aardenburg, 611; The Halles, 612; The Belfry, Sluus, 614. See also HANSEATIC LEAGUE.

Daumet, Monsieur: his Reply to Resolution of Condolence re Assassination of President Carnot, 583.

Dawber, E. Guy: Notes on some Bavarian Towns, 278.

Decimal System of Measurement, 619. Defence Fund for Architects in France, 458.

Design, Elementary, 269.

Devonshire, Duke of, Letter to, re Burlington-Devonshire Collection, 12. Dicksee, Bernard: The Streets and Buildings Bill, 406; Qualification of District Surveyors for Fellowship, 544.

Dictionary of Architecture, The, 504. Diderot, 18.

Dinner to celebrate the 60th Anniversary of the First General Meeting, 521, 583.

District Surveyors: Conditions of Appointment, 25, 540; Discussion on their Duties, 89; Their Qualification as Fellows, Counsel's Opinion, 501 — Discussion, 542; Status under L.C.C. Regulations, ib.

Dollman, F. T.: Pugin, 598.

Dörpfeld, Dr.; his researches at Athens in relation to the theory of Hypacthral Openings, 80, 83; Plan of the Palace of Tiryns, 84.

Douglas, Campbell: The late Andrew Heiton, 381; The Annual Report, 471.

Drainage, Water-Supply, and other Works at Blickling Hall, 157. Drawings, The Ownership of, 187.

E

Education, Architectural J. Maevicar Anderson, 2-4; in the Provinces, 7, 26, 27, 61, 91, 126, 185, 199; Progressive Examination Alfred Waterhouse, 20; A Teaching University for London, 266, 521, 594; Free Lectures on Building, 267; Lord Playfair on the Value of Intellectual Training, 379; Curriculum at Canterbury College, Christchurch, N.Z., 457; in America, 503; The Chair of Architecture at University College, Liverpool, 556; Conference at Plymouth, 600; Museum for Sanitary Appliances at King's College, 619; The Royal Victorian Institute Examinations, 601: The A. A. Currieulum 1894-95, 644; Professor Banister Fletcher's Classes, ib.; D. H. S. Cranage's Lectures at Newcastle, ib. Sec also Examinations. Egerton of Tatton, Lord: Furniture,

Handle Exploration Fund, 23; Elementary Egyptology, 270; Competition for the Cairo Museum of Autiquities, 502; Necessity for an International Jury upon, 615; The Nile Reservoirs, 573; Parallel between the Suez Canal and the Proposed Philie Reservoirs, 597; The Threatened Destruction of Philie, a Protest, 605; Nubia and its Future, 615; Scheme for the Preservation of the Temples of Karnak, 616.

Elections, The Annual, 520.

Election of members by Voting Papers: Discussion, 361.

Electricity, Dwelling-Houses lighted by; uses for cooking purposes, 319.

Elias, Ney: The Temples of Kashmir in the Sixteenth Century, 436. Elizabethan Drawing in Thorpe, quære author, 537.

Emden, W.: Power of Vestry to require extensive drainage and sanitary work to be done in a building, 156.

Emerson, William: The World's Fair Bullding, Chicago, 65; The Classical Influence in Indian Architecture, 115; Speech at the Leeds and Yorkshire Society's Annual Dinner, 198.

Emotional, The, in Architecture, 279. English Renaissance, The, 463, 507, 511; J. A. Gotch's Reply to his Critics 522

Essay Medal, The, 184.

Essays submitted for the Institute Medal, 181.

Etiquette, Professional, 176.

Examinations, The: The President on, 3, 4; Progressive Examination, 20; 1893-94: The Preliminary (Lists of Probationers), 75, 338; The Intermediate (Lists of Students), 50, 308; The Qualitying (Lists of those qualified for Candidature as Associate), 115, 379; Statistics, 446; Royal Victorian Institute, 601; 1894 95, 657.

F

Faija, Henry: obituary notice, 645.
Falkener. Edward: The Grecian
House as described by Vitrevius
(illustrated), 2.1; His Reply to
the Discussion, 74; Exhibition of
his Paintings and Drawings, 76;
Catalogue and Description, 86, 125;
Vote of Thanks to, 86.

Fellows, Qualification of District Surveyors for candidature as, 542.

Fergusson, James, 383, 438.

Ferstel, Baron Max von: The late Carl von Hasenauer, 184.

Fire Protection, Novel. 59.

Fleming, Professor J. A.: The New Science Laboratories at University College: The Electrical Engineering Department, 294.

Flemish Art, 435.

Fletcher, Professor Banister; The Streets and Buildings Bill, 399; Classes at King's College, 644.

Fletcher, Banister F.: Summary of his Report as Godwin Bursar 1893, 557.

Flower, Arthur S.: Two Priories (Review), 52: New Text-book for Students (Review), 140; James Fergusson (Review), 383: The Hansa Influence on Brick Architecture in England, 497; Old London (Review), 506; British Antiquities (Review), 595; Professor Unwin's Howard Lectures, 646; Mr. Ruskin on Modern Gothic (Review), 652.

Foster, Professor G. Carey: The New Science Laboratories at University College: The Physical Department, 299, 305.

Fowler, Charles: The Council Chamber and its Accessories, 376; Influence of the Hanseatic League

on Northern Europe Architecture, 474, 495.

French Architects, Defence Fund for, 458.

French "Pied," The, and the English "Foot," 625.

French Renaissance, Extracts from M. Palustre's work on the, 511: Châteaux, 535; Architects, ib.

Fresco and other Decoration fifty years ago: The late E. T. Parris on, 311; The late J. G. Cracc's views, 312. See Mosaic and Fresco.

FURNITURE: DOMESTIC AND ECCLESI-ASTICAL:

INTRODUCTORY [John Belcher], 413. DOMESTIC [C. F. A. Voysey], 415.

The Theory of Hangings [Aldam Heaton], 418; Materials, 419; Considerations of Utility and Ornament, 420; Chintzes, 421; Lining Fabrics, 422; List of materials in order of merit, *ib*.

CHURCH FURNITURE [W. D. Caröe], 423; Jacobean Balustrade and Bench Ends, Mobberley, 427.

Discussion: L. Alma Tadema, 429; Lord Egerton of Tatton, 430; Lees Knowles, M.P., ib.; Wm. Woodward, ib.; J. Belcher, 431; John Clayton, ib.; J. D. Crace, ib.; — Aumonier, ib.; J. Maevicar Anderson, 432.

The illustrations, 438, 472. Furniture and Pugin, 517, 598.

(

German Art, Sir F. Leighton on, 191. Gethin, J.: Brick & Concrete Walls, 58. Gibbs, E. M.: Presidential Address at Sheffield, 26; Thin Waterproof Walls, 85; Speech at the Leeds and Yorkshire Annual Dinner, 198.

Godwin Bursary, The: Banister F. Fletcher's work as Godwin Bursar 1803, 182; his Report, 557.

Gohna Dam and the Suggested Nile Pam, 646.

Goodacre, John: The late William Jackson, 594.

Gotch, J. Alfred: reply to the eritics of his Architecture of the Renaissance in England, 522.

Gothic, Modern, J. Ruskin on, 652. Gourlay, Charles: his Lectures at Glasgow, 515.

Graham, Alex.: Review of Work of the Travelling Students 1893, and of that submitted for Prizes and Studentships 1894, 177; The Pugin Studentship 408.

Pugin Studentship, 408. Grandson, Neuchâtel, Vaulting at, 193. Grantham, Richard F.: The Plumber and his Work (Review), 19.

GRECIAN HOUSE, THE, AS DESCRIBED BY VITRUVIUS [E. Falkener], 29.— Vitruvius's Description of a Roman House, 32; Plan of the House of Pansa, Pompeii, 33; Vitruvius's Description of a Grecian House, 34; The Grecian House, 36; Plan, 37;

Plan of the House of the Faun, 40: The Mesaulos, 42; Houses of the Great and Little Fountain, 43; House of the Quæstor, 44; Various Hypotheses regarding the Hypæthral Openings of Grecian Houses, 45.

Discussion: F. C. Penrose, 46, 48; Alex. S. Murray, 47; E. P. Loftus Brock, ib.; Professor Aitchison, ib.; H. H. Statham, 48; Professor Kerr, 49; The President, 49; The Author's Reply, 74.

Grecian House (Vitruvius's) and the Moderns, 57; Hypæthral Temples, 80; Comparison with the Palaces of Tiryns and Mykene, 83; Dr. Dörpfeld's Plan of Tiryns, 84; Plan of Mykene, ib.; The Lighting

of Ancient Temples, 147.

Greek Lines, 505. GRISSELL MEDAL, THE, 196.

Н

Hadfield, C.: The late John Brightmore Mitchell-Withers, 409.

Hall, Edwin T.: The Conditions of Builders' Contracts, 89; Public Health (London) Act, 1891: The SANITARY BY-LAWS, 121; The Streets and Buildings Bill, 390.

Hannen, Lord: obituary notice, 382. HANSEATIC LEAGUE, THE, INFLUENCE ON THE ARCHITECTURE OF NORTHERN EUROPE [J. Tavenor Perry] .- The Baltic Style, 473; The Hansa the controlling power, 475; History of the League, 476; Architectural effects, 477; The Apostles' Church, Cologne, 480; St. Stephen's, Nevers, 481; St. Peter's, Malmoe, 482; West Tower, Paderborn Cathedral, 483; St. Patroclus' and St. Peter's, Soest, 484; St. Mary's, Lübeck, 485; St. Catherine's, Lübeck, 486; Town Hall and St. Nicholas', Stralsund, 487; East Gable, Prenzlau, 488; Choir and Transept, St. Peter's, Malmoe, 489; St. John's, Stettin, and Neubrandenburg, 490; St. Mary's, Stargard, 491; St. Nicholas' and St. James', Stralsund, 492; List of the Hanseatic Towns, &c., 493; Chronology of the League, ib.

Discussion: R. Phené Spiers, 494; Charles Fowler, 495; W. H. James Weale, 496; H. W. Brewer, ib.; Arthur S. Flower, 497; J. Macvicar Anderson, ib.; Author's reply, 498.

Hansoms, Balmanno Squire and, 24. Hartlepool School Board: Competition Advertisement, 624.

Hartley, Henry: Presidential Address at Liverpool, 60.

Hasenauer, Carl von: obituary notice,

Haynes, W. H.: The Streets and Buildings Bill, 408.

Hayward, C. Forster: The New Buildings at University College, 305; Qualification of District Surveyors for Fellowship, 545.

Haywood, Wm.: obituary notice, 434. Heaton, Aldam: THE THEORY OF HANGINGS, 418.

Heaton, Clement: Vaulting at Grandson, Neuchâtel, 193; West End of Nave, Grandson, 194; Some Notes on Rhenish Work, 275; Window Arch, Saint-Pierre, Geneva, ib.

Hebb, John: Ancient Monuments in British Honduras, 409; Condition of the West-End Streets, 569; Painting of Arabic Buildings in Egypt, 600; Parenzo Cathedral (Review), 650; Forgotten Staircases: An Old Story, 655.

Height of Buildings: The Practice Committee on the L.C.C. Report, 91; Observations by A. Cawston and Wm. Woodward, 126, 127.

Height of Houses in London after the Great Fire. 83.

Heiton, Andrew: obituary notice, 381. Helmingham Hall, 25, 59, 276.

Henman, William: Hospitals, 439. Hepper, William: Speech at the Leeds and Yorkshire Annual Dinner, 199. Hittite Style of Architecture, The, 57. Hospitals [William Henman]: Paper read before the Leeds and Yorkshire Society, 439.

Hospital Construction, 235.

House Drainage, 435. House-Painters: Technical Instruction for, 185.

Hunt, J. Horbury: His Case in the Equity Court, N.S.W., 548.

Hutton, Sir John: The Council Chamber and its Accessories, 377.

Hygiene and Demography: Congress at Budápest: Subjects for Discussion, 309; The Institute Delegates, 617; Mr. Blashill's Paper, 658. HYPÆTHRAL TEMPLES [Professor E.

Curtius], 80.

Imperial Improvement, March of, 460. Income and Expenditure Account 1893, 454.

India: The Classical Influence in the Architecture of, 93, 134, 147, 191; Archæological Survey of, 54, 563; Memorial to Lord Kimberley on the Condition of Historical Monuments in, 449; Reply, 450; Origin of Sculpture in, 625.

INSTITUTE SILVER MEDALS: Review of Work submitted for, 177, 179, 181; Award, 195; Presentation, 198.

Intercommunication between Architects and Assistants, 17.

Intermediate Examinations 1893-94: Results, 50, 308.

Iron and Steel Institute Autumn Meeting, 521.

Iron Construction, The late Ambrose Poynter on, 318.

Italian Renaissance Architecture, 126, 156, 243, 319, 363.

Italy, A Primitive Mode of Construction still practised in, 313.

Jackson, William : HISTORY AND DE-SCRIPTION OF LEICESTER ABBEY, Part I., 129; Part II., 166; obituary notice, 594. JOURNAL, The New, 11, 447, 471.

Karnak, Preservation of the Temples of, 616.

Kashmir, The Temples of, in the Sixteenth Century, 436.

Kelvin, Lord: Speech at Anniversary Dinner, 586.

Kerr, Professor: The Grecian House. 49; Observations on the Plan of DWELLING-HOUSES IN TOWNS, 201: The New Buildings at University College, 301; The Council Chamber and its Accessories, 377; The Streets and Buildings Bill, 401; The An-

nual Report, 470. Kidner, Wm.: The First Election by Voting Papers, 362.

Kimberley, Lord: reply to the Council's Memorial on the condition of historical monuments in India, 450.

King's College: Museum for Sanitary Appliances, 619; Professor Banister Fletcher's Classes, 644.

Kipling, J. L.: THE CLASSICAL INFLU-ENCE IN THE ARCHITECTURE OF THE Indus Region and Afghanistan, 134. Knowles, Lees, M.P.: Ecclesiastical

Furniture, 430.

Labour Congress, The, 645. Lanciani, R.: The New Museum in THE ORTO BOTANICO, ROME, 633.

Lang, Heinrich: obituary notice, 51. Langston, H. Hardwicke: Qualification of District Surveyors for Fellow-

ship, 544; The Annual Report, 467. Last, J. T.: Notes on Some African STRUCTURES, 635; Native Methods of Mining, Working, and Smelting Iron in East Africa, 640.

Layard, Sir Henry: obituary notice, 592. Leadwork, Mr. Lethaby on, 389. LEGAL :-

Appellate Tribunal, Reg. v.: Building Line, 27.

Ballard, St. George's Local Board v.: What is a New Street? 604.

Bateman, Lee v.: Architect's and Clerk of Works' Supervision, 28. Bibbey, Duke of Devonshire v.:

Ancient Lights, 631. Devonshire (Duke of) v. Bibbey: Ancient Lights, 631.

Goddard v. Grosvenor: Architects' Charges, 547.

Grosvenor, Goddard v.: Architects' Charges, 547.

Herring, Ex parte: Dangerous Structures, 547.

Holland, Wallen v.: Building used for Trade Purposes, 323.

Hough, Sutton Local Board v.: Setting back Buildings, 603.

Humphreys, London County Council v.: Wooden Structure, 604. Jolliffe v. Woodhouse: Party-Walls, 571.

Kennedy, Reg. v.: Building Line, 28.

Kensington Vestry, Worley v.:

Building Line, 363. Kirk & Randall, Lovegrove v., 414.

Lawrence, London County Council v.: Building Height, 64.

Lee v. Bateman: Architect's and Clerk of Works' Supervision, 28.

Legg v. Sill: District Surveyor's Requisition, 660.

Lister, Wallen v.: District Surveyor's Requisition, 244, 411.

London County Council v. Humphreys: Wooden Structure, 604.

- v. Lawrence: Building Height, 64.

_, Nixey v.: Building Line, 214

, Wendon v.: Building Line, 128; What is a Structure? 363, 572.

- v. Worley: Continuing to Buill after Notice, 630.

Lovegrove v. Kirk & Randall,

Mirtin v. Price: Ancient Lights,

128; Appeal, 156. Nixey v. London County Council:

Building Line, 244.

North Ormesby Local Board, Thorold v.: Building Line, 631, 660. Price, Martin v.: Ancient Lights, 128; Appeal, 156.

Reg. v. Appellale Tribunal; Building Line, 27.

Reg. v. Kennedy: Building Line,

St. George's Local Board v. Ballard: What is a New Street? 604. Silk, Legg v.: District Surveyor's

Requisition, 660. Sky Signs: Counsel's Opinion, 128. Stanton v. Straub: Architects' Certificates, 548.

Straub, Stanton v.: Architects' Certificates, 548.

Sutton Local Board v. Hough: Setting back Buildings, 603.

Thorold v. North Ormesby Local Board: Building Line, 631, 660.

Wallen v. Holland: Building used for Trade Purposes, 323.

- v. Lister: District Surveyor's Requisition, 244, 411.

Wendon v. London County Council: Building Line, 128; What is a Structure? 363, 572.

Woodhouse, Jolliffe v.: Party-Walls, 571.

Worley v. Kensington Vestry: Building Line, 363.

, London County Council v.: Building after Notice, 630.

LEICESTER ABBEY, HISTORY AND DE-SCRIPTION OF [Wm. Jackson], Part I., 129; Part II., 166; Ruins in the Garden, 169.

Leighton, Sir Frederic: Addresses TO ROYAL ACADEMY STUDENTS, 120, 176; German Views of his Address, 190; nominated Royal Gold Medallist 1894, 277, 360; Letter of Acceptance, 380; Presentation of the Medal: Address, 549; his Reply, 553; Speech at Anniversary Dinner,

Leonard, Hugh: The Classical Influence in Indian Architecture, 114.

Lewis, Professor T. Hayter: The Classical Influence in Indian Architecture, 113.

Liberty and Property Defence League, 630.

Library Additions, 1893-94: Description, 17, 51, 76, 139, 186, 234, 267, 309, 382, 459, 504, 521, 561, 595, 619, 663; Librarian's Report, 452.

Light and Air: Science Committee's Report, 323.

LITERATURE COMMITTEE: Annual Report, 451; Election of, 541.

Locks and Safes, History and Development of, 278.

Lockwood, H. W.: Architectural Practice in America, 90; Symbolic Architecture, 242.

LONDON AND ITS COUNCIL, 271, 315.

London County Council: The Building Act Committee's Report on Height of Buildings, 91; Deputation from the Art Committee re the New Bridge at Vauxhall, 498.

London, Regeneration of, 461, 512, 537. LONDON STREETS AND BUILDINGS BILL. - London County Council's Proposed Bill to Consolidate the Building Law, 50; Introduced as a Private instead of a Public Measure, 55; Alleged Defects, 156; Objectionable Provisions, 200; A Handy Abstract of the Bill, 273; Proposal to petition against, 232, 265, 277; General Meeting convened to discuss the Bill, 277; Arthur Cates's REVIEW, 343; Discussion, 350; Resumed Discussion, 390; Proceedings in the House of Commons, 411; Referred to a Select Committee, ib.; List of Petitioners against, ib.; The Sign-Painters' Protest, ib.; Report of the Institute Council Delegates on the Amendments, 432; L.C.C. Parliamentary Committee recommend Adoption of Amendments, 444: Conference at Paddington, ib; The Select Committee in charge of the Bill, ib.; Proceedings before the Select Committee, 458, 556, 589; Suggestions from the Art-Workers' Guild, 516; Abstract of Clauses as amended affecting New Buildings, 591; The Select Committee's Reports, 602; The Third Reading, 603; Passed the House of Lords, 617; The Promoters' Acknowledgments to the Institute, &c., ib.

REVIEW OF THE Bill [Arthur Cates], 343; Forma-

tion and Widening of Streets, 344; Lines of Building Frontage, 345; Open Space about Buildings and Height of Buildings, ib.; Construction, 347; Rights of Building and Adjoining Owners, ib.; By-laws, 348; Legal Proceedings, 349; Miscellancous, ib.

Discussion: Dr. Longstaff, 350: J. Slater, 354; Wallace Bruce, 356; Campbell Douglas, 358; E. T. Hall, 390; J. Tavenor Perry, 394; J. J. Stevenson, 396; H. H. Statham, 397; Richard Roberts, 398; Professor Banister Fletcher, 399; Robert Williams, 400; Professor Kerr, 401; H. H. Collins, 404; Wm. Woodward, ib.; J. Marsland, ib.; E. Woodthorpe, 405; W. D. Caröe, ib.; B. Dicksee, 406; J. Macvicar Anderson, 404, 406; S. Flint Clarkson, 406; A. Cawston, 407; W. H. Haynes, 408. London Streets, Condition of, 569, 643.

Longstaff, Dr.: The Streets and Build-

ings Bill, 350.

Lovegrove, H.: District Surveyors, Conditions of Appointment, 25; Status under L.C.C. Regulations, and Qualification for Fellowship, 542.

McGibbon, Alexander: Planning of

Theatres, 280.
Mackison, William: The Architectural Provinces Scheme, 62.

Marshall, W. Calder: obituary notice by his Son, 560.

Marsland, J.: The Streets and Buildings Bill, 404.

Masons, A Learned Lodge of, 238, 599. Master-Workmen and Architects, 463, 511, 535, 653.

Maxwell, James: obituary notice, 116. Measured Drawings and Sketches submitted for the Institute Medal, Review of, 177.

Mcdiæval Manchester, 237. Members elected, 86, 195, 360, 542, 670. Memorial to Lord Kimberley on the condition of historical monuments in India, 449; reply, 450.

Mettam, W. John: obituary notice, 139. Milan, The Castle of, under the

Visconti and the Sforza, 649. MINUTES OF GENERAL MEET-INGS-I. (Ordinary) 6 Nov. 1893, 26; II. (Ordinary) 20 Nov., 60; III. (Business) 4 Dec., 86; IV. (Ordinary) 18 Dec., 125; V. (Business) aniary) 18 Bec., 125; VI. (Business)
18 Jan. 1894, 195; VI. (Ordinary)
15 Jan., 198; VII. (Ordinary) 29
Jan., 240; VIII. (Ordinary) 12 Feb., 277; IX. (Ordinary) 26 Feb., 319; X. (Special and Business) 12 March, 360; Adjourned, 19 March, 409; XI. (Ordinary) 9 April, 409; XII. (Ordinary) 23 April, 438; XIII. (Annual) 7 May, 467; XIV. (Ordinary) 28 May, 515; XV. (Business) 11 June, 541; XVI. (Ordinary) 25 June, 571.

Mitchell-Withers, J. B.: obituary notice, 382.

Mormon Temple, The Great, Salt Lake City, 153.

Morton, J. H.: Presidential Address at Newcastle, 90.

Mosaic and Fresco:-

LC. INTRODUCTORY Harrison Townsend], 245.

Mosaic: Its Materials and Me-THODS [James C. Powell], 248; Materials for Glass Mosaic, 249; Methods of Working, 251.

Mosaic in General, and the late Dr. Salviati's Work [G. Salviati], 254; Mosaic of the Façade of the Justiz Palais, Cologne, 257; Mosaic of the Dome of the Cathedral of Aix-la-Chapelle, 259.

Mosaic and Fresco: Are they LIVING ARTS? [N. H. J. Westlake],

Discussion: J. D. Crace, 262; Professor Roberts-Austen, 263; J. M. Brydon, ib.; R. Phené Spiers, ib.; A. T. Bolton, 264; J. Macvicar Anderson, ib.

Mosaic Decoration, A Short History of, 276.

Mosaics, The, at St. Paul's: Private View, 265, 309.

Mountford, E. W.: The Papers on Furniture, 469; The Architecture of London Bridges, 500.

Murray, Dr. Alex. S.: The Grecian House, 47.

Nash, W. Hilton: Brick and Concrete Walls, 85.

National Home-Reading Union, The,

Naville, Edouard: THE THREATENED DESTRUCTION OF PHILE: A PROTEST,

Neale, J.: The Annual Report, 469. Needs of a Great Capital, Voltaire on the, 358.

Newberry, John E.: Egypt Exploration Fund, 23.

NEW MUSEUM IN THE ORTO BOTANICO, Rome [Professor Lanciani], 633.

New South Wales: Architects' Charges (Stanton v. Straub), 548; J. Horbury Hunt's Case, ib.

New Zealand, Curriculum at Canterbury College, Christchurch, 457. Nile Dam, The suggested, and the

Gohna Dam, 646.

NILE RESERVOIRS: THE FAYOUM AND RAIYAN-MOERIS [Cope Whitehouse], 573; Plan of the Nile from Wady Halfa to the Sea, 574; Middle Egypt, 575; Ptolemy's Map, 576; Temple north of Dimeh, 578, 579; Copto-Byzantine capital at Dionysias, 580; Gateway of the Deir Muellah, 581.

Non-Metropolitan Members, Disadvan

tages of, 9.

NOTES, QUERIES, AND REPLIES. Paris and London, 23; The Egypt

Exploration Fund [John E. Newberry], 23; Birds' Wings as Thatch [Wm. Simpson], 24; A Portrait of Palladio [J. D. Crace], 24; Mr. Balmanno Squire and Hansoms [William H. White], 24; Appointment of District Surveyors [Henry Lovegrove], 25, 540; Architects' and Clerks of Works' Supervision [Wm. Woodward], 25; Helming-ham Hall, 25, 59 [H. D. Searles-Wood], 276; The R.I.B.A. Mottoes, 25, 59 [Allan O. Collard and Paul Waterhouse]; Consolidation of the Building Acts, 55; Proposed Systematic Testing of Bricks and Brickwork [P. Gordon Smith], 55, 463, 598, 626, 627, with illustrations [J. A. Berrington]; Ancient Roman Mortar [E. P. Loftus Brock], 56; The Hittite Style of Architecture [Wm. Simpson], 57; Vitruvius's Grecian House and the Moderns [William H. White], 57; Brick and Concrete Walls, 58 [J. Gethin], 85 [J. W. Cockrill and W. Hilton Nash], 155 [William White]; Ignorance con-cerning Woods, 59; Novel Fire Protection, 59; Heights of Houses in London after the Great Fire, 83; Vitruvius's Grecian House [Professor T. Roger Smith], illustrated, 83; Thin Waterproof Walls [E. M. Gibbs], 85; The Lighting of Ancient Temples [E. P. Loftus Brock], 147; The Classical Influence in Indian Architecture, illustrated, 147 [J. Tavenor Perry and R. Phené Spiers], 191 [Wm. Simpson]; The Great Mormon Temple, Salt Lake City [Wm. Simpson], illustrated, 153; One of the Consequences of the Gothic Revival [William H. White], 155; Sir Frederic Leighton on German Art, 190; Vaulting at Grandson, Neuchâtel [Clement Heaton], illustrated, 193; Australian Timbers, 194; The London Council's Bill: a Handy Abstract, 273; Alderman Beachcroft on Overcrowded London [Lacy W. Ridge], 274; Light and Air in London Slums [Robert Williams], 275; Some Notes on Rhenish Work [Clement Heaton], illustrated, 275; A Short History of Mosaic Decoration, 276; Fresco and other Decoration Fifty Years ago, 311: The Decoration in Mosaic of St. Paul's Cathedral [R. Phené Spiers], 313; A Primitive Mode of Construction still practised in the South of Italy [Wm. Simpson], illustrated, 313; London and its Council [Arthur Cawston], 315; Party-wall Parapets [W. D. Caröe], 316; Betterment, Worsement, and Recoupment [Wm. Woodward], 317; Ambrose Poynter on Iron Construction, 318; The Needs of a Great Capital, 358; University College New Buildings, 359 [H. H. Statham and J. Tavenor Perry], 408 [Prof. T. Roger

Smith]; The London Streets and Buildings Bill, 406 [S. Flint Clarkson], 407 [Arthur Cawston], 408 [W. H. Haynes], 539; The Pugin Travelling Studentship [Alex. Graham]. 408; Ancient Monuments in British Honduras [John Hebb], 409; The Temples of Kashmir in the Sixteenth Century [Ney Elias], 436: James Fergusson [James Burgess], 438; Early Brick Architecture in Great Britain, 438, 509, 511 [J. Tavenor Perry]; The Metropolis —Westminster: March of Imperial Improvement, 460; The Regeneration of London [Arthur Cawston], 461, 512,537; Architects and Master-Workmen [R. Phené Spiers], 463, 511, 585; The American Uniform Contract, 465; The English Renaissance: the Author's Reply to his Critics [J. Alfred Gotch], 522; The Bamian Statues and Caves [Wm. Simpson], 527, with illustrations; An Elizabethan Drawing [Wyatt Papworth], 537; The National Home-Reading Union, 539; The Tower Bridge, 569; The Condition of the West End Streets, 569 [John Hebb], 643; Concrete Pile-Driving [F. de J. Clere], 570; The Suez Canal and the Proposed Philæ Reservoir: a Possible Parallel, 597; Augustus Welby Pugin and Furniture, 598 [Francis T. Dollman], 599 [Wm. Woodward]; A Learned Lodge of Masons [Wyatt Papworth], 599; Painting of Arabic Buildings in Egypt, 600 [John Hebb], 654 [Somers Clarke]; Competition Abuses, Past and Present, 623; The French "Pied" and the English "Foot," 625; Origin of Sculpture in Indian Architecture [Wm. Simpson], 625; Architects and Artisans [Owen Fleming], 653; Forgotten Staircases: an Old Story [John Hebb], 655; A Builder's Estimate of the Architect's Functions [William H. White], 656.

Nubia and its Future: Report of discussion on Mr. Somers Clarke's Paper read before the British Association, 615.

O

OBITUARY. - Charles Bell Birch, A.R.A., 16; Lawrence Booth, 618; Lord Crewe, 185; General Sir Alexander Cunningham, 77; César Daly, 232; Henry Faija, 645; Lord Hannen, 382; Carl von Hasenauer, 184; William Haywood, 434; Andrew Heiton, 381; William Jackson, 594; Heinrich Lang, 51; Sir Henry Layard, 592; W. Calder Marshall, R.A., 560; James Maxwell, 116; W. John Mettam, 139; J. B. Mitchell-Withers, 382; Wyatt Papworth, 618; Sir William Smith, 17; William Charles Tuke, 116. Old London, 506.

Origin of Sculpture in Indian Architecture, 625.

Overcrowded London, Alderman Beachcroft on, 274.

Owen-Jones Studentship, The, 196;

Summary of A. H. Powell's Report as Student 1893, 341.

OWNERSHIP, Tue, of Drawings made for and by an Architect [Posthumous Essay by the late John W. Papworth], 187.

P

Painting of Arabic Buildings in Egypt, 600, 654.

Palladio: Portrait, 24; A student's appreciation, 631.

Palustre, Léon: Extracts from his Renaissance en France, 511, 535.

Papworth, John W.: POSTHUMOIS ESSAY ON THE OWNERSHIP OF DEAW-INGS MADE FOR AND BY AN ARCHITECT, 187.

Papworth, Wyatt: The Monument (Review), 78; A Learned Lodge of Masons (Review), 238, 599; The English Renaissance (Review), 507; An Elizabethan Drawing, 537; his decease, 618; obituary notice, ib.; Funeral, 643.

Parenzo Cathedral, 650. Paris and London, 23.

PARLIAMENTARY. - Sanitary Registration Bill, 1893: Abstract of the Bill, and Report of the Science Committee thereon, 63.—Height of Buildings in London: Practice Committee on the Report of the L.C.C. Building Act Committee, 91; A. Cawston and Wm. Woodward on, 126-27.—The Rural Poster, 128; The Public Health Act, 1891, Powers of Vestry under, 156. -London Streets and Buildings Bill [q.v.], 156, 200, 411, 444, 516, 602, 603; Light and Air: Seience Committee's Report, 323; Sign-Painters' Protest against the Streets and Buildings Bill, 411; Conference at Paddington, 441; The Select Committee, 441; Suggestions from the Art-Workers' Guild, 516; The House of Lords on Betterment, 602; The Select Committee's Reports on the Streets and Buildings Bill, 602; The Third Reading, 603.

Parris, E. T., The late: on Fresco, 311; St. Paul's in the Twenties, ib.; Seale of charges for architectural decoration since 1630, 312.

Party-wall Parapets, 316.

Pegge, J. T.: The Lighting of Dwelling-Houses by Electricity, and its Uses for Domestic Purposes, 319.

Penrose, F. C.: The Greeian House, 46; Hypæthral Temples, 48; elected President, 521, 541; Address on The Presentation of the Royal Gold Medalto Sir F. Leighton, 549.

Perry, J. Tavenor: The Classical Influence in Indian Architecture, 114; Chronological Summary, 147; The New Buildings at University College, 359; The Streets and Buildings Bill, 394: The Influence of the Hanscatic League on the Architecture of Northern Europe, 473; Early Brick Architecture in Great Britain, 511; Damme, a City of the Netherlands, 609.

Peterborough, The Bishop of: Speech at Anniversary Dinner, 585.

PHILE, THE THREATENED DESTRUCTION OF: A PROTEST [Edouard Naville], 605; Description of the Remains likely to be submerged, 608.

THE NILE RESERVOIRS Cope Whitehouse, 573; The Suez Canal and the Proposed Phile Reservoirs; a Possible Parallel, 597; Nubia and its Future, 615

Pick, S. Perkins: The late William

Jaekson, 594.

PLAN OF DWELLING-HOUSES IN TOWNS, Observations on the [Professor Kerr . The Art of Plan, 201; The English Dwelling-House, ib.; The Town House, 202; The Town, ib.; The Organisation of a Plan, ib.; Robert Adam's Plans of a House in Grosvenor Square, 203; Acalemical Plan, ib.; Historical Development of House Plan, 204; The Plan of a Town, ib.; The Story of Regent Street, ib.; Plans of a House in Grosvenor Square, 205-7; Classification of Town Houses, 208; The Street House, ib.; Plans of a Town House, 209; Plans, &c. of Houses in Westminster, 210-11; Plan of a Street House, 211; Plans of House in Cadogan Square, 212; The Suburban House, 213; Plans of Montagu House, 214-15; Convenience, 216; Privacy, ib.; Aspect and Prospeet, ib.; Light and Air, 217; Importance and Elegance, tb.; The semi-detached House, 218; Houses for the Working Classes, ib.; Plans of L.C.C. Artisans Dwellings, 219; Houses for the Poor, 220; Plans of Small Flats or Baehelors' Chambers, 221; Tue Improvement of the Design of Houses, 222; A Gentleman's House, ib.; A Pieturesque House, 223; Elevations and Sections of Corner House at Queen's Gate, 224-25; An Artistic House, 226; Foreign Houses, ib.: The Jerry-Builder, 227. Discussion: Arthur Cates, 228;

Houses, ib.: The Jerry-Builder, 227.

Discussion: Arthur Cates, 228;
Lacy W. Ridge, 229; John Slater, ib.; J. J. Stevenson, 230; Aston Webb, ib.; J. Macvicar Anderson, ib.

Planning, Imagination in [W. H.

Bidlake]: Paper read before the Liverpool Architectural Society,

Planning of Theatres, 280.

Plumber, The, and his Work, 19. Plymouth, Conference of Architects at, re Professional Education, 600.

Poorer Dwellings, The, 269.

Powell, A. H.: Summary of his Report as Owen-Jones Student 1893, 340.

Powell, James C.: Mosaic, its Materials and Methods, 248.

Poynter, Ambrose, The late: Iron Construction, 318.

Practice Committee: The Height of Buildings in London: Report, 91; Annual Report, 452; Election of, 542. Preliminary Examinations, 1893–94: Results, 75, 338.

Prendergast, Colonel Lenox: The Spanish Renaissance (Review), 116. Prentice, A. N.: Edinburgh, 239.

Presentation of Prizes, 198.
President's Opening Address, The J. Maevicar Anderson, 1.—Architectural Provinces or Districts, 4; Map showing the various Provinces, 6; Representation of the Allied Societies on the Council, 8; Disadvantages of non-Metropolitan Members, 9; Legal Registration of Architects, 9; Architects' Charges, 10; The New Journal, 11; The Burlington-Devonshire Collection of Original Drawings, 11; Contemporary Architecture, 12.—Vote of Thanks: J. A. Campbell, M.P., 14; Lloyd Tayler, 15.

— Address to Students J. Macviear Anderson]: Some Aspects of the Mutual Relationship of Augustes, 171. — Master and Pupil, 171; Architectural Competitions, 173; Criticism, 175; Witnesses, ib.; Etiquette, 176; Sir Frederic Leighton's Addresses, 176. Presidential Change of Office: Vote

Presidential Change of Office: Vote of Thanks to Outgoing President, and President's Reply, 520.

Price, F. G. Hilton: Elementary Egyptology (Review), 270.

Priories, Two: Christehurch and Goring, 52.

PRIZES AND STUDENTSHIPS: REVIEW OF WORK OF THE TRAVELLING STUDENTS 1893, AND OF THAT SUBMITTED FOR PRIZES AND STUDENTSHIPS 1894 [Alex. Graham], 177. Measured Drawings and Sketches, 177; Original Designs, 179; Literary Work in the Form of Essays. 181; Work of the Travelling Students 1893, 182.

Deed of Award, 195; Presentation, 198; List of subjects for 1894-95,

380.

Prize Drawings at Allied Centres, 232. Probationers at Glasgow, 503.

PROGRESSIVE EXAMINATION [Alfred Waterhouse], 20; Description of the Examinations, 21; Value of Systematic Study to the artist, 22.

Protestant Church Architecture, Congress at Berlin, 434.

Protestant Churches from the Reformation to the Present Day, 648.

Public Health (London) Act. 1891 [Edwin T. Hall], 121; By-laws made by the London County Council, ib. —Powers of Vestries under, 156. PUGIN (AUGUSTUS WELBY) AND FURNI-TURE [J. D. Crace], 517; His Principles, 519; Bibliography, ib.; Reminiscences of, 598.

PUGIN STUDENTSHIP, THE: Review of work submitted, 178; Award, 196; Presentation, 198; Conditions of holding, 408.

QUALIFYING EXAMINATION, 1893-94:

Results, 115, 379.

Queries & Replies: Helmingham Hall, 25, 59, 276; The R.I.B.A. Mottoes, 25, 59; Brick and Concrete Walls. 58, 85, 155; Ignorance concerning Woods, 59; Novel Fire Protection, 59; One of the Consequences of the Gothic Revival, 155; Early Brick Architecture, 438, 509, 511; An Elizabethan Drawing in Thorpe, 537.

Questions at Business Meetings: by Sydney Vacher, 88; by Wm. Woodward, 89; by Bernard Dicksee and

Henry Lovegrove, 542.

Receipts and Disbursements 1893, and Estimate for 1894: Secretary's Statement, 455.

Regent Street, The Story of, 204; Arthur Cates on, 228.

Registration of Architects, Protest

against Bill for, 9.

RENAISSANCE-The English: Architects and Master-Workmen, 463, 507, 511, 522;—The French: Extracts from Palustre's Work, 511; French Architects and Châteaux, 535;--The Italian, 126, 156, 243, 319, 363;—The Spanish, 116. REPORT OF THE COUNCIL FOR THE

OFFICIAL YEAR 1893-94.—Statistics of the Examinations, 446; Standing Order re representation of Allied Societies on the Council, 448; Memorial to Lord Kimberley on the condition of historical monuments in India, 449; His Lordship's reply, 450; The Streets and Buildings Bill, ib.; Reports of the Standing Committees, 451 et seq.; Balance Sheets, 453 et seq

Discussion: H. H. Langston, 467; Wm. Woodward, 468; E. W. Mountford, 469; J. Neale, ib.; Professor Kerr, 470; Campbell Douglas, 471; H. W. Burrows, ib.; Lacy W. Ridge,

ib.; J. Macvicar Anderson, ib. REVIEWS OF NEW BOOKS. Allen, J. P.: Practical Building

Construction [Arthur S. Flower], 140. Archæologia Oxoniensis [Arthur S. Flower], 595.

Archæological Survey, North-West Provinces and Oudh [Wm. Simpson], 563.

Ars Quatuor Coronatorum [Wyatt

Papworth], 238.

Banks, G.: The Law of Support for Land, Buildings, &c. [Wm. Woodward, 596.

Barry, J. Wolfe: The Tower Bridge [Paul Waterhouse], 562.

Bell, H. C. P.: Archæological Survey of Ceylon [Wm. Simpson],

Boni, G.: The Roman Marmorarii, 146; Il Duomo di Parenzo [John Hebb], 650.

Buls, Ch.: Esthétique des Villes [William H. White], 567.

Burgess, James: Epigraphia Indica [Wm. Simpson], 54, 563.

Castello di Milano sotto il Dominio dei Visconti e degli Sforza [Ethel

Charles], 649.

Clark, T. M.: Building Superintendence [Paul Waterhouse], 647. Corder, J. S.: Christchurch, or

Withepole House [Arthur S. Flower],

Crowther, J. S., and Renaud, F.: Architectural History of Manchester Cathedral [Paul Waterhouse], 237.

Edinburgh Architectural Association Transactions [A. N. Prentice], 239.

Emden, T. W. L.: Betterment [Wm. Woodward], 622.

Fergusson, James: History of Architecture [Arthur S. Flower and William H. White], 383, 385.

Formenschatz, Der [J. D. Crace], 52.

Galton, Sir Douglas: Healthy Hospitals [J. M. Brydon], 235. Gotch, J. Alfred: Architecture of

the Renaissance in England [Wyatt Papworth], 507.

Harris, T.: Three Periods of English Architecture [A. E. Street], 620. Hatton, R. G.: Text Book of Elementary Design [E. P. Loftus Brock],

Hellyer, S. Stevens: The Plumber and Sanitary Houses [R. F. Gran-

tham], 19. Hudson, A. A.: The Law of Building and Engineering Contracts [Wm. Woodward], 596.

Hultzsch, E.: South Indian Inscriptions [Wm. Simpson], 54.

Kirchenbau des Protestantismus von der Reformation [B. A. Charles], 648.

Lethaby, W. R.: Leadwork, Old and Ornamental [J. D. Crace], 389. Loftie, W. J.: Inigo Jones and Wren [William H. White], 141.

Maisey, F. C.: Sanchi and its Remains [Wm. Simpson], 144.

Middleton, G. A. T.: Surveyors and Surveying Instruments [William C. Street], 342.

Paul, Roland W.: Vanishing London [Arthur S. Flower], 506.

Perry, J. Tavenor: Chronology of Mediæval and Renaissance Architecture [R. Langton Cole], 79.

Prentice, A. N.: Renaissance Architecture and Ornament in Spain [Colonel Lenox Prendergast and R. Phené Spiers], 116, 118.

Ruskin and Acland: The Oxford Museum [Arthur S. Flower], 652.

Ryan, C.: Egyptian Art F. G. Hilton Price], 270. Sein-Ko, Taw: Study of the

Kalyani Inscriptions [W. Simpson],

Stone, P. G.: Exact Account of Goring Church and Priory [Arthur S. Flower], 52.

Sutcliffe, G. L.: Concrete and its Uses [Paul Waterhouse], 119.

Tollemache, Beatrice L.: Diderot's Thoughts on Art and Style [A. E. Street], 18.

Van Brunt, H.: Greck Lines [Prof. Aitchison], 505.

Welch, C.: History of the Monument [Wyatt Papworth], 78.

Williams, R.: London Rookeries

[Wm. Woodward], 53. Worthington, T. Locke: Dwellings of the Poor [William C. Street], 269.

Rhenish Work, Some Notes on, 275. R.I.B.A. Mottoes, The, 25, 59.

Richmond, W. B.: his work in Mosaic

at St. Paul's, 251 et seq. Ridge, Lacy W.: The Plan of Dwelling-

Houses in Towns, 229; Alderman Beachcroft on Overcrowded London, 274; The Annual Report, 471; Qualification for Fellowship of District Surveyors, 544.

Roberts, R.: The Streets and Buildings Bill, 398.

Professor: Mosaic Roberts-Austen, and Fresco, 263.

Romaine-Walker, W. H.: The Architecture of London Bridges, 500.

Roman Mortar, Ancient, 56. ROYAL ACADEMY OF ARTS.—Sir F. Leighton's Addresses, 120, 176, 190, 551; Abstracts of Professor Aitchison's Lectures on Architecture, 243,

279, 320, 363. ROYAL GOLD MEDAL 1894, 265, 277, 361, 380.—Presented to Sir F. Leighton: Address by the Presi-DENT, F. C. Penrose, 549; SIR FREDERIC'S REPLY, 553.

Royal Victorian Institute, Australia: Examinations at, 601.

Ruskin on Modern Gothic, 652.

S

St. Paul's Cathedral, The New Mosaics at, 251, 252; The Cathedral in the 'Twenties, 311; Various Schemes of Decoration, 313.

Salmon, W. Forrest: Presidential Ad-

dress at Glasgow, 26.

Salomons, E.: Speech at the Leeds and Yorkshire Annual Dinner, 199. Salviati, G.: Mosaic in General and THE LATE DR. SALVIATI'S WORK, 254. Sanitary Institute Congress, 458, 617. Science Committee: Report on Light and Air, 323; Proposed Brick-Testing Experiments, 55; Suggested

Fund for Experimental Research,

463, 598, 626; Annual Report, 453; Election of, 542.

Scotch Mediæval Architecture, 515.

Scrutineers: Report re Election of Fellows by Voting Papers, 362; Reports re Annual Elections, 541.

SCULPTURE, THE TREATMENT OF, IN RELATION TO ARCHITECTURE: Institute Prize Essay 1894 [John Begg].-General Considerations, Course and Current, 328; Detail of Tympanum, Lincoln Cathedral, 330; St. George, by Donatello, 331; Tympanum by Luca della Robbia, Florence, 333; Subject, Scale, Material, and Colour, ib.

Sculpture in Indian Architecture,

Origin of, 625.

Seager, Hurst: Description of the Curriculum at Canterbury College, Christchurch, N.Z., 457.

Searles-Wood, H. D.: Helmingham Hall, 59.

Select Committee on the Streets and Buildings Bill, 458.

SESSIONAL & OTHER PAPERS: Address to Students: Some Aspects of the Mutual Relationship of Architects [J. Macvicar Anderson,

Augustus Welby Pugin and Furniture [J. D. Crace], 517.

Blickling Hall, Norfolk: its Drainage, Water-supply, and other Works [Maurice B. Adams], 157.

Classical Influence, The, in the Architecture of the Indus Region and Afghanistan [Wm. Simpson], 93; [J. L. Kipling], 134.

Council Chamber, The, and its Accessories [Thomas Blashill], 365. Damme, a City of the Netherlands

[J. Tavenor Perry], 609.

Furniture: Domestic and Ecclesiastical [John Belcher, C. F. A. Voysey, Aldam Heaton, and W. D. Caröe], 413.

Grecian House, The, as described by Vitruvius [Edward Falkener], 29. Hypathral Temples [Professor E. Curtius; communicated by Dr.

Alex. S. Murray, 80. Influence of the Hanseatie League on the Architecture of Northern Europe [J. Tavenor Perry], 473.

Leicester Abbey, History and Description [Wm. Jackson], 129, 166. London and its Council [A. E. Street], 271.

London Streets and Buildings Consolidation and Amendment Bill, 1894, Review of [Arthur Cates], 343.

Mosaic and Fresco [C. Harrison Townsend, James C. Powell, G. Salviati, N. H. J. Westlakel, 245.

New Museum in the Orto Botanico, Rome [Professor Lanciani], 633.

New Science Laboratories, The, at University College, London [Professors T. Roger Smith, T. Hudson Beare, J. A. Fleming, and G. Carey Foster], 281.

Nile Reservoirs: The Faiyoum and Raiyan-Moeris [Cope Whitehouse], 573.

Notes on some African Structures [J. T. Last , 635.

Observations on the Plan of Dwelling-Houses in Towns (Professor Kerr., 201.

Opening Address, The [J. Macvicar Anderson], 1.

Ownership of Drawings made for and by an Architect Posthumous Essay by the late John Woody Papworth, 187.

Philie, The Threatened Destruction of-a Protest [Edouard Naville],

Presentation of the Royal Gold Medal to Sir Frederie Leighton: F. C. Penrose's Address and Sir Frederic's Reply, 549.

Progressive Examination [Alfred

Waterhouse, 20.

Public Health (London) Act, 1891: L.C.C. Sanitary By-laws criticised [Edwin T. Hall, 121.

Report of the Council for the Official Year 1893-94, 445.

Review of Work of the Travelling Students 1893, and of that submitted for Prizes and Studentships 1894 |Alex. Graham', 177. Sir F. Leighton's Address on

German Art, 120.

Transactions, N.S. 1885-92, 310. Treatment of Sculpture in Relation to Architecture John Begg,

World's Fair Buildings, Chicago

Wm. Emerson, 65.

Seward, Edwin: The Separation of Plumbers' Work from the Work of other Trades in Architects' Specifications, 546.

Simpson, William: Birds' Wings as Thatch, 24; Indian Archæological Survey (Reviews), 54, 563; The Hittite Style of Architecture, 57; THE CLASSICAL INFLUENCE IN THE ARCHITECTURE OF THE INDUS REGION and Afghanistan, 93; Reply to the Discussion, 191; The Great Mormon Temple, Salt Lake City, 153; Archæological Survey of Ceylon (Review), 267; A Primitive Mode of Construction still practised in the South of Italy (illustrated), 313; Buddhist Inscriptions (Review), 341; The Bamian Statues and Caves (illustrated), 527; Jaina Sculpture (Review), 563; Origin of Sculpture in Indian Architecture, 625; Points of Resemblance between African and Indian Structures, 641.

Sketching and Measuring Old Buildings, Hints on, 515.

Slater, John: The Plan of Dwelling-Houses in Towns, 229; The Streets and Buildings Bill, 354; Vote of Thanks to Retiring President, 521.

Slums and Rookeries, 53, 275. Smith, P. Gordon: Brick and Brick-

work Testing, 55; Blick ing Hall Drainage, 196; The New Buildings at University College, 301.

Smith, Professor T. Roger: Vitruvius's Grecian House, 83; The New Science Laboratories at University College: The Buildings, 281, 307, 408.

Smith, R. Elsey: The New Buildings at University College, 304, 308,

Smith, Sir William: obituary notice, 17.

SOANE MEDALLION, THE: A. T. Bolton's Tour 1893, 339; Review of Work submitted for 1894, 179; Award, 195; Presentation, 198.

Société Centrale des Architectes Français: A Compliment to British Architects, 555; Vote of Condolence re President Carnot's Assassination, 571, 583; Reply, 583.

South African Association of Architects: A. H. Reid on South African Buildings, 77; Its Retiring Presi-

dent's Address, 601.

Special Meeting, 12 March 1894: Royal Gold Medal. 360; The President on Sir F. Leighton, 361.

Spiers, R. Phené: The Classical Influence in Indian Architecture, 114, 150; Sculpture from the Peshawar Valley, 150; Bactria and Palmyra, 151; The Spanish Renaissance (Review), 118; Mosaic and Fresco, 263; The Decoration of St. Paul's Cathedral, 313; Influence of the Hanseatic League on the Architecture of Northern Europe, 494; Architects and Master-Workmen, 463, 511, 535; Extracts from Palustre's Renaissance en France, 511: French Renaissance Châteaux and Architects, 535.

Squire (Balmanno) and Hansoms, 24. Staircases, Forgotten, 655.

Statham, H. H.: Hypathral Temples, 48; The New Buildings at University College, 303, 304, 308, 359; The Streets and Buildings Bill,

Stevenson, J. J.: The Plan of Dwelling-Houses in Towns, 230; The Streets and Buildings Bill, 396. Stokes, L.: The First Election by

Voting Papers, 361.

Stow's Rules and Directions: Heights of Houses after the Great Fire, 83.

Street, A. E.: Diderot (Review), 18; LONDON AND ITS COUNCIL, 271; Three Architectural Periods (Review), 620.

Street, William C .: The Poorer Dwellings (Review), 269; A Surveying Text-book (Review), 342.

STUDENTS, PRESIDENT'S ADDRESS TO,

STUDENTSHIPS: see PRIZES, &c.

Suez Canal, The, and the Proposed Philæ Reservoir: a Possible Parallel, 597.

Superintendent Superintended, 647. Surveying Text-book, A, 342. Sydney, Architecture in, 435.

T

Tadema, Alma: Furniture, 429. Tayler, Lloyd: Vote of Thanks to

President, 15.

Teaching University for London: Royal Commission's Recommendations, 266; Resolution regarding, 521; Evidence laid before the Commission, 594.

Theatres, The Planning of, 280.

Thorp, W. H.: Speech at the Leeds and Yorkshire Annual Dinner, 198. Three Architectural Periods, 620.

Timbers, Australian, 194.

TITE PRIZE, THE: Review of work submitted, 180; Award, 196; Presentation, 198.

Tower Bridge, The, 562, 569.

Townsend, C. Harrison: Introduc-TORY PAPER ON MOSAIC AND FRESCO, 245.

Transactions, The, N.S. 1885-92, 310. TRAVELLING STUDENTS' WORK, 1893, 139; Review of, 182; A. T. Bolton's Tour, 339; A. H. Powell's Tour, 340. Travelling Studentship, New: T. W.

Aldwinckle's Gift, 617.

Tribunal of Appeal, The (L. C. General Powers Act, 1890): Regina v. Members of, 27; T. Eccleston Gibb appointed in place of Dr. Longstaff, 50; Arthur Cates's Report, 433; Functions and Composition of the Tribunal under L. C. General Powers Act, 1893, 501; Constitution under the London Building Act, 556, 592. Trust Funds, Revenue Account of, for

1893, 456; Balance-sheet, 457. Tuke, William Charles: obituary

notice, 116.

University College, London, The NEW SCIENCE LABORATORIES AT.-The Buildings [Professor T. Roger Smith], 281; Ground Floor of Engineering and Electrical Department, 282; Plans, 283, 286; Students' Desks, 288; Students' Working Benches, 289; Plan and Elevation of Professor's Lecture Table, ib.

THE MECHANICAL ENGINEERING Department [Professor T. Hudson Beare]: Mechanical Engineering Laboratory and Workshop, 290; Cement Room, Chemical Room, and Main Laboratory, 290-91; Testing Plant, 291; Engine Room and Hydraulic Apparatus, 292; Woodworking Shop, ib.; Report on Crushing and other Tests, 293; Forge, Drawing Office, Lecture Theatre, Museum, &e., 294; The Buildings, 306.

THE ELECTRICAL ENGINEERING DE-PARTMENT [Professor J. A. Fleming],

294.

THE PHYSICAL DEPARTMENT [Professor G. Carey Foster], 299.

Discussion: P. Gordon Smith, 301; Professor Kerr, ib.; Professor Unwin, 302; H.H. Statham, 303, 304,

308, 359; R. Elsey Smith, 304, 308; Wm. Woodward, 304; Professor Capper, ib.; C. Forster Hayward, 305; Professor Carey Foster, ib.; Professor Hudson Beare, 306; J. Macvicar Anderson, ib.; Professor Roger Smith's reply, 307, 408; J. Tavenor Perry, 359.

Unwin, Professor: The New Buildings at University College, 302; his Howard Lectures, 646.

Vacher, Sydney: his questions re the Title of the Qualifying Examination, the Educational Functions of the Institute, &c., 86, 88.

Vaulting at Grandson, Neuchâtel, 193. Vitruvius, The Grecian House as described by: see Grecian House.

Vitruvius's "Grecian House" and the Moderns, 57.

Voltaire on the Needs of a Great Capital, 358.

Voysey, C. F. A.: Domestic Furni-

TURE, 415.

Walls, Thin Waterproof, 85. Water Gate of London, The, 562. Water-supply, Drainage, and other WORKS AT BLICKLING HALL, 157.

Waterhouse, Alfred: PROGRESSIVE Examination, 20; The Architecture

of London Bridges, 498.

Waterhouse, Paul: The R.I.B.A. Mottoes, 60; Concrete (Review),119; Mediæval Manchester (Review), 237; The Water Gate of London (Review), 562; The Superintendent Superintended (Review), 647.

Weale, W. H. James: Influence of the Hanseatic League on Northern Europe Architecture, 496.

Webb, Aston: The Plan of Dwelling-Houses in Towns, 230; The Council Chamber and its Accessories, 374. West-End Streets, The Condition of,

569, 643. Westlake, N. H. J.: Mosaic and Fresco: Are they Living Arts?

White, William H.: Mr. Balmanno Squire and Hansoms, 24; Vitruvius's Grecian House and the Moderns, 57; Mr. Loftie, Inigo Jones, and Wren (Review), 141; One of the Consequences of the Gothic Revival, 155; James Fergusson (Review), 385; The Sentiment of Beauty in Towns (Review), 567; A Builder's Estimate of the Architect's Functions, 656.

White, William: The Classical Influence in Indian Architecture, 114; The Council Chamber and its Ac-

cessories, 376.

Whitehouse, Cope: NILE RESER-VOIRS: THE FAYOUM AND RAIYAN-Moeris, 573.

Williams, Robert: The Drainage, &c., of Blickling Hall, 197; Light and Air in London Slums, 275; The Streets and Buildings Bill, 400.

Woods, Ignorance concerning, 59; Australian Timbers, 194.

Woodthorpe, Edmund: The Streets and Buildings Bill, 405.

Woodward, Wm.: Architect's and Clerk of Works' Supervision, 25; Slums and Rookeries (Review), 53; The Delay in the Revision of the Conditions of Builders' Contracts, 89; The Duties of District Surveyors, 89; The L.C.C. Building Act Committee's Report on Height of Buildings, 127; University College New Buildings, 304; The lege New Buildings, 304; Council Chamber and its Accessories, 377; Betterment, Worsement, and Recoupment (Review), 317; Betterment (Review), 622; The Streets and Buildings Bill, 404; The Papers on Furniture, 430, 468, 599; The Annual Report, 468; Qualification of District Surveyors for Fellowship, 544; Building Law (Review), 596. World's Fair Buildings, Chicago,

THE [Wm. Emerson, Judge in Architecture at the Exhibition on behalf of the United Kingdom], 65.—The Agricultural Building, 66; The Administration Building, 67; View of the Buildings, 69; General Plan of

the Exhibition, 71.

ILLUSTRATIONS.

Portrait of Sir Frederic Leighton (frontispiece, facing p. 1).
The Parthenon as restored by Mr.

Falkener (facing p. 45).

Blickling Hall, Norfolk: Plan of Drainage, &c. (facing p. 164). Leicester Abbey: Plan of the Abbey

and Specimens of Flooring Tiles (facing p. 168). University College: The Gower Street

Front completed (facing p. 288).

A Primitive Mode of Construction still practised in the South of Italy (facing p. 314).

THE GRECIAN HOUSE AS DESCRIBED BY Vitruvius, 29 House of Pansa, Pompeii, 33

Grecian House, 37 House of the Faun, 40

The Mesaulos of the House of the Faun, 42 Houses of the Great Fountain and

the Little Fountain, 43 House of the Quæstor, 44 The Fortress of Tiryns, 84 House at Mykene, 84

THE WORLD'S FAIR BUILDINGS, 65 The Agricultural Building, 66 The Administration Building, 67 View looking North-Machinery Building on the Left, 69 General Plan of the Exhibition, 71

ILLUSTRATIONS (contd.).

THE CLASSICAL INFLUENCE IN THE ARCHITECTURE OF THE INDUS REGION AND AFGHANISTAN, 93.

The Hada Tablet, 93

Base of Column found at Maliar-Ka-Mora, 95

Fragments of Cornice and Capital or Capitals from the Peshawar Valley, 97, 98

Capital from Jamalgiri, 98

Capital and Base, 99

Fragment of Volute, in Plaster, 99 Form of Doric Column at Marttand,

Kashmir, 100

Temple at Mulot, 101

The Great Buddhist Statue at Bamian, 104

Sculpture from the Peshawar Valley, 106, 150

Engaged Column, Peshawar, 108 Pilaster of Great Gateway, Palmyra, 109

Pillar at Srinagar, 110

The Temple of Marttand, 111 Gandhara Sculptures: A Parthian

Fire-Worshipper, 134 Female Figure with Children, 136

A Vintage Scene, 137

An Orgy, 138 Wall of Theodosius II., 151

Portion of Eighth-Century Ciborium at Bologna, 152

Rabbath-Ammon, 152 Kalırije Djami, 153

BLICKLING HALL, NORFOLK: ITS DRAIN-AGE, &c., 157.

Section showing relative Levels of Sump, Pump-house, Man-hole, Old Culvert, and Basement of the Mansion, 161

Pump-house, Water-wheel, and Sump, 162

Plan and Sections, 163

HISTORY OF LEICESTER ABBEY, 129, 166.

Ruins in the Abbey Garden, 169

OBSERVATIONS ON THE PLAN OF DWELL-ING-HOUSES IN TOWNS, 201.

Plans of Houses in Grosvenor Square, 203, 206, 207

Plans of a Town House, 209

Plans and Elevation of Houses in Westminster, 210, 211

Plans of a House in Cadogan Square, 212

Plans of Montagu House, 214, 215 Plans of Artisans' Dwellings, 219

Plans of Small Flats or Bachelors' Chambers, 221

Plan of Old House at Chelsea, 223 Elevations, Sections, and Plans of house at Queen's Gate, 224-25

ILLUSTRATIONS (contd.).

Mosaic and Fresco, 245.

Mosaie of the Façade of the Justiz Palais, Cologne, 257

Mosaic of the Dome of the Cathedral of Aix-la-Chapelle, 259

NEW SCIENCE LABORATORIES AT UNI-VERSITY COLLEGE, LONDON, 281.

Plans of Engineering and Electrical Department, 282, 283

Plans of Physical Department, 286 Students' Desks, 288 Students' Working Benches and

Professor's Lecture Table, 289

Mr. Statham's Diagram of the opening from Gower Street, 359

THE TREATMENT OF SCULPTURE IN RE-LATION TO ARCHITECTURE, 325.

Detail of the Tympanum, South Doorway, Lincoln Cathedral, 330 St. George, by Donatello, 331

Tympanum by Luca della Robbia, Florence, 333

THE COUNCIL CHAMBER AND ITS ACcessories, 365.

General Plan and Sections, 368, 369 Council Chamber of the London County Council, 371

REVIEW OF THE LONDON STREETS AND Buildings Bill, 343, 390.

Effect of 45° Angle on Buildings facing Pall Mall East, 395 Plan from Ordnance Map, 395

The Strozzi Palace Cornice reduced to the limitations of the Bill, 398

FURNITURE: DOMESTIC AND ECCLESIAS-TICAL, 413.

Sideboard in American Walnut, 417 Hangings: Cotton, Woollen Cloth, Mohair Satin, 420, 421

Jacobean Balustrade, and Bench Ends, Mobberley, Cheshire, 427, 428

The Influence of the Hanseatic LEAGUE ON THE ABCHITECTURE OF NORTHERN EUROPE, 473.

Plans of St. Katherine's, Lübcck; St. Nicholas', Anklam; St. John's, Stettin; Dom Lübeck; St. Peter's, Malmoe; The Apostles Church, Cologne; St. Stephen's, Nevers, 478, 479

The Apostles' Church, Cologne, 480 St. Stephen's, Nevers, 481

St. Peter's, Malmoe, 482 West Tower, Paderborn, 483

St. Patroclus' and St. Peter's, Soest, 484

St. Mary's, Lübeck, 485

St. Katherine's, Lübeck. 486

ILLUSTRATIONS (contd.).

Town Hall and St. Nicholas', Stralsund, 487

East Gable, Prenzlau, 488

Choir and Transept, St. Peter's, Malmoe, 489

St. John's, Stettin, and Neubrandenburg, 490 Choir and Nave, St. Mary's, Star-

gard, 490

St. Nieholas' and St. James', Stralsund, 492

NILE RESERVOIRS: THE FAYOUM AND RAIYAN-MOERIS, 573.

Plan of the Nile, 574

Middle Egypt, from an Atlas by Claudius Ptolemy, 575

Map of Egypt (Claudius Ptolemy),576 Temple north of Dimeh, the Ancient Bacchis, 578

Interior of Temple, 579

Copto-Byzantine Capital at Dionysias, 580

Gateway of the Deir Muellah, the ancient Dionysias of Ptolemy, 581

DAMME, A CITY OF THE NETHERLANDS,

Notre-Dame, Damme, 610 Capitals in Nave, and Plan of Notre-Dame, Aardenburg, 611 The Halles-five sketches, 612-14 The Belfry, Sluus, 614

Notes on some African Structures, 635.

Framework of Masai House; Shelter, Forest Camp; Travellers' Grass Hut; Nyika House; Tembe of Ugogo, 636

Sango, Sagala, Makua, Lomwe, and Swahili Houses, 637, 638

Ground Plan of Circular House, 638 Plan of Nyanja, or Smelting-House, Usagara, East Africa, 639

Map of provinces for educational purposes, 6

Damp-proof Walls, plan and section, 58 View of the Mormon Temple, Salt Lake City, 154

West End of Nave, Grandson, 194 Rhenish Work, Window Arch, Saintl'ierre, Geneva, 275

The Bamian Statues: Great Statue, 528; Second Statue, 529; Pendentive in Cave, 530; Sketch Plan of Valley, 530; Sections of Caves, Arches, and Niches, 531; "The "Bachâ," 533; General View, 534

Stupa on Jaina Sculpture, 566 Concrete Pile-driving Plant, 570 Brickwork Test at Liverpool, 626, 627 Cairo Museum: Plan of the Site, 629





FROM A RE 111 PHOTOGRAPH BY DOWNEY

INK-PHOTO SPRAGUE A CP LONDON

SIR FREDERIC LEIGHTON, BART., PR.A Royal Gold Medallist 1894

Junt Eight

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

SESSION 1893-94.

THE OPENING ADDRESS. Delivered by the President, J. Macvicar Anderson, at the First General Meeting, Monday, 6th November 1893.

COLLEAGUES AND GENTLEMEN,-

Meeting of last session may remember that the keynote which pervaded the Address it was then my privilege to deliver was Progress, and from that standpoint I noticed some subjects of professional interest. Progress leads to Attainment, and it is therefore a natural sequence to pass from the means to the end, and from the higher platform to review some points that may be supposed to interest the architect, and less directly the public.

No one who regards life as a serious reality fails to set up some goal, in the attainment of which life is passed. The goals of some wither with possession—the object is too material, attainment too easy. The noblest, as well as the happiest, lives are passed in the pursuit of an ideal, the standard of which is so lofty that it is never fully attained. Point after point may be gained, each one higher than the last; but, as with the Alpine climber, ever in front is displayed the as yet unattained excelsior of excellence, which for the architect is enshrined in Truth and Beauty. And so it comes to pass that in such aspirations the oldest men are still students, because their ideal of excellence is so lofty that life is too short to attain it. But, just as the highest life is sustained and inspired by Hope, which can alone find full fruition hereafter, so the life of the artist is ennobled by the yearning for the attainment of excellence, which no disappointment can extinguish, and no success can satisfy. This is the Art life worth living.

Architects, however, are sometimes reproached with incapacity because they fail to attain an ideal which the public choose to establish. Such reproach has often been cast at the architects of this century because they have not created what is called a new style of architecture. No indication is vouchsafed of what is meant by those words, probably because no reflection has been bestowed on the subject. It is sufficient to censure a body of educated men by accusing them of want of originality, and of slavishly copying the works of others. In order to meet the accusation, it is necessary to apprehend what architecture is. When men began to multiply on the face of the earth, when they had to work, when

Third Series. Vol. I. No. 1.

they founded communities, when they erected buildings to provide for their necessities, and when such buildings were constructed with regard to beauty of form and proportion, architecture was born. Thus, architecture is the product of the necessities of life coupled with the aspiration for the beautiful. The development of this germ has found expression in the buildings, monuments, and shrines of succeeding generations; and what are known as styles of architecture are simply the adaptation of this germ to climatic influences and conditions of life in different parts of the world. With the modification of such conditions they become subject to variation. Thus, the architecture of feudal times, when warfare was the rule, not the exception, was characterised by massive solidity, unbroken wall-space, diminutive openings, and bald simplicity. Such characteristics, necessitated by the hardy severity of a warlike age, would obviously be ill adapted to the advanced civilisation and luxurious refinement of these days of peace and accumulated wealth; and so solidity gives place to lightness, wall-space to fenestration, simplicity to ornamentation.

If, then, architecture is the outcome of actual conditions of life, it follows that to create a new style is beyond the power of any individual or any body of architects, no matter how bountifully he, or they, may be endowed with the power of original design. Are the conditions of life in our day distinctively different from those which prevailed in the days of our fathers? Our climate, much as it is abused—and, as I think, unjustly—remains much the same. We eat, we drink, we work, we sleep, we marry and are given in marriage, and in all essential conditions we live and die as our ancestors have done before us. Is it, then, reasonable to anticipate the advent of a new architecture? Cause and effect are inseparable. With new conditions of life, a new architecture will be called into existence: but so long as the conditions of national life remain unchanged, it is as absurd as it is illogical to traduce the architects of this age for having failed to attain to the creation of a new style of architecture.

But it is alleged further that our system of education, and, resulting from that, our programmes of examinations, tend to rivet the chains that bind and restrict us to the past; that we inculcate the study of schools of architecture which were called into being by conditions that no longer exist; that we teach forms and proportions defined by masters in such schools, which were beautiful because appropriate to the conditions of life in their day, but which are not appropriate, and therefore not beautiful, now; that we encourage the student to paraphrase Greek, Roman, Romanesque, Gothic, Saracenic, Renaissance, Hindoo, Burmese, Siamese, or Chinese art; that historic styles have nothing to do with architecture; that English Composition, Geography, History, Latin, French, or German, have no connection with it—in a word, that we look on the essential as unimportant, though most rigorously insisting on what is of no use. Instead of this, we are told that we should inaugurate a system of education and examination that would not disturb the oblivion of the dead past, but that would tend to develop native power by encouraging students to realise the actual requirements of a living age, and to design forms and proportions such as may be best adapted to them; that if we want to test real progress we should see what students can make of a storey-post, a cast-iron column, a wrought- or cast iron girder; how they can adorn a door or window, or group them; if they can light efficiently or æsthetically when light is only wanted to produce a mental impression; or if they know what forms and proportions are good for sound.

In this and in all such representations there is, no doubt, much that is plausible and calculated to attract and captivate the unthinking; nay, more, there is much in which we cannot but concur. We all desire to encourage and to develop original power. It is inevitable that those who cherish the architecture of a past age to which they are passionately devoted, and which in their judgment is not inapplicable to the wants of the present day,

should exercise an influence on their pupils and assistants in the direction of their preference; but it by no means follows that preference for forms or features which a past age admired and practised restricts the development of native power. Is it not apparent that such representations as I have referred to rest on a fallacy? The inferred assumption is that originality may be the product of education. Now, individuality—that which educes original work, instead of reproducing the work of others—is a natural endowment which education and examination can neither create nor smother. That it is rare is demonstrated by the fact that in Art, as in other callings, the possessor secures a following, and founds a school. The majority of men are only too willing to follow where one master-mind leads. The fact of having studied and been imbued with admiration for proportions and forms which are the legacy of a past generation will not prevent originality from finding expression; nay, it is certain that creative power will in no sense be injured, but rather refined, by the study of beautiful forms and chaste proportions attained by past masters of the art, and by the principles on which such forms and proportions were based. If it be true that Latin and History have no connection with Architecture, it is in the same sense true that the dead languages have no connection with the life's work of most of those who are taught them; but experience has proved that such teaching is the best possible mental and educational foundation on which to rear the work of life; and it would be as absurd to banish the teaching of Latin or Greek from our schools, as to exclude a knowledge of Latin, French, German, or History from the education of architectural students. The more highly educated our students are—not merely in technical training, but in respect of general attainments and a familiar knowledge of the past—the better will it be for the future of architecture. Sir Joshua Reynolds has well said: "He "who is acquainted with the works which have pleased different ages and different countries, "and has formed his opinion on them, has more materials, and more means of knowing "what is analogous to the mind of man, than he who is conversant only with the works of "his own country." In the same relation, the gifted President of the Royal Academy addressed to students words as eloquent as they are true when he asked them "to believe "that the gathered experience of past ages is a precious heritage and not an irksome load, "and that nothing will better fortify them for future and free development than the reverent "and the loving study of the past."

And if it be right that the education of architectural students should be not merely technical but liberal, does it not follow that an examination which is established for the purpose of testing the knowledge which they ought to possess should be coextensive? range of subjects embraced in the study of architecture is wide, because there are so many cognate subjects of which it is essential to know something; and, further, because it is desirable that the professor of a Fine Art should not merely be technically an expert, but that he should be also a man of refinement and culture. I have little sympathy, therefore, with the carping criticisms that occasionally reach me respecting the details of our scheme of examinations. The experience which can alone be acquired by time will no doubt lead to the modification of some, or the expansion of other features. No one has been so foolish as to claim perfection for a scheme which is as yet in its infancy. I confess, however, that to my mind the fact that there has been so little to remedy, and that the scheme has already met with so large a measure of success, speaks volumes for the wisdom and the enlightened foresight of the Board of Examiners and of their Chairman. Some of you, indeed, have thought —and I confess to having sympathised with you—that too little prominence has hitherto been attached to the subject of Design; but the Board of Examiners have evinced their desire to meet any legitimate objection by extending, as they have now done, the time to be devoted to this important subject from six ours to two entire days out of the six days to be occupied by the Final Examination, as compared with half a day to be given up to History, Architectural Features, Hygiene, Materials, Construction, and Specifications and Professional Practice, respectively, the sixth day being devoted to the Oral Examination. This is a change for the better, which will no doubt be appreciated by students, and which meets with my entire concurrence. I should, however, deplore any undue limitation in our Progressive Examinations in respect of literary or historical subjects, which are not only of vast utility in themselves, but are essential elements in the equipment of one who aspires to be qualified as an architect to take his place with men of education and learning.

It is alleged, as I have said, that the architects of our day are devoid of originality because they have not created a so-called new style of architecture, and that our system of education and examination is defective because it restricts the encouragement of native power and rivets the chains that bind us to a dead past. Let the tree be judged by its fruit. If these allegations be true, the result would be apparent in the architecture of the day, which should be tame, insipid—a slavish reproduction of dead forms and proportions, devoid alike of interest and of life. Is it so? I am not expressing approval of all contemporary works; but I have no hesitation in asserting that, whatever may be said by adverse critics, our architecture exhibits characteristics the reverse of these. In point of material, the contrast with the past is striking, whether we like or dislike the free use of terra cotta, marble, or faïence, that is so much in vogue; while in respect to Design, I challenge any impartial observer to find precedents for many modern buildings, which seem to sparkle with the impress of novelty. To quote illustrations from the works of living architects would be invidious, but many examples will occur to you which exhibit remarkable ability and originality on the part of their authors. I conclude, therefore, that the allegations to which I have referred—although occasionally emanating from those whose position entitles their opinions to respect—are groundless, and are refuted by the attainments of contemporary architects, whose works, whether we admire them or not, are the expression, not of a dead art, but of life and power.

ARCHITECTURAL PROVINCES OR DISTRICTS.

In my last inaugural Address I incidentally referred to a scheme which was then under consideration for dividing the United Kingdom into architectural provinces, each having its local centre, with the view of combining in one system the various scattered architectural agencies throughout the country and uniting them directly with the heart of the system, the chartered body in London. The subject has since been fully discussed and considered at a Conference which was convened at Liverpool last April by the Liverpool Architectural Society, and which was attended by delegates from most of the Allied Societies, as well as by representatives of the Royal Institute appointed by the Council in compliance with the request of the Liverpool Society. A full report of the discussion has been furnished in our Journal,* but I may quote two resolutions, which were unanimously adopted, as embodying the result of the Conference. The first is: -"That this Conference of delegates from the provincial Architec-"tural Societies in alliance with The Royal Institute of British Architects has heard with great "satisfaction the proposal to divide the United Kingdom into architectural provinces, which, "if successfully carried out, will materially advance the interests of the profession throughout "the country." The second resolution is:—"That by the establishment of such architectural "provinces the Architectural Society of each district will have its local centre, and in time, by "absorbing within its centre all architects of repute, bring into harmonious and united "action the scattered and unorganised members of the profession; strengthen the position of "all local practitioners, both professionally and socially; and enable arrangements to be made

"for extending throughout the country the advantages of the Progressive Examinations now established by The Royal Institute of British Architects; and, by promoting a systematic

"organisation for educational purposes, utilising and developing such means of instruction as "may be available at and in connection with such centres, raise the standard of architectural

"education in all parts."

The labours of the Committee to whom the subject was referred by the Council resulted in the development of a scheme which, having been approved by the Council, has been submitted to, and accepted generally by each of our Allied Societies. I have now the pleasure of giving a brief description of the scheme, which I doubt not you will readily understand with the assistance of the map [see next page]. Beginning with England and Wales:—

The Northern Architectural Association has Newcastle for its centre (A), and Northumberland and Durham for its province.

The Leeds and Yorkshire Architectural Society has Leeds for its centre (B), and the greater part of Yorkshire for its province.

The York Architectural Society has York for its centre (C), and the greater part of the North Riding and the parliamentary division of York for its province.

The Sheffield Society of Architects and Surveyors has Sheffield for its centre (D), and Derbyshire, northern Lincolnshire, and a part of South Yorkshire for its province.

The Manchester Society of Architects has Manchester for its centre (E), and Cumberland, Westmoreland, and part of Lancashire and part of Cheshire for its province.

The Liverpool Architectural Society has Liverpool for its centre (F), and parts of Lancashire and Cheshire, with the counties of Flint, Denbigh, Carnarvon, Anglesea, Merioneth, and Montgomery, and the Isle of Man, for its province.

The Nottingham Architectural Society has Nottingham for its centre (G), and Nottinghamshire and part of Lincolnshire, including Lincoln, for its province.

The Birmingham Architectural Association has Birmingham for its centre (H), and Warwickshire, Staffordshire, Shropshire, Herefordshire, and Worcestershire for its province.

The Leicester and Leicestershire Society of Architects has Leicester for its centre (I), and Leicestershire and Rutlandshire for its province.

The Bristol Society of Architects has Bristol for its centre (K), and Gloucestershire, Wiltshire, Somerset, and Dorset for its province.

The Cardiff, South Wales, and Monmouthshire Architects' Society has Cardiff for its centre (L), and Glamorgan, Brecknock, Radnor, Cardigan, Pembroke, Carmarthen, and Monmouth for its province.

The Devon and Exeter Architectural Society has Exeter for its centre (M), and Devonshire and Cornwall for its province.

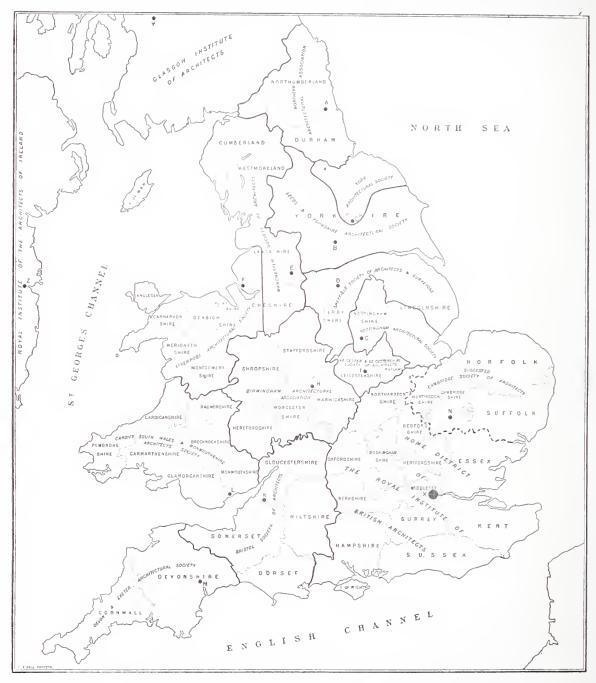
The Society which it is proposed should be established in the Eastern Counties would have Cambridge for its centre (N), and Cambridgeshire, Huntingdonshire, Norfolk, and Suffolk for its province.

The Home District of the Royal Institute of British Architects comprises, with London for its centre (X), Middlesex, Essex, Hertfordshire, Bedfordshire, Northamptonshire, Oxfordshire, Buckinghamshire, Berkshire, Surrey, Hampshire, Sussex, and Kent; and, until the formation of the suggested Cambridge Society, the counties of Cambridge, Huntingdon, Norfolk, and Suffolk.

In Scotland the Glasgow Institute of Architects has Glasgow for its centre (Y), and the Lowlands south of the Forth, with Argyleshire, for its province.

The Dundee Institute of Architecture, Science, and Art has Dundee for its centre, and the Highlands north of the Forth for its province.

In the event of centres being established at Edinburgh and Aberdeen, these Southern and Northern provinces would be subdivided.



MAP SHOWING THE DIVISION INTO PROVINCES FOR EDUCATIONAL AND OTHER PURPOSES.

Allied Centres.—A, Northern. B, Leels & Yorkshire. c, York. D, Sheffield. E, Manchester. F, Liverpool. G, Nottingham. H, Birmingham. I, Leicester & Leicestershire. K, Bristol. L, Caroliff. South Wales. & Monmouth. M, Devon & Exeter. N, Cambridge [suggested]. X, London. Y, Glasgow [the other allied Scottish centre is Dundee]. z, Dublin.

In Ireland the Royal Institute of the Architects of Ireland has Dublin for its centre (Z), and, until the development of Local Societies, the whole of Ireland for its province.

In the matter of educational facilities, as regards the Home division, thoroughness of teaching and training is secured to the student at the Architectural Association, whose curriculum was described in the pages of our Journal last year by Mr. Farrow. This curriculum, which has now entered upon its third year, has proved to be a great success, and a course of education is afforded therein which is eminently suited to the needs of the majority of students. Mention should also be made of the curriculum at King's College, a full description of which was recently given in the Journal; and of the most complete and interesting series of lectures now being delivered twice a week at University College.

In the majority of the Architectural Provinces educational facilities exist which are being taken advantage of by our Allied Societies, and which you will find described in detail in the Kalendar for 1893-94, just issued.

In Manchester great strides have been made during the past year, courses of instruction in architecture and kindred subjects, specially designed to meet the requirements of the Progressive Examinations of the Institute, having been arranged by the Manchester Society of Architects in co-operation with the Technical School of that city. Classes for students, elementary and advanced, have also been established by the Society, and valuable prizes are awarded; and at the Manchester School of Art facilities are now provided for the training of the student of architecture.

At Glasgow great success has attended the architectural courses at the Technical College, and classes in the various subjects connected with the art have been added during the past year. A curriculum having specially in view the several Examinations of the Institute has been started at the Glasgow School of Art; and a prominent place is now accorded to architecture at the University of Glasgow, where classes of great practical utility to the student have been established.

In the district of which the Northern Architectural Association is the centre, a most comprehensive curriculum, extending over a period of five years, has been drafted by the Association, and is now in operation at the Durham College of Science, preparation for the Institute Examinations again being the object in view. The Association itself provides courses of lectures during the winter months, and architecture in its elementary stages is a subject of importance at primary schools in the district.

Full particulars of the very complete course in architecture now in operation at Birmingham were published in *The R.I.B.A. Journal* last November; and the classes in Construction and Design held during six months of the year at the offices of prominent members of the profession in Birmingham have been well attended and fruitful of result, proving of the utmost value to architects' assistants and others.

In Sheffield, in Nottingham, in Leicester, new classes have been formed for the winter session. At Liverpool, by means of a grant from the City Council; at Leeds, with similar aid from the West Riding County Council—examples to be commended as worthy of imitation by similarly constituted bodies in other parts of the kingdom—lectures on subjects of value to the embryo architect are regularly delivered.

The three-years' course in architecture at the Dundee and District Association appears to be very complete and full of promise. The same may be said of the lectures delivered at the Technical Institute, Dundee, which prepare students for the Institute Examinations; and of the classes at the Science School, which are specially arranged for the same purpose.

You will all, no doubt, concur with me in thinking that the importance of this scheme of Architectural Provinces, which owes its origin and existence to the active mind and organising power of Mr. Arthur Cates, is great. It may obviously be the means of developing and maturing throughout the length and breadth of the land an educational system which, under

wise guidance, may be productive of most beneficial results to the architects of the future. Moreover, the creation of properly defined districts, each with its Local Centre in direct communication with the Metropolis, should certainly tend to promote the consolidation of the profession by encouraging freedom of intercourse between its members, and interchange of opinion on subjects of professional interest. I therefore hail the establishment of the scheme as an attainment of no little consequence in the interests of the profession.

REPRESENTATION OF ALLIED SOCIETIES ON THE COUNCIL.

The Conference of Allied Societies at Liverpool, to which I have already referred, unanimously adopted the following resolution: -- "That, so far as the constitution of The Royal "Institute of British Architects and of each Society may permit, it is desirable that the "President for the time being of each provincial centre shall have a seat on the Council of "the Institute; and that this Conference do represent to the Council the desirability of steps "being taken to obtain such modification of By-law No. 25 as will enable this to be done." The practical sympathy of the Council with this resolution was evinced when, at a General Meeting of the Institute held on the 5th of last June, it was moved from the chair that such alterations should be made in By-law 25 as would permit of the proposal being carried into effect. It must be admitted, however, that, in their desire to carry out a suggestion which invoked their sympathy, the Council overlooked a difficulty presented by certain words in the Charter—and I desire to express regret for an oversight for which I am to some extent responsible. The Charter declares that the members of the Council are "to be elected at "a General Meeting of the Royal Institute;" and on Mr. E. T. Hall pointing out that if the Charter stipulates that the members of the Council must be elected it would be impossible to allot scats to ex-officio members, or to members created otherwise than by election, I admitted the force of the constitutional difficulty, and the maffer was thereupon referred back to the Council for reconsideration. I combrace this opportunity to intimate that the Council, having reconsidered the question, are of opinion that the objection raised by Mr. Hall is a valid one; and that, having regard to the terms of the Charter, it is impracticable to adopt the proposal submitted by the Liverpool Conference. Actuated, however, by the strong desire to meet the views of the Allied Societies, a scheme has been formulated which will, in the judgment of the Council, effect the object in view, in so far as is possible, without contravening the terms of the Charter and By-laws; and they have accordingly embodied it in the following Standing Order:—

- 1. That for the class C (By-law No. 25) of Presidents of Allied Societies in the United Kingdom the Council shall annually make the following nominations—
 - As to one place. The President for the time being of the Royal Institute of the Architects of Ireland.
 - As to six places. The Presidents for the time being of those six of the Allied Societies which then contain the greatest number of subscribing members of The Royal Institute of British Architects.
 - As to two places. In rotation the Presidents of two of the remaining Allied Societies, priority in order of rotation being given to those Societies which, at the institution of the rota, contain the greatest number of subscribing members of The Royal Institute of British Architects.
- 2. When all the said remaining Societies have been represented in such rotation, the Council may, if they think fit, make a new order of rotation based on the same priority, and so on in cycles.
- 3. Should it at any time appear to the Council desirable that the President of any Society not on the rota for the year should be included in the nomination list of the Council, either on the ground of (a) the eminence of any such President, or (b) the activity in the advancement of architecture of any such Society, or (c) other causes which in the opinion of the Council shall be sufficient, then the Council shall include the name of such President in the class A of "eighteen Members of Council," and shall not in such class nominate any other Fellow of the Institute resident or practising within the district or sphere of influence recognised by the Council as appertaining to such Society.

I feel confident that for the present, at all events, this may be accepted as a satisfactory solution of the problem, and that our provincial brethren will recognise that, as no mere

alteration of a By-law could effect what they and we desired, we have done all we possibly can do within our constitutional powers. I am sure I express the feelings of my colleagues, as well as my own, when I say that nothing will afford us greater pleasure than to see no vacant seats among the nine that are allotted to the elected representatives of our Allied Societies.

DISADVANTAGES OF NON-METROPOLITAN MEMBERS.

The attention of the Council has been directed to the injury which non-metropolitan members sustain at the hands of the provincial builder-architect, who appears to flourish in some localities like the green bay-tree, and who, it is alleged, does not hesitate to tout for work and to accept surreptitious allowances. We are assured that almost complete ignorance prevails in some districts on the part of the public as to the tenets of the Royal Institute of British Architects, and that our country members consequently do not reap the benefits of membership as they would if such tenets were well known. With the view of assisting our provincial brethren to maintain their honourable position, and to defeat the depredations of unprincipled quacks, it cannot be too generally known that on election no Fellow or Associate of the Royal Institute is entitled to the rights and privileges of membership until he has signed a declaration whereby he promises and agrees that he will not accept any trade or other discount, or illicit or surreptitious commission or allowance in connection with any works the execution of which he may be engaged to superintend, or with any other professional business which may be entrusted to him; and that, having read the Charter of Incorporation and By-laws of the Royal Institute, he will be governed and bound thereby until he shall have ceased to be a member, and that by every lawful means in his power he will advance the interests and objects of the Royal Institute. It is obvious that the pirates referred to have it in their power, in view of the ignorance of the public, to damage materially honourable practitioners; and it is hoped, therefore, by disseminating these facts among provincial newspapers, that the public may become better informed as to the position and character of members of the Institute, and that the position of the genuine architect may be thereby strengthened and confirmed.

LEGAL REGISTRATION OF ARCHITECTS.

Once again has a suggested Registration Bill for Architects been introduced into Parliament, and once again have we lodged a Petition against a measure which I regard as pernicious, and injurious to the best interests of architecture. Why should we, members of a great profession, who desire to maintain our independence, be dragged into the vortex of legislation which we abhor? Until the promoters of this Bill have a mandate from the profession, and from the chartered body which represents it, they are not justified in putting us to the expense of opposing in Parliament their constantly recurring and futile efforts. I protest that I am sick of legislation. The country is deluged with it to the detriment of wise government. In the olden time when people had grievances they set themselves to remedy them; now, all seem to expect the State to do for them what they should do themselves. Free Education has by legislation been provided for one class of the community, which was perfectly well able to pay for it, at the expense of other classes—on what grounds of justice or consistency I have never been able to comprehend, for the law had already provided for the education of the children of those who through poverty or misfortune could not afford to pay The British workman would have the State declare that he is to work eight hours only and no more, thereby destroying the manly independence which was his characteristic until the advent of self-seeking agitators and socialistic demagogues. Such things are unmistakable indications of decrepitude and decay. Not long since I read of a Message

addressed by the Queen of Ravatonga to the Parliament of her antipodean empire, in which these words occur: "We have not prepared any new laws for your consideration. The "Federal Government is still young, and we think the fewer laws that are made the better." Oh, happy Ravatonga! and blessed precedent for a Queen's Speech! Let politicians pander as they will for the votes of the working classes—the root of far too much modern legislation—we, at all events, desire to be left alone in the enjoyment of the independence to which we have attained; and as for Registration Bills, we will have none of them.

ARCHITECTS' CHARGES.

The charges of architects is a subject which periodically engages the attention of critics not always friendly—and we are sometimes led to inquire whether no better system can be inaugurated than that which prevails. I am free to confess that I detest the word commission as applied to the charges of a professional man, and I never use it. It has about it a commercial flavour which is distasteful to men whose work is artistic; and if, therefore, the system of charging by commission on the cost of work could be replaced by one which might be free from that characteristic, I should be glad. This, however, may be thought sentimental, and I will therefore pass to more practical objections. It is alleged that, inasmuch as the charges of the architect are regulated by the cost of the work which is executed from his designs, he has a direct interest in increasing the outlay, instead of restricting it. May it not, with equal truth, be said of the lawyer that it is his direct interest to pile up letters and interviews, and of the physician and surgeon that it is their direct interest to multiply visits and remove limbs ad libitum? In making such allegations, it appears to be thought a thing impossible that an architect should be an horest man, Surely their authors do not realise that no one but a rogue could be guilty of deliberately sacrificing the interests of his client for the sake of a petty augmentation of fees. again objected that, under the existing system, all architects must charge alike; and that it is absurd as well as unfair that there should be no difference between the value of the services of a mere tyro and of those of a man who has attained eminence. But this is a pure fallacy. There is no rule or law, that I know of, which defines the charges of architects. It cannot be too often repeated that, while for the general guidance of its members the Institute publishes a Schedule embodying what are the usually recognised charges, no architect is thereby restricted from charging more than the Schedule suggests, should be consider that his services command a higher remuneration. I have heard one who was an esteemed member of the Institute, and who a few years since passed to his rest, declare that for years he systematically made a charge equal to ten per cent. on the cost of his works. He was quite right to charge what he considered the value of his services, and he appears to have been fortunate in having clients who were willing to adopt the same view. The Schedule of Charges published by the Institute, not as a code of rules, but as a document intended for the general guidance of architects, has so frequently been quoted by learned counsel and commented on by eminent judges, that it has acquired an historic importance which, I am sure, was neither thought of nor desired by its authors. It is, I fear, responsible for having fired the "legal soul" even of so great a luminary as the Lord Chief Justice of England, who appears to find it difficult to comprehend how the same system of charge can fairly be applicable to the design of work which is executed and to the design of work which is abandoned. We may, however, live in hope that the mind of Lord Coleridge may yet be able to appreciate what appears to us so fair and so simple. I may, perhaps, in connection with this subject be permitted to say that some months since I deemed it to be my duty as your representative to address his Lordship, and take exception to what seemed to me to be the unjustifiable strictures which he passed on the

profession of architects in relation to a case which was tried before him; and I am the more glad to refer to this because it affords me the opportunity to acknowledge publicly the extremely courteous reply which Lord Coleridge addressed to me, in expressing regret for the words he had used.

On the whole, I am disposed to think that the admirable simplicity of the present system of charges, the principle of which is the same as that adopted in most other countries, renders it preferable to any code of charges based on time occupied; and that in it we have reached the attainment of the simplest and, in spite of its defects, probably the best, solution of the problem.

THE NEW JOURNAL.

It may be in your recollection that I last year suggested for your consideration a change of a somewhat crucial character in respect of our publications, the essence of which was the combination of the separate volumes of Transactions and Proceedings, with the view of avoiding needless repetition, securing simplicity, and effecting a substantial economy. As the suggestion appeared to be received by you with favour, it was in due course discussed by the Council; and the details of the proposed scheme have been thoroughly considered by the Standing Committee for Literature, to whom they were referred, and to whom the thanks of the Institute are due for the care and attention they have devoted to the subject. No change can, of course, be pronounced an assured success until it has been experimentally tested, but it is at least so far satisfactory that the Council have been able to arrange for the publication of our proceedings in the form I suggested, and that the first number of the new publication will be issued on the 9th instant. Throughout the Session the Journal will be issued fortnightly, and monthly during the recess. Each number will be published on the Thursday after the Monday on which our General Meetings are held, and will contain the Paper read, the discussion thereon, sufficient illustrations to explain the subject, articles, reviews, and other contributions of professional interest. I embrace the opportunity to remind you of an essential condition, which must be rigidly adhered to in the management of the new publication, viz. that all Papers which are prepared with the view of being read at our meetings must be in the hands of the Secretary of the Institute at least one month prior to the dates of the meetings at which they are to be read. I feel sure that I may depend on contributors complying with a condition reasonable in itself, and absolutely necessary for the satisfactory development of the scheme. The anticipated economy which I made bold to approximately estimate last year seems likely to b having this year reached attainment.

THE BURLINGTON-DEVONSHIRE COLLECTION OF ORIGINAL DRAWINGS.

You will, no doubt, remember that in 1892 a rare and remarkable collection of original drawings by Palladio, Inigo Jones, and others was exhibited on the walls of this room by the kind permission of the Duke of Devonshire, to whom the collection belongs. A considerable portion of the collection was, by his Grace's wish, left in our care, and is consequently still here. To this circumstance may presumably be attributed the inspiration of the happy suggestion that, instead of these unique records reposing in the private library of Chatsworth, splendid though it be, where only an occasional visitor would see them, it might be desirable that they should, if possible, be deposited where they would be accessible to students of Art. The

suggestion appeared so admirable that I did not hesitate during the recess to designate a small committee of experts, consisting of Mr. Wyatt Papworth, Mr. J. D. Crace, and Mr. Eustace Balfour, and to authorise them to consider the suggestion, and report to the Council whether it might not be possible to take action respecting it. As the result of this I addressed a letter to the Duke of Devonshire, in which I pointed out that the collection was of great architectural value, as well as interesting from an archæological point of view; that if some scheme could be formulated by means of which it would be permanently accessible for purposes of study and reference, great benefit would be conferred on students of architecture; that with this view I had requested a small committee to consider whether such a proposal could be devised as might be reasonably submitted to his Grace for consideration; and that this Committee had recommended the Council to ask his Grace to present to the Institute such of the drawings, &c., in the collection as were of interest or importance to architects, subject to the conditions: (1) That the said drawings so presented be always kept together and identified as the Burlington-Devonshire Collection; (2) that they be specially insured for a sum to be agreed on against fire and other accidents; (3) that they be never sold or otherwise disposed of without the consent of the Duke, his heirs or successors: (4) that, in the event of the dissolution of the Institute, the said drawings be returned to the Duke, his heirs or successors; and that these conditions, and any others that may be desired by the Duke or his advisers, be embodied in a deed of trust—as in the case of property raised or bequeathed for the purposes of Studentships, &c., in the gift of the Institute -with a schedule attached containing a list of the drawings so presented and entrusted to the Institute. I further pointed out that the collection comprised, among many other drawings of less architectural or archæological interest than those in the selected list, a large number of designs unade in the last century (some of which have been published with the inscription "Burlington Architectus"), and a Vitruvius printed at Venice in 1567, which contains MS, notes by Inigo Jones, as vouched for by the great Earl of Burlington himself; and that, although neither the book nor the designs were included in this application, they were works such as a central representative body like the Royal Institute of British Architects would be proud to preserve in its Library among its most important treasures.

In writing this letter I adopted what may be thought—and no doubt was—a somewhat exceptional course; but I did so under the conviction that I might rely on the large-minded and liberal view which the Duke was sure to take of such a proposition; and the result shows that I was not far wrong.

Although I have not yet received an official reply from his Grace, I am permitted by his agent to say that the Duke has acceded generally to the request embodied in my letter; and that, subject to a final revision of the books and drawings, the matter may be considered settled. When it is completed, you will, I am sure, desire to convey to the Duke of Devonshire your cordial acknowledgment of his chivalrous action, as well as to the members of the committee for their valued services. It is certainly most gratifying that a collection of such exceptional interest is to be confided to the care of the Royal Institute of British Architects, for the benefit of students of architecture; and I doubt not that you will concur with me in regarding the acquisition as an attainment of vast importance.

CONTEMPORARY ARCHITECTURE.

In a previous portion of this Address I defended—I hope, in your judgment, successfully—the works of contemporary architects from the reproach of want of originality. It does not, however, follow that the perception of the beautiful displayed in such works is commensurate with the originality of their design. I have, indeed, on a previous occasion recorded my con-

viction that the craze for novelty in the present day—not alone in art—is excessive, and not infrequently results in the grotesque. Is novelty the goal of our attainment? Is it not rather Beauty? When the Greeks produced what is the purest form of art, so far as we know, that the world has seen, it was not the outcome of a rage for novelty, but of the effort to crystallise in a beautiful form the requirements and conditions of life. It was in the days of their decadence that an intelligent observer recorded of them that "they spent their time in nothing "else but either to tell or to hear some new thing." Can it be that such decadence is overtaking Judging by some modern works, their authors might not inappropriately be referred to in terms similar to those applied to the later Athenians; for their desire appears to have been, not so much to produce what is beautiful, as to evolve "some new thing." A column was originally designed to support the superincumbent weight known as the entablature, and in such juxtaposition is dignified and consistent; but divorced from such relationship, and applied to the face of a building with nothing to support, it is degraded to the position of an incongruous feature of ornamentation. An Order, again, is composed of certain parts, which, in the relationship they are designed to occupy, produce admittedly proportions that are dignified and beautiful; but when applied - one can scarcely say designed -in a ridiculously attenuated form, with parts misplaced or omitted, the result is grotesque. The conglomeration of familiar forms and features, apart from the conditions they were designed to fulfil, and thrown together regardless, apparently, of any consideration but the attainment of novelty, produces the incongruous and silly effect that might have been foreseen. Yet by critics who ought to know better this sort of architectural quackery is lauded as original design, and its authors are praised as men of exceptional ability. Whatever it may be, it is certainly not original work in the true sense of the words, but the parody that passes muster for it with the ignorant. The impress of original power is stamped on features not necessarily new, and imparts to them distinctive life and character, instead of rendering them ridiculous by divorcing them from their proper purpose. Contrast with such grotesque productions the works of the late Sir Charles Barry, and tell me in which you find the truer originality or the purer taste. Barry's classical work there are dignity, repose, proportion, ample undisturbed wall-space, every feature and moulding adapted to its position, and in all the stamp of individuality without any appearance of straining after novelty. In the hotch-potch work I refer to there is neither dignity nor repose; features and mouldings are indiscriminately applied, instead of being designed as inherent elements in the composition; and the deplorable absence of purity is in no way compensated for by fulsome profusion of ornamentation. This practice of covering every bit of wall-space with ornamentation, composed of details pretty and original in design, but applicable, from their petty scale, to cabinet-work and not to buildings, is the curse of our modern street architecture, and demonstrates an absence of grasp and appreciation of breadth which it is sometimes painful to observe. In walks about London one longs to apply the scalping-knife in stripping off meretricious ornament, in order that the eye may find repose on some bit of undisturbed and undisfigured wall-space.

It is not often I have found myself in sympathy with the utterances of the venerable statesman who now occupies the position of Prime Minister, and it is consequently agreeable to be able to concur in views which he expressed a few months since when speaking of Industry and Art. "There is a circumstance in architecture," Mr. Gladstone said, "which terrifies "me, and that is the tendency which appears to prevail in modern domestic architecture. I "am speaking of their exteriors, and I refer to their redundant ornamentation. There are a "great number of new buildings in London with regard to which, if you look at them, you will "find that the architect had either a horror or a dread of leaving bare a single square foot of "wall, as if there were something indecent in leaving bare a square foot of wall. . . . Excess of

"ornamentation is, of all things, the most hostile to a due appreciation of proportion, because "it is in proportion to the perception of breadth and beauty and line, and in the adjustment "of lines to one another that the essence of the art lies, and in that you will find the hope of "attaining high excellence in great works." Not in great works only, I would add, but in all works, great or small.

But while I deplore this meretricious tendency for redundant ornamentation, and while I decry the craze for novelty, which together are responsible for disfiguring many of our modern domestic buildings, I yet desire to record my conviction that there is much that is hopeful and promising in contemporary architecture. Even the rage for educing some new thing, exaggerated as it is, demonstrates that men prefer to think for themselves rather than to reproduce the works of others. If only the remarkable ability which is displayed in the designs of many recent buildings were directed less to the production of novelty and more to the study of proportion, less to the elaboration of ornament and more to the aspiration for simplicity; if only architects were to lead the taste of the day by impregnating their designs with "the percep-"tion of breadth and beauty and line," instead of pandering to the false and meretricious taste of a luxurious age; we should be able to congratulate ourselves—and perhaps at no distant date—on having reached the attainment of an architecture pure, simple, dignified, and beautiful.

VOTE OF THANKS TO THE PRESIDENT.

THE PRESIDENT said they were honoured that night by the presence of Mr. Campbell of Stracathro, who, as Member for the Universities of Glasgow and Aberdeen, had been kind enough to look after their interests on various occasions in the House of Commons, and he was very glad to have the opportunity of acknowledging publicly the services so rendered them.

Mr. CAMPBELL, M.P., said, as regarded the service he had been able to render the Institute, that was only a very small affair, but he rendered it with the greatest pleasure; and he moved a cordial vote of thanks to the President for the Address he had just delivered an Address eloquent and suggestive, permeated all through, he might say, with refinement and common sense. The President had referred to the complaint that there had been no new style of architecture introduced in the present age. He thought that the critics who made that complaint took their ideas rather from things that fade -fashions that fade and were connected with things intended to fade—and falsely applied them to works that were concerned with things intended to last for generations. It could not be expected that the fashions of architecture should change as the fashions of hats and bonnets—or even of sleeves! Yet, although changes in architecture were not expected to be frequent and rapid, they could not but recognise, as the President had reminded them, that changes did occur. The introduction of new materials—the steel girder, for example was followed by corresponding changes; architects availing themselves of the opportunity of having greater spans for floors and ceilings. But there was another cause of change, and that was

the altered condition of their social life. Nowadays they had higher ideas of personal and domestic comfort. No one could doubt that who compared a good old house in London with a good new house. In the old days the comfort of the domestics seemed never to have been considered; he questioned, indeed, if servants of the present day would accept situations in some of the mansions of the ancient nobility: and they would be right in not submitting to the imprisonment their predecessors endured. Architecture of the present day was not for great events and assemblies only, but for the daily comfort of the family. Reference had been made to external architecture—and no doubt they had flamboyant novelties nowadays; but he was not. disposed to lay the blame upon the architects; he thought that generally it would be found to rest with their clients. He was afraid that in these days of advertisement the commission frequently was: "Give me an elevation that will " be as conspicuous as possible," and that the last thing the client would accept would be a quiet or unobtrusive and beautiful elevation. But he would express his gratification at what the President had told them with regard to the education of young architects. It was of the highest importance that the history of architecture should be studied by young men about to enter the profession. Were they to throw aside the whole experience of the past? Were they to encourage young men to set up as architects without knowing what had been done in their profession in the past? That was not the way to have a well-equipped profession, and, as the President had shown, thorough education in architecture was by no means a bar

to the development of the faculty of design. In conclusion, he would venture humbly to congratulate the Institute on having for its President

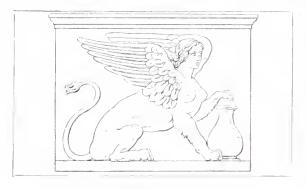
one so truly devoted to its interests.

Mr. LLOYD TAYLER [F.], of Melbourne, Hon. Secretary for the colony of Victoria, said that, being personally a stranger to most of those present, he rose with some diffidence to second the vote of thanks which had been moved; but having been requested to do so, he looked upon the request as a gracious compliment paid to him, and begged their indulgence for the imperfect manner in which he should perform the duty. The deep interest he took in the Institute, and the regular reading of its Transactions and Journal, had kept him au courant with the objects, scopes, and aims of the Institute, and also well informed of the personal efforts the President had made, and of the generous services he had rendered, for the advancement of the interests of the Institute during his tenure of office. As a Past President of the Royal Victorian Institute -- an insignificant body compared with their great Institute—he was not unaware of the grave duties and responsibilities attaching to the office; and he desired to congratulate the President upon the distinguished position he occupied, as well as upon the exceedingly interesting Address with which he had favoured them. Desiring to touch as little as possible upon topics which had been dealt with by the previous speaker, he would observe that the keynote which pervaded the Address at the opening of the previous Session had been Progress; and it followed with appropriateness that that should be succeeded by the consideration of "Attainment." They would, however, agree with him that it would be a sad thing for that day to arrive on which they should realise they had reached attainment. To settle down quietly upon a lazy self-satisfaction and contentment would mean stagnation and retrogression. Progress had been, it was, and must ever remain, their watchword. Referring to the charge which had been brought against them—that they invented no new thing in the shape of a new style, that they were ever wandering upon the same weary beaten track, not astonishing the community by anything wondrously new and startling—the President had remarked, with great truth, that architecture was the result, or the actual outcome, of the conditions of life. The conditions of life were always slowly, gradually, and almost imperceptibly changing; and he contended that in that slow, gradual, and almost imperceptible manner, and in that manner alone, could any new style arise or be invented. Referring to the system of education and the programme of examination, he could not possibly understand the objections made to them. Surely they recognised the genius of those who had gone before, and who had left behind them great works for their admiration and delight! Surely it was

their duty profoundly to study and thoroughly to understand those works! And was it not equally incumbent upon them to test by examination, and to have the assurance that the intending architect had also studied and understood those works, and that he had not neglected that intellectual culture without which they would look in vain for the refinement which should characterise the work of every architect? As to originality, that was a gift which would always assert itself, which would overleap all bounds. True, originality was rare; if it were not so, it would be known by some other name. But wherein would education and the test of examination trammel originality? Have the exact and precise laws of harmony trammelled the great composers Mozart, Beethoven, and Mendelssohn? The architect, like the poet, nascitur non fit, so far as genius and originality were concerned; but while solid, sound, substantial intellectual pabulum must be supplied, and must be assimilated, by those among the rank and file, was it possible that it could do harm to any whose genius might be head and shoulders above theirs? Culture and refinement were, and ever would be, the result of progress and attainment. What would be the value of the glorious legacy left them by the late Poet Laureate, if it were not for the refinement which they recognised in every line of his poems? How poor would be their estimate of the genius of Matthew Arnold if throughout his works they failed to discover and recognise that culture which his classical studies had stamped upon them! On the question of the legal registration of architects, he congratulated the Institute on its successful opposition to the proposed Bill. In a new country, under entirely different conditions, such a Bill might well be approved. The Victorian Institute of Architects had itself framed a Bill for a like purpose, some of the clauses of which, if adopted by the Legislature, would have involved considerable self-sacrifice on the part of every practising architect in their community. Before that Bill reached their Legislature, however, it became so emasculated in order to avoid opposition from various sources, that he, like many others, rejoiced that it never became law. As to the craze for novelty, the often resultant grotesqueness, the redundancy of ornament—these were subjects which deserved the serious thought and study of every member of the profession. The compass, indeed, of the whole Address provided so much food for thought and study that they owed a debt of gratitude to the President for the labour and time bestowed upon it.

Mr. S. VACHER [A.] asked leave to support the vote of thanks to the President, and made some observations which were inaudible to the reporter.

THE PRESIDENT, in reply, thanked the Meeting for their hearty reception of the motion, and for the kindness, consideration, and patience they had evinced in listening to his Address.



CHRONICLE.

The York Society The Cardiff Society.

The recommendation to admit to alliance The York Architectural Society and The Cardiff, South Wales, and Monmouthshire Architects' Society was approved and adopted at the General Meeting held on Monday the 6th inst. The President, in the short speech by which he opened the proceedings, stated that these two non-metropolitan bodies had, some time since, applied for alliance, and that their constitutional rules had been submitted to the Council and revised, with the concurrence of the two Societies concerned, in order to enable them to qualify for the alliance they sought. The advantage, said the President, of assimilating the organic rules and the honourable obligations contained in the "Declarations" signed by the professional members of non-metropolitan Societies with those of the central chartered corporation could not be doubted; and, looking to that advantage, and to the fact that the principal Societies throughout the United Kingdom were being brought into communion with the Institute, he did not doubt but that the proposition would be received by the General Body with acclamation. The motion put from the Chair was seconded by Mr. Charles Barry, and passed with every sign of enthusiasm.

Professional Enrolment in the Provinces.

The President's description of the recent division of Great Britain into architectural provinces or districts, and the map by which it is explained [pp. 5, 6 ante], afford matter for consideration and reflection to a large number of the profession, including architects of some distinction who do not form part of the Institute or of any of its Allied Societies. The subscription to an Allied Society is a small item, and a member, provided he be also a Fellow or an Associate of the Institute, has little or nothing to pay that Society, such subscription being paid for him by the Institute. Indeed, now that each Society has been put in possession, as it were, of certain counties or portions of counties, mainly for educational purposes, a little activity on the part of its officers may suffice to enrol all the

architects of standing, and all their pupils and assistants, resident within the particular territory allotted to its charge. By such means the boná fide practitioner, whose range of business is local, will secure a means of defence against the jerrybuilder, and of distinction from the quack. Now that Cumberland and Westmoreland, with parts of Lancashire and Cheshire, form one architectural province, all the respectable architects of the locality should be members of the Manchester Society. In like manner the Birmingham Association should include in its ranks all the members of the profession resident in Staffordshire, Shropshire, Herefordshire, and Worcestershire; and so on throughout England and Wales. Each Allied Society will thus become the recognised centre of professional education and discipline, and, in due course, of examination, in its particular district.

Architects' Benevolent Society.

The Benevolent Society's Red Book, a copy of which has been sent with the Kalendar to every member of the Institute, shows an alteration in the executive recently made with a view to improving the conduct of the Society's increasing work. For several years the Secretary of the Institute has acted as Honorary Secretary of the Benevolent Society, and a clerk of the Institute as its Assistant-Secretary—a system introduced by the late Mr. T. H. Wyatt when he was President of the Society, in imitation of that long in vogue at the Institution of Civil Engineers. The Secretary of the Institute, however, having resigned the Honorary Secretaryship, the duties have been undertaken by Mr. Percivall Currey [F.]; and the post of Assistant-Secretary, vacated by Mr. H. B. Verity, filled by the Assistant-Librarian of the Institute, Mr. Dircks. The Honorary Treasurer is still Mr. Arthur Cates, whose recent efforts to increase the Society's funds are well known to architects throughout the country.

The late Mr. Birch, A.R.A. [H.A.]

Charles Bell Birch, who died on the 16th ult., leaving behind him a record of rare skill and industry, had been an Honorary Associate of the Institute since 1884. He was born in London in 1832, and at the age of twelve commenced his artistic studies at the Somerset House School of Design. A year later, his parents removing to Berlin, he became a student of the Royal Academy of that capital. It was at Berlin, while yet barely twenty, that he produced his first important work, a bust of the late Lord Westmorland, H.M. Ambassador at the Court of Berlin, which was subsequently executed in marble for the King of Prussia. On his return to England in 1852, Birch passed through the schools of the Royal Academy, and eventually became assistant to the late J. H. Foley, R.A. In 1864 he competed for the prize of £600, open to all the world, offered by the Art

Union of London for the best original figure or group, carrying off the prize with his group "A Wood Nymph," which subsequently figured at the Vienna, Philadelphia, and Paris Exhibitions, whither it was sent by the Royal Commissioners as one of the representative works of British art. Among his contributions to the Royal Academy were a bust of the late Emperor Frederick before his marriage with the Princess Royal; a bust of Lord John Russell for the City Liberal Club; and an ideal work, "Retaliation," which was cast in bronze and purchased for the Sydney Art Gallery. In 1879 was exhibited his "Last Call," and in the following year another military group, representing Lieutenant Hamilton in his gallant attempt to save the Residency of Cabul in September 1879. In 1880, in which year he was elected an Associate of the Royal Academy, he executed the Temple Bar Griffin; and three years later "The Orange "Cup," an equestrian statuette in silver of William III., a prize offered by the King of the Netherlands for a race to be run at Goodwood, and which is now in the possession of the Princess of Wales. The statue to the Earl of Beaconsfield in the Junior Carlton Club, the memorial to Jenny Lind in Malvern Cemetery, and the colossal marble statue of the Queen erected at Oodeypore are among other of his works. The Illustrated London News and other journals afford specimens of his skill as a draughtsman on wood and stone; and for the Art Union he executed a series of designs for Lord Byron's poem of Lara.

Monographs of New Buildings.

On the 11th February last year a general invitation was given to members of the architectural profession to present drawings or photographs of such of their executed buildings as they might deem most representative or characteristic of the work they had carried out. The invitation was responded to by, among others, Mr. Thomas Harris [F.], who presented a series of photographic illustrations of the exterior and interior of Stokesay Court, Salop, a mansion executed from his designs, for Mr. J. D. Allcroft; and the monograph, which is handsomely bound, is enriched by two plans. More recently Mr. John Belcher [F] has presented a similar series of photographic views of the Institute of Chartered Accountants, a building just completed from Mr. Belcher's designs. The book is published by Messrs. Whittingham & Co., of the Chiswick Press, and is admirably produced. Plans of the three storeys, with a description of each, and references to the twenty plates form the preface of a remarkable volume.

The late Sir William Smith.

The death of the editor of the *Dictionary of Greek and Roman Antiquities*, the first volume of which appeared some fifty years ago, ought not to pass without a regretful reference in this JOURNAL.

Sir William Smith was also the editor of the two Dictionaries of Greek and Roman Biography and Mythology and Greek and Roman Geography. To his editorial duties in these works he added numerous contributions of learned articles. The six volumes, including his Atlas of Biblical and Classical Geography, completed in 1875, as a companion volume to his Biblical and Classical Dictionaries, form (to use the words of *The Times*) an encyclopædia of antiquity, and it cannot be said that the praise is too high. "The real labour of "the latter part of Sir W. Smith's life," according to the same authority, "was the editorship of The " Quarterly Review, which he held from 1867 till "his death." The last few years of his life, which exceeded 80, were passed to a great extent on the Lees of Folkestone. It was there, ensconced in a Bath chair, he was most frequently seen during the greater part of the spring and summer of this year; and it was then and there Sir William Smith was heard to state that he read, prior to its publication, every article printed in the Review.

Books received.

Among recent presentations to the Library are two works by Mr. Charles Welch, Librarian to the Corporation of London: one a History of the Monument, containing numerous illustrations, and, as frontispiece, an engraving of Kneller's well-known portrait of Sir Christopher Wren; the other, a handy little volume entitled The Guildhall Library and its Work. Mr. J. E. Cornish, the publisher, has forwarded An Architectural History of the Cathedral Church of Manchester, by the late Mr. J. S. Crowther, who was entrusted with the work of restoring the Cathedral. He, however, died before his volume had gone through the press, and Mr. Frank Renaud was deputed to undertake the final revision of the work, which contains forty plates from drawings by the author. Sir Douglas Galton's latest work on Hospital Construction has been sent by the publisher, Mr. Henry Frowde. Mr. Corder has sent his Guest Chamber, Christ Church, Ipswich; and Mr. P. G. Stone has sent his Goring Church and its Priory. The Church of St. Bartholomew the Great, by Mr. N. Moore, and Mr. J. Tavenor Perry's Chronology of Architecture are among the latest additions to the Library.

Intercommunication between Architects & Assistants.

Members and others are invited to read the Kalendar 1893-94 [p. 264], issued last week, where they will learn that there are now two distinct Intercommunication Books at the office of the Institute. One is a Register of the names and addresses of Architects requiring Assistants (started only this year), and the other a Register of Assistants and Others seeking employment (an enlargement of the Book which has existed for many years). In both books the registration fee

to non-members is one shilling, payable in coin or by postal order, but not in stamps; while to members of the Institute, to Students and Probationers, both books are free. Further, the names and addresses of Architects requiring assistants, and of Assistants seeking employment, with short particulars of wants and qualifications, will be published, if desired, in the Supplement to this Journal at a charge varying from one shilling to half-a-crown, payable in coin or by postal order.

REVIEWS OF NEW BOOKS. I. (1.) DIDEROT.

Diderot's Thoughts on Art and Style, By Beatraw I., Tollemache, 80, Lond, 1893, Price 58, Remington & Co.

It would have been odd if a man of such truly encyclopædic acquirements as Diderot had left Art unfouched. It was impossible that, having touched it, he should have done nothing to make its principles clearer to the world at large. Art was not one of his early loves; indeed, if it had not been for his friend Grimm's insistence, it is possible that he might have been content to regard his yearly progress through the Salon as a purely ceremonial act to the end of the chapter. His latent capacity for being interested—and that with him was synonymous with understanding was, however, quite prodigious. Forgetfulness or indolence in the contributors to the Encyclopædia found him always ready and able to take their place. His energies needed but the impulse, and so it is not odd that the gallery lounger of one day was the art critic of the next.

His complaint that there was always some one man who knew his own special subject better than he did is the expression of a fact, not the expression of a regret. It could not have been otherwise with sympathies so wide and farreaching. He was not the man to follow his chase, nose to ground, till he should run it to earth in a half-score of heavy volumes: he digressed while he pursued, turned up byways, dashed across country, loitered at one moment, devoured the earth in his course the next. He was too passionate for finality, too hardy to be followed blindly, but too sure of sight to mistake his goal. His art criticism was all his own. It is, or was, daring, because it expressed the opinions of a man who thought for himself, but it was safe, because he did not venture beyond his own province. He was no painter, pretended to no knowledge of technique, and his criticism, like About's or Hazlitt's, was of the literary order; but his display of insight was astonishing, a mine of suggestion to the artist, and, one may imagine, as potent as a magic key to the mysteries of the Arts in the hands of the ordinary frequenters of the galleries.

It was an age of academical tyranny, and Diderot cried out for freedom, for nature as against convention, for the individual as against the school. "The study of anatomy has its advantages," he says, "but the danger is lest the artist should bear it too much in mind, lest he should wish to show off his knowledge, that in spite of the flesh he should always be thinking of the muscle. He may dwell on all this too much, and become dry and hard."

"Compare the Laocoon and his boys (small " men rather) with the Elgin marbles," says the author of Rab and his Friends, "the riders on "the frieze so comely in their going, so lissome; "their skin slipping so sweetly over their muscles; "their modestly representing not of what they "know, but of what they see." The Greeks considered dissection a profanity, and studied the muscles from the outside, in their relations, so to speak, not in the abstract, under natural, not unnatural, conditions. How exactly does this happy phrase "slipping so sweetly over their "muscles" express the effect which Diderot asked for! He held the balance between Nature and the antique, it is true; but had he lived in the time of our fathers he would doubtless have been at one even with the perfervid enthusiasm of Haydon over Lord Elgin's treasure-trove. In one of the articles reproduced in Mrs. Tollemache's book, Diderot, who is speaking of Saunderson, a blind mathematician of exceptional gifts who at that date, or not long before, had been lecturing at Cambridge, points out what an advantage he had over the ordinary lecturer in speaking, blind himself, to a seeing audience, because he was able to illustrate his meaning by metaphors depending on, and arising out of, his infirmity, and therefore fresh to his audience and charged with a double measure of enlightenment. Something of this is true of his own art criticism. The painter who has been a failure is scarcely likely to tell his more successful brethren anything that will be of much use to them in their art, nor will the technical and one-sided point of view make the subject specially intelligible to the larger and inexpert audience; but the many-sided man of genius was able to convey some of his own striking perceptions in the fresh, apposite, and varied analogies which suggested themselves to him.

Take as an instance that which he draws between the disposition of the words and images in a literary picture and in a painting. His point is that the tendency of a subject to disgust and horrify is more directly due to its treatment—to pieces of wrong emphasis, ill-considered collocations—than to its own inherent qualities, and he illustrates this by a reference to Homer's description of the crows gathered round a corpse, picking out its eyes and flapping their wings with joy.

Is it the same thing to say, "I see the crows

"flapping their wings with joy around thy corpse, "and pecking out thine eyes," and, as the poet puts it, "I see the crows gathered round thy corpse, "pecking out thine eyes, while they flap their wings with joy"? Is the impression left on the mind in the two cases identical, or even similar? The difference is, of course, so obvious that the gradations of skill in pictorial treatment become at once more intelligible—perhaps even they are perceived for the first time—and the subject of a more discriminating appreciation. Again, he says, "We cannot too often urge painters to study the "great poets, and poets in their turn to examine "the works of great artists: the former will thus "educate their taste, and gain noble ideas; the "latter will be trained to truthfulness." The interdependence of all the spheres of artistic energy, the wisdom of testing one by the other, is always before him, and the advice which he gave is as much needed to-day as it was then. Even Tennyson's noble architectural fantasies suffer from an incoherence and vagueness transcending the pure glamour of vastness which he desired. They are not only fanciful; they are incomplete and impracticable.

In the era of the Conventional he was the apostle of the actual. He pleads stirringly for something more like nature than the accepted representation of war-scenes. In literature the conventional picture of war, the old Homeric hand-to-hand encounter between the opposing champions, the physical, not the mental, superiority of the victorious general, was actually still in full vigour when Addison was commissioned to write the Campaign. If he did not give it a death-blow, the change in treatment dates from his day. In painting, however, precedent was blindly followed till Horace Vernet outraged it in his picture of the taking of Constantine. His principal actor, who, according to usage, should have been in the thickest of the fight, moving down the enemy like grass, sits in the foreground with his face to the spectator and his back to the battle, thinking out some critical combination like a blindfold chess-player. What Vernet did, Diderot had already suggested: "Follow the army "yourself; then paint.

It was said by the celebrated Villemain that in Art it is less essential to correct faults than to develop qualities; and the province of criticism was understood by Diderot to be the encouragement of effort rather than the castigation of faults. As in Nature the growth of the grass is the death-warrant of the weeds, so in Art the good and the bad cannot coexist. Stimulate the one, show its possessor where his virtue lies, and what is vicious in his method may be trusted to die a natural death. The critic's touch cannot be all velvet, but the grasp of the iron glove shows consideration neither for the criticised nor for the art of which he is the exponent. This was

Diderot's view, and it accorded with the natural kindliness of his temperament, and allowed that species of enthusiasm under which he preferred to write.

Enthusiasm and judgment in their due proportions are the stock-in-trade of the critic, and not less so of the artist. "If I had to paint the portrait of Imagination, I should represent her "plucking the feathers off Pegasus, and teaching "him to submit to academic rules." There is one fortunate moment, and one only, "when there "is vigour and liberty enough to be enthusiastic, "and sufficient judgment and taste to be wise." As he held the balance between the study of nature and that of the antique, so he tempers enthusiasm with judgment, and academic precision with that freedom which is the birthright of genius.

To go on at greater length would be to give a paraphrase of the whole volume—of so much of it, at least, as relates to art. To recommend the reading of the other articles to an architect is to assume that he has got spare time. But, at least, the Englishman who does not know how warmly Samuel Richardson was appreciated on the Continent should read the paper on his works. To Diderot the "little printer" was even more than Fielding was to Goethe.

All translations ought to be a labour of love: unless they are founded on a sympathetic appreciation, it is impossible that they should convey the spirit of the original. The one under notice is a very good example of its class—no mere hackwork, but an intelligent rendering into pure English of a master, shall we say, by a disciple?

ARTHUR EDMUND STREET.

(2.)

THE PLUMBER AND HIS WORK.

The Plumber and Sanitary Houses: a Practical Treatise on the Principles of Internal Plumbing Work. Fifth Edition. By S. Stevens Hellyer. 80. Lond. 1893. Price 12s. 6d. [B. T. Batsford, 52, High Holborn.]

"Of making many books there is no end." There is, perhaps, no department of science of which this may more truly be said than that with which Mr. Hellyer's work deals, and the fact that the book has gone through the last three editions in nine years and has now reached the fifth, not to mention the works of other writers, testifies to the increasing demand for knowledge of the subject. And even if much study therein was weariness of the flesh, of which the author himself complains (page 433), his readers at all events will learn how to prevent evils of a far more serious kind.

The fifth edition is an exhaustive treatise on the subject of house sanitation, comprising all that relates to drainage, ventilation, and water supply within and appertaining to the house, not only pointing out what are the best methods and

apparatus, but also showing what appliances should be avoided and the reasons for and against. The best forms, and, it may be added, many of the worst kinds of traps, syphons, closets, sinks, baths, lavatories, house drains, soil pipes, ventilating pipes and cowls, and water fittings are described and illustrated in the fullest detail. The information is complete to the present time; and the explanations which accompany every detail should warn us against the many dangers and troubles attending defective fittings. Indeed, many readers would rise from a perusal of the book with an uncomfortable sense of the insufficiency, and perhaps insecurity, of the system of drainage in their own houses, accompanied by a dread of a searching examination by a sanitary expert lest he might discover some hitherto undetected soapsud adhering to the bath wastepipe and insist on much work being done to remove it.

The author seems to have been unfortunate in the stoneware pipes supplied to him (page 358). No doubt those rejected were unfit for the work, and few sanitary engineers would use stoneware pipes for soil pipes in the house; but with well-selected and well-laid stoneware pipes a very good drain can be made to conduct sewage from the house. The composition joints referred to make excellent work, and when the pipes with them are well laid they are more certain to be good all round than cement joints. The author objects to them, but does not state his objections.

The illustration of ventilating pipes in Plate XXI., page 428, does not seem a very happy one, as it exhibits so many bends—no less than five in each pipe—and these bends are not conducive to good ventilation. The last paragraph in the book (page 465) might well be supplemented by a reference to the Public Health (London) Act, 1891. The provisions of the Act carry us so far as London is concerned, a step forward in the direction the author so much desires. Where a structural defect exists in the drain, notice may be served, after inspection by the sanitary authority, on the owner of the house to make the defect good. But where lessees have bound themselves under their lease to repair and reinstate defective drainage the duty will devolve upon them.

The progress during the last few years of the application of sanitary science to the constructive details of houses is due very much to the spread of literature of the kind under review, and to the influence of the Sanitary Institute and other kindred societies. The public is now quite alive to the importance of good drainage, and the builders of new houses aim at, if they do not always succeed in, having the drains well laid and ventilated. There are, however, still many old houses both in town and country where, if the drains were opened up, they would be found in a fearfully dangerous state.—Richard F. Grantham.



PROGRESSIVE EXAMINATION.

By A. Waterhouse, R.A., President 1888-91, Correspondant de l'Institut de France.

As I had the honour of presiding over the deliberations of the Institute when the scheme of Progressive Examination was determined upon, and as I naturally took great interest in those deliberations, I trust I may be allowed to say a few more words on the subject. Now that three Progressive Examinations are practically taking the place of the single "qualifying" Examination, it may be desirable to review the stages of the movement by which they were initiated.

A Special Committee appointed by the Institute in 1886 considered the subject of Architectural Education. In the following year a Conference of Architects met at the rooms of the Institute. At the meeting on Education at that Conference certain resolutions * were passed and referred to the Special Committee to consider; and to report upon the manner in which they could best be carried out. The Committee after much deliberation reported to the Council in April 1889, submitting a scheme for the three Examinations suggested by the Conference, and recommending that, should the scheme be approved by the Council; it should be laid before the Institute; and if accepted by the General Body communicated to the Allied Societies, in order that the working details should be considered in conjunction with the Councils of those Societies.

The discussion was opened by Mr. Cates, who, dealing exhaustively with the subject, read letters of encouragement and approval from a large number of persons, including several men of eminence in the arts. Sir Arthur (then Mr.) Blomfield, who followed Mr. Cates, gave the scheme his hearty approval, suggesting that the report should be unanimously adopted without discussion of details, which he thought might be left to the Council to settle with a free hand. Mr. Tarver, since de-

^{*} See The R.I.B.A. Journal, Vol. III. N.S., p. 336, fo the resolutions referred to.

ceased, in a letter read at this meeting commended the scheme; and, in reply to its objectors (who alleged that architecture being an art it was impossible to examine in it), contended that all true art was founded on reason and knowledge; that the art of architecture was intimately connected with very palpable subjects for examination; that keen observation and accurate knowledge were especially necessary in working out the modern style, which was slowly but surely taking the place of second-hand ancient architecture; that variation from precedent involved therein must be founded on reason; and that the powers of reason can be both tested and stimulated by examination. There can, I think, be little hesitation in admitting the soundness of the late Mr. Tarver's views, even on the part of those most keenly alive to the dangers incident on such examinations. Nearly the same idea has been expressed by Monsieur Trélat, who long ago urged that we had not to do with the teaching of architecture, but with the education of the architect, which must be so arranged as to enable the young architect to meet the future requirements of his calling.

The scheme for these three Progressive Examinations having been thus approved by the General Body, and loyally supported by many of the Allied provincial Societies, was committed to the Council to carry into effect. The latter were not long in publishing a curriculum, and in the KALENDAR, just issued, these examinations are described thus:-

The Progressive Examinations are intended to afford guidance to students of Architecture in their professional studies, and opportunities for testing at well-marked intervals the progress made in their education, thus establishing a minimum standard of knowledge to be attained by all who intend to enter the profession, and to serve as a basis for those further studies which are essential to the fuller development of architectural ability.

The Preliminary Examination (first held in November 1889) is to test a youth's acquaintance with such parts of a liberal education as are peculiarly essential to his future career. I again quote from the same source :--

The Preliminary, qualifying for Probationer R.I.B.A.— The subjects comprised in this examination are those in which proficiency should be attained by the applicant before entering an architect's office, and it is desirable that special attention be given to them before he leaves school.

Clear and well-formed handwriting, correct spelling, grammar, and punctuation are indispensable.

Powers of observation and of graphic description, facility of composition and lucidity in the expression of ideas, should be carefully cultivated, as being of the utmost value in the prosecution of further studies, and in the work of later years.

Arithmetic, algebra, and plane geometry should be familiar to the candidate, and a knowledge of their application in the solution of simple problems in elementary

mechanics and physics should be acquired.

The geography of Europe and the history of England from the Norman Conquest to the end of the Tudor dynasty should be well studied, regard being had to the connection between the history of the country and its architecture.

A good knowledge of French is essential, and of German

or Italian very desirable, and a clear understanding of the Continental metrical system will also be useful.

Geometrical drawing and the elements of perspective are indispensable subjects of study, and should receive particular attention; while freehand drawing with rapidity and precision from the cast and the antique, and sketching with accuracy, should be carefully cultivated. Reasonable proficiency in these subjects is of the first im-

About the time of passing this first examination (remitted in certain cases), the youth—now a "Probationer"—will enter some architect's office as pupil, for insight into practical work, and will meanwhile have two or three years before himand none too long a time—in which to prepare for the next or Intermediate Examination. If in this preparation he follow closely the programme of study published in the KALENDAR he will naturally reach his goal by the most direct route. In the articles of pupilage sanctioned by the Institute a principal binds himself to allow his pupil such absence from office duties as shall be necessary to enable the pupil to attend lectures and classes of instruction, with the object of qualifying for the Intermediate and Final Examinations.

The Probationer to obtain admittance to the Intermediate Examination will have to produce his "Testimonies of Study," for the details of which I again quote below from the Kalendar. There can be no doubt about their preparation involving systematic study and persistent application, nor can there be any doubt of their great practical utility; or of the work they necessitate becoming a pleasure to the enthusiastic student!

The Intermediate, qualifying for Student R.I.B.A. The first aim of the Probationer should be to acquire facility and accuracy in the geometrical and perspective drawing of architectural subjects, commencing with the Orders and the several periods of Mediæval Architecture, drawn out to a large scale and from figured dimensions.

This course should be followed by careful study of the ornament appropriate to each style, the enrichments of the mouldings being drawn full size, and sketched and

measured, as far as possible, from actual work.

A good general knowledge of mouldings and details having been thus acquired, their practical application should be matured by the measurement of good examples of actual work, and by the making of fully figured and detailed drawings therefrom, with details full size.

The course of study necessitates the continuous use of a note-book (large quarto), in which the important parts of the books under study should be written down in the Probationer's own words, and freely illustrated by careful sketches from all available sources (notes on one page, sketches on the opposite page); and the subjects, being systematically arranged, might be further illustrated by notes and sketches from other books and authorities. A sketch note-book- to be freely and continually used-must be the inseparable companion of the *Probationer* wherever he may go.

The drawing of set subjects from memory is a most useful exercise, impressing on the mind the general proportions and harmony of the several parts of the details: the art of accurately sketching plans, elevations, sections, features, and details from memory should therefore be sedulously cultivated as proving of the greatest service, not only in the Examinations, but afterwards in actual practice. The study of the subjects comprised in the Science Section should be followed out in a similar manner, knowledge of details of construction being acquired, as far as

possible, by actual measurement of work.

Applied physics, mensuration, land surveying, and levelling demand attention, with a view to the complete mastery of their elements and application; formulæ for calculating the strength of beams, columns, &c., should be worked out and the results compared with actual experience; while particular care should be devoted to the study of plane geometry as applied to actual work, and to the acquisition of a thorough knowledge of the projection of solids and development of surfaces.

The Testimonies of Study must be carefully and clearly executed, with neat writing. The written memoir must be prepared with care and neatness, and the illustrative sketches be well and accurately drawn. The admission of the *Probationer* to the Intermediate Examination will depend on the satisfactory execution of these Testimonies; careless or imperfect work may lead to his exclusion.

The "Probationer," if he successfully pass the Intermediate Examination, is then termed "Student," and will at once turn his serious attention to preparation for the Final Examination, which will be first held in the Spring of 1895. It is framed on lines similar to the present "Qualifying Exami-"nation," and, like it, will enable the Student to become a candidate for Associateship of the Institute. Ere this, probably two or three years after the Intermediate Examination, he will have conclud d his term of pupilage; possibly he will have gained further experience in other offices, and matured his knowledge by travel, which of course will be much more interesting and serviceable to him at this period than if he had taken it earlier in his studies, when less able to discriminate between good architecture and bad.

As to the preparatory work, and the fresh testimonies of continued study required for the "Final," I will again let the KALENDAR speak for itself, merely pointing out that in this examination the Student will be required to design a building or a part of a building and its details, at the Institute, and thus show how far his previous teaching and studies have attained their practical aim.

The Final, qualifying for condidature as Associate R.I.B.A.—The principles of study recommended for the Intermediate apply equally to the Final Examination.

Reading to be of permanent value should be supplemented by the taking of copious notes, fully illustrated by careful sketches, and by the collection of information under various heads from different authorities. Combined with the study of the best accessible examples of old work, the habit of accurate sketching of architecture in plan, elevation, onnament, detail, and construction, especially from memory, should be assiduously cultivated, bringing eye, brain, and hand into common harmonious action.

When a knowledge of detail has been thoroughly acquired, the *Student* should take up the study of the general principles of design in both plan and elevation, and of the combination of parts to produce an effective and well-pro-

portioned composition.

He should also master the principles and practice of the preparation of contract and working drawings and specifications, with the control of actual work, thus qualifying himself to deal with the ordinary and many of the difficult problems which arise in the designing and carrying out of

modern buildings, and should miss no opportunity of visiting buildings in the course of erection.

As in the Interme liate, the admission of the Student to the Final Examination will depend on the su liciency and excellence of the Testimonies of Study; poor composition, careless or imperfect execution leading to disqualification.

The alliance of non-Metropolitan Societies with the Institute renders this large scheme of Progressive Examination comparatively easy of realisation. Each of these Societies now forms a local centre influencing the surrounding district, and guiding the education of both "Probationer" and "Student" by establishing and encouraging classes for mutual instruction and arousing emulation in successful effort. So far the result has been of the most encouraging character, showing life and high purpose in the Institute and enthusiastic diligence on the part of the rising generation. The following Table, giving the number of passes in the Preliminary and Intermediate Examinations, will attest this:—

Register of Students — 1830 1891 1892 1893 Register of Probationers 139 221 322 459

One item in the "Advice to Candidates" I regard as of special value. They are therein recommended to draw much from memory. This may not be easy to a young man on first trial; but let him persevere. He may thus reproduce a sketch made of a building, or of part of a building, or (still more difficult) the building itself, without the intervention of a sketch on the spot. The memory drawing should afterwards, if possible, be compared with the original. This practice will immensely quicken his powers of observation, his knowledge of detail, his sense of proportion.

Now, in conclusion, let us see how far this systematic study will carry the Student? Will it necessarily make an artist of him, capable of designing beautiful and appropriate, and therefore more or less original, architecture? Almost as well might we expect an examination in literature to convert the person passing it into a poet. Still the poet, if he is to give utterance to his "thoughts that breathe" in "words that burn," must have learnt by education to express himself appropriately. In like manner even the most gifted artist-architect could not give easy and safe expression to his thoughts without some such course of study as our Examinations attempt to test; and which, continued throughout his professional career, will give him an ever-increasing and well-grounded confidence in his ability to cope with the difficulties of his calling.

If the Examinations cannot make original architects of us, there are at least some qualities that go to the making of the successful artist, which we can cultivate concurrently with our preparation for the Institute Examinations. We can cultivate our sympathy with man and nature. The ideal architect will not fail to appreciate the peculiarities

of the site on which he is called upon to build. He will make his work grow so naturally out of it as to seem and to be the inevitable building for the spot. He will put himself in the place of his employers and patrons: that the buildings he erects for them shall be exactly suited to their wants, habits, and tastes. He will not fail to be an enthusiastic admirer of whatever is well done, either by the masters of the past or by those who are his contemporaries, though the latter may be harder. He will never rest satisfied with his work in design until he fails to find it capable of improvement in any particular. Lastly, and above all, he

will avoid cliques. It is given to very few to do original work of a perfectly successful character, and this was doubtless as true formerly as it is now; but, by cultivating whatever artistic perceptions we may be gifted with, we may most of us in time acquire some sense of refinement, just proportion, and harmony in our work, some abhorrence of fussiness and eccentricity, which, combined with what the Institute Examinations comprise, ought to greatly improve the ordinary architectural practice of the next generation. A genius may occasionally arise and make his way to distinction quite independently of Institute or other leading things; but he will be none the less efficient for some training in the grammar of his art; and I do not see that the Institute curriculum, confined, as at present, to subjects of a practical character, would be at all likely to clip the wings of his imagination or force his bent into any restricted groove.—A. Waterhouse.

NOTES, QUERIES, AND REPLIES. Paris and London.

M. Zola has recently given his impressions of London, as he saw it for the first time, and with his good nature somewhat stimulated by the warmth of his reception in the British capital. It is the River that seized upon his fancy, and if he ever come over again, it is the Thames and those who work and travel upon its waters that he proposes to study. No doubt he will find there much to write about that will be new to the oldest inhabitant, though what James Howel said of the Thames in the seventeenth century may be new to many. "London," he wrote in Londinopolis, 1657, "sports herself upon the banks of "a fresh stately river which brings into her "bosom all the spices of the East Indies, the "treasure of the West, the gems of the South, "and the rich furs of the North." Again, "the " stately palaces that are built on both sides of "her banks so thick, which make divers foreign " ambassadors affirm that the most glorious sight " in the world (take water and land together) was "to come upon a high tide to Gravesend and shoot the bridge to Westminster." Then he

thought Paris would be loth to compare with London for sweetness of site or neatness of streets; nor had she any verdure, whereas London had most delightful fields round about her of a deep green, not so fading as that of France. Indeed, "London," he says, "hath far better " blood in her veins than Paris—I mean a greater "number of wholesome springs, conduits, aque-"ducts, and sources of sweet waters." Howel further states that "the dirt and crott of Paris " may be smelt ten miles off, and leaves such a " tenacious oily stain that it is indelible, and can "never be washed off." Evelyn, writing of France in 1649, under Louis XIV., said that he had seen Naples, Rome, Florence, Genoa, and Venice, "all stately cities and full of princely fabrics," and that Paris for streets and buildings excelled any city else in Europe. But "The River " of Seine, which divides it, is nothing com-" parable for sweetness and good condition to "the Royal River of Thames." The great use made of the Seine, the huge vessels of burden, though not ships, it brought up to Paris, with their freight of "commodities and necessary pro-"visions," was remarkable, and surprised him; and he continued-"Paris wants nothing but "clean streets and a redress of the multitude of " coaches, laqueys and throngs of mankind: with "all which it is generally so pestered that it "appears a miracle to me how so many backs are "clothed and bellies maintained as you may be-"hold in one day if you walk the streets." Then, comparing the two capitals, Evelyn said: "What "our City of London has not in houses and " palaces she has in shops and taverns, which "render it so open by day and cheerful in the " night that it appears to be a perpetual wake or "wedding to the beholder; for so mad and lewd "a town [as London] is nowhere to be found "in the whole world." Writing further, on the 15th February 1652, in Paris, he describes the incomparable air which fortifies the inhabitants, " so that very seldom has a plague or other epi-"demical contagion made here [Paris] that havec " and lamentable devastation which it so frequently "doth in our putrefied climate and accidentally suffocated city, contrary to that vulgar but most "false tradition which I find in every man's "mouth: that the pestilence is never cut of " Paris." Indeed, the advent of the Great Plague of London, a few years later, seems to have justified Evelyn's critical observation.

NOTES.

The Egypt Exploration Fund.

From John E. Newberry [A.]—

With regard to the article under the above heading in the September number of *The R.I.B.A. Journal*, permit me to make one correction, viz. that it was not my brother, Mr. Percy Newberry, but myself, who assisted M. Naville in his excava-

tions at the temple of Dêr-el-Bahari, Thebes; also that I am about to start for Egypt to continue my work there. The Archæological Survey, of which my brother has charge, is a branch of the Fund, but entirely distinct from M. Naville's work.

Birds' Wings as Thatch.

From William Simpson, R.I. [H.A.]—

According to the Irish Book of Lismore, there was in the days of old a celebrated beauty named ('rede, and she built a palace on the banks of the Boyne. She evidently intended to "live "up" to this palace, as a modern æsthetic would express her purpose, for she announced that no one could marry her but one whose soul was great enough to appreciate and comprehend its beauty; and who at the same time could sing its praises in poetry. Many were those that tried, and failed; but at last one aspirant succeeded—his name was Coel O Neumhain—and he sang of the palace:

Its thatch in stripes of matchless order Of [birds'] wings of brown and crimson red.

Its portice is thatched With wings of birds both blue and yellow.

The piece may have some poetic exaggeration in it, but this about the birds' wings is apparently a matter of fact, and would not have been stated if such a material had not been used as described. Feathers are employed for making dresses in some parts of the world, but this is the first notice that has come under my observation of their being utilised for architectural purposes; and as such it is, I think, worthy of being made known. The feathers on a bird form in reality a most perfect kind of thatch, which no rain can penetrate, and there is no doubt but that birds' wings would serve well for the purpose. The colours described by the poet may have been produced by means of dye.

A Portrait of Palladio.

From J. D. Crace [H.A.]—

On the 24th of last June, at the sale of the "Mildmay" collection of pictures, there was bought at Christie's a fine painting described as the "Portrait of Andrea Palladio, the architect, "when young," by Palma Vecchio—size 29 inches by 24½ inches. The picture presents a very young man with a fine oval face and thoughtful expression; almost full face, and life size. In the right hand he holds a pair of compasses extended for use. The portrait brought 180 guineas from a private buyer, who, I have since learnt, is Mr. W. F. Lawrence, M.P. It was in Lord Radstock's collection, sold 1823; was again sold with the collection of M. Nieuwenhuys, 1833; and again, in 1873, from the Hon. M. Constable Maxwell's pictures.

Mr. Balmanno Squire and Hansoms.

From William H. White [F]

The abnormal sunshine of eight consecutive months has been too much for a correspondent of

The Times, who aspires to crawl from Bayswater to the Bank in victorias as in Paris, to sport with Amaryllis in the shade of Hyde Park as in the Bois de Boulogne; and who fancies that a London sun must always shine as it did this year from March to October. Most architects know that the hansom took its name from its designer, an architect; and, according to Mr. Balmanno Squire, "Any one who looks at the plan and elevation of "a hansom can perceive this. Its arrangement," he says, " for accommodating the tenants on the "ground floor, and the coachman in a sort of attic, "built on the 'back front' of the roof, its trap-"door leading on to the roof, its permission of "ingress and egress by a front door, with a broad "doorstep in front of that door, its illumination "when closed by a 'fanlight' over the door, the "iron-girders which connect the horse with the "joists of the ground floor, all point to the archi-"tectural origin of the hansom." And so his letter runs on, with references to the size of the cab-window and the old window-tax, the fenetre en quillotine for which this country has a passion; and then "as Hansom was, so Hansom did," because being an architect he followed a hazardous profession, and designed a patent safety cab, which, it is now patent to everybody, is not safe.

These and other like witticisms appeared on the 1st inst., as if they had all leapt. only the day before, with daring originality, from the brain of Balmanno. But let me add that full of "points" as his letter was, he missed one, and one which constitutes an essential defect in the hansom: it is not built and never was intended for three persons, although constantly so used in defiance of police regulations. Why did he not dilate on the exquisite discomfort of the hansom when occupied by two ladies and himself, and disparage its dualities by a touching account of Daisy's start for her honeymoon, on a bicycle made for two?

Mr. Squire would, moreover, "float," under the Companies Act, a few Paris victorias in the streets of London; and no doubt, if he wait until the British capital enjoys eight consecutive months of uninterrupted rain, he will be able to do so. But the gondola of London, as Lord Beaconsfield called the hansom, is the cab for a community of five millions, on a thousand miles of streets, in a province of houses; and, indeed, "hansoms," like British soldiers after a protracted campaign, will go anywhere and do anything. I remember the delight of two Parisian tourists when, on a visit to London in the sixties, they first enjoyed a drive in a hansom; and later on, in the eighties, when a well-known New-Yorker, who had lived in most of the European capitals, offered as an excuse for his perpetually recurring passages across the Atlantic, that he could not let twelve months pass without a drive in a London hansom. In fine, a German gentleman, whose horses and equipages are still famous, once said to me that there would

be little need for him to keep carriages in London while hansoms were so plentiful and comfortable, the drivers so civil and good.

Appointment of District Surveyors.

From Henry Lovegrove [A.]—

The statement in clause 2(f) of the Conditions of Appointment of District Surveyors on page 238 of the Kalendar 1893-94, that they are required to keep their District office open from Monday to Friday between 9.30 a.m. and 5 p.m., and on Saturday from 9.30 till 2, and give personal attendance there daily from 9.30 till 11 a.m., and (except Saturday) from 4 to 5 p.m., This clause was is inaccurate and misleading. amended before any surveyors were appointed by the County Council. District Surveyors now appointed or promoted agree to attend at their office for one hour daily, at a time to be approved by the Council. This arrangement, it is obvious, is a benefit to the public, and of advantage to the surveyor, as he gets callers at a fixed time; and is able to devote the rest of the day to the inspection of buildings.

Architects' and Clerk of Works' Supervision.

From Wm. Woodward [A.]—

The case of Lee v. Bateman is of interest as turning upon the question how far an architect can be held responsible for negligence in adopting the view of a clerk of works, appointed by the client, as regards alleged defects in a building.

It will be seen from the report of the case (see page 28) that the client, Lord Bateman, was dissatisfied with the manner in which work had been done in restoration after a fire at Shobdon Court; but nothing specifically wrong is reported, except with regard to certain beams in the kitchen offices. The clerk of works stated, in evidence, that the beams were not damaged by the fire, and that view was concurred in by the architects. Nicholson, however, a surveyor, said that the ends of the beams were decaying and rotten, but he was not prepared to say that the beams might not last fifty years—so that, apparently, there was little in this specific complaint of Lord Bateman. Mr. Justice Cave, however, while declaring that the architects were not responsible for the negligence of the clerk of works, went on to say that the question as to whether new beams were required was one for the architect and not for the clerk of works.

Now, in what particulars can a clerk of works be said to be guilty of negligence, when the architect is not? Is not the clerk of works really the architect's representative on the job, and therefore cannot relieve the architect from any responsibility to his client as regards the use of defective materials or workmanship, any more than the architect could shelter himself behind the clerk of works for disappointing architectural design?

Even if the client does personally appoint the clerk of works, it is only as a clerk of works, and surely is not intended to relieve the architect any more than if a clerk of works had not been appointed at all. I venture to differ from the declaration of the Judge that the architects were not responsible for the negligence of the clerk of works, presuming that negligence to be proved. If the clerk of works was employed in the usual way, and not armed by the client with any unusual power of interference with the duties of the architect, I think that the architect is responsible for the proper completion of the work in every respect. The clerk of works is paid by the client, but only as an additional aid to secure good work, the architect not being able to devote the necessary time to be quite sure that he is getting what he is paying for. I have never heard of a case in which an architect has proclaimed the success of a building as due to the science, art, and skill of the clerk of works, and I should be surprised to hear that an architect had been successful in showing in a court of law that he was not responsible for all defects in a building, whether or not a clerk of works had been employed. At all events it is a point which I should like to see argued in these columns of the Journal.

QUERIES.

r. Helmingham Hall.—The Institute has been asked to afford some information respecting the interior of Helmingham Hall, which is not very far south of Ipswich. The first volume of Excursions in the County of Suffolk (80. Lond. 1818) contains a short account of Helmingham and the Tollemache family, and a very good engraving of the exterior of Helmingham Hall. Plans, sections, and views of the interior are asked for, and a doubt is expressed as to the existence of any such drawings. Students with ready pencils might do worse than attack this building, and meanwhile information respecting it will be most acceptable.

2. - The R.I.B.A. Mottoes. - A Probationer has perplexed an officer of the Institute with a request for the English, in an equal number of words, of "Usui civium, decori urbium." The origin of this inscription is probably known to a few, though the First Address from the Chair, and the late Professor Donaldson's Paper, which followed, made no mention of the circumstance. words on the obverse of the Royal Gold Medal are similarly worthy of a short English equivalent. It was the late Prince Consort who, when the design for the Medal was submitted to him, suggested that an inscription should be introduced to show clearly that the Medal was The Queen's gift. Hence the words: "Victoria Regina cudi jussit." The labour required to transform these inscriptions into terse, expressive, and at the same time readable English, will not be misspent.



9, Conduit Street, London, W., 9 Nov. 1893.

MINUTES. I.

At the First General Meeting (Ordinary) of the Session 1893-94, held on Monday, 6th November 1893, at 8 p.m., Mr. J. Macvicar Anderson, President, in the Chair, with 50 Fellows (including 15 members of the Council), 41 Associates (including one member of the Council), 2 Hon. Associates, and several visitors, the Minutes of the Meeting held 19th June 1893 were taken as read and signed as correct.

The following candidates for membership, whose nomination had been previously approved by the Council, were recommended for admission: - As FELLOWS F.R.L.B.A., Charles France (Bradford), Thomas Jerram Bailey A., William Henry Arber [A.]; as ASSOCIATES [A.R.L.B.A.], William Gregory Watkins (Lincoln), Henry Arthur Crouch (Brisbane), Robert Shekleton Balfour, Arthur George Morrice, Reginald Arthur Rix, Frank Earle (Hull), Edward Skinner (Colombo), Cecil Stuart Roche, David William Kennedy, Erskine Seaton Cummings; as HOX, ASSOCIATE, John Oliver Surtces Elmore (Kapurthala, Punjab), Assoc.M.Inst.C.E.; and as HOX, CORR, MEMBER, the Commendatore Rodolfo Lanciani (Rome).

The following members, attending for the first time since their election, were formally admitted and signed the respective Registers of Fellows and Associates, namely:—Edward Mitchel Gibbs (President of the Sheffield Society), Thomas Stevens, Fellows; and Charles James Clark (Farnham, Surrey), John Wardle Ponald (South Shields), Alfred Gladding, Edmund Dealtry Pickford, Associates.

A recommendation from the Council to admit to alliance with the Institute, under the provisions of By-laws 77-81, the following two non-Metropolitan Societies, namely, The York Architectural Society (York) and The Cardiff, South Wales, and Monmouthshire Architects' Society (Cardiff), having been read, and an explanation given by the President, 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 Societies: "The York Architectural "Society" and "The Cardiff, South Wales, and "Monmouthshire Architects' Society."

The Opening Address of the Session having been delivered by the President, the thanks of the Institute were recorded to him for his Address; and an acknowledgment of the compliment having been made, the Institute adjourned at 10 p.m.

PROCEEDINGS OF ALLIED SOCIETIES. SHEFFIELD: OPENING MEETING.

On the 5th ult., an Address was delivered by the President, Mr. E. M. Gibbs [F], to the Sheffield Society of Architects and Surveyors, in which it was stated that the success of the Society was largely due to the services rendered so freely by the Past Presidents, the Treasurer, and the Hon. Secretary. One of the first steps taken by the Society was to enter into alliance with the Boyal Institute of British Architects, the benefits of which consisted not alone in the recognition of its standing in the country, and its consequent greater authority locally, but two of its Presidents had been

honoured with seats on the Council of the Royal Institute, and the Society had been deputed to conduct an examination of students in Sheffield, seven of whom had been registered as Probationers R.I.B.A. Two exhibitions of the Institute Prize Drawings had been held in the city, and the efforts made for education were also directly due to the influence of the Institute. In the proposed division of the country into provinces it was arranged that the Sheffield Society was to be the centre of a province which included South Yorkshire, North Lincolnshire, and the whole of Derbyshire. For promoting and facilitating a knowledge of the various arts and sciences connected with the profession and the education of its junior members, the Society had established lectures, classes, and a library. Lectures had been delivered by men eminent in the profession on subjects relating to the art of architecture, the design of plan, sanitary matters, construction and materials, drawing, professional practice, education, bills of quantities, valuation, and surveying. It had been suggested that members of the Society should undertake more of these lectures than they had hitherto done. The Royal Institute having ceased to admit persons to its Associateship except by examination, the junior members had awoke to the necessity of preparing for such examination. Acting on the suggestion of Mr. Arthur Cates, Chairman of the Board of Examiners, that the educational establishments in Sheffield for architectural students should be utilised, a tabulated statement of the various suitable classes, hours, and fees was prepared and circulated, together with a list of books for reference in the local libraries. Classes had been established and placed under the guidance of Mr. J. R. Wigfull A. for measuring and drawing from ancient buildings and for the study of the history of architecture; and a class of design had been initiated and directed by the President. These classes had been fairly successful, and, as a result of their stimulating effect, several of the students had abandoned their positions in architects' offices, and were giving their whole time to education and preparation for examination - an example which it was hoped would be largely imitated, seeing that the artistic and technical education of an architect could not be accomplished haphazard, by the devotion to study of a few odd hours in the evening, when the mind was wearied with the day's work. It was urgently suggested that the Society should establish a studio and day classes, under the supervision of an architect qualified to undertake them, at such a salary as would enable him to devote sufficient time to the work, the Society to be reimbursed by fees from the students. Questions of practice had received considerable attention from the Society, which had also suggested various modifications in new Building By-laws of the city, which had been acted upon to a large extent. As to professional charges, members of the Society had been recommended to follow the scale issued by the Royal Institute. The conditions and forms of building-contract had also received attention, especially as to the proposal of the Master-Builders' Association to appoint an arbitrator other than the architect, which was considered by the Council unnecessary and undesirable. With regard to competitions, it was suggested that for the future the Society should seek to advise as to the conditions and as to the award being in accordance therewith. To fully appreciate what the Scciety had done for the profession and the public, the President said it was necessary to consider what the condition of things would have been had the Society never existed; it was only reasonable to assume that the work they had done would have been neglected—that what was everybody's business would have been taken to be nobody's.

GLASGOW: ANNUAL MEETING.

On the 17th ult., the Annual Meeting of the Glasgow Institute of Architects was held, and the President, Mr. W. Forrest Salmon [F.], in moving the adoption of the Report,

reminded the Meeting that it was exactly a quarter of a century since the first annual report was read. They were doing a good and useful work, and there were many indications that the public were recognising their Society as one of the necessary institutions of the community. Their main efforts were to advance the great profession of architecture, and to stimulate each other in the direction of high culture and honourable conduct. On the question of competitions, their labours had been directed towards assisting those promoting them; but they were satisfied that the best way to secure good buildings was to conserve the architect's talents for the carrying out of buildings. A vast amount of invaluable time had been thrown away on useless competitive drawings; much useful and valuable work might have been even now in existence to do honour to the genius and skill of the poor unfortunate men whose bright talents had been wasted in various endeavours to please and attract those pitiless committees. When would they take their lessons? Their efforts, however, together with those of other similar Societies throughout the country, were beginning to tell upon the public mind, and where competitions were determined upon professional referees were now almost invariably appointed to adjudicate upon the designs. It was even beginning to dawn upon the minds of the youngest architects that to gain public respect they must first respect themselves, and not compete unless the conditions of the competition were such as would ensure fair play. Perhaps the most important work of the Institute during the past year had been the labour and time spent upon the new Building Regulations for the city. They were looking forward as architects with some hope that ere very long their great and rapidly-growing city would have a model Building Act. At one time it seemed as if the public authorities were afraid that the Glasgow Institute was opposed to the improvement of the laws regarding building. It was difficult to understand how such an impression could have been formed; but in whatever way it was formed, it was altogether a mistake. Their interests all lay in the direction of the improvement and strict surveillance of buildings. There was no body of men so competent as theirs to advise with the authorities on the subject of Building Regulations. The Standing Committee on Public Architecture, which had recently been established, would prove, it was hoped, a useful institution. A very large amount of public money was spent annually on city improvements in which architecture held a prominent place, and this committee in the exercise of its functions might be able to give some assistance as opportunities arose. Such assistance would, no doubt, be appreciated by the growing artistic sense of the community. In conclusion, he referred to the assistance rendered by the Council of the Glasgow Institute in encouraging and promoting the education of students.

In the course of his speech at the Dinner which followed the Meeting, Mr. Salmon remarked that the Glasgow Institute had passed through its infancy and youth without developing any symptoms of weakness, had safely reached the age of manhood, and was in a perfectly healthy condition. They ought to see, therefore, that they did such manly work as might be expected of them; and a study of their annual report would show that during the past year they had fulfilled their obligations in that respect. . . . They were working hand in hand with the Town Council in the education of youth in the Technical College and the School of Art, which, together with the University and the Church Colleges, were the most important the city could boast of, and ought to command far greater attention from the civic authorities. Referring to the new Galleries of Art, their one great use would be, continued Mr. Salmon, to give students the finest art examples to study; and, in conjunction with that great and magnificent endeavour, their civic rulers ought to strive to the utmost to nourish the Art Schools in their midst. To encourage and maintain existing institutions might not be such an attractive programme as to inaugurate grand new institutions, but it was just as necessary. . . . Glasgow was rapidly taking a position as a centre of applied art in the highest sense of the term. The great want was a more widespread demand for and appreciation of the many lovely products which their art-workers could supply. It would be acknowledged that the architects in Glasgow in recent years had shown that they could design buildings which, for originality and power of conception combined with grace and beauty, were not excelled by any modern buildings in all the length and breadth of the land. They must not, however, boast too much, for architecture was a far higher and nobler thing than most of them seemed to acknowledge. One of the greatest men of the age in a recent speech had observed: "Why is it architecture has been placed among the Fine Arts? It is because, " although differing from painting and sculpture in its " close relation to immediate utility, the results of that art " are among the noblest and grandest things in the world." Referring to Mr. Gladstone's strictures on the tendency to excess of ornamentation in modern architecture, Mr. Salmon went on to say that this criticism came from a layman, and when laymen were showing such an appreciation of the art in which they, as architects, laboured, it behoved them to bestir themselves and awake to a true and just realisation of the best thought of the age in which they were living and working, and strive after greater performances. The architecture which would be worthy to live, and which would live, was that which the highest minds of the age appreciated because it gave expression to their exalted ideas. "The art which is grand "and yet simple is that which presupposes the greatest "elevation both in artist and in public." The name of the author of this passage he could not give them, but they would recognise it as a statement sparkling with genuine truth. The buildings that inspired them, then, were for the most part those which were erected under the influence of lofty ideas which struggled to reach out and beyond men's common experience and surroundings. Many of those buildings had been preserved to them, some in an almost perfect state, others broken into fragments; but every broken fragment was dear to the architect. If their buildings were to live, if any one of them were left to instruct the coming generations, it would be because of some grace which appealed to and was perceived by earnest and thoughtful minds.

LEGAL.

Building Line-Appellate Tribunal-Bias.

THE QUEEN v. THE MEMBERS OF THE APPELLATE TRIBUNAL. Prior to the passing of the London Council (General Powers) Act of 1890 the question as to the "general line "of building" had to be settled by the "superintending "architect" under the Metropolis Management Act 1855; but by the Act of 1890 any person deeming himself ag-grieved by the certificate of the superintending architect may, within fourteen days after notice of the certificate has been given or served, appeal to a tribunal to be constituted of one member to be appointed by the County Council; one member (not a member or officer of the County Council) to be appointed by the Council of the Royal Institute; and one member (not a member or officer of the County Council) to be appointed by the Council of the Surveyors' Institution; and this tribunal has power to confirm or reverse or vary such certificate, the decision of the tribunal finally determining the general line of building. The present members of the appellate tribunal are Mr. Arthur Cates, who was appointed by the Council of the Royal Institute, and who is chairman of the tribunal; Dr. Longstaff, appointed by the County Council, and who is chairman of the Building Act Committee of that Council; and Mr. C. J. Shoppee, appointed by the Surveyors' Institution.

In the case of The Queen v. The Members of the Appellate Tribunal, an application was made to the Queen's Bench Division on the 26th ult. for a certiorari to set aside the decision of the tribunal as to the general line of building, on the ground that Dr. Longstaff, one of the members, was chairman of the Building Act Committee which had ordered the prosecution, and was therefore biassed. The following is taken from the report of the case which appeared in The Times of the 27th ult.:

This was an application to get rid of a conviction for building beyond the general line of building, the conviction being founded on a decision of the appellate tribunal appointed under the Act to settle what the "general line of "building" is, and one of the members having concurred in a resolution to proceed against the builder. A Mr. Ellis had built sixteen bouses at Charlton, and a question had arisen as to whether they were beyond the "general line "of building." Dr. Longstaff, a member of the London Council, was chairman of their "Building Act Committee." and also a member of the tribunal constituted by the Act to settle the "general line of building." In fact, Mr. Ellis, the building owner, had begun to build on a supposed consent to a certain line, and before the superintending architect had fixed the line. Then the Building Act Committee, of which Dr. Longstaff was chairman, had resolved that Mr. Ellis should be proceeded against for building beyond the line, and proceedings were taken. But before the magistrate it appeared that the architect had not fixed the line of building, and the proceedings were adjourned to enable him to do so, and he fixed it accordingly, and the magistrate convicted Mr. Ellis. He then appealed to the appellate tribunal, but also applied for a certiorari to set aside the conviction on the ground that the magistrate ought to have waited until the time for appeal had elapsed. The Court did not set aside the conviction, but referred it back to the magistrate, and in the meantime the appellate tribunal had settled the line a little in advance of the architect's line, and so rather more favourable to the builder; but the magistrate made an order to pull down the buildings beyond the line of building as thus settled; whereupon Mr. Ellis, the building owner, applied for a certiorari as above stated.

Mr. R. Cunningham Glen appeared in support of the application, and Mr. Daldy appeared against it and in support of the order. After a long argument, the Court came to a conclusion in favour of the application—that is, that the decision of the appellate tribunal could not stand.

Mr. Justice Charles, in giving judgment, said the question did not affect only Mr. Ellis, the applicant, but the general principles of the administration of justice. Dr. Longstaff, Chairman of the Building Act Committee of the London County Council, was also a member of the appellate tribunal as to the "general building line." There was a resolution in November 1891 of the Building Act Committee to proceed against Mr. Ellis as the building owner of the houses, Dr. Longstaff being the chairman, and proceedings were accordingly taken against Mr. Ellis. The magistrate had to ascertain what the "general line of "building" was, and he adjourned the proceedings to ascertain it, and when he had ascertained it he made an order for demolition of the houses. There were appeals against that order, and also against the decision of the architect as to the "general building line," and on the latter appeal Dr. Longstaff sat. Was it right that he should so sit? Surely not; for he was chairmau of the body which directed the proceedings. That there was personal misconduct no one would suppose, but there was a general rule of law against any one taking part in a judicial proceeding in which he had probably a bias. And though Dr. Longstaff had taken no great part in the resolution, still he was chairman of the Committee; and though no doubt he had not been guilty of any conscious misconduct, there was a probability of bias, and therefore the decision was invalid, and the application must be acceded to.

Mr. Justice Wright concurred. Rule absolute.

Building Line - Demolition - Validity of Order.

THE QUEEN U. KENNEDY, METROPOLITAN POLICE MAGISTRATE.

This was an application on the part of Mr. Ellis, the building owner in the above case, against the police magistrate for a mandamus to him to state a case to raise the question as to the validity of the order for demolition of certain of the houses. The question came before the Court immediately after the hearing of the case above reported.

The Court pointed out that the question must depend upon what was the "general building line," which must depend upon the decision of the appellate tribuual; and that, after the decision just given, the matter had better be adjourned until the building line was legally determined.

Supervision - Negligence.

LEE U. BATEMAN.

This was an action brought by Messrs. P. S. Lee and W. J. Tapper against Lord Bateman, to recover £80. 3s. 9d. for work done and money expended as architects for the defendant in the renovation and restoration of the kitchen wing and other repairs to the mansion-house and walls at Shobdon Court, Herefordshire, which had been damaged and partly destroyed by the fire which occurred there in December 1888. The defence was that the plaintiffs had not performed their duty properly, and Lord Bateman counterclaimed £150 damages. The case was tried before Mr. Justice Cave and a jury on the 30th ult., it being contended for the plaintiffs that the work they had undertaken to do had been properly performed, and it was for the defendant to prove negligence and improper superintendence. It appeared from the evidence that the restoration was designed by Mr. Tapper, and the specification drawn up by Mr. Lee; that they acted in partnership in the matter, and the work was superintended by both. The builder was suggested by Lord Bateman, who also selected the clerk of the works. The work was begun in September 1889, and the final certificate given in December 1890. Complaints were subsequently made by Lord Bateman that the work had been negligently performed. The beams of the kitchen were then examined by the plaintiff, Mr. Lee, and found defective; but in his opinion they had not been affected by the fire. The builder and the clerk of the works also stated in evidence that the beams were not damaged by the fire. Mr. Nicholson, a surveyor, said that the ends of the beams were decaying and rotten, and it would not be safe to allow them to remain more than five or ten years; but he was not prepared to say they might not last fifty years. Further evidence was given to show that it would cost £90 to restore the beams.

In summing up. Mr. Justice Cave said that the plaintiffs seemed to be entitled to their commission on the money expended on the repairs. The real question was whether they were liable for negligence on the counterclaim in not seeing that certain beams in the kitchen were renewed. The clerk of the works was selected by Lord Bateman, and the architects were not responsible for his uegligence. But the question as to whether new beams were required was a question for the architect, and not for the clerk of the works. The responsibility was on Mr. Lee, who in fact left it to the clerk of the works to decide, and did not go himself to look at the works. Mr. Lee adopted the view of the clerk of the works that new timbers were not necessary, and the question was whether this amounted to negligence. That was the real point in dispute.

The jury found for the plaintiffs, and his Lordship gave judgment for ±50. 18s., with an order to take the money

out of Court which had been paid in.



THE GRECIAN HOUSE AS DESCRIBED BY VITRUVIUS. BY MR. FALKENER.

Read at the General Meeting, Monday 20th November 1893; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,-

OUR Council have done me the honour to ask me to give you a Paper on a Pompeian house; but, Pompeii being a Roman province, and Vitruvius telling us that the Roman house had a Tuscan or Etrurian atrium, and that the atrium itself derived its name from an Etruscan city, it appeared to me that it was desirable in the first place to consider whence Pompeii derived its architecture; and I think it will appear, from the observations I venture to offer you, that the Roman house had its origin from Greece, and not from Etruria. I am the more desirous of offering you a Paper on this subject, in consequence of my opinion having been reported at your Meeting on the 19th of December 1892, that the hypæthron of Greek temples was derived from the hypæthral opening of their houses—presuming that such openings in the roof corresponded with the compluvia of Roman houses; and consequently, notwithstanding that Vitruvius says that the Greeks had no atria, I feel myself bound to show that houses in Greece had such openings in their roofs, and that the Romans copied them in the compluvium and impluvium of their atria.

As Pompeii furnishes the most perfect and indeed the only examples of the Roman house as described by Vitruvius, I will begin by showing the Greek origin of Pompeii and the other maritime cities of the Campania; and then compare the Roman with the Grecian house.

Pompen was situated in the centre of the Crater, or Bay of Naples, so called because it is a deeply indented opening, like a *cup*, which must at one time have been even more strongly marked when the islands on each side, Capri and Ischia, formed part of the mainland. This small bay was celebrated in all ages for its beauty and loveliness, its delicious and balmy air, the amenity of its climate, its hot springs, and for the fertility of its volcanic soil. It was resorted to both for health and pleasure. It was a Grecian colony, being part of the Campania, in the centre of Magna Græcia. The Greeks were succeeded by the Romans after the Carthaginian war; and thus we find that the whole coast bears evidence of Greek civilisation and of Roman magnificence.

Looking from Pompeii to the north, we see in imagination the city of Herculaneum, with its temples, basilica, theatre, and other monuments, and with houses said to be larger than those of Pompeii. Neapolis (Naples), colonised by Athenians and Chalcidians after Palæopolis had been forsaken, and which, Strabo tells us, still retained, after being conquered by the Romans, its gymnastic and quinquennial games, with contests of music and gymnastic

Third Series. Vol. I. No. 2.

exercises after the Greek manner, and still preserved its phratries, or divisions. This city, from its continued Greek civilisation, attracted the upper classes of Rome, up to the close of the Republic, for the cultivation of literature and refinement, being called "the Greek city," and "Docta Parthenope"—a proof that it still kept up its intercourse with Athens; while the Emperors afterwards paid it the compliment of presiding over its public games, instituted in honour of the Siren whose body was found on its shore. Suetonius tells us that on one occasion Nero, posing himself as a conqueror, caused a portion of the city wall to be broken down, in order that he might have a triumphal entry. Puteoli, taking its name from its wells and mineral springs, its baths and its solfatara; having a pharos and a harbour, where St. Paul landed; celebrated for its commerce, its temples, and its amphitheatre half as large again as that of Pompeii; and where Cicero and Lucullus had famous villas. Close to Puteoli was the Lacus Lucrinus, which Augustus connected with the sea. It disappeared in a violent earthquake in 1538, and a volcanic mountain rose up in its place, 1,000 feet high, and four miles in circumference. Misenum, which took its name from Misenus, the companion of Eneas, who was buried there; with its spacious harbour where the Romans kept their fleet; where we see one of the villas of Lucullus, which had formerly belonged to Marius, if not built by him, and was even then considered to be a luxurious villa, being bought for a sum equivalent to £2,500. Lucullus, who bought it, enlarged it at great expense, and embellished it with the riches of Asia and the arts of Greece, increasing its value to £80,000. It had shady walks and delicious gardens, rivalling those of the Imperial palaces. Being at the top of the promontory overlooking the Tuscan Sea towards Sicily, it had natural defences, which were subsequently further strengthened, so as to be called a castle; and it was here that the last Emperor, Augustulus, was confined by Odoacer. Lucullus had so many villas that he said he changed his residence according to the seasons, like the cranes and storks. Cornelia, the mother of the Gracchi, those precious babes who afterwards effected a revolution in the land, also had a villa here. Opposite, deriving its name from the nurse of Æneas, who died there, is the little island of Procuita; which was resorted to by the Neapolitans, and famous for the Greek dances the maidens of the island celebrated annually—probably the Romaica of the Grecian Archipelago, described in the Iliad [xviii. 590], or such as Virgil describes [Æn. i. 498], in glades of myrtle, laurel, olive and bamboo, on the banks of the regalised Eurotas; or which Diana led on the heights of Cynthus in Delos—a dance beginning in slow but graceful movements, to the cadence of soft music, and terminating in rapid evolutions; the Queen of Beauty leading, followed by youths and maidens imitating her every action—now in separate lines, and now hand in hand; now holding a dart, and now a garland of flowers; now encircling her, bending on one knee, and then, as she breaks through, following again in mystic mazes, till they disappear behind a grove of olive trees; while the notes of the cithara, lyra, and tibiæ becoming fainter and fainter, lead us to imagine that they are dancing there still. ÆNARIA (now Ischia) comes next, taking its name from Eneas, who was there for some time, and which, from the numerous votive offerings and basreliefs found there (now in the Museo Borbonico), and which had been placed in its thermal baths, prove it to have been a great health-resort. Behind Misenum, but close to it, is BALE, founded by Baius, the companion of Ulysses, celebrated for its great luxury and voluptuousness, as described by Propertius, Petronius, and Martial; with its numerous villas. In one of these, belonging to Hortensius, 10,000 amphoræ of Chian wine were found in the cellars after his death. Close to this is Cume, founded by Cumeus of Æolia before the Trojan war, the most ancient city of Magna Græcia, and the seat of ancient civilisation, flourishing 750-500 B.C.; and where Varro, Seneca, Petronius, and Cicero had villas. Near Cumæ was LITERNUM, where Scipio Africanus had a villa. I picked up one of his family signets, which

had lost its setting, in his family tomb at Rome, though he himself was buried here. Beyond this was Vulturnum, where Domitian built a magnificent bridge.

To the south of Pompeii, or the other side, was Stable (Castellamare), destroyed, like Pompeii, by Vesuvius, though four miles more distant. Among its ruins is a villa in which a marble satyr was discovered in the fountain of an impluvium, and which had a peristyle with a double row of columns all round, said to have been two hundred in number. Beyond this Was Surrentum (Sorrento), which looks so beautiful from Pompeii; famous for its wine—which, being rather acid, was recommended by physicians—and for its pottery; and was much resorted to for its beautiful aspect, having the whole Bay of Naples in view, with Vesuvius towering behind. Pollius Felix had a villa here. Close to it were the Sirenusæ, three small rocky islets of the Sirens, who are supposed to have given their name to Surrentum. Near Surrentum is a large piscina, still holding water; and adjoining is the Promontorium MINERVÆ, on the summit of which was a temple of the goddess, founded by Ulysses, and forming a prominent object both from Neapolis and Pæstum. Opposite is the island of CAPREZE, connected with the memory of Tiberius and his twelve villas. It forms two hills, with a valley between: the further one of which is Ana-capri. I toiled up there in the month of August 1847 in company with Mr. Lockyer, a late member of the Institute, whom some of the older members may recollect, and he abused me all the way up for taking him there in such a broiling sun; but when he reached the top and looked down a sheer precipice of 1,600 feet, his astonishment—being unprepared for it—was so great, that he could only exclaim-" Falkener, forgive me!"

Think of all these cities in a small bay sixteen miles across, so close together that they seemed almost touching; and the intervening spaces filled with noble and magnificent villas, stately monuments, and lofty temples—indeed, Strabo speaks of the bay as "one "continued city"—here encroaching on the sea, and there rising on the hills like an amphitheatre; the whole, backed with its cedars and clive trees, forming a view unsurpassed by anything seen elsewhere; and sparkling in the sun, as if the bay were lined with gems; or as a beach lit up with phosphorus by the gentle ripple of a sea becalmed for many days; or, as we read in the *Odyssey*, as the splendid palace of Menelaus at Sparta, "glistening like the "sun and moon, as one approached it;" or as the palace of Alcinous, which "glistened with "the clearness of the moon, and the splendour of the sun;" while we may form some idea of the importance, riches, and grandeur of these cities of the Campania, from its chief city Capua, the amphitheatre of which exceeded in diameter that of the Colosseum at Rome, and which employed 40,000 gladiators—not extraordinary when we consider that the games sometimes lasted four days in succession: Nero's games lasted a hundred days.

I have been trespassing on your time in thus giving you this cursory view of the cities of the Bay of Naples, in order to show their Grecian origin, the effects of which lasted, as we have seen in the instance of Neapolis, long after they came in subjection to the Roman Republic. Indeed, the Greek language was predominant in Southern Italy till after the fall of the Western Empire; and the libraries consisted chiefly of Greek books. Cicero, in his Tusculan Disputations, says all their learning came from Greece; Dionysius of Halicarnassus more than once says that even Rome appeared to have been founded by the Greeks; Livy speaks of all the coast as being possessed by the Greeks; and Tacitus says that Nero loved Naples for the purity of its Greek. Of the manuscripts found in Herculaneum, the greater part are in Greek. After the Imperial conquests in the East—in Asia, Greece, Egypt, and Sicily: Alexandria alone paying a tribute of two and a half up to six millions sterling—Italy was again resorted to by the Greeks: this time by a constant immigration of exiles and impoverished citizens, consisting of painters, sculptors, architects, poets, philosophers, and others, through

whom its Greek taste, elegance, and refinement were revived, and rendered evident by the comparative purity of taste still exhibited in its public buildings and private houses; and in the paintings, sculpture, ornaments, and furniture with which they were filled and embellished.

It is with these houses that we are now concerned. Judging from the antiquity of Etruria as compared with Rome, Vitruvius and Varro complacently imagined that the Roman house was a general development of the Etruscan house; and thought they found a confirmation of such theory in the circumstance that the name Atrium is similar to that of Atria, or Adria, which gave its name to the Adriatic Sea. But if it were of Etruscan origin, why should it take a name from a city on the northern frontier, instead of from the country itself, or the central capital of the country—from the Adriatic sea, instead of the Tuscan sea? This supposed derivation is evidently an accidental guess from the similarity of name; just as Servius libellously derives it from the supposed smoke of an atrium, saying -" Atrum enim erat ex fumo;" and as Festus fantastically argues—because it rose from the ground—"quia a terra oriatur:" for they might with equal plausibility have stated—because it was invented by Atreus, the father of Agamemnon. There are no ruins of an Etruscan house. Neither do any of the Etruscan tombs show resemblance to a Roman house as described by Vitruvius. It is true, the names of Atrium, Alæ, and Tablinum are sometimes given to different portions of these tombs: but with about as much "rhyme and reason" as stalactite caves are entitled to the fanciful names so capriciously bestowed on them, in order to obtain admirers. The only Etruscan monument approaching to a house is the cinerary urn found at Chiusi, the ancient Clusium; which has an external petasus, or projecting roof on all four sides; and apparently four doors, and an hypethral opening at the top: this is all; but the sinking at the top may have been for the insertion of sculpture. If, however, archeologists insist upon its being the representation of a house or temple, then the sinking at the top must prove it to be the opaion, or hypathral opening of the roof. From what we have seen, however, and from what we shall presently state, it is far more probable that the vertical opening in the roof of the Roman Atrium was derived from Greece. Fortunately, Vitruvius gives us descriptions of a Roman house and of a Grecian house. Let us examine them.

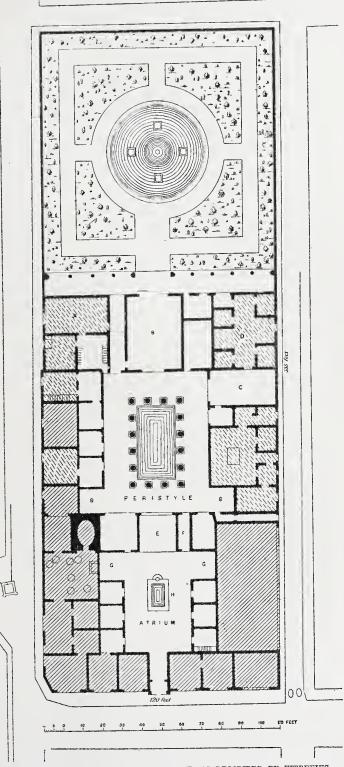
VITRUVIUS'S DESCRIPTION OF A ROMAN HOUSE.

He begins by mentioning the different kinds of Cavædia, using this name conjointly and indifferently with that of Atrium; calling it sometimes by the one, and sometimes by the other; the former corresponding with its character in the pristine house, where it was the central, or, as we should say, the common room; and the latter when it had obtained a greater dignity. "The Cavædia [he says] are of five kinds—the Tuscan, the Tetrastyle, the Corinthian—" (according as they had no columns, four columns, or many columns; but all having a "compluvium); the Displuviatum (when the rain was diverted from the compluvium); and "the Testudinatum," in which there was neither compluvium nor impluvium. All these are represented in paintings in Pompeii. He then gives the names of the different portions of the house, and the proportions of the rooms—the Atrium, the Alæ, the Tablinum, the Peristyle, and the principal rooms; and in speaking of the alæ he fortunately tells us that the height of the images is to be in proportion to the width of the alæ; thus accidentally informing us of the use made of one of the alæ, which, however, we will not here speak of.

He then says: "In private houses a portion has to be provided for the family, and a "portion for the public. The rooms for the family are the cubicula, the triclinia, the baths, "and such like: while those open to the public are the vestibulum, the cava-ædium, and [he "adds] the peristyle; [but this must be a mistake, as the triclinia, baths, &c., which he says are private, are connected with the peristyle]. People of ordinary means, however, do not

" require magnificent vestibula, "atria, or tablina; for they "cannot make use of them, as "such persons have to pay their "court to those who, possessing "such houses (and the means "of keeping them up), are able "to bestow favours on those "who come to ask for them. "Those who have to dispose of "the fruit of their lands must "provide stalls and shops in "their vestibula, with vaults and "cellars constructed underneath. "Nobles, however, and those in " authority and honour, having "to render service to the citi-"zens, require royal vestibula, "lofty atria, and spacious peri-"stylia; with plantations and "open walks, befitting the gran-"deur of the house. In addi-"tion to these there must be "bibliothecæ, pinacothecæ, ba-"silicæ, scarcely wanting in "magnificence to those built "for public purposes: for in "these, public counsels have to "be held, judgments awarded, "and arbitrations given and "adjusted. . . . In suburban "houses the peristyle comes "first, and then the atrium, "having round it porticoes and "terraces, overlooking the pa-"læstra and places of exercise." The latter part of this description applies only, as we are told, to the houses of the nobility; but the former part represents the general type of a Roman house, occupied by people of any position.

This description of a Roman house tallies exactly with the houses we see at Pompeii, and more especially with the house of Pansa; so much is this



HOUSE OF PANSA, FOMPEII. A ROMAN HOUSE, AS DESCRIBED BY VITRUVIUS. A, Court. BBB, CEci. C, Triclinium. D, Culina. E, Tablinum. F, Fauces. GG, Alæ. H, Impluvium.

the case, that we might fancy Vitruvius wrote his description during a visit he was paying to that Ædile; unless indeed he built the house—for not only does the general distribution of the house agree with his description, but the proportions of the several parts agree with his rules: thus, he lays down the rule that the width of the atrium should be two-thirds of the length. The house of Pansa, as measured by Professor Donaldson, is 120 feet wide. Making a scale from that dimension, we find the atrium is 51 feet long: $\frac{2}{3}$ of 51 = 34 feet, the exact width of the atrium.* The impluvium is shown differently in different plans; so we cannot compare it with Vitruvius's rule. The tablinum, like those of most of the houses in Pompeii, is larger than what he directs; but he gives the width of an ala of such a house as two-sevenths of the length of the atrium: $\frac{2}{7}$ of 51 = 14 ft. 7 in. the exact width. The peristyle is to be one-third longer than its width. It is 53 ft. 3 in. wide: $53\frac{1}{4} + \frac{63}{3} = 71$ feet, the exact length of the peristyle. The triclinium is to be double its width in length. It is 17 ft. 10 in. wide, and ought to be 35 ft. 8 in. long: but it is eight inches less only. This agreement is remarkable: and it is singular that the house of Diomedes corresponds with Vitruvius's direction that suburban villas should be entered at a peristyle instead of an atrium. Though all the houses in Pompeii are of the same general arrangement, the house of Pansa is the only one which complies perfectly with all his rules; and it is therefore fortunate for us that these cities at the base of Vesuvius have been preserved: for had we been dependent on the ruins which we find in Rome, England, and elsewhere of Roman houses, their plans and distribution are so varied, that it is only by wild conjecture and fanciful imagination that names can be given to the several parts. And the ruins of the Imperial Palaces at Rome give us no better information: for the architects who designed these palaces only thought of building something quite different from and superior to anything before seen. The wonderful and magnificent temples of Greece were robbed of their columns and precious marbles; and with them they built halls and porticoes and colonnades, succeeding each other in endless confusion and bewilderment, forming towns instead of houses. Not so is it with Pompeii and its neighbouring cities: here all is plain. We see the prothyrum, the atrium, the cubicula, the tablinum, the alæ, the fauces, the peristyle, the triclinium, the weus, the exedra, and the culina; these last arranging themselves according to the peculiarity of the ground.

We will now see how this compares with Vitruvius's description of a Grecian house; but owing to his not having been in Greece, he was dependent for information on his Greek friends, sixteen of whom he mentions by name in the Introduction to his Sixth Book; and these sixteen may possibly have contributed each one item to Vitruvius—as the Twelve Apostles are believed by some to have contributed each one item to the Roman or Constantinopolitan creed, vulgarly called after their name—and Vitruvius may have jotted and jostled them all down together as they were given to him. The result, naturally, is a very confused medley, which we can make nothing of.† We will give the account as we find it, and will analyse it afterwards: for which purpose I have put numbers in the margin, with which the translation will correspond.

VITRUVIUS'S DESCRIPTION OF A GRECIAN HOUSE (from Schneider, Leipzig, 1807-8).

- 1. (3) Atriis Græci quia non utuntur, neque ædificant,
- **2.** (2) sed ab janua introeuntibus itinera faciunt latitudinibus non spatiosis, et ex una parte equilia, ex altera ostiariis cellas, statimque januæ interiores finiuntur. Hic autem locus inter duas januas Græce $\theta \nu \rho \omega \rho \varepsilon \hat{i} o \nu$ appellatur.

^{*} Sir Wm. Gell's scale is different: but his results are the same.—E. F.

^{† &}quot;Les explications que Vitruve a données sur la maison " grecque manquent tellement de précision, que les archi-

[&]quot; tectes qui ont voulu faire une reconstruction en le suivant " à la lettre, sont arrivés à des résultats si complètement

[&]quot;différents, qu'on ne peut y voir que des simples hypo-"thèses."—René Menard, La Vie privée des anciens.—E. F.

- **3**. (4) Deinde est introitus in peristylion: id peristylion in tribus partibus habet porticus; in ea parte, quæ spectat ad meridiem, duas antas inter se spatio amplo distantes, in quibus trabes invehuntur, et quantum inter antas distat, ex eo tertia dempta spatium datur introrsus. Hic locus apud nonnullos $\pi\rho o\sigma\tau\dot{\alpha}s$, apud alios $\pi\alpha\rho\alpha\sigma\tau\dot{\alpha}s$ nominatur.
- 4. (7) In his locis introrsus constituuntur œci magni, in quibus matres familiarum cum lanificis habent sessionem.
- **5.** (5) In prostadii autem dextra ac sinistra cubicula sunt collocata, quorum unus Thalamus, alterum Amphithalamus dicitur.
- 6. (10) Circum autem in porticibus triclinia quotidiana, cubicula etiam, et cellæ familiaricæ constituuntur.
- **7.** (8) Hæc pars ædificii *Gynæconitis* appellatur. Conjunguntur autem his domus ampliores habentes latiora peristylia, in quibus pares sunt quatuor porticus altitudinibus, aut una, quæ ad meridiem spectat, excelsioribus columnis constituitur. Id autem peristylium, quod unam altiorem habet porticum, Rhodiacum appellatur.
 - 8. (1) Habent autem eæ domus vestibula egregia et januas proprias cum dignitate
- **9.** (9) porticusque peristyliorum albariis et tectoriis et ex intestino opere lacunariis ornatas, et in porticibus, quæ ad septentrionem spectant, triclinia Cyzicena et pinacothecas; ad orientem autem bibliothecas; exedras ad occidentem; ad meridiem vero spectantes œcos quadratos tam ampla magnitudine, uti faciliter in eis tricliniis quatuor stratis ministrationum ludorumque operis locus possit esse spatiosus. In his œcis fiunt virilia convivia; non enim fuerat institutum matres familiarum eorum moribus accumbere.
- **10.** (6) Hæc autem peristylia domus *Andronitides* dicuntur, quod in his viri sine interpellationibus mulierum versantur.

Here we see a startling difference at the first blush. Vitruvius says—"The Greek house "has no atrium." This difference appeared so striking to Vitruvius, that he gave it the first place in his particulars, thus placing the room corresponding with the atrium before the prothyrum or entrance passage to the atrium, which of course ought to come first. The atrium is the distinguishing feature of a Roman house. It is the essential mark and primary type of all Roman houses. From the palace to the cottage, every house had an atrium. The patrician had one large enough to receive a number of people; while the plebeian had one as his tiny living room, at once his kitchen and his bedroom, and, if he had no shop, his workroom. Consequently the atria were of various sizes, from ten feet square to a hundred feet in length, according to the position of the owner; and of several varieties, as we have seen—Tuscan, Tetrastyle, and Corinthian. A house, therefore, without an atrium could not be a Roman house, or like a Roman house; and if so, then the Roman house could not be copied from the Grecian. Again, Vitruvius puts the vestibulum in the middle of the house; and as he mentions it in the plural, Wilkins, in his plan, puts three large chambers, which he calls vestibules, in the centre of his house: forgetting that Vitruvius is speaking of houses in the plural, not of a single house. Vitruvius places the women's apartments in front of the house, and the men's at the back: so that the men would have to pass through the women's rooms to get to their own! And lastly, at the end of his description, having to speak twice of the women not being permitted to mix with the men, and this in each case being connected with a peristyle, he joins the two passages together, and thus confounds the two peristyles—the entrance peristyle, and the Peristyle containing the Cyzicene triclinium, the picture gallery, the library, and the œci; and by so doing he gives the title of Andronitis to the wrong one. But let us examine the passage a little more closely. Vitruvius seems to state, as we shall see presently, that the vestibulum was the porch or lobby outside the front

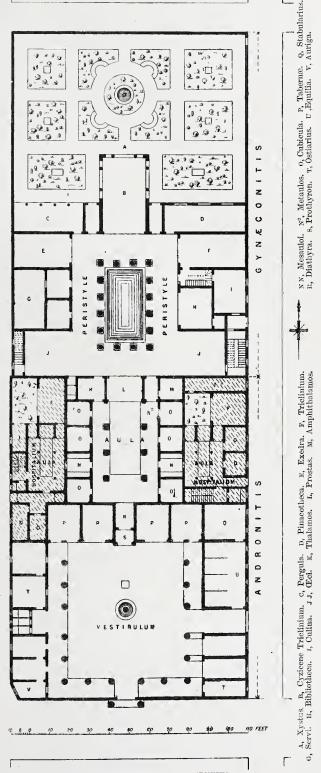
door; therefore that should come first: so his No. 8 will become No. 1. No. 2 describes the entrance passage. We now enter the chamber corresponding to the Atrium of a Roman house, which is here called peristyle: so his No. 1 should become No. 3. His No. 3 describes this peristyle: so it will be our No. 4. But here we come to another confusion in Vitruvius's description. In his No. 4 he speaks of the (Eci inside or behind the Prostas; while in his No. 5 he describes the thalamos on one side, and the amphithalamos on the other side of the prostas. Now that which is at the side must evidently come before that which is behind. The Latin word is introrsus, inwardly; intro-versum, towards the inside, or interior. He used the same word immediately before, in No. 3, where he tells us that the width of the Prostas is that between the anta, while the depth of the prostas, taken "inwardly," was one-third less. So here, the word "introrsus," inwardly, must refer to something further back, or behind. His No. 5 therefore, and not his No. 4, should follow as No. 5. His No. 6 describes a Triclinium as in the Peristyle; but this peristyle must be the large peristyle at the back of the house; for triclinia are never found in the atrium: we therefore pass it by for the present. His No. 10 will now come in as No. 6; for, as we have seen, it was evidently in its wrong place before. This completes the men's apartments. We now come to the Œci, which he described in No. 4 as inside or behind the Prostas, and therefore in the large Peristyle: so his No. 4 should become No. 7. This large peristyle is described in his No. 7, which should become our No. 8. The description of this peristyle is continued in his No. 9, which coincides with ours; and still further in his No. 6, which becomes our No. 10. Thus we see that these Greek friends must have been all speaking in the same breath: so that it was impossible for Vitruvius to make out what they said. But we have their statements, and by the rules, or licence, if you prefer it, of prosopopaia we will personify their statements. Let us, therefore, call upon them, one by one, to tell us what they recollect. We will begin with No. 8, for he speaks of a vestibulum; so it is very proper that we should begin with him. No. 2 speaks of the entrance of the house; therefore he must come next. No. 1 says the Greek houses had no atrium, which we might expect to follow; but No. 3 explains that there was a peristyle instead, which he describes: so we will take his statement in support of No. 1. No. 5 tells us of the thalamos and amphithalamos at the sides of the prostas that the last witness described at the top of the "peristyle." No. 10 tells us that this "peristyle" was the Andronitis. No. 4 says that behind this "peristyle" were two large (Eci. No. 7 informs us that we are now in the Gynacconitis; and therefore that the Œci mentioned by No. 4 were in the large Peristyle, which he then describes. No. 9 gives the names of the rooms round this large Peristyle, and No. 6, mentions some other rooms; while Nos. 11 to 16 confirm the statements of the ten, some supporting one statement, and some another. And now all the sixteen Greeks are of one accord. They say—We told you this, but we could not make you understand us. Thus, by analysing his description, and putting every part in its proper place, according to the numbers which I have placed at the head of each paragraph, we get the following result:—

THE GRECIAN HOUSE.

- (8) 1. The Greek houses have magnificent Vestibula, and imposing doorways.
- (2) 2. On entering, you see the stables on one side, and the porter's rooms on the other, so placed as to be near the entrance door. This doorway is of no great width, and the space between the doors is called $\theta\nu\rho\omega\rho\varepsilon\hat{\iota}o\nu$. He afterwards calls it the $\delta\iota\hat{a}\theta\nu\hat{\rho}a$. It was between the inner door and the hall-curtain, or portière.
 - (1) 3. The Greeks have no atrium (as we have); but you enter a peristylion.
- (3) 4. This peristylion has a portico on three sides: on that which looks towards the south (the further side) are two antæ, at some distance apart, supporting beams, forming an

(open) room, the depth of which is two-thirds of the width. This room is by some called $\pi\rho o\sigma\tau \dot{a}s$, by others $\pi a\rho a\sigma\tau \dot{a}s$.

- (5) To the right and left of this prostas are the thalamos on one side, and the amphithalamos on the other.
- (10) 6. This "peristy-"lium" of the house was called Andronitis; because men carry on their affairs there, without being interrupted by the women.
- (4) 7. Inside (that is to say, behind) these rooms are large equipment and her matron of the house and her maidens occupy themselves in spinning.
- (7) 8. This part of the house is called *Gynæconitis* by the Greeks. The eci just mentioned adjoined a large peristyle, on all four sides of which are lofty porticoes; but if that towards the south (the nearest end) is higher than the others, it is called a Rhodian portico.
- (9) These porticoes of the peristyle are ornamented with stucco and painting, inlaid work, and lacunaria. In the northern portico are placed the Cyzicene triclinium (a triclinium open on three sides) and the pinacotheca; in the eastern the bibliotheca; in the western the exedra; and in that towards the south square eci, of sufficient size to hold four triclinia couches, and leaving sufficient room for the service and the games. These eci are for men's banquets, at which women are not accustomed to recline.
- (6) 10. Round the peristyle also are ordinary triclinia, cubicula, and storerooms.



I have placed my restoration of a Grecian house on the same plot of ground as that of the house of Pansa, and made the different parts as nearly as possible of the same size, the better to compare together the Grecian and the Roman houses; but it must be remembered that we are considering such houses in the time of Vitruvius. In the Homeric age, 900 B.C., the palaces were very large and capacious, though somewhat rude, the Megaron of the palace of Ulysses being capable of seating three hundred guests; but the common houses were very primitive. In the time of Pericles, 500 B.C., the houses of Athens were still very mean and contemptible, all honour being bestowed on the temples and public buildings—and the principal part of the city being reserved for these noble buildings; while in the time of Alexander, 350 B.C., houses became very large, and at the same time very elegant and refined, owing to the luxury and riches produced by conquests in the East. We must look back to this period, therefore, for the type of the particular form of Grecian house; and subsequently, to the time of Augustus, for the type of the Roman house; but the forms then in use had their origin in the Homeric period, though the names were changed. The Vestibulum of the Greek and Roman houses was the Homeric Anle; the Vitruvian Aule and Atrium were the Homeric Megaron; while the Vitruvian Thalamus embraced all the women's apartments in the time of Homer.

Let us consider what these several portions of the Grecian house were. We will begin with the Vestibulum. We have seen that it was common both to the Grecian and the Roman houses. What we find, therefore, in one may help us to understand the other. It is described in the Roman house as "magnificent"; in the houses of the nobility as "royal"; and in the Grecian house as "egregious," remarkable, distinguished, admirable. But Vitruvius seems—and is understood by writers, owing to the loose and complicated way in which his description of the Grecian house is written—to limit the vestibulum to the small open lobby in front of the door, say six feet by five feet, which the Greeks called Prothyron ("Prothyra "Græce dicuntur, quæ sunt ante januas vestibula; nos autem appellamus prothyra, quæ " Grace dicuntur διάθυρα"), with stables on one side and the porter's rooms on the other. But we cannot understand how this could be called "magnificent, royal, egregious"; neither would there be room for the "stalls and shops, with cellars underneath," which Vitruvius says must be provided in the Vestibulum, whose owners have to dispose of the fruit of their lands; neither could a doorway be considered magnificent with stables on one side of it; and it would be still more monstrous to suppose that such palatial edifices could be built over reeking stables! I prefer, therefore, to follow Gallus and Macrobius, who tell us that the Vestibulum was an open court in front of the house—in fact, a cortile or courtyard, in which we can readily place, as Vitruvius directs us, shops and magazines in front of the house for the produce of the lands, with stables on one side of the courtyard and residences for the Ostiarins and Auriga, &c., on the other, approached by a portico or archway, and masked by colonnades: in fact, very similar to the courtyards of Burlington House, or Somerset House, and certain houses of the nobility, which we see both at home and abroad in the present day. This is what C. Cæcilius Gallus says, as quoted by Aulus Gellius:—"Vestibulum esse dicit, non " in ipsis ædibus, neque partem ædium, sed locum ante januam domus vacuum, per quem a via " aditus accessusque ad ædes est, cum dextra et sinistra inter januam tectaque, quæ sunt viæ "juncta, spatium relinquitur, atque ipsa janua procul a via est, area vacanti intersita." And Macrobius, in like manner, calls it an intervening area between the public way and the house, "Ipsa enim janua procul a via fiebat, area intersita, quæ vacaret;" and indeed Vitruvius himself, in his description of the Baths, says: "In Vestibulo deberet esse porticus "ad deambulationes his qui essent ingressuri." In the centre of this area was a statue of Zeus; and, we may presume, a fountain and basin. Pliny tells us it was ornamented with statues; and thus, with its columns and statuary, we may well conceive that it was sometimes "magnificent," and even "royal." Here conquerors of distant countries would place some of the spoils they had collected, as statues, small obelisks, vases, or other trophies; and Cicero tells us that their country villas were so full of works of art as to astonish the beholder. Such vestibula, however, as Vitruvius has told us, would only be met with in country villas, and in the houses of men of rank and distinction in great cities. As, for instance, the Vestibulum of the Golden House of Nero—a courtyard so large that it had in the middle a statue of Nero 120 feet high. This is a proof, therefore, that the vestibulum could not be the small outer lobby in front of the door of every Roman house. There are none in Pompeii; but they would be required in Athens and Rome and elsewhere for the vast number of freedmen and plebeians who attended there at daybreak to pay their respects to their patron; some of whom only were permitted to enter the aula or atrium to see the great man; and the porticoes and colonnades would be necessary to protect them from cold and rain in winter.*

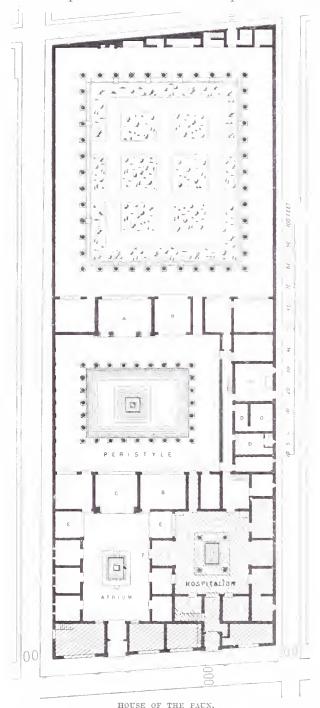
Next, we have to consider the entrance "Peristyle" of the Grecian house, which occupied the same position as the Atrium of a Roman house. This name, "peristyle," given to Vitruvius by one of his Greek friends, has led writers into another misapprehension. They have represented it as a large peristyle, or courtyard, only a trifle smaller than the peristyle at the back of the house, because that is described as being "larger." It is certainly a peristyle; but it is unfortunate that Vitruvius's informant gave it this name: for its proper name is Aὐλη, Latin aula, and translated subdialis atrium, a hall; going back to the simple hall, or room, of ancient times, as Horace describes it—"Caret invidenda sobrius aula." And Vitruvius himself, as we shall presently see, calls it by this name. And thus, when reduced to its proper proportion, it becomes what Vitruvius calls a Corinthian Atrium, only another name for a Grecian Atrium. In the Grecian Aula the hypethral opening extended to the room in front, the prostas, which corresponds in position with the Tablinum of the Roman house; thus making the apartment very airy. The colonnade of the Grecian house was continued round three sides only, the open side abutting on the antæ of the room in front, hence called prostas, parastas, pastas. Pliny seems to have copied this arrangement of a portico in the atrium of his Laurentine villa, which he describes as "Porticus in 🖯 literæ "similitudinem circumactae." The Homeric Megaron had a colonnade on three sides only. Plato, however, gives an instance of an aula having a colonnade running round all four sides, like the Roman atrium. The prostas was used in ancient times for the family meal, in order that, by facing the door, all people might see how frugally they lived. The Romans, inhabiting a country not quite so hot, reduced the hypethral opening, and thus made a covered way all round the room, with or without a colonnade; thus getting a better access to the tablinum; calling it, if adorned with columns, a Corinthian (or Grecian) atrium; but if without columns, they called it, not from its origin but from its plainness, a Tuscan atrium.

In the next place we notice that the Greek house had no Alæ, and no Impluvium. The absence of the alæ diminished considerably the size of the aula, as compared with that of the Roman atrium, and when we connect this with the large size of the hypæthral opening, thus altering the whole character of the hall, we can understand how Vitruvius says—"The "Grecian house has no atrium;" no large imposing covered hall, with alæ carrying the eye further, like our collegiate and civic halls, which frequently have an ala attached to them. But the Greek Aula, instead of an impluvium, had a spacious pavement between the columns, sunk a trifle below that of the covered colonnades, and covered with marble slabs, or rich

^{*} The mistake has arisen from the same word having a different meaning in the present day from what it had criginally. The Latin word vestibulum corresponds with mpdδομοs, a forecourt; while the modern vestibule signifies an ante-room or entrance hall. The Proceeton,

προκοιτών, is an antechamber before a bed-room; προαύλιον is the passage, διάθυρα, before the aula; πρόθυρον, the porch or lobby before the door; and so πρόδομος must be the forecourt in front of, or before the house, the vestibulum.—E. F.

mosaic, and was made use of by the master of the house and his friends, equally with, or rather in preference to, the covered parts; as in our Royal Exchange. This gave them more



A, Œcus. BB, Triclinia. c, Tablinum. D, Culina. E, Alæ. F, Mesaulos.

air. It would hold almost as many people as the Roman atrium, and thus, occupying the same position, serving the same purpose, being lit in a similar mauner, and ornamented with columns as we see in some of the Pompeian houses, as the houses of the Quæstor and of the Great Fountain, in the form called by Vitruvius a Corinthian atrium, we may regard it as the same hall as the Roman atrium, though they differed in detail, owing to the difference of climate.

The next peculiarity of the Grecian house was the Thalamos, or hymeneal chamber. It faced the entrance to the aula: and the Romans placed their lectus genialis exactly in the same position. The ancients had no religious "Form of solem-"nization of matrimony," as we have, though they went to the temple first to consult the haruspices, and afterwards to ask a blessing. It was important, therefore, in order to distinguish between wives and concubines, that the civil form should be a public one, known and seen of all men: so the bride was conducted formally to her bridal chamber, in the sight of all their friends in the Aula or Atrium. The rooms set apart for the thalamos and amphithalamos were used for this purpose only on this occasion; and returned afterwards to their ordinary use: for the bride, on becoming mistress of the house, would naturally dwell in the Gynaceum with the other females of the house.

It will have been noticed that Vitruvius describes "large Œci" behind the thalamos and amphithalamos, and north of the Atrium and Prostas, and consequently in the Peristyle; and that afterwards, in describing the rooms round this peristyle, he mentions "large square Œci" on the south side of the Peristyle. It is evident, therefore, that these œci were identical, serving in the morning for the use and enjoyment of the women and for family gathering,

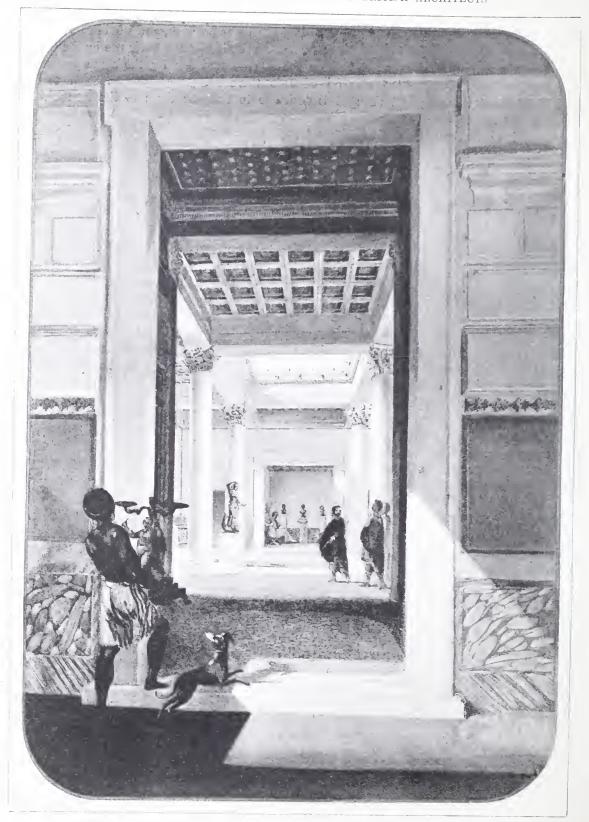
from which its name Oikos was probably derived; and in the evening for the banqueting of visitors or guests. It is possible that the two recesses at the base of the peristyle of the

House of Pansa, as contrasted with the alæ of the atrium, are a Roman representation, on a reduced scale, of these Greek eci. They occupy the same position, and would serve for the same purpose, a family gathering, or for our "five o'clock tea"; and their use by the Grecian maidens for spinning wool was followed by the Roman maidens for the same purpose, as we learn from Asconius in his Notes on Cicero's Orations. The Romans seem to have appreciated these recesses, but thought it desirable to transfer them to the Atrium, thus forming their Alæ.

Vitruvius calls the Peristyle, with its surrounding rooms in the Roman house, the private part of the house: in the Grecian house he calls it the Gynæconitis. But we are not to suppose - that in either case the women slept on the ground-floor. It is certain that the women's sleeping apartments could not have been about gardens which contained triclinia and festive halls, where men were carousing at their banquets and symposia; and in a garden provided with a back door open to all, or at the caprice and corruption of a slave; and which might be frequently left open or unlocked through forgetfulness or intention; but as they had access to these rooms, and enjoyed the gardens and the fountain of the peristyle and the eci during the morning, this part of the house might be called by the Greeks Gynæconitis, because no one was allowed to enter it from the aula without permission, in consequence of the women being so constantly there, and because the staircase leading to the women's apartments was in this private part of the house. So far, then, from the women sleeping in the apartments surrounding the peristyle, we find that even in the Homeric period they had their chambers in an upper storey, the $i\pi\varepsilon\rho\hat{\omega}\rho\nu$, and we are not told differently afterwards: we are merely told that they were sometimes met with in the rooms below. And as the Greek ladies had their Hyperöon, so the Roman ladies had their upper storey, the Conaculum.

It is unnecessary to speak of the different rooms surrounding the Peristyle—the triclinium, the exedra, the baths, the kitchen, and other offices. These varied in position according to the irregularity of the ground. Even in the House of the Faun we find the peristyle twisted sideways, in order to make room for a second peristyle.

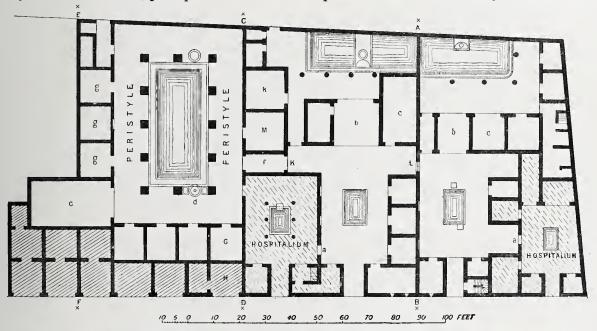
But there is another feature of the Grecian House which we must now refer to. The Greeks had small appendages connected with their houses, for the purpose of receiving their friends; just as we, in our great houses, give them suites of apartments; but their mode of entertaining them was peculiar. Vitruvius tells us they had a Hospitalium on each side of the aula, comprising necessary rooms for such purpose, connected with the aula by a passage called mesaulos, between the aulæ; there giving the apartment its right name, aule. He thus describes it:-"On the right and left are smaller houses, having their own doors (from the "outside), triclinia and cubicula; so that on guests arriving, they may enter at once into the "hospitalium, instead of having to pass through the 'peristylium' (aula) of the master of the "house. For as the Greeks became more civilised and richer, they prepared triclinia, cubi-"cula, and store-rooms for the convenience of guests; and on the first day invited them to "dinner; but on the following day sent provisions to them, chickens, eggs, fruit, vegetables, "and field produce, for there is a communication between the two 'peristylia' (aulæ) "which is called mesaulos, because it is between the two aula"—("quæ mesaulæ dicun-"tur, quod inter duas aulas media sunt interposita"). The mesaulos has been mistaken for the metaulos. The metaulos was the door of the fauces opposite to the entrance of the aula, which led to the Peristyle; while the mesaulos was the communication between two aulæ, the aula of the master of the house and the aula of his hospitalium. In my restoration of the Grecian House I have shown the small aulæ of the hospitalia as peristyles, to be in keeping with the house itself; but in all probability these small aulæ would merely have a compluvial opening in the roof, like Roman atria. Now, it is interesting and highly satisfactory to know



THE MESAULOS OF THE HOUSE OF THE FAUN. (From a Water-colour Drawing by Mr. Falkener.)

that a Hospitalium is attached to several of the houses of Pompeii, the atria of the two houses being connected together by a mesaulos, as we see in the Houses of the Faun and the Quæstor [see plan, p. 44]; and we find it even in so small a house as the House of the Little Fountain; the two latter drawn to a larger scale.

It is interesting likewise to see that the adjoining house, that of the Great Fountain, also had a hospitalium; the more so that there are not so many examples of it in Pompeii; and it is curious to notice the changes that were taking place in the houses of Pompeii at the time of the destruction of the city. The owner of the land in this Street of the Mercuries evidently sold it, or let it out on building leases, in square plots. The first plot went from the corner of the street to line AB, and forms the House of the Little Fountain. The next plot up to CB formed the original House of the Great Fountain. These two plots appear to have been taken by friends or relatives, perhaps brothers: for the disposition of the houses is very similar, each



HOUSE OF THE GREAT FOUNTAIN BEFORE CONVERTED TO A FULLONICA.

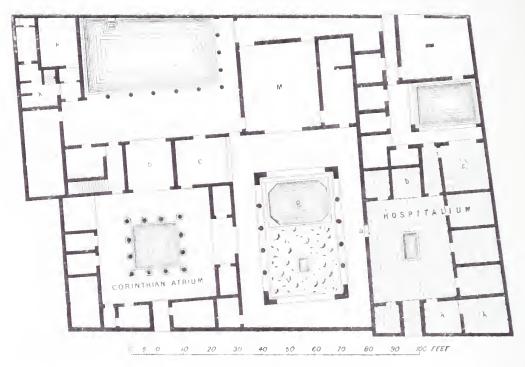
HOUSE OF THE LITTLE FOUNTAIN.

a, Mesaulos. b, Tablina. c, Triclinia. d, Fountain. c, Tabernæ. f, Fauces. g, Balneum. k, Culina. m, Œcus.

[Explanation of the capital letters, A.B, C.D, E.F, G, H, K, L, is given in the text.]

having a hospitalium and a pseudo-peristylium, with a fountain of very similar character, and having a door of communication between the two houses, at L. Subsequently, however, the owner of the second house, becoming richer, took the third plot, reaching to EF, and some small adjoining pieces, and built a large peristyle with square piers, supporting colonnaded porticoes above, on an upper storey; a proof that the houses of Pompeii had upper storeys of great magnificence, which I cannot, however, now refer to. He also obtained a large triclinium, opening into the peristyle; he built baths, the evidences of which I discovered in 1847; he turned one of the rooms of his old house into an œcus to his new peristyle; he ornamented the peristyle with beautiful paintings, with a fountain having jets falling into two adjoining basins, and with an elegant marble puteal. But subsequently he, or his successor, perhaps from reverse of fortune, or from the common cause of over-building, was obliged to sell the peristyle and the sumptuous buildings above to a dyer, who converted the premises into a fullonica; destroying the baths; building in a corner of the peristyle four large square vats,

seven feet deep, for the purposes of his trade; closing the opening L of faux, and opening the cubiculum G, and shop H, to get an entrance from the street. The late owner also gave up his hospitalium, which the dyer made use of as his counting-house, enclosing four of the columns



HOUSE OF THE QUESTUR.
a, Mesaulos. b, Tablina. c, Triclinia. k, Culinæ. M, Œeus.

in walls, so as to form closets or store-rooms; and finally he cut out some of the paintings in the peristyle, in order to substitute pictures connected with his trade. The house of Marcus Lucretius, excavated under my superintendence in 1847, and published in my Muscum of Classical Antiquities, is another instance of enlarging a house. There the alteration was only prepared for: but here it has been carried out, and then destroyed, to make way for a new alteration. Other examples might be adduced, but they can only be discovered by long study.

A doubt may be expressed by some as to the hospitalium of the House of the Faun [see plan, p. 40], it being in so great a contrast to the house itself, which is the grandest yet discovered in Pompeii—a house with a double peristyle, the first of which is in two storeys, and enriched throughout with beautiful mosaic pavements. From a number of amphore having been found in a corner of the peristyle, the owner of the house has been considered to be a wealthy wine merchant, and that this was his shop; but there is no reason for such a theory, for we have seen that in the vaults of a stately villa at Baiæ, belonging to Hortensius, there were found 10,000 amphore of choice Chian wine. Moreover, the tetrastyle atrium would be out of place for a shop; besides which there are two shops connected with the principal atrium, in which, no doubt, the owner's slaves sold the produce of his estates. But stones and other building materials were found in this house, showing that it was in process of alteration; and this hospitalium was about to undergo alterations and embellishments. It is very probable, however, that these hospitalia were used, when not occupied by guests, for the reception of tradespeople and plebeians; for two money chests were found in this tetrastyle atrium, while patricians, friends, and clients were received in the principal atrium. It will be observed that



THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

INCORPORATED SEVENTH OF WILLIAM IV. AND FIFTIETH OF VICTORIA



From a Water-colour Drawing by the Author.

Vol. I. Third Series

the second cubiculum, on right of principal atrium, has a door into each atrium. This was to enable the room to be used as a bed-chamber, either for the principal atrium, or for the hospitalium, as need required.

Thus we find that the Roman house was copied from the Greek house, not merely in its general arrangement, but in its details. The Vestibulum was in common; the Prothyron of the Greeks became the Ostium of the Romans; the Diathyra of the Greeks the Prothyrum of the Romans; the Aule became the Atrium; the Hypæthron the Compluvium; the Prostas the Tablinum; the Thalamos the Lectus Genialis; the Metaulos the Fauces; the Hyperöon the Conaculum; and the Peristyle, Xystus, Triclinium, and other parts were in common. And this is confirmed by the fact that the names of most of the parts of the Grecian house were adopted by the Romans, as prothyrum, peristyle, thalamus, ecus, exedra, pinacotheca, bibliotheca, xystus; and I think we may add the word atrium, taking its name from $a \ddot{i} \theta \rho \iota a$, $a \ddot{i} \theta \rho \iota o \nu$, $\ddot{v} \pi a \iota \theta \rho o s$, $\ddot{v} \pi a \iota \theta \rho o \nu$, denoting the serenity of the air in such a deliciously cool apartment; and I have further endeavoured to show that not only was the Roman house copied from the Greek, but that the houses of Pompeii exhibit all the features of the Roman, and some of the peculiarities of the Greek; thus denoting the constant intimacy from times immemorial between the two countries; and how the Italian habits and customs were borrowed from Greece, and not from Etruria.

This Paper, as I have already mentioned, having grown out of an observation of mine reported to you at your Meeting on the 19th of December last, respecting the vertical hypæthral opening of the Greek temple being the natural result of the vertical hypæthral opening of Greek houses—as our churches are lit in the same manner as our houses and your having honoured me by making a photographic reduction* of my restoration of the Parthenon showing such hypethral opening, I may be permitted now to mention that I consider such vertical hypethral opening, as I have advocated elsewhere, and through which the gods were believed to descend occasionally into the temple, to be only the more confirmed by the various hypotheses that have been started of a contrary nature; each hypothesis combating and contradicting all the others. One writer says the temples were hypæthral, because not completed; another, because the light was admitted from another part of the temple, thus forming a borrowed light, this borrowed light being supplied in one instance from an unsightly, but fortunately only an imaginary, trench, 13 feet deep, cut out of the roof, the whole length of the aisles on either side, in the Parthenon; and from a huge frightful open area, 50 feet in length, supposed to exist for this purpose intermediately between the pronaos and the naos of the temple of Jupiter Olympius, although there is neither authority for, nor example elsewhere of, the existence of such a rude area intervening between the pronaos and the naos of a Greek temple. Another writer, because they were lit by small skylights or dormer windows, contrived here and there in the tiling; though these were undoubtedly used for lighting long suites of chambers, 13 feet wide and 11 feet high, contrived within the roof, these chambers in the roof being probably the cause of so many of the temples being burnt. Another, because they were lit from the east doorway at the time of sunrising. Another, because the lacunaria were open before the covering slab was put over them, and that the slab was painted with a star in remembrance of such opening. Another, because they were lit like a picture gallery, to show all their wondrous sculpture and pictures and votive offerings. Another, because they were dark, like Egyptian temples, except at sunrising, the exception forming the rule; while another states that Vitruvius made a

mistake in calling them hypathral. One writer affirms that what was opposed to his theory was an "architectural bathos"; another, that all other solutions opposed to his were "adverse "to the sober-minded cultivation of scientific archaeology." . . . Ohe! Satis est—nay, Nimis est. It is delightful, in such a conflict of opinions, to fall back upon Vitruvius's simple expression, hypathral, sub divo, and to take it in its natural sense, and rest there, and to believe that as the Greeks found such vertical opening so pleasant in their own houses, they would delight in having it in the magnificent temples to their great gods, so elegantly enriched as they were internally, and so stored with the noblest works of art, and with everything that was beautiful. An objection has been made to it, however, that the beautiful chryselephantine statue of the god would suffer from such exposure; but on examining the plan of the Parthenon it will be seen that the opening might be 40 feet away from the statue—so that objection falls to the ground; besides which, the opening would doubtlessly be provided with awnings and other coverings, when necessary. But this also I submit, with great deference, to the judgment of the Institute.—Edward Falkener.

DISCUSSION OF MR. FALKENER'S PAPER.

Mr. PENROSE [F.].—Mr. President and Gentlemen, the subject of the Greeian and Roman house is not one I have myself particularly studied, but with Mr. Falkener's representations it really receives a great accession of light. I think his analysis of Vitruvius's derivation of a Greek house is quite admirable. I do not mean to say that any one studying the question minutely may not find some points of difference; but on the whole I think he is justified in taking Vitruvius's account of the Grecian house as a general summary of the facts, without being obliged to suppose that he follows in the order from the entrance to the back of the house. It is evident that the Grecian house of the period that Vitruvius was speaking of was derived by very direct evolution from the earliest houses which are mentioned by Homer, and such other authorities as can be brought to supply an account of the earliest houses. In the account of the house of Ulysses, which is the one most clearly laid out, and which is where a great part of the action of the Odyssey takes place, there is not only the first account of it, but a good deal may be made out from the subsequent chapters of the story; and no one has thrown more light upon it than Professor Jebb. In his account of the Homeric times he devotes a chapter to the discussion of the Homeric house, which is thoroughly worth reading with reference to this question. In that case it was evident that the entrance was by a door into the courtyard, and in that courtyard there were all sorts of things done: the oxen and sheep were brought in previous to being slaughtered, and it was what in the north of England would be called the crew-yard, a place where a great deal of rough and dirty work was done. Then luckily we have at Tiryns a Greek house of that period remaining in foundation to a great extent, although it has been rather interfered with by more recent structures which perplex it to some extent, but still the

main conception of the house can be thoroughly well made out from the work at Tiryns. It is a little assisted by the remains of another house at Mycenæ, and I understand that more recent excavations at Troy supply some further illustrations. But the house at Tiryns is the great text from which the account in Homer can be assisted; it is not identical with the account in Homer, and who would have expected that all houses would have been identical? But the entrance there is into a court; then it proceeds to a portico; then to an aula, or large paved court, which has pillars on each side of it, which represents very distinctly the aula in which the suitors of Penelope were accustomed to feast, and where finally Ulysses standing on the threshold was able to shoot his arrows to destroy them. In that case it is apparent, though it is not certain, that the house of the women, the Gynæconitis, was on the side at Tiryns; but in the Homeric house it must have been at the back. It is curious that the only illustration we have of the Greek house is from that very early period; it may be hoped that in some future excavations—because we have by no means got everything that can be got from the excavations yet—some veritable plan of a house of a later period of Greek times may be unearthed, and I think the most likely ground is Ephesus, where the Cayster and its tributaries have covered over a great part of the site of the city with mud to a depth of between 20 and 30 feet, so that it is extremely hopeful that some time or other a real Grecian house of the fourth or fifth century B.C., or later, may be brought to light. I should be very sorry to attack any one of Mr. Falkener's points on the subject of his interpretation of Vitruvius as to the Grecian house, or, indeed, the Roman; because with the Roman he is on very safe ground, having the houses at Pompeii to work upon. He has not mentioned one rather interesting point, which is

that each of these houses must have had a posticum; because Horace, in an amusing passage, advises one of his friends to escape from the crowd of suitors and people who came to him on business by means of the posticum:

Atria servantem postico falle clientem.

With regard to what Mr. Falkener has said subsequently on the matter of the Hypæthrum, I think I should take issue with him on that ground, but very little on the subject of his main paper. If it is the time to move a vote of thanks to Mr. Falkener, I shall be glad to do so, and also to Mr. White for having so very clearly read, and enabled us to follow, the Paper and its illustrations.

DR. A. S. MURRAY, F.S.A. [H.A.].—If, Sir, I understood Mr. Falkener's Paper, one of the chief points in his argument was the identity of the Roman atrium with the Greek peristyle; whether he meant it or not, that seems to me to be a very important part of this question. He gave me the impression that this identity or similarity of these two things had been disputed; but that is not the case in the German book to which I am accustomed to defer in these matters—Nissen's Pompeianische Studien. Nissen expressly points out the similarity of the Roman atrium and the Greek peristyle, but he sets to work in a different way from Mr. Falkener. He does not trouble himself with these later palatial houses of Pansa and that sort, but goes back to those very numerous remains in Pompeii of small houses which are built of square blocks of limestone of one storey, and each having only one single open court with chambers round it on three, or two, or one side. These houses he traces back to about 300 B.C., and therefore gets away out of this atmosphere of Vitruvius and this pseudo-Greek architecture in Pompeii. And then he goes on arguing that when the great renovation of Pompeii came in, in times of wealth and riches, the rich man who had begun with a small limestone house, bought his neighbour's up, kept his original atrium, turned his neighbour's into a peristyle, and so went on adding new peristyles as he acquired new houses from his neighbours. Then, as to the derivation of the word atrium, we know that the Greek word μέλαθρον is very much the same word substantially as the Latin atrium, meaning a room which in primitive times had the smoke rising from the hearth.

Mr. E. P. LOFTUS BROCK, F.S.A. [F.].— Sir, as the last speaker has not seconded the vote of thanks, may I be permitted to do so, for Mr. Falkener is an old friend of mine? In the presence of so many learned members to-night, I do not propose to say more than that, within the last three or four years, Dr. Flinders Petrie has brought to our notice several ground-plans of an Egyptian house, notably those at Kahun. In these there are many points similar to some of those which have been raised to-night, and I

would venture to commend his book to your careful inspection. In addition to the fact that some of the houses have halls opening one into another, there is also in a few a very curious arrangement for getting at the women's apartments; the men had evidently a separate entrance and the women another. All these houses are of earlier date than any Greek or Roman buildings of easy reference, and their general resemblance to such works is

noteworthy.

Professor AITCHISON, A.R.A. [F.].—It would, Sir, be pleasant to hear a Paper by my old friend Falkener, the learned editor of the Museum of Classical Antiquities, and the author of the Games of the Ancients, however dry the subject might be; but his Paper is delightful, for in it he gives us a description of that charming country Campania, and of its seaside towns which he visited years ago. He has, too, supplemented his personal recollections with passages from Homer, Virgil, and Strabo, and with references to many of the great men who had villas there and to the great writers who visited the towns in their palmy days. He tells us, for instance, of Hortensius having as much wine, at one of his country houses there, as would fill a quarter of a million of our bottles. He also tells us of Rome getting all its civilisation from Greece, and of the prevalence of the Greek tongue; Greek seems to have been more familiar to the educated Romans than French is to our educated men. The great Lucullus wrote a poem on the Marsi in Greek, and Cæsar's celebrated "Et tu, Brute" was, according to Suetonius, spoken in Greek. There is one little point I might remark on: the use of the words compluvium and impluvium. They are mostly properly given in the translations of the classics by the word skylight. Impluvium was the literary word used by Plautus, Terence, Cicero, and others, while compluvium was the technical word, for we must suppose that Vitruvius knew the proper technical expression, and he uses the word four times; while impluvium is not to be found in his book. I speak of the edition of Rose and Müller (Strübing, 1867). The passages I am most familiar with are those from Terence and from Plautus. Terence, in the Eunuchus, speaks of Jove going over the tiles and through the skylight to Danae; and this play was translated from Menander. In the Amphitruo of Plautus the serpents came to Hercules through the skylight, and in the Miles Gloriosus the slave, pursuing a monkey over the neighbour's roof, peeps down the skylight. This play is supposed by some to be translated from the Greek of Alexis; he also speaks of women wearing skylight dresses (impluviata vestis) in the Epidicus. These plays may have been adapted from the Greek; but if not, the compluvium came from the Grecian house. I regret that, even in spite of Pompeii, we know so little of the exact uses of the rooms in the Roman house, and unless we are lucky enough to

find an illustrated MS, of Vitruvius, or the ruins of a Grecian house of his day, all that we can do is to improve our skill in planning by drawing out the house from Vitruvius's description. Vitruvius, it is true, mostly spoke about what was known to his readers, and was, therefore, not bound to make himself understood by the ignorant, for I doubt if any one could draw out anything more complex than a temple from his descriptions. I do not know if Vitruvius ever visited Greece or Magna Gracia. Mr. Falkener has, however, shown even greater boldness with his author than Wilkins. Wilkins attributed Vitruvius's supposed mistake that the temple of Jupiter Olympius was octastyle to the ignorance of a scribe, for Mr. Penrose has since found that Vitruvius was right. Mr. Falkener supposes that Vitruvius never saw a Grecian house, and merely put down at haphazard what some Greeks had told him. I freely admit that in putting the men's court in the front and the women's at the back, Mr. Falkener has made the house more agreeable to our notions of Grecian habits, but he is allowing himself a free hand with his author. In spite of this we are greatly obliged to him for the pains he has taken in trying to elucidate the text and in making a working plan according to our ideas. As Mr. Falkener sums up the arguments on the lighting of Greek temples, I cannot help saying something on the subject. We must accept Vitruvius's statement that there were such things as hypethral temples. The Kaaba at Mecca was originally an hypethral temple. Mr. Falkener is, however, the exponent of an entirely different theory; he contends that if Vitruvius says there were hypæthral temples and does not say how temples that were not hypathral were lit, it is evident that all temples were hypathral, but I for one do not think that this conclusion is logical. I confess that at an early period of my pupilage I thought it odd that these great idols of ivory and gold should be left in the open air like the statues in the Groves of Blarney. We know from Pausanias that the ivory of some of these idols suffered from over-dampness and were oiled, and others from over-dryness and were damped. Doubtless many of the theories propounded on a former occasion were made on the spur of the moment, but it would be no great compliment to Mr. Penrose nor to Dr. Dörpfeld to class them in that number. Mr. Penrose has just found out for us that Jupiter Olympius at Athens was octastyle, and has probably discovered what the hypethrum there was. Any one who has the honour of knowing Mr. Penrose or Dr. Dörpfeld will feel quite certain that there is no passage in the classics which could throw a light on the question that they have not consulted before propounding those theories, which took so many of us by surprise. In again returning my thanks to Mr. Falkener I may say that we are doubly grateful to him, first for his notices of the Grecian and the

Roman house, and, secondly, for again calling our attention to the still vexed problem of the lighting

of Greek temples.

MR. PENROSE [F.].—Sir, I reserved any remarks that I had to make on the hypæthral temple, because I thought it more important that the house question should not be stopped or diverted into another channel; and Professor Aitchison has very much anticipated what I had to say. But this seems perfectly clear, that Vitruvius, whether or no we accept him as a guide through the house or through anything he describes, is, I think we may feel perfectly sure, an honest recorder of information on the subjects he treats of; and, therefore, when he tells us that there were temples of various kinds, going through the temples, the temple in antisprostyle, and the amphiprostyle and all the varieties, he passes at last to the hypethrum, and, after describing all the others, he only names one class of hypethral temples, and of this he can only name one example, that being the octastyle temple of Jupiter Olympius at Athens. It follows from this that the other temples of smaller size were not hypæthral, and therefore we are left to consider how those temples could have been lighted without this skylight. The doors were very lofty, and would admit a great deal of light when the sun was rising in their direction. Vitruvius gives us the hint that on those occasions, when the worshippers were making their orisons at sunrise, the gods would appear to rise from their seats. That is just what a person in a state of religious ecstasy might fancy: that when the sunbeams at sunrise struck upon the statue it would appear to enlarge itself and almost to rise. That is in favour of the idea that, generally speaking, the sun coming in by the eastern door shone upon the statue, and that that was the main lighting of the temples. Again, in the case of the chryselephantine statue, it would have been impossible to have preserved the statue from injury from the weather if there had been a large hole of that kind, whether or no it was protected by curtains in any sort of way. The deluges of rain that fall at Athens are something that here—much rain as we sometimes have we really have no idea of. I remember once at Athens, by the Temple of Jupiter Olympius, before the ground was made up as it is now, a sudden fall of rain occurred, and there was immediately a pond of large size, twice as big as this room, formed of water of some depth in front of the columns. Such rain would have fallen upon the statue and drenched it, and injured it to a great extent, if it had been only protected by awnings. Therefore, it is quite clear to me that where elaborate statues were placed they must have been protected by a roof.

MR. H. H. STATHAM [F.].—Sir, I only wish to say one word after what has been said by Professor Aitchison and Mr. Penrose on this subject.

I came here with the distinct intention of making a protest against what I call the insidious postscript which I believe is the raison d'être of Mr. Falkener's learned and interesting Paper; the argument being this: The Roman atrium had an opening at the top; the Roman atrium was copied from the Greek; the Greek, having an opening in the top of his own house, would be likely to put one in the top of his temple. As to the arguments against such an arrangement as is shown in Mr. Falkener's illustration, Professor Aitchison and Mr. Penrose have said nearly all that need be said; but there is one very striking argument which Mr. Penrose omitted to mention, and with which his name has been connected-that is, the very much increased importance which has been given lately to the idea of orientation not only of the Egyptian but of the Greek temples; and, of course, if the temples were specially built so as to be orientated, that immediately connects them with the idea of being lighted by the rising sun, and furnishes a reason why a door might have been considered sufficient without any other means of lighting. There is another point I have noticed in several discussions that have been reported on this subject at different times. Over and over again, in discussing the subject of hypæthral lighting, people refer to Pausanias's description of a temple, and say "Pausanias says nothing "about the lighting." But surely it might have occurred to people that if Pausanias often spoke of temples, and said nothing about the lighting, it was because there was nothing to say. I think that is a strong negative argument in favour of the idea that these temples were really lighted from the door and not from any windows, the position of which none of us can arrange satisfactorily. And, Sir, I want to enter a protest against that illustration in Mr. Falkener's Paper from another point of view. Mr. Falkener complained very truly of the terrible trench which the late Mr. Fergusson cut along the roof of the Parthenon at each side, which, from any position, must have been the greatest eyesore, not to speak of the fact that there is no sort of coin representation of anything of the kind. But if Mr. Falkener objects to Fergusson's longitudinal trench, I object just as much to his slash across the roof. How would it look from A great piece cut off from the the outside? middle of the roof! And from the inside I think it has the most commonplace and ill-considered appearance; it looks like an afterthought, and I should entirely refuse to believe that the Greeks could have treated such a building as the Parthenon in such a way, even supposing they wanted to light it from the top, which I think most people

now agree they probably did not.

PROFESSOR KERR [F.]. — Well, Sir. that question being settled at last, perhaps we may turn to what I understand to be the real subject

of the Paper. The House of Pansa, as delineated in the plan before us, gives us a very striking illustration of the Oriental origin of the plan of the Latin house. The difference between the Latin house and the Teutonic house is radically this: that the Latin house surrounds a court, and the Gothic or Teutonic house surrounds a hall. There is no hall in the Pompeian house, or in the Greek plan derived from it by Mr. Falkener. You observe that the central feature of the plan is the so-called peristyle. That peristyle is in reality an interior courtyard. It is of considerable size, and open to the sky with the exception of the colonnade around it. In order to find access to this chief central apartment there is in front an atrium, or what we should call nowadays an entrance-hall. There is in Mr. Falkener's theoretical Greek plan (and the idea is supported by what Mr. Penrose has said) an outer courtyard, corresponding to our forecourt, and on a large scale. Then there is the garden at the back of the central peristyle, and between the garden and the peristyle there is in the House of Pansa what I take to be the triclinium; while in the same position in his Greek house Mr. Falkener restores the Cyzicene triclinium, which is a dining-room open to the garden on three sides, and therefore very appropriate to an Eastern or Southern ménage. All this is conspicuously distinguished from the Teutonic or Gothic plan which is characteristic in England and Northern Europe, wherein the hall, enclosed and wholly covered from the weather, is the central feature. It seems to me, therefore, that this plan of the Roman or Greek house is very instructive. The same Latin principle is still carried out in modified forms by the Spaniards, the French, and the Italians at the present day; whereas all the Teutonic nations discard the internal court entirely as a place of abode, and rely upon the covered and enclosed halls.

THE PRESIDENT said that he did not pretend to be an expert on the subject before the Meeting, and therefore would not detain them with any remarks of his own. It seemed impossible ever to treat of Greek architecture, either directly or indirectly, without drifting into the interminable question of hypethral lighting, and that would never fail to be the case, as it was a problem which it was now absolutely impossible to solve. He wished, however, to refer to the very beautiful drawings which Mr. Falkener had lent as illustrations to his Paper. Those water-colour drawings were, the President believed, the work of his own hands; and, in putting the vote of thanks to Mr. Falkener, he was sure that, although of course the reading of a Paper naturally lost a great deal for want of the personality of the author in delivering it, he himself, had he been present, could not have been otherwise than pleased by the intelligent mastery of the subject displayed by its reader.



CHRONICLE.

THE INTERMEDIATE EXAMINATION.

At the General Meeting of the 20th inst., the President announced that an Intermediate Examination to qualify for registration as Student had been held at the Institute on the 14th, 15th, and 16th inst.; and that of the 25 Probationers who applied, 21 had been admitted—twenty of whom presented themselves, and were examined. Of these, fifteen had passed, and five were relegated to their studies. The fifteen, placed by the Board of Examiners in order of merit, are—

BRAND: Walter, Sunny Bank, Warrington Road, Ipswich

[Master: Mr. B. Binyon*]. WONNACOTT: Howard John, 280, Lordship Lane, S.E. [Master: Mr. T. Wonnacott*].

TYLEE: Edward, 29, Oxford Square, W. [Masters: Sir A. Blomfield* and Sons].

HAMMOND: Frederic Snowden, 1, Circus Place, E.C.

[Master: Mr. F. Hammond*

SCORER: George Oakley [Lincoln], Abercorn Lodge, Upper Hamilton Terrace [Master: Mr. R. Selden Wornum*]. CHATTERTON: Frederick, 14, Hillmarton Road, Camden Road [Master: Mr. John T. Lee].

SMITH: Richard Harold, 11, Montrose Avenue, Redland, Bristol [Masters: Messrs. Foster & Wood*

SMITH: Osgood, 87, Hanley Road, Crouch Hill [Master: Mr. George Low*]

HITCHCOCK-SPENCER: Edward Napier, Odsey Grange, Ashwell, Herts [Master: Mr. J. A. Cooke]. HORN: David, 95, Fitzjohns Avenuc, N.W. [Masters:

Messrs. Roe* & Richards Julian*].

GREEN: James Jameson, 10, Riversdale Road, West Kirby, Cheshire [Masters: Messrs. C. O. Ellison & Son]. WARE: Edgar Felix, Iddesleigh House, Heavitree Road, Exeter [Master: Mr. A. H. Tiltman*]

ANDREWS: Samuel Percy, 25, Castle Street, Hertford [Master: Mr. James Farley].

GRANT: Frederick Thomas, 7, Hastings Rd., Maidstone [Masters: Messrs. Ruck & A. W. Smith*].

MEAGHER: Jeremiah Joseph, 76, Leinster Road, Rathmines, Dublin [private study].

The asterisk * denotes members of the Institute.

These gentlemen have been registered as Students R.I.B.A., thereby increasing the number already on the register to 88, as against 41 last year, and 17 in 1891. The "Testimonies of "Study" submitted by Messrs. Chatterton and Scorer will be shown at the Exhibition of Prize

Drawings which is to be held at the Institute in the month of January.

The Qualifying Examination (Associate).

The President, in continuance of his announcement of the results of the recent Intermediate Examination, stated that sixty-nine applications had been received for admission to the Examination qualifying for candidature as Associate, twenty-one of whom had been relegated from previous Examinations; and that the Board of Examiners had admitted fifty-eight. The remainder (11) were rejected because the Probationary work which they had submitted was below the required standard of excellence. This Qualifying Examination commences on Monday, 27th inst., in London and Manchester, and lasts the entire week.

The Appellate Tribunal.

In consequence of the decision in the case of The Queen v. The Members of the Appellate Tribunal [reported p. 27], by which the High Court granted a certiorari to set aside a decision of the Appellate Tribunal on the ground that Dr. Longstaff, one of the members, was chairman of the Building Act Committee which had ordered the prosecution, and was therefore biassed, the Committee have recommended the London County Council to appoint Mr. Thomas Eccleston Gibb, Clerk to the Vestry of St. Pancras, to fill the place of Dr. Longstaff on the Tribunal.

Proposed Consolidation of the Building Acts.

The London County Council have given notice of their intention to apply to Parliament during the ensuing session for leave to bring in a Bill, the general object of which is to consolidate in a simpler form the statutes now in force regulating the management, formation, and laying out of streets and roads, and the construction. alteration, and control of buildings. To effect this object it is proposed to repeal all existing enactments in any public or local Act relating to these subjects, or some of such enactments, in order to substitute a new, enlarged, and amended code of law applicable to streets and buildings in London, to be embodied as far as practicable in a single Act. Among the subjects proposed to be dealt with are streets and ways, buildings and structures of every class and description, the rights of owners with respect to building or adjoining properties, rights of light, provisions as to new buildings, protection against fire, the appointment and control of district surveyors, the appointment of the Superintending Architect and appeals against his decisions, dangerous and neglected structures, dangerous, noxious, and offensive businesses, &c. Provision is to be made for the establishment of a tribunal to act as a Court for the hearing of appeals in relation to orders and rules of the

County Council, and with respect to matters arising under the Act.

The late Heinrich Lang [Hon. Corr. M.].

News of the death of Heinrich Lang, which occurred on the 4th of September last, was conveyed to the Institute on the 8th ult. by Dr. Josef Durm, Professor at the Technical High School of Karlsruhe, who kindly forwarded copies of the Karlsruher Zeitung of 7th and 8th September, from the biographical sketch in which, translated by Mr. Beazeley, Librarian to the

Institute, the following notes are taken.

Heinrich Lang was born at Neckargemund 20th December 1824, and educated at the Heidelberg Upper Grammar School, subsequently attending the Polytechnic School at Karlsruhe, and, after passing the examination for the third mathematical class, the four years' course at the School of Architecture, during which period he passed the necessary educational test for the State examination. On 1st November 1846 he was appointed, on probation, assistant instructor at the School of Architecture, and his architectural ability subsequently procured him a place in the office of Eisenlohr, whose star was then in the ascendant. A bright and youthful freshness at that period pervaded the architectural world of Baden, Eisenlohr's poetically-conceived railway-stations, Hübsch's great monumental works in the capital, his churches in the provinces, the grandeur and breadth of conception of his restoration of the cathedral at Spires, attracting many architectural disciples, arousing a spirit of emulation, and setting a brilliant example to students.

After duly passing the State examination he received his certificate as a practising architect in 1850, but continued to act as assistant instructor on probation in the School of Architecture, a post he filled so satisfactorily that in 1852 he was permanently appointed, becoming Professor in 1855. In 1868 he was elected Honorary Corresponding Member of the Royal Institute of British Architects, and in the same year was appointed Assistant-Commissioner of Works and Public Buildings, becoming a Chief Commissioner in 1878. In 1880, on Hochstetter's decease, he became Principal of the School of Architecture, an appointment he retained to the end of his busy and active life. In his capacity of academic instructor he was three times elected Director of the Technical High School, and under his administration that institution reached its highest perfection. In 1880 Lang was appointed by the German Emperor Member Extraordinary of the Academy of Architecture at Berlin; and in 1881 the oak-wreath of the Order of the Lion of the

First Class was conferred upon him.

As a practical architect his numerous buildings bear witness to his professional genius. His chief practice lay in school-architecture, wherein

he skilfully combined the features required by hygiene with those belonging to art. Discarding the jejune and meagre style formerly prevalent in buildings of this class, he gave the sister arts of painting and sculpture a due share in their design, with a view of educating and ennobling the taste of the rising generation. Numerous schools at Karlsruhe, and the grammar schools at Freiburg, Ettenheim, Ettlingen, Durlach and elsewhere were the creation of his genius, as well as the various University buildings at Freiburg and Heidelberg; and the Technical High School owes some of its buildings to him. To these works might be added a long list of business premises, hotels, dwelling-houses and villas, of which the most important are Model's establishment in Karlsruhe and the Victoria Hotel in Baden. The towers of the Protestant church in the latter city were designed by him from sketches by Eisenlohr. He took a successful part in competitions, and was a constant contributor to the professional journals.

Books and Pamphlets received.

Mr. Henry Faija has presented to the Library Normandy, its Gothic Architecture and History, by Mr. F. G.Stephens, an octavo volume published in 1865, and embellished by twenty-five photographs from notable Gothic buildings in Rouen (including three views of the Cathedral), Caen, Mantes, Bayeux, and Falaise. From Adelaide Mr. Edward J. Woods has forwarded an illustrated pamphlet on The Ventilation of Buildings, being a reprint of a paper read by him before the South Australian Chamber of Manufactures in November last, and containing an explanation of the elaborate system of ventilation that the author has lately carried out at the new Houses of Parliament, Adelaide. Mr. F. C. Penrose has presented a part of the Philosophical Transactions of the Royal Society, being a paper by himself On the Results of an Examination of the Orientations of a Number of Greek Temples, which was read before the Royal Society last April. Some Aspects of Lubrication, a pamphlet, by Mr. J. Veitch Wilson, has been received from Mr. Beazeley, Librarian of the Institute. The Secretary to the Government of India (Calcutta) has sent Notes on an Archæological Tour through Ramannadesa, by Taw Sein-Ko, who gives in a quarto pamphlet the results of his explorations in the country which constituted the ancient Talaing kingdom of Ramannadesa, undertaken with the object of elucidating the history of the places mentioned in the Kalyani inscriptions. The Great Palace of Constantinople, a translation by Mr. William Metcalfe from the Greek of the late Dr. A. G. Paspates (Alexander Gardner: Paisley and London), has also been added to the Library. The general and sectional reports of the International Maritime Congress, the second meeting of which was held this year in London under the presidency of Lord Brassey at the Institution of Civil Engineers, has been received (Unwin Brothers: London). The meetings of the Congress for the reading and discussion of papers were held in four sections, and in the publication a volume is devoted to each. Archæologia Oxoniensis, part iii. (Henry Frowde: Oxford & London), contains three papers as well as notes on recent archæological discoveries, and a list of books added to the Bodleian Library since October 1892. Messrs. Crosby Lockwood & Son have forwarded a muchwanted book, just published by them, entitled, Concrete: its Nature and Uses, by George L. Sutcliffe, of Manchester, an Associate of the Institute, who passed his examination in 1890.

Under the head of "Monographs of New "Buildings," in the Chronicle of the last issue of the Journal, it was inadvertently stated that the monograph of the new building for the Institute of Chartered Accountants was published by Messrs. Whittingham & Co., of the Chiswick Press. It was printed by that firm, the publisher being Mr. B. T. Batsford, of the well-known house in

High Holborn.

REVIEWS OF NEW BOOKS. II.

ART TREASURES.

Der Formenschatz, 1891, 1892, 1893, Nos. I. to VIII. 40. Munich & Leipsic. Price 1s. 3d. each part. [Georg Hirth, Munich; and Messrs. Williams & Norgate, 14, Henrietta Street, Covent Garden, W.C.]

We are indebted to the publishers for the contribution of the parts of this work as they have appeared, month by month, for now nearly three years. Each part contains about sixteen plates, produced by a photogravure process from various art objects in promiscuous order. It is bare justice to say that many of the plates are above the average in excellence of definition, choice of lighting, and completeness of representation. The subjects are selected at large from all the walks of art, pictorial, glyptic, or "applied." The volumes form, in fact, a museum through which the spectator wanders, with eye roaming from picture to cabinet, jewellery, ceramics, sculpture, needlework; all in most unexpected variety; a succession of beautiful objects, many rendered with admirable fidelity, without order or classification. There is no letterpress, except the index, which is threefold—one, numerical, following the order of the plates; a second arranged by classes of subject; and a third by names of the masters whose works are illustrated. In a short notice of the early numbers of the work (in August 1891) I pointed out that it would be an advantage to have on each plate some brief, descriptive title; and to forego the repetition, on each plate, of the title of the whole work. The latter repetition is a distinct disfigurement; and the titles to the subjects are often not at all explanatory. Take the first plate in the first number for 1893. This is an excellent representation of the marble torso of a Satyr from the Uffizi at Florence. But, instead of inscribing on the plate any of this information, the word "Antiquité" is repeated in two languages, and "Der Formen-"schatz" in four-so that all we learn out of more than ten words of inscription is that the object is an antiquity. The publisher does himself an injustice in thus "baulking his customer"; for, with plates thus promiscuously arranged, it is of the first importance to see at once what each represents. Moreover, the plates are really too good to be defaced by so many disjected fragments of prominent inscription. The double plate, 3 and 4 (1893), a facsimile of Andrea Mantegna's print of "a battle of river-gods," is first-rate. I may note that two original and varied drawings by the master, for the subject of this plate, are preserved at Chatsworth. Many of the plates show admirable examples by the great ornamentists of Italy, Germany, and France; examples which, when thus brought together, serve only too well to prove how superior to even the best moderns, those men were in the spontaneity, arrangement, balance, grouping, and grace of line of their compositions in pure ornament. Let any one turn over a few of these pages, note the sense of accomplished intention, "completeness," in each of these examples (whatever the style), and carry that recollection with him to the "Arts and Crafts" Exhibition, with its too evident struggles to attain—what? Is it beauty and grace of line, or is it a certain quaint association with some bygone time that is the main object? At any rate, the "repose" that results from perfected completeness (even with great elaboration) is very rarely to be met with in modern ornament, though it have much that is in other ways admirable.—J. D. Crace.

(4.) TWO PRIORIES.

Christchureh, or Withepole House: a Brief Memorial. By John Shewell Corder. Ipswich, 1893. Price small paper edition 1s. 6d.; large paper 10s. 6d. [Mr. S. H. Cowell, Buttermarket, Ipswich.] An Exact Account of the Church and Priory at Goring

An Exact Account of the Church and Priory at Goring in the County of Oxford. By Percy Goddard Stone, F.R.I.B.A. 80. Goring, 1893. Price 2s. 6d. [Mr. Henry

L. Smith, Post Office, Goring-on-Thames.]

Mr. John Corder is already well known as an enthusiastic and, withal, a most careful delineator of all that is picturesque in the architecture of East Anglia, and in this fine old house he has found a congenial subject, and illustrated it excellently both with pen and pencil. Christchurch Priory, known afterwards as Withepole House, and now again as Christchurch, is just within the town of Ipswich, though for many centuries it stood by itself in the country, and still retains in the park behind it a substantial reminiscence of its old demesne. Of the buildings of the religious foun-

dation, which was a house of Austin Canons, founded about A.D. 1170, nothing is left standing, the demolition following the suppression of the priory having been unusually complete; but though the original buildings disappeared, on their site, and in part from their materials, a large manor-house was erected within the space of a very few years, which, remaining as it has in a very perfect state to the present day, has now become invested with considerable architectural importance. As Mr. Corder remarks:—" In design "Christchurch mansion is especially interesting "as marking the epoch when the somewhat rigid "lines of the Tudor were beginning to be toned "down and modified by the freer treatment of the "Elizabethan era, the approaching advent of "which is indicated in several small matters of "detail." The house thus built in the reign of Edward VI. underwent great repairs and some alterations during that of George II., but the bulk of the old building was left intact, and the new work has harmonised with it remarkably well, while since that time nothing has been done to disturb its time-honoured aspect.

The book contains a complete history of the priory and the manor-house, together with much genealogical and biographical information about its successive owners; also a minute description of the buildings in their present condition, with a series of ten photo-lithographic plates of plans, details to scale, and perspective sketches, all from the author's own drawings. The latter should be specially praised, being accurate without being over-laboured, and showing exceedingly well the picturesqueness of the place without shirking or slurring over the details necessary to an understanding of its architectural character. The old house seems to have fallen at last on evil days its doom may even by this time have been pronounced—most fortunate is it, therefore, that such a capital record of it should exist. Work of this kind is generally a pure labour of love, but its usefulness is inestimable; and it is earnestly to be hoped that other workers like Mr. Corder may come forward, until there does not remain an ancient building in any county of England unillustrated and undescribed.

A valuable piece of work, both for its light on architectural and on social history, has been done by Mr. Stone, in the publication of his recent researches on the site of the little-known Priory of Goring-on-Thames; and he has succeeded, from what might have been thought very scanty materials, in compiling a most attractive book. Many people know well enough the quaint little church of Goring, so charmingly situated in the prettiest spot of the whole course of the Thames; very few, probably, have even guessed at the former existence there of the convent, of which it once formed part. Even keen and observant visitors to the church, while doubtless noticing

that it contained puzzles, and had, so to speak, something odd about it, can have gleaned but little concerning its true character and history; since every vestige of the actual "Nuns' Church," of which the present parish church was the nave, as well as of the other conventual buildings, was completely hidden underground, and their very memory nearly lost, until just now revealed by Mr. Stone's persistent and fortunate labours of the last two years.

Systematic excavation has resulted in the tracing of the whole plan of the Priory buildings, which, elucidated in Mr. Stone's book by every attainable piece of documentary evidence, and by a comparison of the plans of similar small nuns' priories, enables us to picture in considerable detail a distinct and notable phase of mediæval life. The thoroughness of the modern school of antiquaries, as compared with the monument-hunting race of the last century, is well exemplified by the difference between the work contained and described in this book and that accomplished on the same spot even by so eminent a man as Hearne, whose interest seems to have been bounded by what Mr. Stone happily describes as "the usual gruesome "delight of the period in sepulchral archæology."

The Nuns' Church at Goring (which absorbed a previously existing Norman parish church, now again standing alone) is shown to have been mainly of the Lancet-Gothic period: very few worked stones belonging to it could be discovered, but the excavations produced a great number of encaustic floor-tiles, dating mostly from the thirteenth century, and of unusual excellence. Of these no fewer than twenty different patterns and devices are figured and described, remarkable not only for their design, but for their rich and varied colouring, comprising, besides the ordinary arrangements of white or yellow on a red or brown ground, such combinations as white on grey and on yellow, two yellows together, yellow on various shades of green, and even one tint of green on another. It is satisfactory to note that these tiles have been carefully preserved, Mr. Stone having pieced them together, and inserted them in the wall of the vestry of the present church.—ARTHUR S. FLOWER.

SLUMS AND ROOKERIES.

London Rookeries and Colliers' Slums: A Plea for More Breathing Room. By Robert Williams, A.R.I.B.A. Price 1s. [Mr. W. Reeves, 185 Fleet Street.]

That Mr. Williams has devoted much thought and sympathetic pains to the subject about which he has written nobody will deny, and his alleviating plans have the merit of being thoroughly practical and well studied. This being so, it is the more to be regretted that he has followed in the footsteps of falsely so-called "Social Reformers," and thus marred what should have been strictly an architect's criticism on architectural blundering in

provision of homes for the poorer classes, with suggested amendments thereon. For example, whilst all will agree with him in condemning the barrack-like blocks of six and seven-storey high dwellings, with their attendant risks in case of fire, and their heavy tax on the weary toiler in ascending to their dreadful heights, there could be no necessity to echo the absurd cry about the wicked ground-landlord which pervades some pages of Mr. Williams's book. Why should not any owner of land turn it to the best advantage from his own point of view, and why should he remain one day longer than he chooses in any particular part of either town or country? I never hear of lessees paying more rent to the ground-landlord than is inserted in the lease, and why should the groundlandlord be held up to obloquy because he does that which he is perfectly entitled to do—i.e. get the best value he can in the best market? What we have rather to consider is how to frame laws which, whilst avoiding confiscation on the one hand, shall provide for the health and general well-being of the community at large on the other.

Mr. Williams gives on page 15 a sketch showing an "example of crowding by deliberate street "planning," and it is to be hoped that his painstaking statistics will prevent, for example, the further development of such "developments" as he shows in a block between the Whitechapel Road and Fieldgate Street (figs. 7 and 8), and in the plans and sections following (figs. 10, 11, 12, 13, 14 and 15); but he must rather blame the Act of Parliament than the owners of the land for the want of breathing space which he clearly shows. Notwithstanding, however, the many what I conceive to be blemishes of his book—chiefly by reason of his support of the new doctrine of spoliation—Mr. Williams has done good service in publishing it, and I should much like to see a trial of his skill given by an order to erect a few of the well-planned "pair of colliers' homes" illustrated on his page 73.—WM. WOODWARD.

(6.

INDIAN ARCHÆOLOGICAL SURVEY.

South-Indian Inscriptions, Tamil and Sanscrit. Edited and Translated by E. Hultzsch, Ph.D. Vols. I., II. Madras, 1890-2.

The Epigraphia Indica of the Archæological Survey of India, Edited by Jas. Burgess, L.L.D., C.I.E., assisted by A. Führer, Ph.D. Vol. II., Part XIII. Calcutta, 1893.

Dr. Hultzsch was appointed Epigraphist to the Government of Madras in 1886, and already he has produced two volumes, in four separate parts, of inscriptions with translations. These have been presented to the Institute by the India Office. Some of the inscriptions are in Sanscrit, but the most of them are in Tamil. A few of these are copper-plate grants, but the greater number are inscribed on pillars, niches, and walls of temples. On such records it might have been expected that some

reference to the architecture of the region would have been found. This is not the case. It would have been of great value to have discovered even the slightest hint regarding the origin of the temples peculiar to the South of India. Many of these are large establishments, and enclosed within walls, which cover a considerable space of ground. Within these places there were generally a number of temples with halls and tanks, besides houses in which the Brahmins lived, as well as accommodation for the temple nautch-girls, attendants, and servants of all kinds; many of them were so large that they might be looked upon as small The inscriptions record grants of villages with land and money to the temples; the gifts to the Rajarajesvara Temple at Tanjavur—or Tanjore—appear as something fabulous. Immense quantities of objects in gold are recorded as having been given to this temple. These include figures of gods, bowls, vases, umbrellas, ornaments, girdles, bangles, pearls, and precious stones of all kinds. There are pages following pages of lists describing these precious articles. If the inscriptions tell nothing about the architecture of the temples, they at least give us a glimpse of the vast wealth that must have been hoarded up in them. The inscriptions are of most value to those who are working out the past history of India, as they give details which assist in filling up the lists of the various dynasties; they also supply dates, and in that they are of use in following out the progress and development of the various architectural styles. To this it may be added, that at times, where the old names of temples have been lost, they are now found in these inscriptions. When Fergusson was writing his part of the Cave Temples of India, he found great difficulty in knowing what name to give the place where the Seven Pagodas stand. This is on the seashore about thirty-five miles south of Madras. Out of a number of names he selected "Mahávallipur"; Dr. Hultzsch now finds from the inscriptions that its correct name is "Mâmallapuram." Dr. Hultzsch's notes, as might be expected, deal with the historical bearings of the inscriptions; but he makes one reference to a temple which is important. It is that when Dr. Burgess visited the comparatively insignificant temple of Kailâsanâthasvâmin Kânchîpuram—Conjeveram—he discovered that it was built in the Pallava style of architecture, and that it belongs to the sixth century A.D. This is an early date for a constructed temple in India, and it will probably go far to establish the period to which Fergusson ascribed the Seven Pagodas, which was to the same century.

The Epigraphia Indica, part xiii., vol. ii., gives a series of new readings of the Pillar edicts of Piyadasi-Asoka, by Dr. Bülher. Asoka, whose date was about the middle of the third century B.C., ruled over the whole of India, from the Peshawer Valley to Madras, and from the Hima-

layas to the western point of Gujarat. Over this wide space he caused edicts of a religious and moral character, and intended for the benefit and happiness of his subjects, to be engraved on pillars, and on rocks. The pillars are called Lats, a word that means "Staff," or "Walking Stick;" the best known of these being the one in the Fort at Allahabad, and Firoz Shah's Lát at Old Delhi. These old Láts now form a series of important monuments in relation to the ancient architecture As Asoka became a convert to Budof India. dhism, and is often described as the Constantine of that faith, these inscriptions have been interpreted up to the present as expressions of Buddha's teaching. The exhortations which they contain against taking animal life have been looked upon as satis. factory evidence of this. Dr. Bülher now affirms "that Piyadasi-Asoka had not joined the Bud-"dhists when the Pillar edicts were completed." His conversion did not take place till the twentyninth year of his reign. "Up to the end of his "twenty-seventh year the king continued to preach "and otherwise to work for the spread of that "general morality which all Indian religions, "based on the Jñánamárga, or Path of Know-"ledge, prescribed for the people at large, and "which was common to the Brahmans, Jainas "and Buddhists." Fergusson, going upon the received theory that Asoka was a Buddhist, and that the inscriptions were edicts of that faith, naturally included the Lats in his classification of Buddhist architecture. A more rigid classification may rank them as pre-Buddhist.—Wm. SIMPSON.

NOTES, QUERIES, AND REPLIES.

The London Council's Proposed Bill.

In connection with the proposal [p. 50] to bring in a Bill having for its object the consolidation or the various statutes in force relating to the management of the Metropolis, it appears to be in contemplation to introduce the measure into the House as a private instead of a public Bill. The matter would therefore be dealt with in the ordinary course of things by a small Committee, instead of the whole subject being freely discussed before a numerous Select Committee, as would be the case if it were introduced as a public Bill. The suggestion that a measure, dealing so largely with the concerns of this great city, and affecting as it does the rights and interests of individuals in all matters connected with building operations, should be introduced as a private Bill demands serious consideration, especially by members of the Institute.

Proposed Systematic Testing of Bricks & Brickwork. From the Science Standing Committee—

During the past Session the question of instituting a series of practical and authoritative tests, and establishing reliable data as to the relative strength of bricks and brickwork, has been brought before the Science Committee by Mr. Burrows, one of its members. At the present time there is no accurate information available upon the matter, which, while of no great moment in respect of the brickwork of domestic or ordinary buildings where the bases of walls are of ample dimensions, becomes of enormous importance when great weights have to be supported upon a limited base, as in the case of piers to carry the floors of lofty warehouses for heavy materials, and the possession of exact knowledge upon the subject should be fully appreciated by the architectural profession. The Science Committee referred the subject to a sub-Committee, composed of Messrs. Burrows [A.], Faija [H.A.], and William C. Street [F.], and they have made a preliminary report descriptive of the need of investigations and of the manner in which it is proposed to conduct them.

P. GORDON SMITH.

The sub-Committee's report is as follows:—We have carefully considered the question submitted to us in regard to this proposal, and beg to submit the following suggestions for your consideration.

It has been shown that the resultant strength of brickwork is much less than we should be led to expect by a study of the actual powers of resistance to crushing of bricks alone, and the object of our proposed inquiry is an endeavour to ascertain the ratio between the strength of bricks and of the same bricks when built in walls or piers.

An extensive series of experiments is not required to enable us to establish a constant by which, from the known strength of any particular brick, we could calculate the amount of diminution in strength produced by the introduction of cementing materials of known quality and composition. Our experiments, therefore, should be directed to the establishment of the ratio subsisting between the original strength of the bricks and of the brickwork formed of the same material, or, in other words, the diminished resistance to crushing due to jointing and bedding.

To effect this we consider it necessary to experiment upon at least three classes of cementing material, viz.:—(a) lime and sand, (b) hydraulic lime and sand, and (c) cement and sand, each mixed in the proportions considered relatively suitable; and upon at least two classes of bricks,

viz., those with and those without frogs.

To eliminate as far as possible all chance of error the testing should be in duplicate or triplicate in each case, and it should be carried out upon piers of at least two bricks square, properly bonded so that a fair number of mortar joints would be submitted to the test, and the piers should be of a suitable height, and of the same dimensions, so that comparative results may be obtained.

To prevent as far as possible any chance of disintegration of the joints by moving the piers, we suggest to construct them on cast-iron bases, about 2 inches thick, so that they need not be

removed from the foundation on which they were

originally built for testing.

The testing should be made at suitable intervals after the construction of each pier—say at the termination of 3, 6, 9, and 12 months from the date of building.

The construction of the piers and the subsequent testing should be carried out in the presence of some of the members of the Science Committee, and accurate notes of the particulars of bricks, cementing materials, and results of testing, should be properly tabulated somewhat in the manner proposed in the tables appended.

For the guidance of the Committee we venture to suggest the following method of procedure:--

(1) Test the bricks to ascertain the resistance to crushing alone without cementing material, noting the particulars as shown in the appended Table (A).

(2) Test the cementing material for tensile strength, carefully describing the exact nature of the ingredients, and the proportions used, as

shown in Table (B) appended.

(3) Construct the piers all of the same size and height, $18'' \times 18''$ by, say, 6 feet high (equal to twenty-four courses at least), and in the manner shown in Table (C), noting the particulars as per Table (D).

(4) Test the piers and record the results as per

Table (D) appended.

Table (A). -Particulars as to Bricks. (Index No. to each.)

Name and address of maker.

Name of brick.

Quality or variety

f Hand, kiln, clamp, machine, pressed, How made dressed, wire cut, or polished.

Length. Size Breadth. Thickness.

Frog { How many. Shape of. If plain or barred.

Colour. Specific gravity. (a) When dry.

Weight (b) After soaking in water for three days under a head of 22 feet.

Date of test for crushing strength. Authority for crushing strength.

Load required to crack the brick, in tons, per brick, per square foot.

Add information as to clay from which brick is made, geological formation, chemical constitution, &c., if ascer-

Table (B).—Particulars as to Cementing Materials. (Index No. to each specimen.)

Maker's name and address. Weight.

Cement and Residue after sifting at various sizes. hydraulic lime Tensile strength atter 3 days. and lime.

Initial set.

Expansion or contraction.

Pit or river. Washed or unwashed. Sand Coarse or fine. Quartzose or felspathic.

Size of grain. Proportion of cement or lime to sand. Table (C). - Method of constructing Piers. (Index No. to each.)

For 3 months; test. Wire cut (no fr 1. In lime. 2. ,, hyd. lin 3. ,, cement 4. ,, cement	1. In lime, ne. 2. ,, hyd. lime. 1 to 3. 3. ,, cement 1 to 3.
For 6 months, 2., hyd. lin test. 2., cement 4., cement	1, In lime. 1 to 3. 3. ,, cement 1 to 3.
For 9 months, test. 1. In lime, 2. ,, hyd. lin 3. ,, cement 4. ,, cement	1 to 3. 3. ,, cement 1 to 3. 1 to 5. 4. ,, cement 1 to 5.
For 12 months, test. 11. In lime. 2. ,, hyd. lin 3. ,, cement 4. ,, cement	1 to 3. 3. ,, cement 1 to 3.
16 piers.	16 piers.
16 duplicates.	16 duplicates.
32	32
32 piers without frogs, 32 piers with frogs.	

Total 64 piers.

Table (D). — Particulars of each Pier. (Index No.)

How constructed $\left\{ egin{array}{ll} (a) \ \mbox{In mortar.} & \mbox{Weight.} \\ (b) \ \mbox{In cement.} & \mbox{Plan of Courses.} \end{array} \right.$ Height. Size Width. Width.

Number of Courses. Date of building. Date of testing. Authority for testing.

NOTES.

Ancient Roman Mortar.

From E. P. Loftus Brock, F.S.A. [F.]

It is not unfrequently stated or implied by writers, and believed by many observers of our ancient buildings who ought to know better, that no mortar can be of ancient Roman date unless it is formed with powdered brick. A red or salmon colour is at once accepted by this class of observers as indicative of real Roman work, and any other description is rejected as being of later date. There can hardly be a greater mistake. Roman mortar is as varying in its component parts as it is in its goodness; for it is certainly not all mortar of Roman date that is flint-like in its hardness.

Almost all the domestic buildings executed in England, villas and such-like, were built with very poor mortar, usually formed of chalk lime, which goes to pieces after a frost or two whenever buried work laid bare by excavation is so left without

being covered over again.

There is a good example of the use of mortars of very different composition in a single building that may be well to indicate in this brief note. The Roman Pharos in Dover Castle will render evidence to an observer that it was designed with care and with fair regard to regularity. It is of solid and good construction, and it appears to be of moderately early rather than of late Roman

date. The facings are of squared blocks of what I have heard called Tufa, but which are of lime concretions formed of the cells of coraline-like insects, rather than being of volcanic origin or of brown colour. This material is found in several parts of Kent, and some from Leeds, in that county, is now before me, recently dug there. The facings are relieved with the well-known bands of red tiles. The regularity of construction and its appearance prevents any belief that the work was erected at different periods. And yet the mortar in one position is very different from that used elsewhere, all being fairly hard and good.

Mortar with pounded brick appears here and there only, sometimes to the blocks of facing, sometimes as if intended only for bedding the bands of tiles, sometimes even to the rubber filling-in. In one place a block of this red mortar has been built in as old material. Elsewhere, the mortar is formed of darkish brown gravel and sand. In another place the mortar is lightcoloured, from the use of rather white sand and minute water-worn pebbles. At the level of four or five feet from the present ground the observer may trace all three descriptions of mortar in walking around the building. It is evident that during the construction various mortar heaps were mixed with whatever materials came closest to hand, and served up at random in whatever part of the scaffolding it was called for. It is of interest to note that in this building, as in others that might be cited, scored flue tiles and roofing tiles have been used in some few places instead of the more even bonding bricks, the wide and coarse joints, so usual in Roman works, readily allowing for a good deal of irregularity in the bedding. It may be added that, while the appearance of red mortar, as is so well known, is a pretty certain indication of Roman work, when it occurs, yet it is found also in some few mediæval buildings. I pointed out a patch or two formed of it, mixed with modern cement, in the ancient walls of Southampton, during the visit of the British Archeological Association in August last, and at the first glance we thought it was Roman mortar adhering to stones removed from elsewhere.

The Hittite Style of Architecture.

From WILLIAM SIMPSON, R.I. [H.A.]

Hittite sculpture is now, to a certain extent, known from the few examples that have survived; but as none of the buildings of that people exist, we have nothing left to indicate their style of architecture. That they had a style of their own can now be shown from monumental evidence. In Vol. VI., the last published of The Records of the Past, edited by Professor Sayce, New Series, there is a translation, by Professor Robert W. Rogers, of an inscription of Sennacherib describing a number of his campaigns, at the end of which there are some interesting details about the buildings he

erected at Nineveh, and one of these was a new palace. The inscription states—

The place of the old palace I left,
With earth from the river bed I filled it up.
The tower ground I raised 200 tipki
above the level. In a favourable month
on an auspicious day I built on this foundation

on an auspicious day it built on this foundation according to the wisdom of my heart a palace of *pilu* stone and cedar wood, in the style [?]

a palace of pitt stone and cedar wood, in the style [?] of the Hitties, and a great palace in the Assyrian style [?]

which far exceeded the former in adaptation, size and artistic excellence, through the work of the wise builders of my royal rule.

From this it may be assumed that the Hittite style must have had some merit and celebrity attached to it, when a mighty and victorious monarch such as Sennacherib, and his "wise "builders," condescended to copy it for a royal palace. The reign of Sennacherib lasted from 705 B.C. till 681 B.C. There is another interest that may be attached to the words quoted above, and that is the introduction at that early date of a foreign style into the architecture of Assyria. On this head alone the point is worth noting.

A note in the first volume of *The R.I.B.A. Journal* [N.S. p. 117, *note*] explains that *pilu* stone was a species of white marble brought from Armenia. The name is derived from the Vannic *pulu-si*, which meant "engraved;" but more probably that should be rendered as "sculptured," and derived its name from having served this purpose.

Vitruvius's "Grecian House" and the Moderns.

From WILLIAM H. WHITE [F.].

When, some sixteen years ago, I used to study daily for literary purposes in the Reading Room of the British Museum, taking notes from authors who have written on the houses of past ages, nothing amazed me more than the blind faith with which Perrault, Galiani, and Newton, and, in later times, the Abbé Barthelemi (author of the Travels of Anacharsis), Mazois, and even Becker, treat the rambling description left by Vitruvius of the Grecian House. Perrault and Galiani divided it into two peristyles—one of four porticoes for the men, and another of three porticoes for the women. Perrault placed the women's half next the street, and the men's half at the back of the house—as Vitruvius describes—so that it would have been necessary to pass through the parts reserved to the matron and her spinsters in order to reach the master's apartments. Galiani placed the two halves side by side, and gave each division an entrance from the street. Newton accepted Perrault's version, and they made the Grecian House described by Vitruvius a palace with a frontage to the street of about 275 feet and a depth of some 350 feet. The author of the Travels of Anacharsis did more. He evolved out of the Vitruvian text a modern mansion of about 360 feet square, with streets of 25 feet wide on three sides of it, and converted its thalamos into

a comfortable bedroom, 32 feet by 25 feet, with two windows looking on a garden. Becker, not being an architect, has dispensed with any formality of scale to his plan, but allowing a width of five feet to his entrance passage from the street, and three feet for the doorway, he shows an area of construction equalling the size of the Parthenon, which is modest in dimensions when compared with those of Perrault, Galiani, Newton, and others.

What remains in Athens to hint, however remotely, that the ancient city ever contained even a dozen houses equal to the magnificence suggested by modern scholars? In Xenophon's time (about the sixth century B.C.) it is extant that there were 10,000 houses in Athens—not improbable as houses now go in Asia Minor, India, and the East generally. Something is also extant of the attempts made by Themistocles to prevent the increase of building obstructions in the streets; and in the fourth century B.C. Demosthenes deprecated, in a celebrated oration, the efforts of any individual to outdo his neighbour by ostentatious building. Nevertheless, about 300 B.C., Dicearchus said that Athens was full of small mean houses in crooked streets, and that "a "stranger might doubt upon a sudden view "whether this was really the city of Athens." Was the Grecian house of Vitruvius built after that date? If so, and if the house described by him was built in his time, can it be fairly called "Grecian"? Distance often lends enchantment to the view, and after lapse of years memory gives its size.

As learned commentators view In Homer more than Homer knew—

so the architects and historians of the last 250 years have endowed the ancient Greek with the results of all their accumulated experience; and the text, copied and recopied by mediæval scribes, of Vitruvius, who had never visited Athens, and whose description of the Grecian house was obtained at secondhand, has been treated by moderns with a respectful and almost religious fervour.

Mr. Falkener's essay is a practical contribution to the discussion of this subject. He gives the plan of a large Græco-Roman house—the house of Pansa—the walls of which are still standing; and, upon a similar plot of ground, in a like position, he constructs another house, not very much larger, from Vitruvius's imperfect description, the paragraphs of which he re-arranges in intelligible sequence. Unlike Perrault, Galiani, Newton, and others, who divided the Grecian House described by Vitruvius into two parts or peristyles, Mr. Falkener constructs it of three divisions: (1) the Vestibulum, which forms an entrance courtyard; (2) the Aula, or Hall, around which is arranged the living-house itself; and (3) the Peristyle, containing the various rooms described as being in such position. Obviously only a few such houses could have existed in Athens at a period when the

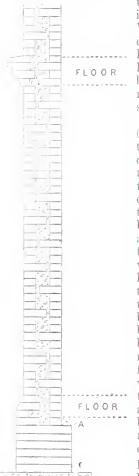
State lavished the wealth of the community upon monuments for everybody's use and delight, when public magnificence was the fashion—the State being everything, the individual relatively nothing.

QUERIES.

3. Brick and Concrete Walls.

From John Gethin [A.]—

Annexed is a specification of what I believe is a new kind of walling, which I have successfully



used for external walls in exposed positions in Wales. I shall be much obliged if anyone will kindly let me know if he has heard of such walls being used before. If not, I shall be pleased to send further particulars.

I claim for these walls. (1) that the cost is about the same as a solid brick or stone wall; (2) that they are perfectly watertight, and that they may even be used for storage tanks; (3) that they may be made of any thickness above 9 inches; (4) that they will not harbour vermin, as is the case with hollow walls; (5) that they are much cheaper than ordinary concretebacked walls, no staging being required; (6) that bricks of unequal thickness may be used for the front and back linings, which is often an advantage; (7) the concrete adheres so strongly to the brickwork that it is almost impossible to get out a brick except in pieces. At A is a dampproof course.

Extract from Specification.—The whole of

15-inch exterior walls to main building to be faced with Cattybrook wire cut bricks, built in Flemish bond, and pointed in black mortar. One header in every six to tail into walls, the other headers



Plan of Damp-proof Walls used in a house at Penarth.

being snap headers. Line the inside of wall with $4\frac{1}{2}$ -inch brick with through headers. The 6-inch cavity thus formed with these two $4\frac{1}{2}$ -inch walls

to be filled in with concrete, to be composed of one part of Dragon cement (obtained in South Wales) to five parts of clean sharp fresh-water sand and hard burnt vitrified clinkers or approved rough gravel, the proper proportions of cement and gravel being measured in roughly-made boxes.

4. "Ignorance concerning Woods."

In a Paper bearing the above title, and read at the International Forestry Congress at Chicago, architects are severely criticised for ignorance concerning woods. They can tell us, says the author, about the wearing quality of different stones, the crushing strength of this material and that, but when it comes to any specific knowledge of the "lumber" used inside of our houses for doors, casings, floors, and possibly ceilingsobjects which are constantly before our eyes—they are wofully ignorant. When furnishing a fine house you select colours to carry out a general idea of harmony. If the upholstering of the furniture, the carpets, or the portières were to turn another colour the harmony would be destroyed. So it may be destroyed through the architect's lack of knowledge. Were the question asked: I desire to finish my dining-room in one kind of wood, my reception-hall in another, my library in another; and, as these rooms are practically one, what woods shall I use in order that the harmony may be preserved after the house shall have been in use for years?—the author of the Paper ventures his opinion that few architects could answer such a question; that too little attention is paid to these vital points, which are most intimately connected with the business of the architect, and should be regarded as part of it.

Under the head of "Timber (as Material)" in the Institute Library Catalogue, is a list of a few books, pamphlets, and Sessional Papers, bearing date from 1835 to 1881, but they are relatively unimportant. It would be desirable to obtain, from members and others information, respecting recent books on the subject of "Woods," and of museums or schools in which specimens are collected for exhibition and study.

5. Novel Fire Protection.

An American journal recently called attention to a device for the protection of shingle roofs from fire which is being introduced in some of the cities of the United States. It consists of nothing more than a water pipe running along the ridge-board of the roof, and connected with the water surface of the building. The roof pipe is perforated at short intervals, so that at a moment's notice the roof can be flooded and rendered impervious to sparks and blazing fragments blown from burning buildings in the neighbourhood. The device is stated to be at once so simple and effective, that one wonders why its introduction was not coeval with that of water-mains and hydrants.

Has any invention of the kind been patented, or has a similar appliance ever been tried, in this country?

REPLIES.

1. Helmingham Hall [p. 25.]

From H. D. SEARLES-WOOD [F.]—

In response to the query in the last issue of the Journal, I think it may interest some readers to know that the Architectural Association visited Helmingham during its annual excursion this year, Lord Tollemache having kindly given us permission to visit his house and sketch any features of architectural interest. The house is a quadrangular structure, and has a very interesting courtyard in the centre, built about the reign of Henry VIII. The rooms have many of them been modernised from time to time, but they contain a most interesting collection of pictures and rare old books, and several musical instruments which belonged to Queen Elizabeth. The exterior of the house has been so carefully preserved that it seems rather to lack interest, although it is a most varied group of roof gables, chimneys, and mullioned windows. The most which surrounds the house contains such excellent water that none other is used in the house to the present day, and the drawbridge has been raised every night since the house was built. Beyond the moat the charming gardens are also enclosed by formal canals and walls. When we arrived we were shown through the rooms by the steward, but were surprised to be told that no sketch or photograph was allowed to be taken of the interior or the courtyard. This probably accounts for the very few illustrations of an interesting house which, as stated, is well worth the attention of Architectural Students. It is to be hoped that, in the event of any of the Institute Travelling Students making an application to measure and illustrate the building, the Council of the Institute will support the application; and that Lord Tollemache will consent to relax his rule. The illustration in the Excursions in the County of Suffolk is of the exterior, and was drawn and engraved by T. Higham; and several illustrations of the exterior were published in the professional papers at the time of our excursion. Helmingham is also referred to, in the interesting article on the late Lord Tollemache, in the October number of The New Review.

2. The R.I.B.A. Mottoes [p. 25].

Another Probationer has come to the rescue of the perplexed officer whose case was stated in the last issue of the Journal, by forwarding the Institute motto translated thus—"For the Use of "Citizens and the Decoration of Towns." But, alas! here are ten words where four were wanted. The Charter itself is only a little more prolix in declaring architecture to be "an art esteemed "and encouraged in all enlightened nations as "tending greatly to promote the domestic con-

"venience of citizens and the public improvement and embellishment of towns and cities." Might "Usui civium, decori urbium" be Englished—"Civic Use, Urban Embellishment"? says a man in the street. But it is not happy. Mr. Justice Credulous would rather die of a dose of black arsenic than believe that four Latin words could bear a meaning so restricted as that of the abbreviated translation; and he would be right.

From Allan O. Collard [A.].—

If the Probationer who perplexed an officer of the Institute could be induced to accept an abbreviated translation of the Motto, "Usui civium, "decori urbium," in, I think, "terse, expressive, "readable English," it may be found in the following rendering "For Use and Beauty." The two words "Cudi jussit," on the Royal Gold Medal, are unimportant and superfluous, I venture to think, as the words "Victoria Regina" effectually indicate the Royal command.

From Paul Waterhouse, M.A. Oxon. [.1.]---

"Usui civium, decori urbium." And so a Probationer has been asking for the meaning of our ancient motto. Fresh from examinations this Probationer becomes examiner, and calls upon the Institute to construe, nay, more, to take the four mystic Latin words and to supply four English equivalents. We have now a Notes and Queries column (of the composite order), and the officer to whom this "poser" was addressed has done well to transfer his grievance to our new and excellent vehicle of inquiry. The Institute at large has been entreated to gaze with the eye of intelligence on the ancient sentence which fortnight by fortnight appears upon its Friday breakfast-table. For once we are bidden to abate the ardour with which the inner contents of the Journal are attacked, and to meditate on the words which we generally "take as read."

Some one, no doubt, is communicating to this very issue of the Journal both a correct translation and a statement of the circumstances under which the motto was compiled or adopted; but I hope not. There are mysteries from which the

veil should not be too rudely plucked.

The feat of translation into four words would, to be sure, be a linguistic achievement of such importance that to withstand it were corporate selfishness; but if that be withheld, let us cherish the blessed ambiguity of our oracle, let us each retain the right of reading into it our own meaning. That is the orthodox treatment of oracles.

Keep it wrapped in Latin, and it is all things to all architects. To one man it is a solution of the "art and profession" problem; to another it is mystic evidence of the harmony of the Useful and the Beautiful; to a third it breathes the comforting but fallacious assurance that if you will take care of the drains the architecture will take care of itself; and to a fourth, it is—Greek!



9, Conduit Street, London, W., 23 Nov. 1893.

MINUTES. II.

At the Second General Meeting (Ordinary) of the Sessiou, held on Monday, 20th November 1893, at 8 p.m., Mr. J. Maevicar Anderson, President, in the Chair, with 27 Fellows (including 9 members of the Council), 23 Associates (including one member of the Council), 3 Hon. Associates, and several visitors, the Minutes of the Meeting held 6th November 1893 [p. 26] were taken as read and signed as correct.

The Secretary announced that, as no requisition to take the votes for candidates for membership, whose names were announced in the last issue of the JOURNAL, had been received, the said names would be submitted for election (by show of hands) of Fellows and Associates present at the Business General Meeting to be held on the 4th December 1893; and the candidates' names were again read.

The following Fellows, attending for the first time since their election, were formally admitted and signed the Register of Fellows, namely:—John Flavel Curwen (Ken-

dal) and Thomas Butler Wilson (Leeds).

The President announced the results of the Intermediate Examination held on the 14th, 15th, and 16th November 1893, and read the names and addresses of 15 Probationers p. 50) who had passed, and were registered as students. The President made a further announcement respecting the Examination qualifying for candidature as Associate, to be held the next week in London and Manchester.

to be held the next week in London and Manchester.

A l'aper, by Mr. Falkener, on The Grecian House as Described by Vitruvius, was read in the absence of the author by the Secretary; and the Paper having been discussed, a Vote of Thauks to Mr. Falkener was passed by acclamation, after which the Institute adjourned, at 10 p.m.

PROCEEDINGS OF ALLIED SOCIETIES.

LIVERPOOL: OPENING MEETING.

Ou the 16th ult. the Opening Address of the session of the Liverpool Architectural Society was delivered by the President, Mr. Henry Hartley [F.], who began by reporting progress made in the educational scheme which was iuitiated at the Congress of the Royal Institute and the Allied Societies at University College, Liverpool, iu the month of April last. A petition, signed by a large number of practising architects in Liverpool, had been presented to the Technical Instruction Committee of the City Council, begging their assistance and co-operation in the scheme, and intimating that in the event of the institution of a School of Architecture, they were prepared to promote its success by every means in their power, and to insert a clause in the articles of their pupils enabling them to take advantage of the special training which such a school would afford. The result so far had not been as favourable as the promoters anticipated; but there had been a distiuct step in the right direction, the influence of which had not been lost. The President would, however, add a few thoughts of his own on what they could not fail to regard as a subject of the greatest importance and of practical value to their Society, with the object of inspiring all to

help forward a movement fraught with the best interests of their profession, if they were to fulfil their mission, and elevate a study and practice which ranked among the noblest and most exalted professions of their time. Architectural education was twofold. First, through the eye they were enabled to study and compare all those things that were so beautiful in Nature and in Art. Their conceptions were quickened as they gazed on and studied the glorious examples of the art of past ages, and their tastes refined as they realised in detail what made these works so noble and dignified, and what gave them that grace and finish which roused their deepest admiration. This was but one aspect of their educational process; the other, which was equally important, required them to gain by reading and book learning that technical knowledge necessary to fit them to bring to practical issue the visions and fancies which inspired them. Thus, the most beautiful design, unless based on the laws of proper construction, failed to inspire the beholder with appreciation of its truthfulness, and without a knowledge of construction, sanitary laws, the qualities and value of the materials at his command, the design of the architect failed to become a lasting memorial of his skill, or of practical value to the world, even if he could carry into concrete form what he had so skilfully designed with pencil and brush.

Then, although the mere training and skill in design, based upon the observation and study of their art monuments, could not fit even the most artistic student, with a soul full of exquisite dreams of beauty, to carry out his conception, if he lack technical skill, so, on the other hand, mere technical knowledge and learning culled from books might fill to overflowing the mind, yet without the artistic skill and power borne in upon the conception through the eye, the architect would fail to produce what was true and beautiful in art. Each method of learning must ever be sisters born, if man was to produce the true triumph of

practical genius. Sang the poet:

"Who can tell the triumphs of the mind By truth illumined and by taste refined?"

Ruskin, in his Seven Lamps of Architecture, at the outset discriminated in his own subtle reasoning between architecture and building; and as he proceeded with the definition of the two he observed: "It may not be always "easy to draw the line so sharply, because there are few "buildings which have not some pretence or colour of "being architectural; neither can there be any architec-"ture which is not based on building, nor any good archi-"teeture which is not based on good building." This statement embraced in language both sharp and incisive what was meant by the twofold educational process which was necessary to fit the student to become a practical architect and not a mere dreamer. It was most difficult to define the dividing line between the two studies, but at least the very merging of the two into one, and their close relationship and contact one with the other, indicated that to become effective in their profession they must embrace in their study both the artistic and practical sides. Surely it was evident, therefore, that some systematic course of training was necessary, and suggested to them once more the urgent necessity of providing the would-be members of their profession with a means of obtaining sound and comprehensive education within easy reach, and conducted on such a system that academie studies might proceed side by side with that of observation and practice.

Lord Macaulay described architecture as an "art "which is half a science, an art in which none but a "geometrician can excel—an art which has no standard of grace but what is directly or indirectly dependent on "utility." Whether this was a truthful definition or not need not at present be considered; but it seemed self-evident that the true and successful architect must embrace a wider knowledge than the power to charm the eye with

artistic drawing, or than could be obtained by observation, independently of any training and technical study. Every building, besides being artistic and elegant, must be soundly and scientifically constructed; and beyond that, the architect in practice must have, at least in provincial practice, the knowledge necessary to enable him not only to direct the expenditure of his client's money, but also to give some account of the expenditure.

The President preferred not to enter into the controversy as to whether Architecture was a Profession or an Art, nor did he wish in any sense to rob architecture of its highest and noblest mission as the great exponent of Art; but he sought rather to enforce the true combination of both sides of architectural education, and to make it selfevident that the true architect must have the imaginative and artistic instinct trained and refined, as well as the collateral and practical sister scientific qualifications. The architect so educated had within himself the germs of success: and if all their rising men (that is to say, the young men of the profession) were placed in that position, their provincial towns might readily fulfil the utterance of an able writer when referring to the curriculum of one of the Allied Societies. "Who knows," he said, "whether the "advance of architectural education in provincial centres "may not one day assist in the erection of local barriers "to metropolitan aggression. . . . and show that a result " so desirable for local enterprise was attained partly by its "wise endeavour."

Nevertheless, they must not mistake what was meant by education. The mere passing of an examination -- nay, the privilege of affixing certain envied titles after their name-did not of necessity make a competent and brilliant practitioner. It no doubt was, and must be, a guarantee indicating preliminary study and some degree of excellence; but such a man may be unimaginative, have few resources to aid him in the creation of things beautiful, and be so overbalanced by want of systematic study and well-directed training in any special department, that he may fail to accomplish the true mission of his profession. Indeed, it was impossible to examine and register the artistic capacities of a student, as they could the extent of his book learning and technical knowledge. What the President was striving to enforce, however, was not necessarily examination, but education—the former would no doubt of necessity follow-but not until the student had been systematically trained and well versed in every branch of artistic and technical knowledge. . . .

Education, moreover, had a deeper and more subtle mission than the mere acquisition of facts, and the training and cultivation of the eye and fancy so as to fit a man to earn a good income by his profession. The study of the fundamental laws and history of Architecture, and a deeper and more intimate acquaintance with her origin, progress, and development, and all the charms and mysteries of her life, must and would inspire the student to regard her with a more reverential devotion, and with a more intense desire to be her true and faithful champion and knight, and to defend her from what was unworthy, untruthful, or degrading. The more closely he was brought in contact with her, the more he must honour her; and surely such a one was more fitted to be her exponent than he whose acquaintance with her was of the loosest and most limited kind, and whose respect for her laws was only observed by the desire to sacrifice her to the vitiated tastes of a mercenary public.

Referring to their educational scheme, the President said they must each share the responsibility of pressing forward the movement which had been inaugurated. All interested in the advancement of their art must not regard with satisfied approval any suggestion which fell short of that which would place young students in the best possible position, so that they might become worthy professors of an art which Ruskin placed in the first order as the

mother of all other art—when he said at the close of one of his works: "I say Architecture and all Art; for I "believe architecture must be the beginning of Arts, and "that the others must follow her in her time and order; "and I think the prosperity of our Schools of Painting and "Sculpture, in which no one will deny the life, though many "the health, depends upon that of our Architecture. I "think that all will languish until that takes the lead, "and—this I do not think, but I proclaim, as confidently as "I would assert the necessity, for the safety of society, of "an understood and strongly administered legal govern-"ment—our architecture will languish, and that in the "very dust, until the first principles of common sense are "manfully obeyed."

DUNDEE: ANNUAL CONVERSAZIONE.

On the 17th inst., at the annual conversazione of the Dundee Institute of Architecture, Science, and Art, Mr. William Mackison, in the course of his Presidential Address, commented on the Architectural Provinces scheme,* and observed that in the event of centres being established in Aberdeen and Edinburgh, which would be hailed with satisfaction, the northern and southern provinces would be divided. The infusion of a representation of the Allied Societies into the Council of the Royal Institute would, he thought, do much to energise and refresh its life work and bring it more into touch with the wants of the provinces. The Council of the Dundee Institute intended to have fewer lectures this season, and, by way of experiment, to interject a social meeting into the course. Opportunities would also be given for visiting various works of a practical nature in the neighbourhood. These would take the place of the lectures omitted, and would not interfere with the excursions which were so highly prized.

LEEDS AND YORKSHIRE: OPENING MEETING.

On the 20th inst., at the opening meeting of the session of the Leeds and Yorkshire Architectural Society, the President, Mr. G. Bertram Bulmer, commenced his Address by remarking upon the better feeling which existed among their practising members and the steadily increasing ardour of their students. It was most gratifying to feel that this change had been brought about by their Society, which was established eighteen years ago for "the pro-"motion of honourable practice" and "the education of "their pupils." He would impress upon the members the urgency of keeping ever in front of them that twofold character of their constitution. If a student of architecture wished to practise as a professional adviser, he must take his fee and therewith be content, otherwise bribery and corruption would enter in. It was for the public to see that a sufficient quid pro quo was offered for services confidential and skilful; and for the architect to see that his fee was sufficient, so that there might be no possible excuse for accepting commission from other than his client. That was the law of the Royal Institute of British Architects, and it must be as that of the Medes and Persians, which changeth not. . . . There was plenty of opportunity for honourable practice, and it was for their Society to show the way, and foster the principle of "Archi-"tecture, a Profession and an Art." One form of honourable practice he would commend as a sacred duty—the preservation of that etiquette which should compel mcmbers of any society to observe both the spirit and the letter of its laws. Unless they were prepared to do this, they were "wolves in sheep's clothing," and had no right to be within the fold. One of their members during the present year had fallen away from their principles, and was no longer within their ranks, having made a determined effort to out-distance his brother competitors in a eompetition, by disclosing the authorship of his design to the judges, thereby preventing his brethren from obtain-

ing the nnbiased award to which they were entitled. The Royal Institute had done a good deal in late years to improve the purity of "competitions" as emanating from promoters, and he (Mr. Bulmer) sincerely trusted that all the Provincial Societies would join with the Royal Institute in controlling any irregular proceedings on the part of members. . . The Architectural Provinces scheme* of the parent body, which had been formulated primarily for educational purposes, would also be advantageous in other directions, for through the Allied Societies the Institute would be able to regulate more stringently the practice of its members, and eirculate for consideration any proposed reforms for increasing its own efficiency. As regarded the main object of the scheme, Mr. Bulmer said he could not but believe that the Royal Institute, having established compulsory examination, and divided the country into edncational districts, would complete the machinery by forming a system of educational classes, with certified instructors, in the various parts of the country where students congregated most. . . . Mr. Bulmer referred to the "smoke nuisance" of their city as a problem of which architects should attempt the solution. The domestic fireplace and business chimney, which were frequently crected from their designs, should be smoke-consuming as far as modern knowledge would allow. . . . It was essential in all new buildings that this point be carefully studied. He would suggest that every smoke-flue in a house should be connected with one shaft, where the smoke could be dealt with scientifically. . . . With all these things, however, they must not forget that the end and aim of all trne architects was Art- to be able to endow the building, after its practical requirements had been met, with form, proportion, colour, and refined and chaste adornment. To do this well was no easy matter, and the student would find that the cultivation of hand, eye, and brain power required to develop his a sthetic gifts would tax his strength; that his Art studies must begin when he decides to devote himself to architecture, and that they would be far from complete should he exceed in years the "allotted span." As to the oft-repeated cry for novelty, which induced the facile practitioner to attempt designs in every known style under the sun, it was a rock on which many crafts had been wrecked, and he would advise their avoidance of it in the future. If every practitioner had one style of his own, there would be variety enough and to spare. The Gothic Art of England was developed from the Norman work through several periods lasting nearly five hundred years, undisturbed by reference to any other style. In the present day they originated, or thought they originated, a style, worked it hard for a twelvemonth, and then attended with pleasure its funeral obsequies. . . . More attention to truth of construction must be insisted on. Many years ago Pugin laid down his "true principles," and but yesterday he (Mr. Bulmer) saw, to his great astonishment, a workman carry into a large building, on his back, the marble columns supposed to support the roof! His astonishment vanished, however, when he discovered they were made of a kind of wicker-work, covered with a patent scagliola! This was a very gross perversion of the truth, and a witness that sham architecture was still to be found among them. There were cases in which the truth was not so easy to diagnose; hence the necessity to stndy and cultivate the principle, which, when once adopted, would give an added interest to their work, and a keynote they should never fail to follow. Architectural Art was not a mere trick of the pencil, but must be based on sound principles, which were the expression of a logical reasoning faculty. In erecting a building of importance, the work of many crafts had to be introduced, and it was the duty of the architect to seenre, as far as possible, complete harmony among these by designing all the details himself in

^{*} See page 4 ante.

every trade, or by exercising a power of selection which could only be arrived at by long and severe training, else his work would become a museum of crafts, and not a homogeneous work of Art.

PARLIAMENTARY.

Sanitary Registration Bill 1893.

The object of this Bill is to provide for the sanitary registration of dwelling-houses, schools, hospitals, &c.; and for this purpose the authorities charged with the administration of the Public Health Acts are to be consti-tuted "sanitary registration authorities" for their respective districts, with power to appoint an officer, to be styled a "sanitary registrar," who shall, under their direction, issue notices in the terms stated in a schedule to the Bill, keep a record of the same, and make returns to the Local Government Board. A notice is proposed to be sent to the owner or occupier of every building, informing him of the provisions of the Act, and such owner, &c., may deposit with the sanitary registration authority a "sanitary certifi-"cate," signed by a "licentiate in sanitary practice," who must be licensed in accordance with the Act. Such licences are to be issued by the Local Government Board to members of the Royal Institute of British Architects, the Royal Institute of the Architects of Ireland, the Incorporated Association of Municipal and Sanitary Engineers and Surveyors, and the Surveyors' Institution, who are to be registered as qualified in sanitary practice; and to various other "qualified" persons. Licences are to be granted without fee to the members of the Institutions above mentioned; but in other cases a fee of five guineas is to be charged, and the authorities are to keep a register of licences issued by them. The Institutions mentioned are empowered to issue "certificates of competency in sanitary "practice" to any of their members who have proved themselves qualified by examination to design and carry out constructive sanitary works, and duplicates of such certificates must be deposited with the Local Government Board. A sanitary certificate is not to be given for any building when the arrangements are not strictly in conformity with the requirements as set out in the Bill. After a date to be fixed, no building shall be used for occupation unless a sanitary certificate has been deposited with the sanitary registration authority; and after a later date no building is to be let or occupied for any purpose until the sanitary arrangements have been certified and registered. A person certifying the sanitary condition of a building is to be deemed to have examined the arrangements certified; and the wilfully signing a false certificate is to be punishable as a misdemeanour. A penalty is imposed for letting or occupying an uncertified building. Sanitary certificates, or sanitary registration certificates, are to lapse five years after the date of issue, and in the case of alterations affecting the sanitary arrangements; in such cases the existing certificates are to be indorsed or new ones obtained. The sanitary registration authority is to decide within its own area as to the purpose for which buildings are being used; but the owner or occupier, &c., is to have a right of appeal to a magistrate, whose decision is to be subject to appeal to the Local Government Board. Lessees or occupiers whose lease, &e., has less than seven years to run at the passing of the Act, are to be exempt from the penalties therein imposed. The engineer or surveyor of a local authority is to undertake, on the written request only of the owner or occupier, to certify the sanitary condition of a building, at a fee to be approved by the local authority. The Bill, when it becomes an Act, is not to be construed to interfere with the Public Health Acts, or with any powers which local authorities may possess under other Acts.

The draft of the Bill, having been brought before the Council of the Institute, was referred to the Science Stand-

ing Committee for consideration and report, and the latter's report was submitted on the 20th inst., when it was ordered to be printed in the Journal prior to its consideration by the Council. The report is as follows:

Your Committee have carefully considered the above Bill, and are of opinion that it is (1) based upon erroneous premises, is (2) a wholly unnecessary measure, and (3) would utterly fail to secure the objects which the promoters

of it seem to have in view.

1. That it is based upon erroneous premises is evident from the third clause, which, in view of the words, "and "in every place where there may be no local authority "under the Public Health Acts, or where there may "be more than one local authority under the said Acts" (lines 11-13, page 1), seems to imply that there are places which have no sanitary authority responsible for health conditions, and that there are places where those conditions are controlled by more than one authority.

So far as England and Wales are concerned, this is

certainly not the case. Under the provisions of the Public Health Act 1875 every part of the country is placed under the responsible control of a sanitary authority, and any such sanitary authority, so far as urban districts are concerned, is authorised by that Act to exercise full control, not only over the construction and sanitary arrangements of buildings, but the closing of any building, or part of any building, which, owing to defective sanitary condition, is unfit for human habitation; and, so far as every rural district is concerned, the sanitary authority responsible for its health conditions can obtain the same powers of controlling the construction and sanitary arrangements of buildings and the closing of buildings unfit for human habitation as are given by the Act to every urban sanitary authority, and the Acts are perfectly clear as to every district being under the control of one sanitary authority only.

2. The Bill is unnecessary, since the Public Health Acts enable every sanitary authority to make and enforce by-laws upon all matters pertaining to health in regard to buildings, and under those Acts the following by-law relating to the certification by an officer of the sanitary authority of any new building as fit for human habitation before it is let or occupied has been largely adopted:—

"A person shall not let or occupy any new dwelling house until the drainage thereof shall have been made and completed, nor until such dwelling house shall, after examination, have been certified by an officer of the sanitary authority, authorised to give such certificate, to be, in his opinion, in every respect fit for human habitation."

Moreover, so far as many of the buildings mentioned in the 6th section of the Bill are concerned, they are already under constant supervision and inspection by public officers responsible directly to some Department of Government, which in its turn is responsible to the Legislature.

As regards the metropolis, it must be borne in mind that the Public Health Act 1875 does not apply to it, and that, although the recent Public Health Act (London) of 1891 has largely extended the powers of sanitary authorities in the metropolis, the whole subject of the sanitation of buildings in the London area is in a transition state, while the contemplated legislation in regard to it takes a far wider and more effectual view of the subject than is proposed in the Bill.

3. That it would fail to secure the objects intended follows from the fact that, while adequate power already exists for securing the proper sanitary construction of new buildings, the closing of existing buildings unfit for human habitation, and the certification by responsible public officers of buildings as fit for human habitation, the Bill proposes to place this important duty of certification in persons having no other responsibility than that of their own personal reputation, and who may be wholly inex-

perienced, although possessed of sufficient general knowledge of the subject to satisfy five or more examiners of the governing bodies referred to. There is, therefore, strong reason for supposing that the provisions of the Bill, if it were passed, would bring about conflict with the responsible sanitary authorities.

These objections to the Bill apply throughout the country under the operation of the Public Health Act 1875 and amending Acts, and your Committee believe these objections equally apply to the rest of the United Kingdom, where corresponding legislative enactments are

actually in operation.

The Bill is defective and objectionable in other respects; for example, Section 10 prescribes certain arrangements (all of which practically, be it noted, can already be required by existing enactments) which are to be secured in every house before a certificate is given; but it will be obvious, in reference to the five sub-clauses of this section, that the matters dealt with do not by any means cover the whole of the conditions requisite to secure wholesomeness in a building, e.g. such matters as a damp-proof course in the walls of the building, undrained sites liable to extreme wetness of subsoil, lack of air-space about the dwelling. Hence it would be possible for a house to be certified under the Bill, though such buildings ought to be condemned by the local sanitary authority as not complying with the requirements which by law they are authorised to enforce.

The qualifications provided in the Bill as necessary for enabling persons to become Licentiates in Sanitary Practice afford no guarantee that persons unsuited for such duties will not obtain licenses, and no arrangement is made by which a person once liceused can be deprived of

his authority to issue sanitary certificates.

Your Committee are satisfied that the proposal to set up an independent body of certifiers is altogether out of harmony with recent sanitary legislation, the tendency of which is to impose such duties on the responsible local authorities.

Your Committee are fully acquainted with the fact that in very many instances the existing powers are said to fail to secure the desired end, but they are of opinion that this is not due to the inadequacy of existing powers, but rather to the failure of the sanitary authorities to put those powers into force—a failure which your Committee are satisfied is due, in a great measure, to the insufficient weight of public opinion consequent upon the ignorance of the public and their indifference to the subject.

For the reasons above set forth your Committee arc of opinion that the Royal Institute of British Architects should enter an earnest protest against the Bill.—Ernest Turner (Chairman of the Sub-Committee); Max Clarke;

GEO. PRYCE CUXSON. 1st November 1893.

LEGAL.

New Street-Height of Buildings.

LONDON COUNTY COUNCIL v, LAWRENCE AND SONS.

The defendants in this case, Messrs. Lawrence & Sons. were summoned by the plaintiffs, the London County Council, for having erected a building on the side of Kensington Court, a new street of less than fifty feet in width, which exceeded in height the distance from the front of the building to the opposite side of the street, without the written consent of the County Council as required by Section 85 of the Metropolis Management Amendment Act 1862 (25 & 26 Vict. c. 102). That section provides that no building, except a church or a chapel, shall be erected on the side of any new street of a less width than fifty feet which shall exceed in height the distance from the external wall or front of such building to the opposite side of such street without the consent in writing of the Metropolitan Board of Works: nor shall the height of any building so erected be at any time subsequently increased so as to exceed such distance without such consent; and in determining the height of such building the measurement shall be taken from the level of the centre of the street immediately opposite the building up to the parapet of such building. The case came on for hearing before Mr. Curtis Bennett at the West London Police Court, and it was proved that Kensington Court was of less width than fifty feet, and that the height of the defendants' building, as measured from the level of the centre of the street immediately opposite the building to the parapet or eaves of the building, was over seventy-four feet, and that the distance from the external wall of the building to the opposite side of the street was forty-five feet. The front of the building was in Kensington Road, and the entrance to it was from that road; there was a small entrance from the area at the side of the building in Kensington Court, but with that exception there was no entrance except from Kensington Road. Kensington Court was a new street within the meaning of the Act; Kensington Road was not a new street. The defendants contended that the building was situate in Kensington Road, and not in Kensington Court; and that it was not erected on the side of Kensington Court within the meaning of Section 85 of the Act.

Mr. Curtis Bennett decided in favour of the builders, holding that, although the side of the building abutted on Kensington Court, the building was not erected on the side of Kensington Court within the section. Accordingly he dismissed the summons, with costs; but stated a case for the opinion of the High Court, before whom the question came on the 19th June last. Mr. Avory and Mr. Finlay, Q.C., appeared for the County Council; and Mr. Dickens, Q.C., and Mr. T. Willes Chitty, for Messrs. Lawrence & Sons.

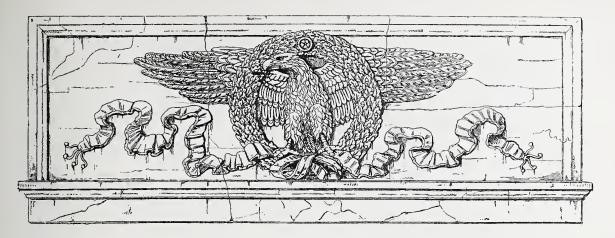
The judgment of the Court was delivered by Mr. Justice Mathew, who said that it appeared to him that when the language of the 85th section was carefully looked at, there was no escape for the respondents. The building in question was a corner house, erected fronting the Kensington Road, but with an external wall in Kensington Court; and the question was whether the provisions of the 85th section had been violated because the side of the building in Kensington Court had been carried to a height exceeding the width of that street without the appellants' consent having been obtained. The respondents, Messrs. Lawrence and Sons, contended that the house could not be said to be erected on the side of Kensington Court, because its main frontage was in Kensington Road, but he (Mr. Justice Mathew) could not agree with that contention. If the word used had been "situate" and not "erected," some sort of argument might have been made on behalf of the respondents; but the language used was quite plain, and it seemed equally plain that the respondents had brought themselves within the provisions of the section. The magistrate was therefore wrong, and the case must be remitted to him for further consideration.

The case came on for rehearing before Mr. Curtis Bennett on the 25th ult., when Mr. Dickens, Q.C., for the defendants, asked the magistrate to inflict a nominal penalty, as a purely technical offence only had been committed, and one which did not affect public rights. He pointed out that it was not until the roof was on in October 1892 that the County Council served a summons, nothing having been done from the April before up to that time. If two storeys had to be taken down, it would entail a loss of £1,500 a year, though the heavy ground-rent

would remain the same.

The magistrate said this was the first case under the new section, and the Court had held that the buildings had been wrougly erected; therefore there must be a substantial fine. It was hard law, and he wished the County Council to understand that he considered the smallest coin in the realm would be amply sufficient in any future proceedings against the defendants.

A penalty of 60s. was imposed, with five guineas costs.



THE WORLD'S FAIR BUILDINGS, CHICAGO. By the Hon. Secretary, WILLIAM EMERSON, Member of the Jury for Architecture on behalf of the United Kingdom.

N being asked by the Royal Commission for the British Section of the Chicago Exhibition to act as Judge in Architecture on behalf of the United Kingdom, I forthwith accepted the offer, and proceeded to America early in July. Arrived at Chicago, I suffered my first journey to the World's Fair by elevated railway, amid the greatest discomfort. Americans appear to think a train never can be full, for the overcrowding was intolerable, and the heat positively appalling. Duly reporting myself to Sir Henry Wood at Victoria House, I at once commenced my duties by joining the General Arts Committee, under the chairmanship of Mr. H. W. B. Davis, R.A., and for nearly three weeks was occupied in the work of the committees and in adjudication. So much time was thus taken up that quite half the exhibits were left unexplored; but, considering that the area covered is four times larger than any of the Paris Expositions, and that the heat ranged from 95° to 103° in the shade, this can hardly be wondered at.

The first entry into the Fair grounds was bewildering. The authorities seem to have thought that people would instinctively find their way about, and but few attendants were provided; it took at least three days to learn the geography of the place. The grounds cover an area of 650 acres, and two hours of diligent inquiry and walking were consumed, the first morning, in the attempt to find my way to the British Government building.

The World's Fair buildings are situated in Jackson Park, some eight or nine miles from the centre of Chicago, and extend two miles along the shore of Lake Michigan. The view from the lake, with the fine peristyle which separates it from the large lagoon, and the groups of State buildings, of which the most conspicuous is the German house, are as charming and effective as can well be conceived. The buildings are generally white, with a judicious introduction of coloured decoration, and the whole, with the water and the trees, has a most grandiose and picturesque effect. The ground on which the Exhibition is built was originally a swamp; and, by a happy inspiration, Mr. Ormstead, the landscape gardener, who planned the Central Park at New York, and to whom was entrusted the laying out of the grounds, took advantage of the swampy nature of the place and the near proximity of Lake Michigan, and proceeded to excavate a series of lagoons to be fed from the Lake, the material thus obtained being used to raise the level on which the buildings were to be erected. These lagoons, round which they are ranged, besides vastly enhancing the

artistic effect of the whole, supply a means of locomotion by electric launches and gondolas to the principal points of interest; and sailing about on them formed the most delightful method of seeing the architectural display, both by day and when illuminated at night, and was, indeed, the most enjoyable thing to be done, reminding one of getting about in Venice. The largest buildings, or rather palaces, are situated on either side of two lagoons crossing each other at right angles, the larger being some thirteen or fourteen hundred feet long by about three hundred feet wide, the other being longer but not so wide. All these lakes are surrounded by fine terraces, with ornamental balustrades and statuary and flights of steps. The Administrative block stands at one end of the larger of these basins, and at the other is a fine peristylium connecting the Music Hall and the Casino. On one side are the buildings for the exhibits of Manufactures and Liberal Arts, Electricity, and Mining, and on the other side those for Agriculture and Machinery. The effect of these groups is undoubtedly finer than anything ever before done in the way of temporary buildings for exhibition purposes; and presenting the appearance, as they do, of a series of very substantial and magnificent white

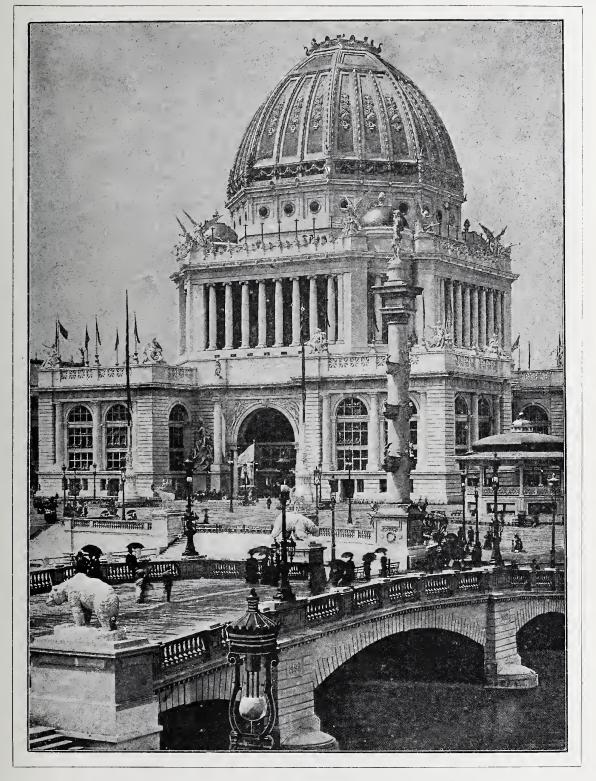


THE AGRICULTURAL BUILDING.

marble palaces of fine design, the mind is completely divested of any idea of their temporary character [see General Plan, p. 71].

The Agricultural building, designed by Messrs. McKim, Meade & White. of New York, is a very striking and well-thought-out composition. It is eight hundred feet long by five hundred feet wide, and has centre and corner pavilions, the centre one being surmounted by a large low dome one hundred feet in diameter and one hundred and thirty feet high. The Order occupies, with its entablature, which is Corinthian, the whole height of the building, and each wing between the centre and corner pavilions has three bays, filled by smaller columns and entablatures, with arches over. The whole is richly ornamented with sculpture. The groups representing agricultural subjects are exceedingly well designed and executed, the horse and cattle groups by Philip Martiny, of Philadelphia, being especially good.

The general scheme, as stated above, was first planned and the grounds were laid out



THE ADMINISTRATION BUILDING. FROM A PHOTOGRAPH PRESENTED BY THE ARCHITECT, MR. RICHARD M. HUNT, Hon. Corr. Member (Royal Gold Medallist 1893), Correspondant de l'Institut de France.

by Mr. Ornstead; then about ten of the best American architects formed themselves into a committee to arrange for designing the various palaces and to settle the style and scale of the buildings. They appear to have decided first on classic architecture, and then on a general height of about sixty or sixty-five feet for the façades, so that the cornice lines range all round, thus securing a harmony of proportion throughout. Each member of the committee then took in hand the designing of one of the buildings; and when the sketch was prepared it was submitted to the general committee and discussed in the absence of the author; the criticisms of the committee were then made known, and the design had to be altered, if necessary, in accordance with the general opinion. Certainly the outcome of this very sensible arrangement has been most satisfactory from an artistic point of view. A general harmony pervades the whole; the buildings are well in scale and keeping with each other, grand in proportion and of fine design; and the view of them from the lagoons was well worth going such a long way to see. The architect who is director of the Exhibition works, and who was solely responsible for their construction after the various designs were prepared, is Mr. Burnham, of Chicago, recently elected President of the American Institute of Architects, a most popular and charming man, genial companion, and clever constructive architect. The late Mr. Root, to whom was due, I believe, the first artistic inception of the Exhibition scheme, was his talented partner.

The Administrative block, by Mr. Richard M. Hunt, the design of which was shown at the Royal Institute some time back, is somewhat after the plan of the Taj Mahal at Agra, and internally is an octagon of grand proportion, surmounted by a dome 200 feet in height. The decorative painting in the empola is not as effective as it might have been; the Arts and Sciences are represented, but the filling in of the spaces is insufficient and the colonring The exterior effect is marred somewhat by the want of height and dignity of the four corner subsidiary domes, which are overpowered by the enormous groups of sculpture in front of them; also the lower stage and cornice appear weak and wanting in massiveness, and the abrupt finish to the large dome is unsatisfactory. One cannot help thinking that a little more care and forethought, a closer study of the Taj itself, might have rendered it easily the finest group of all. While referring to Mr. Hunt, I would mention the immerous expressions of gratification I heard from American architects at the fact of the Royal Gold Medal of the Institute being awarded to him this year. There is gennine pleasure among them that he should have been chosen as the recipient of this honour, and the feeling is general among American architects that no fitter selection could have been made. The various specimens I saw of his work left the impression upon me that he was indeed facile princeps in his art.

It is impossible to describe in detail the numerous palaces and State buildings at the Exhibition, nor had I time to study them sufficiently to do so; but a few notes of the principal ones may be of interest. On the east of the Administrative block is the Machinery building, designed by Messrs. Peabody and Stearns, of Boston, and it is one of the most picturesque and interesting groups. It is of the Corinthian Order, and is 850 feet long and 350 feet wide. The roof is in three spans of arched iron trusses. The corners have very graceful domed pavilions, and in the centre of each front, facing the lagoons, are the main entrances, with porticoes flanked by towers. Between the centre and corner pavils, as are loggias, the walls at the back being handsomely decorated and of a rich yellow tone, producing a very charming effect with the columns standing out in relief against them. The lightness and freedom of the composition form a pleasing contrast to the stately severity of the other palaces.

The Manufactures and Liberal Arts Palace was designed by Mr. George B. Post, of New York. It is the largest of all the edifices in the Exhibition, being 1,687 feet long and 787 feet



VIEW LOOKING NORTH-MACHINERY BUILDING ON THE LEFT. [See General Plan, p. 71.]

wide; the height of the roof over the central hall is 245 feet 6 inches, the span of the steel trusses being 364 feet in the clear. The Order is Corinthian, the design having a broad and

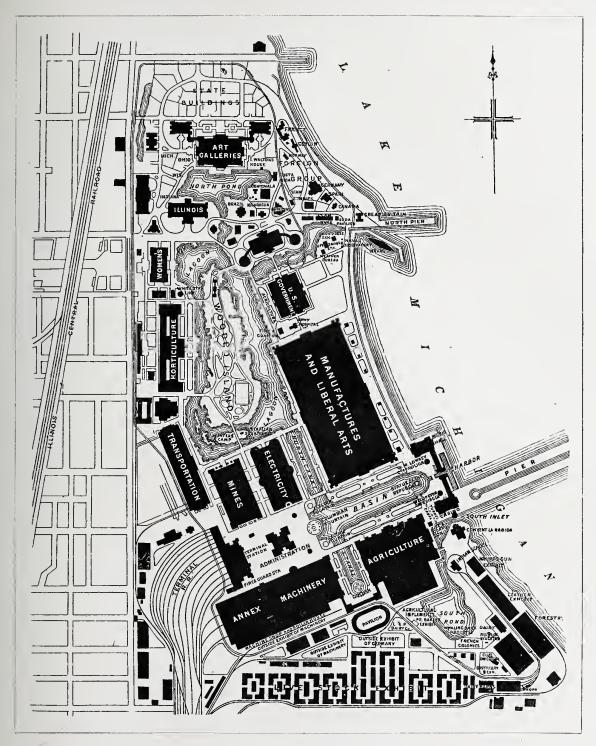
severe effect. The Main Entrance Pavilions are 172 feet high, in the centre of each façade having arches 80 feet high and 40 feet wide, flanked on either side by enormous columns and entablatures; at each corner are entrance pavilions, somewhat smaller and simpler in design. The bays of the façades are formed of a range of single columns and arches with cornice over.

The Electricity Palace was designed by Mr. Van Brunt, of Kansas City; it is 690 feet long and 345 feet wide. The façades are treated with Corinthian pilasters all round, each bay thus formed having a lower tier of two openings with columns, surmounted by a lunette forming the upper tier of windows. The plan of this building differs from most of the other palaces in having a distinctly accentuated nave longitudinally crossed by a transept of similar width and height. The entrances are in the centre of each façade, that facing the Administrative block having a large arched hemicycle forming a porch elaborately painted and decorated, the other being the usual sort of portico. The towers at the corners of the building, and on either side of the portico in the centre of the long façades, are feeble in outline and inferior in detail, which somewhat spoils the effect. These, I understand, were not in accordance with the original design, the architect having to reduce and simplify them owing to some weakness in the foundations.

The most effective scene around these large buildings by the lagoons is the view of the Music Hall and the Casino with their connecting Peristyle. The colonnade is 234 feet long each side of the central water gate or portico to Lake Michigan. The Music Hall and Peristyle were designed by Mr. Atwood, of Chicago, who is also responsible for the Art Galleries; and for grandeur, simplicity, and true artistic feeling these works take rank before any other buildings in the Exhibition. Each of the columns of the Peristyle is surmounted by a figure representing the various American States, and over the water gate is placed a quadriga representing the triumph of Columbus on his return from his first voyage; these are all very excellent works, good in pose, composition, and drapery, the sculptors being Mr. D. C. French and Mr. E. C. Potter. In front of the Peristyle facing the Administrative block, which is at the other end of the large basin, stands a colossal figure of the Republic in gilt and ivory. It is sixty-five feet high, and reposeful in attitude and composition, though, owing to the lines of the drapery, it has rather a stiff and mechanical effect.

The foregoing are the principal buildings forming the chief groups around the main basins; but besides these, in a different part of the grounds, and also by the side of another lagoon, are the Art Galleries, 500 feet long by 320 feet broad, with two annexes, each 200 feet by 120 feet. This building, which, as stated above, is by Mr. Atwood, is of the Ionic Order, very simply and severely treated. It is decidedly the most important piece of work in the Exhibition, and is the only building not to be destroyed; eventually, I believe, it is to be faced with marble. It was, of course, well built and fireproof, and has on either façade a centre portico surmounted by a pediment, with a frieze and a single figure over each column, and small corner pavilions with pediments; the wings are formed of open loggias used as promenades. This building has a longitudinal nave, and cross transepts 100 feet wide, roofed at the intersection by a dome sixty feet in diameter.

The Mining building, the Transportation and Horticultural palaces, and the Fisheries building are situated on various lagoons, and, with the exception of the Transportation building, are worthy of high praise. The Transportation building is very elaborately decorated, and its "Golden Porch," as it is called, has ornamentation like gigantic silver and gold filagree work with figures and foliage, while in the spandrils between the arched heads of openings of façades are grotesque and ugly conventional winged allegorical figures, in colour, and out of scale. The architects are Messrs. Adler & Sullivan, of Chicago. It is the only



GENERAL FLAN OF THE EXHIBITION.

building not in keeping with the others. The Fisheries building is a very picturesque group in Romanesque. The Women's building is Italian, but commonplace and feeble throughout. As

to the various State buildings, they are for the most part picturesque, handsome, and interesting. Those of New York, Pennsylvania, and Ohio are stately and fine compositions; while those of Iowa, Indiana, and California are very picturesque, particularly the last. The Illinois State building was with common consent considered the ugliest and most pretentious; and, curiously enough, it was the only one for which competitive designs were obtained. The German building, a picturesque design, in florid Gothic of the German Renaissance period, and very freely treated, is situated on the lake shore, and is the most imposing of the Foreign headquarters, the walls being painted with allegorical figures and subjects. Its turrets and bell tower and high-pitched gabled roof and balconies render it by far the most telling object from the lake view; and its exhibit of books and relics was one of exceeding interest. Many of the smaller buildings were well worth inspection, but as there are about sixty or seventy, apart from those in the Midway Plaisance, which contains probably another forty, it is as impossible to describe them as it was to see them all properly in the unendurable heat and limited time at my disposal. Many of the architectural exhibits were very charming, such as Old Vienna, the Moorish Palace, the Street in Cairo, and the Persian and Japanese villages.

Doubts were expressed by a number of artists as to the bulk of the work having been designed and executed by Americans, seeing that it is so infinitely superior to anything done in the general buildings of the large towns. But this, I think, is easy of explanation. Most of the large buildings are simply façades to the huge iron and glass roofs, and it is certainly much easier to make an academical design for a large frontage, unhampered by the numerous rooms, storeys, and cross-walls, with nothing much to think of beyond the artistic effect, than it is to design a fine front to a public monument or business building while harassed by all sorts of conditions and requirements. Moreover, the wisdom of the arrangement whereby the designs were submitted to the criticism of a committee of the best men. who were responsible for the ordering of the style and scale, prevented many incongruities. Architects, sculptors, and painters all worked together on the spot, and hand-in-hand, with the happiest results; and from what I heard, they appear to have had a most delightful time together over their work. Much of the sculpture was really magnificent; the groups and figures of the Peristyle and the Agricultural building, and the animals on the bridges, were beautiful. No doubt Monsieur Grandin, of Paris, and other Continental sculptors had a considerable influence and voice in what was done; but the great bulk was, I understood, the work of Americans only, The decorative painting, which was well restrained, and for the most part very effective, was under the direction of Mr. Frank Millet. One point I noticed was, that in the enormous loggias, where the back walls were vellowish in tone, the effect in the strong light was infinitely more happy and joyous than where reds and darker colours had been used, with the idea, I suppose, that the columns would tell out more against such backgrounds. the general conception there should be such originality of plan, self-restraint, and real artistic feeling, affords evidence of good training and good taste for which we in this country have hardly given our cousins on the other side of the Atlantic sufficient credit.

Perhaps the most notable structure, but hardly to be included in the above category, is the Ferris Wheel, a gigantic piece of ingenious engineering, and wonderful in construction. It is 250 feet in diameter, and 28 feet 6 inches wide. Around the periphery of the wheel, which is like that of a huge double bicycle, are slung thirty-six cars, each capable of holding sixty persons, forming a kind of huge merry-go-round, each revolution taking about twenty minutes, —and of about as much utility as the Eiffel Tower. The wheel is worked by powerful engines, and the axle is some hundred and forty feet above the ground, being supported by enormous steel towers something after the manner of Eiffel's construction in Paris. It is

conspicuous from every point for miles around, and from the top there is a magnificent view of all Chicago and the lake, the States of Wisconsin, Indiana, Illinois, and Michigan being clearly visible on a fine day.*

Chicago itself is a long, straggling town occupying some sixteen or eighteen miles of the flat southern shore of Lake Michigan. The view of it from the lake is fine and imposing, the principal buildings standing out well, owing to their great height, which averages from ten to twenty storeys. The lake front is utterly spoiled, however, by the fact of the railways running along the foreshore, and intervening the whole length of the town between the chief street and promenade and the water; it is as though King's Road, Brighton, were set back a quarter of a mile from the sea, and the termini of all the railways were situated on the beach. As to the architecture of Chicago, or of New York for the matter of that, I cannot say that there is much to particularly admire in it, though if we put our two new streets, Shaftesbury Avenue and Charing-Cross Road, in comparison, the Americans would, without doubt, have much the best of it. Their buildings for the most part strike one as ponderous and coarse, even private villas having the appearance of being built to resist a bombardment; and the detail, as a rule, is very inferior. One sort of conventional foliage ornament, fairly good in itself, having found favour at first, has been done to death, being introduced in scale and out of scale, appropriately and inappropriately, in numberless buildings from the Auditorium Hotel and Theatre to the smallest villa. In spite of this, however, the buildings are very interesting; for, by striving after the solution of modern problems, unhampered by the trammels of school and precedent which have exercised so baneful an influence on ourselves in the progress of our architecture, the Americans seem to be gradually evolving a style which, when refined, and toned down with more artistic perception, may become both fresh and effective.

Through the kindness of Mr. Burnham and Mr. Atwood, I had the opportunity of examining the arrangement and construction of some of the enormous buildings running to twenty or more storeys high. The floors and internal walls are supported by a skeleton construction of steel and iron, with fireproof casing, the external façades being faced with masonry. These skeleton frameworks are cross-tied and wind-braced in every direction. The buildings themselves, interesting and clever as they are from an engineering point of view, are, as a rule, very ugly from an architectural one. The Masonic Temple, containing groups of offices twenty-four storeys high, has a central entrance hall the height of the whole building, with one end formed by three sides of an octagon, around which are ranged fifteen lifts, some only being express to the top floors. This hall has a skylight at the top, and gives one the impression of looking up from the bottom of a well to the opening at the surface. One of the most interesting buildings I went over is the new Athletic Club, which has a good Venetian Gothic façade facing the lake. On the ground floor is an entrance hall, with a large swimming-bath and dressing-rooms; on the first floor a large bar, a number of billiard tables, and a handsome room, then unfinished, to form eventually a library or drawingroom, were arranged; on the second floor there was a large gymnasium fitted up in the most complete manner; on the third floor were dining-rooms and kitchens, and on the top floor

Building and Illinois State Building; vol. xli. No. 926, a Design for a Café; No. 928, the Fisheries Building and Comparative Plans of Exhibitions; No. 931, the Arch of Peristyle. Vols. xxi. and xxii. of The Inland Architect contain a series of plates, most exquisite productions, representing the various buildings and grounds of the Exhibition. The Minnesota and Illinois State Buildings are well depicted in The North-Western Architect, vol. xi.

^{*} Some very excellent views of the more important of the Exhibition buildings may be seen in the various American journals in the Institute Library, notably in The American Architect, vol. xxxviii. No. 876 of which contains the Washington State Building; No. 878, the Fine Arts Gallery; No. 884, the Chocolate Pavilion; No. 887, the Transportation Building; No. 916, the Spanish Government Pavilion; No. 925, the British Government

tennis and racquet courts; and all this in a house with a frontage in a terrace. The result of crowding such enormous buildings on a small area is, that on a fine sunshiny day, looking from the lake, the city has always a dense pall of black smoke overhanging it. I learned that the height for building has lately been limited by law to sixteen storeys, or 150 feet, and I should not be surprised if in the near future it is found that this concentration of business buildings in the centre of the city is a mistake; and that the authorities will take steps to spread them over a wider area. But the chief difficulty now exercising all minds is how to get rid of the World's Fair temporary palaces, and the last suggestion is to burn them, as pulling down would entail vast expenditure.—William Emerson.

DISCUSSION OF MR. FALKENER'S PAPER ON THE GRECIAN HOUSE AS DESCRIBED BY VITRUVIUS: The Author's Reply.

MR. PRESIDENT AND GENTLEMEN,—

With regard to the House, I am grateful to my friend Mr. Penrose for his amiable approval of my interpretation of Vitruvius. I show the Posticum in my plans; but I did not refer to it, as it is not a point of difference between the Grecian and the Roman houses, and therefore was foreign to my subject; and it should be remembered that I am describing the Grecian house in the time of Alexander, and not of Homer, though I refer to

that early period.

As to the Hypethron, I have no doubt upon the subject; and I see nothing in the discussion to shake that opinion. Only the same argument is brought forward again and again that the chryselephantine statue would be injured by the rain; but I point out, at the end of my Paper, that this opening might be forty feet distant from the statue, as you will see by examining the plan of the Parthenon; so, as I said, that objection falls to the ground. But it will be said that though the rain might not fall on it, the rain falling even in a distant part of the cella would injuriously affect the statue. I do not think so. As my friend Professor Aitchison reminds us, Pausanias says the statues were liable to over-dampness, and were oiled; and to over-dryness, and were damped. As an illustration of this, when I built my boathouse, the large doors in front were made of open woodwork, in a reticulated form, in order that the damp sea-air might come in, and thus prevent the timbers from shrinking and to require caulking in the next season. As for "deluges" of rain occasionally, the Greeks and the Romans had open roofs to their aule and atrium; and yet we never read any complaints about the inconvenience of deluges.

In one point, however, my friend Aitchison inadvertently makes a mistake: for he makes me answerable for an opinion I do not hold. He says: "We must accept Vitruvius's statement that there were such things as hypethral temples. . . .

- "Mr. Falkener, however, is the exponent of an entirely different theory; he contends that if
- "Vitruvius says there were hypethral temples,

" and does not say how temples that were not hypæthral were lit, it is evident that all temples

"were hypethral, but I for one do not think that

"this conclusion is logical."

I do not say anything of the kind; indeed, I maintain the contrary. It was only some, and not all, even of the great temples which were hypæthral, and none of the smaller ones; and all the other temples were lit only by the door, as regards the light of day, though they were lit artificially by lamps and candles, as we see in Greek and Roman Catholic countries; while the Egyptian temples must have depended (I mean the inner portion of such temples) entirely upon this artificial light. And I believe these Greek temples which were not hypethral were very similar to the ancient Greek churches I have seen in Russia. The inner portion of the church is held to be like the Holy Place of the Jewish temple, and is partitioned off by the Iconostasis. The cathedral church of Kieff is very small, and the screen takes off the greater portion of it, so that the remaining space is not large enough for the whole of the congregation, and many of the worshippers remain outside. Just so in the ordinary Greek temple it is probable that the great majority of the people were outside; and as, in both Greece and Rome, they went to the temple the first thing in the morning, the effect must have been very imposing for all the people outside, and it must have increased the invstery and awe by keeping them outside, to behold the god or goddess lit up by unseen lamps and the golden rays of the rising sun. This, I believe, was the case with most of the ancient temples; but it was in contrast to these temples that Vitruvius says that some of the great temples were hypethral, and I therefore beg to hold to my opinion and to accept Vitruvius as my authority.

Thus you will see that I and my critics are not so much at issue as it appears; for I have not been speaking of Greek temples in general, but of hypæthral temples; and my critics, therefore, must speak of hypæthral temples, and not of

other temples.



CHRONICLE.

THE PRELIMINARY EXAMINATION.

The President reported to the Business General Meeting of the 4th inst. that 84 persons had been admitted to the Autumn Preliminary Examination of pupils and others desirous of qualifying as Probationers. Of these, thirty-one were examined in London, nine in Manchester, one did not attend, and forty-three were exempted from attendance; the certificates and drawings submitted by the last-named being sufficient evidence of their qualifications. Of the forty examined, four were relegated to their studies in all subjects of the examination, and five in part. One did not pass. The remaining thirty passed; and they have been registered with the forty-three exempted candidates as Probationers, namely:

ABBOTT: Thomas Ernest; St. Leonards House, East Sheen [Master: Mr. E. Dewar Mathews].

ARMITAGE: John Basil; care of Mr. B. Tower, Sedbergh

R.S.O., Yorkshire [Sedbergh School]. BAXTER: Albert Ernest; 4 & 5, Market Place, Willen-

hall [Master: Mr. M. Johnson].

BOUGATSOS: Christos [Greece]; 30, Bedford Place, Russell Square, W.C. [Master: Mr. Edwin T. Hall*]. BRUMELL: George; 15, Bridge Street, Morpeth [Masters: Messrs. Hicks & Charlewood*].

BRYER: Alfred; Quarndon, Derby [Master: Mr. T. E.

Lidiard James*

Lidiard James* J. CARDEN: Robert Walter; 32, Leinster Square, Bayswater, W. [Master: Mr. W. A. Pite*].

CASTLE: John George; Cleckheaton, Yorkshire [Master: Mr. Reuben Castle*].

CHARLES: Bessie Ada; 7, Upper Wimpole Street, W. [Master: Mr. Ernest George*].

CHARLES: Ethel Mary; 7, Upper Wimpole Street, W.

[Master: Mr. Ernest George*].

CLARK: Clement Wightman; Sharon, Rotherham,

Yorkshire [Masters: Messrs. Flockton* & Gibbs*].

CLARK: Frank Adams: 43, Torrington Place, Plymouth Master: Mr. H. J. Snell].

CLARK: John; 3, Chandos Street, Highfields, Leicester [Master: Mr. A. H. Hind*].

COLQUHOUN: Alexander Martin; 32, Ardgowan Street, Greenock [Masters: Messrs. Southorn & MacDonald]. COUNCELL: Thomas James; Eastdene, Redland Grove, Bristol [Master: Mr. W. L. Bernard*].

CRAIK: David McLeod; Edburton Villa, Sketty, Swansea [Masters: Messrs. Bucknall & Jennings*].

DAVIDSON: Walter Ramsay, B.A. Cantab.; Desswood, Aberdeenshire [Pembroke College, Cambridge]. DAVIS JONES: John; Carlton Chambers, Castleford,

Yorkshire [Master: Mr. Robert Grierson].

DENNIS: Robert Edward; 150, New Bond Street, W. Master: Mr. Robert Sawyer*].

DIAMONDOPULO: Aristotle George [Greece]; 1, Lavender Gardens, Clapham Junction, S.W. [Master: Mr. G. A. T. Middleton*].

DICKIE: Archibald Campbell; 32, Gibson Square, Islington, N. [Master: Mr. John Carver].

FARRAR: George Frederic; Fairfield House, Halifax [Master: Mr. Robert Walker*].

FLOWER: Victor Augustine; 26, Stanhope Gardens, S.W. [Master: Mr. Arthur S. Flower*].

FLOYD: Arthur; 35, Grosvenor Place, Leeds [Master: Mr. T. Butler Wilson*].

FORREST: George Topham; 175, Skene Street West, Aberdeen [Masters: Messrs. Brown & Watt*

FOSTER: Francis Roland; 1, Beaufort Road, Edinburgh [Master: Mr. S. Henbest Capper *].

FUNNELL: Horace Frederick; 17, Trafalgar Street, Brighton [Master: Mr. E. J. Hamilton].
GITTINGS: Henry; The Elms, Gillingham, Kent [Mas-

ter: Mr. G. E. Bond].
GOODLAND: Joshua; 5, The Parade, Exmouth [Masters:

Messrs. Kerley and Ellis].

GRAYSON: George Hastwell, B.A., Cantab.; 14, Castle Street, Liverpool [Masters: Messrs. Willink* and Thicknesse].

GREEN: Thomas Frank; 55, Blenheim Terrace, St. John's Wood, N.W. [Master: Mr. F. Wheeler*]

GROOM: Percy John; 6, Blythwood Villas, Crouch Hill, N. [Master: Mr. John Groom*]. GRUBB: Ernest; 62, Dean Street, South Shore, Black-

pool [Master: Mr. J. A. Nuttall].

GRUCHY: Charles de; 13, Melody Road, Wandsworth, S.W. [Master: Mr. W. J. Ancell].

HARDON: Herbert; 51, Wellington Road, Heaton Chapel, nr. Manchester [Masters: Messrs. Woodhouse * & Willoughby *]

HARVEY: Frederick Milton; 169, High Street, Gorleston, Great Yarmouth [Master: Mr. J. W. Cockrill*].

HAWES: John Cyril; 1, Spring Terrace, Richmond, Surrey [King's School, Canterbury].

HISLOP: Alexander David; 142, Holland Street, Glasgow [Masters: Messrs. A. N. Paterson* & W. J. Anderson*].

HOBBS: John; 5, Cambridge Terrace, St. Michael's Street, Folkestone [Masters: Messrs. Cowell & Bromley].

HOLLIER: Einest William; 84, High Street, West Bromwich [Master: Mr. R. F. Matthews]. HOTTEN: Harry Walter; 23, Beach Street, Folkestone,

Kent [Master: Mr. J. Gardner]

JAMES: George; Leyland Croft, Old Road East, Graves-end [Master: Mr. Wm. West].

JARVIS: Percy John; Grove Hill Road, Tunbridge Wells [Master: Mr. W. B. Hughes].

KING: Edward Vincent; Hartshead Vicarage, Liversedge,

Yorkshire [Master: Mr. James Ledingham*].
KINNS: Frederick William; 112, Lancaster Road, W.
[Masters: Messrs. Withall* & Ellis].

LANGLEY: Samuel Henry; 57, Charles Street, Leicester [Master: Mr. A. Hall]

LEE: John Stevens; 78, Comeragh Road, West Kensington, W. [Masters: Messrs. John S. Lee & Son].

MARSHALL: Arthur George; The Oaks, Alleyn Park, West Dulwich, S.E. [Master: Mr. W. E. Clifton*].

MAYNARD: Dudley Christopher; 3, Cumberland Gardens, St. Leonards-on-Sea [Master: Mr. F. H. Humphreys*]. MILNE: Walter Herbert; Green Hall, Cheadle, nr. Manchester [Master: Mr. J. R. Earnshaw].

NICHOLSON: Joseph Landell; 18, Malvern Street, Newcastle-on-Tyne [Masters: Messrs. Armstrong* & Knowles*

NIGHTINGALE: Alfred Ernest; "Kentisbeare," Atney Road, Putney, S.W. [Master: Mr. R. Fabian Russell*]. PARKER: Richard Barry; Brockhampton Court, Ross, Herefordshire [Master: Mr. G. Faulkner Armitage]. PATRICK: John Russell; 11, Reighton Road, Upper

Clapton, N.E. [Master: Mr. H. Huntly-Gordon*].
PICKERING: Arthur Edwin; 70, Tressillian Road,
Brockley, S.E. [Master: Mr. F. Nesbitt Kemp].

ROWELL: Reginald Bertie; 3, Duke Street, Reading [Masters: Messrs. Charles Smith* & Son*].

SHEPPARD: George Lewis; Sansome Walk, Woreester [Master: Mr. Sheppard].

SHIPWAY: George Walter; 2, Pilkington Road, Peckham, S.E. [Master: Mr. W. M. Brutton].

SHORT: Ernest William George; Beaeonsfield House, Kemble Road, Perry Vale, Forest Hill, S.E. [Master: Mr. W. Harvey Dyball].

SIMM: Ernest; New Chapel House, Balderstone, near Blackburn [Masters: Messrs. Stones* & Gradwell].

SLAUGHTER: Ernest William; "Gairloch," Alexandra Road, Reading [Masters: Messrs. Charles Smith* & Son*].

SMITH: Cyril Wontner; 34, Woodberry Grove, Finsbury Park, N. [Master: Mr. A. M. Butler*].
SMITH: Frederick John Osborne; 34, Southampton

SMITH: Frederick John Osborne; 34, Southampton Street, Strand, W.C. [Master: Mr. J. Osborne Smith*]. THOMAS: Richard Wellings; 1, Pentland Villas, Eign Road, Hereford [Master: Mr. G. H. Godsell.

THOMPSON: Robert Milne; 2, Barrack Street, Perth [Masters: Messrs. J. & G.* Young].

TOWSE: John Stanley; Hillside, Ravensbourne Park, Catford, S.E. [St. Dunstan's College, Catford].

WALLIS: Charles William; 6, Hampstead Mansions, Heath Street, N.W. [Master: Mr. R. Langton Cole*].

WATSON: Alfred Edward; Southbank, Oakleigh Park, Whetstone, N. [Masters: Messrs. Brunsden & Henderson].

WATTS: Harold; 2, Hoe Park Terrace, Plymouth [Master: Mr. II. J. Snell].

WATTS: John Henry Vernon; 91, Chester Road, Castle Northwich, Cheshire [Master: Mr. K. Ellerton].

WHEELER: Edwin Paul; 66, Ludgate Hill, E.C. Masters: Messrs. Searle* & Hayes*].

WIDDOWSON: Arthur Reginald; 4, Grey Friars, Leieester [Master: Mr. W. Morton Cowdell].

WILLIAMS: Albert Charles; High Street, Epsom, Surrey [Master: Mr. R. Langton Cole*].

The asterisk * denotes members of the Institute.

The number of Probationers is now 517, and the number of Students, 88. These, said the President, make what I may venture to call a nursery of more than 600 junior members of the profession—a not altogether unsatisfactory outcome of the policy which the Institute has pursued during the last few years.

The Autumn Examination in Architecture.

An Examination of 58 persons to qualify for candidature as Associate was held during the week commencing 27th ult., six being examined in Manchester and 52 in London. The Oral Examination of the latter began at the Institute on Friday, 1st inst., at 10.30 a.m., and terminated the subsequent day at 4 p.m. The Chairman of the Board, Mr. Arthur Cates, presided, and the several subjects of the Examination were taken respectively by the following Examiners:—History of Architecture, by Messrs. H. Drinkwater. John Slater, B.A. Lond., and R. S. Wornum; Mouldings, Features, and Ornaments, by Messrs. James

Brooks and Alex. Graham, F.S.A.; Sanitary Science, by Messrs. P. Gordon Smith, Ernest Turner, and Keith D. Young; Strength of Materials, Shoring, &c., by Messrs. L. Solomon and Leslie Waterhouse, M.A. Cantab.; Plan, Section and Elevation, by Messrs. T. W. Cutler and Alfred Waterhouse, R.A.; Materials, by Mr. H. D. Searles-Wood; Construction, &c., by Messrs. Alfred Conder and Flint Clarkson; Specifications, Methods of Estimating, and Professional Practice, by Messrs. E. Gregg and B. Tabberer. At the conclusion of the Oral Examination, on Saturday, the Board held a meeting for the transaction of business, which lasted two hours. The Report of the Manchester Examiners may be expected this week, and the public announcement of the names of those who have passed and are qualified for candidature as Associate will be made to the General Meeting convened for Monday, 18th inst.

Mr. Falkener's Paintings and Drawings.

In pursuance of the suggestion made by Mr. R. Phené Spiers, after the close of the General Meeting of the 20th ult., Mr. Falkener was asked by the President to lend some of his once wellknown drawings for exhibition at the Institute, which he very kindly consented to do; and the drawings were exhibited to the General Meeting of the 4th inst. A list of them is given after the minutes of that Meeting [pp. 86-88], and it will be seen that they comprise drawings in water-colour and oil paintings of ancient and mediaval historical monuments and ruins in many parts of the Old World. They will remain on view for the benefit of Probationers, Students, members, and others, until 9 p.m. on Wednesday, 13th inst. The Vote of Thanks to Mr. Falkener, moved by the President, last Monday evening, was passed by acclamation and with much cordiality.

Additions to the Library.

Mr. Andrew N. Prentice [A.], the Soane Medallist of 1888, has presented, in conjunction with its publisher. Mr. Batsford, a book that does him infinite credit, and at the same time reflects credit upon the Institute. It is entitled Renaissance Architecture and Ornament in Spain, and a review of it will appear in the next issue of the Journal. Messrs. Chapman & Hall have sent A Text-book of Elementary Design, by Mr. Richard G. Hatton, and Egyptian Art, by Mr. Charles Ryan, both forming part of the "Science and Art Series." Several books have been added to the Loan Collection. Among them is Knight's Annotated Model Byelaws (Knight & Co., London), fourth edition, in which care has been taken to bring the contents up to current date. New by-laws which have been prepared to meet special wants, and which have received the approval of the Local Government Board, have been added; fresh explanatory annotations and diagrams have been inserted; and recent judicial decisions on the subject of by-laws

and their interpretation have been carefully summarised. The fifth edition of Professor Banister Fletcher's text-book, Quantities, and Valuations and Compensations, by the same author (B. T. Batsford, London); the latter is an enlargement of Professor Fletcher's Compensations, now out of print; two chapters under the heading Valuations, which give in a concise form the numerous points to be notified in buying land and house property, having been added to the older work, which has undergone revision and been brought up to date. "This book," Professor Fletcher states, "is now a "complete guide in valuing land and houses, for "mortgage renting, for investment, as well as for "making valuations, where land and houses are "taken by public bodies or companies called "'Compensation' cases." Paley's Gothic Mouldings, edited by Mr. W. M. Fawcett, fifth edition (Gurney & Jackson, London), has also been added to the Loan Collection. Charicles and Gallus, companion volumes by the late Professor Becker, translated by Mr. Frederick Metcalfe, long held in great estimation by all classical students (Longmans, Green & Co., London); and The Genesis of Mountain Ranges, a pamphlet by Mr. T. Mellard Reade, reprinted from Natural Science, are among the latest additions to the Reference department of the Library. Professor F. Meldahl [Hon. Corr. M.] has kindly sent four Papers by himself, three of which are respectively entitled, Jardins Projekt til Marmorkirken i Köbenhavn og dets Forhold til Europas Kuppelkirker, Norges Stavkirker, and Charlottenborg Slot. All of these admirable expositions will be read with interest by readers with a knowledge of Danish. The fourth Paper, Ueber die historischen Formen der Holzbaukunst und die Geographische Verbreitung derselben, is, as the title denotes, accessible to those familiar with the more generally cultivated language of German.

Buildings in South Africa.

At a meeting of the South African Association of Engineers and Architects on the 25th October at Johannesburg, the President, Mr. A. H. Reid [F.], read a Paper on "Dangerous Buildings," and called attention to the structural weaknesses which were only too apparent in their buildings, attributing them to the fact that, as materials were very costly, builders were prone to cut down quality. This was the more serious, as in their climate buildings were subjected to excessive trials from rain and wind, and strict supervision by the local governing body was necessary. The number of dilapidated buildings in Johannesburg, considering the short time they had been in existence, was enormous, and this was entirely due to the use of inferior materials. Repairs to houses, again, were nearly always designed to make the front look well, and nothing else. A thoroughly systematic examination of all buildings at regular periods was, in his opinion, absolutely necessary,

and periodical surveys of public buildings and clubs, theatres, towers, domes, and even batteryhouses and workshops, should be made and recorded by the proper authorities. He would impress upon engineers the importance of having their work overhauled by competent architects now and then, as many battery-houses were constructed of the most flimsy materials and wretched timber, and would soon succumb to wet and dry rot, white ants, vibrations from the action of machinery and wind, and changes from extreme dry to prolonged moisture. The collapse of a few of these buildings, concluded the reader, for want of such proper supervision, could not be far off, and in case of such a calamity the loss of life and money would be incomparably greater than the cost of the stitch in time by one who had had experience in such matters.

The York Society.

At the Annual Meeting of the York Architectural Society, held on the 22nd ult. [see page 90] the following gentlemen were elected as officers for the ensuing year:—President, Mr. William Hepper; Vice-Presidents, Mr. Henry Perkin, F.R.I.B.A., and Mr. Alfred Creer, A.M.I.C.E.; Hon. Secretary, Mr. A. B. Burleigh; Hon. Treasurer, Mr. N. R. Yeomans; Committee, Messrs. G. Benson, E. T. Felgate, J. T. Pegg, J. G. Perry, and J. H. Sellers. The Past Presidents, Mr. Walter G. Penty, F.R.I.B.A., and Mr. Arthur Pollard, are also ex-officio members of the Council.

"Alexander Thomson" Memorial, Glasgow.

The trustees of the "Alexander Thomson" Memorial have offered a prize of £60 for the best design for an Exchange for a large city, the design to be in the early Classic style. This is open to all architectural students between the ages of eighteen and twenty-five residing in the United Kingdom, and qualified as described in the Deed of Trust. Full information can be obtained from the Secretary to the Trust, Mr. John Thomson, 241, West George Street, Glasgow.

The late General Sir Alexander Cunningham, K.C.I.E.

Few original investigators of our time have reaped so large a harvest of results as General Sir Alexander Cunningham, K.C.I.E., who died on the 28th ult., in his eightieth year. Born in 1814, his public career began when he entered the service of the East India Company in 1831. His marked ability quickly brought him to the front, and he was singled out for various executive posts, and acted for some time as aide-de-camp to Lord Auckland. For twenty years from 1840 he held responsible positions as a constructor of public works and in various campaigns, winning special distinction as a field engineer during the Sikh war in 1846 by his rapid bridging of the Beas by boats. In 1858 he was appointed Chief Engineer of the North-West Provinces-no easy

post at a time when the country was still suffering from the administrative confusion left behind by the Mutiny—and this position he held till his retirement from Indian service some thirty years later. Meanwhile, however, Sir Alexander had become famous in a different line from that of his official duties. His observations and inquiries as Boundary Commissioner on the Tibetan Frontier in 1846-47 had already been embodied in two works, The Temples of Kashmir, and Latakh, Physical, S'atistical, and Historical, when in 1861 he was entrusted by the Viceroy with an archeological survey of India. From that time until his retirement in 1885 almost every year produced results and discoveries of importance to the ancient history and geography of India. His explorations brought to light the buried framework of ancient Indian history; and his identifications of early cities and sites, although in some cases corrected or rendered doubtful by later research, are essential to any real knowledge of Ilindostan. In 1871 appeared his Ancient (feography of India, which contains an exhaustive account of molern discoveries bearing on the Buddhist and Greek periods; and in 1892 he published his magnificent work on Gaya. His Indian collection bears evidence of long and unwearied research; and his unique collection of coins of the ancient Indian States, of the Indo-Sassanian dynastics, &c., is said to be unequalled by any cabinet in the world, not excepting the British Museum itself.

REVIEWS OF NEW BOOKS. 111.

THE MONUMENT.

History of the Monument. By Charles Welch, F.S.A., Librarian to the Corporation of London. With Illustrations, and a Map of Obl London. Price 1s. 6d. Published under the Anthority of the City Lands Committee of the Corporation of the City of London. 40. Lond. 1893.

Most welcome work to citizens of London and to architects is this authoritative history of one of the chief features of London proper. Still we grumble perhaps without reason, for but little account is given of the structure while being built, or how the work was done while it was in course of construction. Chapter i. relates its "Design "and Construction"; how several designs were made (as usual) by its architect, Wren, before the final one was approved with its vase of flames, instead of a ball of copper with flames gilt, a statue of Charles II. 15 feet high, or a Phænix. Is the "wooden model of the pillar," or the model of the scaffolding used, still in existence? The latter is (or was) in the possession of Mr. J. K. Brunel, and a photograph of it would possibly have been more interesting than some of the woodcuts; the model might be now placed in the Guildhall Museum.

A manuscript in the Guildhall Library contains the particulars of expenses, and, moreover, affords the names of the chief artists employed on the work. Of "Joshua Marshall, Mason," some account might have been given, following that of Christopher Wren, Architect, and of (Caius) "Ga-"briell Cibber, Sculpter," who in one paragraph is styled "Gabriell Cibber, Sculpter Mason," showing how in those days the artist and workman were one man: without this connection, indeed, the art displayed in London buildings might have been greatly inferior to what it was and has come down to us. Cibber carve I the "Hierogliphick ffigures on the "colume." Robert Bird was the coppersmith, and William French, blacksmith, was the fourth chief artisan employed, though no doubt Thos. Woodhouse, carpenter, and Anthony Tanner, bricklayer, both did well the little work they were called upon to perform. The exact quantity of Portland stone is copied from The Parentalia, as estimated by the architect, being 28,196 feet cube. The cost of the Monument is given as £12,347 12s., under which amount is a mysterious sum of "£1,102 19 09," to which no description is given! Shall we assume that this was the amount paid to the architect for his commission, including any clerk or clerk of the works (the names of Wren's assistants, beyond that of his best pupil Hawksmoor,* are unknown!)? It is nearly 10 per cent. Thus the whole expenditure is put at £13,450 11s. 9d. How deep was the excavation? Was anything found of the Roman occupation? are questions among others that arise in the mind of an architect or of an archæologist, and probably they are impossible to be answered, or they would have been notified in this admirable description.

Chapter ii. describes the Sculpture—the hieroglyphics of the account - and the Inscriptions on the Pedestal. Historical Incidents and Literary Notices are comprised in chapter iii., including the fact that "the late City architect," Mr. Alexander Peebles it may be assumed, took advantage of the swinging scaffolding that was erected in 1888, to measure every portion of it, and then made drawings to a scale of eight feet to an inch. "The "building is now in as good a condition as ever." Chapter iv. comprises "A Brief Account of the "Great Fire of London," and includes many interesting letters and accounts of that terrible event, and of the incidents which arose out of the Acts of Parliament for rebuilding the city. Rolle's quaint remark is amusing: he states that streets were widened and houses carried up higher than before, and then proceeds to explain the fact, "in "order to the gaining of more room, those latitudi-"narian streets requiring altitudinarian houses." Wren's plan for rebuilding is given and described; and this most interesting publication, which is

^{*} His name is on the print of the Monument dated 1723. The edifice was erected $1671-1677.-\mathrm{W.~P.}$

rendered accessible to the public at an easy rate, is wound up with a valuable list of "Views, "Bibliography, and Authorities," both manuscript and printed, of this grand design, equalling any similar Memorial column of ancient times, the names of which are given in a table extracted from The Dictionary of Architecture.

WYATT PAPWORTH.

(8.) ARCHITECTURAL CHRONOLOGY.

A Chronology of Mediæval and Renaissance Architecture. A Date-Book of Architectural Art from the Building of the Ancient Basilica of St. Peter's, Rome, to the Consecration of the present Church. By J. Tavenor Perry, A.R.I.B.A. Price 16s. [Mr. John Murray, Albemarle Street, W.]

The scope of Mr. Tavenor Perry's work is fairly well expressed by the title quoted above, though the addition of the dates (306 A.D. to 1626 A.D.) would make it more precise. But the title on the cover, "Chronology of Architecture," might mislead the student who saw it on a bookshelf, as of course it excludes all pre-Christian work and much of the Renaissance. It will probably be admitted that this is in itself an error. The author explains in his preface that the period he has chosen was " one of the greatest activity in architecture that "the world has ever seen"; but it is at least doubtful whether, for shorter periods, as much activity has not been displayed before; and there seems no sufficient reason for the selection of such a limited time, nor for its connection with a particular building. It may be hoped that we may see a new edition which will take us back through Greece, Egypt, and Assyria (to note how the wave of art set ever westwards as the centuries rolled on), and forwards to 1700 A.D., so that we may not miss from our "Chronology" the mighty name of Wren, nor look in vain for the date of Sta. Maria della Salute. Within the limits prescribed, the arrangement of the book calls for little but praise. An introduction gives the student an idea of the style prevalent from time to time in the countries of Europe by numerous examples arranged in a tabular form. We may note, however, that if England has nothing to show for the years before 1050, yet Ireland, with its wonderful series of early churches, related apparently to those of the Grecian Archipelago, and its round towers stretching back to the ninth century at least, might have helped to fill the gap.

After the introduction follows a description of the illustrations, some eighteen in number, with their dates. Here we pause to ask why it is that in hardly any book yet published on architecture are the dates of the buildings to be found attached to the illustrations? Even Fergusson often leaves the reader in complete bewilderment as to the date of the building he is describing, while the Italians shame us by putting on their half-lira photographs, not only the date, but often the name of the archi-

tect of the building represented. From this digression we return to the Chronology, which proceeds to mention, in 200 pages, a series of consecutive years, and gives the architectural events of each. The value of this list, dealing, as it does, mainly with well-ascertained facts, cannot be overestimated; and the indices of places and architects, which follow it, enable instant references to be made to a man or building, the references being by year and not by page; they are further divided by mention of the building as a sub-heading to the place, so that one does not waste time in looking (for example) for a house at Halberstadt among the dates of the Dom. The descriptions are generally sufficient, but they are sometimes too laconic. For instance, we are told of Le Mans as follows:—

1134. Cathedral damaged by fire.

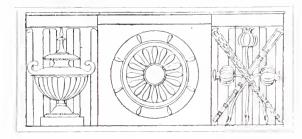
1145. Cathedral. Date carved on south-east pillar of crossing.

1158. Cathedral consecrated.

Now, we know that Le Mans Cathedral consists of a round-arched nave, with very interesting Romanesque capitals, and a splendid Pointed choir, with its cluster of chapels, towering far above the nave, and entirely different in style. The entries are no doubt correct, and the damage to the cathedral led to the building of the choir; but one would expect to find some mention of the erection of the nave in the previous century, and something to indicate that it is the choir which was dated and consecrated in the years referred to. Again, in 1163, we learn that St. Kevin's cell at Glendalough was burnt. This is the only mention of the interesting remains of that charming place, and, as no authority is given, may we hope it is St. Kevin's cell—now called his church—is surely earlier than 1163, and does not look as if it had suffered much from burning at any time, being the only building in the valley which retains its original roof. These Irish remains are so unique, and so much earlier than anything we have in England, that one may be pardoned for wishing them to be referred to as frequently as possible, even if a few German churches were left out in consequence.

Among the founders and architects the name of Rahere is absent, though his strange story, no less than his two foundations at St. Bartholomew's, entitles him to remembrance in connection with his noble church. The hospital, however, is not referred to in the chronology, nor is his tomb, though, perhaps, the latter is too small a structure for insertion. A more remarkable omission is that Michelangelo is only mentioned in connection with the Farnese and the Collegio della Sapienza. His work at St. Peter's and at Florence escapes notice altogether.

In conclusion, the book is one which will be a welcome addition to an architect's shelf; and if it errs, it is chiefly in that it is less comprehensive than one would wish it to be.—R. LANGTON COLE.



HYPETHRAL TEMPLES.

BY PROFESSOR E. CURTIUS, OF BERLIN.*

The octastyle temple of Zeus on the banks of the Ilissos at Athens was a building having the cella entirely open to the sky, without a roof. As a consequence, the term hypethros applied to it by Vitruvius can no longer serve as a specific name for temples that had roofs like the Parthenon, and may have been lighted through them. This important advance in our knowledge of ancient

buildings we again owe to Dr. Dorpfeld.

The hypethral question must now be considered from an essentially different point of view, seeing that the one definite testimony we possessed for hypæthral structures has vanished. But is the whole question decisively answered? Is it therefore proved that the architectural idea of King Antiochus in erecting to Zeus in Athens a complete ναὸς ὖπαιθρος, with an αὐλη περίστυλος in the middle, was something entirely new and original—a plan of construction without precedent? Is it not much more probable that here also an old national tradition had been before his mind, and that a problem which had existed in former times was now solved in a new manner? For the temple which Cossutius erected at the cost of the Syrian king belongs, equally with the δεκάστιλος δίπτερος, to the series of Hellenistic wonders which, by their exaggerated dimensions and daring construction, were intended to surpass everything that had existed in ancient communities.

Thus a fresh light is thrown on the relation of Hellenic to Hellenistic buildings. The old controversy as to temple lighting must turn on the newly acquired facts, and to prevent hasty conclusions being drawn from them I will here mention some circumstances which seem specially

worthy of attention.

In private houses the original source of light was the door. Light and air entered from the street. Houses with an easterly aspect were therefore in favour. They would receive the full brightness of the rising sun [Lucian, De Domo, 6]. The idea of a top light, in preference to side light from the door, arose in connection with the neces-

sity of an opening in the roof for the outlet of the smoke from the hearth (καπνοδόκη), such as we see in the old palace of Lebaie so vividly described by Herodotus [viii. 137]. The doors having originally served as windows, these top openings were naturally also called doors (θύραι, θύραι φωταγωγοί). With the introduction of top lights begins the characteristic development of the Hellenic house. Lucian attributes the charm of a house to the skilful disposition of the windows (¿κ $\tau \hat{\omega} \nu \phi \omega \tau \alpha \gamma \omega \gamma \hat{\omega} \nu \mu \epsilon \mu \eta \chi \alpha i \eta \mu \epsilon i \eta$). On the channels of light (φωταγωγία) depend the elegance, the health and comfort of the house. Every description of roof was invented to flood with light the interior of the building by means of horizontal openings, and from this illumined court to light the surrounding chambers. Thus it was possible, as Lucian says, to throw objects out of these chambers (διὰ τῆς φωταγωγοῦ) into the ἔπαιθρον τῆς

aὐλη̂s Lucian, Convivium, 90].

It was a special care to have the top light arranged to suit the different seasons of the year (προς ωραν έκάστην εὐ έχου) [Lucian, De Donio, 6]. In rainy seasons, wood boarding was provided (stratura ex tabulis, que estate tollerentur, hieme pouerentur). As in old German towns the arrival of summer was announced by benches placed before the doors, so in a well-constructed ancient house the boarded roof was removed during the summer months, and replaced by curtains so as to shade the opening without barring the passage of fresh air. In this way a gradually increasing luxury was developed. For goatskins woven material was substituted. In time coloured curtains came to be employed to throw a soft, agreeable light on the white marble of the court. Ovid very attractively depicts the charming effect of a velum purpureum [Metam. x. 592]. Everything essential to the boarded roof was included in the fixtures of the house; the veia were the property of the tenant, as the Roman jurists clearly distinguish.

developed among the Romans, had been familiar to the Greeks is clearly shown by the ever-recurring but never Latinised word hypæthros. There seems to have been in the Hellenic nature a deeply-grounded, irresistible impulse to enjoy the light and air of heaven. With an almost Greek sensitiveness Vitruvius praises the healthiness and invigorating effect of the open court. To the Greek, daylight in the house was a necessity of life. Lucian attests this in a special manner when, along with the fine proportions of a house in length, breadth, and height, he extols $\tau \hat{\omega} \nu \phi \omega \tau \alpha \gamma \omega \gamma \hat{\omega} \nu \tau \hat{\omega} \epsilon \lambda \epsilon \hat{\omega} \theta \epsilon \rho \sigma r$. It was a distinction between the freeman and the slave that the former could not bear

That this system, which we see so luxuriously

darkness nor dull obscure light. The same was the case between Hellene and barbarian. Ample daylight (πολλή ἡ ἔντον ἡμέρα [Lucian, Hippias, 7], αὐλή, φωταίγεια) was indispensable to a Greek's

^{*} Address to the Archæological Society of Berlin, at a Meeting held in June 1893; and here published with the Professor's permission, the translation having been revised and communicated by Alex. S. Murray, LL.D. [H.A...

enjoyment of life, and the anxiety of providing for it (by the $\phi\omega\tau a\gamma\omega\gamma ia$) was one of the most important problems in domestic architecture, and kept the faculty of artistic invention continually

on the stretch.

This activity extended naturally to public buildings. We have an example in Kyzikos, a city rich in architectural invention [Plin. xxxvi. 100]. There the town-hall had a roof which was famed as a masterpiece of carpentry, the beams being so fixed that they could be removed and replaced without difficulty. As occasion required, a roof was available more or less open in summer, and in winter closed (up to the opaion).

Suppose we had nothing else from antiquity than the numerous and much-varied expressions, scattered in writers and lexicographers, all having reference to top-light—ònalov, foramen tecti, tecta perforata, transsecta; tecti pars patet, lumen summo tecto accipitur, locus tectus intra parietes relictus patulus, cœlum liberum, cœlum patet, tectum interpatet. Allow that most of these expressions come from the Romans, who more than the Greeks are given to mention practical contrivances, we may still safely conclude that to reconcile the necessity of light and air with closed rooms had been from old times one of the chief aims of domestic architecture, and had been practised with gradually increasing skill.

In religious matters new considerations arise. From the time of the Pelasgians the pious Hellenes felt surer of the divine presence under the open sky. They prayed and sacrificed sub divo, and the altar of Zeus Herkeios can only be imagined as $\tilde{\epsilon}\nu \ \tilde{\nu}\pi\alpha(\theta\rho\varphi \ \tau\hat{\gamma}s \ \tilde{\alpha}\nu\lambda\hat{\gamma}s \ [Paus. ii. 24]$; he who would

take an oath, prodibat in impluvium.

How could men who enjoyed life only in the open air think it would be otherwise with the gods of Olympos! As to the astral deities, it was a law that they could only be invoked in the open air. Places where they had given special tokens of their presence could not be closed from the heavens by any roof.

It may have been folly, in the oldest popular belief, to confine the divine power within walls, but the introduction of image worship required

temples to shelter the Égava of the gods.

The architectural member whose function in the Doric temple is first mentioned by name is the metope. The word indicates an open space between two triglyphs. The etymology may be questioned, though there is no satisfactory ground for that. But we have a further and perfectly independent confirmation in a passage of Euripides [Iph. Taur. 1181], where Pylades proposes to get into the interior of the temple by means of the opening between the triglyphs. The text is trustworthy and its explanation unquestionable, and, however adventurous the proposal (of Pylades) may sound, the poet, well versed as he was in the antiquities of his country, could never have sug-

gested to an Attic public what was absurd and sure to excite ridicule.

We have thus sufficient evidence that even in the earliest temples there had been an endeavour to make the cella independent of the light entering in by the door, and to illumine it by means of high-placed side windows ($\theta \dot{\psi} \rho a \iota \phi \omega \tau a \gamma \omega \gamma o i$).

Metope windows being impossible in peripteral buildings, the question arises whether in these splendid edifices with their surrounding porticoes a return was made to the primitive method of lighting by the door. Had this been so, Vitruvius, in his notice of the various forms of the Peripteros, would have reflected on the Pyknostyle as prejudicial to the influx of light. The only objection he urges is that it prevents a free view of the door, and that the sculpture cannot be well seen from the outside [Vitr. 71]. But when it is argued, from the great width of the doors, that they must have served some other purpose besides that of entrances, this inference cannot be accepted, seeing that the width of the approaches and entrances to the temples tended to the special honour of the gods, as the δδοὶ ἐκατόμπεδοι prove. Besides, the Pantheon shows that wide doors do not make a top-light superfluous. In private houses streams of light lent grace and dignity to the rooms, and we may also assume that the dwellings of the gods were not less cared for in that respect. This is shown by the metopes of simple temple cellas, and confirmed by the temple of Athene Nike in Athens, the fronts of which had no walls on either side of the door, so as to allow the entrance of as much sunlight as possible into the small chamber. Those temples, which were essentially treasure-houses, we must conceive to have been lighted from above. It appears to me incredible that the taking to pieces of the Parthenos statue, and the careful weighing of all the valuable parts of it and of its basis, could have been carried out under the supervision and responsibility of a large number of sworn officials with wide open doors. In regard to the temple at Delphi, we learn from the Ion of Euripides that the doors were shut when Xuthos wandered through the rooms, and that the persons outside became aware of his return by the great noise as the heavy doors rolled open. The doors therefore served only for people going in and out. Apollo enters from above (eulminis per aperta fastigia) into his sanctuary; again, the thunderbolt which Zeus hurled down in front of his image (at Olympia) was not thought to have broken through the roof, and it is a firmly established fact that the vase which was placed as a record of this divine approval of the work of Pheidias stood under open sky.

In temples which were not, like that of Athene Polias, open for daily service, the great doors must be supposed to have been shut except on special occasions: (hence [Plautus, Bacchides, v. 900] Abiit in arcem edem visere Minervæ, nuno

aperta est; for ordinary visits of strangers there would be smaller entrances.

The opinion has been expressed that for colossal statues within temples it would be an advantage if the light were not too powerful, and certainly the Greeks knew how to produce an effect of solemnity imposing in the highest degree. We may be sure that if in private houses the greatest skill was displayed in procuring impressive lighteffects by artistic arrangement of the curtains for the openings in the roof, no technical device would be neglected which could give full effect to the matchless temple statues of a classical time, whether by subdued or brilliant illumination. Above all, it was necessary that the detail, which was lavished with unexampled artistic resource on these statues, should be easily and fully appreciated. Nor can we avoid the conviction that, had the doors really been the only source of light in the Parthenon and in the temple of Zens at Olympia, the position and dimensions of the colossal statues would have been different. With light only from the door, it is difficult to comprehend why the place chosen for the statues should have been the very farthest from the door and the most exposed to obstructions in the general view of the statucs.

As regards the temple at Olympia the pictures of Panainos give us a clue. These pictures decorated the barriers which enclosed a court where people assembled directly at the feet of the image of Zens for quiet contemplation. So expressive a combination of painting and sculpture even the Parthenon did not possess. This arrangement of the interior of the temple was arrived at under the immediate influence of Panainos, and if he placed his famous pictures on the inner side of the barrier we cannot possibly imagine that he should choose for them surfaces which would be completely in obscurity, even at noonday, with the doors wide open! This court, on which Panainos had bestowed special care, necessarily presupposes an upper light.

The use of lamps and candles which we would otherwise have to assume in this instance is only known to us in the "Opisthodomos" of the Acropolis, a building which in my judgment [Stadtgeschichte, p. 132] was no other than the back chamber of the older Hekatompedos, a room without top-light, requiring to be artificially lighted when the moneys and inventories were being revised. In these circumstances fires might arise such as the one mentioned by Demosthenes [c. Tim. 743].

Financial records and accounts were deposited for official control; but there were also in the temples a quantity of memorials meant for the public in general. Thanks to the learning and diligence of Lolling, many inscriptions which had been incised on the bases of small works of art dedicated to Athene have been identified as such. The least the donors would expect was that these

inscriptions could be read with convenience, while every artistically inclined visitor to the Hekatom-pedos would wish to examine these works carefully. Nowhere else could be seen such rich and varied offerings of Athenian piety.

Far more important were the inscribed tablets referring to matters of national interest, such as the pillar in the temple of Zeus at Olympia, on which were minutely recorded the materials and quantities of the colossal gold and ivory statue. Are we then to suppose that when it was desired to examine these wonderful objects stored up in the temples with more leisure than was available on the open days of public festivals, the doors had to be opened specially?

Those who adduce the strength of the southern snn, as an argument against the necessity for a top-light, must remember that precisely on the occasions of high festivals, when everything ought to appear in the greatest brilliance, the light from the door would be much diminished by the great trains of citizens crossing the threshold and filling the entire nave.

But, irrespective of the paintings of Panainos and their position adverse to lighting from the door, we have positive examples of artistic decoration which most certainly could not have been satisfactorily seen by door-light-above all, the freize of Phigaleia, as to which the opponents of a top-light have been obliged to accept an hypæthral cella. Was, then, the principle of construction thus admitted a solitary exception? That is surely an assumption of the highest improbability if we consider how far the artistic decoration within temples may have surpassed any idea we can form, how early the necessity of an upper light had been felt by the Greeks, and how in all branches of architecture they had applied themselves to the task of roofing large buildings without thereby debarring the entrance of daylight.

It is true, we are not in a position to form a clear conception of roof construction, developed as it had been by long practice and great technical skill; but that is no evidence against hypæthral lighting. One of the best proofs of our imperfect appreciation of the works of art most admired in antiquity is the fact that it is impossible for us to form a satisfactory idea of the colossal images in the temples and their effect.

No less inconclusive is the circumstance that no positive evidence has yet been obtained of an impluvium in Greek temples. Meanwhile, as far as I see, it has not yet been proved that the holes still to be seen in the floor of the temple of Zeus at Olympia, measuring 0.44 metre in length and 0.24 metre in width, were not adapted for carrying off rain-water, like the holes in the floor of the Pantheon. They took up and drained off the water which we poured in by way of experiment.

My aim has been to guard against considering as solved an important problem in the history of ancient buildings, because of the discovery at the Athenian Olympieion. Any one conversant with recent literature knows how his estimate of the various temples fluctuates amid conflicting opinions. We have not to pronounce a verdict, but to go on always learning. The pierced roof-tiles at Olympia which conveyed light to the attic have only been recently discovered. When Dörpfeld says, "Nothing "has been found that would indicate the existence "of a large top light," that is true. But the question is not the magnitude of the opening. Much could be obtained by a very moderate aperture which should admit zenith light.

The Hellenistic hypæthral temple is the product of a long series of Hellenic roof constructions which provided for the temple a top-light of greater or less dimensions. What had not been attempted under a Roman sky was, so far as we know, first achieved in the octastyle temple of Zeus, on the banks of the Ilissos, a bold and splendid edifice which was not content with merely an opening in the roof, but left the entire nave roofless, like an

hypæthral peristyle.

Taking as a basis material collected chiefly by Karl Bötticher with his indefatigable industry, I have attempted to prevent unjustified conclusions being drawn from the recent discoveries. In my judgment a lightless Greek temple is so incredible that the technical impossibility of a top-light must be proved before I can relinquish belief in it.

NOTES, QUERIES, AND REPLIES.

Heights of Houses in London after the Great Fire.

Among the Rules and Directions, printed by Stow [vol. i. p. 233], for rebuilding the City of London after the Great Fire of 1666, are some interesting items determining the character of the new houses and the heights to which they might rise. The first category of house was to have two storeys, besides cellars and garrets: the cellars 6 feet 6 inches high, and the two storeys each 9 feet high from floor to ceiling. The second category was to consist of three storeys besides cellars and garrets: the cellars 6 feet 6 inches high, the first and second storey each 10 feet high, and the third 9 feet, from floor to ceiling. The third category, fronting the principal streets, was to consist of four storeys besides cellars and garrets: the first storey or ground floor to be full 10 feet high, the second or first floor 10 feet 6 inches high, the third 9 feet, and the fourth storey 8 feet 6 inches, from floor to ceiling. The roofs of all these three sorts of buildings were to be uniform. Thus, allowing the level of the ground floor or first storey to be raised 10 inches above that of the street (such height being prescribed as not more than 13 nor less than 6 inches above the street), houses of the least sort were about 20 feet from the streetlevel to the eaves; houses of a better sort about 32 feet 6 inches; and houses fronting the principal streets about 43 feet. All houses of the fourth sort of building, to use the exact words of the Rules, were "Mansion houses and of the "greatest bigness," and were therefore to have the heights, &c., of their storeys left to discretion, but "so that four storeys be not exceeded."

Vitruvius's Grecian House.

From Professor T. ROGER SMITH [F.]—

While fully recognising the many excellences of Mr. Falkener's Paper on this subject, I cannot feel that it satisfactorily provides an account of such a Grecian house as Vitruvius describes, the more so as the Roman architect's description has to be rearranged, and in part explained away, in order to make it fit with the plan of a pseudo-Pompeian house which the learned English writer propounds. It seems therefore worth while, now that the ground plans of a great Greek palace at Tiryns and of a smaller one at Mykene are available, to inquire if they throw light on the Vitruvian description. It is quite true that Tiryns dates from a period many centuries anterior to the time of Vitruvius; but, as Mr. Falkener himself observes [p. 38],—"the forms then (i.e. in the "Augustan age) in use had their origin in the "Homeric period, though the names were "changed"; and my suggestion is that the disposition of those forms adopted generally in Greece also had its origin in that age.

If we take Dr. Dörpfeld's ground-plan of the palace [fig. 1, next page], and accept his explanation of it, and with the plan before us read the description of the Greek house in Vitruvius without any inversions or omissions, we shall find that Vitruvius's description is very closely fitted by the general disposition, and in some particular by even the details of that plan. Taking the paragraphs as Mr. Falkener numbers them, the following points may be noticed: (1) There is no atrium at Tiryns. (2) You enter a not very spacious propyleum, having on one hand two rooms, which are probably porters' rooms, and on the other traces of buildings of which the plan cannot now be recovered, and which it is quite possible were stables. porch would be appropriately termed θυρωρείον. If the obscure words about inner doors mean that they are close to the porter's door, the plan agrees therewith also. (3-7) From this propylæum the first of two peristyles is approached along a pass-The two peristyles stand side by side at Tiryns, and not one beyond another, as Mr. Falkener's plan suggests, though in fact it fails to provide the two peristyles which Vitruvius describes. The peristyle, and its appendages, which is first reached is the women's part, or Gynæconitis, and this is the part first dealt with by Vitruvius.

This peristyle is less ornate than Vitruvius describes, but there is in it the shallow vestibule looking south, which he calls *prostas*, and behind it comes the women's *megaron*, which answers to

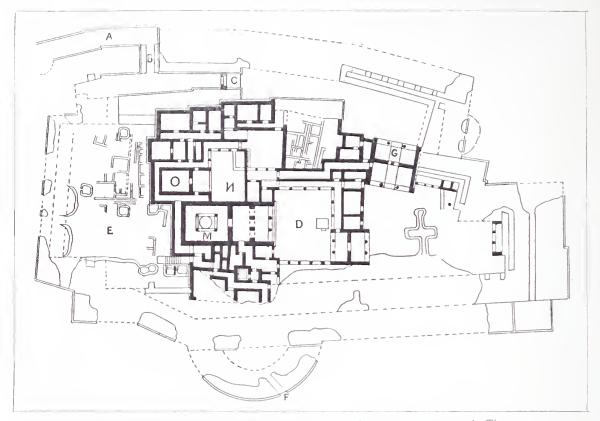


FIG. 1.—THE FORTRESS OF TIRYNS, FROM A PLAN BY DR. DORPFELD IN SCHLIEMANN'S Tiryns.

A, Slope up to the Gate; B, Gateway; C, Gate of Upper Fortress; D, Courtyard of the men's apartments; E, Middle Fortress; F, Postern;
O, Great Propyleum; M, Megaron of the men; N, Little Courtyard; O, Megaron of the women.

the *aci magni* of Vitruvius where the women and spinsters spent their time. There are chambers adjoining which may well furnish *thalamus* and

Court State of the state of the

FIG. 2.-HOUSE AT MYKENE.

antethalamus, and there is a considerable space of which the plan is not now capable of being made out, and which may be taken to have provided the triclinia, cubicula, and cellæ familiaricæ, or the

substitutes for them which existed in the Homeric age (8-10). "To this is joined," says Vitruvius. "a larger house with more spacious peristyle."

To this large house he subsequently gives the name of Andronitis-the men's quarters; and accordingly adjoining the women's house—but almost entirely separated from it we find on the plan of Tiryns another house containing the larger and more ornate men's peristyle, with its prostas and the men's megaron. This house, Vitruvius adds, has its own handsome portal, which is exactly what we find at Tiryns, and thus far at least the ruins of the building singularly correspond with the main lines of the author's description. There are, as was the case in the women's part, considerable portions of the plan which are no longer recoverable, and it may well be that were we in possession of them we should find them correspond to some of those parts of the

andronitis as described by Vitruvius of which I cannot pretend to find counterparts at Tiryns; but we must not forget that it is not likely that, in so remote an age as that in which Tiryns was

built, either a library or a picture gallery would be

provided.

The plan of the palace at Mykene, though smaller and less complete, so far corresponds to that of Tiryns as to show the men's megaron as entirely distinct from the women's rooms, the two being at opposite sides of a court. The small house at Mykene, of which a plan is appended [fig. 2], shows a very marked separation between the men's and the women's apartments, though arrived at in a different way, the women's apartments having been situated in an upper storey.

To return to the plan of the palace at Tiryns; there are in it two peculiarities which deserve to be pointed out, and in which it differs altogether from the arrangements universal at Pompeii. The first is the almost Oriental care with which the access to the women's hall from the outside or from the men's side of the house is rendered tortuous, so that no one can see in from the street or from the outer court or from the men's court, and that any person entering has to pass round more than one angle obstructing direct access. The other peculiarity is the existence of narrow passages running quite round the back of the women's hall and the men's hall, and apparently intended for the use of slaves and attendants. The various chambers, and, in fact, all parts of the house, are accessible to slaves using these passages without it being necessary for them to cross either the men's or the women's hall or court. In the ordinary Roman or Pompeian house all these elaborate passages give place to one short straight corridor—the fauces—opening at one end into the atrium, and at the other into the peristyle, so that the tablinum was the only part of the house which the slaves need never pass through.

REPLIES.

3. Brick and Concrete Walls [p. 58].

From J. W. Cockrill (A.)—

In 1875 I used a similar mode of construction to that described by Mr. Gethin, Portland cement being used for the concrete. I found, however, that only when a wall was 18 inches or more in thickness was there any economy. The work then done is quite waterproof. my neighbourhood ordinary brickwork may be taken as costing 25s. per yard cube. Good concrete, at the present price of Portland cement, can be done at 12s. per yard cube. This fact, coupled with the desire to introduce surfaces of glazed ware, led me in 1886 to use concrete in the construction of a cemetery chapel with a glazed wall lining internally, and coursed flint with terra cotta dressings externally; the lining was made for me by Messrs. Doulton, and their "cellular" terra cotta was the outcome of my desire to introduce terra cotta into this particular class of construction. The glazed lining was made for me 9 inches by $4\frac{1}{2}$ on face, with the back hollowed out $1\frac{3}{4}$ inch thick. The cost of this work hardly exceeded what it would have done if executed in the cheapest way in plain brickwork. I have since erected a lavatory with a similar mode of construction, but have used a tile of section . This tile was made by Messrs.

Doulton double ____, and partly cut before burning. In this case a wall is produced with both surfaces glazed at about the cost of ordinary unglazed brickwork. I am now using the same tile in two new ward blocks at an isolation hospital, effecting by its use a saving of at least £200, producing better walls than can be done by any other mode of construction, this class of work having all the advantages which Mr. Gethin claims for it. For underground work in which one side of the concrete is against the soil a considerable saving is made by using such a method, and in plans now being made by me for swimming baths, subways, and sewers I intend introducing it, and estimate that a saving of quite thirty per cent. will be made over any other form of glazed surface construction which could be adopted, in which the face is boulded with the body of the wall.

From E. M. Gibbs [F.]—

Thin Waterproof Walls.—Somewhat similar advantages to those claimed by Mr. Gethin for his brick and concrete walls have been obtained by the building of walls only 10 inches thick, consisting of two half-brick walls built 1 inch apart in cement mortar, the 1 inch being also filled with it as the walls are built. No headers are used. The cement is the bond. These walls are used in sale shops of steel and iron framework construction, filling in spaces about 13 feet square; the object being the reduction in weight and the saving of valuable floor space. The walls are in some cases faced with glazed bricks, and in others with brick and stone in bands. In all cases they have resisted the rain.

From W. Hilton Nash [A.]—

With reference to the notes which appeared in the last issue of the Journal by Mr. Gethin, I may state that I have recently built some walling of a similar character, only the outside was faced with stone instead of brick. This was employed in a church in Sussex, and appears to have answered very well. The concrete between the stone and brick linings forms a sort of vertical damp course which is very advantageous in exposed situations. The stones were 12 to 15 inches in height, and band stones were let in at intervals. It is very important in this class of work to proceed with deliberation, or the concrete is apt to make the stonework bulge. The concrete should be inserted every four courses. The brickwork in the walls I allude to was 9 inches thick, the stone 6 to 9 inches thick, with about a 7-inch cavity between, which was filled with cement concrete.



9, Conduit Street, London, W., 7 Dec. 1893.

MINUTES. 111.

At the Third General Meeting (Business) of the Session, held on Monday, 4th December 1893, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the chair, with 20 Fellows (including 8 members of the Council) and 29 Associates (including 1 member of the Council), the Minutes of the Meeting held 20th November 1893 were taken as read and signed as correct.

The Secretary announced the names of the following applicants for candidature: As Fellows Benjamin Ferdinand Simpson (Newcastle-on-Tyne), Charles James Smithem, and Walter Hilton Nash [A.]; as Associate—John Alexander Russell Inglis (Edinburgh); as Hon. Associate—James Roger Bramble, F.S.A. (Yatton, Somerset).

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 to be entered on the Minutes.

The President announced that, by a Resolution of the Council, pursuant to the By-law No. 20, the following defaulters had been suspended from membership until the 31st December 1893, namely:—Hugh Roumieu Gough [F], and Alfred William Mardon Mowbray F. Further, that, by a Resolution of the Council, pursuant to the Bylaw No. 20, the following defaulters had ceased to be members of the Institute, namely: George Ashdown Audsley [F], John Lewis Holmes [F], Walter Merceron Hudson [A], and William John Willeox [A].

The following member, attending for the first time since his election, was formally admitted and signed the Register of Associates, namely: John Brightmore Mitchell-

Withers, jun. (Shetlield).

The President referred to the loan by Mr. Falkener of his paintings and water-colour drawings which were exhibited in the Meeting-room, and stated that the exhibition of the same would continue until the close of Wednesday, 13th December 1893. Whereupon it was

Resolved, that the cordial thanks of the Institute be offered to Mr. Falkener for his kindness in lending his paintings and water-colour drawings for exhibition.

The President announced the results of the Preliminary Examination held on the 14th and 15th November 1893, in London and Manchester, and read the names of 73 persons who had been registered as Probationers—see p. 75.

The following candidates for membership were elected by show of hands, namely:

As Fellows (3).

CHARLES FRANCE (Bradford).
THOMAS JERRAM BAILEY [4.7], Architect to the School Board for London.
WILLIAM HENRY ARBER [4.7]

As Associates (12).
CHARLES ARTHUR FORD WHITCOMBE.
JOHN WHITE, Glasgow.
WILLIAM GREGORY WATKINS (Lincoln).
HENRY ARTHUR CROUCH (Brisbane, Australia).
ROBERT SHEKLETON BALFOUR.
ARTHUR GEORGE MORRICE.
REGINALD ARTHUR RIX.
FRANK EARLE (Hull).
EDWARD SKINNER (Colombo, Ceylon).
CECIL STUART ROCHE.
DAVID WILLIAM KENNEDY.
ERSKINE SEATON CUMMINGS.

As Hon. Associate.

JOHN OLIVER SURTEES ELMORE, Assoc. M. Inst.C.E. (Kapurthala, Punjab).

As Hon. Corr. Member.

The Commendatore RODOLFO LANCIANI, Architect, Member of the Archæological Commission of Rome, &c. (Rome).

Mr. Sydney Vacher [A.] having asked certain questions respecting the title of the Examination qualifying for candidature as Associate, the educational functions of the Institute, the purposes of the division of the United Kingdom into architectural districts or provinces, the intentions respecting the Home District, &c., the President replied to each categorically [Appendix B].

Mr. Wm. Woodward A. having asked a question as to delay in revising the conditions of Builders' Contracts, Mr. Edwin T. Hall F., formerly Hon. Secretary of the Practice Standing Committee, replied on behalf of that Committee [Appendix C]; and, further, having invited attention to the alleged official practice of deferring action respecting building works believed to be executed in contravention of the Building Acts, whereby serious loss to owners, architects, and others might be entailed, a discussion ensued, in which Mr. Woodward agreed to allow the matter to be referred to the Practice Standing Committee for the purpose of embodying a recommendation thereon in their report to the Council of the Institute on the Consolidation Bill proposed to be introduced into Parliament by the London County Council [Appendix D].

The proceedings of the Meeting having been thus brought

to an end, the Institute adjourned at 9.30 p.m.

APPENDICES.

A. Description of Mr. Falkener's Drawings. Pompeii.

1. Maritime Villa, called the flouse of Diomedes. This drawing gives an idea of what the houses of Pompeii were like which sloped down to the sea at the time of the destruction of the city. The sea-front is a restoration, as is also the upper storey which faced the street. The portico, with pediment overlooking the peristyle, is not shown in Gell's Pompeii, but the columns are still existing, having been walled up by the last owner, so as to get a Cyzicene Triclinium. Vesuvius, as seen from Pompeii, is very different from what it appears as seen from Naples. It shows the huge crater which eaused the destruction of

these eities of the Campania.

2. The Prothyrum of the House of the Faun.—In this drawing are seen the stepping-stones, so constantly used in Pompeii in consequence of the height of the foot-pavements. At the side of the entrance is one of the shops belonging to the owner. There is a mezzanine over the shop, and the noble door of the mansion is nearly as high as this upper room. The height of the shops is always equal to the height of the atrium behind; so that what the Italians call the piano nobile, or the upper floor of the mansion, extended over these shops. Just inside the door is seen, very high up, the Lararium, which is referred to by the prophet as "behind the door." The Lares were saluted, or were supposed to be saluted, by every one going into the house, but the Lararium was generally in the atrium itself.

3. The Taberna.—We here see one of the shops. The upper part of the shop was approached by a small wooden staircase, and it served the same purpose as the back room of our shops. As these rooms were generally open, the painted ceilings would be visible as one passed along. The holes in the curb for tethering horses will be noticed, and the polygonal pavement. This house is remarkable in showing a residence on the upper floor, approached only

from the street.

4. The Atrium of the House of Sallust.—This was the principal room in the house, some 25 feet high and 50 feet long. In the centre is the impluvium, with its fountain (now in the museum at Naples). It has alæ at the sides, and through the tablinum are seen the columns of the pseudoperistylium, having the further wall painted to represent a garden; a practice resorted to in all the smaller houses of Pompeii which had not room for a noble peristyle. The pavement is of black stucco, with white marble tesseræ, which form lines to seven different vanishing points, including the perpendicular and horizontal.

5. The Impluvium of the House of the Faun.—This impluvium shows the famous bronze faun, from which the house takes its name. Behind the tablinum may be seen

the double peristyle, one behind the other.

6. The Peristyle of the House of the Faun.—This is the largest house in Pompeii, and was enriched with costly mosaic pavements in nearly every room, the principal one representing the Battle of Issus between Alexander and Darius. Like several of the houses of Pompeii, the peristyle has an upper storey; but, unlike any of the others, it has a second peristyle, serving the purpose of a hortus, which may be seen behind the columns of the peristyle. It was therefore a magnificent house.

7. The Lararium of the Peristyle.—In the lararium of this part of the house the penates were generally worshipped, though in some houses they appropriated a

separate room, so as to be more private, called

8. The Sacrarium, House of the Quæstor.—This example is quite perfect, and is the only room in Pompeii in which

the ceiling has been preserved.

9. The Triclinium with a pergula.—Here again the back wall is painted so as to make the peristyle appear more extensive. The columns are painted to represent mosaic work, winding round the columns in serpentine lines. These were formed by describing a circle at bottom of column, dividing it into flutes, and running these lines up; then forming horizontal circles all the way up, and drawing in the leaves at the intersections.

10. The Mesaulos, or communication from one atrium to another, the further one being the atrium of a hospitalium, or suite of apartments for the reception of friends and

visitors.

11. The Solarium.—An imaginary view from the top of a house, looking down upon the roofs of other houses, and having Castellamare and Sorrento in the distance. The pergula, so common on roofs of houses in the wall paintings and in modern Italy, is supported on wooden columns, as represented in arabesque paintings.

12. Origin of Arabesque Painting.—A view through a window-opening in Pompeii, which might have given the idea of wall-painting in three divisions; the side ones ornamented with figures, and the centre one opening with

a colonnade, and people behind it.

13. My house.—The house of Marcus Lucretius, formerly called the Casa delle Suonatrice. It was excavated under my personal superintendence during four months in 1847. I desired that everything should be left as it was found, instead of being taken to the Museo Borbonico. This request was granted, and it is now one of the show houses on this account. The tablinum is interesting in showing recesses in the wall on either side for inserting paintings on wood, which Pliny says were always of greater merit, because of higher finish. The sinking for the clamps of the pannels are clearly seen.

14. The Greek Theatre.—This drawing is made from measurements and examination of various theatres in Asia Minor. The Greek theatre differed from the Roman in devoting the orchestra to dancing and music, and to the chorus, and in the corners of the theatre being open, thus giving a view of the country. They were more of a horse-shoe form, and were larger and more common than the Roman. The awning is supposed to be hung from a

large hook or ring, and run up in slips; while the ring itself was supported by strong ropes attached to lofty poles which ran all round the theatre. These theatres often held 45,000 people. That of Lyttus in Crete was 600 feet in diameter.

15. The great hall at Karnac, the columns of which are 13 feet in diameter.

16. The Parthenon at Athens, as restored by me.

17. Ephesus.—The city of Ephesus as viewed from the great theatre, showing all the public buildings in the heart of the city, and all the private houses on the hills. In front is the agora or forum, having a lake in the centre surrounded by a colonnade, and on the left the market-place. Behind

the great agora is the great gymnasium.

18. An aqueduct at Ephesus.—This drawing was lost for many years, so that I could not include it in my book on Ephesus. At length it was discovered rolled up in a drawer, and crushed and bruised so that I was obliged to cut out the sky, and paint a new one on another sheet, which I pasted at the back, but which is scarcely seen. I mentioned this when I sent it to the Royal Academy, and it was consequently rejected, looking like a trick of art, to get greater effect. There are long inscriptions in Greek and Latin along the whole length, which are still visible, even in this drawing, giving the name of the donor.

19. Pinara, in Lycia—view from the ruins of the theatre. In front is the site of the city placed upon a platform of rock, and behind it is the Acropolis perched high among the clouds, and the abrupt sides of which formed the necropolis of the city, being pierced with tombs in every direction.

20. Myra, in Lycia. -Rock-cut tombs.

21. Hierapolis.—Petrified cascade. In the centre of the city is a spring of warm water, charged with lime. Being full of air, the water magnifies any object placed in it. Putting my foot in it, it appeared to be the foot of a colossal statue. As the stream flows through the city, the heavier portions of the lime sink to the bottom, while the lighter go to the sides. It thus gradually builds itself up like a stone wall, carrying the water to the edge of the plateau on which the city is built, and flows from it like a cascade. After many years, when its bed becomes level with the spring, it finds a weak point, and turns aside in another direction to form a cascade somewhere else, leaving the former cascade of stone perfectly dry. The only water visible is that in the centre of the small basins, after rain.

22. "My tomb."—A tomb I discovered in Lymyra in Lycia. It is in three steps, and the four horses' heads

represent the quadriga of the deceased.

23. Euromus, in Asia Minor, a very picturesque ruin, which composes well from the contrast of the two angles.

24. The city of Adalia, the ancient Attaleia in Pamphylia. Morning effect.

Morning enect

25. The river cataracts at Attaleia.—Evening effect: so called from its falling into the sea in so many cataracts.

- 26. Aiasalik, the ancient *Ephesus*.—Mosque. The beautiful writing over door will be seen in detail in my "Ephesus."
- 27. Aiasalik.—Interior of the Mosque. It is all in ruins, and the pulpit was lying on the floor in fragments when I made the drawing.

28. Aiasalik Cemetery.

29. Aleppo.—Vizir Khan. 30. Aleppo, House at—

31. Ballat, the ancient Miletus.—Outside of Mosque. The capitals are remarkable as imitating stalactites; and the perforated slabs forming windows are interesting, as admitting light and ventilation.

32. Ballat.—Interior of the Mosque. It is now in ruins. The carpet is evidence of a puzzle, to find out a vanishing point for lines which are not given in the original drawing. It is the third carpet I "put down," the former ones "going "up hill."

33. Mylassa, Medrassah at-

34. Nicaa.-Mosque with porcelain minaret.

35. Adrianople, Mosque at.—The lights and shadows have all been reversed since it was exhibited at the Academy; and the sky being mixed with oil spots had to be restored with erayons.

36. The Capella Reale at Palermo all of mosaic.

37. Copy of a crayon copy of a painting by De Heim at the Louvre. The crayon drawing was so bad that I mistook the lemon which is in the original painting for an orange; after painting all the fruit from fruit bought at Covent Garden, and adding the butterflies, prawns, &c., I went to Paris, and then discovered the mistake about the lemon. A first attempt in oil.

38. An altar-piece at Lubeck, forming a triptych—a most wonderful sculpture, exhibiting a double scene and double tracery, one behind the other. In front is the Crucifixion, St. Veronica, and the soldiers easting lots; and behind are our Saviour carrying the cross, the cen-

turion, and the Resurrection.

The frame once contained a copy of a painting by Titian, ordered by Charles I. His initials and crown are branded in at the back, and a parchment describes it as being one of ten such pictures.

Copy of writing on parchment at back of frame, written

by Vanderdoort, Keeper of the King's Cabinet: -

9

hind shelf of his Maj^{*} Cab^t room Cubbards in y^{*} Wh. Hall, 1639

of6 of9

Extract from the Ashmolean Catalogue.

"Here followeth the fourth book of the King's limited pieces and pictures, being No. 10, that are kept in his "Majesty's new erected Cab' room, within the cupboards at "the present time at Whitehall, about 1639, whereof the "ten limited pieces are in double shutting cases, with "locks and keys, and glasses over them, the particulars

"thereof specified as follows:— No. 9.

"The great limined piece, done upon the right light. Ninth, lying along a naked woman on her back, whereby the chaumber afar off in a little waiting-room a

"Done by
"Peter Oliver
"after
"Titian."

"woman knceling, taking something out of "a chest, another waiting woman coming "after, bringing along a pillow, whereof "my Lord Chamberlain hath the principal "iu oil colours, the limned piece being dated 1638.

"Size 6 inches by 9 inches."

B. - Mr. Vacher's Questions.

Mr. SYDNEY VACHER [A.] said his first question was: "Would the Council consider the advisability of omitting "in future the words 'in Architecture' in the description "of the Examination for qualifying as Associate, in the "KALENDAR and all other places?" He observed that this had been done in the advertisements of the Examination in the press; and, as many members of the Institute disagreed with the Examination being designated an examination in Architecture, the omission of the words would please many and offend none. The second question was: "Did the Council consider the Royal Institute of "British Architects an educational body?" The third question: "If not, the title to the map showing the United "Kingdom divided into provinces issued in the first num-

" ber of the new Journal seemed incorrect and should be "altered, and the words 'for examination' inserted in " place of 'for educational,' so as to read: "' Map showing " the divisions of the Provinces for examination and "'other purposes'; and would the Council see that an " erratum to that effect was put in the next number of the " JOURNAL?" He thought it wiser that it should be explained that it was for the help of their new qualification for Associates. Formerly it was merely the word of the members that was required. Now it was decided that was not sufficient, and the Charter had been altered to allow of an examinational qualification for an Associate being substituted. His fourth question was: "In " view of the new regulation for the qualifications of "Fellows passed last session, would the Council take into "consideration the formation of a new class of mem-" bers higher in grade than that of Associate, to admit "those gentlemen in full honourable practice who had " and who had not passed the Associates' examination, "and who could not comply with the qualification for "Fellows?" As he (Mr. Vacher) had formerly pointed out, it would be a great help to the Institute if a new class were created as suggested. His fifth question was: "With regard to the second resolution passed at the "Liverpool Conference last year, referred to in the Presi-"dential address, was it by coercion that the Council of "the Southern Province-viz. the Institute -hoped to "absorb within its centre those architects of repute and "their following of young men and sympathisers who had "presented a Memorial to the Institute which had been "disregarded?" He considered that the gentlemen who backed up the Memorial with their names were some of the most advanced among English architects, and that their opinion on examination should have great weight with the Institute, even though they were not members. The sixth question was: "If not, by what means did the "Institute hope to attain that end?" always bearing in mind that they had that Memorial against the Examination before them. The seventh question he put because the Presidential Address conveyed the idea that the Architectural Association was either in alliance, or contemplated alliance, with the Institute: "Was it a fact that the "London Architectural Association was not in alliance " with the Iustitute, and had no present intention of any "such alliance?"

The PRESIDENT said he would endeavour to answer Mr. Vaeher's questions as briefly as possible:

As to Question 1. Seeing that the examination, in their opinion, if it were an examination in anything at all, was an examination in architecture, it would be a distinct error and misleading to assign to it any other name. Until valid reasons were brought before the Council for an alteration, it was not proposed to make any alteration.

As to Question 2. The Institute was not a teaching body, and had never assumed to be so; but, looking to the results of the policy which the Institute had for many years followed, seeing that it had done more to encourage and foster the education of young architects than any step which, so far as he was aware, had ever before been taken, it was in the highest and fullest sense of the word

an educational body.

As to Question 3. The heading on the map was correct; it was a map dividing the United Kingdom into certain architectural provinces for educational purposes. One of the principal motives was to bring into active organisation the educational facilities that existed at various local centres, to encourage and foster them, and so to promote the education of the young architects throughout the country. To alter the heading of the map as proposed would be an erratum which would require to be corrected. As to Question 4. In view of the new regulation for

As to Question 4. In view of the new regulation for the qualifications of Fellows passed last session, he ventured to say it would be most unwise to make the suggested alteration. Until the new regulation had been tested by experience it would be premature to make further alterations.

As to Question 5. In writing the paragraph referred to in the Address, the President explained that it was not a reference so much to the Royal Institute as to the various Allied Societies. Certainly it was not by coercion that they should hope to bring into the Institute the gentlemen referred to.

As to Question 6. The word "hope" was hardly the term to use after the experience they had had. It was the desire of every one connected with the Institute to see men whom they all acknowledged as distinguished and able architects, members of the Institute. It was right to add, however, that when the Memorial was presented, the Council invited the Memorialists to discuss the matter with them and thrash it out. The invitation was declined. He (the President) had more than once declared that nothing would give him greater pleasure than to see those gentlemen, instead of remaining outside and criticising the Institute's well-meant efforts for the advancement of architecture, come among them and join them, and help them in such efforts. They could only express regret that such invitations and such cordial expressions of goodwill had so far been disregarded. Mr. Vacher had said that the Memorial had been disregarded by the Institute. Most emphatically he would say that that Memorial was not disregarded; it was carefully considered, and the gentlemen who signed it were asked to eome and discuss it. [Mr. Vacher, interposing, said he wished rather to imply that the advice was disregarded.]

As to Question 7. If Mr. Vacher had referred to the By-laws, he would have seen that the Architectural Association (London) was not qualified to become an Allied Society, alliance being confined to any "non-Metropolitan "Architectural Society." Members of the Institute and of the Association, however, were unanimous in thinking that the objects of both Societies would be best served by perfectly independent action. The Association was essentially a teaching body, and if the Institute were to attempt to become so in any form it would only injure the work being done so admirably by the Association. The President was glad to take the opportunity of expressing his hearty satisfaction in regard to the thorough and perfect goodwill and good feeling that existed between the Institute and the Architectural Association.

C and D.—Mr. Woodward's Questions.

MR. WM. WOODWARD [A.] wished "to direct attention " to the delay on the part of the Institute in completing the "revised Conditions of Contract." Referring to the fact that a period of nearly seven years had elapsed since the first consideration of this subject, he stated that on the occasion of two or three Annual Meetings he had called attention to the extraordinary delay which had occurred, and had been informed by the Hon. Secretaries of the Practice Committee that the subject was one of great difficulty, requiring very delicate handling, and that the negotiations with the Builders had to be carried on with such regard for their sensibility and sensitiveness that it would be impossible to devote too much time to the furtherance of this object. He (Mr. Woodward) trusted that no final agreement would be come to with the Master Builders, or the subject be finally settled in any way, until each member of the Institute had had a draft copy sent to him for criticism and observation.

Mr. EDWIN T. HALL said that formerly he had taken a very active part in the matter, and was still doing so. He thought the question was a perfectly reasonable and legitimate one, and he could assure Mr. Woodward that every effort had been made to bring the matter to a climax years ago. The great difficulty had been that it was not a revision of Conditions, but it was abso-

lutely a new set of Conditions. Those who had had trouble under the present set of Conditions knew that, once they got into trouble with the builder, the latter could drive a coach and horses through the document in numerous places. The Committee had therefore endeavoured to frame a set of Conditions which should be practicable, and just as between architect and builder and client. The Conditions had been settled by the Committee at least three years ago, and were sent to the Institute of Builders, with whom they remained, to the best of his recollection, for twelve months. When returned, however, they had been so entirely altered as to be practically a new set, and framed, as the Committee thought, a great deal too much in the Builders' interests. The Committee then made a revision, taking the suggestions of the Builders' Institute where it was right and honourable that they should, and dissenting from them where it was right and honourable they should dissent. The Builders' Institute had, very naturally, looked at the matter from the builders' point of view. The Committee, however, had not studied the architect's point of view only; they had had a third person to consider who was not represented either by the Institute of Architects or the Builders' Institute, and that was the client. They wanted a document that the client's solicitors would say was sound and right to protect them. They wanted to protect the architects and also the builders from exactions on anybody's part. It had taken a long time to debate that pro and con; but, at length, they had so far got the Builders' Institute to take their view, that he thought he was right in saying that everything was agreed except the verbiage of two clauses—the Arbitration clause and what was commonly known as the Bankruptcy clause. Fourteen months ago a Committee of leading members of the Council of the Builders' Institute met five members of the Practice Committee, and, in principle, everything had been agreed to. But the great difficulty since then had been to get the solicitors to accept the decisions then arrived at. He was sure it would strengthen the hands of the Committee if the Meeting would fix a time for settlement; he hoped, however, that in two or three months they would be able to settle it. No document, of course, could be issued by the Institute as an Institute paper until it had been submitted to a General Meeting; and he thought the Council would decide that a draft should be published before it was debated by the Institute. When the matter was debated, the gravest consideration should be given to it; and if it was a sound, workable, and just document, it should be passed.

Mr. WM. WOODWARD [A.] then proceeded "to invite " attention to the practice of some district surveyors in "allowing building works to be proceeded with, which " works they have determined are in contravention of the "Building Acts, and in declining to take the required "legal action until such works are completed, thereby " entailing serious loss and inconvenience on the part of "building owners, architects, and builders." A builder submitted drawings in the usual way to the district surveyor; the district surveyor came to the conclusion that there was an irregularity in the building as designed by the architect; the architect entertained an entirely different opinion, and, in order that his client might not be put to the expense of altering the building thereafter, invited the district surveyor to at once bring the subject before a magistrate, so that the point in dispute might be settled. In two cases within the experience of Mr. Woodward where the architect had suggested such a course, the district surveyor had declared that it was useless, as the magistrate would not entertain the matter until the contravention had been consummated. The architect was thus placed in a dilemma. He had the risk of the magistrate's adverse decision hanging over his head; he must go on with the building; and the district surveyor declined to have the point settled. To bring the matter to an issue, if the Meeting approved, he would suggest that representations be made to the District Surveyors' Association that it was the opinion of the Institute that in cases where an architect suggested to a district surveyor that he should bring a disputed point before the magistrate, the district surveyor should at once comply with the request. A second and more prefcrable course, if the Meeting approved, was to send notice to the London Council, stating that, in the opinion of the Institute, the subject should be dealt with in the Consolidation Act the London Council were preparing, and that, in the event of an architect submitting in writing a notice to a district surveyor that he desired that any disputed point should be brought forthwith before a magistrate, the district surveyor should comply with his

 M_{R} , WYATT PAPWORTH [F.] asked if it would not be better that the County Council should send the matter to the Appellate Tribunal, where it would come before men

having practical knowledge.

MR. TAVENOR PERRY [A.] asked if it would not be better to have the definition so fixed that they could all understand what the Act meant, instead of requiring a

tribunal to appeal to at all.

MR. EDWIN T. HALL [F., submitted that Mr. Woodward had answered his own question. How could a magistrate decide on anything except a breach of the law? There was no matter to go before a magistrate until there was a breach of the law, and the law had not been broken until something had been done contravening the Building Acts. He thought Mr. Woodward's object would be gained if, in the revision of the Building Acts, which the Institute had undertaken, they were to put in the suggestion as one of the points which they recommended should be included in any amending Act, so that there should be a means of arriving at a decision on the drawings, and thus obviate difficulties which constantly arose.

Mr. WOODWARD A. said that that would be the proper course to pursue, and would meet his views.

THE PRESIDENT said that, no doubt, the Council would consider the matter with a view to finding some solution to obviate the difficulty pointed out.

PROCEEDINGS OF ALLIED SOCIETIES.

YORK: ANNUAL MEETING.

On the 22nd ult. the twelfth annual meeting of the York Architectural Society was held, under the presidency of Mr. W. Hepper, and the annual report read by the 11on. Secretary, Mr. A. B. Burleigh, in which it was announced that the Royal Institute had, under the terms of their Charter, added York to the list of Allied Societies and made the city a local centre. Under the terms of alliance the Royal Institute of British Architects required Members and Associates of the York Society to allow themselves to be placed under the honourable obligation of signing a declaration prohibiting the acceptance of trade discount commissions or allowances, the purport of which declaration was the same as that contained in the Charter of the Institute. In making this announcement the Hon. Secretary congratulated the members upon having made an advance towards the attainment of a higher standard of professional practice, and one which should commend itself to the notice of architects within the York province. The Treasurer's report was a satisfactory one, as, although the expenditure for the past year was large, there yet remained a balance in favour of the Society.

SHEFFIELD: MONTHLY MEETING.

On the 28th ult., at the monthly meeting of the Sheffield Society of Architects and Surveyors, Mr. E. M. Gibbs [F.], President, in the chair, a Paper was read by Mr. H. W. Lockwood on "Architectural Practice in America." After a short sketch of the history of architecture in the States, an account was given of the present method of training for the profession, which was in the main characterised by the substitution of the student in an academy for the pupil in an office. The extent to which the speed demanded from everybody in the States had affected the practice of architecture was shown by a life-like sketch of every-day work in a New York office, with its division and subdivision of work, this departmental system giving speed at the expense of interest. Quantities were seldom, if ever, supplied. In very few cases was a clerk of works employed. In consequence of the extra work entailed by that and some of the legal conditions surrounding the profession, and, to a minor extent, by the absence of the pupil, the expenses of an office in the States were much heavier than in Great Britain. . The Paper closed with a notice of Richardson and his work, and an appreciative criticism of the American architecture of to-day, finding in it the defect, especially in church design, of a want of the feeling of reverence, and of an appreciation of the poetical. These, however, would come with experience, and the strength and originality of the work of young America gave sufficient guarantee that these wants would in time be well supplied.

NORTHERN: OPENING MEETING.

On the 29th ult. the opening meeting of the session of the Northern Architectural Association was held, when an Address was delivered by the President of the Association, Mr. J. H. Morton F.. Quoting from Mr. Macvicar Anderson's Address to the Institute on the 6th ult., that " architects have been sometimes reproached with iuca-" pacity because they fail to attain au ideal which the "public chooses to establish," and because they have " not created a new style of architecture," Mr. Morton went on to say that as they existed in a great measure by the approbation and support of the public, it was obvious that for business reasons they were obliged in some measure to consider its criticism. But though this proposition might hold good in a limited sense, they must not forget also that there was criticism and criticism. It was not for them to submit meekly and blindly to the dictation of vulgar and captious censorship. In deferring to public criticism they must be satisfied that the counsel given was just, and the product of a cultivated mind competent to instruct; that while no man should consider himself above the help of criticism, the latter must proceed from the well informed, who had mastered something more than a feeble smattering of the art of architecture, and who were qualified to judge of excellences, to point out shortcomings, or suggest improvements.

In modern times one style after another had passed into vogue, and, like everything which was the result of ephemeral fashion, had after a while been almost, if not altogether, discarded, without leaving any deep or lasting impression on the national architecture. It was admitted that the exclusive study of any one style was apt to result in mere servile imitation, which was so injurious to art. Therefore it was the miud drawing its inspiration from every source which was the best capable of producing, through the process of its crucible, great and original results. The true mark of progress in the present day was that, generally speaking, they were students and patrons of all styles; and this practical freedom, together with the requirements and inventions of the age, was perceptibly changing the expression of their architecture, and giving it, so to speak, a kaleidoscopic variety and a

character of its own.

They were told that the mutual feeling of confidence and interest which formerly existed between employer and workmen had, in a great measure, disappeared, and that some of the regulations of the trade unions had a tendency to bring down the best workmen to the standard of the average, and to grind them down to a dead level. The

subject naturally bristled with difficulties; and he (Mr. Morton) was aware that in treading on that ground his feet were striking the treacherous surface of Labour and Capital problems, and skirting dangerously the pitfalls of an intricate and as yet imperfectly grasped system of social and political economy. He thought, however, it might be acknowledged that the causes he had alluded to, combined with the decline of the apprenticeship system, had resulted in increasing the difficulties of architects, as well as contractors, in the execution of satisfactory workmanship. The rapid improvement in machinery, together with the fact that some employers were unwilling to take apprentices, may have had some influence in changing those conditions. It was stated at one of their meetings last session by a much respected tradesman connected with one of the more decorative branches of the building trade, that he was one of the few, if not the only employer in their city who took apprentices in his own particular trade. It had also been alleged that trade unions set their faces against apprenticeships to a large extent, and that in many cases the men felt that where apprentices were taken they (the men) taught them their trade for the benefit of the employers, and thus enabled the youths to enter into unfair competition. It was expected by many that technical education would be the compensating medium for some of these changes or defects. It must be allowed, however, that no trade could be properly learned out of the workshop; although the men would certainly understand better the instruction given in the workshop if they had had the benefit of a theoretical foundation before proceeding to practice. It was useless to expect the technical school to entirely replace the apprenticeship system; but, having laid the foundation before entering the workshop, the technical education of the artisan might go on contemporaneously with the workshop employment. Many workmen of excellent practical skill worked entirely by rule-of-thumb, and their efforts would assuredly prove more successful if guided by the enlightenment and precision of scientific knowledge. Thus technical education might be the means of exalting labour, and of enabling capable workmen to raise themselves to a higher standard by the acquisition of a more perfect knowledge of the art of building in all its details in relation to architecture. .

Although it was well known to most of the members that their Association was in alliance with the Royal Institute, it might not perhaps be so well known that the counties of Northumberland and Durham had recently been allotted to the charge of the Northern Architectural Association, whilst the counties of Cumberland and Westmoreland, formerly in the province of the Northern, had been assigned to the Manchester Society. In the Institute Journal of November 9th it was urged that a little activity on the part of the officers of each of the Societies allied to the Institute might suffice to enrol all the architects residing within their territory; and it was further mentioned that one-fourth of the subscription of Associate members of the Institute was returned towards their subscription to the Allied Society with which they were also connected, and that therefore the annual extra amount was small. In the case of a Fellow the subscription to their Association became nothing at all, as it was paid by the Institute. The majority of the gentlemen connected with the Institute in the two counties in the province of the Northern Association were members of the Association. There were, however, four Fellows and six Associates that were not so; but it was hoped they would be induced to join. It might be well to mention that the Presidents of the six Allied Societies that had the greatest number of subscribing members of the Institute were to be nominated for seats on the Council, and if the ten gentlemen alluded to could be persuaded to join, there seemed no reason why the Association should not have that additional link with the Institute. With a view of still further increasing and sus-

taining the influence of the Association, the committee hoped to arrange a conference of architects and students in Sunderland early next year, and to lay before the meeting the rules, library catalogue, syllabus of lectures, visits to buildings, and other advantages in connection with the Association, with the hope of inducing more architects and students in that district to join them. The Association had now existed for thirty-five years, and the roll in the last annual report stood as follows: -Members 31, Associates 42, Students 22, total 95. It now numbered-Members 33. Associates 44, Students 29, total 106, an increase of 11 in six months. But a much larger number of students were needed in order to arrange for the services of a special Professor of Architecture in connection with the Durham College of Science. It would be remembered that a curriculum of study was drafted by the Committee, and approved by the Principal of the College, and issued last year. Dr. Garnett, however, shortly after was called away from the district, and it seemed that the matter must remain in abeyance till such time as further arrangements could be made with his successor. If the subjects indicated in the curriculum, however, were strictly adhered to and persevered in, the education of their students might go on without interruption. The memory, more or less, of every student needed cultivation. Reading would do this, but it must not be rapid and superficial to be productive of permanent benefit. An invaluable aid to study was the Library of the Association. Books had been purchased selected entirely from the list recommended to students by the Royal Institute, and they were now in possession of the nucleus of a library already worth from £50 to £100.

Many of their members, unfortunately, were not seen at the meetings as frequently as could be wished. They consequently missed those agreeable intimacies and friendships that had been formed in the Association, and which tended towards its success and the regard the attending members had for it. The committee had decided that in future the rule "That every gentleman on his "election shall be required to sign his name, agreeing to "conform to the rules, in a book provided for that pur"pose" should be fully observed. . . . In future the roll-book would be on the table at all indoor meetings. New members would be expected to attend the first possible meeting after their election, to sign the same.

The question of competitions had from time to time occupied the attention of the committee, and the occasion should not be allowed to pass without noticing the general result, as they seemed on the whole to have been decided fairly and justly. Professional assessors were now generally recognised in the district as necessary to a just decision, and where one was appointed they should always, as far as possible, uphold and maintain his award. It was only where they feared the result was arrived at in bad faith, and the integrity of the committee was suspected, that their interference was necessary, and this would ever be found to be on behalf of the interests of their art. . . .

PARLIAMENTARY.

Height of Buildings in London.

The Council have received the Report, which is given below, from the Practice Standing Committee, and, prior to taking it into consideration, have ordered it to be published. The Report is as follows:—

The Practice Standing Committee have had under consideration the special Report of the Building Act Committee of the London County Council, dated 26th October 1893, containing the following proposed clauses:

(a) That existing buildings should not be raised or extended so as to contravene the provisions of the Bill as to height and open space in front which are applicable to new brildings, or where they already contravene such provisions, they should not be raised or extended so as to make matters worse.

The next recommendation was designed to meet a grave defect in the existing law, whereby the Council had practically no control over such buildings as blocks of artisans' dwellings not fronting any street, but inclosed in a courtyard exclusively belonging to them.

(b) That domestic buildings not abutting upon any streets shall be subject to restrictions as to height and open space about them similar, mutatis mutandis, to those to which buildings abutting on streets

are subject.

As regarded the difficulty of setting back buildings in old streets, or on old foundations, they thought the setting back should be compulsory; and as regards the public convenience, there was no sufficient reason why the public should not pay a fair price for what it required. They therefore recommended:—

(c) That buildings erected anew upon old foundations shall, unless the Council otherwise allow, be subject to the same restrictions of height as new

buildings upon new sites.

(d) That buildings erected anew upon old foundations, or erected in old streets, shall, unless the Council otherwise allow, be set back at the same distance from the centre of the road as applies to new buildings erected on vacant land, but that in their case the owner shall not be compelled to give up to the public way the land so left free from buildings.

It was becoming more and more the practice to erect large blocks of buildings which entailed certain peculiarities of construction. Amongst others, it was often found necessary to light many of their rooms by internal areas or courtyards; therefore

they recommended:

(c) That provision be made for the adequate ventilation of internal areas or shafts, constructed with a view to providing light and air to rooms in domestic buildings, and for regulating the dimensions of the same.

As the law stood at present, the Committee often found itself in a difficulty as to new streets; there-

forc they recommended:

(f) That it should be an offence to lay out any new street without the sanction of the Council in writing.

(g) That in cases arising in the administration of the Building Aet, the Council should have power, under proper safeguards, to close or divert useless roads, paths, or rights of way.

(h) That the Council be empowered to frame by-laws to regulate lamps, signs, or other things attached to houses and overhanging the public way, such by-

laws to be enforced by the vestries.

The Practice Standing Committee are of opinion that most of the proposed regulations will, if carried into effect, provide satisfactory and necessary additions to the powers of the London County Council, and, as such, consider that the Royal Institute should give support to them generally in principle. But there are some points connected with some of the proposed regulations upon which misconception appears possible.

With reference to the proposed regulations (a), (b), (c), and (e), the Practice Standing Committee consider these

to be satisfactory and desirable.

As to (d)—If the intention of this regulation is rightly understood by us, it would appear to be open to very grave objection, as giving power to the Council in some cases to take the whole of a man's property without compensation. and in many others to render building sites valueless as soon as the buildings standing on them are pulled down. This regulation would thus act, not as intended in aid of

improvement, bnt, on the other hand, would lead to old buildings being maintained or reconstructed piecemeal, at great cost, without the sanitary and other advantages to be obtained by rebuilding. To give two instances of the manner in which this regulation might be applied. At present a building is being erected on the site of a previous one at the corner of Dean Street and High Holborn. The frontage to Dean Street is about 56 feet, the depth about 16 feet. Dean Street is only 14 feet 6 inches wide. If the powers proposed to be exercised were enforced in this case, in order that Dean Street might be widened to 20 feet from its centre, 12 feet 9 inches would have to be taken from this site for the whole length of its frontage to Dean Street, thus leaving available a site for building with a frontage of only 3 feet 3 inches to Holborn, and a return frontage of 56 feet to Dean Street. Even if only 4 feet were taken, as suggested in the report of the Building Act Committee, the site would be rendered so useless by itself that the owner of the adjoining premises would be the only person for whom it would have any value, and he would probably be able to obtain it at his own price.

The second example is this. In Portsmouth Street, close to King's College Hospital, one of the streets which will probably require to be widened in connection with the new street from the Strand to Holborn, stands an old and dilapidated public-house which projects considerably beyond the present general line of frontage. It has a frontage to Portsmouth Street of about 45 feet: at each end are narrow thoroughfares. If the proposed powers were enforced in this case, and the thoroughfares in front and at each end were widened to 20 feet from their centres, the owner would find himself left with a useless site available for building only of about 10 feet by 7 feet, and

this without any compensation.

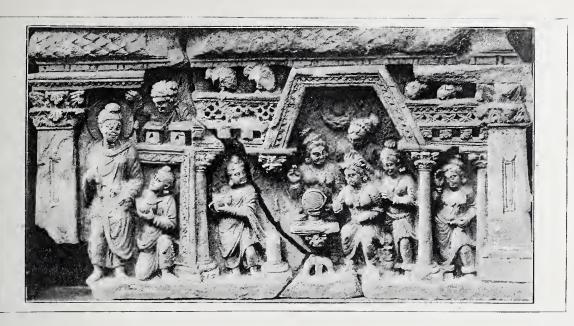
It is, of course, to be presumed that the County Council, if they possessed the proposed powers, would desire to exercise them in a just and equitable manner; and even if not compelled to do so, would wish to allow compensation in such cases as the above. But it does not appear that they would have any power to do this.

The proviso that the land not built on shall not be thrown into the public way would merely leave a number of forecourts or waste spaces, of little or no advantage to the public, or the owners of the properties rebuilt behind them.

The powers under which the Commissioners of Sewers in the City of London are enabled to acquire either whole sites or portions of them for the purposes of public improvement in cases of rebuilding are believed to have acted equitably to the owners of property, and satisfactorily to the public. It is therefore suggested that the requirements of the case might be met if similar powers were conferred on the London County Council.

(f) If it be intended to enact that it is to be an offence to lay out a road otherwise than in accordance with the regulations of the Council and the Acts of Parliament relating to such matters under which they act, there can be no objection to this clause, provided that in cases where approval is refused the grounds of such refusal are stated. But, if it be intended to go further, it would appear to be an interference with the right of every man to develop his own property, provided he does so in accordance with such regulations as may have been made in the public interest. Any owner of a honse or land should be allowed to rebuild the one or lay out the other for building, subject to such regulations as are of a definite character, of general application, not liable to frequent variations, and particulars of which should always be readily obtainable by any person interested in them.

(g) This is considered a useful and valuable regulation.
(h) This also is thought desirable, and it is suggested that all things of a nature similar to those enumerated, attached to houses whether they overhang the public way or not, might profitably be subject to control in the manner described.



THE CLASSICAL INFLUENCE IN THE ARCHITECTURE OF THE INDUS REGION, AND AFGHANISTAN. BY WILLIAM SIMPSON, R.I. [H.A.].

Read at the General Meeting, Monday 18th December 1893; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,-

HEN it was discovered that there existed in the old architecture of the Indus Valley details which must have been derived from a classical source, it was natural to suppose that the Greeks who followed Alexander had been the means of its introduction. The theory presented itself that Greek architects had come to Bactria during the period when the Satraps, after Alexander, ruled at Balkh. It was suggested that these architects practised in that region until the Greek style had been more or less established; that it had afterwards crossed the Hindu Kush, and filtered slowly down to the Indus. In doing this it became mixed with native features of construction, and thus produced that peculiar jumble of forms with which we are now familiar. As almost all the remains in which it has been discovered are Buddhist, Dr. Leitner gave it the title of Græco-Buddhist, the title by which the style is now generally known. Sir Alexander Cunningham at first called it "Arian"; at a later date he classed it as "Indo-Grecian"; and, as a form of the Corinthian capital is principally found in the remains, he called it "Indo-Corinthian." It has also received the name of "Indo-Bactrian." At a later date doubts arose as to its being Greek: Fergusson, one of the doubters, suggested that it might be "Indo-Roman," or even "Indo-Byzantine." It is doubtful if any other known style of architecture could be brought forward carrying with it so many aliases. Their repetition here will in themselves form a sort of index to the questions which have arisen regarding this particular style, and at the same time serve as a key to the subject of this Paper. The term "classical" has been adopted so as to avoid any assumption in the title as to the source of the influence.

It may be as well, before entering into the questions we have to deal with, to give a slight sketch of the bringing to light of this classical influence. The first hint of it I have as

Third Series. Vol. I. No. 4,

yet met with dates back to 1809, when Mountstuart Elphinstone went on a political mission to the "Caubul" Court at Peshawar, which was then part of Afghanistan. In passing through the Punjab, on the return of the mission, a visit was made to the Manikyala Tope. An engraving of the monument is given in the book, and Elphinstone adds many descriptive details; he concludes by saying: "There is nothing at all Hindoo in the appearance of this "building; most of the party thought it decidedly Grecian. It was indeed as like Grecian "architecture as any building which Europeans, in remote parts of the country, could now " construct by the hands of unpractised native builders." * In 1832 Burnes visited this tope and mentions Elphinstone's criticism, but adds nothing of his own.† The merit of first realising in a distinct manner the classical character of the architecture of the Indus region is, I think, due to Sir Alexander Cunningham. In 1848 he published a small volume entitled An Essay on the Arian Order of Architecture.‡ This work is founded on the old remains in Kashmir, where the influence can also be traced. The extent to which this architecture had been practised in the past was not realised until the exploration of the Peshawar Valley had been carried on for some time. The remains of Buddhist monuments were discovered at Jamalgiri, Shah-Dheri, Takht-i-Bahi, and other localities. The first of these places had been found by Cunningham in 1848, and was explored a few years afterwards by Lieutenants Lumsden and Stokes. Upon the sculptures discovered there, a Paper, contributed by E. C. Bayley, and entitled "Note on some Sculptures found in the District of Peshawur," was published in the Journal of the Asiatic Society of Bengal [vol. xxi. pp. 606-621. Calcutta, 1853].

In February 1860, when passing through the Punjab, I visited the Manikyala Tope. This was on my first visit to India, and shortly after my arrival, when I knew very little about the architecture of that country, and at the time had heard nothing about a Greek influence (I am using the term "Greek" here in its broad sense, and as including Roman, for at first there had been no consideration as to which it belonged); yet, before I had finished my sketches, the conclusion was forced on my mind that such an influence could be traced in the details of the monument. I have still in one of my sketch-books the rough sketch I made of one of the capitals, and a section of the frieze and cornice, which seemed to me to determine the point. In the following year, when I went to Kashmir, I also noticed the details in the architecture there, and they appeared to confirm my previous conclusions. In 1862, on my return from India, I read a Paper on its Architecture before the Institute [Transactions, 1861-62, pp. 165-78], in which I affirmed the existence of this classic influence.

In 1864 General Cunningham found at Maliar-ka-Mora, near Shah-Dheri, the ancient Taxila, the base of a column, formed of sandstone. This is now in the Lahore Museum, and I give a sketch of it [see fig. 1]. The column that stood upon this base was 2 feet $4\frac{\pi}{4}$ inches in diameter, and the plinth is 3 feet 8½ inches square. No one with the slightest knowledge of the "Five Orders" could, after seeing this fragment, doubt the existence of a classic influence of some kind in that part of the world. Cunningham says respecting it that "it "is of very great interest, as it is the first specimen of pure Greek architecture that has yet "been discovered in the Punjab." § But four years previously I had noted this classic influence in the Manikyala Tope, which is in the Punjab.

^{*} An Account of the Kingdom of Caubul. By the Hon. Mountstuart Elphinstone. Vol. i. pp. 107-8. Professor Wilson, in his Ariana Antiqua, published in 1841, alludes to what Elphinstone had written, and says: "Although "its elevation may have been influenced by a recollection "of Grecian buildings, yet it has been since fully proved "the work of Indian artists." Professor Wilson's book is a valuable one in connection with the history of the subject; but, at the time it was written, a sufficient amount of knowledge had not been collected on which to form a

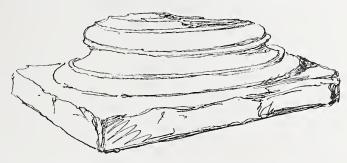
reliable judgment. This is fairly evident from the quotation given above.—W. S.

[†] Travels into Bokhara. [London, 1834.] By Lieut. Alex. Burnes, F.R.S. Vol. i. p. 65, and vol. ii. p. 470.—W. S.

[‡] Published in Calcutta; it contains a number of plates of the temples of Kashmir. A copy of this rather rare volume is in the British Museum Library.-W. S. [The essay appeared originally in the Journal of the Asiatic Society of Bengal, vol. xvii. pp. 241-327.] § Archæological Survey of India, vol. ii. p. 129.—W. S.

It may have been about 1870 that Dr. Leitner made excavations in the Peshawar Valley. which resulted in the discovery of a considerable number of sculptures. These he sent home, and they were exhibited for some time at South Kensington. They are now preserved in the

Museum of the Oriental University Institute, at Woking. It was to these sculptures that Dr. Leitner gave the term "Græco-Buddhist,"a good descriptive title, if the Greek origin of the art upon them can be maintained. Dr. Leitner's labours also deserve the credit of having brought the subject prominently before the public—or at least before matters—in this country.



those who were interested in such fig. 1. - base of column found at maliar-ka-mora, north of shah-DHERI, THE ANCIENT TAXILA. NOW IN THE LAHORE MUSEUM.

(From a Sketch by the Author.)

Such are, so far as I know, the

leading points in the early history of the discovery of this influence. The explorations of the remains in the Peshawar Valley were carried on for some years, but not, it is said, in a very methodical manner. The sculptures found are now housed in a special museum, erected for the purpose, in Lahore-which, on that account, is unique of its kind. Fergusson devotes a chapter of his Indian and Eastern Architecture to the subject of this architecture, under the heading of "Gandhara Monasteries." * In the Archaelogical Survey of India Sir Alexander Cunningham has devoted most of vol. v., which is written by himself, to the explorations in Gandhara; and he has added an Appendix on "Ancient Indian Architecture-Indo-Persian and Indo-Grecian styles." Fergusson having expressed doubts about the influence being derived from the Greeks, it ought to be noticed here that Mr. Vincent A. Smith, of the Bengal Civil Service, lately followed up these doubts in a Paper read before the Bengal Asiatic Society.† I went carefully through this very able Paper some time ago, and regret that I have not a copy to refer to, for it was that Paper which led me, although indirectly, to write this one.

The geographical space, containing known remains which bear evidence of this influence, ought to be defined. A very few are in the Punjab, and they are situated between the Indus and the Jhelum, the Hydaspes of the Greeks. Taxila,‡ the city which Alexander first reached after crossing the Indus, now known as Shah-Dheri, is within this space, being represented by extensive mounds. The Manikyala Tope is about forty miles to the south-east of Shah-Dheri; the Balar Tope, which is similar in its architecture, is only about four miles to the north. There are also some remains in the Salt Range. The temples in Kashmir are almost all Brahminical; but, in those that I have seen, the influence can be traced in many of the details. The locality which has produced most of the sculptures is the Peshawar Valley, the ancient Gandhara, and sometimes called the Yusufzai country—the Afghan name—from the tribe or clan of Yusuf.

ings, if they had been recorded, would have been invaluable in relation to the subject of this Paper. Apollonius describes—very slightly—two temples at Taxila: one was the Temple of the Sun. This last is described as having "walls of porphyry, enriched with ornaments of gold," and in it were statues "of Alexander and Porus" [chap. xxiv.]. I know that doubts exist regarding this book, but I find that some writers place more or less faith in Apollonius. It is impossible to give every reason I have for rejecting it, but that portion which describes India has always appeared to me to be a concoction.-W. S.

^{* &}quot;Gandhara" was the name of the region about

Peshawar at the Buddhist period.—W. S.

† Journal of the Asiatic Society of Bengal, vol. lviii. pp. 107-198.

[‡] In a Paper such as this, which deals with the question of Greek architecture in India, the city of Taxila is of importance-not so much on account of Alexander's connection with it, as from the description given in the Life of Apollonius of Tyana by Philostratus. Apollonius is supposed to have visited India about the middle of the first century A.D., a date when the exact details of build-

The finding of the remains here has been due to the excavations which have been carried on. The Buddhist remains have in most cases become shapeless mounds, and the spade only can reveal what is in them. From this it will be understood that there may be much yet concealed, and new data may in the future be discovered.

The influence also exists in the Buddhist remains of Afghanistan. There are considerable districts of that country in which, up to the present, no remains of this kind have been reported—most probably because they have not been looked for, or no explorations have been made. We do know that they exist through the Khaibar, and all the way as far as Jellalabad and Gandamak; and I believe they are also found in the Kabul Valley. There are Buddhist remains on the north of the Koh-i-Baba range at Bamian, and the valleys leading down to the Oxus; but the existence of the classic influence in these—a most important point in the question—will be dealt with further on in this Paper. Our first knowledge of the remains in Afghanistan is due to Mr. Masson, but his acquaintance with architecture was not sufficient to enable him to observe the classic influence, or to define in any way the character of the style; and his drawings, published in the Ariana Antiqua, are so small that the peculiarities of detail cannot be distinguished in them.* Knowing that the architecture of Afghanistan was all but an untouched field, it was with a sense of satisfaction that I accompanied the column of General Sir Samuel Browne into the Khaibar in November 1878, when the last Afghan war began. We wintered at Jellalabad, and finally advanced as far as Gandamak. Over this space I made sketches of the remains of Buddhist architecture and of its details in such a manner as to convey a knowledge of its character; and these leave no doubt about the existence of the classic influence upon them.† I cannot speak of the Kabul Valley from my own observation, but in the Ariana Antiqua there are drawings by Masson of three topes in that locality, and the details upon them are the same as he gives in the Jellalabad topes, and from this I presume that the style in both cases is the same.

It is rather peculiar that no Buddhist remains have, so far as I have heard, been reported on the Shikarpur, Kandahar, and Ghazni route to Kabul. I have often inquired of those who have passed in this direction, but could hear of none. The likelihood is that no one has taken the trouble to look for such things.§ I doubt if any remains of the kind will be found in Kaffiristan. We have descriptions of their temples, which are not very trustworthy; but, so far as they are described, we may conclude that they are not Buddhist. Mohammedanism never penetrated into this mountain region, which is the reason the inhabitants are now known as "Kaffirs"; and I should doubt if Buddhism ever reached these people; but in the valleys leading to the mountains, such as the Swat and Kunar Valleys, I believe there are Buddhist remains

published, but, so far as I know, they throw no light on the architecture.—W. S.

‡ Ariana Antiqua, pl. ix. These are the topes of Shevaki, Korrindar, and Darrah.—W. S.

§ Hiuen Tsiang, on his return journey to China, went by this route; at least, he mentions Ghazni, and says there were "some ten stupas built by Asoka-raja" at it. See Prof. Beal's Records of Western Countries, vol. ii. p. 284. Sangharamas, or monasteries, are also mentioned on this route.—W. S.

^{*} Masson wandered about Afghanistan and neighbouring eountries for many years, beginning about 1826, till the Afghan war, or about 1840. He was a man of considerable ability, and he made excavations into the topes about Jellalabad and Kabul. His object was not architecture, but coins, and he contributed a large quantity of the Indo-Scythian coins, of which there is a splendid collection now in the India Office. Besides his contribution to the Ariana Antiqua, which was edited by Prof. Wilson, Masson published four volumes of his wanderings. It is understood that he deserted from the artillery in India, but his services in procuring coins &c. were so valuable that the late James Prinsep procured his pardon, and he acted in some political capacity during the Afghan war. A Dr. Honigberger, who had been thirty-five years in Runjit Singh's service, returned to Europe in 1833 through Afghanistan, Bokhara, and Russia. In passing through Afghanistan he met Masson, and dug into some of the topes at Jellalabad, finding coins, relies, &c., which he brought to Europe with him. Accounts of his excavations were

[†] I read a Paper to the Institute on my return. Its title was "Buddhist Architecture in the Jellalabad Valley" Transactions, 1879-80, pp. 37-64. I also read a Paper before the Royal Asiatic Society on "The Buddhist Caves "of Afghanistan," which is published in the Journal of the Roy. As. Soc., vol. xiv. part 3. It ought to be mentioned that Mr. Beglar, one of the gentlemen of the Archaological Survey Department, made some excavations at Ali Musjid during the war, and laid bare some groups of small topes and other structures.—W. S.

which have not yet been explored. In March 1879, when in camp at Jellalabad, I accompanied Major Stewart of the Guides, with an escort, a short distance up the Kunar Valley, to Konadeh and Islampur, about fourteen miles distant. At both of these places there are Buddhist remains, and the people told us there were more of them higher up the valley.

The words of Professor Wilson regarding this style, that it may perhaps have been "influ"enced by a recollection of Grecian buildings," might suggest that we have to deal with temples
somewhat similar in form to those in Greece or Rome. A notion of this kind would be very far
from the truth. We may take the Taj at Agra as an example; it is a purely Mohammedan
tomb, so far as form and construction are concerned, but we can detect a European style in its
ornamentation. It is the same with the structures under consideration; they were purely
Buddhist, but we can easily trace an influence in their ornamentation which must have come
from some classic source. A Buddhist tope in this style has preserved every form and feature

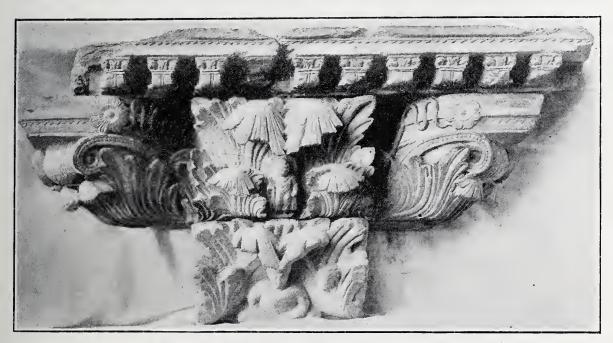


FIG. 2.—FRAGMENTS OF A CORNICE AND CAPITAL OR CAPITALS FROM THE PESHAWAR VALLEY.

(From a Photograph.)

peculiar to itself; but many of its mouldings, its pilasters, and their capitals, as well as its sculptures, bear evidence of this influence. The art, it ought to be stated, is of a very mixed character, for these classic details are combined with bell-shaped capitals, which are acknowledged to be the same as those at Persepolis; and there are also forms derived from India, as well as some which, I have concluded, belonged originally to Afghanistan, and probably to a considerable portion of the Himalayas. This curious agglomeration of forms naturally produces a strange jumble; and yet it seems to have been practised for a sufficient length of time to have become stereotyped into an established style. These words are correct enough so far as the Peshawar Valley and Afghanistan are concerned; but they do not apply to Kashmir, nor, indeed, would they be quite right in relation to any of the remains in the Punjab. The Kashmir temples are Brahminical, and belong to a later date than the Buddhist, which may account so far for the difference; but, at the same time, there is no similarity in the structural forms of the two. In the Peshawar Valley, where mounds only are found, little beyond the foundations and lower

courses of the buildings now remain. In the Jellalabad Valley many of the topes are still standing, but in a mutilated condition. The umbrellas which surmounted them are of course gone, and the same with the *tecs*, while in none of them is the dome perfect; but there are so many left, that, although fragmentary, I was able to bring home from them a sufficient quantity of



FIG. 3,—FRAGMENTS OF A CAPITAL OR CAPITALS FROM THE PESHAWAR VALLEY.

(From a Photograph.)

details to restore one on paper, in which every point might be depended upon, except the dome and umbrellas [Transactions, 1879-80, pl. v.]. Although the topes in the Jellalabad Valley remain in their ruined condition, none of the monasteries are left; foundations are visible in some cases, but only in one place did 1 find some fragments of a wall. This was at the Ishpola Tope, in the Khaibar Pass; and there was a portion of a window left, which sloped inwards towards the

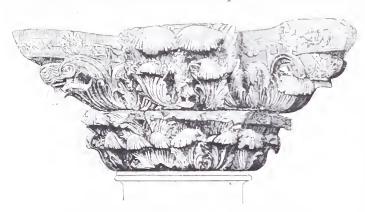


FIG. 4.— CAPITAL FROM JAMALGIRI, PESHAWAR VALLEY. (From FERGUSSON'S Indian and Eastern Architecture, p. 173.)

top—a point of some importance, as I believe it was a feature of the early architecture of the region.

A form of the Corinthian Order is found in almost all the Buddhist remains of the Indus Valley and Afghanistan [figs. 2, 3, 4]. The exceptions are few. In saying that it is Corinthian, it must not be supposed that it is an exact imitation of that Order. The remains only show a rude copy, which has been recognised as Corinthian, and it is now accepted that it has been either derived

from Greek or from Roman models of some kind. In combining it with other forms, fragments of the Order only have been introduced; pilasters are found at times in which the mouldings of the base are classic. In some cases the capital is added, but over this there is often placed a dwarf pillar with the Persepolitan bell-capital. Sometimes the frieze may be

recognised as classic; at times there is no frieze. Instead of its being the Corinthian Order, it might be described as only a sort of patchwork, in which touches of Corinthian can be made out. The Indo-Corinthian capitals are generally short and stumpy; large ones, which have stood upon round columns, are found to have been in two pieces; the lower stone had upon it one, and sometimes two rows of leaves. On the upper one are more leaves, with the scrolls. Some have a lotus or other flowers, the stems of which wind about on the upper part of the capital. In these larger capitals there is generally an abacus, which bends upwards from the centre, the line of which follows partly the curve of the scroll. [See figs. 2, 3, 4.] In many of the pilaster

2' 7"

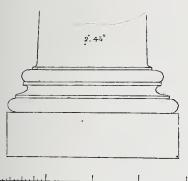


FIG. 5.—CAPITAL AND BASE.

(From CUNNINGHAM'S Archæological Survey, vol. v. pl. xviii.)

capitals there is no abacus, but an extended plinth, which I take to be a survival of the primitive wooden bracket, examples of which I have seen still existing in the rudely-constructed houses of Afghanistan. The character which this bracket assumed will be seen developed over the capitals in the illustration forming a headpiece to this Paper.

One building, supposed to be a monastery, has been found at Shah-Dheri, in the Peshawar Valley, with pillars,



FIG. 6.—FRAGMENT OF VOLUTE, IN PLASTER. FROM HADA, NEAR JELLALABAD. (From a Sketch by the Author.)

the capitals of which appear to have been derived from the Ionic. The front view would not strike an unpractised eye as being of that Order, because, instead of the scroll, there are two circular discs—quite smooth—without volutes; but the side view shows the cushion, which connects the volute in front with the other behind, compressed in the middle, where there are two small mouldings, thus showing a form that must have been evolved in some way from the Ionic [fig. 5]. In addition to this I can state that a fragment, in plaster,

of a small volute was found at Hada, in the Jellalabad Valley, which was the only trace of this Order that chanced to be noticed. In all the topes, where any fragments of the capitals remained, they were quasi-Corinthian, but Sir Alexander Cunningham affirmed that the fragment from Hada was that of a "Roman Ionic capital" [see fig. 6].*

^{*} All the fragments of sculpture found in the excavations I made at the Ahin Posh Tope were sent to Calcutta, and it would seem that this fragment of a voluto was among them. Sir Alexander Cunningham finding it, assumed that it was from Ahin Posh, and in the Journal of the Asiatic Society of Bengal for March, April, and August, 1879, he stated that the tope had been of the

[&]quot;Roman Ionic Order," and that the fragment was that of a "Roman Ionic capital." This may be correct so far as the character of the Order is concerned, but the fragment had no connection with the tope. Of course, Sir Alexander was not to blame in this, because he had no means of knowing what is here stated. I found no capitals on the Ahin Posh; only the lower half of the pilasters

In Kashmir and the Salt Range—the latter is in the Punjab, north of the Jhelum, the ancient Hydaspes—there are still remaining a few temples, with columns, which have been described as Doric. If the Corinthian and Ionic had not been recognised in this region, I doubt if any one would have ventured to give the title of Doric to these remains. The classic influence being accepted, there is no reason why the Doric may not have come with the other Orders. The column and capital of this Order are the only features which have as yet been found in the very few



FIG. 7.—FORM OF DORIC COLUMN AT MARTTAND, KASHMIR.
(From a Sketch by the Author.)

examples that are known. The absence of the frieze and architrave peculiar to the Doric Order may be accounted for from the fragmentary manner in which the other Orders have been copied. I give a sketch of one of these columns [fig. 7], which forms part of the enclosure of the

were left; and in my restoration I made the capitals Corinthian, which I believe them to have been, like all the others I saw in the locality. I give this note because some one may hereafter find Sir Alexander's statement, and upon his authority—which is so deservedly high, from

his long and distinguished labours in the field of Indian archæology—accept it as a fact, especially as there is no existing evidence to bring against the statement that there had been a Buddhist tope, in the Jellalabad Valley, of the "Roman Ionic Order."—W. S.

temple of Marttand in Kashmir.* There is a temple in the Salt Range, at an ancient site called Mulot, which has similar columns in it [fig. 8].† Both of these temples are Brahminical, and from that it may be assumed that they are later than the Buddhist in which the Corinthian is found. Fergusson dates the temple of Marttand from 725 to 761 A.D. Cunningham puts it from 578 to 594 A.D. At present it matters little as to which of these dates is correct; it is enough to know that this particular Order was introduced after the others.

The sculpture which is found in connection with this architecture also bears strong evidence of a foreign influence. The formal conventionalism, which is such a marked feature of Indian sculpture, has in this case almost entirely disappeared. In figures of Buddha the rigid lines of drapery are superseded by more picturesque folds; even the round knobs by

which the hair of the head was represented by Indian artists has given place to a more naturalistic treatment. The influence on the sculpture, in fact, is quite as marked as in the architecture. Much of it is rude, and was no doubt the work of local artists of no great merit.

When this particular style of architecture and sculpture was first brought to light, it was very natural to associate it with the Greeks and Alexander's invasion. Alexander's name still remains connected with many legends in the Punjab and Afghanistan. Wherever there are groups of date trees, the Punjabis say that these places were the camps of Alexan-. der. His soldiers, it is believed, were fed on dates, and they threw away the stones, from which the trees grew. When I visited the Manikyala Tope in 1860, it was at that time familiarly known as the "Tomb of Bucephalus"—Bu-

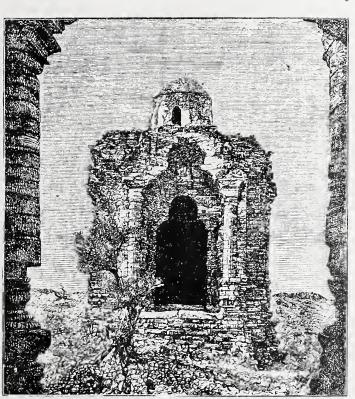


FIG. 8.—TEMPLE AT MULOT IN THE SALT RANGE. (From Fergusson's Indian and Eastern Architecture, p. 296.)

cephalus being the name of Alexander's horse, which is said to have died about the time when he fought the great battle with Porus at the Jhelum, and a monument was erected to it. The historians also record that the great Macedonian built two cities, one on each side of the river; one was called Nicæa, and the other Bucephala, in honour of his favourite steed. This was the first train of thought by which the classic influence was explained; but it was soon felt to be insufficient. Alexander's stay in the Punjab was too short to have made any impression, or to have caused a permanent style of architecture to come into existence. The date

^{*} A restored drawing of the doorway with this column will be found in Fergusson's *Indian and Eastern Architecture* [Edition 1876], fig. 162, p. 288.—W. S.

[†] Ibid. fig. 169, p. 296. Also Archaelogical Survey of India, vol. v. p. 85, and pls. xxvi. xxvii. Cunningham gives the name of the place as "Mallot."—W. S.

of Alexander's invasion is also, I think, too early, it being generally accepted that the remains belong principally to the first centuries of the Christian era.*

The theory held up to the present has been that this influence originated from Bactria. where a Greek government was established on the conquests of Seleucus Nicator, with Balkh as its capital. A large and important city, which was the seat of government, would no doubt attract artists, who would remain permanently in such a place. So far we have evidence that Greek artists-or, at least, artists familiar with Greek art-did exist in Bactria, for the coins of the early rulers afford evidence of this. The coins struck by Enthydemus, Demetrius, and Eukratides may be taken as examples. The art upon these is not only after the Greek manner, but they have also Greek inscriptions and Greek deities represented upon them. The theory suggests that, if men came to that region capable of producing coins, there might also have been others who were architects or builders, as well as sculptors. This Bactrian dynasty is supposed to have continued for about a century and a half, when it was swept out of existence by a Scythian or Mongol horde, known as the Yu-chi; but a hundred and fifty years would be quite sufficient time for the introduction of new forms in architecture and sculpture, as well as for establishing them as a permanent style. Being once established, the supposition is that the style, in course of time, found its way into Afghanistan, and passed on to the Indus.†

In these views of the subject the Greek origin is assumed; but later on doubts arose, and for some time past the question has been, Is the influence Greek or Roman? Perhaps I could not do better than quote the words of Fergusson on this disputed question. He says:— "Among Indian antiquaries there are two different views as to the age of these sculptures, "regarding either of which a great deal may be nrged with a considerable degree of plausibility. "The first is, that the Bactrian Greeks carried with them into Asia the principles of Grecian "sculpture and the forms of Grecian architecture, and either during their supremacy or after "their expulsion from Bactria established a school of classical art in the Peshawer Valley. It "further assumes that when Buddhism was established there under Kanishka and his "successors, it bloomed into that rich and varied development we find exhibited in these "Gandhara monasteries. This is the view adopted by General Cunningham, who, however, "admits that, as all the sculptures are Buddhist, the earliest must be limited to the age of "Kanishka, which he assumes to be about n.c. 40, and that they extend to A.D. 100, or "thereabouts. The other theory equally admits the presence of the classical element, derived

"shortly after a.d. 100, when it was supplanted by the "Indian alphabet." [Ibid. pp. 187-88.] Fergusson is inclined to continue the style down to a much later date. He says: "The erection of the topes in Gandhara was spread "pretty evenly over the whole time that clapsed from the "Christian Era till Buddhism ceased to be the religion of "the country, in the 7th or 8th century; and that the "most flourishing period was about the year a.d. 400, when "Fa Hian visited the country." [Indian and Eastern Architecture, p. 181.]—W. S.

† We have authentic evidence of the celebrity in which Bactrian architecture had been held at an early period from the Chinese pilgrim, Hiuen Tsiang. When in the South of India, at a place supposed to be Amaravati, he describes a monastery as follows:—"Un ancien roi de "ce royaume l'avait construit en l'honneur du Bouddha et "y avait déployé toute la magnificence des palais de "Ta-hia [de la Bactriane]" [Vie et Voyages de Hiouen-Thsang, Julien's trans. p. 188]. The passage does not indicate in the slightest what the style was, but that the architecture of Bactria had been known as far as the South of India for its "magnificence."—W. S.

^{*} Regarding the date, Sir Alexander Cunningham says:

"As to the age of these specimens of Indo-Grecian
"architecture and seulpture, my belief is that the great
"mass of them belong to the most flourishing period of
"Indo-Scythian rule under Kanishka and his immediate
"successors, or from 40 b.c. to about 100 a.p." [Archæological Survey, vol. v. p. vi.] In the same volume he
says:—"As the different styles of Greek architecture must
"eertainly have been introduced into the Kābul Valley and
"the districts lying along the Indus as early as b.c. 200,
"it is a source of much disappointment to me that no
"specimen of Indo-Grecian architecture has yet been
"discovered to which I can assign an earlier date than
"about 80 b.c." [p. 189]. To this he adds that this style,
"so far as I can judge, must belong to the two flourish"ing centuries of Indo-Scythian rule, or from b.c. 50 to
"A.D. 150" [p. 189]. Sir Alexander was guided to this conclusion partly by inscriptions and coins, for he says of the
sculptures: "That they are not of later date than A.D. 150, I
"infer from the use of Arian letters only as masons' marks,
"as it would appear from the testimony of both coins and
"inscriptions that the Arian alphabet fell into disusc

"from the previous existence of the Bactrian Greeks, but spreads the development of the classical "feeling through Buddhist art over the whole period during which it existed in the valley, or "from the first to the seventh or eighth century of our era, and ascribes its peculiar forms as "much, if not more, to constant communication with the West, from the age of Augustus "to that of Justinian, rather than to the original seed planted there by the Bactrians." *

These quotations, along with what I have given above, will make the whole question before us easily understood. It may be even simplified by putting it as follows:—Is this influence Greek or Roman? When I have written before upon this subject, I accepted, without considering the matter, that it was "Greek," and used that word along with the word "classic." In the present Paper I have adopted the term "classical" in the title, so as to avoid any assumption about its being Greek or Roman; but I may now state that the aim of this Paper will be to show that the influence was Roman, and not Greek. I shall add some slight evidence which goes to show that the first influence, which has been generally accepted, and which even Fergusson supports, as coming from the Bactrian Greeks, is very doubtful. This may be seen in details which point to Palmyra as the source through which the classic influence came to the north of India, and that, when it reached the Indus, it went from that region into Afghanistan; and probably it never crossed the Koh-i-Baba range into the valley of the Oxus.

Perhaps I could not do better than relate the occurrence of the steps which have led me to the conclusions stated above. In the winter of 1884-85, when I accompanied the Afghan Boundary Commission from Tehran, through Khorassan, to the Murghab, where I was close to what had at one time been the Bactrian region, I kept a very watchful eye open for any architectural remains along the whole of that route. A fluted column, a sculptured frieze, or a Corinthian capital would have been welcome to my sketch-book, if for no other purpose than to fill up a foreground. I only saw mounds of various sizes where cities or towns had been in former times. These mounds seemed to contain nothing but fragments of pottery—of which I often admired the beautiful tints-and at times large square bricks could be seen scattered about. My own impression was that these mounds were the remains of towns, constructed like those I saw in the present day, such as Sabzawar and Nishapur, which are nearly all built of mud or sun-dried bricks, the finer structures having been covered externally with coloured, glazed tiles. Not the slightest trace of anything classic was visible. Some caves were discovered near Penjdeh, but they were also free from the touch of anything that had a Greek or Roman origin. After I left and returned home, Major Talbot, R.E., who belonged to the Survey Department, was sent on an expedition, for surveying purposes, eastward through the Koh-i-Baba range.† While on this work he came to Bamian, so celebrated for its caves and colossal statues. He sent me a number of drawings and descriptions of these caves, as well as of others at Haibak, some of which have already been communicated to the Institute.‡ It chanced that in the expedition there was a young Brahman, named Bairav Baksh, a pupil of the Jeypore School of Art. I had seen his work, and knew that, although not familiar to the practice of our Western style of art, he could draw very accurately, from his having a correct eye and a very delicate hand. § I mention this because much depends, in the present case, on the care and truthfulness of this artist's work. He made a sketch of the great statue at Bamian, which, I may state, on the

^{*} Indian and Eastern Architecture, p. 177 .- W. S.

[†] This is the name given to the continuation westward of the Hindu Kush, and which forms the great northern the Transactions, Vol. VII. N.S. p. 261.—W. S. § Members may recall the exhibition at the Institute,

by Colonel Jacob, in January 1891, of some of the original drawings of the Jeypore Portfolios of Architectural Details [The R.I.B.A. Journal, Vol. VII. N.S. pp. 45, 92, 128]. Some of these were by Bairav Baksh; and those who saw these elaborate sheets will be able to judge for themselves as to the delicacy and accuracy of this artist's work .- W. S.



FIG. 9.—THE GREAT BUDDHIST STATUE AT BAMIAN, 173 FEET HIGH.

authority of Major Talbot, is 173 feet in height. This may be depended upon, for he used the theodolite, whilst previous visitors had only made guesses. This sketch was sent home to me, and I was astonished to find that there was no appearance of the Greek or classical influence upon it. The lines of the drapery are given in this figure with all the formal regularity we are so familiar with in the Indian statues of Buddha [fig. 9]. The second statue, which is 120 feet in height, has the same mannerism equally distinct.* I think every one will agree in recognising that the art on these two Buddhas does not belong to the same school as that we are familiar with in the sculptures in the Peshawar Valley.

Now Bamian is only about 150 miles south from the mounds that remain of ancient Balkh, the capital of the old Bactrian country; and if Balkh was the centre from which the classic influence started, and found its way to the Indus region, then Bamian is just the spot where it might have been expected to be found. On the contrary, the celebrated statues at that place seem to be entirely free from this particular influence. A few details of the caves at Bamian were sent to me, and in them nothing of the classic influence can be found. In a former Paper † I gave plans and sections of some caves at Haibak: these were made by Major Talbot. Haibak is direct north from Bamian. The details of these caves have been accepted as Sassanian,† with nothing either Greek or Roman in them. There are many caves in this particular region, and as yet very little has been done in the way of

^{*} I may mention that Mohammedan armies have often passed Bamian, and that in their hatred of idols they have been in the habit of using their artillery against the statues. This will explain their mutilated condition.—W. S.

[†] See Transactions, Vol. VII. N.S. "Origin and "Mutation in Indian and Eastern Architecture." There is a small dwarf pillar repeated under the domes of these caves, but as yet nothing can be deduced from its details. It is just possible that this may be a survival.—W. S.

exploration; so no assumption of certainty should be made. All that can be affirmed from the character of the great statues, and the caves, is that, so far as our present knowledge goes, there is none of the classical influence on the north side of the Hindu Kush or Kohi-Baba range. If further discoveries should show that this conclusion is not quite correct, then the conditions of the question will have to be reconsidered.

On realising the significance of this absence of Greek or Roman art in the region of the Oxus, it led me to pay some attention to the details of the style found in the direction of the Indus. But, before dealing with this, there is another view of the case, on which I should like to say something, as it will give a better idea of the subject, and help at the same time to clear the ground. Fergusson, as already explained, thought that this architectural style, with the classic influence in it, was practised in Gandhara as late as the seventh century, or at least during the period that Buddhist buildings were being constructed. This is highly probable; but to this he seems to add that the connection with the West, which was begun with the Greeks -as he supposed-was continued, "and must have been nourished and kept up by constant "communication between the East and the West during the period at which it was most "flourishing, which may be described as that intervening between the age of Constantine and "that of Justinian." * This forms a very important point in this subject, and one that is rather difficult—at least, so it seems to me—to form a judgment upon. My impression—but it is only an impression—differs from what is expressed in the above quotation. The difficulty is owing to the state the remains have been found in. There is no structure standing, there are only mounds, with foundations, and fragments of architecture and sculpture. Dates as yet are in most cases only guesses, so that no systematic chronology exists. When I was in the Jellalabad Valley I could perceive differences in the remains of topes that are still standing; but as to which were the older, and which the later, I could find no means of determining. I am more familiar with the remains in the Khaibar Pass and Jellalabad Valley than with those in the Peshawar Valley. Judging from those remains I have seen, I should say that a regular style had somehow come into existence, formed of some classic details, rudely rendered, which were intermixed with local forms. This composite style I have seen so often repeated, the details being in each case so little different, that I assume it was recognised and practised by all the architects or builders over a certain geographical space, and also over a considerable duration of time. The forms, I found, were as regularly followed as we would find in any of the recognised styles which are practised in the West. I cannot say there could be no continued connection with the West-most likely there was some communication-but I doubt the constant supply of nourishment which Fergusson's words imply.

Fergusson puts the matter in another way; he calls attention to the resemblance between the Gandhara sculptures and those on "sarcophagi or the ivories of the lower empire." † To this he adds: "There are many of the Gandhara bas-reliefs which, if transferred to "the Lateran Museum, and labelled as 'Early Christian,' would pass muster with ninety-"nine people out of one hundred who visit that collection." ‡ If the hundredth person could find out that they were not "Early Christian," then he would find out exactly what I am prepared to establish. In these Gandhara sculptures an arch is often found supported by columns with quasi-Corinthian capitals. Fergusson naturally refers to this as evidence of a connection with Byzantium at the period when the Byzantine style had developed its forms. This, of course, seems very plausible; but I doubt if the one person, beyond the ninety-nine, at the Lateran Museum would be able to recognise that the arch in the Gandhara sculpture is not a Byzantine one, but is derived from the circular roof of the Buddhist Chaitya Cave [fig. 10].

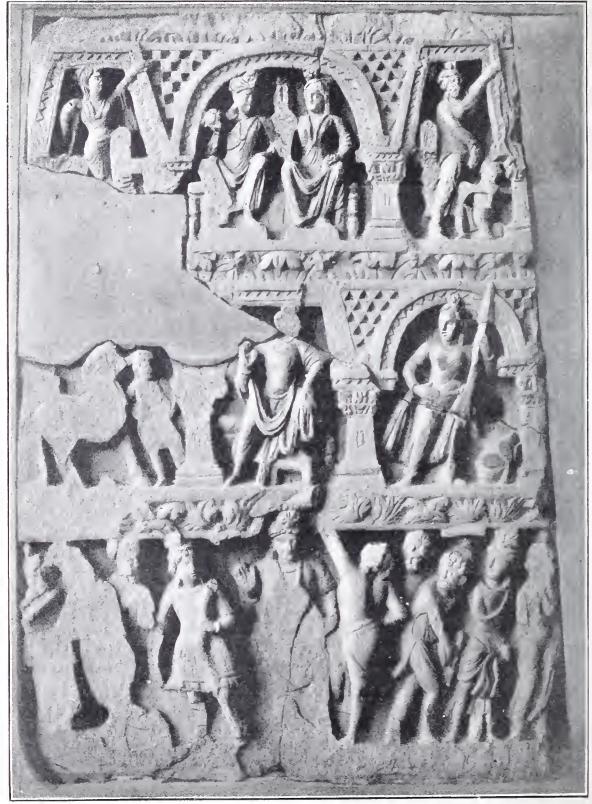


FIG. 10.—SCULPTURE FROM THE PESHAWAR VALLEY. (From a Photograph.)

There is another form which often alternates with this arch [fig. 10]. Cunningham uses the term "Egyptian niche" as descriptive of it; this is from the sloping sides; but I take it to be a wooden form of a door or window which was more or less common over the Himalayas and Tibet, and most probably it existed in the hill regions of Afghanistan.* This form is trabeate, with sloping jambs, and was originally wooden. The form itself would imply that; but I found in the Jellalabad remains a repetition of it in stone and plaster, in which the two ends of the lintel were represented projecting beyond the outside of the jambs.† This is another form that cannot possibly be traced to the West. It will be noticed in the photographs of these sculptures that the abacus, if it may be called so, is extended out far beyond the capital [fig. 10, and the headpiece, p. 93]. I take it that this is the survival of the primitive wooden bracket; as such, it was a member the native artists of the region were accustomed to, and it may be presumed that they retained it. The Persepolitan capital is another oft-repeated feature of these sculptures; this is a form common to the architecture of India during most of the Buddhist period; and that is another detail that cannot be traced to Western Asia. The same may be said of the "Buddhist Railing," it being a well-known constructive form that originated in India.

These examples, I think, are sufficient for my purpose. They comprise the principal features—other than the classic—in these sculptures. The point here is that they all belong to India; not one of those given above was derived from the Lower Empire; and not one of them can be identified with what is found in Early Christian sculptures. It must be confessed that the resemblance mentioned by Fergusson does exist; but the analysis of each detail proves that, although there may be a slight appearance of similarity, there has been no connection.

The classical features of this style now remain to be dealt with. It will be seen that by taking up each point, so far as we have gone, and considering it by itself, we have been able to explain where such detail came from. Having reached this position, it occurred to me that the classical forms might be submitted to the same process, and, by doing so, equally satisfactory results might be obtained. I shall now lay before you the steps I took, and the conclusions may be left to the judgment of each individual. On the mantelpiece of my own room I have a very fine piece of sculpture which was found at Hada, near Jellalabad, and an illustration of which, taken from a photograph, appears as the headpiece to this Paper. It contains some of the main features of classic architecture; and it was this sculpture that suggested to my mind the consideration of each bit of detail, in order to test the Greek or Roman origin of it. From the illustration of this sculpture it will be seen that there are two pilasters with quasi-Corinthian capitals in it. It may also be noticed that on each of these pilasters a panel is represented. Now, this panel was the first point I took up by asking the question, "Were "there panels in Greek pilasters?" I did my best to answer this, and I could find no panels in the Greek. But, as my attention for many years back has been principally turned to Indian and Oriental architecture, I did not feel confident in my own knowledge, so I consulted Professor Hayter Lewis. He confirmed my conclusion, but added that, except as ante, the Greeks could scarcely be said to have had pilasters in their architecture. Here were two points established, either of which would be sufficient to prove the non-Greek origin. I called his attention to the Corinthian capital on the pilaster. "Is that combination of capital and pilaster "Greek?" The answer was that the Greek antee rarely had ornate capitals. If I were asked what is the principal architectural characteristic of these sculptures, I should say it is a pilaster with a panel and a Corinthian capital; and it turns out that neither of these is Greek.

Indian and Eastern Architecture, p. 313.-W. S.

[†] TRANSACTIONS, Vol. VII. N.S. p. 261.—W. S. ‡ This piece is 20 inches by 12 inches. The subject is

the Bhadrakâ Jâtaka, or that of a pious servant girl, who took out a bowl of food to Buddha. See *The Romantic Legend of Sákya Buddha*, by Samuel Beal, p. 321.—W. S.

With a conclusion so distinct as that just arrived at, I might close the evidence; but there are two points more I should like to touch upon. These are, first, the absence of fluted columns in this Indo-Corinthian style [fig. 11], the importance of which will be seen further on. The second point is, that there were no modillions in the Greek Ionic and Corinthian, though there were sometimes dentils; and that in this Indo-Corinthian we have blocks or brackets, which I take to be modillions. If further consideration should determine that they are not modillions, then this part of the case must be dropped.

There may be other details, but I have here given enough to serve my present purpose, and they seem to me to be sufficient to show that the origin was not Greek. I may mention that I



FIG. 11.—ENGAGED COLUMN, PESHAWAR VALLEY.
(From a Photograph.)

have submitted the whole case also to Dr. Alex. S. Murray, and he accepts the general conclusion that the classical details are not Greek, but Roman.

We have now to find out by what route this classical influence reached India. It has already been shown there is a strong probability that it did not come by way of Bactria. The Romans did not pass beyond Parthia: and, although greater conquerors than the Greeks, they had not their Alexander, and never invaded India. There having been no Roman invasion, there was no occupation; hence we have to seek for a trade route. There was the Egyptian route by Myos-Hormos, from which 120 ships sailed down the Red Sea every year in connection with the commerce of Rome; but these vessels seem to have gone principally to the Malabar coast and Cevlon; * so that route will not supply what is wanted, and the presumption would

naturally be in favour of the other route by the Persian Gulf, said to have been the original home of the Phænicians, the great trading race of antiquity. But we require a much later date than the time when the Phænicians had their original islands of Tyre and Arvad—which were no doubt great commercial centres of the ancient world—in the Persian Gulf. Possibly it might have been the descendants of these people that developed the trade with India through Palmyra. In this we have a trade route at a date near enough to our purpose; the trade lasted up to 278 A.D., when the city was taken, along with its queen, Zenobia. Here, we know, there were examples of Roman architecture; and these examples are, I think, the nearest, in point of situation to India, to any that we know of. Now, in the Roman architecture of Palmyra we find almost all the architectural features of the sculptures in the

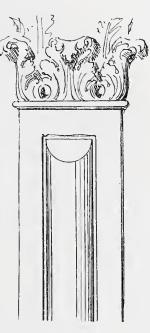
^{*} Gibbon's Decline and Fall, ch. ii., and Smith's Dictionary of Greek and Roman Geography, art. "Myos-Hormos," vol. ii. p. 387.—W. S.

Indus region and Afghanistan. The Corinthian Order predominates. The pilasters have Corinthian capitals, and these pilasters have panels. Another prominent characteristic of Palmyrene Corinthian is that of the column without flutes. The Corinthian columns of Baalbec are also without flutes. Baalbec, it may be mentioned, was also on the trade route, as well as Palmyra, between the West and India.

The panels on the pilasters of the Buddhist sculptures, it will be noticed, are not square at the top and bottom; they have a semi-circular curve, the curve being inwards upon the panel, as may be seen in the headpiece [p. 93]. Panels of this form existed in Palmyra,* but as they are only found on the soffits of the lintels, I doubt if that was likely to be the source from which they were derived. I think a more satisfactory explanation can be produced. Professor Hayter Lewis has a number of photographs of Palmyra, and among them is one of the Great Gateway. One of the pilasters of this structure has a panel, but its surface is

convex, as if a slice of a column had been inserted to form the panel; and, although the whole is rectangular, this convex form had to be sliced off at the end, the section of which produces a circular line, exactly like that in the Buddhist examples [fig. 12]. As the square form is retained in the Palmyrene pilasters, it is not quite the same as those in the Buddhist panels; but it is not difficult to imagine how the square form might be dropped out by such rude copyists, and the curved form retained. But even this supposition of a change by the Buddhist builders may not be required. Professor Hayter Lewis refers me to an example of a panel, with semi-circular ends, which he finds in the Marquis de Vogué's Syrie Centrale, said to be of the 5th century A.D. That is rather late to account for it as an original for the one in the region of the Indus; but the change may have taken place earlier in Western Asia than the date of the one mentioned, so that it may have been carried along with the other forms. Whether the mutation took place in Western Asia and was carried to India, or whether it took place in India, is not a very serious matter. It is sufficient for our purpose that we have found the probable source from which this small bit of detail originated.

I have already referred to the modillions [fig. 2]. In the Fig. 12.—Pilaster of great gate-Buddhist structures these blocks are too large to be classed as dentils; but there is just the possibility that they may have been



WAY, PALMYRA. (Sketch from a Photograph.)

derived from local forms, to I do not wish to attach too much importance to them; but if they are accepted as modillions, then they can be accounted for as part of the Roman Corinthian as it existed at Palmyra.

In the piece of sculpture from Hada, already referred to, there is what I take to be a portion of an architrave, which is supported by the two pilasters [headpiece, p. 93]. The frieze of this is

^{*} Wood's Palmyra, pl. xviii.—W. S.

[†] I have a sketch of a house in Leh, the capital of Ladak. It was a mud house, and large pieces of wood had evidently been scarce; so a lintel was formed of small frag-ments. These were laid, first, across from jamb to jamb; then came a layer transversely on these; the third layer was placed like the first, and the fourth was again laid like the second. This was all very rough carpenter work, but the ends of the transverse pieces of wood, if they were small, produced dentils, and, if larger, they had the appear-

ance of modillions. I may say that this mode of constructing lintels is a special feature of Ladak architecture, and was probably common to the Indus region and parts of Afghanistan. An outline sketch of the house at Leh, with the above details, may be seen in the Transactions for 1882–83, pl. xxxv. This plate belongs to a Paper of mine on "Architecture in the Himalayas," published in the same volume, and at p. 75 remarks will be found on these particular details somewhat similar to those given here.-W. S.

convex, and ornamented with what is intended for leaves along its whole length. Now, one of the marked features of the Palmyrene Corinthian is a convex frieze ornamented by laurel or oak-leaves. Dr. Murray, to whom I have shown the photo of this sculpture, thinks that this convex form is not a frieze, but only a round moulding. I have to confess that he is supported in this by what will be found in some of the photos of these Buddhist sculptures, in which round mouldings may be seen ornamented in the same manner. I have always looked upon this particular form as a frieze, coming as it does exactly where a frieze ought to be; but with a doubt existing about it, and coming from such a high authority, this identity of detail need not be insisted upon.

I have now gone over these details, and although they do not take in every part of the architecture, still a large portion of it is included in them. The result to my mind is that none of them belongs to Greek architecture; and that each of them—not belonging to Indian forms

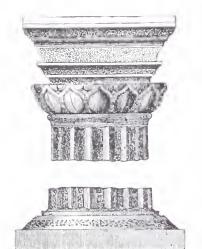


FIG. 13.—PILLAR AT SRINAGAR,
KASHMIR.
(From Fergusson's Indian and Eastern
Architecture, p. 234.)

—can be traced to the Roman style as it exists in the ruins of Palmyra.

I can say but little on the peculiar style found in the remains of Kashmir. I confess now to a faint doubt as to its being of Doric origin. The total absence of anything like the Doric entablature raises a suspicion. The base mouldings of the pilasters are Corinthian, or they might be Ionic; this is particularly distinct in the remains of the two temples at Patun. which I sketched in 1861. The flat flutes, which go so far to produce a classic appearance, may possibly have been derived from the sixteen facets of the Hindu pillars [figs. 7, 13]. The roof is evidently of wooden origin, and the decorative parts mainly consist of lines imitated in some way from the lines of the roof. There is no panel in the pilasters—a marked point of difference from the Gandhara style [fig. 14]. In fact, the Kashmir architecture differs in almost every detail from the Indo-Corinthian style we have been considering. Most probably it owes its development to other influences. As the temples represented by its remains are Brahminical, it may be

assumed to be later in date than the Buddhist. I am under the impression that the exact dates of the various temples are doubtful; but Fergusson puts the date of the Marttand temple—as already stated—as late as the eighth century, and this may be given as approximate. The examples of Ionic are so few and so fragmentary that I do not see any conclusion that can be based upon them.

Beyond the reference already made to the absence of the classic influence in the Great Statues of Bamian, I do not propose to touch upon the figure subjects of the sculptures. Neither do I propose to deal with the coins, although I recognise their great importance in reference to much that has been dealt with in this Paper. One obvious reason for silence on my part is that my want of knowledge does not entitle me to speak on this branch of the question. Those wishing to study this aspect of the case will find it treated in Mr. Vincent A. Smith's Paper, which has been already referred to. I will only recall the fact that, in my exploration of the Ahin Posh Tope, among the twenty gold coins found in the central cell, three of them were Roman. They were coins of Domitian, Trajan, and Sabina Augusta, the wife of Hadrian, who was the latest of the three; she died A.D. 137. The most probable way to account for these Roman coins in the Jellalabad Valley would be that they were carried there as the medium of commerce. This gives us the earliest possible date for the Tope; but

we have to allow time for these coins to find their way to that distant part of the world, and it may have been many years afterwards when they reached Afghanistan.

There is a honeysuckle ornament on the Buddhist Lats of Allahabad and Sankissa, which is very like the Greek form of that ornament; but it is supposed that it may have come from Assyria or Persia. If it is of classic origin, then it would suggest that, in order to account for these ornaments so far south, there may have been other trade routes between Western and Eastern Asia than that which led to the Indus Valley.

When the Greek origin of the influence in the Buddhist architecture of the Indus region was assumed, it was natural that other theories should have been based upon it. One of these

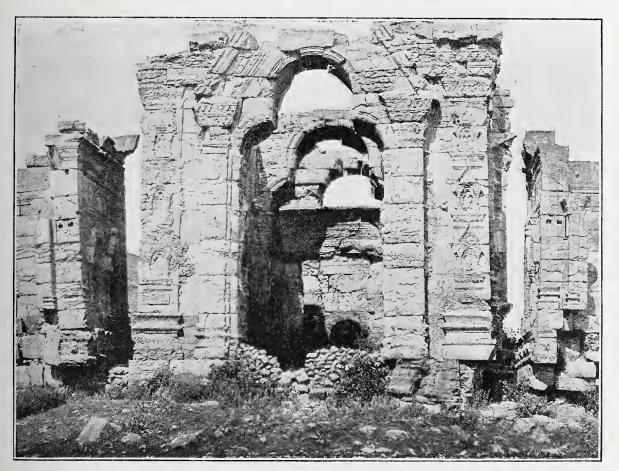


FIG. 14.—THE TEMPLE OF MARTTAND, KASHMIR. (From a Photograph.)

which has received acceptance among many Indian archæologists may be alluded to here, because it is one that has an important bearing on the origin of Indian architectural art. The oldest stone structures in India date from about 250 B.C.; and along with these stone structures we have the earliest known examples of sculpture and decorative art. When it was taken for granted that the architecture and sculpture of the Indus Valley and surrounding localities were Greek in character, and had been introduced by Alexander or his successors, the use of stone as a building material, and the beginning of sculpture, through the whole of India was ascribed to this foreign influence. I never accepted this conclusion.

Even assuming that Greek architects and artists had reached Bactria shortly after the time of Alexander, I could not suppose it possible for the art they brought with them to have been carried through Afghanistan, the Punjab, and the North-West Provinces, as far south as Buddha Gaya, or to Bharhut, in Central India, in half a century or so. Styles of art did not travel with such rapidity as that at any time in that part of the world. However, speculations on this head need not be carried farther. If the conclusion pointed to in this Paper should find acceptance, the whole theory falls to the ground.

I cannot close this Paper without recording my thanks to Professor Hayter Lewis and Dr. Alex. S. Murray for their kind assistance.—William Simpson.

DISCUSSION OF MR. SIMPSON'S PAPER.

Dr. Burgess, C.I.E. [II. A.], formerly Director-General of the Archæological Survey of India, has forwarded the following:—

Mr. Simpson's Paper is an eminently clear statement of the question of classical influence on the architecture of the North-West of India and Afghanistan, a question on which the last word has, perhaps, not yet been spoken. The history of our knowledge of the subject, as traced by Mr. Simpson, shows that a steady advance has hitherto been made towards clearer light. Whether the influence traceable in the remains under consideration is to be strictly called Greek or Roman is a matter of subordinate importance, dependent chiefly on the source to which we directly trace the influence and the period at which it was felt. Roman is here only a later form of Greek art. In the first formation of hypotheses, we are apt to assume more than is necessary; and in this case the theory—that if Greek die-sinkers found their way to Bactria "there might also have been "others who were architects or builders as well " as sculptors "—is uncalled for. In those early times, and indeed for long after, the artist was sculptor, painter, engraver, and architect in one. The artists who prepared the long series of coins from Andragoras and Diodotos for nearly two centuries to Hermæus and Azes and others with Greek legends for a century later—may often have been sculptors rather than engravers, and fitted to influence also the architecture of their times. Nor need we suppose that because no remains have yet been reported from beyond Bamian, and about Balkh, of similar type to those of Gandhara, therefore none ever existed; the argument from absence of evidence is a dangerous one in such a case. Remains of the sort are usually found in certain limited areas -not at all equably distributed. Nor should we make it a part of any hypothesis that Balkh only was the capital or mint city of most of these princes. Some, if not many, of them ruled over Kabul, and probably over Gandhara itself and part of the Punjab. Under these princes there seems no sufficient argument for concluding that their artists did not influence the art of the region over which they ruled. Whether that

influence had been fully developed long before the execution of the special groups of monuments under consideration, or whether it took hold on the art just about the time of their construction, may not be quite clear yet. From what Mr. Simpson justly describes as "the strange jumble" of architectural forms in these remains, it is evident that no conscious effort was made to mould the forms after classical patterns. We find Persian, Hindu, and classical details all mixed up, as if (assuming the style had not previously been formed) we might imagine the directing workman had taken hints from his travelled acquaintances: here a capital from Persepolis, there a base from Western India, and from a Yovana artist a spirited sketch of the acanthus foliage on the Corinthian capital and of decorative dentils and mutules, all which he had utilised in his own way. To break the plain surface of a pilaster a small panel was inserted, or, as often, human figures in rilievo were carved on it. In one of the Jamalgarhi sculptures (Report on Amaravati Stûpa, &c., p. 80) we have Persepolitan capitals on shafts with the true Hindu water-pot base, as if copied from Nasik or Karle, and supporting two arched passages, the roofs of which are panelled in a way that deserves attention as a feature of classical origin. A frieze of the "Bnddhist rail-pattern" type rests on the extended abaci of two of the pillars, and above all is the garlanded torus moulding. The sculptures on this slab are strongly marked by classic freedom and indicate classic influences. Mr. Simpson's illustrations, figs. 1 and 5, are of much interest, as showing that other Orders than the Corinthian were known in the North-West, and that a base copied from the Attic model was employed. The base of the column in fig. 11, too, as in many other of the Gandhara sculptures, is classical, rather than Indian. In India proper, pillars either had no bases, or one of the form of a water-jar, as at Kanheri, Karle, and Nasik—of the second century; and when it was tried to improve on this, as in the striking examples at Junagadh (Rep. Arch. Surv. West. India, vol. ii. pl. xxiv.), we feel that it is only hidden by ornament akin to the Corinthian capitals of the north. Among other Gandhara sculptures we have distinct imitations of favourite Greek subjects, as, for example, in one from Sangas, which reproduces, with but little variation, Leochares's Rape of Ganymede, and the Pallas Athene in Lahore Museum. In the important Paper alluded to by Mr. Simpson, Mr. Vincent Smith comes to very similar conclusions as to the resemblance of the architectural details of the Gandhara remains to those found at Palmyra, the great entrepôt of the Oriental trade in the second and third centuries. But he contends that these Gandhara works were executed almost exclusively between 200 and 350 A.D.*—J. BURGESS.

Professor T. Hayter Lewis, F.S.A. [F.], sends

the following:

Mr. Simpson has been kind enough to show to me the sculptured tablet from Hada [see p. 93]. From the locality in which it was found it would naturally occur to an architect, as he suggests, that its style was probably derived from some reminiscence of the art of Greece, imported by Alexander in his invasion of India. But a close examination shows, I venture to think, that, by whatever channel its influence might have flowed, its source was not Greek, but Roman. The main features of the design are two wide pilasters (one at each end) with a cornice or entablature, broken in by the straight-sided arch, but otherwise surrounding the whole. The lower part is an architrave, over which is a swelled frieze, ornamented with leaves in the well-known Roman style. The pilasters have capitals in rude imitation of Corinthian. There are, no doubt, instances in Greek art wherein the ordinary mouldings of the ante are replaced or supplemented by work of a more ornate character, as, e.g., at Priene and at the Temple of Miletus; but I know of nothing in Greek art so entirely like the Roman as the pilaster capitals from Hada. In turning to the source whence these features could have been derived, one is directed, naturally, to Palmyra, which was so nearly rebuilt by Hadrian that it received the name of Hadrianopolis, and its ruins contain some of the grandest columnar remains existing. The city was on one of the great trade routes to India, and no architect or sculptor passing through it could fail to be impressed with their magnificence. In these remains we find the swelled frieze, the leaf ornament, the wide panelled pilasters and Corinthian capitals. In the centre of the Hada Tablet we have, it appears to me, the Indian rendering of the Roman arch—the arch which never sleeps.—T. HAYTER LEWIS.

Mr. PURDON CLARKE, C.I.E. [H.A.], said that, in the years 1870 and 1871, he was stationed in Rome, engaged in the superintendence of the

copying of the early Mosaic decorations, and working in conjunction with M. Georges Berger, who was similarly employed upon the frescoes and other branches of Early Christian art in the Catacombs. During that time, although he did not seriously study as a student, he formed a good mental impression of the leading characteristics of Roman art, especially of the period of its decadence. Ten years later, when visiting India, he was shown by Mr. Kipling the collection of sculptures from Takht-i-Bahi, his first impression being a feeling of their great similarity to Roman work, and this had lasted ever since. Having been favoured with a proof of Mr. Simpson's Paper a few days back, he was reminded that through the kindness of Mr. Kipling they possessed at the South Kensington Museum a few originals and a good set of casts of the principal sculptures from Takht-i-Bahi; and a selection of those, which had been lent to illustrate the lecture, would considerably help to prove many of the points of argument in Mr. Simpson's valuable There was one labelled the statue of Minerva, and which he had little doubt was intended for Minerva—it looked very much like a work of late Roman art—and there were two or three casts which were distinctly like Roman sculptures, especially that in which a large figure was in the costume of a Roman soldier of the third or fourth century. He (the speaker) had not seen any of the buildings, excepting those in Kashmir, which were pretty well known; though in an island in the Lake at Srinagar there were foundations of a building with some very classical details which, so far as he was aware, had never been drawn. One point that seemed to have escaped Mr. Simpson's notice was that, in following the old trade route through Palmyra on to India, one could find in Persia, almost half way between Palmyra and the Indus, not far from Hamadan, the city where Queen Esther lived and was buried, the remains of an old temple still standing, which was dedicated to Diana, and the modern name was Kingavar. Some drawings of it might be in Flandin and Coste's work. The building had never been well explored, although a plan had been restored, showing that it was similar in size to the Temple of the Sun at Palmyra. He did not think any of the columns carried their capitals, which had been destroyed by fire, and huts had been built round them; but in several places, through the buildings, portions of the sub-structure could be traced, and there was no doubt of it being a perfectly formed temple That was an important of the first class. link, being on the route between Palmyra and India, and one that might be of assistance in working out the problem. It was a classical temple, according to Flandin, mentioned by a Greek geographer [Voyage en Perse, vol. i. pp. 409-12. 80. Paris 1851]. There were quan-

^{*} Recent conclusions as to the chronology of the Indo-Scythian period have upset the dates assumed by Sir A. Cunningham, and remove Kanishka from about 40 B.C. to 80-100 A.D. This change approximates his dates to those of Fergusson.—J. B.

tities of coins, Parthian, Roman, and Greek, found in that neighbourhood, though a great many were said to be forged. In connection with the Takhti-Bahi sculpture, he would call attention to the most curious of the examples, one which Cunningham had specially noted as strongly resembling a well-known type of the figure of Hermes, who was sometimes shown carrying a goat, a ram, or a bull. In the Takht-i-Bahi sculpture it was very like the figure that was found at San Clemente, in Rome, of St. Peter as the Good Shepherd, or some of the later figures of Christ, the Good Shepherd. It was exceedingly striking; and, amongst all the others, stood away from the rest of the group as being a Roman figure.

Mr. H. LEONARD [H.4.] said that when he was at Lahore it was looked upon as quite an established thing that the sculptures and remains brought into the Museum there, and referred to by Mr. Simpson, were influenced by Greek art. In Kashmir the same idea prevailed, although he thought the Kashmir buildings were much more Roman than Greek in style. It was natural enough to suppose that along the route Alexander travelled over to India, which involved a long period of time, the influence caused by his passage

would, if it lasted, be Greek.

Mr. TAVENOR PERRY [4,] suggested that, to carry out the theory that the farther East they went the richer they found the so-called Corinthian style—and the farthest East they went, he thought, was Pahnyra—was it not possible that Eastern influence had acted upon Western art, rather than Western influence upon Eastern art?

Mr. LOFTUS BROCK, F.S.A. F., said that his impression was that the buildings of Palmyra did not all date from the time of Hadrian; but that the bulk of them were much later. It existed not only in the time of Hadrian and long afterwards, but for centuries before that; so that whatever influence there might have been in Roman times was but the counterpart of what had preceded in the long period anterior, when the Greek influence would be found rather than the Roman. From the fact that so many coins had been found in India indicating Greek influence, it really seemed no more difficult to believe Greek artists were at work designing and executing buildings than that they executed coins.

Mr. WILLIAM WHITE, F.S.A. F., said that there must have been a Greek influence, and possibly a subsequent one from the Roman, meeting it perhaps some centuries later. In the photograph handed round [see the headpiece p. 93] there was a conglomeration of various styles, Greek, Roman, Byzantine, and Gothic, all com-

bined together in one.

Mr. PHENÉ SPIERS, F.S.A. [F.], referring to Mr. Simpson's statement that it was doubtful if any other known style of architecture could be brought forward carrying with it so many aliases, said

that he hoped to be able to prove that there were many more even than Mr. Simpson had been able to distinguish, and that Sassanian and Byzantine would have to be added. The object of the Paper was to prove that the theory which attempted to ascribe those works to Greek architects was erroneous, for the reason that they contained many features of undoubted Roman origin. In his research for the route by which the classical influence entered Bactria, Mr. Simpson had fixed upon the trade route through Palmyra, and this trade dated up to 273 A.D., when the city was taken. It was therefore prior to that date that Mr. Simpson had fixed the period of those Buddhist sculptures. From a careful examination of photographs, and research into the developments of the Sassanian and Byzantine styles of architecture. he (Mr. Spiers) had come to the conclusion that the Buddhist sculptures had infinitely more connection with those two later styles, and that in their character they differed widely from the Roman work at Pahnyra. Fergusson, in his Indian and Eastern Architecture, had pointed ont the wide difference between the Corinthian capitals of Palmyra (which differed but little from those of the Pantheon at Rome, and the capitals from the Gandhara monasteries, which in their design resembled more those from the church of St. Demetrius at Thessalonica, and many churches in Central Syria. He (Mr. Spiers) could not accept Mr. Simpson's theories as regarded the date of the Bactrian work, seeing that it possessed features which could only be ascribed to a date as late as the fifth and seventh centuries, or even later. The principal features shown in the illustration fig. 10 were the arches alternating with a threesided figure with sloping sides, both of them carried on stumpy Corinthian pilasters. Simpson had pointed out that the arch, as shown, need not have had a Byzantine origin, because it was like the Chaitva arch of a Buddhist It was not the arch alone, however, which decided the question; it was the close assemblage of arches, and their support on Corinthian pilasters with wide spreading capitals, which denoted, he ventured to think, their Byzantine origin. Arches carried on columns were not found in Palmyra, in the buildings in which Mr. Simpson took for his models, but they were adopted as the principal characteristics of the style in Byzantine buildings in the East and in Eastern Europe. The capitals of the pilasters were of two designs, which might be either Persian or Byzantine. Describing in detail, from a photograph, the various features of a bas-relief tending to prove his argument, Mr. Spiers went on to say that the two decorative details on which he chiefly relied as showing the later date of the work were one of them Sassanian, the other Byzantine. The Sassanian detail was the dent-de-scie monlding which decorated the arches, and at that epoch the

only Eastern race which adopted such decoration was the Sassanian, as in the Palace of Rabbath-Ammon, in Moab. The Byzantine detail was that shown in the string-courses, which was a leaf decoration of the ogee moulding, found first in its strongly developed form at St. Sophia, Constanti-

nople.

THE HON. SECRETARY wished to second the vote of thanks to Mr. Simpson for his interesting Paper, and urged that the author's endeavour to prove that the Greek influence from Bactria could not have penetrated down into the Punjab and Central India,—on which he based his argument that Greek influence could have had nothing to do with the architecture of that country,—was met by the well-founded belief that Alexander crossed the Indus itself at a place called Attock, where there was, till recently, a bridge of boats, not very far from which some engineers, in making a railway, discovered an ancient Greek burial-ground. A note of the discovery was sent to the Director-General of the Archæological Survey of India, and it appeared, or was expected to appear, in one of the official reports. He (the speaker) had seen in the Lahore Museum, which was under Mr. Kipling's care, some of the sculptures to which reference had been made, and there was one—a large representation of Buddha—which gave him at the time a very strong impression of Greek character, certainly more Greek than Roman; and he thought the sculptures in some cases did show more Greek than Roman influence with regard to the folds in the drapery. They were taking a great deal of trouble to prove how far that influence of Greece and Rome had affected architecture in that part of India; but most things in the West had proceeded from the East. The East was the cradle of the religious beliefs and of the arts; it was also the cradle of the human race according to Scripture. Was it not likely that some of those artistic types which they were trying to prove had been introduced from Greece originated in those localities and started westward, and that they were perfected by the Greeks and Romans, and perhaps later went back again? All over India instances of what they were pleased to term classical detail were found. In ancient Indian architecture there were numberless little details closely similar to some details in Greek and Roman work, and might it not have been that the germ of these types really came from the East? With regard to the point mentioned, that certain of those sculptures looked very like early Christian work, the Nestorians, it was well known, penetrated into both India and China; and China at the present moment contained remains of certain buildings which were known to have been Nestorian. Was it not possible, therefore, that they might have taken some suggestions of early Western art into India at that time?



CHRONICLE.

EXAMINATION FOR CANDIDATURE AS ASSOCIATE R.I.B.A.

The President announced to the General Meeting of the 18th inst. that 70 persons, of whom 22 were relegated from previous occasions, had applied for admission to the Examination qualifying for candidature as Associate, and that 59 had been admitted. Two of these did not attend, 51 were examined in London, and 27 passed; six were examined in Manchester, and four passed. Of the 24 in London who were unsuccessful, six were relegated in all subjects of the examination, and 18 in certain subjects; of the remaining two in Manchester, one was relegated in all subjects, the other in certain subjects. The names and addresses of the 31 successful candidates, given in alphabetical order, were then read by the President as follows :--

ASHFORD: William Henry; Stone House, Rhayader. BACON: Roger Francis; Swallowfield Vicarage, Reading [Probationer 1889; Student 1891].

BARLOW: William Tillott; 23, Finsbury Circus, E.C. BARNES: Harry; 25, Fawcett Street, Sunderland [Probationer 1891].

BARROW: Ernest Robert; 76, Mount Street, W. BROWN: Alfred Kirk; Preston Cottage, Preston, Hull. CHILDS: William John; 7, Cedars Villas, Putney Bridge Road, S.W.

DEARDEN: Henry; Healey Lane, Batley, Yorkshire. EARNSHAW: John Robert; 4, Chapel Walks, Manchester. FETCH: Ernest Edward; 54, Goodrich Road, East Dulwich, S.E.

FORGE: Arthur James; Oakleigh, Claremont Grove, Woodford, Essex.

HALSALL: Francis Peter; 8, Bridge Street, Southport.HAYWOOD: Charles Spencer; Commercial Chambers, Accrington.

JONES: Harry Evan; The Tower, Dalston, N.E. KEMPSON: Charles; 96, South Fields, Leicester.

KENDALL: Franklin Kaye; 1, The Paragon, Blackheath [Probationer 1890; Student 1892].

LANDER: Harold Clapham; Rockhurst, Tunbridge Wells [Probationer 1890; Student 1892].
 LEWIS: William Arthur; Brooks Croft, Forest Road,

Walthamstow. LISHMAN: Frank; 51, Grandison Road, Clapham

Common, S.W.

LITTLE: John Renison; Eden Holme, Chorley New
Road, Bolton.

LUCAS: John Archibald; Guildhall Chambers, High Street, Exeter. MORGAN: Arthur Hill; 80, Foregate Street, Chester. MOWLEM: John Ernest; 13, Osnaburgh Street, N.W. NEWNHAM: John; 61, Palace Gardens Terrace, W. NIELD: George Ernest; The Sycamores, High Road, Tottenham.

SALIER: Douglas George; 11, Spring Gardens, S.W. SHEPPARD: Arthur William; 45, Brailsford Road,

Tulse Hill, S.W.

SMITH: David Forbes; Forth Bank, Gallatown, Kirkcaldy. TOYNTON: Alfred Wright; 23, Duke Street Chambers, Bloomsbury, W.C.

TREW: George Harry Male; 53, Beauchamp Road, Lavender Hill, S.W.

WETENHALL: Edward Box; The Poplars, Finsbury Park, N.

The Ashpitel Prize, 1893.

The announcement, also made by the President on the 18th inst., that the Council had awarded the Ashpitel Prize for the current year to Mr. Barrow, of London, and two subsidiary prizes to Mr. E. E. Fetch, of Cambridge, and Mr. Inglis, of Edinburgh, may be here conveniently supplemented by the statement that Mr. Barrow has been thus placed at the head of 141 other gentlemen who, in the Spring and Autumn Examinations of 1893, sought to qualify for candidature as Associate, and of whom 73 (out of 142) qualified. The Ashpitel Prize, which this year consists of books to the value of ten guineas, is provided out of a special fund, held in trust as a memorial of the late Arthur Ashpitel; and the subsidiary prizes of five guineas each, above mentioned, are provided from the same fund.

Mr. Simpson's Paper.

The Hon. Secretary, last Monday, was enabled to promise on behalf of Mr. J. Lockwood Kipling, formerly of the Lahore Museum, who was present at the Meeting, that the latter would make a communication to the Institute on the subject of Mr. Simpson's Paper; and he also expressed the regrets of Sir Richard Temple and Sir George Birdwood at their inability to accept the invitations sent them, one on account of his Parliamentary duties, and the other from indisposition. Mr. Ney Elias, the well-known Eastern traveller, and Political Agent of the Viceroy at Meshed in Persia, and Mr. Stephen Wheeler, formerly of Allahabad and Lahore, were present, though they did not join in the discussion. Communications made by Dr. Burgess and Professor Hayter Lewis, which were read to the Meeting, will be found on a previous page. A letter addressed to the President by Mr. Simpson, explaining his enforced absence, and expressing his regrets, was also read.

The late William Charles Tuke and James Maxwell.

At the General Meeting of 17th April last was announced the decease, on the 28th of the previous month, of William Charles Tuke, junior partner in the firm of Maxwell & Tuke, of Manchester and Bury. It is with deep regret the Institute now

chronicles the death, which occurred on the 28th September last, of James Maxwell, the head of the firm, who survived his partner but six months, the two gentlemen having been associated together for a period of over twenty-six years. Both had been Fellows of the Institute since 1888, and both were prominent members of the Manchester Society of Architects, Maxwell being also a Fellow of the Surveyors' Institution. Maxwell was articled to the late Thomas Holmes, of Bury. At the age of twenty-one he set up in practice on his own account, and in a few years laid the foundation of a very extensive business. In 1865, Tuke, the son of an architect and surveyor of York, and great-grandson of a surveyor of note of that city by whom the first survey of Yorkshire was made, entered the office of James Maxwell as clerk, and two years later was admitted into partnership with him. The firm thus constituted carried out a large number of public and private buildings in all parts of the country, including the Cambridge Hall and the Winter Gardens at Sonthport, the Manchester Jubilee Buildings, the Ulster Reform Club at Belfast, the British Section at the Brussels Exhibition, the Eiffel Tower and surrounding buildings at Blackpool, some ten or twelve banks in various parts of Lancashire, and the Technical Schools and two Club-houses at Bury. Their most important work, however, was the part they took in the foundation of St. Anne's-on-the-Sea. The whole of the town was laid out by them, the Promenade constructed, roads made, and plans prepared for the hotel, gasworks, and practically for all the original houses in the neighbourhood. The firm also prepared designs for public buildings which have been erected in Yokohama and Ecuador; and they were among the six selected architects in the latest competition for a War Office.

REVIEWS OF NEW BOOKS. IV. (9.)

THE SPANISH RENAISSANCE.

Renaissance Architecture and Ornament in Spain: a Series of Examples selected from the purest works executed between the years 1500-1560, measured and drawn, together with short descriptive text, by Andrew N. Prentice. Fo. Lond. 1893. Price 50s. [Mr. B. T. Batsford, 94. High Holborn.

This series of remarkable drawings refers to a period of art which it behoves Englishmen to study with greater care than they have hitherto done, for Spain reaped the benefit of researches when that country was, by the discovery of the New World, in a position to undertake the production of costly works of art.

Let us recall, by the aid of Addington Symonds, the historian of the Renaissance, what was happening in Europe about the year 1500. Spain, France,

and Germany had gained entrance to Italy—that Italy which in later years of the fourteenth century had begun to thirst for a knowledge of classic culture, and owing to the fall of Constantinople in the middle of the fifteenth had found from the dispersed volumes of the classics, hitherto shut up in the libraries of that capital, an altogether new field of mental culture. It was not from rediscovered antique art that as yet the artists and the architects and the sculptors received their inspiration, for little of antique art had been unearthed during the fourteenth and fifteenth centuries; but classic literature lighted a flame which found expression later in works that have claimed during the last 400 years the admiration of the world. This was the period which tuned the writings of Alberti, and paved the way for the purest and most perfect specimen of what is known as Italian Renaissance architecture. Bramante's work was not so much an outcome of studies in antiquity, as an exhibition of emancipated modern genius, fired and illuminated by such masterpieces of the past as came before him, interpreted by the newly discovered literature of the same period. This, then, was the artistic atmosphere into which the Spaniards emerged at the time when Charles VIII. of France, by his expedition to Naples, opened Italy to the leading nations of Europe.

The universities of Italy at this time attracted the youth of all these nations; they returned later enthusiastic pioneers in an altogether fresh interpretation of art to their own countries. In Spain the union of the Crowns of Castile and Aragon had generated a united nation; and the expulsion of the Moors, that strangely cultured and artistic people, had set free an amalgamated race of artist workmen, able in an altogether fresh direction to carry out the ideas brought into the service of the peninsula by the Italian artists who flocked thither at a time when Christian churches had to be not only erected but furnished; and on this latter portion of the work they specially expended the artistic knowledge of their day, at a time when ample pecuniary means were forthcoming to carry out the wishes of an enthusiastic

Fergusson tells us that we possess but few books on Art in Spain. He says we have books in abundance on the glories of the Alhambra and Moorish art generally—but for the Renaissance we are left to the prosy twaddle of Ponz, or the dry text of Cean-Bermudez, which, though eminently useful to those who have the buildings before their eyes, is worthless, from its deficiency in illustrations, for the purpose of stay-at-home explorers. He adds that, in so far as the Renaissance is concerned, the first burst of it alone is worthy of much attention.

and a highly cultured ruling class.

This is the style which, derived from Italy, fostered by those whose education had been acquired in the same country, and carried out in Spain in many cases by Italian artists in conjunction with Spanish workmen brought up under the cultured influence of the Moors, displayed itself during that period of exultation and of pride which followed the union of all Spain under the glorious tutelage of Ferdinand and Isabella. It continued to flourish till the year 1558, a period during which Spain, from her discovery of the New World, and the position of her monarchs as the greatest sovereigns of Europe, combined with the energy of the great men who then illustrated her councils, stood forward practically as the leading nation of Europe.

As ill luck will have it, a mickname has been given to this style of Spanish architectural art; for some unknown reason it is called "Plater-"esque." This name has had some influence in preventing some of the finest work in Europe being studied as it deserves; it seemed to convey the notion that the details were only appropriate to the workshop of the silversmith, and so it has come to pass that few have noticed them; and Spain till recent times has been quite beyond the means of the ordinary architectural student as a

happy hunting ground for his efforts.

Thanks to the Royal Institute of British Architects, Mr. Andrew N. Prentice, a Soane Medallist of the Institute, the author of the volume now noticed, was able to pass some time in the peninsula, and he deserves the greatest credit for having made such good use of his time; he has not only made a most interesting selection of subjects, but has executed the drawings with considerable skill. Who knows but that drawings which recall such a glorious period of art as this,—if others also will take part in the work,—may be the means of a renascence, in the twentieth century, of some of these art methods of the sixteenth? In Spain this style flourished only for about half a century, but it was the means of attracting to that country those who executed some of the choicest specimens of a school of art that has no rival in modern times.

Of course, the revival among us of anything of such a high class as this presupposes an amount of culture among persons for whom the work is done which it would be difficult to assign to those who in the present day furnish the means without which it would be impossible to execute it; the workman, too, must have artistic knowledge of a deeper character than that with which we are accustomed to credit him at the present time; still, demand generally produces supply, and the Art institutions of the last thirty years must have failed in their purpose if they cannot bring to the front a few, at any rate, whose art knowledge might find expression when an opportunity such as this is presented for their acceptance. We must, however, remember that no "cheap-"jack" execution can exist in the style we are considering; and, alas! in these days the craze for

cheapness, which is already deteriorating our manufactures, would altogether destroy all chance of a successful reproduction of early Renaissance art. Mr. Prentice's drawings are of course in black and white, and indicate rather than reproduce the effect of the art decoration which clothes the

architectural designs of this period.

Should any one desire to realise fully the art surroundings of this early time in Spain, there is a unique opportunity of doing so owing to a munificent gift made some months ago to the British Museum by the late John Malcolm, of Poltalloch. If the book is not on view yet, its production cannot be long delayed. It consists of a livre d'heures, the property of more than one member of the Royal Family of Spain; about half of it is ornamented in the mediaval style, while the remainder consists of the most exquisitely finished drawings in colour and gold that perhaps ever were produced in this highly favoured period of art. A series of architectural subjects of the greatest interest will be found decorating the pages of this choice volume; both styles of art represented being of the highest kind, an intellectual treat is in store for those who care not only for the usual style of manuscript illumination, but who value the rare opportunity of seeing, as if executed yesterday, the coloured architectural details of this early renaissance time. The book on its arrival in this country from Spain (which it left for the first time only a few years ago) was in one volume. It has, however, been since divided, perhaps out of respect for the different styles of art depicted within its covers. At any rate, during a consideration of this period of art it seems cognate to the subject to mention such a priceless specimen as this, which ought to interest members of the Institute, even if others pass it by. The Italian influence shown in the splendid miniatures enshrined in the volume bear witness to the cultured taste of its possessors; that many of the illuminations were executed in Italy there can be little doubt, but others of them, there is no kind of question, were produced in Spain at the very time when the works delineated by Mr. Prentice were being executed, if not by Italian workmen, at any rate by artists instructed by them; and attention is now called to this volume because by it, together with two others also in the British Museum—namely, The Breviary of Isabella the Catholic, dated 1196, and the Book of Hours belonging to her daughter—some idea may be formed of the cultured surroundings of those who brought about the remarkable phase of art to which these interesting drawings of Mr. Prentice have introduced us.

Speaking of the Renaissance in Spain, Addington Symonds, whose knowledge of the subject is, apart from the historical prejudices of that writer, universally acknowledged, calls particular attention to the fact that this period in Spain produced no

slavish imitation, as it did later in Italy; whilst the note of Renaissance work in Germany was still Gothic, he adds, "touched by Italian in-"fluence, enriched and fortified by the new learn-"ing, Spanish genius walked firmly forward on

" its own path."

It is indeed satisfactory that such good use has been made of the means provided by the Institute to enable young students to travel in countries which to former generations were inaccessible. The writer of the present notice was a witness to the diligence shown by Mr. Prentice and his companion Mr. Heber Rimmer, both Soane Medallists, when they were at work in Majorca, a place somewhat beyond the purview of the ordinary tourist. In consequence of this by-journey we find among the drawings in Mr. Prentice's volume several from Palma Cathedral fittings, notably the pulpits or ambons and bas-reliefs in the choir of that interesting church, which show how, even in a comparatively out-of-the-way island, the Italian influence of this great period of art made itself We know all about this noble work -how that one Juan de Sagrera, between the years 1525 and 1530, contracted for and executed what we now see; and that even if he had studied in Italy he was assisted by a local artist—one Maximari, or Maximo Marino. Thus, from an instance such as this, we may fairly assume that natives on the mainland of Spain were gradually obtaining knowledge of Italian Renaissance methods of the finest time, and turning them to account in the manner we now have an opportunity of appreciating in the volume before us. Surely if we admire but at a distance we shall be none the worse for a careful study of the early Renaissance period of art in Spain, to which this volume of drawings is a means of introducing us.—Lenox Prendergast.

It has often been a source of reproach that so few architectural works with fine illustrations should be published in England, whereas on the Continent, and particularly in France, a year never passes without two or three sumptuous volumes appearing, either on architecture or on the kindred arts attached thereto. The reason perhaps is not far to seek. Many of the works referred to are published at the expense of the French Government; but even when they are undertaken by private enterprise the State deems it to be a part of its duty to encourage the venture by subscribing for fifty or a hundred copies at the published price, and distributing them among the libraries of the various provincial towns. Here in England the unfortunate publisher is required by law to present five copies to the British Museum and other libraries respectively. This being the case. it is at least some consolation to be able to feel, when such a work as Mr. Prentice's volume on Spain appears, that for the immediate purposes of the publication—namely, its real use in an archi-

tect's library—and for its inherent artistic value, it not only holds its own, but is far superior to French works of a similar though much more expensive kind. As an instance of this, while Mr. Prentice's labours during the last three years have been devoted to the delineation of the Plateresque work in Spain, M. Léon Palustre, a wellknown French writer, has been occupied with the production of a magnificent work entitled La Renaissance en France, representing the architecture of a similar period in that country, and of which at present three volumes have been published, illustrated with magnificent eaux fortes by M. Sadoux and other well-known etchers. It is true that the scheme of M. Palustre's work goes beyond that attempted by Mr. Prentice, and is the result of many years' labour and research into the history of the François-Premier style and its development by French artists, in opposition to the now exploded theory that its chief beauties were due to the importation of Italian architects. Looking, however, to the illustrations alone in the two works, and notwithstanding the great beauty of the plates in M. Palustre's volumes, as representations of architectural detail they are far inferior to Mr. Prentice's; and we have the additional satisfaction of feeling that in the latter's work, drawn on the spot, and by an artist whose sympathies were completely in harmony with the spirit of the detail he was drawing, we possess a far more perfect representation than that afforded by the brilliant etchings of the French artists.

One general consideration which suggests itself in looking through Mr. Prentice's work is the variety of drawing it contains, and for this reason alone it is of great suggestive value to students. The drawings were either in pencil, inked in, or tinted, and they represent general views in perspective, plans, general elevations, detail elevations, with sections where required, profiles of mouldings, details of woodwork, ironwork, plaster and wood ceilings, and sketches of various features in perspective. For the reasons suggested in the preface to the work, the greater part of the illustrations are from buildings hitherto unknown, and it is perhaps difficult to select examples as the more worthy of notice. Two of the classes of subject, however, from their beauty and, to a certain extent, variety of treatment when compared with the work of other countries are, first, the magnificent grilles which form the screens to the choirs, chapels, and tombs of the Spanish churches. These have been already referred to in the Paper on "Wrought-Ironwork: Renaissance Period," read last year by Mr. Starkie Gardner,* though he was in possession only of a few of the numerous examples given in Mr. Prentice's work.

The second class of subject to which we might refer, and which, though found in Italy, is developed

to a far greater extent in Spain, is shown in the small court or patio, which forms the most important feature of a nobleman's house in Spain. The variety in the designs of these courts as displayed by Mr. Prentice is endless, and they possess one characteristic essentially Spanish—namely, the bracketed capital which enabled the architect to employ the horizontal entablature instead of the arch as in Italy, and therefore to economise in the height of the storeys. The suggestion of clear, sharp shadows given either by tint or hatching in Mr. Prentice's drawings is, for a work of this kind, preferable to that afforded in French illustrations, where most of the detail is lost in the intensity of actual shade; and he has done wisely to commence his work with the drawing of the Library of Santiago Cathedral, which prepares the student for an appreciation of the extraordinary brilliance of the sunlight in Spain, which gives such value to the contrast between the large masses of plain masonry and the exquisite and rich detail of the window and door dressings. The reticence in some of the drawings is to be commended, as, for instance, in Plate 20, where it has not been deemed necessary to repeat the ornament on both sides of the doorway; and for excellence of draughtsmanship the figures in Plate 10, the doorway at Burgos, and in Plate 18 the marvellous iron pulpit in the Cathedral of Avila, should be specially noted.—R. Phené Spiers.

(10.) CONCRETE.

Conerete: its Nature and Uses. A Book for Architects, Builders, Contractors, and Clerks of Works. By George L. Suteliffe, A.R.I.B.A. With illustrations. 80. Lond. 1893. Price 7s. 6d. [Messrs. Crosby Lockyood & Son, 7, Stationers' Hall Court, Ludgate Hill.]

When you anatomize Architecture into Art and Science, as some of our friends love to do, it is a mistake to suppose that you place on one side all the romance, and all the prose on the other. There is a world of drudgery to be got through in the art department; and, thanks to the law of compensation, there lurks under the head of "Materials and Construction" a whole realm of magic and mystery. A chemist, of course, can explain anything; but even the symbols of the laboratory do not steal all the miraculous charm out of the processes and phenomena which nature gives to the architect as the means of his craft. By all means, if you will, explain the calcination of rich lime as the expulsion of CO₂ from COCaO₂, and express the action of setting as the reabsorption by calcium hydrate of its lost carbonic acid gas, but there will still remain to the man of imagination something of the miraculous in the marvellous and almost spontaneous action of the group of agents which we call limes and cements. These things are an ancient mystery; and Vitruvius, when he penned his elaborate and obscure

^{*} Transactions, Vol. VIII. N.S. p. 273,

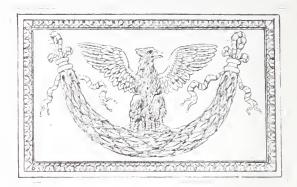
solution of the problem, was probably not the first who had tried to explain the secret. Mr. Sutcliffe, by the way, alludes in his introductory chapter to the passages of Vitruvius bearing on his subject, and it is worth while to mention that in Gwilt's translation of the chapter on pozzuolana there is an unnecessary confusion introduced by the word pulvis being rendered sand. There is no such confusion in the text, and "powder" would adequately represent the state in which the pozzuolana earths are found.

Mr. Sutcliffe must be congratulated on having treated a large, and in many ways a difficult, subject in a thoroughly comprehensive and lucid manner. System in a work of this kind is as vital as it is difficult to secure; the author has made it a primary consideration, and, without in any way disregarding such excellent works as that of Mr. Faija on Portland Cement, one may well acknowledge that this manual fills a long-felt gap. It is careful and exhaustive; equally useful as a student's guide and an architect's book of reference.

After an interesting, though necessarily slight, sketch of the historical aspect of his subject, he proceeds at once to those rudimentary classifications which are so simple when understood, but so vitally important to a grasp of the matter. Concrete is the subject, not cement only, and the author has therefore to deal not only with the differences of the various matrices, but with some account of the aggregates in general use. A recent controversy on the relative value of various aggregates as fireproof material gives additional importance to the study of these ingredients.

Naturally, the chapters on concrete floors are among the most interesting in the book. The fact that concrete floors are, in most modern buildings, carried out, not by the general contractor but by a specialist, who adopts his own methods of construction and applies his own patents, limits the architect both in the opportunities and in the necessity for giving a general study to this aspect of construction. Mr. Sutcliffe, with considerable fairness, has grouped together an account of all the principal systems in vogue (and out of vogue) in this country, and, better still, has gone into first principles, thereby giving his readers an opportunity of forming their own judgment, unbiased by trade circulars, on the respective merits of rival floor manufacturers. He has not omitted to point out that, though we are nowadays accustomed to use floors composed partly of iron as well as concrete, there are many instances. ancient as well as modern, of almost incredible performances in the way of concrete floors unassisted by any other material.

In conclusion, I should add that, besides being eminently readable, this work is elucidated by many illustrations and tables, all of which are good and to the point.—PAUL WATERHOUSE.



SIR F. LEIGHTON'S ADDRESS.

If the critics are silent before an Address delivered by the President of the Royal Academy, it may be taken as a compliment to his learning and eloquence, rather than as any show of deference to his position at the head of the arts of the country. It is, nevertheless, remarkable that so little attention has been paid to the thoughtful discourse on German Art delivered to the Royal Academy students on the 9th inst. The Spectator, which is accustomed, in the season, to devote whole columns to juvenile abuse of successful men, and head them "Art," has not a word about it; nor has The Athenaum, which, by way of novelty, prints a right amusing paragraph in its Fine Art Gossip. The Saturday Review, whose architectural criticisms, in Beresford Hope's time, were often read and sometimes praised, calls it "a very "learned, judicious, and interesting Address on "German art, especially architecture," and stops there; and all that The World has to say about it is that "Sir Frederic" (with a k) "gave one of "his scholarly addresses to the students upon "Teutonic art and its influences upon art in "general,"—the latter portion of this unique sentence evidencing that the writer, if he heard the Address, had not understood it, and, if he saw it in print, had not read it. The Times thinks that its purport "runs counter to the current of "opinion to-day in regard to the growth of art"to wit, the common doctrine that "art will always "be a barren exotic unless it springs from the " people"; but, though the President of the Royal Academy gave several historical facts showing what commed in the past at certain periods, he deduced no inferences from them in respect to the present.

His description of the introduction into Germany of the "Gothic style" treats of a fact virulently contested even in recent years, and repeats a misnomer which during the fervour of the mediæval revival in this country some enthusiasts tried to correct. He says: "Gothicism supplanted that "national form of art in which Germany had till" then [the downfall of the Hohenstaufen Dynasty, "about A.D. 1270] expressed her powerful idiosyn-

"crasy"; and he refers to the old superstition throughout Germany that the "Gothic style" was the national home-born style of that country, instancing its retention of the "blackletter"—the Gothic character—as deluded patriotism on the part of the Germans. But is it only in Germany that such a delusion exists or existed? Who has not heard, in good set English phrase, of Scandinavian forests with their rough woodmen, rude precursors of the Gothic architect? Who has not witnessed the indignation with which any attempt to identify English mediæval work with that of France has been received by English archæologists? It was more agreeable to national sentiment to believe that in many different countries, situated at distances more or less remote from each other, designs for abbeys, cathedrals, and monasteries, absolutely identical in form and character, were evolved out of the inner consciousness of inspired builders belonging to separate, and often antagonistic, nationalities. In Sir Frederic's opinion, the correction of such errors,—persisted in against the evidence of history, both written and practical, affords a striking instance of the growth of sound criticism in art within the last generation or two; and it is of no small importance that a great authority should thus acknowledge the debt which Western Europe owes to French inspiration and example in the matchless productions of the twelfth and thirteenth centuries. Indeed, Viollet-Le-Duc made it perfectly clear that during a period anterior to the fourteenth century the arts radiated from the great Abbey of Cluny over every part of France, covered Flanders, crossed the English Channel, penetrated into Germany and Spain, and even entered Italy. But why does Sir Frederic maintain the barbaric title of "Gothic" to designate those arts and the style they developed? What he calls "German Romanesque" has a better racial right, it would seem, to the appellation of "Gothic" than has that scientific evolution of architectonic form and artistically ornamented construction which marks the buildings erected by Frenchmen, and under French influence, during those marvellous two hundred years.

If there is one aspect of the Address which invites the attention of those who have read Sir Frederic's previous discourses, or the more ornate of his after-dinner speeches, it is its prosaic reserve. Only once he bursts into a flight of fancy—when a tuneful knight "struck his harp, sing-"ing blithely of the love of women, boldly too "of wrong at Rome." True, he afterwards revolts, as it were, against his own self-restraint, when he condemns Cologne Cathedral because it "smacks of prose and poverty of inspiration." A sole sentence points to the possibility that he has had our present England in his thoughts while discoursing of the German past. He learnt, he says, at Cologne the value of sobriety in the distribution of ornament—"a lesson," he adds,

" which may, perhaps, at this time not be value" less to my young architectural friends."

Sir Frederic Leighton enjoys an advantage shared by only a very few Englishmen: he can read the literature of the chief European nations, and discuss it, in their own tongues. Perhaps, with innate respect for the fitness of things, he imparted to his latest discourse a grave and reverend solidity of composition somewhat in the spirit of the old linguist, who addressed the Deity in Spanish, whispered Italian to his mistress, spoke French to his man of business, talked English to his birds, and muttered German to his horse, which last was considered a serious animal even before Swift raised him to be a master of men. Or perhaps he recalled the words of Voltaire, who, in a bitter mood, described the Germans as the elders of Europe, the English as grown men, and the French as children. In any case, Sir Frederic has not been unmindful of the responsibility which may be said to weigh on every, even the highest, critic of German art, and he may rest assured that those who can follow the thread of such discourses are much obliged to him for them. May he next compose an Ode to the Birds, and sing it lustily! For the English are men enough to bear unpalatable criticismcriticism, moreover, which ought to be scathing if judged by that he has meted out to the Germans. Seriously, it may not be amiss here to express a hope that before long he will take for his parable the work of his own time-reviewing the great Victorian age of antiquarianism and revival, and extracting from his many-sided experience deductions which will be eminently useful to architects and students of architecture over all that portion of the globe inhabited by the Englishspeaking race. The subject will undoubtedly be a difficult one, and the task may appear thankless, at least for a time; but no one could accomplish it better, or make fewer enemies in the doing, than Sir Frederic Leighton; nor would any advice of the sort be more respectfully received, by those personally interested, than his.

PUBLIC HEALTH (LOND.) ACT 1891.

BY-LAWS MADE BY THE LONDON COUNTY COUNCIL.

The By-laws which passed the Seal of the London County Council on 22nd June 1893, and were "allowed" under the provisions of Section 114 of the Act by the Local Government Board on the 28th of the same month, are made under Sections 16 (2) and 39 (1) of the Public Health (London) Act 1891. It will be interesting to architects to know that the first draft of the proposed By-laws was referred to the Institute for consideration, and that numerous amendments were suggested in a long report, dated February 1893, sent to the London County Council.

Many of these were adopted and embodied in a revise, which was again considered and reported on by the Institute in May 1893. This report was sent to the County Council and also to the Local Government Board in that month, and the outcome of this report is referred to later on.

The sub-divisions of the By-laws under Section

16~(2) are four, namely:-

1. Prescribing the times for removing fæcal and offensive matter, and the way of doing it.

2. As to the closing and filling-up of cesspools and privies. 3. As to the removal and disposal of refuse, and as to

the duties of the occupier of any premises in connection with house refuse, &c.

4. Penaltics.

With the first and fourth of these, architects have nothing to do.

The second, architects must bear in mind, because in pulling down old houses even in the heart of London it is very common to discover cesspools not only within the curtilage of a building, but within the building itself. The requirement renders compulsory the emptying of "disused or " unnecessary cesspools and privies of all fæcal or " offensive matter and the complete removal of so " much of the floor walls and roof of such privy " or cesspool as can safely be removed, and all " pipes and drains leading thereto or therefrom or " connected therewith, and any earth or other " material contaminated by such fæcal or offensive "matter," the filling up of the cesspool with "dry " clean material," and where the walls are not completely removed the covering with a layer of good concrete, six inches thick, of the surface of the space filled up. Presumably every cesspool is unnecessary where sewer drainage is available within the prescribed distance. In the original draft the removal of all parts of the cesspool was insisted on, but the Institute pointed out that in loose and sludgy soil such an operation might be dangerous to adjacent buildings: hence the present form.

As to the third sub-division, the only comment neeessary is that By-law No. 7 and another By-law, No. 16, under Section 39 (1) practically sound the doom of the old brick dustbin of unsavoury odour.

The By-laws under Section 39 (1) are:—" With "respect to water-closets, earth closets, privies, "cesspools, and receptacles for dung, and the "proper accessories thereof in connection with " buildings, whether constructed before or after the " passing of the Act." Every architect should study these carefully, because they impose restrictions and rules which affect the actual planning of a building as well as the areas of windows, the construction of closet partitions, &c. They also regulate the position of, and mode of building, external privies, cesspools, dung receptacles, &c.

In addition to these structural matters there are minute regulations as to sanitary apparatus, water

and soil pipes, and traps.

Speaking broadly, and with the few but important exceptions to be noted further on, the new By-laws will be found to be sound and correct in principle, conceived in the spirit of the Act under which they are made, and in accord with the best modern sanitary practice. They will be found to contain little that differs from what thoughtful architects habitually do in their works, but, it is needless to say, much that differs from the practice not only of the jerry-builder, but also of the unscientific, though artistic, architect.

There is one regrettable feature: there is no power reserved by which the County Council may vary any parts of the By-laws in special cases where it will be found in practice impossible to apply them. We have here cast-iron legislation that must break if it is found impracticable, as it lacks the elasticity of dispensary modification.

In studying the By-laws it must be always borne in mind that they relate to buildings "whether constructed before or after the passing " of the Act"—vide Section 39 (1).

Now let us consider the effect of this by taking

the Act and By-laws together.

Under Section 1 of the Act itself it is "the duty " of every sanitary authority to cause to be made "from time to time inspection of their district . . . "to ascertain what nuisances exist . . . and to "enforce the provisions of this Act for the purpose "of abating the same . . . so as to secure the "proper sanitary condition of all premises within "their district." The term "nuisance" is of such wide application that an interference with personal comfort has been held to come within its definition (G. W. Ry. v. Bishop, L.R. 7 Q.B. 550). Section 2 defines among other things as a nuisance—"Any premises (this word means not "only a building, but everything within its curti-"lage) in such a state as to be a nuisance or "injurious or dangerous to health."

Section 40 authorises domiciliary visits, when (Sect. 44) if anything is found "not to have "been made or provided . . . according to the "By-laws of the County Council and sanitary "authority, and to the directions of the sanitary "authority . . . or to be contrary to this Act,"

it must be altered.

The net result is, apparently, that every closet in London, old or new, which does not conform to No. 1 By-law, must be condemned by the sanitary authority, and altered so that it shall conform.

Let us see the effect of No. 1 on a site entirely covered on the ground floor with buildings, as probably 90 per cent. of shop sites are in the centre of London, as permitted by Section 14 of the 1878 Act. On such a site no closet can hereafter remain below the level of the first floor. It is true that the final proviso appears to give a power to construct a basement w.c., but it is under conditions which hardly exist in such sites.

In the original draft this proviso did not exist

at all, but the Institute suggested its necessity, and proposed that the minimum width of area should be 3 feet, ventilated by a grating over or immediately adjoining the w.c., of the same area as that required for a window. This recommendation was pressed, on the ground that it is probable that not 5 per cent. of such areas are more than 3 feet wide, as that was a minimum fixed by Section 103 of the Metropolis Local Management Act, 1855, for dwellings, and has been very generally adopted in other buildings.

The effect therefore of the Act and By-law appears to be that no w.c. can longer exist, or can be constructed in the front areas of the large majority of shops, except in the improbable event of a local authority consenting to the increase in the width of existing areas to 5 feet under the public way, and allowing an area of 40 feet super-

ficial to be only covered by a grating.

This result not only affects matters constructional, but matters of legal tenure. It is of course well known that in a large number of cases shopkeepers do not live over their shops, but take leases of the shop and basement alone, the rest of the house being separately let and having its separate entrance, a condition of things legitimate in itself and recognised by the 1855 Act. What is the position of the tenant of a shop covering the whole area of a Under the first paragraphs of shallow site? By-laws Nos. 1 and 2, he cannot have a w.c. lighted only from the roof; under the last paragraph of No. 1 he cannot practically have one in the basement; he cannot get access to the upper part of the house, for that is let to others. He must therefore pull down a part of his ground floor at the rear not less in area than 100 feet superficial, and thus sacrifice the retiring room of the employés; or he must build a w.c. in the front of his shop, thus reducing his window and making a direct access from a w.c. into the shop—perhaps a provision warehouse.

The creation of an open yard in lieu of a retiring room is by no means an unmixed blessing. It becomes a lumber yard—a neglected space shut in by walls. It would seem preferable from the points of view of sanitation and decency that the w.c. should be placed on the ground floor in a retiring room at the back, as might quite properly be done, provided that the closet has in the roof a lantern light of which at least 2 square feet on each of two opposite sides shall be glazed, and at least 1 square foot on each of such sides shall be made to open for ventilation, and also that it have an inlet by means of a valved tube not less than 54 inches in sectional area for fresh air, taken from above the roof down to the floor-level of the closet. A circulation of air would thus be obtained superior to that arising from a window only.

Another effect of the last paragraph of No. 1 is to prohibit the formation of a w.c. opening into the area "4 feet wide" required, as a minimum, to exist in front of a separate underground dwelling [see 96 (c) of the Act], although that Section (Sub-sect. h) requires the use of a closet to be "appurtenant" to such dwelling. It is manifest that a separate underground dwelling may be, and often is, entered externally from the area, and it is most convenient that the w.c. should be on the same floor level. It therefore appears that to gain this end on a site having a frontage of say 20 feet, the area already increased from the 3 feet of the Local Management Act to 4 feet by Section 96 of this Act, must in fact, if the By-law is valid, be further increased to 5 feet, a result which the Act certainly did not contemplate.

No. 3 properly requires that a cistern directly connected to a w.c. shall be distinct from that used for drinking purposes, and of course this is complied with by the use of a small flushing cistern in the w.c. itself. It prohibits the D-trap and other similar traps, and also apparatus of the "pan" type, and requires an anti-syphon pipe where two or more closets are connected to one

soil pipe.

No. 4 deals with soil pipes. In a building "hereafter erected" a soil pipe must be "situated "outside such building." Let us take a house in one occupation built in accordance with Section 14 of the 1878 Metropolis Management and Building Acts Amendment Act. The whole of the site on the basement and ground floors is covered with building, and on the upper floors there is at the rear an area of not less than 100 square feet. On the upper floors there are w.c's near the back wall, which comply with Bylaws Nos. 1 and 2. The house is burnt down and has to be rebuilt, but to comply with No. 4 either the owner must sacrifice his ground floor and basement blocks, or he must give up the closets, because he cannot cause the soil pipe from them to be situated "outside his building in "respect of the two lowest storeys." He can of course make it external by building an open brick shaft or small well for the pipe, which shaft, if large enough to get at the pipe for repairs, would become an unsanitary receptacle for snow, dust, dead vermin, &c.-a neglected "dustbin," in fact. If this expedient be not resorted to, practically it would appear to follow that the w.c.'s must be placed on the road front, and must have the soil and ventilating pipes carried down outside the wall and shop pilasters. These would have to be cased for protection from wilful as well as accidental damage, and, in very exposed positions, to prevent frost—to the great detriment of the architecture, and to the inconvenience of the public when repairs have to be done to the pipes.

It would appear to answer all sanitary purposes if for new and old buildings the soil pipe were external "wherever practicable." It is desirable to put a soil pipe outside, but in cases like the above there can be no more danger arising from the piece of soil pipe in the house than from a horizontal soil pipe or drain under it. Both must

be gas and water-tight.

Passing over many By-laws of no technical interest, we come to No. 26. This specifies for lodging-houses that one closet shall be provided for every twelve persons. It would have been desirable, if possible, to have fixed at the same time the proportion in the case of a factory (Section 38), and the Institute suggested the following addition:— "In the case of a factory, workshop, or workplace "there shall be water-closet, earth-closet, or privy "accommodation in the proportion of not less "than one closet or privy for every twenty persons "of either sex employed in or in attendance at " such factory, workshop, or workplace, but in no "case shall there be less than two closets or "privies if there be more than twelve persons in "all so employed." If no regulation is made we may find that every local authority may fix a different standard, or may fix none at all. Great confusion and inconvenience in planning buildings will necessarily follow.

Leaving the consideration of the house proper, we turn to the By-laws which deal with cesspools. The existence of laws relating to cesspools recognises that they are a necessity in certain cases where sewers do not yet exist. In the London County they may be reasonably considered as temporary outlets for sewage. They are, during the earlier stages of the building development of a new district, the only practicable method of drainage, and when it is developed they give place to a system of sewerage, the cost of which could not properly be incurred until it was known that

the "development" would continue.

No. 20 requires every cesspool to be "at a dis"tance of 100 feet at the least from a dwelling"house or public building, or other building in
"which any persons may be or may be intended to be
"employed in any manufacture, trade or business."
No. 22 requires the cesspool to be "ready of
"access" for cleaning, to be watertight (although
it specifies and only permits a mode of construction which very often fails to retain that quality),
and does not permit of its having "any means of
"communication with any sewer or any overflow
"outlet," and No. 26 says, "the occupier of any
"premises shall once at least in every three
"months cause every cesspool belonging to such
"premises to be emptied and thoroughly cleansed."

For any ordinary building one cesspool is usual, and it is not convenient to empty it more frequently than at three months' intervals. In practice, therefore, the size will be calculated on these bases. Why a well-ventilated cesspool that is watertight need be "100 feet at the least" away from a house is not clear from a sanitary point of view. In by far the larger number of new houses it is not usual to have gardens 100 feet deep on the

roadside, because they are too exposed to view to be of value to the family as places for recreation, and are consequently a wasteful expense. It will generally follow that the 100 feet must be measured at the rear of the house, thus rendering the cesspool anything but "ready of access," and necessitating the carrying of all its contents past the house, with the risk of spilling the sewage en route to the road. I am not now dealing with large grounds where the sewage can be utilised on the land, or where there is a roadway at the side of the house, but with an ordinary suburban villa.

Again, it not unfrequently happens in the suburbs that the land on which a house is built rises from the road. It is manifestly objectionable and expensive to have the drain gradient running against the natural slope, necessitating possibly a tank twenty-five feet below the ground 100 feet from the house. To ventilate such a tank is difficult, to clean it out both difficult and costly, and not very good for the men employed. It would seem to be much better to put the tank close to the front fence, where it can easily be ventilated and readily cleaned out (without the necessity for being entered at all) by means of one of the well-known closed vans having a hand pump and suction pipes attached (on the fire-engine principle) used by many local boards. Another great advantage of this position is that when the public sewer is ultimately made in the road, the drainage has simply to be disconnected from the cesspool and carried on to the sewer. In the other case, the whole of the drainage must be re-done at great inconvenience, and at a perfectly unnecessary outlay to the house owner.

For these reasons the Institute recommended that the 100 feet should for the general rule be reduced to 50 feet, and that the following alternative should be added to clause 20, "or in case of "a building not less than 30 feet back from any "road such cesspool may be constructed close to

"the said road."

In summing up my comments I think there is one point which all sanitary reformers should bear in mind, and that is that sanitation is highly commendable as a servant, but must not be exalted to become a fetish. It is desirable that a broader view should be taken of a house or place of business than that which seems to regard it only as a shell to enshrine a water closet. After all, sanitary accessories are made for man, not man for them. With this reservation the laudable attempt to improve the hygienic condition of London deserves the approbation of every architect, and the public authority may, I am sure, always count on the sympathy and co-operation of the Institute in this aim. It is not unfair to take to our Practice Committee the credit for having ungrudgingly placed the ripe practical experience of its members at the service of the public as a jury of experts.

Perhaps it may transpire that the bearing of those special points in the By-laws which I have criticised has not been fully apprehended by those who drew the By-laws. Already those persons who have begun to feel the pinch of Nos. I and 4 are inquiring if it is possible that the requirements can be actually "law." As soon as effect is given to them by the local authorities as the Act directs, it is probable that the outery will be

so great that they must be modified.

I have but one comment more to make, and that is, as to the way in which these By-laws have come into force. They are required to be confirmed by the Local Government Board, "which "Board is hereby empowered to allow or disallow "the same as it may think proper," and provision is made for full previous publicity in regard to the By-laws for which allowance is sought. The manifest intention of this would appear to be to give persons the power to make objections or suggestions in respect to such By-laws, and that those objections or suggestions should be independently considered by the Board before such allowance is given. It is proverbial that specialists not unusually get into a groove, and exalt their speciality to the prejudice of every other consideration. It would seem probable that the Legislature, in view of this, recognised the necessity of a controlling power that would take a broader view than any specialist, and would subordinate his views to others of different but equal importance.

The Institute's objections to and suggestions for the revised draft By-laws were sent, as in courtesy bound, to the County Council, and then to the Local Government Board before the end of May. The Board in their reply dated 30th June, i.e. more than a month after the receipt of the document, said: "The Board forwarded a copy of "your communication to the London County "Council for their consideration of the suggested "amendments to the By-laws. The County "Council however, have not at present adopted "any of these amendments; but they state that "they have taken note of such of the suggestions "as appear important, and that should it at a "future time be found necessary to revise the "By-laws these suggestions will receive further "consideration. The County Council have now "submitted the By-laws for confirmation, and the "Board have confirmed them."

It would appear, therefore, that the Local Government Board, instead of exercising an independent judgment—acting as a Court, to "allow or disallow as they may think proper"—in so important a matter as these By-laws, have merely referred our criticisms to and accepted the judgment thereon of the body whose draft was criticised on technical grounds of public importance. The principle involved is one the importance of which, I trust, will be my apology for referring to it.—Edwin T. Hall.



9, Conduit Street, London, W., 21 Dec. 1893.

MINUTES. IV.

At the Fourth General Meeting (Ordinary) of the Session, held on Monday, 18th December 1893, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the chair, with 22 Fellows (including 8 members of the Council), 20 Associates, 1 Hon. Associate, and 25 Visitors, the Minutes of the Meeting held 4th December 1893 [p. 86], were taken as read and signed as correct.

The following candidates for membership, whose nominations had been previously approved by the Council, were recommended for admission:—As FELLOWS [F.R.I.B.A.], Benjamin Ferdinand Simpson (Newcastle-on-Tyne), Charles James Smithem, and Walter Hilton Nash [A.]; as ASSOCIATE [A.R.I.B.A.], John Alexander Russel Inglis (Edinburgh); and as HON. ASSOCIATE, James Roger Bramble, F.S.A. (near Yatton, Somerset).

The following member, attending for the first time since his election, was formally admitted and signed the Register of Fellows, namely:—Thomas Jerram Bailey [F.].

The President announced the results of the Examination held during the week commencing 27th November 1893, and read the names and addresses of 31 persons who had qualified for candidature as Associate [pp. 115-16]. The President further announced that the Ashpitel Prize was awarded to Mr. Ernest Robert Barrow; and that additional prizes of books to the value of five guineas respectively were awarded to Ernest Edward Fetch (Cambridge) and John Alexander Russel Inglis (Edinburgh).

A Paper by Mr. William Simpson, R.I. [H.A.], on The Classic Influence in the Architecture of the Indus Region and Afghanistan, was read, in the absence of the author, by the Secretary, and the Paper having been discussed, a Vote of Thanks to Mr. Simpson was passed by acclamation, and the Meeting adjourned at 10 p.m.

ERRATA.

Description of Mr. Falkener's Drawings [pp. 86-88].

Page 87, No. 22, for three steps read three storeys.

", No. 25, for river cataracts read River Cataractes.", 88, No. 35, for mixed with oil spots read ruined with oil spots.

PROCEEDINGS OF ALLIED SOCIETIES. SHEFFIELD: MONTHLY MEETING.

On the 12th inst., at the ordinary monthly meeting of the Sheffield Society of Architects and Surveyors, Professor Anderson, of Firth College, delivered a lecture on "The "Architecture of Dalmatia, Roman and Renaissance." Commencing with a short historical account of the country, he described its position and character, and the important part it played during classical and mediæval times, and dwelt especially on the importance of the Venetian influence as testified in many of the buildings during those periods. The purpose of the curious projecting towers of the Amphitheatre at Pola was discussed, and the buildings in the various towns were described in detail. An interesting account followed of the palace of the Emperor Diocletian at Spalato; and the lecturer concluded with a description of a Christian Basilica in Dalmatia, built on the site of an ancient graveyard, at the excavation of

which he had been present. The lecture was illustrated, by the aid of lantern slides, with photographs taken by the Professor in the district under discussion.

GLASGOW.

Mr. W. J. Anderson's Lectures.

Not the least interesting feature in connection with the architectural curriculum now in operation at the Glasgow School of Art is the series of lectures in course of delivery by Mr. William J. Anderson [A.] on "Italian Renaissance "Architecture." The initiatory lecture, which was given on the 25th October, was presided over by Mr. W. Forrest Salmon [F.], President of the Glasgow Institute of Architects, supported by Mr. Campbell Douglas [F.], Mr. T. Lennox Watson [F], Mr. Francis Newbery, head-master, and other members of the Glasgow Institute. The lecture had for its purpose a review of the architecture of Italy from the earliest times to the end of the Roman Empire. It was shown how Etruscan art directed Roman architecture up to the conquest of Greece and her colonies, when the more powerful influence of the latter began to have full sway. Yet Roman art could not be described as having been derived from Greece. It was a combination or attempted fusion of the Etruscan and Greek principles, but was never logically worked out to its conclusion, and the Renaissance architects only carried it farther, without having entirely solved the problem. The time of Trajan was believed to be the best period of Roman architecture. The Pantheon, often called the Rotunda of Agrippa, and believed to be of the reign of Augustus, was now thought from discoveries made as recently as last year to be of the latter part of the second eentury. Illustrations were given of the exterior and interior of this, the finest work of the Romans; and, altogether, about sixty slides were shown by the lantern, including the temples of Pastum, the Forum at Rome, the Basilica of Constantine, the Baths of Caracalla, &c. A considerable part of the lecture dealt with the essential distinctions between Greek and Roman methods and principles, and concluded by noting the constructive ingenuity of the Roman structures of the second and third centuries. At this time the separation between construction and decoration was complete, the concrete and brick shell being built independently, leaving the marble or stucco envelope to be applied afterwards. In this the lecturer thought there was a lesson for the present time. It might not be the noblest manner of building, but it was perfectly legitimate, and capable of wonderful architectural effects, as the restoration of the Baths of Caracalla served to show. With proper organisation such as the Romans had, it was a much more economical method of structure, and thus left resources for decoration such as could never otherwise have been entertained. It was more reasonable than, and at least as artistic as, the Greek method of rearing masses of most costly marble and limestone, and then covering them with colour or with decorated stucco. Views and descriptions of the Roman Colosscum concluded the lecture, Mr. Anderson remarking that his special subject was to consist in what was, both literally and metaphorically, built out of its ruins. A worse title, he said, might be given to the subject than that of "The Stones of the Colosseum," although, as a matter of faet, the earlier Renaissance had a long career before any approach to the Colosseum was attained.

The second lecture of the series was delivered on the 15th ult., the special division treated of being the Early Christian and Mediæval Architecture of Italy. A general view of this long period was considered necessary, as the architects of the Renaissance were influenced by mediæval work to a degree seldom realised. Beginning with a brief historical review, the lecturer went on to discuss at some length the growth of the early Church buildings. These were believed to be, not, as generally supposed, the

outgrowth of the Roman basilica or Law Court, but a development of the form and arrangements of the Roman dwelling-house, of which plans were shown and compared with those of early churches, as well as with the Roman basilica. The early arrangements of choir and apsidal seats of the clergy were shown as they exist at San Clemente in Rome, and Torcello, near Venice. Passing to the true Romanesque period, the contrasts presented by contemporary work in different parts of Italy were noted. and accounted for by the variety of races which inhabited the country, and the modifications they exercised on the Latin element which lay under them all, and which, in the revival of the classical forms in their purity, found the only outlet that satisfied it. Thus the churches of San Miniato at Florence, St. Mark at Veuice, and San Zeno at Verona, erected almost at the same time, represented the three distinct types of Romanesque, Byzantine, and Lombard, which in other buildings were more or less commingled. The same diversity characterised the Italian Gothic, which, although it produced buildings or parts of buildings unrivalled in beauty, scarcely attained the cohesion of a distinct style. Introduced from Germany, the Italians never could have had any fondness for it, and certainly never grasped its aims and principles. Probably they never desired to do so, fancying that they were translating it into classical language. The survival of Roman forms was its greatest peculiarity, and in Venice especially the infusion of Arabic or Saracenic influence.

The third lecture, delivered on the 6th ult., treated of the Origin and Progress of the Renaissance, with special reference to Florentine work. The lecturer defended the earlier Renaissance from the charge of being wholly an imitative style, pointing out that emulation rather than imitation was its ruling principle, and that it was a true reflection of the temper of the times. The theory that with the Gothie style architecture as a living art died, which had been popularised by Mr. Ruskin and by our greatest eritic Fergusson, and reiterated by Mr. William Morris, was controverted. It was shown that the Italians, though they went back to Rome for their principles and details, built up a new style, as different in its best examples from Roman as Roman itself was from Greek. There was no greater contrast between the Greek Parthenon and the Colosseum than there was between the Colosseum and the Palazzo Strozzi, and originality was never displayed to a greater degree than by Brunellesco and some of his pupils. The previous tendency to naturalism in sculpture was only a preparation for the renascence which followed, and it was left for Donatello, under the influence of Brunellesco and the ancient masters, to grasp the true place and principles of sculptural art. The greater part of the lecture was devoted to an analysis of the early Florentine style, with upwards of forty illustrative examples by lantern, including the works of Brunellesco, Michelozzi, Alberti, and Andrea Sansovino.

The fourth lecture was delivered on the 20th inst. the subject being the Early Renaissance out of Florence, with special reference to the Milanese and Venetian schools.

PARLIAMENTARY.

Height of Buildings, &c., in London.

Mr. Arthur Cawston [A.] and Mr. William Woodward [A.], referring to the Report of the Practice Standing Committee [p. 91], forward the following observations:—

The absence of any definite laws as regards the height of corner buildings in the metropolis is well known to be constantly creating friction and animosity against our County Council. It therefore seems surprising that no clause which would terminate this unnecessary friction appears in the special report of the L.C.C. Building Act Committee, which appeared in the Journal of the 7th inst.

This question of curtailing the height of buildings on corner sites is, no doubt, of extreme importance to the

appearance and wealth of the metropolis.

In the first place, such sites are known to possess more value for building purposes than others, not only because of the better architectural effect that can be produced on them, but also because of the extra light that can be obtained—an important consideration when arranging a suite of offices.

As regards the importance of such sites for the architectural appearance of the metropolis, one realises the drawbacks that must ensue (if the buildings on corner sites are to be curtailed) immediately one remembers that classical architecture, whether of terraces or of single buildings, can only be effective if the angles of the façade are accentuated. One sees this at the National Gallery, Somerset House, the Home Office, Burlington House, the Conservative Club, Carlton House Terrace, Grosvenor Place Mansions, York Terrace, Regent's Park, the Classical groups in Regent Street, and wherever good classic exists. Without doubt, much of the dignity of such façades would disappear if the height of the corners were reduced.

It seems to me, too, that the disadvantages of lofty corner buildings have been over-rated. The façade to the wider street is allowed to be built higher than the façade to the narrower street, because of the greater amount of light and air which comes from the wider space. But the first window round the corner, being close to the angle, reaps even more benefit from the wider street than those windows which face it, for this side-window has a view right down the length of the wider street. In the same way with the second window from the corner; and, according to the width of the side-street, so is the benefit of looking down the wider street extended further and further from the corner.

As to the disadvantage from lofty corner buildings that might accrue to the houses further down the side-street, if the corner house has the proper amount of vacant ground in its rear, this disadvantage is practically infinitesimal. Doubtless for these reasons the Parisian by-law as regards corner houses was framed as follows: A building at the corner of streets of unequal width may return at its full height along the narrower street for a distance not exceeding three times the width of the narrower street.

Closely allied to this question of the height of corner buildings is the question of the line of frontage they should follow in the side-street, and I submit that the balance of the advantages of allowing them to come out to the extreme boundary of the side-street overbalances the

balance of the advantages of allowing them to come out to the extreme boundary of the side-street overbalances the disadvantages, especially when one remembers the open space required at the rear of every building. The present attempt to keep back these corner buildings has serious disadvantages. First, the loss of valuable ground on the most valuable building sites in every neighbourhood if the by-law is followed. Secondly, the ease with which the by-law is evaded. This is often done when laying out an estate, by first building the corner houses and placing them at the extreme edge of the side roads, thus creating the official line of frontage all along the side-road at the extreme edge of the roadway. Thirdly, and in consequence, although the majority of houses may be set back some ten or twenty feet behind this official line of frontage, it is open to any one to bring forward his house to the official frontage, thus damaging his neighbour who has set his house back.

Although the right of corner houses to come out to the extreme edge of the side-roads might be recognised, a by-law should certainly forbid these houses from creating

the official frontage line in the side-roads.

Doubtless clause (d) [p. 92] might cause hardships even if compensation were paid for the land taken; but would not the disappointments and opposition to setting back be lessened if an organic plan of improvements were decided upon, and always open to inspection, for then no doubt could exist as to why and where the new lines of frontage

were being formed? Another advantage of such a plan would be this. Supposing the proposed by-law be passed without an organic plan, and eventually all the existing streets are widened to the extent of 40 feet, even then London would not be a convenient or handsome city. What London really wants for the convenience of our enormous traffic is more main arteries going from one busy centre to another, and the by-law under consideration can only help forward this great want in conjunction with an organic plan. Without an organic plan it will again result in mere tinkering.

As to the wording of clause (d)—does not this imply that all existing buildings in old streets shall be set back at once? And what if buildings are "erected anew" on foundations six inches or so behind the old front foundations? Would these latter come under the clause? I think not. Surely the present wording seems to form an open gate through which the proverbial coach-and-four could be driven. Would the following be too exact—"Every new building, reconstruction, or addition to any old building on "land abutting on any public thoroughfare shall"?

The Practice Standing Committee state that "The "powers under which the Commissioners of Sewers in the "City of London are enabled to acquire either whole sites "or portions of them for the purposes of public improvement in cases of rebuilding are believed to have acted "equitably to the owners of property and satisfactorily to "the public." This is well worthy of noting, as it affords architects a powerful argument in favour of extending over the whole metropolis those many powers already possessed by the City Corporation—powers which have cost that Corporation labour, and delays extending over centuries, to extort from Parliament.—Arthur Cawston.

The clauses which have issued from the Building Act Committee of the London County Council appear to me to have been somewhat insufficiently grasped by the Practice Standing Committee in the Report published in the last issue of the Journal. In my opinion those clauses are not altogether "satisfactory and necessary additions "to the powers of the London County Council," and I do not think the Institute, as a body, "should give support to them generally in principle."

Clause (a) brings old buildings into the same category as new buildings; and clause (b) would give the London County Council power over buildings even if erected in a park, because "domestic buildings" are not defined, and the "light and air" part of the clause demands very

careful consideration.

Clause (c) is distinctly of a confiscatory character, and the words "fair price" referred to by the London County Council means very little if left only to the County Council to determine.

Clause (d) has been rightly appreciated by the Practice Standing Committee; and clause (e) leaves it entirely to the London County Council to determine what an "ade-"quate" internal area may be, as they are to determine the "dimensions of the same." I presume that means the dimensions of the areas, the exercise of which power

may very easily ruin a building site.

Clause (f) should certainly have a right of appeal attached to it; but why the Practice Standing Committee should state that clause (g) is a "useful and valuable "regulation" I cannot understand. It may be made the medium of taking away, without any compensation whatever, most valuable private property. "Proper safe-"guards" may be construed in the most elastic fashion, and, bearing in mind the present humour of the London County Council, the very notion of "closing or diverting "useless roads, paths, or rights of way" should have led the Practice Standing Committee to have at least recommended that the word "useless" be defined, and that no

road, path, or right of way be elosed until after careful inquiry by an independent tribunal, and that adequate compensation be made for all land taken.—WM. WOODWARD.

The Rural Poster.

A Bill, backed by Mr. Caine, Mr. Curzon, Sir T. Sutherland, Mr. John Burns, Mr. Birrell, and Mr. Jacob Bright, will shortly come before the House of Commons, the object of which, the preamble states, is to prohibit the raising of unsightly erections which destroy the beauty of the rural scenery in Great Britain and Ireland. The Bill provides, shortly, that no picture, printed or written matter, or any advertisements or signs whatsoever shall be exhibited upon any highway, footpath, canal, river, &c., so as to be visible to any person being on or passing along the same. Any breach of the Act is to render the offender liable to a fine of £5, to be recovered in manner provided by the Summary Jurisdiction Acts. The Act, however, is not to apply to any place within the boundaries of any Parliamentary or municipal borough, or within the district of any urban sanitary authority; or to any place within the precincts of a railway station, pier, or landing-place, or to any guide or sign-posts erected by or with the sanction of any public authority, or by any railway company; nor to advertisements affixed to a dwelling-house, or erected by any person upon land in his occupation to advertise a business or trade bond fide carried on by him upon that land, or to advertisements for the sale or letting of lands or tenements upon which the advertisements are displayed.

LEGAL.

Ancient Lights—Obstruction—Injunction or Damages. MARTIN C. FRICE.

This was an action brought by the plaintiff, who was lessee of a house in Birmingham under a lease of which about twenty-nine years were unexpired, to restrain the defendant from creeting, or permitting to remain erected, upon certain land opposite to the plaintiff's property, any house or other building to or at a greater height than the former buildings upon the same premises, which had been recently pulled down by the defendant, in such manner as to darken or obstruct the plaintiff's windows, which were ancient lights. The plaintiff's house was sublet to various tenants at a rental of about £490. The freeholder was not a party to the action. The evidence showed that the building which had been erceted by the defendant substantially interfered with the plaintiff's ancient lights, but there was no evidence to show that the selling or letting value of his property during the remainder of his term would be thereby interfered with or injured.

Mr. Warmington, Q.C., Mr. Renshaw, Q.C., and Mr. Micklem appeared for the plaintiff; and Mr. Marten, Q.C., Mr. Jelf, Q.C. and Mr. Jugney, for the defendant

Mr. Jelf, Q.C., and Mr. Ingpen, for the defendant.

Mr. Justice Kekewich delivered judgment on the 18th ult., holding that, the action being by a lessee with only a short term to run, the case was one in which the Court should not, in the exercise of its discretion, grant an injunction. His lordship therefore gave judgment in favour of the plaintiff for £120 damages and costs.

The Building Line-A New Point.

WENDON V. THE LONDON COUNTY COUNCIL.

This was an appeal from a decision of a metropolitan police magistrate in a case raising a fresh point as to the effect of the building line section (75) of the Metropolis Local Management Amendment Act 1862 (25 & 26 Vict., c. 102). More than six months before proceedings were instituted a building owner put in the footings of the walls of a corner house in a new street at a sufficient distance from the centre of the street. He subsequently built up a

row of houses in the same street, which he set ten feet further back, and thereby created a building line in the street. He sold the corner lot, and when the purchaser began to raise walls on the footings he was prosecuted by the County Council for building in front of the building line without license. The magistrate convicted, but stated a case for the opinion of the High Court, which came on for hearing before Mr. Justice Wills and Mr. Justice Wright on the 28th ult.

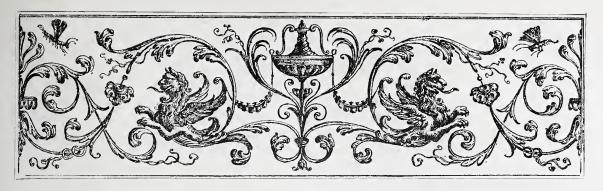
Mr. R. Cunningham Glen, for the defendant, contended that at the time footings were laid there was no building line fixed, and so there could be no offence. The former owner had an absolute right to erect the house on that site, and the new owner had the same right.

Mr. Avory, for the County Council, contended that the building line had been fixed in accordance with the owner's line of building in the row of houses he had built in the same road.

The Court held that, as nothing substantial had been done on the corner lot before the new building line was erected, the case of Auekland v. Westminster Board of Works, on which the defendant relied, did not apply, and that he was liable, on the wording of section 75, for the erections made by him.

Sky Signs: Counsel's Opinion.

The clause dealing with sky-signs in the London Council General Powers Act 1893, by which the London Sky Signs Act has been to some extent modified, has led to notices being served on a large number of tradesmen and shopkeepers in the metropolis, alleged to have infringed the provisions of the Act. The Licensed Victual-Protection Society, whose clients figure somewhat largely among the victims, have instructed their solicitors, Messrs. Maitlands, Peekham, & Co., to eonsider and report upon the alteration in the law thus effected. Their report may not be without interest to district surveyors, and, as recently published in The Morning Advertiser, is as follows:—The definition of a sky-sign is not materially affected by the recent Act, and it must still be "visible "against the sky from any point in any street or public "way." The only material alteration effected by the Act is that boards fixed upon the parapet or cornice of any building, or to the ridge of any roof, must not be more than three feet in height. We have been informed that district surveyors in some parts of London have taken advantage of the new Act to once more endeavour to drag into their net signboards affixed to the walls of houses but not placed upon the parapet. We have no hesitation in advising that showboards or signboards affixed against the walls of houses, and not being upon the tops of houses, cannot, in any case, come within the operation of the Acts. Nothing comes within the Acts unless it is "visible against the sky from some point in a street or "public way." If the line of vision be limited by bricks and mortar or other solid substance, it is not a sky-sign. The very name "sky-sign" truly expresses the kind of thing aimed at by the Acts. The only things to which shopkcepers need turn their attention are showboards fixed upon the tops or parapets of houses and being more than three feet in height. As to these, the owners may either remove them or replace them by others not exceeding the statutory limit of height, or they may apply to the district surveyor for the necessary certificate. It is important, however, to remember that such certificate will only last two years, at the end of which time a further certificate for two years must be obtained, making four years altogether. At the end of the four years the sky-sign will have to be removed. Speaking broadly, public-house showboards, in the positions in which they are generally fixed, do not come within the Acts, but when placed upon the top of the house they must not exceed three feet in



HISTORY AND DESCRIPTION OF LEICESTER ABBEY. I. By W. Jackson [F]. Registered at Stationers' Hall as the property of the Royal Institute.

HEREVER we see a ruin we may find a history; but he who would trace a monastic ruin to its source must begin far away with the history of humanity, at the line of cleavage between the pagan and the monotheistic world, before the modern Christian world, with which these institutions are usually associated, had a beginning. The name itself is suggestive: the Greek monastery becomes the Latin convent, becomes the Norman-French abbey, becomes the English abbot and convent of the monastery of St. Mary de Pratis at Leicester. One advantage the English student may have: the beginning is distant, but the end is near—sharp indeed it is, and somewhat dramatic and tragic, with one burly, useful-brutal, and quasi-royal figure in the foreground.

The abbey of St. Mary de Pratis was founded with the consent and advice of Alexander, Bishop of Lincoln, and built in the years 1137–43 for canons regular of the Order of St. Augustine, and in honour of the Assumption of the Blessed Virgin Mary, by Robert Fitz-Robert, commonly called Bossu, who succeeded his father as Earl of Leicester in the year 1118. He built also a nunnery at Nuneaton, where his wife Amicia enrolled herself as a nun, and there died; he entered himself as a canon regular at his abbey of Leicester, and lived in that profession fifteen years, and there died and was buried in 1168. His son, Robert Blanchmain, married Petronella, a descendant of Hugo de Greutmaisnel, first Norman Earl of Leicester, and she built a fair church to the abbey, which was solemnly dedicated in 1194.*

In the year 1107 Henry I. promoted Robert Bellomont, Earl of Mellent, to the earldom of Leicester. He repaired St. Mary's Church, and placed therein a dean and twelve secular priests, restored their possessions, and appropriated to them all the churches in Leicester except St. Margaret's. "There was afore the Conquest," says Leland, "a collegiate church of "prebends, intra castrum, which was destroyed, together with the city and castle, but re-edified "by Robert, Earl Mellent, for a dean and twelve prebends, and dedicated, as the old church "was, to St. Mary; the greater part of the belongings of this college was, by Robert Bossu, "alienated and annexed to his new abbey of St. Mary de Pratis." They were there "afore "the Conquest," and were probably instrumental, after the Battle of Hastings, in the opposition which induced the Conqueror to batter the church and fortress about their ears. William was on his way from London to put down a rising in the North, and he could not afford to leave an enemy behind him at Leicester. Harold, we know, favoured the seculars—his foundation at Waltham bears witness; but William had the Pope's help and the monks', and an ally in

Third Series, Vol. I. No. 5.

^{*} Hugo de Greutmaisnel . 1068-1094 Yvo, his son . . . 1094-1107 Robert de Bellomont . 1107-1118

Robert Bossu . 1118-1168 Robert Blanchmain 1169-1190 Robert Fitz Parnell 1190-1204

Simon de Montfort (1) . 1207–1218 Simon de Montfort (2) . 1239–1265 Norman Earls of Leicester.—Nichols' Hist.

Archdeacon Hildebrand, who probably hoped, through him, to bring the English into subjection to Rome. At Waltham the king treated the seculars harshly; but he did not alienate their possessions: their lands, like others in similar cases, were held in capite, and their college continued to the year 1177, when, at the bidding of Henry II., Guido Ruffus resigned his deanery, and sixteen regular canons of the Order of St. Augustine were inducted into the church [Dugdale]; about the same time, it will be observed, and the same compromise, as at Leicester, where the possessions of the dean and prebends were annexed by Robert Bossu to his new abbey of Augustine canons at St. Mary de Pratis. We have another glimpse of them about the year 1100, when Archbishop Anselm revived an old edict of Dunstan's forbidding secular priests to marry, a prohibition which our local historian, Mr. Nichols, informs us was received with heat and disfavour at Leicester.

But the larger question remains: Where and whence did they come?—not the seculars or the monks, but the *motif*, the organisation which, at that distant period, taught and colonised, and brought the place into contact with the civilised world. We naturally look to Rome, and in Mr. Gladstone's Oxford Address (1892) we find a hint which may be followed. But let us first quote Dr. Stubbs: "The most abiding influence of Rome is that of religion; the Church "continues to exist when the Imperial administration has perished"; and Mr. Gladstone: "After the extinction of the Roman Empire in the West, and during its senility, there existed "only one instance of an attempt at systematic and orderly government: this example is the "Christian Church, which, amidst the surrounding decay, steadily developed its organisation."

Now, we find that in the year 314 a.p. a Council at Arles was attended by three British bishops, Eborius of York, Restitutus of London, and Adelfius of Caerleon, and we assume that they were representatives of a British Church spread over the land from York to London, and from London to Caerleon; and if we take up the map, seeing that York and London and Caerleon were three principal cities of the provinces into which Roman Britain was then divided, with Leicester in the centre of the triangle, connected with them by military roads, and at that time a populous and important municipality, we must admit as highly probable that there was a Roman-British Church in Leicester. History is silent about it; the litera scripta does not remain; nothing, indeed, is more remarkable, considering the nature and extent of the Roman occupation, than the absence of written testimony. What history we have comes to us in other ways—from the archæologist, from coins, ceramics, and ruined buildings; and some such evidence is to be found in the present case.

In the centre of the Roman quarter at Leicester stands a church which was dedicated in early English times to St. Nicholas; it consisted originally of a short and narrow nave, 42 by 18 feet, with a space set apart at the east end, indicated by the fragmentary piscina, or credence, in the walls. The present nave arches have been inserted in the older wall, and the tower has been added at some subsequent, but remote, period. In the original wall are two narrow window-openings; they are circular-headed, and built with double rings of Roman brick, evidently copied from the adjoining fragment of Roman masonry called the Jewry "wall." They present a problem of no small interest—When, and by whom, were they built?

Now, the Roman builders of the Jewry wall withdrew from Ratæ about the beginning of the fifth century, and from that time to the middle of the sixth century, when the Northern invaders fought their way up the valley of the Trent and the Soar and captured Ratæ (Mr. Green dates its capture A.D. 550), the Roman-British people were left to themselves. From 550 to 650 the heathen Engles were in possession; from 650 to 750 Christianity was again in the ascendant (Theodore divided the See of Mercia about A.D. 690); from 750 to 950 the Danes were in possession; and from 950 to 1066 Leicester was once more nominally Christian. Now, if we tabulate these dates, it will be seen how difficult it is to explain the problem of

St. Nicholas' Church, except on the supposition that the original nave was built in the Roman-British period anterior to A.D. 550.

ST. NICHOLAS' CHURCH.

410. The Romans withdrew from Rate.

The original nave built.

690. A bishop in Legreceastre.

550. The Engles captured and partly destroyed the town.

750. The Danish invasion.

650. Christianity again introduced.

950. The English king, Edmund, expels the Danes.

We may now assume that Christianity was first introduced into Leicester (Ratæ) about the beginning of the fifth century; in the words of Dr. Stubbs, "the Church continued to exist "when the Imperial administration had perished," but there was no continuous life, as in the towns of Italy and Gaul; the Jute, the Saxon, the Engle, and the Dane had yet to come—"wolves, dogs, whelps from the kennel of barbarism," old Gildas calls them. The story of 200 years' merciless warfare may be read in Bede and the English Chronicle, and the evidence may be seen in the ruined monuments, the scattered coins, and the upturned milestone at Leicester; but, amidst the surrounding decay, the Church steadily developed its organisation, and hence in due time we have Augustine and Theodore, and the Norman earls, with their canons regular, at Leicester Abbey.

"The Norman Conquest," says Mr. Freeman, "is an event which stands by itself. It "took place in a transitional period of the world's history; the elements, Roman and Teutonic, "imperial and ecclesiastical, which stood side by side in the early Middle Ages, were then "being fused together with the later system of feudal, papal, crusading Europe." We have seen that William the Conqueror had the Pope's help, but by the reign of Henry I. English monasteries were full of Benedictine monks, who cherished native aspirations and had their headquarters at Rome; and hence we find that the religious revival of the twelfth century in England took a somewhat local colour. It was, in fact, a modest attempt at reformation, pre-Benedictine it might be called, anticipating the constitutions of Henry II., and reverting to the principles of St. Augustine. By this time our Norman earls had become of Charlemagne's opinion, that the spiritual and ecclesiastical power should be kept in subordination to the military and temporal. Now the seculars, who had probably lingered about at Leicester Castle from the time of Ethelfieda, would not observe any rule whatever;* and the monks were subordinate to Rome, and hence, instead of monks or seculars, we have canons regular at Leicester Abbey. They took their rule from an epistle written by St. Augustine about the beginning of the fifth century, in which the disciples were enjoined, almost in the words of St. Paul, to possess all things in common, to guard against pride, to attend regularly at prayer and praise, to practise moderation in all things, to have personal regard for one another, and not to fail in duty to the abbot.† They differed little from the monks, except that they were less amenable to Rome.

We shall not, however, appreciate the meaning of Leicester Abbey unless we take into account other circumstances of the time. It is quite probable that Earl Bossu intended, as it actually came to be, a place of refuge for himself. The disorganisation of society after the Roman Empire was repeated on a small scale in the England of the twelfth century. Stephen was on the throne, or rather he had seized the crown, and his reign of nineteen years was one of complete anarchy and confusion. It is a period almost bare of historical record. Even the Saxon Chronicle, so full up to the reign of Henry I., stops suddenly short at 1140; but in 1123 there is an account which throws a light, in a quite unexpected way, upon our actors, and even illustrates the motives by which we may suppose them to have been actuated:

1123.—This year the king called a meeting of his bishops, his abbots, and his thanes at Gloucester, and bade them choose whom they would as Archbishop of Canterbury. Then the bishops said they would never have a man of any

^{*} Year 963.—Ethelwold, Bishop of Winchester, drove the clerks out of the bishopric because they would not the bishopric because the bishop of the bis

monastic order as archbishop, and they intreated the king that they might choose one of the clergy for archbishop. All this was set on foot by Roger, Bishop of Salisbury, and the Bishop of Lincoln, for they were ever against the monks and their rule. And the prior and monks of Canterbury, and all others of the monastic Order, resisted, but in vain, for the Bishop of Salisbury was very powerful. So they chose a clerk, William of Curboil, who was canon of a monastery called Cliche, a priory rebuilt in 1118 for canons of the Augustine Order. Soon after the king went to Winchester, and then he gave the bishopric of Lincoln to a clerk named Alexander,* nephew of the Bishop of Salisbury. Then the king sailed for Normandy, having committed all England to the care of Roger, Bishop of Salisbury.

We can now trace the genealogy of Leicester Abbey, through the Norman earls and ecclesiastics, from Normandy; and we can see, and in part understand, their motive, and the meaning of it. In Mr. Freeman's account of the monasteries of Bec and St. Evroul, the names of Lanfranc, and Duke William, and Hugo Greutmaisnel, are quite familiar to us:

The second prior of Bec was Lanfrane, the trusty friend and councillor of Duke William. . . . William, son of Geroy, became a monk at Bec, and his nephew Hugo, and Robert of Greutmaisnel, restored the ancient house of St. Evroul . . . the knightly founder of Bec, at the age of forty, retired from the world, and received the habit of religion from Herbert, Bishop of Lisseux . . . that beck still flows through rich meadows, and under trees planted by the waterside, by the walls of what was once the renowned monastery to which it gave its name; but of the days of Herlwine no trace remains besides these imperishable works of nature; a tall tower, one of the latest works of medieval skill, attracts the traveller's attention, but the truest memorial of that illustrious abbey, an effigy by which the piety of aftertimes marked the resting-place of the founder, is now to be found in the neighbouring parish church.

Every word of this famous passage from the Norman Conquest, changing the venue, may now be applied to Leicester Abbey. The river Soar still flows by the side of the massive and venerable walls, which arrest attention and form a picturesque object from the new People's Park. The road, which takes its name from Abbey gate, is bounded by the work of Bishop Penny, one of the last abbots, whose effigy has a resting-place in the neighbouring parish church of St. Margaret;† but, with these exceptions, scarcely a vestige remains of what was once the renowned Abbey of St. Mary de Pre.

From the sixth to the sixteenth century—from Gregory and Augustine to Clement and Wolsey—the Church and the monasteries, like "two rowers in a boat," combined their powers to form the history of England; but there is a period beyond where history fades into fable, and legend into myth. In the Monasticon Anglicanum we read that Glastonbury Monastery was the first of its kind in Britain—half legendary, perhaps, there is yet in the account a morning freshness of description and a solid substratum of fact:

About the year 63 A.P. St. Joseph of Arimathea, accompanied by cleven other disciples of St. Philip, was sent into Britain to introduce Christianity in place of Druid worship. They obtained from Arviragus, the British king, permission to settle in a small island in a district called the twelve hides of Glaston. This island was called Ynswytryn by the Britons, and afterwards Avallon, the name of a British chief. Here St. Joseph built an oratory of twigs. About a century later Lucius, king of the country, was baptized, and an oratory of stone was built. St. Patrick, in 433 A.D., retired to this island, and reduced the occupants to more regular monastic order. About the year 530 St. David took a journey to Avallon, and added a chapel to the east end of the church. About twelve years after the renowned King Arthur, nephew to St. David, being mortally wounded in the rebellion of his cousin Mordred at Camlon, was carried to this Abbey, and there died and was buried.[‡] The common tradition about him is preserved in the following verses:

"But for he skaped y" battell y" wys, Britons and Cornysch seyeth thus, That he levyth yet perde, And shall come to be a Kyng ayc, At Glastonbury on the queer,
They made Arter's tomb ther,
And wrote with Latyn over thus.
Hic jacet Arthurus, rex quondam, rexque futurus."

Early copies of the *Monasticon* give no account of Leicester Abbey; the edition of 1846 contains a brief outline only, referring the reader to Mr. Nichols's history of Leicester.§ From

^{*} This is the Alexander, Bishop of Lincoln, by whose advice Robert Bossu built Leicester Abbey in 1137.

[†] This monument, "the work of no mean artist," bears a crozier in the left hand, has rings on the first and fourth left-, and fourth right-hand fingers, and wears a bishop's mitre.

[‡] A newspaper paragraph comes here ready to hand for illustration:—"Excavations on the site of the prehistoric "British village near Glastonbury have resulted in the

[&]quot; discovery of a stockade made of oaken planks and piles

[&]quot;such as sometimes surround the Irish crannogs, earthen jars, spindle whorls, a bone shuttle, bone needles for

[&]quot;making nets, bones of sheep and cattle, bronze finger-"rings, an arrow-head, a bead of dark amber, and a canoe "17 feet long, cut out of a log of oak. The 'island valley "'of Avallon' is about a mile distant."—The Speaker,

[&]quot;'of Avallon' is about a mile distant."—The Speaker, 3rd December 1892.

§ The illustration in Dugdale is wrongly described as

that record we may now proceed to quote, and condense with other matter as respects the personal history of the principal abbots.

The first abbot, Ricardus, was elected in 1144; he presided twenty-four years, and died in 1168. The twenty-fourth and last abbot, John Bouchier, surrendered up his office in 1539. The power and dignity of the abbot were considerable: he gave the solemn benediction, conferred the lesser orders, and wore a mitre little differing from that of a bishop.* Next in dignity was the prior, who had charge of the jewels and plate. A chamberlain, a precentor and sub-chanter, a sacrist and sub-sacrist, a treasurer, almoner, steward, cellarer and sub-cellarer, a master of the grange, a hospitiarius, and about twenty canons, complete the list of persons who were associated as abbot and convent of the monastery of St. Mary de Pratis. They had four Granges, at each of which one of the members resided, under the title of One was at the west gate at Leicester, the others at Ingarsby, Houghton, and Medoplek, in Derbyshire. The abbey church was solemnly dedicated in 1279. The chapel of St. Augustine was on the south side of the church. It was in the principal chapel, dedicated to the Virgin Mary, that Wolsey was buried. In 1323 John de Tours had license to found and endow a chantry. In 1344 Richard the Abbot was directed to find a proper strong house in his abbey to receive money collected for the king. In 1352 Simon de Islip, archbishop of Canterbury, had license to found and endow a chantry.

William le Clowne was abbot from 1344 to 1377; he built the abbot's hall and the gates of the abbey; he probably also built the boundary walls on the north and west, enlarging the original site of the abbey grounds; but he is chiefly interesting to us in connection with the important question of parliamentary representation. From the time of Henry III. the abbots of Leicester were occasionally summoned to attend the great Council of the realm. It was a principle of the feudal system that every tenant should attend the court of his immediate superior, and hence he who held per baronium, having no superior but the king, was bound to attend him in his great Council. By Edward III. this Council was formally separated into two houses—the archbishops, bishops, abbots, and greater barons, who were summoned by Royal letters; and the knights and freeholders of the Crown, by writ from the sheriff.† At the same time the summons probably became more frequent, and, for some reason into which we need not now inquire, attendance became irksome to Abbot le Clowne, and he, evidently well up in the history of the business, sent a petition to the king, "for the Abbey of Leicester, "being founded by Robert Bossu, and being a subject's foundation, could not be held per "baronium, and so the abbot was incapable of being legally called to Parliament." Whereupon the king did grant that the said abbot and his successors should for ever thereafter be eased and discharged of their attendance in Parliament; and in the Clause Rolls 25 Edward III. the abbot's name is cancelled, and these words written against it: "Abbas Leicestriæ "cancellatur quid habet cartam regis, quod non compellatur venire ad parliamentum." About the same time the number of abbots and priors to be summoned to Parliament, who all held of the king per baronium, was fixed at twenty-six, Leicester not being one, and we may therefore conclude that they were summoned, not because they wore a mitre, or bore a crozier, but because they held of the king in eapite per baronium.

Henry de Knyghton was a native of the adjoining village of that name; he was educated at Leicester Abbey, and afterwards a canon there; he distinguished himself in early life by harbouring two felons, fugitive from justice, but he afterwards received pardon from the king. He wrote de eventibus Angliæ, a record of events from the early English kings to the year

Leicester Abbey. It shows the ruins of Earl Huntingdon's mansion.

^{*} The first mention of an abbot's mitre appears about the middle of the twelfth century. To distinguish it from a

bishop's, it was of less costly material, and not ornamented with gold, a rule which was frequently disregarded. The abbot's crozier was carried in his right hand, the bishop's in his left (Encycl. Brit.). + J. R. Green.

1400. Leland and Nichols have drawn much of their information from this source. His condemnation of Wyclif, natural enough, perhaps, under the circumstances, is interesting historically as indicating the temporary union which the dread of Lollardism had made between the clergy and the monastic Orders; there is a touch of local colour in the following passage from his work: "Christ intrusted his gospel to the clergy and doctors of the church, "to minister it to the laity and to the weaker sort, according to their exigencies and several "occasions; but this Master John Wyclif, by translating it, has made it vulgar, and laid it "more open to the laity, and even to women" [Gilpin's Life of Wyclif]. Wyclif had just been expelled from the University of Oxford, and summoned to appear before the Papal Court. "Ah!" said he, "Herod and Pontius Pilate are made friends to-day."

William Charyte was prior in 1477; he compiled the Rentale norum generale, which furnishes many details about the abbey, viz., a rent-roll of the value of the several chapels, farms, and manors; a comparative view of the property and of the rents received at different dates; the customs of the tenants, an inventory of leases, &c. He wrote also the Registrum Librorum Monasterie, to which Dugdale refers as a singular and very curious document, not only as it relates to Leicester Abbey, but to the literary history of England in the 15th century. In 1409, whilst John Rotherby was abbot, the chancel of St. Martin's Church at Leicester was rebuilt. John Penny was prior in 1493, abbot in 1496; was created bishop of Bangor in 1504, bishop of Carlisle in 1508. He died in 1509, on a visit at Leicester Abbey, and was buried there, his monument being removed to St. Margaret's Church after the suppression of the monastery. This Penny, says Leland, made the new brick walls of the abbey.

John Bouchier subscribed to the king's supremacy in 1534, surrendered his office in 1539, was returned into the Exchequer as a fugitive in 1576, included in a general pardon in 1584; he was one of the last surviving abbots.

In 1557 the site of the abbey was purchased by William Marquis of Northampton, and by him, about the year 1562, alienated to Henry Hastings, earl of Huntingdon, who built a mansion out of the old materials, and sold it to Edward Hastings, knight. In 1622 the site was the inheritance of William Cavendish, second earl of Devonshire. In 1645 it was the residence of the Countess of Devonshire, and that year it was occupied by Charles I., as his headquarters, from the 30th of May to the 2nd of June, and it was then burnt by his troops.

End of First Part.

THE CLASSICAL INFLUENCE IN THE ARCHITECTURE OF THE INDUS REGION, AND AFGHANISTAN. By Mr. J. L. Kipling, C.I.E.

R. SIMPSON, in his interesting Paper [see p. 93] on this subject, refers to an article by Mr. Vincent A. Smith, of the Bengal Civil Service, entitled "Greco-Roman Influence on the Civilisation of Ancient India," published in the Journal of the Asiatic Society of Bengal (vol. lviii., part 1, No. 3, 1889). It is to be regretted that this admirable summary of fact and opinion could not also have been laid before the Institute, for it treats the subject at large with remarkable breadth of view and fulness of knowledge. One of the general conclusions of this authority is that the Gandhara, or Peshawar local school of sculpture (which furnishes the starting-point for Mr. Simpson's speculations), followed the lines of Roman art, and is not the direct descendant of Greek art. Mr. Simpson gives suggestive details and impressions of that fresh and personal character

which can only result from first-hand observation, and he contends that the classic forms and

spirit visible in the architectural and sculptural remains in Northern India can be traced to the Roman style as it exists in the ruins of Palmyra, and not to Byzantine or early Christian art. "It must be confessed," says Mr. Simpson, "that he resemblane mentioned by Ergusson "does exist; but the analysis of each detail proves that, although there may be a slight appearamence of similarity, there has been no connection." Now, Fergusson, in a merely cursory way, threw out the suggestion that the curven ivories of early Christian art, especially the consular diptychs and certain objects in the museum of St. John Lateran, were very like the Gandhara sculptures—so like, indeed, that some of them might be mistaken for early Christian works. Mr. Vincent Smith says, with reference to the specific objects mentioned, that "while "admitting that some have really an artistic relation with the Gandhara work, I venture to "think that the relation is not very close." But, none the less, he follows up Fergusson's suggestion, and finds, as Mr. Purdon Clarke and others had thought, that "the closest "parallels to the Gandhara sculptures are to be found among the remains of early Christian "art, though not among the ivory carvings. These parallels are to be found in a place where "we should hardly expect them—the Catacombs of Rome." And, in direct opposition to Mr. Simpson, he says that "a comparison of the plates of the Gandhara sculptures chied by Major "Cole with the similar plates of the sculptures in the Catacombs in Roller's work will "convirce any one who takes the trouble to make it that the connection between the two, "however it came to pass, is very close indeed." And, further on, as if in anticipation of Mr. Simpson's theory of Palmyra as the only source of inspiration, he says: "No difficulty "exists in supposing that Indian art may have been affected by the Palmyrene variety of the "coarries as supposing that Indian art may have been affected by the Palmyrene variety of the "coarries as the supposing that Indian ar spirit visible in the architectural and sculptural remains in Northern India can be traced to the

horizontal, bracketed type dear to the Hindus, who seem to have always cherished a dislike to the Roman arch. Some years ago Mr. Simpson, in a Paper read before the Institute, gave a conjectural restoration of the Ahin Posh tope, which I enlarged, framed, and hung up in the Lahore Museum, as it was the only attempt within my knowledge to give a rational reconstruction of a Buddhist building.*

Captain Deane's stupa is of a different type from that monumental erection, being one of the small votive stupas (about eight feet in diameter) erected in apparently vast numbers as thank-



YIG. 15.—GANDHARA SCULPTURES. FEMALE FIGURE WITH CHILDREN. FROM SIKRI.

offerings at Buddhist shrines; and when I left India it was being erected in the new Lahore Museum. I give a rough sketch of one of the most curious of the sculptures found by Captain Deane at Sikri [fig. 15]. There can be little question as to the Roman, or at least the classic air of this figure, which, as M. Emile Senart remarks, has certainly no religious significance from the Buddhist point of view, and at first sight recalls a Cybele or some analogous divinity, or perhaps the nursing-mother goddesses of the Babylonian terra-cottas. Messrs. Vincent Smith, Simpson, and others, would probably say it is incontestably Roman in style, and therefore in origin. M. Senart, one of the most learned of living authorities on the subject, is inclined to ask whether the explanation is not to be sought for on the Iranian,—the Persian side. We see, he writes, in Indo-Scythian coins how those barbarous chiefs borrowed symbolic abstractions from Persian tradition to incarnate them in more or less similar types familiar to classic art Oanininda under the features of a Niké or Victory and Ardoxo with the attributes of Fortune—and he is inclined to believe that the figure might be a personification of royal abundance. In other words, while admitting the classic feeling, he thinks that it came rather through ancient Persian channels, than along the direct route indicated by the Paper under discussion. Meanwhile, though the general air of the figure is classic, the details are undeniably Indian. Exactly such a stamped gold ornament as appears on the mother's brow is worn to-day by Brahman women. The dress is Indian, and even English children in India are to-day (when the mother is not looking) borne astride on the nurse's hip; while the belt showing under the folds of the robe and the bangles on the arms are now in common use. A

Hindu friend of mine said simply, "It's the foster-mother of Krishna," a personage who

^{*} The Paper referred to is entitled "Buddhist Architecture in the Jellalabad Valley," and was published in the Transactions 1879-80, pp. 37-64; it contains a full and most interesting description of Mr. Simpson's explorations in the Jellalabad Valley in 1878. The Paper is illustrated with numerous sketches and plans, and the author's restoration of the Ahin Posh Tope is represented in the plate facing page 55, with regard to which Mr. Simpson explains; "My effort has been rather to combine the

[&]quot;features to be found on more than one tope still remaining in the Jellalabad Valley, than to represent the particular one named. I have used the plan of the Ahin Posh, and placed upon it the highest architectural development which the style seems to me to have reached in that region. On all the topes of the Jellalabad Valley in which capitals are remaining, I found them to be Corinthian, and they are so introduced into the restoration. The Ishpola Tope is my authority

naturally enjoys high consideration among Hindus. As another example of the possibility of diversity of opinion among those best entitled to express one, I may mention the Corinthian capital, among the foliage of which small figures of the Buddha are embowered. This is obviously derived from late Roman or Byzantine sources—the Baths of Caracalla, the churches of Salonica, say some with whom this capital is a cheval de bataille. M. Senart, however, says:—"Il n'est pas exact que l'introduction de petits personnages dans la composition du "chapiteau corinthien date seulement du IVe siècle. Rien n'empêcherait, du reste, d'admettre "que cette innovation appartint en propre aux architectes de l'orient hellénisé. (Je puis citer "au moins deux chapiteaux de l'époque Arsacide qui reproduisent cette disposition.) "L'habitude de représenter le Buddha sous l'arbre de bodhi devait en tout cas favoriser ici "l'idée de le transporter sous les retombées de feuillages des chapiteaux."

In the essay by Mr. Vincent Smith, to which I would invite the careful attention of all who are interested in the subject, many instances are given of parallelism and resemblance between late Roman work and the Buddhist remains on the north-west frontier. I have not space or leisure to enumerate these, but I may point out the profusion of amorini in the latter: often in pairs, tier on tier, in cell-like compartments in the relief sculptures, and



FIG. 16.-GANDHARA SCULPTURES. A VINTAGE SCENE.

often in friezes, where they support long wreaths and resemble more or less the "Cupid and "Swag," vulgarised in Europe since the Roman time. But, like some other of the classic inventions adopted by the artists of Northern India, the cupid did not travel far south, and was never naturalised in the country. It may be that Indian infant forms do not suggest the dimpled roundness in which the Romans delighted, but, at all events, in the Ajanta cave frescoes, which seem to be the *ultima thule* of classic influence, the boys became grotesque gnomes sporting with still more grotesque animals. I give a rough sketch [fig. 16] of a small

"for the round dome. The Barabat and the Khaista
"Topes give me sufficient examples for the space between
"the dome and the upper cornice. The Jani and Barabat
"Topes have only one belt of pilasters, but in the Pheel

"Khana, Khaista, and Bimeran Topes, and in those about "Kotpoor, the double belt exists, and they illustrate the higher architectural development. In the upper belt in "these instances there is in all of them an arch between

"each pilaster, which will be found in the restoration. So far as my experience goes, there was no arch in the lower belt. Above the upper cornice, which is in every case Greek in its details, is a heavier cornice, with a greater

"projection; this rests on stone brackets of an ogee form." The excavations at the Ahin Posh Tope were carried out under Mr. Simpson's direction by a party of Afghans placed at his disposal by the late Sir Louis Cavagnari, then engaged in military operations in the district. The tunnelling necessary in order to penetrate to the centre of the tope formed a task of no little magnitude. A tunnel had to be driven to a length of close upon forty-eight feet, and made high enough for a man to walk erect, and sufficiently wide to allow of the carrying out of the débris. The work took nearly a month to accomplish, but at

length the central cell was reached. This consisted of an oblong heap, quite rude externally, some four feet by three. On the top was a large slate extending to nearly these dimensions, and about an inch thick. On being raised it was found embedded in mud, with another slate slightly larger in size under it. The cell itself was a cube of sixteen inches, formed of small slates about six inches long and half an inch thick, and their edges, which formed the surface of the cell, were smoothly trimmed, but not polished. The vase or jar containing the relics, which Mr. Simpson had repeatedly found in other topes, was in this case absent. There were about two handfuls of dark-brown dust, probably part of the ashes of the person in whose honour the monument had been erected. On the ashes lay a golden reliquary set with stones; it was octagonal in shape and about four inches long, with holes for the cord by which it was worn round the neck. The cell contained also a number of gold coins of Indo-Scythian monarchs, anso a number of gold coins of indo-seysman monarchs, Kadphises, Kanerki, and Hverki; and Roman coins of the reigns of Domitian, Trajan, and the Empress Sabina Augusta, wife of Hadrian—as stated recently [p. 110] by Mr. Simpson-and which are of value as giving the limit of possible antiquity to the monument.

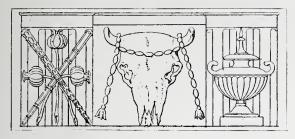
and much dilapidated frieze, showing a vintage scene, in which boys, leopards, a scene of dalliance, Bacchus on a leopard, and the wine-press of Europe (unknown in India, but common in Persia), are framed in a distinctly Byzantine arrangement of the grape-vine. I have also sketched a scene of orgy [fig. 17], which cannot but recall to classic students the aspect of many a Roman Sarcophagus, with its lion's head and claws, and the revellers in act "to twitch the "Nymph's last garment off." Here, I think, it would be hard to show the intrusion of any element either of Buddhist faith or Persian symbolism. But the women, seated on the knees of their distinctly Roman friends, wear the heavy Hindu anklet. Again, in Roman work of the Antonine period, figures of captive Phrygians, Dacians, and Sarmathians frequently appear. I give a rough sketch of a Parthian (?) fire-worshipper [initial, p. 134], bearing what looks like a modern Hindu pinda, a ball of cooked rice, which the sculptor, in the other balls already placed on the altar by the bearded fire-priest, represents by cones something like pine-apples, and which have for long been favourite worship-offerings. The costume is almost exactly that



FIG. 17 .- GANDHARA SCULPTURES. AN ORGY.

of the modern Afghan, and it is also like that we associate with the Parthians. It will be found to bear a considerable resemblance to figures in late Roman work.

It would take long to come to an end of the parallels that might be drawn between Greek, Roman, Byzantine, and even Venetian work, and the sculptures from the Yusufzai Valley; nor would it be impossible to persuade a student who regarded the matter solely from the architectural or artistic side that a direct relationship exists between them. But the historical student of Buddhism, knowing how frequently so-called imitations turn out to have been locally and independently developed products, will be inclined to hesitate. The matter is really one of great difficulty and obscurity. For, after all is said that our present knowledge can bring to bear, there remain many things unaccounted for; and I think most students will agree that the theory of imitation of late Roman work fails to explain precisely the most wonderful and difficult points in the Gandhara sculptures. And these works are not, as might be imagined from their scarcity in Europe, merely incidental or occasional objects. They are found spread over a considerable extent of country in large quantities, testifying to the existence through several centuries of a high state of civilisation, great wealth, large populations, and a marvellous development of a faith of which they are the only vestige now left in the land. J. L. KIPLING.



CHRONICLE.

The Travelling Students' Work 1893.

The work done, during their respective tours, by Mr. John James Joass (Pugin Student), Mr. Banister Flight Fletcher [A.] (Holder: Godwin Bursary), Mr. Alfred Hoare Powell (Owen-Jones Student), and Mr. Charles Archibald Nicholson (Tite Prizeman), was examined by the Council on Monday, 1st inst.; and approved. It will be shown, with the designs and drawings submitted for the Prizes and Studentships of 1894, at the Annual Exhibition which opens on Friday the 5th inst., at noon, in the Conduit Street large Gallery. The work executed by Mr. Arthur Thomas Bolton [A.] (Soane Medallist) during his foreign tour has also been received, and will be submitted to the Council on the 8th inst.

The late W. John Mettam [A.].

William John Mettam, who died on the 26th ult., was the energetic Honorary Secretary of the Leeds and Yorkshire Architectural Society. By his death Leeds has lost the services of a practitioner of ability and undoubted integrity—one who was at all times animated by the desire to uphold the honour of his profession. He was articled to Messrs. Perkin & Bulmer, of Leeds, in 1880, and having completed his term with them, entered the Leeds Office of H.M. Works, &c. that establishment was closed he travelled for a short time in France and Italy, passed his Examination for candidature as Associate of the Institute, and then commenced practice in Leeds. He was only thirty years of age, and was elected an Associate of the Institute in 1890.

A Centenarian Architect.

Mr. John Chessell Buckler, of Melbury, Cowley St. John, Oxford, recently completed his 100th year, having been born on 8th December 1793. The eldest son of Mr. John Buckler, he inherited his father's taste for the study of architecture, and practised as an architect till the 90th year of his age. He published a volume of etchings of the Cathedrals of England and Wales in 1822, An Account of Eltham Palace, Remarks upon Wayside Chapels, and A History of the Architecture of St. Albans Abbey Church. Mr. J. C. Buckler obtained the second premium for his designs for rebuilding the Houses of Parliament after the fire in 1834. He was extensively employed in the

University of Oxford, and in restorations at Lincoln Cathedral and other ancient churches, and the old mansions of Oxburgh and Hengrave.

Additions to the Library.

Professor Babcock [Hon. Corr. M.] has presented an admirable volume of essays by Mr. Henry van Brunt, Fellow of the American Institute of Architects (Houghton, Mifflin & Co., Boston and New York). The book takes its title, Greek Lines, from the first essay, and contains numerous other expositions on architectural subjects, which have been written during a lengthened professional career. Mr. van Brunt states in his preface that his views have been developed rather by practice than theory, and "that they have the advantage of "that sort of sincerity which is the natural pro-"duct of conviction rather than sentiment." Mr. R. Langton Cole [A.] gives a concise and comprehensive résumé of architectural work accomplished during 1892-93 in an article contributed to The British Almanac and Companion for 1894 (The Stationers' Company, London). The first part for 1894 of Der Formen Schatz (Georges Hirth, Munich and Leipzig) contains sixteen well-executed plates from various subjects, chiefly selected from fifteenth and sixteenth century work, including Albert Dürer's "Group of Angel Musicians," the original of which is in the possession of Mr. R. Heseltine, of London. A notable recent addition is Altare und Kanzeln, being a collection of illustrations of some thirty examples of altars and pulpits from the most famous churches in Germany. Mr. J. Tavenor Perry [A] has presented various interesting works relating to Indian archæology. The first of these, published in London in 1833, consists of translations, from the original MSS. (which came into the hands of Sir Alexander Johnston, who had the strongest evidence of their authenticity) of the Mahavansi, the Rajaratnacari, and the Rajavali, which are the sacred and historical books of Ceylon; also a collection of tracts illustrative of the doctrines and literature of Buddhism. The translations were edited by Mr. Edward Upham, and the whole, at the time of publication, constituted the first specimen of an original and genuine Buddhist history that had been offered to the public. The manuscripts comprehend three historical works, originally written in the Pali language, describing the revolutions and other events of interest in the annals of Ceylon, the latest of them ending with the expulsion of the Portuguese from the Island by the Dutch; and a number of curious tracts and treatises on the doctrine of Guadma and other subjects of Buddhist literature furnished by competent native authorities. Mr. Perry's other presentations include The Wonders of Elora, by John B. Seely (London: 1824). This is an illustrated narrative of a journey to the temples and dwellings excavated out of a mountain of granite, and extending upwards of a mile and a quarter, at Elora in the East Indies. Lassen's Bactrian Coins, translated from the German of Professor Lassen, by T. H. E. Roeer (Calcutta: 1840), is an erudite work likely to be of interest to numismatists and historical students, as it gives points in the history of the Greek and Indo-Scythian kings in Bactria, Cabul, and India, as illustrated by deciphering the ancient legends on their coins. Travels in Kashmir, by G. T. Vigne (London: 1842), is included in Mr. Perry's list of donations.

REVIEWS OF NEW BOOKS. V.

NEW TEXT-BOOK FOR STUDENTS.

Practical Building Construction, a Handbook for Students. By John Parnell Allen, Lecturer on Building Construction, Durham College of Science, Newcastle-on-Tyne. 80. Lond. 1893. Price 9s. 6d. | Messrs. Crosby Lockwood & Son, 7 Stationers' Hall Court, London.]

Of handbooks and treatises upon the mcchanical part of building there is certainly no lack, but they seem to fall into two classes—the cheap and very elementary, and the (comparatively) dear and abstruse-looking. Mr. Allen's book takes a middle course, and covering, as it does, in sufficient detail the entire range of "Building Construction," as defined and taught by Government Departments and Schools, in a single volume of convenient size and moderate price, it is sure to prove a formidable rival to great and small competitors alike, and bids fair to take a permanent place as a favourite student's text-book. It has indeed much, in addition to its comprehensiveness, to recommend it: simplicity of style, a multitude of illustrations, good print, and an attractive general appearance; moreover, in spite of the inevitable similarity in many points between books dealing with this particular subject, it shows a genuine intention to produce a useful and original work, a thing in itself refreshing, while there are so many books passing current as educational authorities which are flavoured with an air of antiquity, in their case rather musty than venerable.

Mr. Allen enjoys the great advantage, for the writer of a book of elementary instruction, of being a lecturer on the subject about which he writes; the clear, straightforward method of his exposition is of the kind which only comes from experience in actual teaching, and the title of his book, "Practical Building Construction," is well justified by its contents. The author's aim is stated in his Preface to be primarily to provide a handbook for students preparing for the Examinations of the Science and Art Department, the Royal Institute of British Architects, and the Surveyors' Institution, and secondarily a book of general reference for all persons engaged or interested in building; it is evident, however, from the importance

throughout assigned to the Syllabus of the South Kensington Examinations, which is printed in full, that its requirements have really determined the plan and scope of the book, even to the extent of compelling the author to waste space upon descriptions of sundry quite obsolete and useless methods of construction.

The nature of the book will probably be best understood from a brief mention in their order of the various heads into which it may be divided: Beginning with three chapters on bricks and brickwork, the fourth is entirely devoted to "Damp and its Prevention"; next follow two chapters on masonry, four on timber and carpentry, and three on works in iron and steel. Roof-coverings and fireproof floors are each given one chapter, while joinery occupies five; after which we find one on plastering, painting, and glazing; one on foundations, scaffolding, shoring, &c.; one on "Miscellaneous Materials" two on calculations for structures, which include graphic methods, but somewhat unaccountably omit any reference to questions concerning the stability of brickwork or masonry; while the concluding chapter, entitled "Sanitation," deals with ventilation, drainage, and the disposal of sewage. The fullest and best sections are those on brickwork, carpentry, and joinery respectively; some of the other subjects are touched on too lightly to impart much serious information. Of course, in describing so many and diverse operations, the author sometimes lays himself open to criticism as to whether the methods he prescribes are in each case the best possible; but, considering the wide range of the subjects he has undertaken to handle, his teaching may on the whole be called very sound and judicious; it is, however, somewhat ultra-dogmatic in tone, and the inquiring student might be better satisfied if he could more often find the reasons given for statements propounded so entirely ex cathedrá; he may also be considerably puzzled over cases, several of which occur, where two different ways of doing the same thing are described, c.g. as to the "head-"nailing" or "centre-nailing" of slates, without any guiding remarks being vouchsafed upon their comparative advantages and disadvantages. The numerous illustrations, though somewhat rough (and hardly to be recommended as examples for imitation in the treatment of detail), are extremely clear, and well adapted to their purpose of explaining the text; they also deserve particular mention for the great merit they possess for purposes of reference, in exactly corresponding to convenient ordinary scales; a point overlooked in many book illustrations, which are often reduced at random to odd proportions, so that no common scale can be applied to them.

On a thorough perusal of the work several mistakes will be found, but most of them are so obviously of the accidental kind almost insepar-

able from a first edition that it would be ungracious to enlarge upon them here; there is so much in it worth reading, and its suitability to the needs of a large body of students is so evident, that the early appearance of a second edition may be safely predicted. From the new one all these casual blemishes may be expected to have disappeared; and one thing more may be hoped of it, that in the interests of a sound and intelligent comprehension of their subject by his readers, the author may be allowed more space for the consideration of the Why, as well as the How, of those matters concerning which he himself possesses such minute as well as extensive knowledge.—Arthur S. Flower.

(12.)

MR. LOFTIE, INIGO JONES, AND WREN.

Inigo Jones and Wren; or, The Rise and Decline of Modern Architecture in England. By W. J. Loftie. 4o. Lond. 1893. Price 16s. [Messrs. Rivington, Percival & Co., 34, King Street, Covent Garden.]

I beg leave to offer the publishers of this work an expression alike of congratulation and condolence: the one because they have brought out, at an appropriate moment, a very excellent review of neo-Palladian monuments in England; the other because they have allowed its author to preface it with a very petty piece of superfluity. Mr. Loftie is an art critic, smooth, swift, and sententious; and he writes best when an editor accepts responsibility for his invective, franks his shortcomings, and introduces him, as it were, to those who really understand the subject which he is professionally deputed to discuss with the public.

It was in the columns of anonymous journalism that Mr. Loftie graduated as an art critic; and few compositions of the kind, when detected, have had greater attraction for me than his. Although only art criticisms, thrown off as they no doubt are on the spur of the moment—as all genuine efforts of genius are believed by amateurs and the public generally to be thrown off-their poetical fervour has strangely affected my moral sense. I have tried to analyse Mr. Loftie's methods of eulogy and disparagement; and, knowing that he combines, in his own person, the two offices of critic and clergyman, have trembled at the possibility of future complications. It was Henry Fielding's opinion that, according to the judgment of some Critics and some Christians, no author could be saved in this world and no man in the next. Now, if for Christians you read "clergymen," and for author "architect," the outlook becomes doubly terrible; and I have asked myself whether a professional combination of Critic and Divine should be permitted to endure, or become the modewhether the critical, being a part of the literary faculty, ought not, in Mr. Loftie's case, to belong exclusively to the domain of literature. In fine, Is art criticism rightly exercised as a profession?

The Rev. W. J. Loftie's Inigo Jones and Wren was put into my hands the day before Christmas, when I had no conception that any fun it might provoke would enhance the frivolities of the season. I have no reason to suppose that his denunciations of the modern "Gothic" architect are not uttered with intentions as good as those which animated Augustus Welby Pugin, when, in the thirties, he published Contrasts and discoursed on "True " Principles." But Pugin damned the neo-Grecian and the neo-Palladian architects with incisive argument which they could not fail to understand, and illustrated it in a manner which men who had but eyes to see could appreciate. The new prophet, a clergyman in the nineties, simply abuses modern architects, including in his tirade both mediæval architecture and nineteenth-century bishops. He has evident Faith, and doubtless Hope; but his Charity,—and on certain Sundays he will tell you it is the greatest of the three—is defeated by personalities which lack refinement and tire by repetition. And he is so absolutely imbued with the letter of his text (as a Divine should be) that if you met his invective with your own and called him an isosceles triangle, or compared him with the square of the hypothenuse, it may be doubted whether even then he would succumb in the accustomed flood of tears.

This annihilation of modern architecture in England, and with it the modern architect, is apparently complete in four chapters, though the book purporting to do the deed consists of eight. The fourth chapter, moreover, has a touch of humour in it, for it concludes with a quotation from Professor Banister Fletcher, who in 1890 is alleged to have told his youthful architectural class that "a building without proportion is "utterly, hopelessly bad," and that "a building, "no matter how simple, if in proportion, is good "and pleasing"—words which, being deemed necessary to the instruction of King's College students, afford, in Mr. Loftie's opinion, a melancholy sign of the state of architecture in England. But, seriously, what is Proportion? Whose standard of proportion is erring man to accept in these years of grace and rapid change? If I am able to follow the new prophet, it is not that of the mediæval builder whose methods and application of scale, as exemplified in his best buildings, are among the marvels that the present century has the credit of discovering. No; it is that of Vitruvius and Palladio, of Inigo Jones and Wren, and of Mr. Loftie—at least for a time.

Gentlemen, as the toastmasters say at civic feasts, pray silence for—Alexander Pope:

We think our fathers fools, so wise we grow, Our wiser sons, no doubt, will think us so.

Do you remember when Colonel Newcome first came home from India? How he went with Arthur Pendennis to the "Back Kitchen," and consorted with unconventionalised genius both literary and artistic; how he afterwards learnt that Dr. Johnson could not write English, that Pope lacked imagination, that Byron and even Sir Walter were poets of the second order, and that a Mr. Tennyson, of Cambridge, was the chief of modern poetic literature! The good Colonel died before the sixties and Pendennis survived him, but not for long. The same thing had happened a generation before, in the thirties, when young Macaulay eclipsed the luminous and voluminous Gibbon. The same thing is happening, more than a generation after, in the nineties, when lights of academic respectability refuse Macaulay the privilege of holding a candle to Mr. Froude. The old law of progress continues unchanged, though slightly varied—one of the variations being that the "Back Kitchen" is now a Boudoir in which the artists display their best manners, and the place of Bows who fiddled is filled by Mr. Loftie who writes.

It is very thoughtful of the reverend gentleman to tell you that he is not an architect, but that he writes for amateurs and the public generally. It may therefore be valuable to cull from his book a few extracts which will enable architects to take the measure of his criticism or judgment, and the measure of his knowledge, respecting a subject on which he poses as a public instructor.

Here are some:

The Saracenic saying [that an arch never sleeps] is true . . . of the progress and development of English architecture. The arch of the medieval Gothic architect never stood still. It was always changing, sometimes for the better, more often for the worse. The round Norman arch developed into the thirteenth-century lancet. The Early English style gave way to the Decorated, and both to the Perpendicular. Finally, the Perpendicular yielded to the Romanesque. . . . Between each pair of Gothic styles there was a transitional style. . . . But the new Romanesque . . . spread so rapidly that in fifty years, or less, it had taken nearly all England back to the place from which it had started three hundred years before. . . . The arch which had never slept was finally put to rest. The Gothic tradition slumbered, and slumbers still. . . . An art which has ceased to be progressive has ceased to live. Had a mediæval architect been told of the "rules" of Gothic architecture he would have directed all his efforts to break them. . . . The old succession of Gothic architects did not die out until the modern so-called revival had actually commenced. . . . If we take Cardinal Wolsey . . . as the last Professor of Gothic before the irruption of the full-blown Italian or Palladian style, we can follow the succession to Inigo Jones, Wren, and Hawksmoor without a break. . . . we assume, as we may . . . that the first distinctly Palladian building, as distinguished from Elizabethan, is Caius College at Cambridge, begun probably by Haveus in 1565. . . . The justly famous Gate of Honour was not built till after the death of Dr. Caius. He is said to have dictated the design to his architect before his death. It is curious to observe in architecture, as in many other arts, that first attempts are often so good. In Egypt, the sculpture of a period so remote that it cannot be dated is not only the best of its kind, but many sculptors and others have acknowledged that a diorite statue of a king-the first royal statue in the world—has never been surpassed. So, too, in our own country, some works of the thirteenth century, erected while pointed architecture was in its infancy, remain unapproached. . . . The mediæval architects had very strict rules of proportion at first. In the plain Early English or First Pointed style it was necessary . . . the great safety of the Palladian style lay in the strictness of its rules. What was often done by chance in Gothic was made certain in the style of the Renascence. . . . We can judge from his [Inigo Jones] Gothic work that the eye for proportion, in which he excelled all his contemporaries and most of his successors, was both born in him and also sedulously cultivated. . . . Inigo Jones, the architect, was born 15th July 1573, and . . . was apprenticed to a joiner. . . . He learned, we know not where, without great expense or great trouble, how a cloud-capt tower could be taught to rise as the background of a play; or how a fairy landscape, far reaching by sunny rivers and high-walled cities, could form a permanent scene. Such devices were unknown in England at that day. . . . But in order to produce these effects, a knowledge of proportion came first. . . . Without proportion, Jones could not have influenced the taste of his time as he did; . . . among the predecessors of Inigo Jones, working drawings of the modern kind were not in use. Workmen had their traditional rules and followed them, according to the department on which they were employed. . . . But Inigo Jones was anxious that everything in a house which he designed should be his . . . down to the balusters of the staircase and up to the plaster-work of the ceiling . . . and, what was more, must be executed by the workmen according to the drawings. . . . It is . . . the fact that all Wren's churches in the City were designed with a purpose, and that the destruction of one church is a partial destruction of all the rest. . . . As a rule, the relation between the different churches was preserved by the spires or towers. . . . The grea est of all the architects who followed Wren in the first half of the eighteenth century was Richard, third earl of Burlington. . . . In 1716, Burlington, not yet of age, met Kent in Italy. . . . At twenty-one, when he returned home from Italy, . . . he set about refronting the old house in Piccadilly in the Italian style. He must have begun as early as 1716, for that date with his arms was on the leadwork. . . . Kent came home 1729; . . . so great the friendship of the pair that Kent never left Lord Burlington again... During all the years of their association Kent and Lord Burlington seem to have very seldom worked together, and to have retained . . . a complete independence of style.

And this, at the end of the nineteenth century, is instruction in "Modern Architecture" for amateurs and the public generally! I will pass over Mr. Loftie's exquisite harmonies on the Gothic arch that never sleeps and ultimately slept, and come at once to his philosophical reflections on "first "attempts." I can imagine the reverend gentleman taking an orthodox view of the procedure which resulted in the birth of Eve, and having based his deductions of her personal appearance from the pictures to be seen of her in various parts of Europe maintaining—in accordance with archæological methods of logic—that she was a handsome woman; and remarkable as a first attempt. But I cannot understand his assumption that because a diorite statue in Egypt is of a period so remote that it cannot be dated (like Eve aforesaid)—and as a piece of sculpture so perfect that it has never since been surpassed—it is necessarily a first attempt. Is he certain that a century or so prior to the time of the said undated statue the

earth was without form, and void? Does he, moreover, think that works of pointed architecture erected in England during the thirteenth century were first attempts? He does gravely inform his readers (p. 21) that the pointed arch "grew " from the attempts of Norman builders at Canter-"bury and in a few other places"; but does he suppose that the alterations and additions made in the twelfth century at Canterbury Cathedral, under the direction or inspiration of Guillaume, surnamed of Sens (which, for his information, I will state is situated in the old province of Burgundy), were first attempts? Perhaps; and perhaps, therefore, he will permit me to relate the following anecdote. In 1869, in Paris, a distinguished French architect, who had studied the best works of mediæval architecture from Provence to Brittany, told me in good faith that there was little "Gothic" worth studying in England; and that Viollet-Le-Duc, whom we both knew personally, was of a like opinion. No reply was made to him then, and he is gone; and I console myself now with the reflection that he, as a Frenchman, had a better right to ignore the mediæval architecture of this Island than Mr. Loftie has to ignore that of France. The latter, by so doing, misleads the ignorant (who probably read his books) into a belief that "Gothic" architecture is of English origin and essentially a native product.

I will pass over Inigo Jones's "eye for propor-"tion," his "cloud-capt towers" and "fairy land-"scapes," and other "devices," and also the influence he exercised upon "the taste of his time." As for the great Earl of Burlington, his learning and refinement, and the influence they must have had upon Kent, have been lately treated deferentially in the Transactions * of the Institute; and it is needless to quarrel over the question whether Burlington House, which the nation gave to the Royal Academy, was designed by the Earl at the age of twenty-one, or by Campbell, or by any other architect of the day. Mr. Loftie may be congratulated on possessing an organisation so delicate as to enable him to discern the "complete independence of style" retained by Kent and Burlington respectively, except in certain examples of their work. But something must be said about his contention (p. 119) that before the time of Inigo Jones "architectural drawings were " practically unknown"; that, practically, he was the first to make detail drawings to scale; and further, that it is a good thing for architecture that everything in a house which an architect designs should be of his own artistic creation. This last proposition is a difficult thing for me to treat, even personally. But si Monumentum quæris of the system that Mr. Loftie says is good for architecture—circumspice! Many of the most

modern architects he attacks have made, and often do make, designs for the smallest details of the buildings executed under their direction. Indeed, one of the most gifted architects of the century told me that he had with his own hands made all the drawings of a great building which happens to be among the objects of Mr. Loftie's aversion. My personal opinion is that, by so doing, he spoilt a noble monument.

The assumption that medieval builders did not

make drawings as Inigo Jones made them, and as architects make them now, cannot be satisfactorily proved unfounded. But there is existing evidence which would probably hold good in an English Court of Law, that drawings of mediæval buildings, well known to moderns, were made in the Middle Ages, though there is little to show that they served in the execution of such buildings; and there remain very few of such drawings. But the custom endures in France, especially among stone-cutters and carpenters, to make, on the face of a wall, or the prepared surface of a floor, under cover or in the open, as the case may be, full-size line drawings of doorways, windows, dormers (lucarnes), chimneys, plinths, rustications, stones, and even entire façades; of roofs, wooden dormers, floors, and "pans de bois' generally. There is every reason to believe, from facts which have been collated, that such was the practice of the artist or artificer at all periods of the Middle Ages throughout Western Europe; and there is no doubt that in the fifteenth century, and at the end of the fourteenth, when few absolutely new buildings were commenced—when the great buildings then in existence sufficed for the needs of the population. and were altered and taken to pieces ad libitumthe artificer, whether of wood or stone or brick, in lead or slate or tile, had a free hand, and so free that Philibert de l'Orme's protest, now familiar to every architect, that in many districts "la "charrette conduit les bœufs," explains itself. Many French stone-cutters and carpenters of twenty-five and even fifteen years ago, as I knew them, were quite capable themselves of building houses in stone or wood, without the initiation of an architect; and they were, in point of education and social influence, totally distinct from the French or British artificer who, under unfortunate auspices, distributes explosives on a Paris Boulevard or poses as unemployed on

But it was totally different in

the twelfth and thirteenth centuries, which re-

present the great building era of Christendom.

Then an orthodox plan existed, and was promul-

gated, of the abbey, the cathedral, the church; and this plan, rude if you like, was accom-

panied by ruder elevations. There were then

doubtless rules of proportion, &c., as Mr. Loftie

says, and equally rude, to guide artists in the execution of such works. The masters (I do not

Tower Hill.

^{*} Vol. VIII. N.S. 1892, p. 362.

mean the employers) and the artists or artificers were educated some at a central school or university, others at branches of the same,—at which branches or allied local centres were developed eccentricities of detail that made themselves felt within a certain radius,—the abbeys, monasteries, priories, cells, all helping in the work of dissemination.

This system has been practised even within the last thirty years. The central Government located in Calcutta has provided, and still provides, India with buildings on a similar principle, and the failure to produce good architecture in that country is due to an official inability to use the local native artist or artificer; and to the fact that the central authority is not content with mere general direction, but expects the local artist to carry out detail drawings, the spirit of which he obviously does not understand, to the letter.

The secret and strength of all progressive architecture lie in the general control of an expert or rather of a long line of experts, able and ready to fill the superior grades as they fall vacant. In the twelfth-thirteenth century, this expert directed and guided the design and construction, leaving his building community, his corps de bâtiment—sculptors, painters or decorators, fitters and furnishers, and artists of every description —free to execute details in accordance with the means, the wants, the fashions, in a word, the vernacular of their time. No doubt, if it were now possible to summon the mediaval mastersof-the-work to a Congress in London, they would deny that any such organisation existed in their time, just as they would wonder at the fuss made, in this century, about the buildings they raised. But their denial would serve to augment the respect which every thoughtful architect entertains for the naïveté that speaks, as it were, in every stone of their buildings; and which is as distinct—it seemed to me—at Delhi and Alimedabad as in France and the countries immediately around her. As for the contention that Inigo Jones frittered away intellect and time over personal preparation of a full-size drawing for a wooden baluster or a plaster cornice, uothing exists to support it. Palladio, and the neo-Palladian architects of the English "Rennaissance," as Mr. Loftie spells it—why not do the thing well, and spell it Wrennaissance?—made sketches only of buildings, the execution of which they directed and the business of which they superintended, as the drawings they have left suffice to show. The working drawings and details were made by the artists, or, to use a homelier word, the draughtsmen they employed; and many of those artists were foreigners, or Englishmen educated in foreign schools. Nevertheless the neo-Palladian architects—who had they been called upon to produce evidence of their artistic abilities in the shape of drawings could

not have done so—are justly credited with the design of buildings which the world at large continues to admire, and to which Mr. Loftie has happily invited public attention in a book made

for the purpose.

The market value of gratuitous suggestions is well known and often quoted, and a reviewer should be niggard of advice. But I cannot refrain from urging Mr. Loftie, if he would master the great subject he has undertaken, to study Architecture a little more and architects a little less; and to remember, for the sake of those whose instruction he has professedly at heart, the solemu admonition which it is the reverend gentleman's duty to repeat, now and again, to amateurs and the public generally: "If the Blind lead the Blind, " shall they not both fall into the ditch?"

WILLIAM H. WHITE.

(13.)

INDIAN ARCHÆOLOGY.

Sanchi and its Remains: a full Description of the Ancient Buildings, Sculptures, and Inscriptions at Sanchi, near Bhilsa, in Central India: with Remarks on the evidence they supply as to the comparatively modern date of the Buddhism of Gotama, or Sákya Muni. With forty plates. By General F. C. Maiscy, H.M. Indian Army. And an Introductory Note by Major-General Sir Alex. Cunningham, K.C.I.E., C.S.I., R.E. Large 40. Lond. 1892. Price 50s. [Messrs. Kegan Paul, Trench, Trübner & Co. Charing-Cross Road, London.]

One of the most interesting groups of monumental antiquities in India is that of the stupas and other remains at Sanchi Kanikhera, near Bhilsa, and about twenty-five miles north-east of Bhopal. The first notice we have of these remarkable structures is by General Taylor, of the Bengal Cavalry, when encamped near them in 1818, and who was apparently the first British officer to visit and describe them, however briefly. At that date, the capital, or hti, on the summit of the great stûpa was still in situ. Soon after, Captain Fell visited the place, and early in 1819 sent from Hoshangabad a somewhat detailed account of the remains, which appeared in Buckingham's Calcutta Journal of 11th July 1819. The hti had then fallen, and lay on the top of the stûpa. In 1822 Mr. Maddock, then Political Agent at Bhopal, obtained leave from that Government to dig into the stûpas —it has been alleged—in search of treasure; but this is doubtful. The work was conducted by Captain Johnson, the Agent's assistant, who told Dr. Spilsbury that he had completely opened the great stûpa " from the top to about thirty feet below "the level, and to what he considered the bottom " of the foundations, and found the whole of solid "brickwork." This most foolish and unfortunate excavation did immense damage to the remains, which were previously in a remarkable state of preservation, and hastened, if it did not entirely produce, the dilapidation that followed of the enclosing rails.

The large stûpa, which crowns the hill, is about 121 feet in diameter, and, exclusive of the hti, measured about fifty-three feet in height; and at about fourteen feet from the ground-level it was surrounded by a ramp about four and a half feet wide. A path, scarcely ten feet wide, round the whole structure was enclosed by a stone railing having four lofty gateways at the cardinal points, each covered with elaborate carving. Of one of these gateways full-size casts may now be seen in our Science and Art Museums of South Kensington, Edinburgh, and Dublin. The body of the second stûpa, the only other tolerably entire, is of considerably smaller dimensions, being only about thirty-nine feet in diameter. The larger may date from the third century B.C., and the rail and gates somewhat later. Plans and drawings were made by visitors from the time of the first discovery of these monuments, and an excellent sketch of the eastern gateway, by an unknown hand, was published as the frontispiece to Fergusson's Illustrations of Architecture in Hindostan in 1847, together with a woodcut representing the great stûpa as it must have been about 1819. In August 1847, Capt. J. D. Cunningham, political agent at Bhopal, sent his notes and measurements to the Asiatic Society of Bengal; and in 1849, 1850, and 1851, Colonel (now General) F. C. Maisey made a large series of very careful drawings of the sculptures from the gateways. In the latter year he was joined by Major (the late Major-General Sir Alexander) Cunningham, and they again opened the stûpas, obtained the relic-caskets, and carried out other excavations. Colonel Maisey sent his report and drawings to the Government, which did not, however, publish them; and soon afterwards General Sir Alexander Cunningham wrote his well-known work, The Bhilsa Topes, dealing chiefly with a general description of the monuments and the numerous donative inscriptions on the rails. Forty years ago, however, Pali scholarship was only in its infancy, and the readings and translations made then left much room for improvement.

Colonel Maisey's drawings were apparently forgotten till 1868, when the late James Fergusson, while seeking for materials for his account of the Amaravati marbles, found them at the India Office, and prefixed a description of the Sanchi to that of the Amaravati sculptures in his Tree and Serpent Worship. In that work Sanchi is illustrated by forty-six plates, of which fourteen are photographs by Colonel Maisey's drawings. In the preface and text of both editions (1868 and 1873) full credit is done to the excellence of Colonel Maisey's work, and Fergusson was the first to point out their importance as illustrative of Buddhism, and to attempt an interpretation of them.

General Maisey now publishes his drawings separately with letterpress of his own, and, except in a footnote to the preface, and once to point out a mistake in the first edition, he scarcely alludes to *Tree and Serpent Worship*. He blames Fergusson (p. 5) for making "the base circumference" of the principal stûpa 554 feet; yet the latter (*Tree and Serpent Worship*, p. 96) gives the measurements mentioned above, that tally almost exactly

with General Maisey's.

The object of the work seems to be—(1) to reproduce the author's own hand-drawn sketches, and (2) to publish his opinions on the age of these monuments and of Buddhism, which religion, he thinks, "was introduced as a reform of the pre-ex-"isting semi-Mithraic faith, about the commence-"ment of the Christian era—i.e. shortly before the "gateway sculptures of Sanchi were executed." Now, (1) some of the plates are reproduced on a larger scale than in Tree and Serpent Worship, and in a few instances, where they are not tinted, these may be artistically better than in the latter work; in other examples they are smaller in scale, more darkly tinted, and hardly more satisfactory. The few additional drawings are chiefly small figures, ornaments, &c., and are either to be found in The Bhilsa Topes or are not of much importance. And (2) his theory of history is quite imaginary. Cunningham (so very recently deceased) contributed an introductory note to the volume, in which he satisfactorily disposes of this theory respecting the late age of Buddhism and of these

General Maisey's discussion of the inscriptions he would have done well to omit. He has nothing better to give than Cunningham's tentative readings of forty years ago. Even for the three Gupta inscriptions, he seems to be unaware of Dr. Fleet's well-known volume, where the readings of them are satisfactorily settled. He uses "sthapa" throughout for the Sanskrit stapa, Pali thapo, and asserts that the sense of dharmma in Buddhist literature is quite different from that of dharma in the inscriptions, and that dhama in them may mean "the moon" &c

"the moon," &c.

In history, also, his theory runs away with him. Chandragupta II. (circ. A.D. 405) he would identify with Vikramaditya of Ujjain, "the alleged founder "of the Sanvat era, whose date was put back "by the Hindu historians to B.C. 56; that is, to "the period of the Sakas or Indo-Scythians, to "whose race Sakya belonged. But" (he adds) "we "may go beyond this, and see in this 'Chandra "Gupta' of the fifth century A.D. (the Yu-gai of "the Chinese historians) the historical origin of "the 'Ayu' or 'Asoka' of Buddhist writers: whom "they also put back, in order to connect him with "the older Maurya dynasty of Pataliputra" (p. 103). Mere assumption of this sort is surely a thing of the past; no one nowadays is likely to accept such dreams.

Sanchi would well reward further examination and illustration, for the story of its sculptures has not been finally unravelled; but this volume adds nothing towards that end to the second edition of Fergusson's important work of twenty years ago. Edinburgh. James Burgess.

(14.)

MEDIÆVAL MARBLE-WORKERS.

The Roman Marmoravii, By Giacomo Boni, Pamph. la. 80. Rome 1893. [G. Bertero, Via Umbria, Rome.]

The Cavaliere Giacomo Boni has published a Paper read by him before the British and American Archaeological Society of Rome, on those Roman artists who during the twelfth and thirteenth centuries and the beginning of the fourteenth were occupied in carving and encrusting with gold and enamel those beautiful works, consisting of ambones, pavements, candelabra, episcopal chairs, tombs and shrines which in Italy are called Cosmati, from the Christian name of Cosma or Cosimo, one of the workers who, with his sons, flourished in the thirteenth century.

The origin and development of the art of these marble-workers have caused much discussion. "It "is now agreed," says Cavaliere Boni, "that there "was a Romanesque school of architecture, to "which is due the simple diminutive arcade, sup-"ported by slender shafts, which surrounded the " courtyards of monasteries and decorated the tops " of towers or fortified houses with small double or "triple openings, not ungraceful in themselves, but " so narrow and modest as to provoke the derision "of the Renaissance architects, who nick named them "'cricket-cages.' Only a few fragments of the "primitive Romanesque windows and other features "of domestic architecture remain; but of the "cloisters, which exhibit the primitive rudeness or "unadorned simplicity of the style, we may mention "as remaining to us the cloisters of S. Lorenzo, "those within the convents of S. Cecilia and the "SS. Quattro Incoronati, S. Cosimato and S. "Sabina."

The mosaic work appears to have had a Byzantine origin, but similar decoration was introduced by the Saracens in the Ziza palace at Palermo. The Norman tombs in Palermo Cathedral, Roger's chamber and the Palatine chapel, the King's and the Bishop's throne in Cefalu Cathedral, show a distinct resemblance to the work of the Roman marble-workers. The finest example of the kind in Sicily is the cloister of Monreale Cathedral.

The idea of turning the fragments of the Roman ruins into something useful and beautiful was not new, having been adopted by the Gothic kings; but it was not until the twelfth century that it was fully carried out. "The germ of this kind of "decoration," says Cav. Boni, "could not find a "better soil for its foundation than that of Rome, "where slabs of marble of all kinds, and large "drums of porphyry columns were ready to hand "for any one desiring to avail himself of quarries, "formed not by the unconscious process of

"geological laws, but by the accumulated labour of several hundreds of years, by generation after generation of conquerors and artists, who had stored the working materials sufficient for the utward splendour of the capital of the Roman empire." It was only in Rome, however, that the style of the marble-workers flourished, and when introduced into other countries it languished and died.

Cavaliere Boni then proceeds to give a list of the principal Roman marble-workers and their works from his own notes, which constitute a most valuable contribution to the history of architecture. "Before closing this brief review," says the Cavaliere in conclusion, "I must ask leave to mention "some important works of a Roman marble-"worker which I admired a few years ago "at Westminster Abbey, and about which I am "indebted to Mr. Micklethwaite, the learned "English architect, for some interesting notes." They consist of a small tomb bearing no inscription, but believed to be of the daughter of Henry III., who died in 1257. The basement of the shrine of Edward the Confessor bears the following inscription, only a portion of which is readable:—

Anno mileno domini cum septuageno Et bis centeno cum completo quasi deno Hoc opus est factum quod Petrus duxit in actum Romanus civis. Homo causam noscere si vis in actum Ilex fuit Henricus Sancti praesentis amicus.

The relics of Edward the Confessor were laid in the place of honour by Henry III. A.D. 1269. The inscription was also studied by Mr. Stevenson in a MS. copy of the fifteenth century preserved in the British Museum. The tomb of King Henry III., the second founder of Westminster Abbey, erected A.D. 1281, has nothing English about it, save the grey Purbeck marble. The bronze figure resting upon it is English

work, but ten years later.

The pavement of opus Alexandrinum before the high altar at Westminster was laid A.D. 1268, and bore the inscription: Tertius Henricus rex, urbs, Oderieus et Abbas hos eomposuere porphireos lapides. The abbot, Richard of Ware, paid a visit to Rome after his election, which took place A.D. 1258. He died A.D. 1283, and upon his grave may be read the following words: Hic portat lapides quos huc portavit ab urbe; that is to say, that he lies buried under the red and green porphyries, the traditional elements of the opus Alexandrinum, which he brought himself from Rome to England. No matter how great was the liberality of the mediaval abbot in providing precious materials, how great his care in selecting one of the most skilful among the Roman marmorarii, the attempt to transplant a style of work which could only find its proper nourishment among the ruins of an ancient city, was not successful. This is proved by some attempts to imitate the work.

JOHN HEBB.



NOTES, QUERIES, AND REPLIES The Lighting of Ancient Temples.

The E D Larming Procest E C A [F]

From E. P. Loftus Brock, F.S.A. [F.]— The recent discussion * on this subject has occasioned various points of interest to be brought forward. But there is one which appears to be worth consideration, and it has hardly yet been touched upon. It is the amount of light that was necessary to enable the interiors to be visible. While it is a matter of certainty that many of the Egyptian temples, and some others, must have had their interiors in all but profound obscurity, except at times when artificial light may have been used, it is reasonable to suppose, as has been suggested, that the interiors of others, such as the Parthenon, must have had sufficient light to allow the superb sculptures and the contents to be visible. The covering—the Peplum—of the statue of Minerva in the latter building, an elaborate piece of needlework, obviously of no service to protect the statue from rain or to act as a velarium to the structure, would require daylight rather than any artificial light to show its colours to advantage. But would so large an opening as Mr. Falkener has shown in his beautiful drawing of the interior of the Parthenon † be necessary? I think not. It has to be remembered that we possess an almost perfect ancient Roman temple, the Pantheon, which obtains its light all but entirely from above.‡ The light is abundant at all times of the day, even when the doors are closed. When the sun is declining the light is still good, while it is brilliant when sunbeams enter. Yet the superficial area of the lighting surface is less than one thirtieth of the whole superficial area.§

* Pp. 45-49, 80-83. † Plate facing page 45.

§ I have followed the dimensions on Piranesi's plan, where the diameter is given as 194 $6\frac{2}{5}$, 194 $8\frac{1}{4}$, and 195 $0\frac{2}{5}$

What is sufficient for the Pantheon would have been equally effective for the Parthenon. It may be supposed that the sky of Athens is as good as that of Rome, and under similar conditions an opening, say, of twelve feet by seven feet only would have given entrance to a similar proportion of light into the cella of the Parthenon, while a small increase would light not only the cella but the surrounding aisles divided from it by the ranges of superimposed columns.* The smallness of this opening, if it ever existed at the Parthenon, could have been easily managed in the roof covering, and it has some reference to the recent discussion in two material points. It removes the objection that any large opening would have caused necessarily an awkward appearance on the exterior. Also, that a large opening would have exposed the statue and its delicate formation to the action of the elements.

There is another item of evidence that the Parthenon affords, which may be borne in mind with advantage by the explorers of ancient temples which are supposed to have been lighted from above. It is, to search for evidences of the mode of escape of the rainwater. Piranesi's plates show how carefully this was provided for at the Pantheon. It is hardly possible that such apparent traces may be found in the ruins that are yet to be brought to light; but it is hardly possible for any such to have existed without there being some trace, if it be only the slight slope of the pavement towards the point of escape.

The Classical Influence in Indian Architecture.

From J. Tavenor Perry [A.]—

To properly appreciate the valuable series of Papers contributed by Mr. William Simpson to the Transactions † of the Institute, a chronological summary of the principal events which occurred on the north-west frontiers of India is required; and I have therefore attempted to put together in the following table [see next page] the history of the Greek and Persian empires of South-west Asia from the time of the conquest by Alexander, to the irruption of the Saracens, and the downfall, at the height of its power, of the great Persian monarchy. Before dealing with any theory of particular artistic influence passing between countries divided "as far as the East is from the West," it will be well to study such a table, and to ascertain

Roman feet, the building not being quite circular by so much, probably owing either to spreading during construction, or by slight error in erection. The circular light is $36~8_5^3$ Roman feet in diameter.—E. P. L. B.

* There is no scale to Stuart's plan (Antiquities of Athens, vol. ii.), but by making a scale from figured portions the cella measures about 72 feet from east to west by 34 feet from north to south, thus giving an area of about 2,448 feet. The temple, and all the other important ones at Athens, now appear to be carefully oriented, whatever may have been their position when erected.—E. P. L. B.

† In 1862, 1880, 1883, 1891; also page 93.

[†] Vitruvius tells us that there was no hypethral temple in Rome. We may hardly be justified in calling the Pantheon one. But the circular portion, we now know, is later than his time.—E. P. L. B.

what historical limitations are imposed on the probabilities of such theories.

334 The Persian empire invaded by Alexander.7

Alexander, by the battle of Arbela, gains Babylonia 331 and Persia.7

328 Subjugation of Sogdiana.2

327 Alexander overruns the Punjab.

325 Chandragupta founds the Maurya dynasty of India at Patna.3

323 Death of Alexander.2 Confusion in South-western Asia.

312 Era of the Seleucidæ.2

312 Seleucus Nicanor invades India.1

256 Bactria revolts against the rule of the Seleucidæ, and Theodotus I. founds the independent Græco-Bactrian kingdom.5

250 Persia revolts against the Seleucidie, and Arsaccs I.

founds the Parthian kingdom.2

250Asoka, third king of the Maurya dynasty, adopts Buddhism.3.

205 Antiochus Magnus of Syria and Sophagasenos (Somasarman, son of Asoka3) renew a treaty of confederacy.

139 Mithridates I. of Parthia overthrows the Greek dynasty of Bactria.5

130 Bactria overrun by the Scythians.

Syria reduced to the condition of a Roman province.2 The Roman and Parthian frontiers become conter-

17 Herod the Great completes the Temple at Jerusalem.

A.D.

226Ardishecr I. succeeds to the throne of Persia and founds the dynasty of the Sassanidæ.2

260Roman army of Valerian defcated by Shahpoor,

second Sassanian king.2

264 Odenatus, king of Palmyra, governs the castern part of the empire for Gallicnus.2 Period of greatest Palmyrene prosperity.

274 Defeat of Zenobia. Ruin of Palmyra.2 283Ctesiphon taken by the Emperor Carus.

297 The River Aboras fixed as the limit between the Empire and Persia.

348 Defeat of the Romans by Shahpoor II. at the battle of Singara.2

Expedition of the Emperor Julian against Persia, and its failure."

Temple at Susa destroyed by Christians.4 War be-422tween Persia and Theodosius.2

The "Endless Peace" concluded between Persia and Rome.4

591 Khosron Pervez, the Sassanian, restored to the throne of Persia by the Emperor Maurice.2

Khosrou overruns Syria.4 611Jerusalem taken by Khosrou.6

616 The ancient limits of the Persian monarchy restored.

Conquest of Persia by the Saracens.2

From the date of its original conquest by Alexander, Persia, which had until then been the supreme power in Western Asia, remained wholly under the government of the Greeks until the fall of the Seleucidæ in 250 B.C., when Arsaces established a Parthian dynasty over its central portion, leaving the north-eastern provinces of Sogdiana and Bactriana still under Greek rule; thus, after little more than half a century of Grecian domination, the country was restored to its ancient independence, and a wedge of semi-barbarism driven in between the Græco-Bactrian provinces and the Greek kingdoms beyond the Euphrates. But in spite of the natural aversion felt by the native Persians to their Greek conquerors, and their continuous efforts to regain possession of the provinces of the earlier Persian empire still left under Greek sway, they were for long unable to prevent a continuance of the intercourse between India and Syria. Thus, we find that so late as 205 B.C., the treaty of confederacy was renewed between Antiochus and the son of Asoka, which was first made in 312 B.C. between Seleucus, after his invasion of India, and the founder of the Maurya dynasty. From the commencement of its recovered independence, the expansion of Persia, both eastward and westward, rapidly proceeded, and in 139 B.C., little more than a hundred years after the establishment of the kingdom, Bactria was conquered by Mithridates I. of Parthia, and nine years afterwards was overrun by the Scythians. Similarly, great changes were going on in Western Asia, and by the year 65 B.C. the successes of Pompey had reduced the Greek kingdom of Syria to the condition of a Roman province, and the frontiers of Rome and Parthia became conterminous.

From the inglorious campaign of Antony which shortly followed this contiguity, down to the disastrous defeat of Valerian in 260 A.D., the empires were engaged in ineffectual contests, alternating with periods of more or less friendly intercourse, in one of which occurred the incident of Augustus receiving an Indian embassy at Samos, and of Phraates IV. of Parthia returning the Roman standards captured at the battle of Carrhæ. During this same period there had been great disorder within the Parthian kingdom, which ultimately led to the fall of the Arsacidæ in Persia, and the commencement in 226 A.D. of the Sassanian dynasty, under which Persia regained its former greatness, and whose rule lasted till its

overthrow by the Saracens.

By the buildings which remain scattered over Western Asia, ascribed to the kings of this dynasty, we know that under them some revival in the arts took place; and from many incidents we discover that, in spite of frequent wars, the intercourse between Persia and the Eastern empire was frequent and intimate. Although Odenatus of Palmyra, to revenge the death of Valerian, twice defeated the armies of Shahpoor under the walls of Ctesiphon, yet it was to Persia Zenobia attempted to fly when Palmyra was captured by Aurelian. One of the wars with Rome was only provoked through a Christian bishop, and it may thence be assumed that such

¹ Sir G. C. M. Birdwood, The Industrial Arts of India.

² Blair's Chronological and Historical Tables.

³ Fergusson's Indian and Eastern Architecture. Gibbon's Decline and Fall of the Roman Empire.

⁵ C. Lassen, Bactrian Coins.

⁶ Professor T. Hayter Lewis, F.S.A., Jerusalem.

⁷ Townsend's Manual of Dates.

were allowed to reside in the country, causing the destruction of a temple at Susa; whilst it was the army of a Roman emperor that restored Khosrou to his throne, to become perhaps the greatest, though the last, of the Sassanian dynasty of Persia.

From this historical summary it will be seen that, until the time of Alexander, South-west Asia formed politically one country, with its centre of government in Persia; and the conditions of its people were so little altered when foreign masters were imposed, that we find as it regained its independence, and to some extent its former importance, the native style of architecture was still alive and progressive, scarcely affected by external influence; so that the ruins of Khorsabad, the halls of Persepolis, and the palace of Ctesiphon are but steps in the sequence of a style which lasted perhaps longer than any other in the world. Details peculiar to the earliest periods we find surviving in the latest, and influencing the arts of adjoining countries. The Ionic volute appears on the bas-reliefs of Khorsabad, the columns of Susa, and is found among the Sassanian remains discovered at Warka; * whilst the "knop and flower," so characteristic of early Assyrian work, reappears on the temples of Athens and the pillars of Taking together, therefore, the historical and the artistic facts, the improbability of any direct influences passing through Persia, eastward or westward, becomes manifest; whilst the probability that Persia was a centre from which emanated and radiated those influences on foreign styles, which now appear such remarkable coincidences, seems the only solution of this architectural problem.

Of the chief buildings on the Indian frontier in which Western influence is supposed to be evident, the principal, and those most dwelt on by Mr. Simpson, are the Kashmir temples, of which Marttand is the typical example, and the Gandhara monasteries. The date accepted by Fergusson for the temple at Marttand is the early part of the eighth century, but he considers that some of the older Kashmir temples may date back to the year 600 A.D. Now the Greek kingdom of Bactria had been destroyed nearly eight hundred years before that date, and it would be difficult to find anything in the style of Persia of the same period suggesting the survival of classic influence. But what are the so-called classic features in these temples? Practically nothing but a supposed likeness to the Doric Order in some of the columns. A copyist would have been more particular than to have put sixteen flutes to the shaft; whilst the convex form of the capital, with its rude ornament, is to be found among the Sassanian remains at Warka already mentioned. But these buildings contain details of a most interesting character, suggestupon, trefoil arches as a decoration.

The monasteries of Gandhara, at the earliest, may have been begun about 100 A.D., but Fergusson considers 300 to 400 the more likely time. Either date, however, is sufficiently long after the fall of the Bactrian kingdom to preclude the possibility, even if its founders had any knowledge of the Corinthian style, of their having been the means of its introduction to India. I will not here repeat arguments I have before used on this subject.§ It is only necessary to mention, as pointed out by Fergusson, that the earliest examples of the Corinthian capital are to be found among the ruins of the temples of Asia Minor, and that the richest and most sumptuous specimens of the style exist in the countries bordering on the western Persian frontiers, such as the buildings of Baalbec, Petra, and, above all, Palmyra; buildings which perhaps were in course of erection at the same time as those of Gandhara erected on the eastern frontiers. Do not these examples, also, point to a common centre from which these peculiar forms and decoration sprang, rather than to an influence, almost impossible under the circumstances to conceive, due to the survival of some traditions of an ancient art among a people who could never have seen work of such a character in their native Greece?

When we find the flora and fauna of countries divided from each other to be identical, or but slightly modified, we know that their separation is due to great geologic changes and the irruption of the ocean; and so the denudation wrought in Persia by foreign conquests and religious changes to a great extent destroyed the earlier works of the Parthian and Sassanian kings; but we can be sure

ing far other ideas than classic influence. In the arrangement of gables and trefoil arches we have a most unclassic feature, which seemed to Professor Willis to suggest that it might be an early appearance of a form which became so common in the West in mediæval times, for he says: "the form "of the arch is totally different from the Roman, "being the trefoil. The history of this form is "involved in quite as much obscurity as that of "the pointed arch. It makes its first appearance "in Europe after the First Crusade, and may there-"fore be supposed either to be derived from the "East, or from Byzantium, as other evidence may "point out." * Such evidence is now to a greater extent available, for in the ornaments of the Sassanian palace of Mashita, erected by Khosrou II., illustrated by Mr. Phené Spiers,† gables appear as a great feature in the ornamentation; whilst the nearly contemporary buildings of Armenia, such as the church of Etchmiadzine, show not only the gables, but, if M. Brosset's drawing may be relied

^{*} Loftus, Chaldæa, &c., p. 225 and plate.

^{*} G. T. Vigne, Kashmir, vol. i. p. 400. † Transactions, Vol. VII. N.S. p. 56.

[†] The Ecclesiologist, vol. xiii. p. 225. § The Architect, 24th January 1880.

that these buildings once formed the connecting link between those features of architectural art which appear both in the temples of Palmyra and the monasteries of Gandhara.

From R. Phenė Spiers, F.S.A. [F.]=

The task which Mr. Simpson undertook in his Paper [see p. 93] was twofold: first, to prove that the theory which connected the Bactrian sculptures with the rule of Alexander's satraps at Balkh

folio volumes of the two cities shows that the buildings represented were of the same style and character, so that an examination of the architectural characteristics in the one may fairly be taken as representing those of the other. Coming as I did from Jerusalem, where the tombs of Herod's time all suggest in their detail the germs of that archaic work which in Justinian's time blossomed forth into the Byzantine style, I was much surprised to notice the entire absence of a



FIG. 18. - SCULPTURE FROM THE PESHAWAR VALLEY. (From a photograph.)

was an erroneous one; and secondly, that the only classical influence which could be detected in these sculptures was Roman, and derived from the buildings in Palmyra. As the trade route through this latter city ceased in 273 A.D., when it was taken, he ascribes an earlier date to these Bactrian sculptures. Baalbee, he points out, was also on the trade route, as well as Palmyra, between the West and India. I have never had the good fortune to visit Palmyra, but I have drawn most of the work at Baalbee, and a comparison between the illustrations given in Dawkin's and Wood's

similar Greek feeling in the buildings at Baalbec. Not only were they eminently Roman, but any tendency in them to a further development was in the direction of the Renaissance of the fifteenth and sixteenth centuries. Mr. Tavenor Perry seems to have imagined that the farthest East one went, the richer was the so-called Corinthian style, and that it was possible that Eastern influence had acted on Western art rather than the converse. This was not my impression of the work I found there; but, granted that it was so, it would have been in the wrong direction, for it was not debased

Roman or primitive Renaissance which was going to act for the next few centuries on Western art, but archaic Byzantine. As a matter of fact, the work at Baalbec is remarkably pure, considering its distance from Rome, and, as Fergusson says in his Indian and Eastern Architecture, p. 177, "it "requires a practised and well-educated eye to "distinguish between the capitals of the Pantheon of Agrippa and those last executed at "Baalbec or Palmyra. The entablatures show "considerable progress, but the capitals were so "stereotyped that it is evident, if any Greek or "Roman artists had designed capitals in Gandhara "during the period alluded to, we could predicate "exactly what they would have been."

Whilst agreeing with Mr. Simpson in his first contention, viz. that there is no proof of any direct early Greek influence, such as was contended to have been exerted immediately after Alexander's time,

I am quite unable to accept the other conclusions he arrives at—first, that the influence is Roman only; and secondly, that the Bactrian sculptures date from the second and beginning of the third centuries. I have said any direct Greek influence, because there can be little doubt that, through Parthia, various Greek elements crept in, and the engaged column in fig. 2, p. 108, from the Peshawar Valley, has a capital of the same design as those found at Warka in Mesopotamia by Mr. Loftus, and now in the British Museum. But this by the way; for the moment the question is narrowed thus: in the headpiece to Mr. Simpson's Paper, in figs. 2, 3, 4, and 10, and in the illustration fig. 18, p. 150, are the features such as could only be ascribed to the influence of the second Greek empire. Mr. Simpson's suggestion that the arches, as shown in fig. 10, are derived from the roof of the Chaitya Cave is not of much value as regards his argument, because no one

denies that there were arches in Palmyra. As he has suggested the resemblance, however, it might be pointed out that in fig. 10 the arches shown are singularly unlike the Buddhist Chaitya in shape; and moreover (and this is remarkable, as they were carved for the Buddhist priests), there is not a single example in which the chief characteristic of the Chaitya is carved—viz. the purlins which show its wooden origin. It is only necessary to look at figs. 46, 47, 51, 52, 55, and 60 in Fergusson's Indian and Eastern Architecture to recognise that the purlins are never omitted in the real Chaitya. In the place of the purlins we find a dent-de-scie ornament, a Sassanian ornament of the seventh century. That in some cases the Chaitya was copied I am quite willing to allow -in fact, in the illustration now given [fig. 18] the niche on each side may have been taken (minus the purlins) from the façade of the cave at Bhaja (fig. 46, Fergusson), and there is the same

panelling with coffers. My contention is, however, that the carrying of these arches on capitals and shafts is distinctly a much later development, and one which is taken from Byzantine sources, such as are found in Central Syria. and 52 in Fergusson, in which the Buddhist rail is shown as in fig. 18, explain the entirely different way in which the early Buddhists of the first and second centuries adopted decorating the Chaitya. In fig. 52 they are placed between the columns, but in all cases they rest as complete features on horizontal beams. As I have already pointed out, it is not so much the form of the arch as the assemblage of many arches, circular or three-sided, carried on wide-spreading capitals and shafts, which suggest the later and Byzantine origin, and of this there is no example either in Palmyra or Baalbec.

Again, with reference to the alternating of the



FIG. 19. - WALL OF THEODOSIUS II., CONSTANTINOPLE.

round and three-sided arches, Mr. Simpson suggests that the latter were copied from wooden structures; but that (supposing the assumption to be a correct one) would not account for the alternating of the two forms. I should be more inclined to attribute the origin to such a feature as that of those three niches in the wall of Theodosius II. at Constantinople [fig. 19]. This alternation was no doubt derived from the alternating of the circular and angular pediments of Roman structures, and, as seen in the enriched niches at Baalbec, and the example at Constantinople, was probably not unique, because we find the same treatment in Saint-Jean, Poitiers, and Saint-Front, Perigueux. The resemblance between these niches at Constantinople and those in the Peshawar Valley sculpture is much closer than in any Roman work at Palmyra or elsewhere. Over the niches on either side in fig. 18 will be seen birds, probably peacocks, pecking at fruit. This was a

favourite Byzantine method of filling up the spandrils over arches. It is frequently found in Greece, and is found in Italy in ciboria, sarcophagi, and balustrades executed from the sixth to the eighth centuries by Greek artists. The example



FIG. 20.—PORTION OF STH-CENTURY CIBORIUM - ON TOMB AT BOLOGNA.

illustrated [fig. 20] is taken from the arch of a ciborium utilised in a tomb of the fourteenth century at Bologna. Similar birds are found in the plaster decoration of the Baptistery of Ravenna of the sixth century.

I have already referred to the dent-de-scie ornament carved in all the arches. Fig. 21

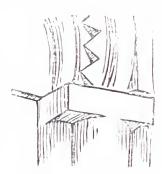


FIG. 21. - RABBATH-AMMON.

is taken from a photograph of the Palace of Rabbath-Ammon in Moab, a building supposed to have been erected by Chosroes II. when marching on Jerusalem in 614 A.D. A drawing of this palace was published in illustration of my Paper on

Sassanian Architecture.* I now come to the string-courses which divide the three tiers of sculpture in fig. 10. This I claim to be Byzantine, and its earliest example will be found in St. Sophia at Constantinople. The Byzantine architects discarded the

plain fillets of the classic entablatures, and emphasised and enriched with bold sculpture the decorated mouldings. The ogee moulding of the cornice, the egg-and-tongue moulding under it, and the convex frieze, were the chief mouldings in which they delighted. The modillions they introduced occasionally, as in St. John Studius at Constantinople; and in the cornice of this same church we find the first example of the socalled Venetian dentil. They also utilised the architrave when necessary, curving it into an archivolt sometimes, and in the former case they emphasised the bead decoration. Their favourite moulding, however, was the ogee, which they contented themselves with as a string-course, in preference to any other. This is found in many of the Greek churches. It found its way to Venice, where it was employed in long lengths inside Participazio's church of St. Mark, in Contarini's church at Murano, and generally throughout all the Byzantine palaces at Venice, and others in Verona, Ancona, &c.

Now the chief characteristic of this decorative moulding is the bringing forward and turning over of the centre leaf, the object being doubtless to break the straight line of

the fillet above. Fig. 22 is an illustration of an example in the Kahrije Djami Church at Constantinople, founded in 413, but rebuilt in the seventh century. A comparison of this example (which, as it happens, is taken from a photograph of the arch-mould instead of the lintel below it) with the friezes as shown in fig. 10 is too close to allow of the supposition that such a treatment was developed in India three centuries before its adoption in Constantinople; unless, of course, as was suggested by Mr. Emerson, the feature was borrowed from India. But, in that case, why did not the Byzantine architect take over the Buddhist rail and other Indian features? I have an open mind on the matter, and if our Hon. Secretary will take up the subject and give us a Paper on the influence of Indian architecture on Greek and Roman work, it would be, I am sure, a most valuable contribution to the history of the development of the earlier styles: in Western Mohammedan work I have sought in vain for that Indian influence. Now I come to the capitals illustrated in figs. 2, 3, and 5. The theory which has been held as to the Alexandrian Greek origin of the sculpture in the Peshawar Valley may be traced, I think, to the strongly-marked Greek character of these capitals, and the only error which has been made is in the attempt to attribute them to the Greeks of the First instead of the Second Empire. The attempt which Mr. Simpson makes now to connect them with the purely Roman examples at Palmyra seems to me to be on the face of it impossible. Any one who has examined the foliage of a Roman and a Greek or Byzantine Corinthian capital will be able to see at once the marked difference in the section of their leaves, which, whilst slightly concave in the Roman, is always V-shaped in the Greek and Byzantine. There are one or two Roman buildings, in the carved foliage of the capitals of which the V-shaped section is found, as, for instance, in the Temple of Vesta at Rome, and in the Arch of Hadrian at Athens; but they were certainly carved by Greek artists. Throughout Eastern Europe, Syria, and even in Egypt and North Africa, wherever the remains of a Byzantine building are found, the carved foliage will always have this V-shaped section.



FIG. 22.-KAHRIJE DJAMI.

photographs of the Peshawar capitals, which are reproduced in figs. 2, 3, and 4, have the V-shaped section in their leaves. But there is another characteristic in them which is of Byzantine origin. The Byzantine architect recognised that a monolith column of granite or marble could carry a much greater weight than one composed of many courses of brick, and as in interiors large piers or supports were much in the way, whenever he could afford it he replaced the pier by a column of comparatively small diameter; this entailed some difficulty in the capital, which was neither large nor strong enough to carry the wall or arches alone. In some cases he inserted on the capital a new feature called the dosseret; in other cases, and particularly when the Ionic Order was used, he incorporated with it this wide-spreading feature. To this characteristic Fergusson, arguing in favour of the Byzantine origin of these Gandhara capitals, says (Indian and Eastern Architecture, p. 178): "After "Constantine, however, the design of the capitals "went wild, if the expression may be used. The "practice of springing arches from them, instead of "their supporting horizontal architraves, required

"a total change, and in the West it produced "exactly the same effects that we find in Gandhara." In this opinion I concur entirely, so that it is not necessary to say any more on the subject, except to point out in the capitals two Sassanian details, the dent-de-scie moulding and the flower, which, as may be seen in Flandin and Coste's work, was a favourite feature with the Sassanians, being derived by them from the Persians. As regards the figure of Buddha, which is seen in the capitals [fig. 2, p. 97], Fergusson says that in the Gandhara monasteries they are very frequent, and of a type which in India would be assumed to be certainly as late as the fourth or fifth century, some of them very much later. Fergusson also points out the reduplication of the figures of Buddha and of saints, which is of much later date. The nimbus behind the head of Buddha, Fergusson says further, is not known to be of earlier date than the fourth century, and he eventually comes to the conclusion, as quoted by Mr. Simpson, that "many of the "Gandhara bas-reliefs would, if transferred to the "Lateran Museum and labelled as early Christian," "pass muster with ninety-nine people out of "every hundred who visit that collection." With this view I entirely agree, and my opinion was strengthened by the inspection of a collection of photographs shown me by Mr. Kipling, in which there are numerous apparent reproductions of sculptures of the Lower Roman and the Byzantine Empires, similar in many respects to the sculptures of the pedestal of the obelisk at Constantinople (carved in the reign of Theodosius I.), and many fourth-century sculptures (and later) in the Italian museums and churches.

Some of these sculptures in Italy are said to have been executed by Greek artists who in the seventli century were exiled from Syria owing to the Mohammedan invasion, and again in the eighth century from Byzantium owing to the iconoclastic persecution in 728 A.D. Is it too much to suppose that some of these Greek artists may have sought an asylum in the East rather than in the West? At all events, it is almost certain that sculptures of the class from which the Bactrian artists took their models are not to be found in Palmyra. There may have been statues on the brackets attached to the columns, but no traces of sarcophagi or altar pedestals with figure sculpture have ever been found, so far as I know, in either Palmyra or Baalbec.

The Great Mormon Temple, Salt Lake City.

From William Simpson, R.I. [H.A.]—

The great temple at Salt Lake City has at last been finished. The dedication ceremonies began on the 6th April last, and continued for a week. The corner-stone was laid on the 6th April 1853, thus giving forty years as the time it has taken to erect the structure. In this matter of time it quite eclipses Solomon's Temple. At first the progress

in building was slow, as the blocks of granite had to be brought in bullock-carts a distance of about twenty miles. Ultimately railway communication was established, and the work went on more rapidly. I visited Salt Lake City in May 1873, and the walls were then only about seven feet above the ground. The granite that I saw was of a pale grey colour, and it will stand out light against the blue of the sky.

Salt Lake City is laid out in the usual plan of American towns, with its streets at regular intervals, and at right angles to each other. These form what are called "blocks," and one of these in Salt Lake City is known as the "Temple "block." In this is the tabernacle, which is used for the Sunday services, and also the temple, which stands in the corner at the opposite

There are three floors in the temple, which realise the three storeys of the Ark of Noah. Each of these floors will be used for a different purpose. The tabernacle, as already mentioned, serves for the regular Sunday worship. The temple is intended for other celebrations, and the rites to be performed in it will not be those that belong to. ordinary worship, but to ceremonies which, in the eyes of the Mormons, are far more sacred than the Sunday observances.

The ground-floor, which is a semi-crypt, will be devoted to baptisms. Here there is a great brazen font resting on twelve oxen—an imitation, no doubt, of the brazen sea in Solomon's Temple. The necessity for such a large baptistery is owing to a peculiar view held by the Mormons. They place an interpretation upon 1 Corinthians xv.

29, which enables a Mormon to be baptized for a dead resecond floor repre-

lative, so that the dead person will be again revived and enjoy all the blessings which the Latter-Day Saints promise in the future to those who by this means are enabled to join the body of the faithful. As this lower floor is supposed to represent the earth, a figure to typify this is introduced into the decoration, and is repeated all round. The sents the moon; the third floor the sun. Representations of these luminaries are

also in each case introduced into the ornamentation. If I mistake not, the second floor is devoted to marriages, and the third to the ordination, or initiation, of the priesthood. These last are very elaborate ceremonies, and said to be secret and mysterious. Marriage is also considered to be a very sacred rite. Those of other Churches marry for time only, till death part them; but the Mormon marries for Eternity. The rite is considered as a Sacrament. The most important of all the ceremonies which take place in the temple—the "Celestial Marriage"—is celebrated with many observances, including numerous washings and anointings.

The interior of the temple is said to be fitted up with much decoration and enrichment; one journal reports it as "gorgeous and gaudy." There is a great display of precious woods, and there are bronze and silver and gold-plated orna-



THE MORMON TEMPLE, SALT LAKE CITY.

diagonal to the tabernacle. The plan of the temple is a parallelogram 1865 by 99 feet; the ridge of the roof is 100 feet from the ground. The foundation is a solid mass sixteen feet in width and the same in depth. The walls resting on this are nine feet in thickness at the base, and six feet at the top. At each end of the building —that is, the east and the west—there are three immense towers terminating in spires; those at the corners being 175 feet high, and the central towers 225 feet. These three towers occupy nearly the whole of the space at each end, and from their height they have an imposing effect. The central tower being the highest, it typifies, as was explained to me, the Supreme Head of the Church, and twelve pinnacles on the spire represent the twelve apostles. Surmounting the spire is a ball, and higher still, like a weathercock, is the figure of an angel blowing a trumpet.

ments. Among the symbols are those of the "clasped hands" and the "beehive," which are exclusively Mormon. The motto of the Mormon Church, "Holiness to the Lord," is often repeated. On the second-floor window of the western central tower a large eye is represented with rays pro-

ceeding from it.

The whole cost of this great fabric is said to have been one million sterling. Its style is described as Gothic. When in Salt Lake City I was introduced to the architect, Mr. T. O. Angell. As I could not judge of the building with its seven feet of wall only above ground, he very kindly showed me the plans, and it is from his explanations of them that most of this has been written. Like almost all the Mormons I met, he was most kind; and though I wished to be as complimentary as possible regarding his design—and the building does in truth deserve praise in many ways-I found that he rejected any credit given to him for it. I learned that the Mormons ascribe everything connected with their affairs, both in Church and State, to divine inspiration; and then it dawned on me that the design for the temple was not that of the architect: it had come down to him from above.

QUERIES.

6. For the Science Standing Committee [p. 55].

From WILLIAM WHITE, F.S.A. [F.]—

In the carefully accurate scheme proposed for the systematic testing of bricks and brickwork, could there be a finer opportunity for testing also the relative strength of brick pillars in relation to their height? For these I should say the six months period only would be sufficient and without frogs; and but two, 12 ft. high—and two, 18 ft. high, to compare with similar 6-ft. pier.

7. One of the Consequences of the Gothic Revival.

From WILLIAM H. WHITE [F.]—

L'Architecture, the Journal of the Société Centrale des Architectes Français, in its issue of the 30th ult., announces the decease of a "M. "Mauduit," one of the revivers of "l'art du "repoussé au marteau pour les métaux employés "dans la décoration extérieure des édifices." Can this be M. Monduit, of the firm of Monduit & Bechet, justly famous under the Second Empire, and successor to the firm of Durand, similarly distinguished in the reign of Louis-Philippe? Memories are short amid the turmoil of perpetual gaiety, and the results of dynastic changes have made them shorter in the Paris of the last decade or so. Hence this query!

It was in the workshops of MM. Monduit & Bechet that all the best examples of lead and copper hand-beaten work, executed by ordinary workmen in blouses, were produced during the ifetime of Viollet-Le-Duc. The lead flêche of Notre-Dame, fixed as it is upon a framework of

iron, the lead flashings of the mansardes of the Tuileries, the copper dome and groups of statuary on the Opera House, the renovated covering of the dome and cross of the Invalides, and a host of other beautiful details, all executed by the hand of an artist or artificer who did not hesitate to call himself an "ouvrier"—by the hands indeed of several such artists—were wrought under the immediate direction of M. Durand, who was the chief of M. Monduit's establishment.

It would be most interesting to have some definite account of the instruction imparted by Viollet-Le-Duc to these workmen (in the employ of MM. Monduit & Bechet)—the same who attained such excellence in their art that they were enabled, a few years after the establishment of the present Republic, to produce in beaten copper the colossal statue of "Liberty" which the French presented to the United States of America, and which now commands the entrance to New York Harbour.

REPLY.

3. Brick and Concrete Walls [p. 58].

From WILLIAM WHITE, F.S.A. [F.]-

I am glad to be able to throw a little light on Mr. Gethin's inquiry. Just twenty years ago I carried out, in the manner described, the whole of the walls at the Church of St. Mark, Battersea Rise; and most successfully, except in the pillars, for which we were obliged to substitute a hardstone. It proved a work of considerable difficulty to cut a doorway through the wall of the crypt, before the church was finished. There was a crack in the walls showing a slight separation right across the church, which, but for the concrete walls, might have been serious: as the foundation was clay upon a steep slope. At every sixth course I had a through course of headers. I abjure "snap-headers," and the intermediate courses were wholly stretchers. A full description of the work was given to the Architectural Association, together with particulars of tests which I had made of the samples prepared.

Then again seven years ago I did the same, on a different scale, in the rebuilding of the tower of Sandridge Church, Herts, with thicker walls, but still with an inside casing of brick, and flints without; taking my idea from some early work which I had noted in the construction of the Colosseum at Rome. For a concrete wall, a finish of brick is of course greatly superior to a roughcast of plaster or cement. But a learned amateur seized the opportunity to make merry over the scientific constructiveness of a modern architect, who would build two half-brick walls and fill them up with concrete! The old tower had fallen and had been already rebuilt once early in this century. In order to keep the walls straight special provision had to be made to counteract the swell-

ing of the cement in setting.



PROCEEDINGS OF ALLIED SOCIETIES. GLASGOW.

The fourth lecture of the series by Mr. W. J. Anderson [4. on "The Architecture of the Italian Renaissance," delivered at the Glasgow School of Art on the 20th ult., dealt mainly with the architecture of the early period in the Dukedom of Milan and Dominion of Venice. Beyond the territorial influence of Florence, the district of Milan, the lecturer said, was the first to transplant the renascence which had blossomed in the flower of cities, and is one of the most important centres of its early development. Such buildings as S. M. delle Grazie, the Certosa di Pavia and Como Cathedral served to stamp the country round Milan with a distinct architectural character. Venice, at that time in the zenith of her power, drew her architects and her architectural forms through the district of Milan, and not directly from Florence, for various reasons, which were explained at length. The dissensions of the two great republics at the period, and the dominion which Venice at this time exercised over nearly the whole of Lombardy, were part of the causes. as also the history of Venice itself. That was of unique character, and all the enthusiasms of ancient Roman and Etrurian history were lost upon the Venetians. Instead of the shadow they had the substance, and possibly imagined that in their greatness they had rivalled Rome. Thus the element of sympathy may have been wanting, and it is possible that this may account for the indifference with which the new style was welcomed, and the retention of their Gothic and Byzantine features to a marked degree. Rather, however, than accepting Mr. Ruskin's view that the early Venetian Renaissance consisted in the "first corrup-"tions of the Gothic school," it was argued that the style might be regarded as a purification of the depraved and illogical Italian Gothic. The architects of the period, having begun to see in the Gothic forms and features perversions of the classical details, and being desirous of getting to the roots of things, returned to that technique in its purity, although retaining in their compositions much of what was good in their mediaval work. The early Renaissance in Venice was in fact celectic in tendency, and is more a carefully-chosen combination of styles than the revival of any one in particular.

PARLIAMENTARY.

The Public Health (London) Act 1891.

Mr. Walter Emden, a Member of the London County Council, writes on the 27th ult. as follows:-I think it might be of service if the Council of the Institute would give their attention to the action of the powers under the Public Health 1891 Act. The Vestry or District Board, through its inspectors, can lay a complaint; and can, and does now, without giving any detailed notice, require a considerable amount of drainage and sanitary work to be done in a building. Several public buildings with which I am connected have had notices, and in one case work passed by the Vestry only comparatively a few years ago has been required to be taken ont, and over £1,000 worth of work has been required to be done. I do not disapprove of necessary sanitary work being required and done compulsorily, but when such large amounts of work can be required, as in cases such as I have mentioned, it places a very great deal of power in the hands of inspectors who have to draw up the requirements and also to pass the work when done. Beyond this there is little or no gnarantee that the requirements are of such a nature as should be ordered. My object in pointing out these matters is to suggest the advisability of an appeal in such cases, as in the Building Act, and which should go to a tribunal similarly constituted, or to the same tribunal. The requirements under this particular head are such as I believe in many cases to be far more onerons—and much more diversity of opinion exists about them—than any requirements that can be made under the clauses of the Building Act.

London Streets and Buildings Bill.

Mr. Frederick Meeson, District Surveyor for East Hackney North, has called attention, by means of a circular recently issued, to alleged defects in certain clanses of the London Conneil's proposed Bill, which the Council of the Institute have referred, for consideration and report, to both the Practice and the Science Standing Committees; and a copy of the Bill is lodged in the Institute Library.

LEGAL.

Ancient Lights - Obstruction - Injunction or Damages. MARTIN V. PRICE (Appeal).

This was an appeal from a decision of Mr. Justice Rekewich refusing to grant an injunction to restrain building on a site in Temple Street, Birmingham, above the level of former buildings on the same site, so as to obstruct the access of light to the plaintiff's premises. The facts are given in the note of the case in the Conrt below see page 128. Mr. Justice Rekewich had found that the defendant had already erected his buildings so as to interfere with the plaintiff's ancient lights; but his lordship thought he had jurisdiction to award damages, not only in respect to the obstruction already cansed, but also in respect of the building contemplated but not yet erected, and he awarded 2120 damages. The plaintiff appealed.

The judgment of the Court of Appeal (Lord Justice Lindley, Lord Justice Smith, and Lord Justice Davey) was delivered on the 19th ult. by Lord Justice Lindley, who said that the question whether the Court had jurisdiction to award damages by way of compensation for an injury not yet committed, but only threatened and intended, was a difficult one. In Dreyfus v. Pernyian Guano Company the Court had expressed a clear opinion against the existence of such jurisdiction; but it had been very commonly assumed that there was such a jurisdiction; and in Holland v. Wooley the late Mr. Justice Pearson had awarded damages in lien of an injunction, which, if granted, would have been simply preventive, and in no sense mandatory. If there was no such jurisdiction, the order appealed from was wrong; but, assuming the jurisdiction to exist, the Court was of opinion that upon the facts of the case the plaintiff was entitled to an injunction to restrain the defendant from continning to build higher than the old honse. Mr. Justice Kekewich had found that some of the plaintiff's lights were ancient, and that they were already obstructed; that the plaintiff had sustained, and would sustain, material injury entitling him to substantial damages. The Court of Appeal could see no reason to differ from those findings. The plaintiff's legal right and its infringement being established, the plaintiff was entitled to an injunction according to the ordinary principles on which the Conrt was in the habit of acting in such cases. There might be circumstances depriving the plaintiff of that prima facic right; but they could discover none in that case. The order appealed from was discharged, and an order made for an injunction in the ordinary form, to restrain the defendant from continuing to build higher than the old building above the level of the street to the injury of the plaintiff; and for an inquiry as to damages already sustained, to be conducted before an official referee.



BLICKLING HALL, NORFOLK: ITS DRAINAGE, WATER SUPPLY, AND OTHER WORKS. By Maurice B. Adams [F].

Read at the General Meeting, Monday, 8th January 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,-

LTHOUGH the comparatively uninteresting subject of drainage may be considered necessarily somewhat commonplace, I venture to think that no apology should be needed at a meeting of the Royal Institute of British Architects when such a matter is brought forward for consideration. I cannot forget, however, that some enthusiasts, prominently associated with our profession, have asserted in the plainest possible terms that an architect, if he be strictly an artist, has far too much to think about in evolving the conceptions of his art, to trouble himself about drains. This opinion may be traversed without parley; and, indeed, I venture to assert that no architect, whatever may be his artistic capabilities, can afford in these days to neglect so important a part of his work, however much he may dislike sanitary difficulties and all that belongs to them. A practical knowledge is only the alphabet of architecture, and on these subjects at least we may rightly enough examine a man, so as to ensure his being qualified to build soundly, and be able to plan his buildings with a proper regard to their sanitary arrangements and efficient drainage.

Mr. Norman Shaw's admirable dictum, that "a true architect is far more likely to be a practical man, than a practical man is likely to be an architect" (Architecture: a Profession or an Art, page 11), is doubtless true enough; and few probably would dispute the further selfevident truism, that unless a building be structurally satisfactory and properly drained, its abstract merits as a specimen of fine proportion and beauty of design can afford but a very qualified enjoyment to those whose fate it is to use it. A little care and forethought about such matters at the outset of a building undertaking would often enough-have saved countless troubles and ultimate expense. Those who neglect so practical a side of their business do unquestionably more harm in the long run to the interests of true architecture than any one else engaged in building craft; while, besides this, they go far in practice to justify the existence of a standing army of so-called specialists, whose business it is to make themselves ready to supply the assumed deficiencies of the architect. These things ought not so to be; and surely in this matter of drainage there is nothing after all so very difficult, so very special, that the architect should give way to the drain doctor, whose costly contrivances often turn our buildings into veritable museums of building appliances, and disfigure our sky-lines in every direction. On the other hand, these worthies no doubt not infrequently have had the excuse ready made to their hand, that architects, in scheming the plans of their buildings, have paid so little regard to the position of water-closets, baths, and sinks, locating them

Third Series. Vol. I. No. 6.

here, there, and everywhere, that a really simple system of drainage is rendered almost an impossibility.

The less complicated the sanitary arrangements of a building are, of course, the better, and a few well-known rules will go a long way to simplify the planning of drains of even the most intricate of buildings. Thousands of existing structures of all kinds will have to be redrained during the next few years, and much of such work will be far better done by capable architects than by any other class of men. Specially is this the case where the buildings have any just claim to be considered as specimens of architectural merit; while with historic buildings, such as the one with which we have to treat to-night, it seems to me of the utmost importance that none but an architect should be allowed to touch the fabric; and even the extent of his work should be rigidly limited to the simple repair and renovation of perished or perishing parts, while his sanitary work should be carried out in the quietest and most unobtrusive manner possible. Moreover, in dealing with the sanitation of old buildings, it is inevitable that much of the work necessary for the efficient execution of the undertaking will partake of the nature of architectural restoration. The condition of the fabric as a whole must be considered; and herein the value of an architect's judgment is of prime importance. Damp walls and unhealthy rooms may arise from a variety of causes, not immediately connected with those things with which the drainage specialist usually concerns himself; and, as a matter of fact, the most elaborate reports from such sources have been prepared, dealing with the unsanitary conditions of buildings, and devising costly schemes for their improvement, without even mentioning some of the most evident causes of mischief, such as a properly qualified architect would point out almost at a glance.

While, therefore, I desire to insist upon the unquestionable necessity of thoroughly good drainage, I would urge that the drains are, after all, only a part, and sometimes really a small part, of what should form a well-considered whole in the efficient work of building, whether we are dealing with a new structure or an old one.

With these possibly somewhat trite introductory remarks, I will proceed to place briefly before you the particulars of a scheme which I successfully carried out some few years since at Blickling Hall in Norfolk. The problem was, as I think you will readily see, an unusually difficult one, and on this account it was suggested to me that a description of the work would furnish an interesting subject for a Paper at the Institute. That the difficulties which presented themselves in this case were of no slight kind is testified by the fact that before I was instructed to report on the subject an eminent specialist had already been consulted, with the result, as I afterwards learned, that he declined to undertake the matter at all unless practically carte blanche was given him to deal with it as he found necessary.

Blickling Hall as it now stands was erected about a.p. 1620, and, like very many mansions of that period, it stands in a hollow. In the days of the Barons, and in the times before them, our ancestors, mainly for reasons of self-defence, selected elevated sites on which to build their homes, and every Englishman's house since has been reckoned his castle. Gradually, as the arts of peace developed, the mansion-house superseded the feudal stronghold, and less elevated positions became more common, where the nobility, following the lead of the clergy, whose monastic dwellings nearly always were built near water, erected their homes in well-wooded valleys and low-lying denes or sheltered coombs. The aspect of a house likewise received consideration, but the appreciation of prospect for its own sake does not appear to have been general, even among the cultivated classes, till the days of the Georges, though exceptions might occasionally be cited. Blickling Hall occupies, too, a site on which an earlier house stood, the home of the Boleyns; and before their time, in the fifteenth century, the Bishops of Norwich had a palace there. I need not now speak further of the history of Blickling; while

the beauty and importance of the mansion, as an example of the English Renaissance, is too familiar to need further comment for our present object.*

The moat which surrounds the house has been planted as a garden for very many years, but under the moat itself an old brick culvert extends on the four sides of the building, and this culvert was used as the sewer for all purposes. Its outfall extends for about three-quarters of a mile alongside the lake, which is about eighteen acres in extent, to its lower end; and there this drain terminates in a copse, through which the overflow of the lake water is carried by way of a stream, which continues through the property for miles. I will extract from my report, written before anything was done, some of the leading particulars descriptive of the old drainage at that time.

The first portion, or upper end, of this outfall drain from the culvert round the house had no fall at all, and always stood charged with water approximately level with the lowest parts of the basement floor. This superabundance of water was due principally to the fact that the outfall culvert passes under the bed of the lake, thus immediately connecting it with the foundations of the Hall; while the whole of the roof and surface water, collected from the forecourt, stables, and adjacent farm buildings, as also from the kitchen wing in front of the mansion, was brought down to the low level of this old brick drain below the moat on its way to the main outfall above described. The culvert, being in itself of faulty construction, was quite unable to withstand such a pressure of water; and, in consequence, the entire basement was continually saturated with sewage water, causing damp to extend more or less all over the lower rooms, and of course giving off unhealthy vapours, which, by the higher temperature of the ground floor and upper apartments, were drawn up through the hall and staircases into adjacent corridors, and so distributed about the building.

The supply of flowing water always coming, through the drain under the roadway next the kitchen wing, from the stream in the fields south-east of the Hall, to feed the lake on the north-west, had been in former times used as a means of flushing the old culvert on the west side of the house; but, owing to the bad state of the sluices, a continuous inlet of water had for a long time been going on, needlessly charging this old, flat, low-level sewer, and helping to augment the soakage of the basement already alluded to.

Beyond this, all the soil from the w.c.'s and sink wastes had polluted this body of water, while the catch-pits formed under the old manholes, near the house, retained a considerable quantity of foul deposit, thus greatly increasing the evil; added to which, a stagnant cesspool existed about half-way between the house and the lake. The sluices from the lake into the culvert greatly augmented, too, the surcharge of water, and effectually prevented the bulk of the sewage from reaching the outfall beyond. The basement of the older part of the Hall on the east side was sufficiently high to be above the water-line of the lake; but when the late Mr. Burn formed a passage in the basement, leading to the kitchen wing, he lowered the floors by two feet in this part of the house, to increase, as I suppose, the head room of the offices along this front. By these alterations the basement floor and the lake-water level became at times almost identical, so that the sewage oscillated between the two. This fact, added to

Uhde, of Brunswick, Part 3, published by Ernst Wasmuth, Berlin, 1892. A view of the entranee front forms the frontispiece to Old English Houses, by the present writer, published by Batsford, 1888; the same drawing is given in the Transactions, Vol. I. N.S. 1885. A view, also drawn by the present writer, showing the south front, with the bridge and moat, is published in The Building News for 5 Jan., 1894. A full description of the remarkable ceiling over the great library, written by the late Rev. James Bulwer, Rector of Hunworth, Norfolk, was printed in The Antiquary, No. 6, June 1880.—M. B. A.

^{*} Eleven plates illustrative of the elevations and details of Blickling Hall figure in Henry Shaw's Elizabethan Architecture, 1834. A view of the mansion is included in S. C. Hall's Baronial Halls, drawn by J. D. Harding, 1845. There are two plates of the entrance archway and grand staircase from Blickling, with a plan and one or two detail sketches, in the Architecture of the Renaissance in England, by J. A. Gotch and W. Talbot Brown, Part 3, 1891. Three plates of a similar kind, illustrating the main porch, the garden front, and the great library, appear in Baudenkmäler in Grossbritannien, by Prof. Constantin

the state of the drainage as already described, rendered the basement so inundated, that boards or permanent wooden latticed ways had to be provided in places along the passages to allow the servants to pass over the water. During wet weather a pump, erected by the steward, had to be used to prevent the water rising above this normal level. The walls were green with damp, as were also the lower steps of the stone staircases, and the woodwork of the windows and skirtings was rotting with wet, producing a state of things most injurious to health. Nothing very well could have been worse under the circumstances, seeing that all the sewage from the stables and kitchen wing was brought from the comparatively high level in front of the mansion down to the basement.

Another cause of trouble, not yet mentioned, but which went far to make some of the principal ground-floor rooms damp and unhealthy, existed in the state of the outer court or quadrangle, where the principal entrance to the house is situated. The walls were thoroughly saturated, and green with vegetation and damp. The cause of this was chiefly due to the fact that the curved roofs of the four towers in the angles of this courtyard had no eaves gutters, so that consequently every time it rained a considerable quantity of water was thrown into the yard, and, falling on to the stone cornice which runs round at the first-floor level, soaked into the walls and dripped off with much splashing on to the flags below. The circulation of air in so confined a courtyard was of course not enough at any time to keep it very dry, and under the circumstances I have described the place was objectionable in every way. I may at once state here that I put eaves gutters to these tower roofs where they overlapped the yard, and repaired the stone cornice and covered it with 5-lb. lead, forming a good drip and flashing it well. Round the courtyard I constructed sunk dry areas which are dished away from the walls and drain into the new system. Stone flags, perforated and sunk on the upper face, cover in these areas, so that they are not seen at all, unless looked for. These alterations in the outer court realised my intentions, and the walls soon lost their slimy surface and dried out well.

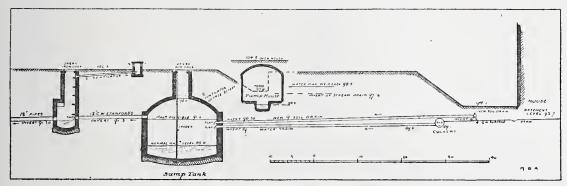
Speaking generally, the w.c.'s in the house were not really badly placed except in two or three cases. The private closet adjoining Lady Lothian's suite of rooms on the ground floor on the east side was formed out of the dressing-room in the middle of the block, and had no external ventilation whatever. The closet adjoining Lothian Row, on the other side of the house, was lighted from this corridor. None of the closets had any ventilated lobbies, and soil pipes and drains extended in every direction, while D traps were used everywhere.

Before briefly describing the new scheme of drainage which I carried out, it may be interesting to mention a curious circumstance connected with the water-logged condition of the site. An ancient cesspool was found under the middle of the private drawing-room in a position which at no time since the present mansion has existed could either have been necessary or even convenient—in fact, no use, so far as can be ascertained, could have been assigned to it in such a position. This cesspool, therefore, must have belonged to the earlier house of Tudor times, seeing that the existing building was erected about 1620. When opened, the cesspool was just as though it had only been in recent use—a state of things which, so far as I know, can only be accounted for by the quantity of water in the land, permitting neither the soil to soak out of the cesspit, nor soaking itself into it to dilute the contents, which by these means were to all intents and purposes hermetically sealed, reserved really to develop nineteenth-century nuisances—further evidence of the truth of the well-known words: The evil that men do lives after them.

I have thus pointed out, I think, sufficiently the main difficulties which presented themselves when I was called upon to solve the problem as to how best to deal with the unsanitary condition of Blickling Hall. As a matter of fact, in doing this I actually had only a few inches of differences of level in some parts to avail myself of. Permit me now a few words to describe the principal features of the scheme which I carried out; and, if we may judge by results, it is only fair to add my plan proved a success, seeing that the house was made both dry and sweet—as dry, in fact, as the building can be made, situated as it is.

My first point was to intercept the drainage on the higher level coming from the two main adjacent wings and other buildings in front of the mansion, and so prevent a vast quantity of sewage and surface water from discharging into the lower level round the house at all. This I did by taking an iron drain through the kitchen staircase hall; and, having an ample fall for the purpose, I diverted this upper drainage away from the house in a westerly direction, through the park, till it joined the new manhole beyond the sewage sump, which I shall mention presently.

Superabundance of water, as you have seen, was the chief cause of the troubles which had to be removed, and I determined to convert its main source into a useful friend, instead of allowing it to remain a serious enemy, as it had undoubtedly hitherto been. I refer to the stream water which came past the kitchens and through the west gardens to feed the lake. This water clearly furnished an available power at once to hand for pumping the low-lying

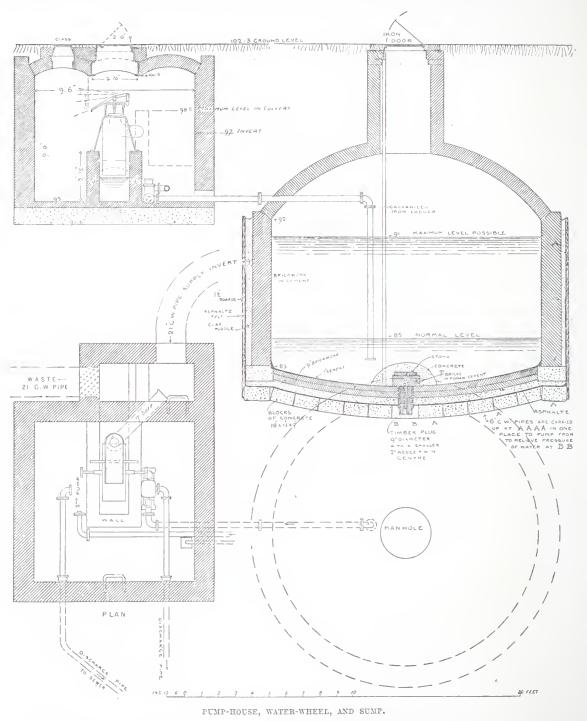


SECTION SHOWING RELATIVE LEVELS OF SUMP, PUMP-HOUSE, MAN-HOLE, ULD CULVERT, AND BASEMENT OF THE MANSION.

drainage. I therefore cut off the old rotten and leaking brick culvert by which this water was conveyed to the lake. I formed a weir of 21-inch glazed ware mastic jointed pipes, and, by carrying it back a considerable distance up the roadway course of the stream against the kitchen wing, an ample head of water, even in the dryest weather, was obtained to drive an overshot wheel capable of working two pumps. These were designed and made by Messrs. Easton & Anderson. The reason why this weir drain assumes the particular course shown by the plan is due to the position of some big trees, which prevented its being laid in one straight line. All the old drains in and about the mansion were taken up, as they proved to be deficient either in fall or in condition, and, moreover, were all difficult of access. The new drains were laid in straight lengths, and every branch was brought into inspection-pits or manholes, so as to be readily accessible and easily cleared. The manholes were trapped and ventilated, and all the house drains were effectively isolated from the main sewer. The old culvert round the hall was cleaned out, and reserved exclusively for rain and surface water, the soil drain system being kept entirely distinct.

The sewage from the house, thus collected into one outfall, was conveyed to a large sump situated beyond the fosse on the west side of the mansion; and from this tank it is pumped into a 12-inch new pipe drain, which extends from this point about 550 feet in a westerly direction across the park at a higher level, and discharges by its own gradient into the old culvert beyond the point where it possesses a fall. This is about 800 feet away from the

house. At this point I inserted a tidal ball-valve to prevent any back flow of sewage towards the Hall. The rain and surface water about the house, collected in the old culvert under the

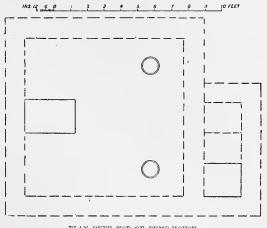


moat, was brought also into the sump, which was estimated to be equal to two days' discharge should both pumps fail at any time. By a very careful adjustment of levels, however, the

worst that can happen is provided for by the retention of the old culvert outfall, which, on an emergency, will serve as a bye-pass. Should the sump become full, it has an overflow into the new outfall, while the sewage is prevented by flap-valves from harking back towards the house. In case, however, the overflow by some mischance should be stopped up, and these valves be lifted by a flood of sewage which might then hark back, it will run into the bye-pass, and not into the culvert round the house, because stones or lock barriers are so placed as to

prevent this, and, besides, a valve-flap protects the new outfall from the house at this point. As a matter of experience, it has been found that an hour's pumping-or, at most, two hours' pumping—is sufficient to clear the sump every day.

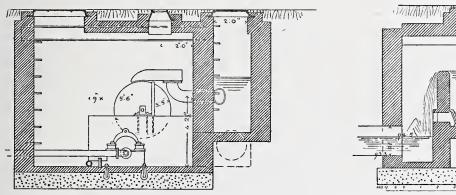
One pump at a time only is used, the second being furnished for work while the other is repaired, or in case either one of the pumps breaks down. An overflow drain from the head of the weir is provided so as to ensure the over-shot wheel from being stopped by too great a head of water, and with the same object the surface of the lake is kept to a prescribed level. The stream-water waste



PLAN OVER TOP OF PUMP-HOUSE.

after passing the wheel flows into the lake, which it supplies as before. The sump is ventilated by a shaft up an adjoining tree, and the pump-house is sufficiently far from the Hall to prevent the click of the machinery from being heard. An automatic flushing cistern fitted with an Adams's patent syphon is fed from the stream weir, and periodically flushes the new main soil drain leading to the sump.

The difficulty of constructing the sump was considerable, in consequence of the vast quantity of water in the land, and continuous pumping day and night had to be employed.



LONGITUDINAL SECTION OF PUMP-HOUSE,

SECTION SHOWING WEIR WASTE AT REAR OF PUMP-HOUSE.

The ground had to be shored up by close-sheet boarding, which also served to assist in keeping out the water. An inverted arch of concrete blocks, made on the spot, formed our foundations, and on this we built up the sump, our big manual pump being placed in the centre. When the time came for removing this pump, I had an oak plug driven into the aperture, a hole sufficiently large to take a small pump being first made in this plug. A small handpump was then inserted to relieve the water pressure, while the bottom was being made good

round the larger opening. When this had been done the small pump was drawn out and a timber pin was driven into the hole. The result proved most disastrous, for the water burst up the brickwork round about the bigger timber, and all efforts to make it good were unavailing. Mr. Robert Williams, my clerk of the works—I may here mention to his credit that he has since passed the qualifying examination, and is now an Associate of the Institute—whose help at this time was unsparingly rendered, worked almost night and day in conjunction with the builder, Mr. Bartram, of Aylsham. Indeed, the clerk of the works endeavoured, wet through as he was, to make good the joints in the breach with his own hands. The water rushed up into the sump as if it rose from a boiling spring, so that the tank was soon full, while despair at failure manifested itself among the workmen, as well as the contractor and clerk of the works. I went down to Blickling on this occasion with feelings of much misgiving, for it seemed as if the water, which I had set myself to master, would prove too much for me. After all, it was only a sewage tank, and the pumps would keep under a few hundred gallons of water; but such an endless amount as we had to contend with would of course be fatal. However, to sum up, I managed it in this way. I stopped the hand-pump (Messrs. Easton & Anderson's pumps were not then fixed), and let the water rise to its normal level. I then threw in several bags of Portland cement till the water was saturated with it, and then had some Portland cement concrete let down in buckets and tipped so as to form a raised centre or hill in the middle of the invert bottom over the timber plug. This concrete was rammed carefully, so as not to unnecessarily disturb the water, and it was thus left to set. In ten days or a fortnight we pumped this water out of the sump, when beyond a few tricklings here and there, through the joints of the walls of the tank, no water whatever came in, the boiling up from the sump's bottom was stopped, and we became masters of the situation.

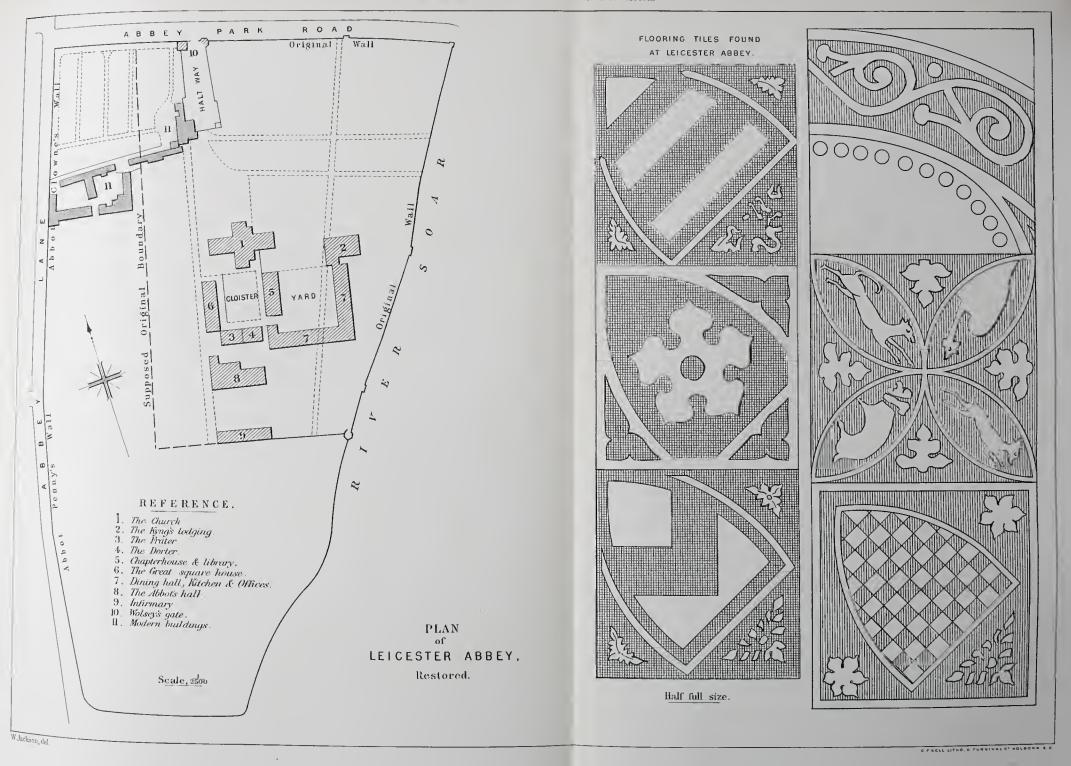
To help in drying the basement of the mansion, I put some sunk areas along the west front, similar to those already mentioned in the outer court. In the inner court deeper areas were built, and new housemaids' closets and w.c.'s were erected. New latrines were also constructed near the kitchen garden for the men-servants and gardeners. The gentlemen's lavatory and closets at the upper end of the stable wing, on the other side of the Hall, were altered and renewed.

The whole of the roofs on the eastern front of the mansion were stripped, repaired, and retiled. For this brindled Broseley tiles were employed on the inner slopes; but where the roofs are seen from the gardens weather-stained local tiles purchased from old buildings in the neighbourhood were used, so that when the restoration was completed all damage whatever to the ancient appearance of the building from an artistic point of view was avoided. The same may be said concerning the sanitary work which I have described, inasmuch as everything connected with it was kept carefully out of sight, as it always should be where possible. The big angle towers were restored, and a ready means of passing through the roofs and over them was provided, so that every part of the buildings could be readily accessible in case of fire. Some of the old wooden and cement-cased mullioned windows were taken out and new stone ones inserted to match the originals. The great central clock turret, too, which is constructed entirely of timber, was thoroughly overhauled, and repaired and painted.

One interesting matter, in respect to the cost of the Broseley tiles in Norfolk, may here be mentioned. The contractor asked £4 per thousand, and ultimately I obtained them delivered at Blickling for £3 per thousand, which was exactly the same price as the same tiles cost delivered in Australia for a house which was being erected at the same time from my plans near Sydney. The tiles cost 30s. per thousand at ship's side in London, so that 30s. remained to pay the freight and cartage when reaching New South Wales.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

INCORPORATED SEVENTH OF WILLIAM IV. AND FIFTIETH OF VICTORIA



The water supply in case of fire, the appliances and turbine for which were designed by the late Mr. W. E. Rich, of the firm of Messrs. Easton & Anderson, was an extensive scheme, including a water tower, holding 25,000 gallons of water, which I built on the knoll in the park. This hill was originally formed with the earth taken from the lake when it was made. Big trees now entirely cover its slopes, so that the tower, which is picturesquely covered with a conical thatched roof, can only be seen in the winter. The water service in the Hall, coming from a rather questionable source, induced Mr. Rich to recommend the sinking of a well in the park three-quarters of a mile from the house beyond the lake, with the object of obtaining pure water, which would serve both for domestic service as well as the fire water-supply; the turbine placed at the bottom end of the lake and worked by the overflow being intended to pump the supply from this well into the water tower already mentioned. I aid not myself pretend to any knowledge in respect to well boring, but I entirely agreed with M.. Rich as to the rightness of the position which we selected in the park for our well on this occasion.

Notwithstanding the water-logged condition of the land everywhere, we were unable to get any quantity of water from this well. Our pipes were driven down through chalk clay having isolated boulders here and there. These flints had to be crushed and drawn up—an expensive and tedious job. After reaching about eighty feet a milk-like water was obtained in small quantities, which, when analysed, was reported to be charged with recent sewage and ammonia. After going over a hundred feet down, the same results followed, only that the water was declared by the analyst to be more impregnated with ammonia than before.*

This analysis, which was very remarkable, gave a result which I do not pretend to understand, and to me is quite inexplicable, particularly as the water from the stream, which is pumped by a small ram into the Hall for domestic purposes, was reported to be perfectly good, notwithstanding its questionable source. We had to abandon the well, and the fire service water is pumped into the tower from the lake. The hydrants will throw the water over the highest turrets and roofs of the Hall, and fire-plugs are located about the building to command all parts readily in the usual way.

Gentlemen, I have now done, and in conclusion permit me to say that I have intention-

^{*} First report on the new well water.—The sample of water from Blickling I have lately examined, although being described as taken from the soft chalk, is evidently very largely mixed with surface water containing recent sewage. This is so strongly marked that, unless the well from which it is drawn is close to some drainage-work or cespool, it would almost appear that some accident had happened in collecting the sample. Without a knowledge of all the circumstances of position, &c., I can, however, give no opinion upon this point. The water as it comes to me is a very bad one. You will see that, unlike most chalk waters, it has a very moderate degree of hardness, although this is reduced to about the usual degree on boiling, and that the total amount of solid matter is much less than is commonly found in water wholly derived from the chalk. On the other hand, it is quite milky, owing to the presence of chalk in suspension. The analysis will be found below.

Total solids in 100,000 Chlorine Sulphuric acid Nitric acid . Lime . Magnesia	parts		:		4·30 1·91 ·44 8·47 1·33	
Hardness on Clarke's s (per gallon) Ammonia in a million	cale / \ { sali { orga	after		iling "		10·8° 4·0° 2·000 ·060

Nitrogen as nitric acid, &c		.114
Oxygen required for organic matter	•	•550

Report on second sample.—There is evidently something very unusual in the sample of water from Blickling Hall, coming as it does from a borehole 90 feet below the surface of the chalk; for this second sample is even more polluted than the first. Is it possible that the water sent to me can come from the gravel which you describe as having a disagreeable smell? If not, I am quite unable to account for a chalk water containing such an amount of nitrogen as saline and organic ammonia. It appears to be a matter of much interest. I give the analysis, by which you will see that the saline ammonia is greater than in the first sample, and that the organic ammonia is higher also.

(Signed) G. H. OGSTON.

	, -	-				
Total solids in 100,000	parts					21.50
Chlorine					4.50)
Sulphuric acid					1.62	}
Nitric acid .					-58	}
Lime					8.32	}
Magnesia .					1.32	}
Hardness on Clarke's s Ammonia in a million Nitrogen as nitric acid	{ sali { org	{ befo } after ine anic med)	ore	:	•	10.5° 4.0° 2.150 .100 .224 OGSTON.
					1	R R

ally avoided making my Paper merely a technical one, my aim being rather to briefly describe in general terms the problem which I had to solve and how I managed it, just mentioning those points which were somewhat unusual. I trust the tale has proved worth the telling.

For discussion see infra.

MAURICE B. ADAMS.

HISTORY AND DESCRIPTION OF LEICESTER ABBEY. II. By W. Jackson [F]. Registered at Stationers' Hall as the property of the Royal Institute.

HE causes which led to Wolsey's overthrow, and to the closing scene of his life at Leicester Abbey, are among the most complicated in European history. In the drama of the Reformation, in fact and in fiction, the great Cardinal and his contemporaries pass before us "like little wanton boys that swim on bladders." Shakspeare makes Wolsey responsible for the death of the Duke of Buckingham—that is not the verdict of history, but the Elizabethan dramatists had their own reasons for throwing a glamour over the acts and deeds of the Tudors.* Mr. Froude is a witness, and a very important witness, for the defence, but even he is constrained to write in terms of condemnation: "We have "arrived at a point from which the issue of the labyrinth is simple. The course of it has "been very dreary, and, brought in contact as we have been with so much that is painful, so "much that is discreditable, we may have lost our sense of the broad bearings of the question "in indiscriminate disgust." † It was a time when "reasons of State" were held to justify the most atrocious murders, when the highwayman was called a reformer, when the real men, in whose hands the reformation would have prospered, were sent to the scaffold. Let us be thankful that Henry Tudor was only half an Englishman, and that, in the next generation, his name was clean put out.;

Wolsey's first appearance on the public stage was about the same time with another event which, curiously enough, coloured all the years of his life. At the beginning of the sixteenth century the power of France was predominant, and Henry VII., thinking he saw in alliance with Spain the best security against his "hereditary enemy," arranged a marriage between Catherine of Aragon and his eldest son, Arthur, who, as we all know, died a few months after the wedding. Henry VIII., succeeding to his father's throne and in continuation of his policy, began his reign with a few judicial executions, and married his brother's widow. From this point we must now attempt to take up the threads, so far as they concern us, from the tangled web of events which succeeded. The Pope, the Kings of England and France, the Emperor, Catherine the Queen, Anne Boleyn, and Cardinal Wolsey are the dramatis personæ—a powerful cast—but they are all needed to show how a poor old man came to die at Leicester Abbey.

In the year 1511 Ferdinand of Spain, Henry of England, and the Pope formed a "holy "league" to drive the French beyond the Alps. In 1513 an English force landed at Fontarabia; but Ferdinand used it only to cover his own operations at Navarre, and Henry, finding himself deserted by his ally, concluded a treaty with the King of France. In 1516 Ferdinand of Spain died, and his grandson Charles succeeded to the throne. In 1519 the Emperor Maximilian died. Charles of Spain, Henry of England, and Francis of France were candidates, but Charles was elected. The new Emperor visited Henry VIII. in 1520, and promised to use his influence to get the Cardinals to support Wolsey's succession to the Papacy. In 1521 there was war between France and Spain, and a secret treaty between Spain and England. Money was wanted in England, but there were parliamentary difficulties, and Wolsey, already playing

^{*} There was a secret confederacy between Charles and Henry, and a promise of the Emperor to marry the Princess Mary. Her right to the throne was asserted by the arrest and condemnation of the Duke of Buckingham. He was a descendant of Edward III.'s youngest son, and, if Mary's

succession were denied, he stood heir to the throne (Green, Hist. p. 124). † Froude, Hist. v. i. c. 5. † Strictly speaking, not exactly half. His great-grand-

parents were Katherine of France and the Welsh Owen Tudor.

the part of scapegoat, became unpopular. In 1525 Charles defeated and captured Francis at Pavia, but afterwards concluded an armistice with him; he did not, however, promote Wolsey's cause, and he married a princess of Portugal.

Anne Boleyn now comes on the scene. Henry resolves to break his marriage with Catherine, and ceases to take an active part in Continental affairs. In 1526 they are roused by the storm and sack of Rome. In 1527 Henry and Wolsey definitely break with Spain and form an alliance with France. There is a proposal to marry the Princess Mary to a son of the French king, and a question raised as to the validity of Henry's marriage. The King seeks a divorce from Rome; but the Pope is a prisoner in the castle of St. Angelo, and wants to know whether France and England will be able to protect him from Catherine's nephew. In the autumn of 1527 the French had some success in the north of Italy, but in 1528 the French army "melted away" on the unhealthy plains of Naples.

Before that event the Pope had agreed to a legatine commission to try the divorce case in England, and Cardinal Campeggio left Rome to hear it in conjunction with Wolsey; he loitered on the way, until he heard of the disaster to the French army, and then, proceeding by way of Paris, he betrayed to Francis that he had no intention of allowing judgment to be passed in the case. In the same year Henry publicly acknowledged Anne Boleyn as his intended queen, and sent Sir Francis Bryan to the Pope to announce that in default of help from Rome he would settle the divorce case by the law of his own country. Meanwhile, the Emperor Charles became aware of Wolsey's unpopularity, and, supposing it to mean objection to the divorce, he made the mistake of feeling the pulse of English disaffection, and thus united the nation upon the question whether the papal authority should be any longer recognised in England. In 1529 writs were issued for a new Parliament, and there was a change of ministers, with the Dukes of Norfolk and Suffolk, Sir Thomas More as Chancellor, and "above them all sat Mistress Anne, who never ceased to fear that Wolsey would return, until "a year after, when the welcome news was told her that he had passed to his long rest." *

The authority for these facts and figures may be found in Froude, and Green, and Ransome. Mr. Froude's history of the time is the most important, and is supported by reference to State papers and contemporary letters. There can be but one conclusion, over and above the "dreary, painful, and discreditable labyrinth" to which he alludes, that the King had a desire to play the part of emperor, and Wolsey had an idea of being elected Pope, and that for these objects they made and unmade treaties, and played with men's lives and fortunes. It is with Wolsey, however, that we are now concerned, and it is clear that by 1528 he had become unpopular all round; the city was angry at the loss of Spanish trade, the clergy † and people were aggrieved by increased taxation, and the great nobles were jealous and offended. In addition, he had, for some not well-explained reason, a bitter foe in Anne Boleyn; in the midst of all there was a dreary negotiation about the divorce, and, the relative strength of Charles and Francis being undecided, Wolsey staked his all upon France, and lost.

We now turn to the closing scene of his life. It was night when Wolsey and his escort reached Leicester, Saturday the 26th November 1530; they had come, as we all know from Shakspeare, by "easy roads," from Cawood Castle and Hardwick Hall, by way of Nottingham. He was sick unto death, and with difficulty had been held on the mule he was riding; he was in that condition of mind and body, only possible with human creatures, which a greater than Shakspeare has described for us

As one Who with his gain elated sees the time

When all unawares is gone, he inwardly Mourns with heart-griping anguish.‡

^{*} Letter from the French ambassador.

[†] The clergy put themselves in the forefront of resistance, and preached from every pulpit that the Commission was

contrary to the liberties of the realm (Green, Hist. p. 326).

[‡] Cary's Dante, c. 1.

He had evidently intended to take refuge, perhaps to enact the part of Becket, at York; the care with which he hid his intention points that way:

Mr. Cromwell shewed my lord of Norfolk that my lord would gladly go northward but for lack of money. Then was the King moved therein; the council were of divers opinions, but finally concluded that he should have 1,000 marks, which was delivered to Mr. Cromwell. . . . Then he prepared for his journey, rode from Richmond to Hendon, and so on. About the feast of St. Michael he moved to Cawood Castle, seven miles from York, where he lay long. . . . At length, being persuaded by the doctors of the church, he determined to be stalled at York minster the monday after all hallows day. The day being known Abbots & Priors sent in great store of provisions * all unknown to my lord, who when he heard forbade saying "I do propose to come to York upon sunday night, and to lodge at the dean's house, and " upon monday to be stalled, and then to prepare home hither again."

The hunters, however, were too quick for him; they had let him run, and on Friday before the day fixed for the installation, Sir Walter Walsh and the Earl of Northumberland, with Mr. Kingston, Constable of the Tower, and a company of gentlemen they had gathered in the King's name, arrested him and took him back towards London; "by the way he waxed so "sick that he almost fell from his mule." At his coming to the gate of Leicester Abbey he was met by the Abbot and Convent, to whom the Cardinal said, "Father Abbot, I am come to "lay my bones among you."

On Monday morning as I stood by his bed he perceiving me asked who was there. "Sir," said I, "it is I." "What "o'clock is it?" said he. I answered, "It is about eight." Quoth he, "That cannot be, for at eight o'clock you shall "lose your master." With that Dr. Palmes (his chaplain) bade me ask him if he would be shriven, which I did; but he was angry with me, saying, "What had I to do to ask such a question?" But Dr. Palmes took my part, and talked with him in Latin, and pacified him and then Master Kingston came and asked him how he did. "Sir," quoth he, "I " wait but God's pleasure, and, Master Kingston, if I had served God as diligently as I have served the King, He would "not have given me over in my grey hairs." †

Considerable excavations have recently been made in the Abbey grounds, with the object of tracing the site of the monastic buildings, and possibly finding the place of Cardinal Wolsey's burial; "he was buried in the Lady Chapel; he had upon him next his body a shirt "of hair, which was laid in a coffin made for him of boards, having upon his dead corpse all "such ornaments as he was invested in when he was made Archbishop, as mitre, cross, ring "and pall." \tag{Many fragments of rough and moulded stone and encaustic tiles were found, but there were no continuous foundations, and it became obvious that the materials had been removed by the Earl of Huntingdon and his workmen in the year 1562, and used in building the mansion house, the ruins of which now form the most conspicuous object in the grounds. If we add here a note from Nichols's Annals of Leicester, there will be little doubt what became of the relics: "As a labourer was digging in 1747 upon a spot where the high altar of the "chapel was supposed to stand, he found a human skull, with several human bones. From "the situation of the place, and other circumstances, it was conjectured at the time that this "might be the skull of Cardinal Wolsey." And it may fairly be so conjectured without fearing Horatio's warning: "Twere to consider too curiously to consider so." Thus, Wolsey was buried, with all his ornaments, in the Lady Chapel. My Lord Huntingdon's workmen, after the manner of workmen, dug up and rifled the place—a labouring man, digging potatoes, found the relics.

Imperious Cæsar, dead and turned to clay, Might stop a hole to keep the wind away;

O that that earth which kept the world in awe, Should patch a wall to expel the winter's flaw.

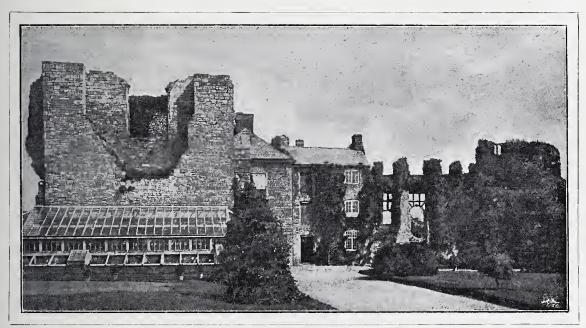
In the year 1870 a document was discovered in the Public Record Office, evidently written for some official purpose by a careful observer, immediately after the dissolution of the monastery; it is entitled "The viewe of the seytuacion of the late monasterye of Leicester," and by the help of this document and of Mr. Nevinson's excavations it has become possible to construct and locate a plan of the various buildings. In this plan the original boundary of

^{*} At the installation of George Neville Archbishop of a vast store of provisions was consumed (Hall's History). York in the year 1470, 3,000 persons were present, and

[†] Cavendish, Life of Wolsey.

the site is shown by a broken line. The original stone wall remains on the north-east and east. Of the original buildings only a small part of the infirmary, and of Wolsey's gate and gate-house, and what may have been the cell of an anchorite at the south-east corner, remain. The wall from Wolsey's gate, along the north and north-west, was probably built by Abbot le Clowne about 1377; the brick wall along Abbey lane was the work of Abbot Penny about 1496.

With the death of Wolsey we reach a turning-point in our history; there was no apparent change for a time—so the sun appears to rest at the summer solstice—but there was thunder in the air. The clergy were attacked and fined, and required to recognise the King as supreme head of the Church.* Sir Thomas More's resignation, the King's marriage with Anne Boleyn, the Pope's threat of excommunication, the Act of Appeals—"thenceforward there "shall be no appeals to any authority exterior to the realm"—must have reverberated through



RUINS IN THE GARDEN, LEICESTER ABBEY.

the quiet precincts of the abbey. In the year 1534 Abbot John Bouchier, wise in his generation, subscribed to the King's supremacy, by virtue of which the right of visitation was transferred from the Papacy to the Crown; and in the summer of 1535, directly after the execution of Sir Thomas More, Cromwell issued a commission for a general visitation of the religious houses and spiritual corporations. "The persons appointed to conduct it," says Mr. Froude, "were Doctors Legh, Leyton, and ap Rice; Legh and Leyton, the two principal commissioners, were young and impetuous men, likely to execute their work thoroughly rather than "delicately; but, to judge by the surviving evidence, they were as upright and plain dealing "as they were assuredly able and efficient."† The Camden Society has recently published the correspondence of Doctor Leyton, one of these commissioners, who says in his letters that he has been to Leicester but can find no fault with the canons there—"I find no evil among "them, but I intend to charge divers of them with the grossest crimes." This is not the only case in which Leicester has a fairly clean bill of health, and it is satisfactory, amidst the prevailing corruption, as testified by Doctor Leyton and Mr. Froude, to find and record it.

^{*} Wolsey was prosecuted for a breach of the law in having exercised authority as papal legate within the acknowledged his authority. † Froude's History, v. 2.

Ulverscroft Priory (Leicester) was founded about the year 1180, and was suppressed in 1534 among the smaller abbeys; but on special commendation of the goodness and usefulness of the house and inmates, it was reinstated by letters patent from the King, dated 30th January 1536, granted to the prior of the house of the Holy Trinity and the Blessed Virgin Mary of Olverscroft. It was, however, finally surrendered in 1539.*

John Leland is not likely to be unduly prejudiced in favour of the religious houses; he had a commission in 1537 from the King to view, peruse, and report upon any record in any abbey or college in the kingdom. After a minute description of the College Church in the Newark at Leicester, he concludes as follows: "Honest men therein. £300 in their treasury "beforehand." They were suppressed, and the place utterly destroyed, in the year 1539.

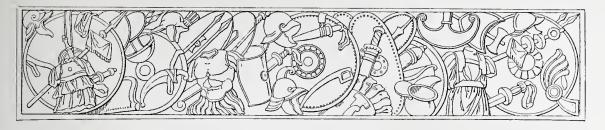
The first Act of Suppression in 1535 did not pass the Commons without difficulty:

When the bill [says Sir H. Spellman, had stuck in the lower house and could get no passage, the king commanded the Commons to attend him in the forenoon in his gallery, where he let them wait till late in the afternoon, and then, coming out of his chamber, walking a turn or two amongst them, and looking angrily, first on one side and then on the other, "I hear," said he, "that my bill will not pass; but I will have it pass, or I will have some of your heads," and without other rhetoric or persuasion returned to his chamber.‡

In 1539, John Bonchier, last of the abbots of Leicester, surrendered his house and office; if he had not done so he would doubtless have shared the fate of the old abbot of Glastonbury.§ There was great spoil at Leicester Abbey; worth in present money, according to an estimate founded on Charyte's Rentale already referred to, £20,000 a year. The movement of dissolution began with the avowed intention of endowing many sees, and making other noble foundations, "one for Leicester and Rutland out of Leicester," says Bishop Burnett; "but "only a small part was accomplished of that which the King intended;" what was actually accomplished may be seen by a short note from Leland's Itinerary. In 1459 the Abbot and Convent of Leicester held the whole manor of Ingarsby, and made it their principal grange; "now it is Bryan Cave's that boute it of the king." The curions reader may find in Nichols a further account of the plunder, but there is one document which may here be quoted because it gives a graphic description from the very time and place. It is addressed to my lord Cromwell by Francis Cave, one of the assistant commissioners:

I am now in possession of the house, and all the demesnes which was unlet at the time of our repair thither. We found the house indebted to divers creditors £410, and besides certain sums of money, the house was indebted to the King's Highness, whereof we make no reckoning, and for the discharge thereof we have made sale of stoke and store, with the ornaments of the cherche, &c. £228. The plate is unsold, by weight one hundred and ninety pounds, the lead by estimation £1000. The cherche and house remeyneth as yet undefaced, and in the cherche be many things to be made sale of, for the which it may please your lordship to let makenow your pleasure, as well as for the defasinge the cherche and other superfluous buildings which be about the monastery. A hundred marks yearly will not sustepne the charge in repaying this house if all the buildings be let stande. Thus I pray Jesus longe to preserve you in healthe and much honore. Written at the late monastery of Leicester the twenty-ninth day of August 1539.

What reply his Lordship made to this letter, and why the monastic buildings were so completely destroyed, we can now only conjecture. Cromwell was himself silent, attainted of treason, and executed within a year from the date of it; the King had just destroyed the shrine of St. Thomas at Canterbury. "No saint." said he, "but a rebel and a traitor," and he was not likely to spare a building which might become the shrine of another rebel and traitor, nearer and more obnoxious to him. It is impossible not to wish that some memorial had been left—some part of Archbishop Islip's chantry, of Henry Knyghton's library, of Abbot Clowne's hall, or Wolsey's tomb—some object-lesson to remind us of that morning vision we once saw at Glastonbury: but, the commissioner wrote, "The house is indebted to "the King's Highness, and thereof we make no reckoning."



ADDRESS TO STUDENTS. Delivered by the President, J. Macvicar Anderson, at the Sixth General Meeting, Monday, 15th January 1894.

SOME ASPECTS OF THE MUTUAL RELATIONSHIP OF ARCHITECTS.

GENTLEMEN,-

N the first occasion on which it was my privilege to address you I directed your attention to the consideration of what is probably the most important subject to which an architect can devote his studies—the Art of Planning; for on the successful development of that art depends the daily comfort, convenience, and therefore to a great extent the happiness, of the community. Hence it is impossible to overrate the crucial importance of the subject, or to impress it too strongly on the minds of those who as students are about to embark on their career as architects. The mistaken idea that such work as Planning is not Art has led many, who should have known better, to derogate it to a position of comparatively minor importance. He who regards planning as inartistic or unimportant has no claim to be a true architect. When addressing you last year I offered some suggestions in reference to the varied and extensive responsibilities which you will as architects be called on to discharge to clients, contractors, artists, tradesmen, and others. I propose now to confine what will be my final words to you from this chair, to one other position which you will occupy—your relationship to the members of your own profession, a relationship second to none in interest, for surely no right-thinking architect can disregard the advantage of possessing the good opinion of his professional brethren in respect alike of his works and of his character.

MASTER AND PUPIL.

Let me first touch on the preliminary aspect of this question—the relationship between master and pupil, of which some of you probably have already had experience. Notwithstanding the remarkable expansion of educational facilities in recent years, I suppose the oldfashioned system of pupilage which prevails in this country not only holds its own, but is likely to find increasing favour. In days gone by, when educational facilities—other than those which were to be casually picked up in an office—did not exist, it was perhaps not unnatural that the system of pupilage should be liable to abuse, because the only, or nearly the only, means of acquiring knowledge was from such information as the master might choose to impart. Hence the pupil was to a large extent, if not solely, dependent on the master, and in such circumstances a niggard spirit of exaction on either side would surely conduce to a relationship the reverse of satisfactory. In these later days this is not likely to occur, for the pupil is not now solely dependent on his master for the acquisition of knowledge. The air is full of educational courses, curricula, syllabi, lectures, and classes, and the remarkable success which many of these have attained demonstrates how much they were needed. The creation and continuing elaboration of such educational facilities has materially altered the relations which formerly existed between master and pupil. It is true that students must to some extent take advantage of such facilities after office hours; but I think that, in receiving a pupil and accepting a premium with him, a master is now bound, not merely to extend to him the advantages of training in his office, but, in addition, to recognise the existence of educational institutions outside, and to afford to his pupils reasonable facilities for profiting by them. And if this be so, what is the corresponding claim on the pupil? Obviously that, in enjoying the privilege of opportunities of study apart from the office, he is bound to devote himself with all the keener application to the work of the office while in it. No office can be properly conducted without discipline. Regularity, application, system, are indispensable. If, in an enlightened and liberal spirit, hours are set apart in which pupils can engage in outside study, they should be rigidly and loyally adhered to. To fail in this is not merely loss to the individual, but injury to others, for the force of example is great, and no one can release himself, even thus early in life, from exercising influence on others—it may be for good, it may be for evil—but it must be for one or other.

One valuable branch of study outside the office, for engaging in which a master should always be glad to afford his pupils facilities, is that of sketching and measuring old buildings. To any one possessing the gift of artistic draughtsmanship this is an enchanting occupation, although not free from a seductive, and even dangerous, tendency. To make pretty sketches, however fascinating, is not the object in view. Far be it from me to detract from the charm of artistic sketches, but what I insist on is that in sketches of old work the primary requirements are accuracy and clearness, lines well defined, forms and proportions true, joints and construction expressed, and dimensions clearly figured. Such sketches should be finished on the spot, and should not be touched up afterwards. By such subsequent treatment they may lose some of their charm, and must lose much of their value, for, if not finished at the time, they cannot be guaranteed as accurate delineations. That this subject is rightly regarded as of great importance is illustrated by the prizes offered here and elsewhere for measured drawings and sketches; and while, as I have said, musters should always afford facilities, pupils should never lose opportunities for engaging in it. The eye as well as the hand is thus trained to accuracy, and the mind is stored with useful knowledge. In view of the value attaching to work of this nature, I have thought that it would not be uninteresting or unprofitable to direct your attention to the measured sketches of an old master in architecture and his pupils, one whose memory—though he has long since passed away—still lives, and is likely to survive the changing fashions of succeeding eras. Palladio, as you all know, lived in the sixteenth century, having been born in 1518, and having died in 1580. The sketches exhibited, as illustrative of the manner of such work at the period referred to, form part of the Burlington-Devonshire collection, which, through the munificence of our Honorary Fellow, the present Duke of Devonshire, have now become, under certain conditions, the property of the Royal Institute of British Architects. They are interesting as illustrating the actual manner of work of an eminent architect of the sixteenth century and his assistants, a period when architectural students did not glory in the manifold advantages which they enjoy in the present day. It is to be noted, too, that, apart from the character of the draughtsmanship, these sketches amply fulfilled their proper purpose, inasmuch as complete drawings of the buildings they represent—the Baths of Agrippa and of Caracalla—were afterwards made from them, and published in the great Earl of Burlington's book,* which you will find in the Library. In further illustration of the manner of work of such masters, a selection from the drawings of the followers of the Palladian school in our own country—Inigo Jones, John Webb,

^{*} Fabbriche' Antiche' disegnate' da Andrea Palladio Vicentino e date in luce' da Riccardo Conte' di Burlington. Fo. Lond. 1739.

and others in the seventeenth century, and of William Kent in the eighteenth—some of which are signed, is also exhibited; and in respect both of draughtsmanship and design they may, in my humble judgment, be profitably studied by students, and, I venture to add, even by the architects of this privileged age.

ARCHITECTURAL COMPETITIONS.

Passing from such early relationship of master and pupil to more mature experience, many of you will, no doubt, find yourselves occupying the position of friendly rivals in architectural competitions. The general question of whether the system of competition is advantageous or prejudicial to the interests of architecture need not now be discussed. I have more than once recorded an opinion unfavourable to the system, and I see no reason to alter it. I fear, however, that, whether we like the competitive system or not, we must accept it as an established fact, and as practical men, therefore, our efforts should be directed to mitigating its evils, as I should say—or emphasising its advantages, as others may think. There can be no doubt that much has already been accomplished in this direction by the Royal Institute. I have observed that the Paper of "Suggestions for the Conduct of Architectural Competitions" which we publish, is very generally referred to and adopted by promoters of competitions throughout the country, and I cannot but recognise that—in spite of occasional enormities—there is now a more general desire to treat architects well than was formerly the case. In my experience as assessor, I have happily succeeded, in more than one instance, in prevailing on promoters to recast conditions, which had already been drawn up although not issued, in such a way as to expunge all objectionable features, and to make them perfectly fair and satisfactory. It is gratifying to be able to record the growth of such a spirit of equity and liberality on the part of promoters as has rendered this possible. In some cases, however, conditions are drawn and issued before the assessor is consulted, as, for example, in the recent competition for the extension of the Pump Room at Bath. When this is the case, all the assessor can do is to select the best designs in conformity with the conditions, apart from the question of their excellence or otherwise. I confidently assert that in every such instance which has come under my o

In a professional expert to advise them from the outset.

The question whether promoters should be bound to adopt the award of their assessor is one which admits of a good deal of discussion. It is argued on one side that it is only human nature for those who are going to spend money on the proposed building to reserve to themselves the right of ultimate selection; while, on the other hand, it is asked, What is the use of taking professional advice unless it is adopted? In regard to the first, it should be borne in mind that in almost every competition the promoters do not spend their own money, but that of ratepayers or subscribers, and that they consequently are only agents between the capitalist and the profession; while, in regard to the other view, it does not seem to me to be a sequitur, however desirable, that because you call in professional advice you are bound to act on it. I confess, however, that my sympathies are all in favour of unreserved powers being conferred on the assessor. If it is desirable to secure expert skill in the preparation of the competitive designs, is it not equally so in regard to their selection? At all events, I am satisfied that an assessor, when consulted as to the conditions, should allow no mistaken feeling of delicacy to deter him from securing, if possible, the ultimate decision for himself, on the ground that nothing will tend more to inspire confidence in competitors than the insertion of such a condition. He cannot, of course, insist on this, but if he exercises ordinary tact I am convinced that in nine cases out of ten he will succeed. Such has been my own experience, for in more than one case I have obtained this concession contrary to the expressed desire of

promoters. Whatever may be thought, however, as to the respective rights of promoters and assessors in this respect, there can be no manner of doubt that the interests of architecture are best promoted when the final decision is left unrestrictedly in the hands of the professional assessor. An apt illustration of this is the recent Pump Room competition at Bath, already referred to. The promoters reserved to themselves the ultimate selection, and in the exercise of this right adopted the design which Mr. Waterhouse had placed second in preference to the design to which he awarded the first premium. In view of the sequel, how infinitely better would it have been for themselves and all concerned had they adopted the award of Mr. Waterhouse! I did what I could to press this view upon them, but ineffectually. A unique feature in this competition—and one which I trust may remain so—was the circumstance that the competitor who was placed second by Mr. Waterhouse, and whom the promoters determined to place first, turned out to be an official of their own who had himself drawn up the conditions. One can scarcely conceive a greater act of impropriety, or one more absolutely unfair to other competitors, and yet a proposition was actually made to the effect that a second competition should be instituted between the three competitors selected by Mr. Waterhouse, one of whom was the official in question. My advice was sought in regard to this proposition before it was brought forward, and it was given unhesitatingly to the effect that there was only one course to pursue—namely, to adopt Mr. Waterhouse's award in respect of the design he placed first, to disqualify the second, to give the second place to the design he placed third, and to ask him to select a design to take the place of the latter; further, that in any circumstances the offence of the official in question was so grave that he should be absolutely precluded from having any further connection with the matter.

Another illustration of the advantage of the decision of the assessor being final occurred recently. The conditions had been issued and the designs received before I was consulted. While leaving my judgment free—for otherwise I would not, of course, have accepted the appointment—the promoters requested me to consider the designs in a recommended order of merit. It so happened that as regards such order the first had to be last, and the last first, or nearly so, for the design which was far and away the best in every respect, and which I accordingly placed first, was last but one, and the one which beyond comparison was the least meritorious occupied the first place in the suggested order of merit! It is satisfactory, however, to add that the promoters appreciated the reasons which I put before them for my selection, and at once adopted my award.

The relation which competitors bear to one another is, or should be, so simple and clear as not to require definition, and yet a recent instance demonstrates that this is not necessarily the case. We expect, and rightly expect, fair dealing on the part of promoters; and they and we have the same right-neither more nor less-to expect fair dealing on the part of competitors. The unmistakable course for competitors to follow is to comply strictly with the spirit and the letter of the Instructions. When conditions are properly drawn, there should be neither doubt nor difficulty in doing so. Such obvious procedure was singularly disregarded in the case of a competition held not many months since. The conditions were evidently drawn with the intention of precluding any chance of the identity of competitors being disclosed, and yet I regret to state that an architect, who at the time was a member of one of our Allied Societies and an Associate of the Institute, did not scruple to contravene the conditions by disclosing his identity—not, it is true, by signing his drawings, which would have been manly, though perhaps quixotic in view of the conditions-but by means which we could not but condemn, and which were indignantly disowned by his provincial brethren. I need scarcely add that the architect in question is no longer an Associate of the Institute, nor a member of the Allied Society: so far, well; but the pity is that the

credit of the profession should have been even temporarily tarnished by such conduct on the part of one of its members.

CRITICISM.

Those of you who possess literary ability may sometimes find yourselves placed in positions of delicacy and difficulty in relation to your professional brethren. A facile pen is an acquisition greatly to be desired when guided by truth, knowledge, and charity; it becomes a dangerous power when influenced by prejudice, envy, or ambition. Nothing is more easy for one possessing this power than to write sharp philippics which will insure an approving laugh from the unthinking—but what of the keen wound they may inflict on some sensitive nature? Nothing is so easy as to write disparaging criticisms—for the discovery of real merit calls for study—but what if they are wide of the mark and suggest misleading conclusions? No one should venture to criticise the work of others without first honestly trying to place himself in the position of the author of the work criticised, and to realise the difficulties he had to contend with. Viewed from a general standpoint, a work may be severely censured, which, regarded in the light of the circumstances in which it was conceived, may rightly be accepted as a triumph. This is specially true as regards architectural criticism. How often do our critics and reviewers strive to realise and to make allowance for the difficulties and the hindrances which surrounded the inception or the execution of the work criticised? How often do such considerations influence the pens of ready writers? Alas, for the rarity of Christian charity! It is to be feared that the literary reputation of the critic is too often the influencing motive, regardless of the feelings of the author, and of the difficulties he had to contend with. Be assured your criticism of the work of others will be none the less pungent, and will be all the more appreciated, if your pen is divorced from prejudice and thoughtlessness, and inspired by truth and knowledge, seasoned with brotherly kindness.

WITNESSES.

You may be called on to aid by your testimony as experts in influencing judgment for or against your contemporaries. It has ever been—and I suppose it ever will be—the case that men will differ. Even the highest code of morality anticipated this in the qualified injunction, "If it be possible, as much as lieth in you, live peaceably with all men." No doubt there are some to whom the injunction does not apply, inasmuch as to live at peace with any one seems to be with them a sheer impossibility; but even with those who are peaceably disposed, circumstances will occasionally arise, involving a principle which they cannot concede, and which render it necessary to appeal to the help of others either in law or in arbitration. I cannot claim to speak on this subject as an expert, my appearance in courts of law having happily—although unfortunately, too—been restricted to the discharge of the wearisome duties of a juryman; but it has sometimes vexed me to hear some of my professional brethren, whom I knew to be men of probity, censured by others for appearing as witnesses and giving testimony against them. Such experiences, which are by no means restricted to the profession of architects, may be thought to be unedifying, and I confess that I regard the relationship as perhaps the least desirable, and certainly the most inartistic, which an architect can occupy; but yet I fail to see why the witness should be the subject of censure more than he against whom he testifieth. Is it not the fact that the last-named is frequently the original sinner? How can light be thrown on a purely technical point other than by the evidence of experts? and how can such evidence be obtained if none will appear as witnesses? How can questionable or derogatory proceedings be exposed if reputable men will not come forward to testify against them? Further, why should it be thought strange that men of the same craft should differ in the witness-box, so long as it is a patent fact that in scarcely any topic of

ordinary conversation in society will the same view be taken? In this relationship the rule of guidance appears to me to be clear and simple. Do not consent to give evidence as to the works or character of a brother architect unless you are perfectly sure that you can testify from the safe basis of experience, and in the honest belief that what you testify is truth.

ETIQUETTE.

No dissertation on the relationship in which professional men stand to each other would be complete without some reference to the subject of professional etiquette. We have heard etiquette condemned. We have been told of the triumph of prejudice and jealousy to the detriment of the welfare of client or patient. We have even heard whispers of the neglect of patients rather than the consultation with the rival practitioner which might have saved life. Such rumours—if indeed they are true—are at best but exaggerated indications of exceptions which prove the rule. Etiquette gives honour where honour is due; it rightly exposes impostors. Etiquette appreciates ability and encourages merit; it scathingly condemns the individual and the society that live on borrowed plannes, assuming virtue if they have it not. Etiquette generously extends the arm of sympathy; it would rather cut off the right hand than by word or deed injure others for the sake of personal aggrandisement. Etiquette recognises all honourable methods of advancement; it rightly looks askance at questionable expedients of self-advertisement, such as are too frequently resorted to. In a word, etiquette is the standard which uncrringly gauges the reputation of professional men: above the level of the gauge is to be found all that is honourable and commendable; beneath it, all that is grovelling and unworthy. In the Harveian oration delivered at the Royal College of Physicians last October by Dr. Pye Smith, this subject was so happily delineated that I cannot refrain from quoting the words of the Harveian orator:—" Professional etiquette really means "the observance of those rules which distinguish a profession from a trade, which make our "calling honourable as well as honest, which check the arts of advertisement and direct our "ambition to obtaining the suffrages-not of the public which cannot-but of our profession "which can judge truly; rules of conduct which are, in fact, nothing but the carrying into "daily practice of the golden rule, to do to others as we would they should do to us."

SIR FREDERIC LEIGHTON'S ADDRESSES.

Although my subject is the relationship that exists between members of our own profession, I must before closing crave your indulgence, while for one moment I stray beyond it, for the purpose of directing your particular attention as students of Architecture, to the very remarkable addresses on the arts, and more especially the architecture, of different countries, which have been recently delivered by one who is not a member of our profession. For many years we have been accustomed to regard Sir Frederic Leighton as a man of great parts and exceptional culture. To refer to his works as a painter would be superfluous; his claim to be a sculptor of no mean order is indisputable; and as if this were not sufficient, the subject of his more recent addresses to the Students of the Royal Academy has led him, as it were inadvertently, to demonstrate that in regard to the art of architecture he possesses an intelligent and a critical grasp of the subject second to no modern author. To few indeed is it given to combine with wide historical research and keen critical acumen, the indescribable literary charm of composing poetry in prose. Let me commend to your thoughtful attention the study of these singularly learned and graceful discourses.

In now attering my parting words to you from this chair, let me wish you God-speed in the elevating career on which you are entering, a career which is the unique embodiment of the ideal and the useful. In the pursuit of it you will not, it is true, be enfranchised from those hindrances, anxieties, and worries which are incidental to all human engagements; nor will you have as your goal the accumulation of wealth, which so many regard as the chief end of man, though it is far, very far, from being so in truth; but, if inspired by a generous spirit of devotion, such as should ever be the characteristic of the student of art, you will not fail to find in it as much pure enjoyment, and as much ennobling aspiration, as you are likely to attain in any avocation in which you could engage.—J. Macvicar Anderson.

REVIEW OF WORK OF THE TRAVELLING STUDENTS 1893, AND OF THAT SUBMITTED FOR PRIZES AND STUDENTSHIPS 1894. By Alexander Graham, F.S.A., Vice-President.

GENTLEMEN,---

It has been the custom in recent years to depute some member of the controlling body of the Institute to prepare a series of critical notes upon work submitted annually in competition for the Prizes and Studentships, and to embody such notes in the form of a short Paper to be read at an early Meeting of the new year. It is a privilege for any one to take part in such a proceeding, and it is my pleasing duty on this occasion to record the sense of gratification with which the Council have viewed the many beautiful drawings that now adorn the walls of the Gallery. It may seem an invidious task to play the part of a critic in any matters on which there is obviously divergence of opinion; but criticism in this room is intended for friendly hearers, and the motive of such criticism is solely for the encouragement of our younger brethren, to lend a guiding hand to those who are on the threshold of their career, and to promote that which is common ground for us all: the advancement of architecture.

The work under consideration may be classed as follows:—(I.) Measured Drawings and Sketches; (II.) Original Designs; (III.) Literary work in the form of Essays; (IV.) The work of the Travelling Students of last year.

I .- MEASURED DRAWINGS AND SKETCHES.

It is a matter of regret that the Institute Medal given for so important a branch of study as measured work should have attracted only two competitors, whereas the Pugin Studentship, which, it must be admitted, offers an almost unlimited field for the experienced sketcher, has enlisted the artistic services of six candidates of more than average ability. reason for this is apparent. Sketching is a fascinating pastime for any one who can use a pencil or a brush with ordinary facility. It enables one to exhibit at a friendly gathering a pleasing record of a well-spent holiday; it forms material for a pretty volume for the drawingroom table; and whereas geometric line drawings, devoid of pictorial effect, appeal only to professional judgment, sketches in any form are intelligible to the non-professional mind, whether male or female. But pretty sketches, simply as little pictures, have no practical value, nor will they help an architect in his daily practice. A few careful measurements of any portion of a well-designed building, showing the size and jointing of the masonry as well as its scale and surroundings, committed to paper on plan, section, and elevation, will prove more instructive and more useful than whole sheets of pictorial bits which may have attracted the eye at the passing moment. This truism has been so often propounded in this room as almost to require an apology for repeating it. Let us hope that pegging away in a good cause will ultimately have a beneficial effect.

As drawings of measured work nothing can be better than those of the north transept of Lincoln Cathedral, submitted by Mr. James R. Wigfull [A.] (Saint Hugh), to whom the medal has been awarded. Lincoln, with its charms of line and form and proportion, is always

attractive to the student as well as to the advanced architect; and although nearly every part of the structure which is worth sketching or measuring has been committed to paper in recent years, such drawings as these are very welcome as a valuable contribution to the portfolios of the Institute. They are exactly what measured drawings should be: clear, precise, full of meaning, and without any attempt to produce pictorial or meretricious effect. The other competitor, with the motto Universum Studium Meum, selected one of the subjects suggested, viz. the tomb of Henry III. at Westminster. The drawings have not failed for want of merit, but on account of the greater merit of the Lincoln drawings. The monument, which is interesting from an antiquarian point of view, has been very carefully delineated.

And here I would venture to suggest that measured drawings for which prizes have been awarded should be turned to more useful account than has hitherto been the custom. For nearly fifty years the holders of the Silver Medal have deposited in our Library a copy or reproduction of their drawings, and, consequently, there is a mass of useful material stowed away which is certainly accessible, but not easily so. These reproductions, it must be remembered, are careful delineations, line for line, of a large number of monumental buildings, many of which have been restored or disfigured in recent years or, in some cases, have perished altogether. Would it not be as well, therefore, to classify this good material and to adopt, for the future, some uniform system of reproduction? Such reproductions could be obtained at small cost; they should be of fair size, and should be bound up in volumes from time to time. As matter for study or reference they would be invaluable, and, I venture to think, the scheme would not prove unremunerative to the Institute from a financial point of view. Moreover, it would be an encouragement to younger men, who would thus become contributors to a work of exceptional and lasting interest.

The large number of sketches submitted by six competitors for the Pugin Studentship is a clear indication that there is no lack of energy in the rising generation, and that the power of sketching with facility is spreading rapidly through our ranks. It is impossible, however, in this necessarily brief notice to do justice to the merits of so many aspirants to distinction in this branch of manipulative art. Mr. R. Shekleton Balfour [41], whose measured drawings of Heriot's Hospital gained the Institute Medal in 1892, has been successful in carrying off this Studentship; and, we may add, has well deserved it for his admirable series of sketches in pencil and colour. Such good work as Ethelreda's Shrine at Ely, the series of drawings of the charming old bede-houses at Higham Ferrers and Lyddington, and that interesting specimen of early Italian art, the tomb of Benedict XI. at Perugia, are quite up to the mark. A word must be said for the excellent sketches of Mr. J. Paul Cooper, principally illustrative of Gothic architecture in Italy. It is a question whether such sketches, admirable though they be, are admissible for a Prize awarded "for the promotion of the study of the mediæval "architecture of Great Britain and Ireland." The founder of this Studentship was one of those men who regarded the duties and responsibilities of life, as well as everything he undertook, with exceptional gravity. There is little doubt that so earnest a thinker and so diligent a student of medieval work in this country was actuated by a desire that others should follow in his steps, and perpetuate the good work in which he himself achieved such marked success. It would be as well, therefore, if candidates paid reasonable regard to the intentions of the Founder, confining their attentions more especially to remains of mediaval buildings at home, rather than abroad.

These remarks are in some way applicable to Mr. W. Curtis Green's careful drawings of Ye Old Oak House, West Bromwich, which might be classed as mediæval, though some of the details give indications of work of later date. Portions of Gloucester Cathedral have proved attractive to Mr. Alfred J. Dunn, who has given a sheet of interesting drawings of the wax

paintings on the reredos in the Lady Chapel. But the pencil drawings are not all equally satisfactory, partly owing to want of precision, and partly to the adoption of drawing discontinued lines. This style of draughtsmanship is not to be commended, and should not be encouraged. For the second time Mr. Thomas A. Sladdin has unsuccessfully entered the lists with some excellent, conscientious work, such as the details of Fox's Chantry at Winchester; and Mr. H. C. Corlette [A.] gives some measured drawings of Sant' Anastasia at Verona, together with some beautifully-coloured sketches of the ornament in the vaulted ceiling of that noble church. A Medal of Merit has been deservedly awarded for such excellent work. These coloured sketches should be specially noticed, because they will give future candidates for the Owen Jones Studentship some idea of the class of colour work which the Institute desires to encourage, and which would have obtained favour with the distinguished founder of that prize.

No award has been made this year in the Owen Jones Studentship, on the ground that neither of the two candidates had attained that standard of excellence which had been maintained in previous years. Mr. A. T. Bolton's contributions were considered insufficient, and those submitted by Mr. T. Rogers Kitsell, the Tite Prizeman for 1892, did not altogether satisfy the judges, in spite of the merit conspicuous in many of them, such as the series illustrative of textile fabrics in the South Kensington Museum.

II. -- ORIGINAL DESIGNS.

The subject selected for competition for the Soane Medallion has brought ten candidates into the field with a large number of designs of varying merit. This much-coveted prize has been awarded to Mr. James Humphreys Tonge (Nil Desperandum) for a clever picturesque design and for a fairly workable plan. But it is puzzling to know what could have induced so capable a designer to carry cross walls right through the centres of a series of bay-windows. This occurs in no less than twelve places. These bays, which are conspicuous features in the quadrangle, are designed externally as one window and not as two separate windows. Another defect in the planning is the position of the water-closets, which are grouped together close to the main entrance gateway and are accessible only by passing in front of a sitting-room window. The conditions of the competition included the placing of these conveniences in a detached block. In its strictest sense this means a detached and isolated building, but the framers of these conditions may have meant that they were to be kept together as much as possible. Anyhow, this somewhat inelastic condition has proved difficult of solution, and though each competitor has tackled the subject in his own way, it cannot be said that the efforts of any one of them have been attended with marked success. It may be some consolation to Mr. R. S. Dods [A.], the author of "Quien Sabe," to know that his general design found almost as much favour with the judges as the one placed first. Its quiet collegiate character, the marked exercise of restraint in the treatment of wall-surfaces, and the excellent proportions of the gateway-tower are the most noticeable part of the design. Perhaps it would have been as well to have broken the long line of frontage of the inner quadrangle by a bay or projection, or by a different treatment of skyline; but it is difficult to judge of the pictorial effect from the one perspective, which is isometrical. Here, again, the condition as to the detached block has been met by placing the water-closets at the extreme end, and so far removed from one part of the building that some of the occupants would have to traverse a distance of about a thousand feet in one journey there and back. This cannot be considered convenient. In other respects, assuming that such a site could be obtained for a building with a depth of about four hundred feet, behind which is the college garden and beyond is the master's residence, the arrangements shown on the plan are workable. The hall and kitchen

offices are rightly placed, and the position of the Fellows' common-room has been well considered. A medal of merit has been awarded to Mr. G. S. Hill (White Star) for a picturesque group of buildings in brick and stone, drawn by a skilled hand. As a composition it would have gained by less elaboration and by the exercise of a little restraint in the treatment of the wall-surface. The single rooms for students with space for a bed, and with one angle screened off to form a pantry, scarcely comply with the instructions; but the positions of the waterclosets in octagonal blocks, with access from a corridor, may be said to meet the written requirements. For an excellent set of drawings and details submitted by Mr. Henry Mitchell (Black Lion) Honourable Mention has been deservedly made. As a matter of criticism it may be asked what purposes are served by the two towers, except for external effect, and whether convenience was considered in making the dining hall so very lofty. It should be observed that the pantries are without light or ventilation, although there would have been no difficulty in obtaining a sufficiency of light through narrow windows in the external wall; and, as an attempted solution of the problem of the water-closets already referred to, they are placed off the staircases somewhat after the manner now generally adopted in hospital construction. To meet this arrangement, which is not inconvenient, the corridor or cloister below is blocked with supporting piers, completely sacrificing the charming effect always produced by the long unbroken lines of a well-proportioned and adequately-lighted gallery or corridor. All the other competitors have attacked the subject in different ways, but with doubtful success. Planning is an art that with some men is almost a gift, while by others it is attainable only after long practice and as the result of much experience. Wasted space, in the form of loggias, pantries without light, staircases lighted solely by skylights, and water-closets in a central block forming a conspicuous feature on entering the college gateway, are a few instances of defective planning noticeable in many of these designs.

The style of architecture adopted by the competitors is much on the same lines, with the exception of one who has given a design of Jacobean character. The nature of the subject was necessarily restrictive in respect of style. Indeed, it may be said that the style of Collegiate buildings in a University town in England is almost traditional, although these traditions have been set aside on many occasions, markedly in recent years. Still, it could hardly be expected that so severe a type of Classic architecture as was in vogue when Soane, the founder of this Medallion, practised with such distinguished success, nor even the lighter forms of the Renaissance, which prevail in the chief cities of Italy and Spain, would have found favour in this competition. If any of the candidates had adopted such styles, it is highly probable that his labours would have been in vain. May we not, therefore, assume that the subject precluded a number of able men from taking part in the contest—men whose studies had been more particularly directed to the various styles of Classic architecture; and may we not hope that, in future years, the subject selected will be one that readily admits of every kind of treatment, and with some prospect of success! I am led to make this remark, in consequence of having frequently observed how much independent thought is noticeable in the original designs prepared for the Examination qualifying for candidature as Associate. It is true that many of these designs are not of a very high order; but they show the tendency of our rising school, and in that respect the movement deserves encouragement.

The Tite Prize has only attracted four competitors. One would have thought that so fascinating a subject as a Royal Mausoleum, to be treated according to the principles of Palladio, Vignola, Inigo Jones, or Wren, would have brought a larger number of candidates into the field. No one of the designs has attained such excellence as to evoke unqualified admiration, the merit lying almost as much in the plan as in any special skill in architectural composition. The prize has been awarded to Mr. A. R. Hennell (Semper Vigilans) for a simple

design after the manner of Palladio. The plan is meritorious, and the internal effect of the four bays with their domical roofs could not fail to be pleasing. No construction is shown, nor is it asked for; but it is presumed that the cupola, which is only 22 feet in diameter, rests upon girders over the gallery front. The external effect would have been better if the cupola had been about two feet larger; the only difference that it would have made internally would have been the reduction in the width of the gallery, but this would have been of no consequence. It is difficult to understand why the author of so creditable a design should have gone out of his way to break the pediment over the entrance doorway. Such a treatment is not to be commended. In the present instance, if the raking lines had been continued to the apex, and heraldic or other sculpture introduced in the tympanum, the building itself would have gained considerably in breadth as well as in general effect. The perspective drawing does scant justice to the design, and it is fortunate for the author that the merits of the composition and not the perspective had full weight with the adjudicating Committee. The design bearing the device a Red Cross is picturesque, but the architecture does not belong to any particular school. The general conception of the plan is meritorious, but it is doubtful whether an arrangement applicable to so large a building as the Invalides is suitable for an edifice of such very moderate dimensions. The staircase block, which has been made a conspicuous feature of the design, would not have a pleasing effect from many points of view; and the inner angle formed by the junction of the two blocks, one being circular and the other square, would require much more consideration than the author appears to have given to it. Another design, contributed by Wren, deserves notice as a study of the works of Wren. But the proportions are not those of the great master. The cupola is but a transcript, on a small scale, of the dome of S design after the manner of Palladio. The plan is meritorious, and the internal effect of the from, rather than contributes to, the general effect. It is a matter of surprise that none of the candidates were inspired by Bramante's charming little circular chapel of San Pietro in Montorio, which seems to lend itself to such a subject as a Royal Mausoleum. It possesses many of the characteristics of the school of Vignola; and, for subtle proportions, balance of parts, and pleasing outline has not been surpassed by any other work of its kind.

For the Grissell Medal there is only one competitor. This is a matter of regret, for the subject, a timber dome with a lantern, is within the scope of any man who has had a moderate share of practical experience. The result is not altogether satisfactory, for the drawings exhibited are incomplete in themselves, and the subject, although commenced on right lines, has evidently not been fully worked out. It is hoped that the same subject, or a similar one, will be given again, and that the author of this design will not be discouraged, but exercise his powers again with more fortunate results.

III.-LITERARY WORK IN THE FORM OF ESSAYS.

We now turn to the literature of the year in the form of ten essays of varying merit on "The Treatment of Sculpture in its relation to Architecture." On three occasions during the last ten years this Medal has not been awarded, once in consequence of no essays having been received, and twice owing to the work submitted having failed to satisfy the examiners. Last year was a case in point, when an experiment was made to test the literary powers of the rising men amongst us. The subject was a difficult one, and appealed especially to men of considerable culture and of high literary attainments. The result was unsatisfactory. This year the subject may be regarded as an easy one, evidenced by the fact that ten candidates entered the list for this honourable prize. After careful examination and studious perusal of an unusually large amount of manuscript and type-writing, the adjudicating Compercial examination of the careful examination compercial examination and studious perusal of an unusually large amount of manuscript and type-writing, the adjudicating Compercial examination and studious perusal of an unusually large amount of manuscript and type-writing, the adjudicating Compercial examination and studious perusal of an unusually large examination of manuscript and type-writing.

mittee decided in favour of the one bearing the device of a Crown and Thistle. The author of this essay is Mr. John Begg [A.]. Medals of merit have been awarded to Mr. C. Bernard Hutchinson [A.] (Nemo Repente), and Mr. Walter K. Shirley (The Godhead Fires), and Honourable Mention has been accorded to Mr. Percy Charles Campbell (Pandrosus). And here I should like to say a few words, in friendly criticism, upon the general character of these essays—not only those on the table before us, but on those submitted in competition in previous years. Essay-writing is a gift allotted to the few. To some it comes in earlier years by intuition, to others the facility is often attained by long course of study and diligent perusal of the few authors whose distinguished names are associated with this branch of literature. It is only on very rare occasions that a high standard of excellence, both in the material as well as in the composition, can be reached, and that standard has not, in the opinion of those who have read these essays, been attained in this last competition. There seems to be an idea, as exemplified in so many instances, that illustrations, mostly in the form of photographs, are the backbone of the composition, and that so many pages of descriptive matter, supplemented by a few comments, constitute an essay. Without any desire to undervalue the zeal and untiring labour that have been shown in a marked degree by so many competitors, or to discourage in any way the aspirations of those who will take part in this competition in the near future, I would only venture to suggest the study of the pages of some of our great essay-writers, and learn from them the form and method adopted in building up their work, as it were, from the starting-point.

IV.—THE WORK OF THE TRAVELLING STUDENTS, 1893.

We will now briefly consider the work of the Travelling Students of last year, noting, in the first place, the valuable labours of Mr. Banister F. Fletcher [.1.], the holder of the Godwin Bursary. As a practical study of a notable group of temporary buildings, the handsome well-illustrated volume before us, entitled "Report on the Columbian Exposition at Chicago, 1893," will take honourable rank as a work of reference. Many of the illustrations are familiar, but special attention should be directed to those relating to iron roofs of large span. They are clearly defined, and will prove valuable to those whose practice demands an intimate knowledge of this branch of architectural construction.

It is always gratifying to note the work submitted by prizemen of a previous year, and it is rarely disappointing either in quality or quantity. Men who have passed with distinction the ordeal of a first exhibition of their powers are not likely to fail in the expectation of their brethren; nor is the enthusiasm that prompted them to enter the lists likely to flag when the first steps are taken in a career of usefulness and honour. It cannot be said that any one of the prizemen of last year has failed in any particular. We therefore welcome them once more with a note of congratulation for so much good work well done. Mr. Arthur J. Bolton [A.], the Soane Medallist, has returned with some charming sketches and measured drawings of buildings in Spain. Nothing could be better than the pencil drawing of a reja at Burgos, and another of the stone lantern of the Giralda at Seville. We will pardon the omission of the terminal figure, which is probably inaccessible, but fully appreciate the labour and inconvenience in measuring the work shown on the drawing. Then we have a careful elevation of the Cathedral tower at Granada, and, amongst others of equal excellence, details of the cloister of the Collegio Irlandeses at Salamanca—a good specimen of Spanish work. The drawings sent by Mr. John J. Joass, the Pugin Student, will compare favourably with the work of his predecessors. Attracted especially by the buildings of his native land, Mr. Joass has given a series of drawings of great interest. The drawing of a cabinet at Holyrood is deserving of notice, and so are those illustrating Craigevar Castle. It is a question whether such a building can

be classed as mediæval in the sense in which the founder of this Studentship would have interpreted it. Mr. Charles A. Nicholson, the Tite Prizeman, has brought a series of beautiful drawings in pencil and colour, the result of a tour in Italy. The view of Santa Maria dei Miracoli is quite up to the mark, and the fine perspective interior of Sant' Anastasia at Verona is specially noticeable. Taking this drawing as a companion to Mr. Corlette's details of the ornament, already referred to, we obtain an excellent idea of the form and colour of this noble church. Mr. Alfred H. Powell, the Owen-Jones Student, exhibited such marked appreciation of colour in the drawings submitted last year, as well as a high order of draughtsmanship, that it seems unnecessary to say that the standard of excellence, shown by a series of beautiful drawings, has been fully sustained. A glance at the screen on which they are exhibited will more than satisfy the good opinion previously expressed of Mr. Powell's artistic work.

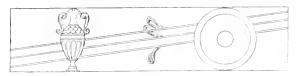
These, Gentlemen, are the somewhat imperfect notes on the students' work of the year, penned in good faith, and with the sole desire to encourage, and not to dishearten, our younger brethren in their onward career. I will conclude with a caution—not to devote too much time to the production of sketches, simply as little pictures. Draughtsmanship, after all that can be said in its favour, is but the handmaid of architecture, and sketching is a pleasant means to a nobler end. Some of the greatest works of mankind were erected in an age when draughtsmanship, as we understand it, was utterly unknown. It is in the application of what we see and sketch that the true test of our abilities as architects is to be found.—Alex. Graham.

THE LATE CÉSAR DALY.

Hon. Corresponding Member (Paris), 1844-94; Royal Gold Medallist 1892.

The President, addressing the General Meeting of Monday the 15th inst., said that with very sincere sorrow he intimated—what possibly some might have learned already—that M. César Daly, Honorary Corresponding Member, and Royal Gold Medallist for 1891, died at Wissous, near Paris, on Thursday last, at the ripe age of eighty-three. Mr. Macvicar Anderson added that as he had so recently described the career and the works of M. César Daly he need not refer to them further, but he could not allow the present occasion to pass without recording the sorrowful regret which all who knew César Daly experienced at his loss. When presenting the Royal Gold Medal, some eighteen months since, the President indulged the earnest hope that it might please God to spare their friend for some years of useful activity. The hope had been only to some extent fulfilled. Though full of years, he had been taken earlier than those who admired his life and work could have wished. It seemed but yesterday since the dear old man, standing there by his side, delivered an address full of youthful vigour, sparkling with energy, overflowing with thoughtful and suggestive inquiry; an address which struck every one who listened to it as being, for a man of his years, a most brilliant and remarkable performance, and which, as they had afterwards learned, was perused by Her Majesty with much pleasure. César Daly had now gone, but his example remained—a noble example, which he thought they might all emulate, for it afforded the example of a life of constant labour, of ceaseless, indomitable, indefatigable energy, and of ardent devotion to the interests of the Art he loved so dearly. The President could not but regard the memory of César Daly—alas! that it should be but a memory—alike with respect and with affection.

Both the Paris Figaro and the Soleil, of the 13th inst., devote much space to a eulogy of the deceased architect; and the Soleil asserts that it was he who designated his adversary, Viollet-Le-Duc, as a proper recipient of the Royal Gold Medal awarded to the latter in 1864. César Daly, elected in January 1844, on the nomination of Sir Charles Barry and Professor Donaldson, had been fifty years an Hon. Corresponding Member.



CHRONICLE.

The Prizes and Studentships 1894.

The two Royal Institute Silver Medals have been gained by Mr. John Begg [A.] and Mr. James R. Wigfull [A.] of Sheffield: the one for an Essayon "The Treatment of Sculpture in its relation to "Architecture," the other for measured drawings of the north transept of Lincoln Cathedral. The Soane Medallion has been won by Mr. J. H. Tonge, of York; the Pugin Studentship by Mr. Robert Shekleton Balfour [A.]; the Godwin Bursary by Mr. Harry Percy Adams; and the Tite Prize Ly Mr. A. R. Hennell. Subsidiary Medals, sums of money, and Certificates of Henourable Mention have been awarded, in the instances respectively of the Royal Institute Silver Medal for Essays, the Soane Medallion, and the Pugin Studentship, to various gentlemen; and particulars of the same will be found on page 198, as well as in Mr. Graham's review [pp. 177-183].

The Essay Medal.

The President, in presenting the Silver Medaland cheque to the author of the winning essay, explained to the Meeting of the 15th inst. that the original value of the prize was a silver medal and five guineas; but some few years back the Council had increased it from five to twenty-five guineas, with the view particularly of encouraging literary merit among the students of architecture—and not merely young students, but any students under the age of forty years. The President trusted that the remarks made by Mr. Graham on the subject [pp. 181-82] would not be altogether lost sight of; and that future competitors for the Essay Medal would devote themselves not so much to illustrating the subject of their Paper by sketches, prints, or photographs, as to perfecting the literary part of their work.

The late Carl von Haserarer [Hen. Corr. M.].

Baron Max von Ferstel [Hon. Corr. M.], a son of the distinguished architect who received the Royal Gold Medal in 1882, has kindly sent from Vienna a notice of the professional career of Baron Carl von Hasenauer, who was elected an Hon. Corresponding Member in 1867, and whose death in his sixty-first year occurred on the 4th inst., after a short illness. The Baron's account, written in English, of his deceased confrère, is as follows:—

He was without doubt one of the most eminent of those architects who had the luck to work with Ferstel, Hansen, and Schmidt at the architectural development of modern Vienna. Born 30th July 1833, in Vienna, the son of well-to-do parents, he studied at the Academy of Arts under Van-der-Nüll and Siccardsburg. Even at that time his unusual talents attracted the attention of his masters, and in his twenty-first year he gained there the first prize for architecture, and a scholarship, which enabled him to spend several years in studying the well-known monuments of European architecture. His first step was in taking part in the competition for the construction and decoration of the principal front of the dome at Florence, on which occasion De Fabris gained the first and he the second prize. Shortly after, he obtained the third prize in the international competition for the erection of an opera-house in Vienna (1861). At that time the Ringstrasse, which was laid after the demolishing of the fortresses, moats, &c., gave splendid opportunity for the erection of fine palatial buildings, in which Hasenauer took an important part; one of his principal buildings of that time being without doubt the Lützow Palace in the Giselastrasse, which is the most characteristic specimen of his artistic style.

The buildings for the International Exhibition of 1873 give proofs of his great architectural decorative talents, which enabled him to carry out even the most colossal and substantial buildings in elegant and graceful form. At the same time Hasenauer took part, with Ferstel, Hansen, and Löhr, in the competition for the Museums; Ferstel and Hansen made plans according to their individual artistic tastes without respect to the rules laid down by the committee-rules which may be said to have been very unskilfully made. Although the committee unanimously pronounced the plans of both Ferstel and Hansen to be excellent and of great importance, still the jury could not see their way clear to carry out either of them. Amongst the plans, which were made in accordance with the said rules, those of Hasenauer were doubtless the best, and in consequence were recommended by the jury. Gottfried Semper, who had just completed a similar building most satisfactorily in Dresden, was called to Vienna to look over the plans of Hasenauer, and assist him in the erection of these monumental buildings.

In connection with Semper, Hasenauer made the plans for the new Burgtheater, and the new Hofburg. After Semper's death Hasenauer completed the Museums, the Burgtheater, and nearly finished the left wing of the new Hofburg before his death. The plans for the country residence built by order of the Emperor Franz Joseph at Lainz, were made and carried out alone by Hasenauer. Unfortunately, neither the public nor the architects know much of this building, as it is placed in the middle of an immense wood, to which visitors are not admitted.

Hasenauer was favoured more than his colleagues by fortune, and honours and decorations were showered upon him. No doubt he owes his successful career to his great talents, but his pleasing and most attractive manners, and his connection with the influential family Genotte-Markenfeld (his wife was a Genotte), as well as an immense circle of powerful friends, furthered

him in every way.

It is very difficult, almost impossible, to pass judgment upon Hasenauer as artist and architect, not only because it is always difficult to judge impartially so soon after death, but because his most eminent works were carried out in connection with Semper, and the part which the latter took has not yet been decided. Hasenauer himself spoke unwillingly on the subject, and it was certainly against his interest that so many of his friends tried to deny Semper any merit in the Museums, Burgtheater, and Burgbau.

For the general public the ignoble quarrel which arose after Semper's death on this subject may have had a certain importance, but for professional men, who are acquainted with Semper's innumerable monumental buildings, especially in Dresden, there can be no question as to the part taken by him in the above-mentioned works, which bear so distinctly the mark of the great master that it is not necessary to see Semper's own sketches, drawings, and studies to detect his part therein; as, for instance, the principal front of the Burgtheater. British architects will doubtless remember Semper's plans for a Wagnertheater in Munich. The plans were not executed, but could very easily be adapted for a similar task in Vienna. In both places the site and conditions were the same, and so we see the characteristic wings which Semper projected for Munich car red out in a similar way in the Burgtheater at Vienna.

In fact, it is a useless task to try to settle the part taken by one or the other; it required, at all events, a thorough artist and an eminent architect to work with Semper and take his place afterwards. Hasenauer's death is a great loss for Vienna, so much the more as the Burgbau is unfinished, and it is to be feared that the task of completion will be placed in the hands of a technical official and not in those of an artist.

The late Lord Crewe [H.A.].

Lord Crewe, who died on the 3rd inst. in his 82nd year, had been an Honorary Associate of the Institute since 1877. Born in 1812, he succeeded to the title and estates on the death of his father, the second Baron, in 1835. Thoughthe estates (situated chiefly in Cheshire, Staffordshire, and Leicestershire) at that time were heavily incumbered, he succeeded in carrying out great improvements—restoring or rebuilding farmhouses, erecting cottages, and building and endowing schools. The gift of a site for a town and market-hall in Sandbach, the assignment to the Local Board of Health of the tolls due to him as lord of the

manor, and the erection of a drinking fountain were among his most recent benefactions. By his death the title becomes extinct.

The Liverpool Society-Students' Lectures.

The syllabus to hand of the weekly lectures delivered to students of the Liverpool Architectural Society affords good evidence of the vitality of the Society, and of the devotion of its members to the work of training the rising generation of their profession in the principles and practice of their art. The classes have been formed to assist students in preparing for the Intermediate Examination of the Royal Institute, History of Architecture being taken by Mr. T. Taliesin Rees [A.]; Building Construction by Mr. J. W. Blakey [A.]; Specifications and Quantities by Mr. H. L. Beckwith; Mouldings, Features, and Ornament by Mr. C. E. Deacon [F.]; Sanitation by Mr. T. Harnett Harrisson [F.]; and Theoretical Mechanics and Stresses by Mr. Robert J. Angel [A.], Grissell Gold Medallist, 1891. Work is given to the students to be executed at home, and is corrected by the lecturers, and marks are awarded according to merit. Mr. C. W. Harris (pupil of Mr. Henry Hartley [F.], President of the Liverpool Society), obtained the prize for best work done during last Session. Mr. R. J. Angel [A.], the Hon. Secretary of the Students' Committee, is also lecturer on Building Construction at the School of Art Section of the Technical Institute, Warrington, where classes provide instruction in the science and art of building, and where the student of architecture is afforded an opportunity of acquiring a scientific and technical insight into the various cognate industries.

Technical Instruction for House-Painters.

In January of last year a National Conference of Painters and Decorators (masters and men) was held under the auspices of the Painters' Company, in their old Hall, in Little Trinity Lane, E.C. It was attended largely by representatives of distant towns (including Edinburgh, Glasgow, and Belfast), as well as by Londoners. After three days' discussion a Committee was appointed to draw up suggestions: on the one hand, for forming some sort of General Institute or Society of those connected with the painting and decorating trade; on the other, for some guiding scheme of technical instruction for young painters. The suggestions were accordingly embodied in a printed circular, which has, it appears, been sent to employers and trade societies throughout the country, whose opinions are invited, so as to ensure, as far as possible, general approval. Mr. J. D. Crace [H.A.] was Chairman of the Committee. As one working result, the Painters' Company have instituted a course of four lectures on Painting Processes, to be delivered in their Hall: the first was delivered on Monday. These are especially for

young working painters. The Painters' Company, it is understood, have also accepted the invitation of the Carpenters' Company to join them in providing classes of instruction for young craftsmen, at the building recently taken for the purpose in Great Titchfield Street (formerly the School of Art), and their committee are expecting to open a class for painters by the end of this month. This will be for training in the processes of the craft, not for such instruction as can be obtained in Schools of Art.

The "Esthétique des Villes": a Civic View.

The Lord Mayor has sent to the Institute a pamphlet written by the Burgomaster of Brussels on the Esthetique des Villes, and forwarded by him to his Lordship, with a letter in which the author states that he has attempted to "rechercher "dans ce travail tous les facteurs dont les ad-" ministrateurs de villes doivent tenir compte, " quand ils sont appelés de les transformer." The pamphlet, the author of which is named Ch. Buls—who writes with evident knowledge of his subject, and who has seen the Parthenon, and the more important ruins of ancient Greece, as well as Vienna and the great European capitals—is interesting from a literary point of view, and may afford occasion for notice in an early issue of the JOURNAL.

Additions to the Library.

In a recent issue of the Journal there was occasion to mention a series of pamphlets which had been presented by their author, Professor Meldahl [$Hon.\ Corr.\ M.$]. He has generously followed up these contributions by others of an important kind, which, as he suggests in a letter, are likely to be of interest to architects of this country, as showing how young architects are pursuing their studies in Denmark, and how the old country churches of that country are constructed. Professor Meldahl's last donation consists of (1) two parts, in folio, of the Studierejser af Kunstakademiets Elever-travelling studies of the Fine Art Academy (Copenhagen) students each part containing twenty plates of drawings of plans, elevations, and details of various Danish buildings, ecclesiastical and secular; (2) Eight parts of Tegninger af Eldre nordisk Architektur -- illustrations of old northern architecture—each part containing some twenty plates of engravings of miscellaneous and interesting work bearing on architecture. The engravings of this admirable series are well executed, and their comprehensive character may be estimated by the fact that they include, besides the plans and elevations of buildings, reproductions of pulpits, fonts, panelled rooms, tombstones, memorial tablets, intricatelycarved cabinets and chests, specimens of ironwork, doors, doorways, chalices, and other ecclesiastical ornaments; (3) Bornholmske Kirker the churches of Bornholm—is a volume in folio,

illustrated by thirty-six plates of drawings of churches of the Island of Bornholm—one of the most interesting and picturesque of Denmark's possessions. There are twenty-one churches on the island, and fifteen of the most remarkable of these were measured and examined under the direction of Herr Hans J. Holm, by the instructions of Ministeriet for Kirke og Undervisningsvæsenet, the result being the present interesting volume. The illustrations are accompanied

by a brief explanatory text.

Mr. J. Alfred Gotch [F.] has contributed through his publisher (B. T. Batsford, London) the sixth and final part of his Architecture of the Renaissance in England. This part contains thirty plates and forty-one illustrations in the text, together with title-pages, indexes, &c., so that the work is now complete for binding. The author and publisher, who, it should be remembered, have been assisted in this undertaking by Mr. W. Talbot Brown [A]., are to be congratulated upon having exceeded the promises contained in their original prospectus by some twentythree plates, and by eighty illustrations in the text, without additional charge to the subscribers. In a note attached to the cover Mr. Gotch, while acknowledging the copiousness of the illustrations, speaks rather diffidently of the text as only touching the fringe of the subject, and suggests a prospect of his dealing more at length, at some future time, with the influence of the Renaissance on England. Mittelatterliches Holzmobiliar, edited with text by Jacob von Falke, contains forty plates of mediaval furniture of German, French, Italian, and the workmanship of other countries. Mr. J. J. Stehlin-Burckhardt has forwarded his Architectonische Mittheilungen aus Basel, a handsomely bound folio, illustrated by plans, elevations, and details of the Courts of Justice, Academy of Arts, Post Office, State Theatre, and numerous other buildings in Basle.

Mr. Woodward [A.] has sent a Plan, Views, and printed descriptions of some Improvements which he proposes should be effected at Charing Cross.

Additional copies of a useful book of reference, Pewtner's Comprehensive Specifier, have been added to the Reference and Loan collections. Professor Unwin [H.A.] has forwarded the twentythird and twenty-fourth Annual Reports of the Massachusetts State Board of Health; and Mr. John Hebb [F.] has presented a brief history by Mr. H. Littlehales of the Benedictine nunnery founded in the tenth century at Romsey in Hampshire. The latest quarterly part, No. 45, of The Journal of Indian Art (W. Griggs, London) contains an interesting article by Mr. B. H. Baden-Powell, based on a paper from India by Mr. B. A. Gupte, on The Silver Workers of Cutch (Western *India*), accompanied by numerous illustrations of silver metal-work, which, for the most part, is notable for the delicacy of its ornamentation.



THE OWNERSHIP OF DRAWINGS MADE FOR AND BY AN ARCHITECT.

By the late John W. Papworth.*

A letter is a document which, by means of words, attempts to supply to the reader some information from the writer; even after signature this, until delivery to the Post Office, or until delivery by some other means (the difficulties respecting a letter in transitu need not here be discussed), is held to be the absolute property of the writer, unless by agreement he has previously parted with that property. After delivery (if there has been no such agreement), either party may by injunction prevent the publication of the document; but before proceeding to that step, in cases where the Post Office is not the medium of transmission, the delivery to the reader or to an agent specially appointed by him to receive the document must be proved by the recipient. An architect's drawing has the nature of a written document, and is invested with all the qualities of a letter, as soon as it has received his signature, or the formula, "To be returned to the office of "A. B.," &c., or even "From the office of A. B.," &c. A drawing is any combination of two or more lines which expresses form more clearly than any amount of description could do. In exception to this definition, some persons might produce copies of photographic pictures, and inquire where the lines are to be seen; others might bring forward shadowed representations of buildings in which no lines appear. The reply is, that no man could have made such copy or such shadowed drawings without first drawing the lines, which have subsequently been erased.

Architectural drawings are technically known as

Sketches of plans, or sections, or elevations, or perspective views; Draughts (this term is nearly obsolete, because the words "rough plan," &c., are too generally used in an office for "rough draught "of plan," &c.), sometimes scaled to a modulus; General Drawings, always scaled to a foot; Detail Drawings, either at full size or at an aliquot part of that size; Show Drawings, for exhibition to the client, to the architect's friends, and to the public; a drawing in any one of these classes may be either "rough" or "finished," but is not necessarily an original design—the words "design" and "drawing" are so frequently used with indifference as to their separate meanings, that it may be useful here to insist that a design means a project, an idea, which may be very good although expressed in a bad drawing, just as, on the contrary, good drawing may be wasted upon a bad design; and Copies or repetitions, which may be either counter-drawn by transfer, or duplicates by tracing or by using the rule and compasses, or enlarged or diminished copies produced by hand or by machinery. The term Working Drawings once meant the general drawings drawn so large as to show construction, or to admit of minute dimensions to save mistakes by workmen unused to scales; but now all detail drawings may be included. As to Original Drawings, all from which copies are made are original: however, since an assistant's work has been allowed to pass under the master's name, an original drawing by the master is one which he has himself made. Competition Drawings are finished general (and sometimes detail) drawings submitted in competition with other architects; in a few exceptional cases drawings of the design to a small scale have been at first required, and a selection has been sealed, for verification by the advertising body, from which the larger drawings have been made, and again submitted in final competition. Prize Drawings are the successful Competition drawings, although the present day speaks of "premiated "prize drawings" when the competition has been made as a scholastic exercise for a small sum of money, or for a medal, or for books, &c., commonly called a "prize."

When the conditions of competition include a provision that the prize drawings shall become the property of the donor of the premium, without the addition of words to the effect of "on delivery of "the premium," the architect enters into a speculation of making drawings for approval, purchase, and payment. The drawings on approval become the property of the donor of the premium, who in the present state of the law of artistic copyright has the power to sell, or lend, or publish them forthwith, without fear of any interference on the part of the architect, who must formally sue the donor for the premium as a debt, unless the architect by some indiscretion has deprived himself

even of that remedy.

^{*} During the period when the important subject of the ownership of drawings was under consideration-a question raised by the demand made by the Office of H.M. Works, &c., on the late Edward Barry, for the drawings made by his father in carrying out the designs for the Houses of Parliament—my brother, the late John W. Papworth, undertook to collect the views generally held by members of the profession, and wrote them out with comments. His notes, which were found, at his death, among numerous other papers in his desk, are given in the above posthumous article. See for other articles on this subject Vol. VIII. N.S. pp. 169, 188, 231, 254, 404.—WYATT PAPWORTH.

It is clear that a body corporate having a common seal may advertise for competition designs, receive them, approve two or more sets of drawings, and refuse to proceed to the adjudication of the premiums (on the ground that the advertisement was not a copy of a contract made under seal) until a more satisfactory opportunity; yet the architects cannot compel the body corporate to return the approved drawings; and it is doubtful whether they could compel them to proceed forthwith to adjudication and payment; yet the drawings would be legally in possession of the corporation, if not legally its absolute property.

The drawings made by an architect's assistant in the architect's office absolutely belong to the architect until he parts with his property in them, and this whether the assistant be paid (even if there be a debt due to him in respect thereof) or otherwise. This property depends on the fact that the drawings are made on paper, or vellum, &c, provided by the architect. Hence the clause in Articles of Pupilage that the pupil is to provide all

instruments and materials except paper.

The drawings made by an architect's assistant out of the office for the architect absolutely belong to the architect until he parts with his property in them, even before he has paid to the assistant the price of the work. This property may arise in one of two ways: either the drawings are made on paper or vellum, &c., provided by the architect, in the same manner as a solicitor supplies to his surveyor the parchments on which the surveyor is to make duplicate drawings; or else the drawings have been made on paper or vellum, &c., provided by the assistant, and the architect, by agreeing to have them, acquires the property in them; but in both cases the assistant has a lien upon the drawings, or any part of them, for the whole price, unless he has agreed to receive the price at a future day, or takes security for the debt.

Not to omit what may at first sight seem to be an almost extinct branch of the subject, it may be observed that a century or more since, when vellum was more used, paper much dearer, and assistance perhaps worse remunerated than at present, agreements as to the uselessness of an assistant's work were settled by destroying the material, a habit said to have been preserved to his later years by Sir John Soane, who did not hesitate to ask the assistant or pupil for his penknife, with which Soane reduced, at two diagonal cuts, the drawing into four triangles. Even now, the destruction of a pupil's drawing is taken as the strongest mark of the architect's disapproval. But of late years the principle caveat emptor has been so trinumphant that if the architect does not take care to see satisfactory samples of his proposed assistant's skill, he had better not refuse an unsatisfactory drawing, but (after pointing out the defects and getting them rectified as much as possible) accept, without manifesting displeasure, the finished work

which is tendered to him. And if the architect, during the progress of work done out of the office, should see evidence of carelessness, incapacity, or ignorance, he had better say that the drawing at that stage will suit his purpose, as if it were completed; and, upon payment even of the price originally fixed, withdraw it. To leave a drawing under a continuous lien is not satisfactory.

An architect is paid for his services either by salary, by fee, by commission, or by time. The term "salary" applies to all payment (generally as an annual one) for continuous professional services necessary to the satisfactory discharge of the duties of the position held by the salaried architect, whether such services be rendered daily or only occasionally, and whether the hours of work be fixed or left to his discretion. There may still occur a case in which an amateur gives to an architect just free from pupilage a moderate salary to look after an estate generally, and to assist in improving it and the mansion. In such a case all finished drawings absolutely belong to the employer, whoever provided the materials, but they pass to the architect by verbal or written consent, being, in fact, a part of the patronage which supplies him with a portfolio of (not academical) drawings of work that has been, or has been likely to be, executed. All unfinished (in rough) works, such as dimensions in a note-book, measuring-book, or field-book, with calculations therefrom and abstracts thereof, belong to the salaried architect; he has always had it in his power to throw them aside (replacing, if necessary, the material) if he suspected them, and so preferred to take the reproach of indolence rather than of carelessness, ignorance, or incapacity.

There is, next, the case of the amateur who takes into residence, or pays by salary, or both, a clever but yet unsuccessful architect to draw out what the amateur designs, or thinks he designs, or wishes to see designed and drawn. The patron will (perhaps jealously, certainly legally) insist upon securing every scrap of paper used by the architect in setting forth an idea, and every alteration suggestel until the completion of the finished drawings, even if these run into complicated details at full size, or highly-finished perspective views. This patron naturally holds that it is not honourable in his salaried architect to make tracings of the finished drawings, either in or out of office-hours. This arrangement is suce to fail unless an office-room

and fixed hours are part of the bargain.

The last phase of salaried business to which attention need be given here is that of the architect attached to a public building or institution. If he act as steward, which in some places is part of the business, his ledgers belong to the office; and if his work includes building, his contracts and bills examined, or ready for examination, belong to the office. But at the death or departure of the architect, all rough work excepted in the positions

above mentioned, ought not to be asked for by the client, who should be satisfied to think himself fortunate in getting any finished drawings made in explanation of the contract drawings for new works in progress. As to designs for new works proposed, the successor should prepare his own design for his own work, and not lazily avail himself of the labour (which he may misunderstand) of his predecessor, who, if alive, is not to be damaged in reputation by having his work spoilt, or, if it be unsuccessfully executed, to be made responsible for the liabilities that may occur.

When an architect takes a salary for the guardianship of a building, the drawings which he may make of defects in the existing structures for the purpose of pointing out them and the remedies ought to remain in the office for his successors. But all drawings made outside the usual hours of work where daily service is required, or even (by open or tacit agreement for an equivalent) during those hours, or in the intervals of occasional service, for any object apparently connected with the salaried situation, but really foreign thereto, belong entirely to the architect until he parts with them for a fee or other consideration.

The term "fee" applies to payment for a report, whatever be the nature of the document, and whether illustrated or not by drawings. property in finished work done for a fee is generally supposed to pass so entirely to the client when he accepts the work as to prevent publication by the reporter without the consent of the client, while any attempt on the part of the reporter to prevent publication by the client would be reprobated by his professional brethren. The plan, as of an estate, made by a surveyor is in fact a report of the shape, extent, and nature of the estate, and the drawing is itself his report; but all wrongly plotted plans or rough draughts belong to the surveyor, and would not be yielded to the client by any man of respectable position in business. If they were demanded by a troublesome client, the surveyor would probably destroy them, and communicate the fact of their non-existence as his reply to the demand. So, also, if an architect is required to report on the condition of a building, or part of a building, his rough draught of his report might be demanded by a troublesome client; and, inasmuch as the architect's first impressions might have been modified by subsequent surveys, the destruction of the rough draughts of reports would be prudential. Indeed, destruction seems to be the only way by which to promptly meet a demand for papers upon which statements apparently incriminating the architect or surveyor might be founded. It is for the finished work, not for the preliminary studies, that the amount of the fee is fixed; otherwise the architect or surveyor might tender the rough work, or studies, and require in exchange the fee; and the order of the client to stop and deliver the unfinished work on part payment of the proposed fee would be as futile in an action against him for the entire profit of the transaction as if he refused to accept the

finished work without the rough work. An architect's contract with his employer, where the former works on commission, is that the architect will make the usual professional charges, and will be liable to the client for any responsibility incurred by himself or assistants. But the client and his friends understand the matter very differently. They say: "Architect A "contracted with friend B to build B a house for "£900; yet it has cost £1,200 and ruined B." The architect says that there was not any contract in that case; that the original order was for a £900 house, that his original sketches were for a £900 house; that B, with his family, made additions in size and quality to match what they saw at their neighbour's; that the lowest tender was £1,200, and that B said, "Cut it down as much as "possible, but I shall have something more like "what I want than you at first designed;" and that, in process of construction, the builder gets orders from B to an amount that fills up the cutting down. Furthermore, our lawyers fall into the verbal trap, and insist on supposing that the architect's contract drawings bind him to the client; on the contrary, the client is bound by them to the builder, and the builder to the client, no variations being usually allowed unless ordered by the architect, or architect and client, in writing. When an architect takes a commission for the erection (I omit the words "the alteration") of a building, he undertakes the production of such a building to the best of his ability, which may improve as the work proceeds. He may write what directions he likes, and so describe his plan as to make a drawing unnecessary (remembering Michelangelo's celebrated letter to Vasari about the stairs to the Florentine Library); or he may illustrate his letter with diagrams, or his diagrams may be so full as to leave little occasion for writing to it at all. Still his signature constitutes it a letter for which he is responsible, and which, according to all the text-books on property, belong to the sender, not to the receiver; and, by the way, if a perspective view, highly coloured, be stolen,

the value is that of the paper on which it is made. These diagrams may be a plan, an elevation, a section, a perspective view in freehand or geometrical work; the size of the paper does not affect the fact that they are protected as letters so far that if a piratical publisher sought to print them he would be open to an injunction to leave out all the accompanying explanatory writing. Moreover, the illustrative details in other diagrams, drawn by another person not in the employment of the architect, become the property of the architect as soon as his signature thereto makes him responsible for the directions given thereon.

If the architect be represented as the owner, and the drawings in question have been appended in fact or in schedule to a contract, the thief may say that they are the client's property (it will be impossible to deny that a contract is the client's property), and so escape conviction; on the other hand, if the client be represented as the owner, and the drawings in question never have been appended in fact or in schedule to a contract, the thief may say that they never were the client's property, or, at least, that they are the joint property of the architect and client, and so escape conviction. In both these cases it must be observed that the indictment will be framed for stealing the papers (say value 40s.), and not for stealing the drawing (say value £4 or $\mathcal{L}40$), by which the property in the papers is proved. Under peculiar circumstances (if known to the thief) a third line of defence might be taken; for he may say that the drawings, having been sent by the architect to the client for transmission to the builder, had become the joint property of the architect and client, and so escape conviction.

The subject of the joint property of the architect and client in a drawing is one of the highest importance. An architect's drawings for a work executed upon commission, say of 5 per cent., appended in fact or in schedule to a contract, have the nature of a written document, and are liable to be stamped accordingly: it will be impossible to deny that the contract is the client's property; the property in the drawings passes, with the implied consent of the architect, entirely to the client, who, in the present state of the law of artistic copyright, evidently has the power to sell or lend or publish them, as well as to use them again for another locality. The practice is, of course, reprobated by the profession, which herein cannot help itself.

An architect's drawing for such a work not so appended to the contract, whether made before the contract is signed or at any time subsequently, is an explanation of the subject of the contract, and is as entirely his property, to deal with as he likes, as if it were blank paper, until the moment that it leaves his office with his signature authorising the execution of the work in the way there shown, at which time it becomes invested with the character of a letter. If any number of copies of such a drawing may have been made in the office, they still remain the property of the architect, even when he has selected the best executed among them for signature for transmission, and he may put them as patterns before his pupils for further copies, or he may publish them. The client has no power to interfere.

Moreover, if the architect chooses to tear up, not only his sketches, but his finished drawings, one after the other as soon as the works which they show are executed, it might not be prudent, but is clearly within his power to do so. If Sir C. Barry neglected, before his decease, to destroy his papers, that neglect did not transfer his right to burn them to the Government. If a member of the Government had chosen to order Sir C. Barry to deliver up, from time to time, his sketches and drawings, so that they might be officially destroyed, the matter would have been so ludicrous that it could not have been sustained. Official destruction is not so far from official preservation as might be supposed. The Government itself cannot produce all the drawings made by its salaried officials from the Fire of London to the Reform Bill.

From the first sketch of the ideas of an architect working on a payment by commission, to the picture representing the extent or intended result made by an artist for the architect, the paper on which those drawings are made remains the property of the architect, not of the client, and can be transferred by the former to any one; and further, the client has no right to select such as he would like to possess, even if he tender the value of the materials and workmanship.

(Signed) John W. Parworth.

NOTES, QUERIES, AND REPLIES.

Sir Frederic Leighton, P.R.A., on German Art.

The Kölnische Zeitung (24th ult.), not unnaturally, has something to say about the opinions expressed by the President of the Royal Academy of Arts of London on "German Art," * and its comments thereon are preceded by a chivalrous avowal that Sir Frederic, who studied in Germany, speaks and writes its language like a German; and that the address in question shows a thorough knowledge of the history of German Art.

The critical portion of the article, which has been kindly translated for the Journal by Miss Charles, is as follows:—Sir Frederic's judgment does not surprise us when we know that we are dealing with a classical formalist, and this discourse is only a fresh proof of the inadequacy of the formalist standpoint in art. All these formalists have one single esthetic scheme, to which every expression of art must restrict itself. Characteristic, individual, and national expressions are not admissible, for only one fixed ideal must be followed by the artist—namely, the one taken from the antique, and revived again in the Italian Renaissance. Also, the remark that the German is more ethically than æsthetically inclined is not new. This is true up to a certain point, but cannot be applied to old German architecture and painting. When Sir F. Leighton blames the German exaggerated taste for ornament, the assumed exaggeration of Gothic grouping, this has nothing to do with the ethical: it is just here that he misunderstands German feeling and German imagination. The German wishes to express his own feelings through the medium of art: he plays with

^{*} Reported in full in The Times, 11th ult. [p. 120].

it, and puts in it the wealth of his emotions, also in no small degree, his humour. He cannot, like the Romanesque people, satisfy himself with borrowing a foreign beauty which does not convey enough to him, and therefore he adapts these foreign fashions to his own use. This especially he has done in Gothic. Nothing is falser than when Sir F. Leighton maintains that Germans have not fully digested the Gothic style. They were the first to introduce Gothic towers and to adapt the style to brick buildings. This would have been impossible without an intimate knowledge of the subject. He rightly compares German Gothic ornament and grouping to Chinese art; but German Gothic is still richer, and still more imbued with the spirit of symbolism. Also in Renaissance we find the same instinct of the Germans to put their national stamp on foreign importations, and to enrich them with new motifs. In German painting we see this effort to be characteristic, to speak to Germans through German types, and therefore we find in their Madonnas and Child, rather the impress of German feeling than the expression of mere sensual beauty in its perfection. But this feature must not be confounded with ethical motives, for even the piety of ancient art does not arise from accepted conventionalities, but from dreamy imaginations. Sir F. Leighton asserts that Germans could not attain the highest æsthetic beauty! What is the highest æsthetic beauty? In his opinion, it is a conception independent of all human life, whose type is to be found with Romanesque nations, and especially with Italians. Germans do not attain this sensual beauty of form in their pictures, nor do they impart to their buildings that sweet rhythm to be found in the Romanesque. The development of German art has certainly not been continuous, but even had it attained a state of greater perfection, it would still have differed from the Italo-French, for it would have been German. German art has something particular to saysomething which differs from the Romanesque, and it is this "something" that Sir Frederic would like to see done away with, just because he is a formalist. He acknowledges himself that the old German art had a great influence upon foreign artists. Why, then? Just because it has a peculiarity of its own, and speaks in its own tongue. But for Sir F. Leighton there is only one language in art, and that must be the highest; and it was this idea of his which proved the stumbling-block of modern German art. We have, unfortunately, had many such Leightons in Germany, who would not recognise that art is the expression of the human soul, and must be as varied as souls are. Even in our country men have shrugged their shoulders over the art of our fathers, and have wanted to force all our artists and learned men to be Italo-Greek. It is called a striving after the highest beauty, and through this striving, not only have our young artists not become Raphaels or Michael Angelos, but our art and our artistic feelings have been entirely ruined and corrupted. What Sir F. Leighton needs in order to be just in his learned treatment of old German art—what all our Leightons need in fact—is the fundamental recognition of the important share that the soul of the nation takes in art. Such gentlemen refuse to see that Raphael as well as Phidias let the soul of their people speak through their art, and that every art which fails to do this is, at the best, but a very learned translation.

The Classical Influence in Indian Architecture.

From William Simpson, R.I. [H.A.]—being his Reply to the Paper by Mr. J. L. Kipling, C.I.E., in the last issue of the Journal, and the observations of Mr. Tavenor Perry [A.] and Mr. R. Phené Spiers, F.S.A. [F.]; and also to those who discussed his Paper on "The Classical "Influence in the Architecture of the Indus

"Region and Afghanistan" [pp. 93-115]:— Dr. Burgess warns me not to suppose that my Paper will be the last word on the subject it treats upon. The number of communications that the Paper has called forth seems to me to be equally emphatic as a warning of the same kind. So far as I am concerned the warnings were not required, for I had no illusions on the matter. The truth is that the task I imposed upon myself was a very limited one, and it did not include the whole range of inquiry over which the discussion has spread itself. The blame, if any exists, rests upon myself, for I did not, perhaps, sufficiently define the limits to be dealt with; and I could not at times avoid touching on what was outside of the special points on which my Paper was based. As the subject would probably be new to many, I gave some account of the discovery of this classic influence, with a slight sketch of the geographical area over which it is found; and to this I added notes with the chronology according to Fergusson and Cunningham. This, no doubt, tended to open up the whole field of the subject; but I may point out that I did put some limits upon it. It is distinctly stated that I left out the coins, and I know that the art upon them has an important bearing on the classic influence. The same with the sculpture; I avoided it, although perfectly conscious that no final judgment could be come to without giving it a full consideration. The Ionic and Doric were referred to, but their origin was not touched upon. These limits will be found in my Paper by any one who carefully reads it. I have another slight correction to point out. It is represented that I have derived the whole of the classic influence through Palmyra. No such idea existed in my mind, nor is such a statement justified by my Paper. I should not like to say positively that there had been no original Greek influence through Bactria; and I may

call the attention of Dr. Burgess to the fact that I made no dogmatic statement on that head. My position is that, so far as our knowledge goes at present, there is no evidence of its existence. My words were, that in that region very little has been done in the way of exploration, "so no "assumption of certainty should be made;" and that if further discoveries should give us new light I am willing to reconsider the question. When dealing with Fergusson's supposition of a continued influence down to the Byzantine period, I expressed myself in the following words: "I cannot say there could be no continued "connection with the West-most likely there "was some communication—but I doubt the "constant supply of nourishment which Fer-"gusson's words imply." It will be seen that these words do not contain an emphatic negative. I shall be quite willing to accept a Byzantine influence when the evidence for it is produced. The same with the Sassanian: as soon as I can see trustworthy proofs it will not be rejected. Our later knowledge of this style —that it has extended through Persia to Central Asia would almost lead us to expect that some of its forms might have reached Afghanistan on the Indus region; and the dent-de-scie ornament, which Mr. Phené Spiers has brought forward, may be due to it. Again, the Doric and Ionic are left in my Paper without any suggestion as to the route by which they came into the Punjab and Kashmir. The same with the honeysuckle ornament of the Buddhist lats, alluded to at the end of my Paper: their supposed origin is mentioned as that of Assyria or Persia. I might have alluded to other forms in Indian architecture which have suggested foreign influences at some early period to account for them, and among these is the idea of Fergusson that there are forms in Ceylon which could only be explained by a connection with Mesopotamia at some far past date. I have gone over these instances to show that I am very far from confining my ideas to Palmyra, or to any one single route, for the sources that have affected the architecture of the Indus region or of Hindostan. But they also serve to call attention to another aspect of the case, and that is the connection of India with Western Asia in ancient times. This is a subject which up to the present has received but small attention, and the study of it has as yet but scarcely begun. Students have at last taken it up, and some very interesting Papers upon it have lately appeared in the Journal of the Royal Asiatic Society; how far these were correct or not, I cannot pretend to say —but I look forward with hope to future investigations in this direction. The Persepolitan Column, which is one of the forms of the architecture we are discussing, is found in the early Buddhist architecture of India; but whether it was carried from Persepolis to India, or from India to Persepolis, is a point that up to the

present we have had no means of determining. This, I may point out, adds another interesting problem to our subject—that is, did the Persepolitan Column cross the Indus from India, or did it come direct from Persepolis to the Peshawar Valley and Afghanistan; or was it, as Fergusson suggests, an architectural form common to the whole region? These questions are, I think, enough to indicate the interest architectural students must feel in future inquiries as to the intercourse that existed in early times between India

and other parts of Asia.

Returning to the details of my Paper, I may recall that it treated more particularly of that architecture which came into existence in the Buddhist period in the Indus region, and which grew into a regular style, and was followed for a considerable period of time, probably undergoing changes, as all styles have done, but still retaining certain marked features. With this I included the architecture of Afghanistan, limiting myself more especially to the Jellalabad Valley, where I had the advantage of studying the remains on the spot. In this peculiar style, confining myself to the architectural forms, I separated its main features into two groups. In one I placed the forms that I assumed to be of local or of Indian origin, and not derived from the West; the other contained those that were of evident classic origin. These, it was shown, were not Greek, but Roman in character, and that very similar forms were found in the remains of Palmyra; and as that city was on a well-known trade-route to India, it was the probable source from which the classic forms had come to the Indus region, whence they found their way to the Jellalabad Valley. So far as the discussion has gone, I may assume that, within the limits given above, my ground remains untouched, and I ought to be satisfied. I am aware it is but a small portion of a large and important subject; but if a bit of firm ground has been established, it is something. I am reminding myself, and I may remind others, that the whole subject is new, and that it is yet early to speak of any conclusion as a certainty. Some fresh discovery may alter the whole question; and we must be prepared to shape our theories to any new data which may turn up. I am aware that one critic has expressed doubts, and I must make a reply which will not be difficult, as it appears to me that his case has broken down in his own hands. When I assumed that the arched form found in this particular style was of Indian origin, and derived from the circular shape of the Chaitya Cave, it did not occur to me that any one would doubt the identity. In controversy everything may be doubted, so Mr. Phené Spiers is quite within his right. From what he said at first he seemed to affirm that the arch was of Byzantine origin; his judgment was formed, he said, not from the arch, but by its surroundings,

which was a "close assemblage of arches, and "their support on Corinthian pilasters with wide-"spreading capitals." On reading this, my desire was to call his attention to another surrounding common to the style, and that was the same arch supported on a Persepolitan capital; an arrangement found in the Karli and other rock-cut caves of India. Luckily, Mr. Spiers has selected as an illustration to his second criticism a piece of sculpture with this arrangement [fig. 18], and as it is, even without the purlins, he is constrained to admit that the arch is that of the Chaitya Cave. I am not sure, from what Mr. Spiers says, whether he means that it is at times the Byzantine arch, and at others the Chaitya form; if he does mean this, I cannot accept his conclusion. I think I am perfectly justified in assuming that it is the same arch in every case; and as he has admitted in one instance that it is the Chaitya arch, I am entitled to claim that my original position stands untouched. In the sculptures there is a trefoil arch, and in the small topes excavated by Mr. Beglar at Ali Musjid, almost the whole of the niches are of this form; it is also found in the Kashmir temples—as in Marttand, for example [fig. 14]—the central arch in this case is the same form. The origin of this trefoil arch is one of the puzzles of Indian architecture. The only solution of it that has as yet been attempted is that proposed by Fergusson, and his explanation assumes the central arch to be that of the Chaitya As to the purlins, they are a small matter, and Mr. Spiers in his reference to his own illustration [fig. 18] is obliged to admit that it is copied from the Chaitya form, "minus the "purlins." I will call his attention to Sahadeva's Ratha, one of the Seven Pagodas, south of Madras,† where he will find this arched form repeated all over the temple, and entirely without the purlins. If they were dropped out in the South of India, it is equally possible that they were dropped out also in the North. Mr. Spiers does not seem to be quite sure that the square niche with sloping sides is of wooden origin. Well, I feel quite satisfied on that head. In my Paper on "The Buddhist Archi-"tecture in the Jellalabad Valley," I thought it of so much importance that I gave a drawing of one,‡ which showed its wooden origin, because the horizontal beam at the top was represented in stone and plaster as projecting at each side—an evident survival of its original construction. I take it that this particular form belongs to Tibetan architecture, in which it can yet be traced, and that it was common to the Himalayan range, including, at some long past date, Afghanistan. As this form, along with the arched form, is a very important feature in the style of architecture under consideration, I have here dealt with each of them at

some length; and my conclusion is that as I find them in the region of the architecture, I never thought of tracing them to Palmyra, as Mr. Spiers's words would seem to imply I had done; neither do I think it necessary to seek for them on the walls of Constantinople. It is evidently the arched form that gives the Byzantine appearance to the style, and on that account it is necessary to be sure of its origin, and I think it has been shown to be Indian and not Byzantine. As to the repetition of the circular form, that was one of its marked peculiarities in Buddhist architecture; and I should guess that in following that form, those who did so would be more likely to copy this repetition where they found the form, than from a style that they did not copy it from. However, that is merely an opinion, and given here only for what it is worth. As to the ogee moulding, to which Mr. Spiers attaches so much importance, it appears to me that such a moulding would not be distinctive of its derivation from any style that had come down from a classic source, be it Greek or Roman, or even Byzantine. As to the foliage upon this moulding, we have only to realise what rude sculptors most of them were who worked in this school of architecture, to come to the conclusion that no theory of origin could be based on such a slight bit of detail. To Mr. Tavenor Perry my acknowledgments are due for his very full chronological table, and the historical notes which he has added, all of which will be valuable for reference. I have already expressed myself with regard to the importance of further investigations regarding the early monuments of races and the intercourse between them in Asia-a subject in which Mr. Perry evidently takes a deep interest. I have read Mr. Kipling's communication with great satisfaction, and admired his sketches; but it calls for no criticism from me. I could have wished that he had extended his writing into a Paper on the sculptures of the Gandhara district, a subject which, from my slight knowledge of them, I do not feel entitled to take up; but one which, from Mr. Kipling's position, he must be fully capable of dealing with. Let me suggest that he may yet be prevailed upon to do this. To this I would add that when Captain Deane's Stupa is finished at Lahore, Mr. Kipling will see that an illustration of it is sent for publication in the Journal. To Mr. Purdon Clarke my thanks must be expressed for his kindness in sending the casts to illustrate my Paper.

Vaulting at Grandson, Neuchâtel.

From Mr. Clement Heaton (Neucliâtel)-

I send you a tracing of a rough sketch I made the other day when passing Grandson, which is on the borders of the Lake of Neuchâtel. To quote Fergusson (Handbook of Architecture, p. $55\overline{1}$):—

The church belongs to the Carlovingian era, and, like many churches of that age, has borrowed its pillars and many of its ornaments from earlier monuments. Its most

^{*} See Indian and Eastern Architecture, p. 285.

[†] The Cave Temples of India, p. 137. ‡ Transactions 1879-80, pl. 3—vi. p. 56.

remarkable peculiarity is the vault of the nave, which shows how timidly at that early period the architects undertook to vault even the narrowest spans, the whole nave being only thirty feet wide. It is the earliest specimen we possess of a mode of vaulting which subsequently became very common in the South of France, and which led to most of the forms of vaulting afterwards introduced. I had but just time to glimpse round, but I looked specially at the vaulting, and send you a perspective note of it. The capitals supporting the arches are very interesting also. They are

WEST END OF NAVE, GRANDSON.

full of uncouth vigour, and one of them is about as gruesome a bit of design as I have ever come across: four ogres eating little figures, who hang out of their mouths caught by the legs like a rabbit in a trap [see sketch]. The whole effect of the arches is, however, very rich. The smaller caps are of the interlacing ornament borrowed from the goldsmith's work. There still remains here an hour-glass on the pulpit, and a fine carved seat. On the outside of the church is something

very indicative of the present state of things in Switzerland—an old oil street-lamp, and immediately over it the electric light. A sudden jump from the antiquated to the brand-new is what one sees every day. Grandson is the town mentioned by Scott in *Anne of Geierstein*, where the Duke of Burgundy was overcome and lost his treasure.

Australian Timbers.

Attention was recently called to a Paper entitled "Ignorance concerning Woods" [page 59] which was read at the International Forestry Congress at Chicago, in which architects are taken somewhat seriously to task for their ignorance concerning a subject that the author considers is most intimately connected with the business of the architect. The request in the Journal for information

respecting recent books on the subject has brought to the Institute a small octavo pamphlet entitled " Australian Timbers, with "special reference to the Orna-"mental and Decorative Woods " of Australia," being a reprint of a Paper read before the Royal Victorian Institute of Architects in September last by Mr. George S. Perrin, Conservator of State Forests, Victoria. This little treatise comprises within its twentyseven pages a description of the timber trees of the colony, and the uses they most conveniently serve. Attention is drawn to woods hitherto neglected which are specially suitable for interior carpentry, joinery, and cabinetwork, and the rougher purposes to which the harder and more durable woods may be applied. Treated by the new Rieser patent process, the author predicts that the mountain ash, the giant tree of Australia, which has borne so evil a reputation owing to its tendency to rapid decay when subject to alternations of wet and dry, will ere long take a prominent place in the estimation of architects and builders for indoor work, such as flooring and lining,

as well as for doors and dados. It is claimed for the patent that the process the timber is subjected to not only reduces its weight—an important factor in its favour—but imparts greater elasticity and toughness, and at the same time renders it more amenable to the plane or other tool used in working it up. A consignment of fifty thousand superficial feet of timber treated by this process was lately despatched to London from Australia by the patentee.



9, CONDUIT STREET, LONDON, W., 18 Jan. 1894.

MINUTES. V.

At the Fifth General Meeting (Business) of the Session, held on Monday, 8th January 1894, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the chair, with 31 Fellows (including 5 members of the Council), 35 Associates, and 11 visitors, the Minutes of the Meeting held 18th December 1893 [p. 125] were taken as read and signed as correct.

The Secretary announced the decease of the following members—namely, Baron von Hasenauer [Hon. Corr. M., Vienna], Lord Crewe [H.A.], and William John Mettam [A.], Hon. Secretary of the Leeds and Yorkshire Society.

The receipt of donations to the Library was announced, and an expression of the thanks of the Institute to the several donors was ordered to be entered on the Minutes.

The following Associates, attending for the first time since their election, were formally admitted and signed the Register, namely:—Marshall Robinson (Bolton), Arthur George Morrice, and Henry Arthur Crouch (Brisbane).

The following candidates for membership were elected by show of hands: -

As Fellows (3).

BENJAMIN FERDINAND SIMPSON (Newcastle-on-Tyne).

CHARLES JAMES SMITHEM. WALTER HILTON NASH [A.].

As Associate.

JOHN ALEXANDER RUSSEL INGLIS (Edinburgh).

As Hon. Associate.

JAMES ROGER BRAMBLE, F.S.A. (Somerset).

The President having read the Deed of Award of the Prizes and Studentships 1894, made under the Common Seal [Appendix A], 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 (Essays).

Crown and Thistle.—John Begg [A.], 3, Vernon Place, Bloomsbury Square, W.C. (Silver Medal and Twenty-five Guineas).

Nemo Repente Sapit. - C. Bernard Hutchinson [A.], 102, Holland Road, Kensington, W. (Medal of Merit).

The Godhead Fires.—Walter K. Shirley, 6, Delahay Street, Westminster (Medal of Merit).

Pandrosus.—Percy Charles Campbell, 15, Avenue Wagram, Paris (Honourable Mention).

THE ROYAL INSTITUTE SILVER MEDAL (Drawings).

Saint Hugh.—James R. Wigfull [A.], 14, Parade Cl

Saint Hugh.—James R. Wigfull [A.], 14, Parade Chambers, Sheffield (Silver Medal and Ten Guineas).

THE SOANE MEDALLION.

Nil Desperandum.—James Humphreys Tonge, 17, Grange Street, Fulford Road, York (Medallion and, under conditions of foreign travel, £100).

Quien Sabe.—R. S. Dods [A.], 3, Vernon Place, Bloomsbury Square, W.C. (Medal of Merit and Ten Guineas).
 White Star.—George S. Hill, 77, Queen Street, Glasgow (Medal of Merit).

Black Lion.—Henry Mitchell, Scotstoun Villa, Whiteinch, Glasgow (Honourable Mention). THE TITE PRIZE.

Semper Vigilans.—A. R. Hennell, Oakwood, Mayo Road, Forest Hill (Certificate and, under conditions of travel in Italy, £30).

A Paper by Mr. Maurice B. Adams [F.] on Blickling Hall, Norfolk: Its Drainage, Water Supply, and other Works, was read by the author, and, having been discussed [Appendix B], a Vote of Thanks to Mr. Adams was passed by acclamation, and the Institute adjourned at 9.45 p.m.

APPENDICES.

A. Deed of Award of Prizes and Studentships 1894.

To the General Meeting of the Royal Institute, Held Monday, 8th January 1894.

Gentlemen,—In pursuance of the terms of By-law 66, the Council have the honour to state that they have examined the work submitted for the two Silver Medals of the Royal Institute, the Soane Medallion, the Pugin and Owen-Jones Studentships, the Godwin Bursary, the Tite Prize, and the Grissell Medal.

THE ROYAL INSTITUTE SILVER MEDALS.

(i.) The Essay Medal and Twenty-five Guineas.

Ten Essays were submitted for the Silver Medal of the Royal Institute—the subject being "The Treatment of "Sculpture in its relation to Architecture"—under the following mottoes:—

1. Crown and Thistle.
2. "Harmony."
3. "I know but one art."
4. "I know but one Art."
5. "Pandrosus."
7. "Red Rose."
8. "Santa Barbara."
9. "Sermons in Stones."

5. "Nemo Repente Sapit." 10. "The Godhead Fires."

The Council have awarded the Silver Medal and Twenty-five Guineas to the author of the Essay bearing the motto or device of a Crown and Thistle; a Medal of Merit to the respective authors of the Essays "Nemo Repente Sapit" and "The Godhead Fires," and Honourable Mention to the author of the Essay "Pandrosus."

(ii.) The Measured Drawings Medal and Ten Guineas.

Two sets of measured drawings were received for the Silver Medal of the Royal Institute under the following mottoes:—

1. "Saint Hugh." 2. "Universum Studium Meum."

The Council have awarded the Silver Medal and Ten Guineas to the author of the drawings bearing the motto "Saint Hugh," of the North Transept of Lincoln Cathedral.

THE TRAVELLING STUDENTSHIPS.

(i.) The Soane Medallion and One Hundred Pounds.

For the Soane Medallion and (subject to the conditions laid down for the award of this Studentship) £100 for foreign travel, ten designs for a College in a University Town, to accommodate 100 students, 6 tutors and a "master," were submitted under the following mottoes:—

1. "Æditha."
2. "Ars Docet."
3. Black Lion.
4. "Fiat."
5. "Manners Makyth Man."
6. "Nil Desperandum."
7. "Quien Sabe."
8. "Stet Fortuna Domus."
9. "Ulula."
10. White Star.

The Council have awarded the Medallion and (subject to the conditions before mentioned) £100 for foreign travel, to the author of the design bearing the motto "Nil" Desperandum," and a Medal of Merit with Ten Guineas to the author of the design bearing the motto "Quien Sabe," although, in their opinion, the conditions as to the detached block of w.c.'s has not been satisfactorily met in either case. The Council have further awarded a Medal of Merit to the author of the design White Star, and an

Honourable Mention to the author of the design Black Lion.

(ii.) The Pugin Medal and Forty Pounds.

For the Pngin Studentsbip, applications, each with a select number of drawings and sketches, were received from the following six gentlemen:—

- 1. Robert Shekleton Balfour [A.].
- 2. John Paul Cooper.
- 3. Hubert Christian Corlette [A.].
- 4. Alfred John Dunn.
- 5. William Curtis Green.
- 6. Thomas Arthur Sladdin.

The Council have awarded the Medal and (subject to the conditions laid down for this studentship) ± 40 , for travel within the United Kingdom, to Mr. Robert Shekleton Balfour [A.], a Medal of Merit and Five Guineas to Mr. Hubert Christian Corlette [A.], and a Medal of Merit to Mr. John Paul Cooper.

(iii.) The Owen-Jones Certificate and Fifty Pounds.

For the Owen-Jones Studentship, applications, each with a select number of drawings and sketches, were received from the following gentlemen:—

- 1. Arthur Thomas Bolton [A.].
- 2. Thomas Rogers Kitsell A.].

The Council, after careful consideration of the drawings submitted by Mr. Bolton and Mr. Kitsell, have decided not to award the Studentship.

(iv.) The Godwin Medal and Forty Pounds.

For the Godwin Bursary only one application was received, namely, from--

Harry Percy Adams (with drawings).

The Council have awarded the Medal and (subject to the conditions laid down for this Studentship) £40 for travel outside the United Kingdom, to Mr. H. P. Adams.

(v.) The Tite Certificate and Thirty Pounds.

For the Tite Prize four designs for a Royal Mausoleum were submitted under the following mottoes:—

1. Red Cross.

3. "Semper Vigilans."
4. "Wren."

2. "Repose." 4.

The Council have awarded the Certificate and (subject to the conditions laid down for this Studentship) ±30 for travel in Italy, to the author of the design bearing the motto "Semper Vigilans."

PRIZE FOR DESIGN AND CONSTRUCTION.
The Grissell Medal and Ten Guineas.

For the Grissell Prize only one design for a timber dome was received, and the Council, after careful consideration of the same, have decided not to award the prize.

In witness whereof, the Common Seal has been hereunto affixed, this eighth day of January 1894, at a Meeting of the Council.

[Here follow the corporate seal and signatures.]

B. Discussion of Mr. Adams's Paper [p. 151].

THE PRESIDENT said there was one point about which he should like to ask Mr. Adams. The difficulties of draining the house were obvious, situated as it was in a hollow, with water-logged soil all round, and there being a difficulty consequently in getting a natural outfall. The manner in which these difficulties were overcome had been clearly described; but he should like to ask how the outfall was treated, whether it was simply allowed to get into the lake, or whether it was utilised in any way.

Mr. P. GORDON SMITH [F.], who moved a vote of thanks to Mr. Adams, referred to the difficulties of the work, and said that the Paper showed what could be done under very peculiar circumstances, and how a house obviously unhealthy in many important particulars,

appeared to have been made thoroughly healthy and fit to live in without sacrificing its architectural character. He quite concurred with what Mr. Adams had said about the importance of an architect taking the lead in a work of that kind, where the building itself was of such great value as an historic and archæologieal curiosity. He should like to know a little more about the outfall of the drains. As he understood, the sewage of the house, as distinguished from the rain and surface water, was taken into the old drain, which discharged into the same stream that took the overflow from the lake. He should like to ask whether that arrangement was in strict accordance with the requirements of the Rivers Pollution Act. It seemed to him that if it discharged into that stream the arrangement must have been, strictly speaking, a contravention of the Act; but it might be that as the new system of drains was not itself directly connected with the stream, but only with the old drain, there was technically no such contravention. One other point he would refer to, and that was the vast number of houses of the same character all over the country, Scotland as well as England, in which the original primitive methods of drainage and sanitary arrangements were still relied upon. Many of these great houses were occupied by members of the Legislature and others who had taken an active part in passing the Public Health and Rivers Pollution Acts, and who were fully alive to the sanitary defects which existed, but who were debarred from making the necessary improvements in them by the fear of large outlay.

Mr. H. W. BURROWS [A.] seconded the vote of thanks, and alluded to the fact that Mr. Adams had kindly offered his Paper to the Science Committee, and it was practically under the auspices of that Committee that it had been brought forward. Undonbtedly, the treatment of the subject was a difficult one. Mr. Adams had a water-logged condition to deal with, and an outfall at a higher level than the basement of the house; the trouble therefore was to lift the sewage. Mr. Adams had adopted a pumping apparatus. There were, however, other lifting arrangements, such as the Shone Ejector, which was in use at the Houses of Parliament, by which the sewage was raised from the low level to the high level drain. But Mr. Adams had at his disposal a natural and less expensive means of lifting the sewage by a stream of water, and he consequently formed a water-wheel pump, which was worked by the natural fall of the stream. He would like to ask whether members of the Institute had seen an arrangement patented lately by a namesake of Mr. Adams, Messrs. Adams & Co., applicable under similar conditions. Having a water-logged site to deal with, by an antomatic arrangement, saving any pumping, sewage or water could be lifted from a low to a high level. He did not think it had been used in many places as yet, the patent being only two or three years old; but, judging by the descriptions, the idea seemed very feasible. It was apparently a modification of the well-known ram principle, by which a head of water was utilised to lift from a lower position to a higher. In the case under discussion the stream, no doubt, gave all that was required. There was a natural fall, and so long as there was a head of water equalling the lift, and a body of water equal to the amount to be lifted, they had all the necessary conditions. In that particular instance a head of three to four feet of water would be sufficient, and Mr. Adams had said there was an ample head of water at any time of the year. If it had been possible to use the patent he had mentioned, the somewhat elaborate arrangement of sump and pumping gear would not, apparently, have been required. There were two receptacles in the Adams's Lift, as he understood it: one at the higher level, which contained air compressed by the column of water, and that air was conducted by a pipe to the lower receptacle in such a manner that an equal body of water or sewage was displaced by the weight of the upper column

of water to a height equal to the head, and this went on automatically. If what the patentees claimed for it was to be relied upon, it would prove a valuable adjunct to such a case as that before them. He would like to ask what steps had been taken to purify the sewage before it passed into the lake overflow or stream. He supposed there must be a fall there, and it could either be got rid of in the ordinary way by passing it over the land with a series of agricultural drains, or it could be liquefied in a way that his (the speaker's) own firm had adopted in one or two instances, by a French system, the "Vidangeuse" automatique," patented by M. Louis Mouras, of Vesoul. The arrangement was an exceedingly simple one. Practically an air-tight box was all that was required; the drainage passed into it, and by decomposition-whether chemically or by the agency of bacteria, it was difficult to say-at any rate, experiment had shown that in the course of a few weeks any solid matter passed into the receptacle, such as potato peelings or paper, was absolutely decomposed, and only liquid passed from it. They had used that system in 1887, and up to the present time it had answered perfectly; all that passed from the receptacle was liquid, with flocculent matter in suspension. In connection with the same subject, the Scott-Moncrieff patent, which had been lately adopted, seemed to be a rediscovery of the principle of the Vidangeuse automatique. Colonel Scott-Moncrieff introduced the fæcal matter under a filter, and so locked in the decomposing organic matter that it gave birth to an enormous number of bacteria; it would be seen, he thought, that the effluent from the Scott-Moncrieff filter was the same as that from the "Automatic "Scavenger." In speaking of the well, Mr. Adams had not given them a geological section of the neighbourhood. He (the speaker) had not had time to look up the subject, but, so far as his memory served, it was possibly a chalky boulder clay on the Upper Chalk; and it seemed to him that, as the well was sunk in the western part of the site, the ground was possibly absolutely waterlogged with sewage matter which had been percolating through it for years, and that, if some means had been taken for shutting off the surface water, as was done in the London Basin, by iron or brick cylinders, the difficulty might have been He should like to know if anything of the kind was tried. Then Mr. Adams had not clearly told them, in connection with the water supply, where he ultimately obtained the water for the house—whether rain-water or stream-water was used, and, if either, how it was purified.

Mr. ROBERT WILLIAMS [A.] said he should like to say a word about the sump, as it might be of use in dealing with a similar case. Had they proceeded in a different way, he thought they might have avoided the failure they had at one time. They put the pumps into the excavation, and pumped it dry in a few hours. It would, however, have been better if they had sunk a well, or a couple of wells, outside the area of operations, and pumped the water away, and then constructed a domical invert, and allowed it sufficient time to become water-tight. this means, he thought, water would have been kept Should he have such a case again he should adopt that plan. Mr. Adams had mentioned the small amount of fall they had had. In the long piece of drain from the house to the connection with the old sewer they had but eight and a half inches in about two hundred feet. They had, of course, commenced at the bottom, but, as they could not get the ground, the whole of the cutting could not be made at once, and it had to be done in sections. The cutting was sometimes nine to ten feet deep, and in some places deeper. It was a great responsibility to get the drain finished at the right level in the sump two hundred feet away, where they had already constructed an aperture to receive it. The point was to get the drain uniformly inclined, and to ensure accuracy they procured a Dumpy level and staff, as they could

allow only a fraction, simply a turn of the spirit level, for each pipe, and every one of them was levelled in that way, and carefully pressed down so that the weight of earth could not press it further. He was, however, in some fear that there might be irregularities here and there, and that, possibly, by pumping the water and carrying sand with it and other matters there might be a stoppage. But he had a very good proof one day when there happened to be a great flow of water. The men were pumping, and a piece of timber four inches square and five or six feet long, which had been placed at the mouth of the drain in the sump, suddenly disappeared into it. He (the speaker) concluded that the drain would be stopped, and hastened down to the connection with the old sewer, wondering at what part of the drain it would stop; but the piece of timber was already there, and he was satisfied. He would like to add a word in recognition of the care and good workmanship of the late Mr. Robert Bartram, the builder, and of his workmen, as contributing to the success of Mr. Adams's scheme of drainage.

MR. ARTHUR BAKER [F] said he should be glad to know something more about the outfall. Would Mr. Adams give them the level of the outfall at the other end of the lake, and tell them why, if there was a good outfall and a good drop at the other end of the lake, the new pipes were not taken a little further so as to get a sufficient fall? If he had gone further, could he not have got a sufficient fall to

have avoided the use of a sump altogether?

MR. MAURICE B. ADAMS [F.], in reply, thanked the Meeting for the patience with which they had listened to his Paper. Drains, he knew, did not furnish very entertaining material to dilate upon, but he felt most seriously that they intimately concerned matters that they ought personally to take in hand. There was much work to be done in that direction, and why they should not more often undertake it he was at a loss to understand. With regard to the outfall, they must remember that it extended the best part of a mile, and to take up so long a length would indeed be a serious matter; and his clients, though they, of course, required an efficient scheme, did not desire more work to be done than was absolutely necessary. The old sewer, from the point where he brought the new pipe into it, had a fairly good fall, and there seemed to be no good reason why it should be disturbed. He believed the specialist mentioned did propose to take up the whole of the outfall; but in his (Mr. Adams's) opinion that would have been more suitable to draining a town, whereas they had only to drain a house. The President had referred to the ultimate discharge of the sewer; he (Mr. Adams) would explain that at the bottom of the lake there was a copse which had a system of irrigating channels, by means of which the sewage was distributed, mingling with the overflow from the lake, whence there was a vast quantity of water constantly passing away. The lake itself was eighteen acres in extent, and the water coming down from the stream-drain by the Hall was continually flowing, winter and summer, through the lake, so that there was a corresponding amount of water discharged from the lower end of it, which became mixed with the sewage, and, after irrigating through the copse enclosure, obtained an overflow ultimately into a small stream, and so passed away through the fields for miles. Whether that stream had changed since the completion of the scheme he could not say; but at the time he examined the watercourse it was quite free from anything approaching visible sewage; indeed, he did not believe that sewage ever reached so far, because it was more or less distributed into the irrigation channels of the copse within the confines of the park. Before the work was executed, owing to the dead level of the upper outfall, he failed to see what force there was to cause the sewage to pass away at all beyond a certain overplus. A question had been asked as to the water-supply of the house. As a matter

of fact, they simply used the water which had always been used; it had been analysed, and was reported to be perfeetly good. They had questioned its source, however, and Mr. Rich advised that a new well should be sunk at the other end of the park, near the foot of the lake, where it was determined to locate the turbine to pump the water into the tower on the knoll, whence the pressure thereby obtained threw the water over the Hall. It was thought, if the same supply could be made to answer for both purposes, the water should be kept continually moving in the fire-service, and thus maintain the entire system in better order. As he had stated, they were not successful. From the analyst's report [p. 165] the curious in such things might see what a very extraordinary result was obtained. It had been asked how it was that some method had not been adopted of keeping the water from getting into the well, as he understood, in its upper stages. They had simply driven iron pipes down into the clay, and if there were any fissures in the upper strata, the bottom of the well ought not to have been affected thereby, because, as the pipes were driven down into the clay, the suction round outside them would be very considerable, and would quite prevent leaking down by the side of the pipe. This extended to a depth of 100 feet, and yet only a very small quantity of water was obtained; so that directly the turbine was put to work it emptied the well in a very few minutes, and the water practically was of no use. In driving down the pipes they continuously came upon isolated boulders, which had to be driven till they compressed the clay sufficiently to break upon it by blows from the monkey, and then the fragments had to be drawn up with a grappling-iron. This led to further loss, and the money put down in the estimated cost for the well was soon swallowed up. The supply proved a failure, and had to be abandoned.

MINUTES. VI.

At the Sixth General Meeting (Ordinary) of the Session, held on Monday, 15th January 1894, at 8 p.m., Mr. J. Maevicar Anderson, President, in the chair, with 21 Fellows (including 10 members of the Council), 34 Associates (including 2 members of the Council), and 54 visitors, the Mimutes of the Meeting held 8th January 1894 [p. 195] were taken as read and signed as correct.

The President announced the decease of César Daly [Hon. Corr. M., Royal Gold Medallist 1892, and added a

few sympathetic remarks thereon [p. 183].

The following Fellow, attending for the first time since his election, was formally admitted and signed the Register,

namely: Walter Hilton Nash.

The President delivered an Address to Students on Some Aspects of the Mutual Relationship of Architects [p. 171], and Mr. Alexander Graham, Vice-President, read a Review of Work of the Travelling Students 1893, and of that submitted for Prizes and Studentships 1894 [p. 177], whereupon Votes of Thanks to the President and Vice-President were passed by acclamation.

The President then made the following presentations to

the Travelling Students of last year :-

ASHPITEL PRIZE 1893 (Examination for Candidature as Associate): Books value £10. 10s. to Mr. Ernest Robert Barrow. Subsidiary prizes of books value £5. 5s. respectively to Mr. Ernest Edward Fetch and Mr. J. A. Russel Inglis [A.].

SOANE MEDALLION 1893: Cheque for £50, being second moiety of the £100 for travel, to Mr. A. T.

BOLTON [A.].

OWEN-JONES STUDENTSHIP 1893: Certificate and cheque value £25, being second moiety of the £50 for travel, to Mr. Alfred Hoare Powell.

GODWIN BURSARY 1893: Medal and cheque value £20, being second moiety of the £40 for travel, to Mr. Banister F. Fletcher [A.].

TITE PRIZE 1893: Cheque for £10, being balance of the £30 for travel, to Mr. Charles A. Nicholson.

The President then proceeded to present the Prizes and introduce the Travelling Students for 1894, in accordance with the award [pp. 116, 139], namely:—

ROYAL INSTITUTE SILVER MEDAL AND TWENTY-FIVE GUINEAS (Essays): to Mr. John Begg [A.], for Essay under the device of a Crown and Thistle.

Medal of Merit to Mr. C. Bernard Hutchinson [A.], for Essay under motto "Nemo Repente Sapit."

Medal of Merit to Mr. Walter K. Shirley, for Essay under Motto "The Godhead Fires,"

Certificate of Honourable Mention to Mr. Percy Charles Campbell, for Essay under motto "Pan-"drasus"

ROYAL INSTITUTE SILVER MEDAL AND TEN GUINEAS (Drawings): to Mr. James R. Wigfull [A.], for his drawings of the North Transept of Lincoln Cathedral, under motto "Saint Hugh."

SOANE MEDALLION and, under conditions of foreign Travel, One Hundred Pounds: awarded to Mr. James Humphreys Tonge, for his design for a College in a University Town under motto "Nil "Desperandum."

Medal of Merit and cheque value £10. 10s. to Mr. R. S. Dobs [A.], for his design under motto "Quien

"Sabe."

Medal of Merit to Mr. George S. Hill, for his design under the device of a White Star.

Certificate of Honourable Mention to Mr. Henry Mitchell, for his design under the device of a Black Lion.

PUGIN STUDENTSHIP: awarded to Mr. Robert Shekleton Balfour [A.].

Medal of Merit and cheque value £5. 5s. to Mr. Hubert Christian Corlette [A.].

Medal of Merit to Mr. John Paul Cooper.

GODWIN BURSARY; awarded to Mr. HARRY PERCY ADAMS.

TITE PRIZE of a Certificate and, under conditions of Travel in Italy, Thirty Pounds: awarded to Mr. A. R. Hennell, for his design for a Royal Mausoleum under motto "Semper Vigilans."

The business having terminated, the Institute adjourned at $9.45~\mathrm{p.m.}$

PROCEFDINGS OF ALLIED SOCIETIES. LEEDS AND YORKSHIRE: ANNUAL DINNER.

On the 8th ult. the annual dinner of the Leeds and Yorkshire Architectural Society was held at the Queen's Hotel, Lecds, the President, Mr. G. Bertram Bulmer [F.], in the chair. The toast, "The Royal Institute of "British Architects and the Allied Societies," was given by Mr. W. H. Thorp [F.], who observed upon the presence of Mr. Emerson among them, and referred to his recent duties at the World's Fair, Chicago, as Member of the Jury for Architecture on behalf of the United Kingdom, commenting in terms of appreciation upon his account of the buildings at the Exhibition, and the architecture generally of the City of Chicago [p. 65]. Dwelling upon the scope and objects of the Royal Institute and the Societies in alliance with it, Mr. Thorp said they existed largely for the purpose of promoting friendly and professional intercourse among the members, bringing subjects of architectural interest among them by means of Papers; and particularly having regard to the education of those intending to enter the profession. The Royal Institute, as an examining body, might almost be regarded as holding a status similar to that of the London University; and every

young architect who was worth his salt would be determined to pass its examinations.

Mr. Emerson, in responding, said the Royal Institute well knew the deep interest the Allied Societies took in all matters connected with the well-being of the architectural profession. Their interest had been shown last year in their response to the invitation of the Liverpool Society to attend the Congress there on the educational movement. Their keen desire to uphold the honour and dignity of the profession had been shown lately by the Leeds and Yorkshire Society, when a competitor in a recent competition endeavoured in an underhand way to influence the votes of the committee promoting the competition. Their representations to the Council of the Royal Institute resulted in the resignation of the architect in question. Charges as to misconduct ought to be made to the Council in accordance with the Charter and By-laws, and it would be well for the Allied Societies to study a little more closely the By-laws of the Royal Institute. Had the competitor not resigned, or the Leeds and Yorkshire Society not laid a formal charge in accordance with the By-laws of the Institute, so determined were the Council to enforce honour among their members that the President himself would have taken steps to bring the matter to an issue very different from that of mere resignation. He had mentioned the above simply as a case of which many present were cognisant, and as one of many instances in which the Institute looked after the interests of the architectural profession, though they might never be known to the public. In unity lay strength; and when, as was the case at the present day, certain architects took credit to themselves for standing aloof from their professional brethren, and placed themselves on a pedestal from which to sneer as memorialists at other architects - a line of conduct from which certainly no good could accrue; and when clergy posing as art critics gibed at architects as Mr. Loftie [p. 141] had done - under the plea of educating the public, while at the same time displaying their ignorance of architecture, it was certainly wise for the profession to join ranks and uphold their mutual interests.

Mr. Edward Salomons [F.], President of the Manchester Society, ventured to think that if the Institute and the Allied Societies could educate the public taste to appreciate the distinction between an architect and a builder they

would have achieved a great point.

Mr. Edward M. Gibbs [F.], President of the Sheffield Society, said that having had the direction of the scheme for architectural education in Sheffield, he hoped he might be permitted to speak plainly on the subject, and having watched what was being done in other cities, as reported in the Institute KALENDAR, he was of opinion that the present arrangements were not satisfactory; that the attendance at various classes at the educational institutions of each city, and the few special classes established for architectural education, was not an adequate preparation for the practice of the profession. He was also disappointed to find that so little had come of the proposal to establish a Chair of Architecture for the Northern Societies. In his opinion a College should be established for the Northern Societies of Liverpool, Manchester, Leeds, Sheffield, and Nottingham; but he feared that even such a combination of provinces could not establish and support one; and he therefore ventured respectfully to suggest that the Royal Institute should, as soon as it could, in addition to the work of examination, undertake the education for the profession by the establishment of a college either at London or at one of the ancient Universities. He had some diffidence in making the suggestion, but remembered that the Institute had taken the whole profession into its confidence by the establishment of the provinces and the alliance of the Societies.

Mr. A. H. PAGET [F.], President of the Leicester and Leicestershire Society, said that architects in the country were much indebted to the action of the Institute in striving to raise the status of the profession, and to weld it into an organised body. In former years the Institute had consisted almost exclusively of London practitioners, who were but little concerned with architects at a distance from town. But of late years changes had come. By affiliating provincial Societies, the Institute was now in touch with arehitects all over Great Britain and Ireland; and the desire to belong to the Institute, not only through an Allied Society, but personally, was now very great. The administration of the Architectural Provinces had yet to be developed, and their value as a working scheme to be ascertained. But their establishment proved that the Institute was determined that no part of the United Kingdom should lie beyond its cognisance through the agency of the Allied Societies. As another instance of the growing energy of the Royal Institute, he would mention the late improvements in the compilation and issue of the Journal. Mr. Emerson's article on the World's Fair Buildings, which a previous speaker had referred to, was an instance of the high character of the descriptive notices which appeared in the Journal. Such articles, with their capital illustrations, gave them just what they, as architects, most wanted, and their thanks in the matter were due to the authors and the Institute.

Mr. WILLIAM HEPPER, speaking as President of the York Society, said they all felt it a great honour to have become allied to the Institute. York not being a great commercial centre like Manchester, Leeds, or Sheffield, their Society was not nearly so large as the Societies in those cities; but if they in York could not boast of such great commercial prosperity, they could boast of the great antiquity and historical importance of the ancient city, and also of its Minster, bar walls, and very numerous examples of ecclesiastical architecture, which were visited, and admired, by people from all nations; and on that account they considered they had a just right to be included in the scheme of the Institute for dividing the country into sections, making the York Society one of the directly Allied Societies. For about a dozen years they had held their own against a good deal of indifference and opposition, and now that they had been allotted a definite sphere of action, they hoped to increase in strength and usefulness, and do their share in promoting the cause of archi-

tecture.

Mr. Emerson [F.], in giving the toast of "The Leeds "and Yorkshire Architectural Society," said the Royal Institute was very sensible of the good and important work being done by the Society, and that its alliance was very greatly valued. Mr. Gibbs's suggestion that the Institute should become a teaching body was quite unreasonable. Its function was to further the interests of the profession, and young men must obtain their education previous to joining its ranks. With regard to competitions, he would call attention to the injustice done by committees inveigling men to compete on the understanding that an assessor would be appointed to advise as to the selection of the best design, and then calmly ignoring the assessor's advice. Seeing that competitions were so much in vogue, architects should continue to insist on the assessor's advice being carried out, or decline to compete. A committee was in no case parallel with a judge giving a decision after hearing a case pleaded in court. The judge had legal knowledge to help him, whereas the committee usually knew nothing of architecture and did not understand drawings. In conclusion Mr. Emerson desired to point out that the Journal of the Institute now gave the Proceedings of Allied Societies, and he begged that they would send up notes of them as a regular thing.

Mr. G. Bertram Bulmer [F.] responded on behalf of the Leeds and Yorkshire Society, and said they felt doubly honoured in the toast being proposed by the Hon. Secretary of the Royal Institute. They recognised his abilities and

welcomed him as the accredited representative of the Institute. In the past they had enjoyed some measure of the success Mr. Emerson looked for in the future. The Leeds and Yorkshire Society, which had been formed in 1877, had floated on the tide of success fed by the three rivers of patience, perseverance, and discretion. They had not been free from the usual internal troubles, but these had been thrown off like the complaints of early childhood, and there was every promise of their soon reaching a healthy "majority." Their Society had steadily grown in numbers from the beginning, and now consisted of about one hundred members. They had become "incorporated" to define their responsibilities and their legal status. Allied to the Royal Institute, they were in a strong position to promote their professional interests; and their efforts in the promotion of facilities for the education of those seeking to enter their profession had met with a large measure of success. Such was a brief outline of their past. There was work enough and to spare in the future; and fortunately there were young men of ability and purpose in reserve who would carry on the Society's labours worthily and successfully when the present workers had passed away.

PARLIAMENTARY.

London Streets and Buildings Bill.

The Bill is put forward without a clue to its principles, without the usual references to existing Acts, without an attempt to distinguish between new clauses and old sections. It is practically a new Building Act, the existing Acts, seven in number, being swept away by it. The principal objections are that there is no sufficient distinction made as to buildings to be erected on sites of old buildings and on new sites, as in the existing Acts; that when rebuilding on old sites, the line of frontage is to be set back without compensation; that the open spaces required to be left at different levels are excessive, and the enforcement of the angle of 45 degrees from the back is a serious curtailment of the reasonable use of sites, while the angle of 45 degrees from the opposite front is also unreasonable in many cases; that the distinction between the front and the back of a building is impracticable, &c. Moreover, clauses in leases made before 1856 are to be overridden; and the use of ordinary arbitration in place of the acceptance of a decision of two out of three surveyors destroys one great advantage of the present Building Act. A further important objection is that the reservations as to buildings erected under previous Building Acts are not re-enacted.

The attention of members of the Institute is directed to the following clauses and sub-clauses of the Bill, as containing provisions to which detailed objections are likely to be made, and the numbers and subjects of which are-

Cl. 3.—Evidence of commencement of street.

Cl. 13, sub-cl. 2.—Buildings projecting beyond general line when taken down to be set back.

Cl. 14. - Buildings may be set back in certain new streets.

Cl. 16.—Notices of definition of general line.

Cl. 30, especially sub-cl. 4 (d). - Space at rear of new buildings.

Cl. 31.—Space where domestic building re-erected in a narrow street or way.

Cl. 35.—Superintending architect may define front or rear of building.

Cl. 38.—Heights of buildings in certain cases.

Cl. 42.—Rules as to girders, beams, and bressummers.

Cl. 45.—Cases in which a wall to be deemed a party-wall. Cl. 49.—Means of escape at top of high buildings.

Cl. 58, sub-cl. 1.—Rules as to party arches over public

Čl. 73, sub-cl. 3 and 5.-Rights of building owner.

Cl. 75, sub-cl. 4, 8, 9, 12.—Rules as to exercise of rights by building and adjoining owners.

Cl. 80, sub-cl. 2 (e). - Rules as to expenses in respect of party structure.

Cl. 82.-Adjoining owner may object to account.

Cl. 185, sub-cl. 2 and 24.—Definitions of "way" and "party structure."

Emendations are stated to be necessary in the following clauses and sub-clauses of the Bill:

Cl. 13 and 14. - [See above for subject.]

Cl. 40, sub-cl. 1 (b) and 2 (b).—Rules as to recesses and

Cl. 45.—[See above.] Cl. 47. – As to chases in party walls.

Cl. 48, sub-cl. 2, 3, 4.—As to construction of roofs.

Cl. 50, sub-cl. 4. As to chimneys and flues.

Cl. 51, sub-cl. 7. - As to furnace chimney shafts.

Cl. 55, sub-cl. 1.—As to habitable rooms.

Cl. 59, sub-cl. 2. - As to arches under public ways.

Cl. 64, sub-cl. 3.—As to uniting buildings.

Cl. 67, sub-cl. (d).—As to staircases in churches and chapels.

Cl. 72, sub-cl. 2, 3.-Rights of owners of adjoining grounds respecting erection of walls in line of junction.

Cl. 73, sub-cl. 2, 6, 7, 9.—Rights of building owner. Cl. 74.—Rights of adjoining owner.

Cl. 75, sub-cl. 1, 2, 5, 8.—As to exercise of rights by building and adjoining owners.

Cl. 76, sub cl. 3.—Settlement of difference between building and adjoining owners.

Cl. 78, sub-cl. 2, 3.—Building owner to underpin adjoining owner's building.

Cl. 79.—Security to be given by building owner.

Cl. 80, sub-cl. 1 (b), (e), 2 (a), (b).—Rules as to expenses in respect of party structure.

Cl. 82.—Adjoining owner may object to account.

Cl. 84.—Penalty on delay of payment by adjoining owner. Cl. 85.—Expenses incurred on requisition of adjoining owner.

Cl. 86.—Saving for lights in party walls, &c.

Cl. 88.—Dangerous structures.

Cl. 102, sub-cl. (iii.). - Dwelling-houses on low-lying land.

Cl. 103, sub-cl. (ii).—Sky-signs.

Cl. 127, sub-cl. 2 and 3.—Notice by surveyor in case of irregularity.

Cl. 149, sub-cl. 2 and 3.—Payment of expenses of legal proceedings by owners. Cl. 169.—Limitation of time for proceedings where notice

not given.

Cl. 175, sub-cl. 5.—Storing of wood and timber.

Cl. 176.—Advertisements on buildings.

Cl. 185, sub-cl. 6, 15, 24, 29, 32. - Definitions of "Building," "Ground Storey," "Party Structure," "Domestic Building," "Owner." Schedule, pp. 102, 110, 111.—District Surveyors, and

fees payable to them.

The "short title" of this proposed Act is "The London "Building Act 1894," and though the London Council have invited several corporate bodies to contribute suggestions in respect thereto, they have been unable to furnish them with a sufficient number of copies of the Bill, to allow such bodies to examine it thoroughly, except at an almost prohibitive cost—the price of each copy being six shillings. This, however, is a detail of slight importance in a Bill, the scope of which and its general principles cannot—according to the London Council—be altered at its present stage, though they are willing to consider verbal alterations and minor amendments. The Bill, which cannot possibly become law on its present lines, and which is to be introduced in the Lower House as a private Bill, will probably be read a first time on the reassembling of Parliament next month.



OBSERVATIONS ON THE PLAN OF DWELLING-HOUSES IN TOWNS. By Professor Kerr $\lceil F \rceil$.

Read at the General Meeting, Monday, 29th January 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,-

The Art of Plan.—Every architect understands from experience the radical importance of good plan, even in the most ordinary circumstances. In these days the construction is probably easy enough; the design of graceful proportions and academical effect need not be troublesome; but to arrange the plan may still be a puzzling task; I may indeed go so far as to add that the more skilful the designer of a plan may be, the more trouble may his design give him, his greater insight only making him the more fastidious; in fact, he who gets through his planning most easily is he who does it carelessly, knowing no better. And if we turn to our great exemplar, Nature, it is not the mere durability of an animal or a plant that is most mysterious, or its beauty, but the design of its internal mechanism—its plan. There is no paradox in saying before this assembly that the whole universe of life is evolved from this initial element that we call plan. Excuse me for putting the case very familiarly: of what avail would be the strength of Hercules, the symmetry of Adonis, the splendour of Apollo, with a rickety organisation within?

The English Dwelling-house.—You do not require to be told that the English dwelling-house, in respect of plan, professes to be, at its best, the best in the world. For as it is a well-known boast that the English language is the one that gives best expression to the idea of *Home*, so also are we familiar with the proposition that home comfort is the special characteristic of the English house. Consequently I must be right in recognising it as a first principle of our professional science that the organic arrangement of a dwelling-house begins and ends with the idea of home or family comfort.

For the better understanding of this we may recall to mind the broad geographical distinction between the Oriental and ultimately Southern type of dwellings and the Occidental and ultimately Northern type. We see at a glance on the one hand the conditions of sunshine and balmy climate, and on the other the influences of cloud and cold. From the east, and through ancient Greece and Rome, there came to the South of Europe the habit of living in the open air, within the enclosure of a court or under a colonnade. This is still in principle the preference of the Latin nations, as when the Frenchman, the Italian, or the Spaniard dines in the street. From the north-west, on the contrary, and through bleak Scandinavia and Germany, came the enforced custom of living in a hut, a hall, a house, carefully covered in from the weather; and this Gothic principle it is that has been brought to such perfection in English houses during the present century. "Let those enjoy it," say our paterfamilias and

materfamilias, "let them enjoy it by all means, who go to bed on the roof of the house or in "the shadow of the garden wall; we prefer emphatically a 'desirable family residence.'"

The Town House.—The great difference between the house in the country and the house in the town is obviously this: in the one case the accommodation is conveniently and comfortably spread out over the proper extent of ground-space, while in the other it is so squeezed together laterally that it flies up into the air. Height becomes the substitute for breadth, and an inefficient substitute it always is. The rooms which would naturally be disposed side by side have to be artificially piled up tier upon tier, and even buried in the ground. Consequently, one has to be continually running up and down stairs; the very light of heaven becomes a scarcity; fresh air is an unattainable luxury; and even how to escape from over a fiery furnace is brought only too plainly within the range of practical consideration. All this cannot be helped, I know; this crowding is what constitutes the town; and the more important the town the greater the crowding; but let us look it fairly in the face.

The Town.—Is the law of Nature remorseless whereby this mere crowding brings into such sad relief the choking breath, the pallid cheek, the feeble frame? It is. To grasp the situation, pray regard it in this very practical light. We of the human race are a frail species of living things whose habitat is the bed of a certain ocean. We call it the Air; and it is a fluid of a somewhat touchy character chemically, not to be too much trifled with in respect of its quality. If left pure and fresh, every mouthful of it is invigorating to our life-blood; if moderately deteriorated by some reasonable accident, it recovers itself and bears no malice; but if subjected to too gross an outrage—that is to say, too flagrantly vitiated—the chemical consequence is inevitable. That consequence to us—in greater or less degree according to the case—is in fact blood-poisoning, just as if we were poor little fishes in a polluted sea. Now, in these circumstances, a town is simply an artificial patch of incrustation deposited upon our ocean-bed to accommodate a crowd of us for artificial purposes of our own; and, inasmuch as we well know that all forms of crowding of animal life produce pollution of the air, it follows that a town becomes of necessity so far an unwholesome place of habitation. How loathsomely foul some towns can become, I need not say; but I remember a peculiar suggestion once offered in public with reference to this point by an eminent physician, which may, perhaps, make a lasting impression upon your minds as it did on mine—namely, that one of the principal causes of the disappearance of the great cities of antiquity may not unlikely have been that the inhabitants were driven away by the intolerable pollution of the soil. However, looking again at this fluid in which we live, we find that it has a most happy faculty whereby it promptly whisks away into the upper regions, and so disperses harmlessly, any reasonable contamination which it can seize hold upon; but, of course, when the crowding of a town is made so compact as to prevent this agrial action, the contamination must remain, and must indeed increase, in spite of the provision that Heaven has made to the contrary. Then the occupants, in an enfeebled condition, must pull through life as they can; and although Nature, still beneficent, resorts (this is a strange fact) to the desperate contrivance of lowering in their case the standard of vital energy—less of the man and more of the monkey—so that, instead of dying, they still live on at an inferior level, "yet is their life but labour and sorrow." This may seem to be a fanciful picture; but it is not; we cannot be too forcibly made to understand that the very raison d'être of a town is crowding, and that crowding must, in the very nature of things, bring with it the evils of crowding.

The Organisation of a Plan.—This process of organisation, as the first part of his task, the designer is bound to follow out from first to last, in the case of a dwelling-house, more or less laboriously. It is not enough to account for a certain list of rooms, and to provide them all of such dimensions respectively and with such relations to each

other as shall be on the whole not unacceptable; this is little better than the old-fashioned mode of the *Vitruvius Britannicus*, by which the house was endowed with an academical

exterior and a symmetrical interior, and the occupants were left to settle down in it as they best could. The skilful architect nowadays will include in his plan the furnishing of every room; in imagination he will personally occupy every corner; he will go up, and no less go down, every step of every stair; he will pass inwards and outwards through every doorway, and consider the precise interior effect and lighting-value of every window; he will discover every impedimentand embarrassment that would afterwards be discovered; he will see the dinner prepared and served, the dishes washed, even the boots blacked; in short, nothing that in any way concerns the working of the house is beneath his notice. I do not say that in the result every item shall be faultless, but compromise must be in every instance reduced to a minimum. This is organisation, the scientific design of the internal economy, without which, be the house ever so stoutly built or graciously adorned, they labour in vain who build it.

Academical Plan.— The symmetry and stateliness of an academical plan

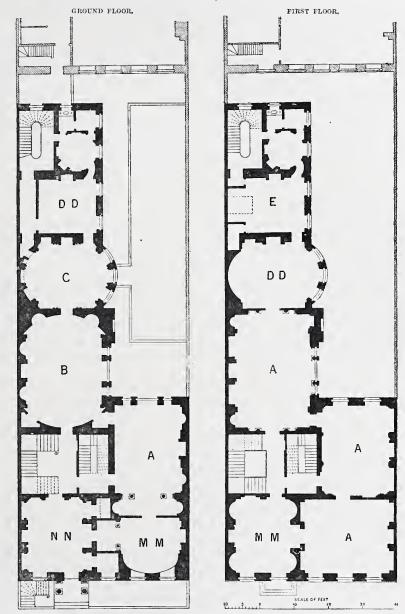


FIG. 1.—PLANS OF A HOUSE * IN GROSVENOR SQUARE. ROBERT ADAM, ARCHITECT, 1773.

(Reduced from R. & J. Adam's Works in Architecture, vol. ii. Plate I.)

A, Drawing-rooms. B, Dining-room. C, Library. E, Bedchamber. DD, Dressing-room. MM, Ante-chamber. NN, Entrance Hall.

—on paper—are always attractive; in a competition of designs, when a drawing of that class is placed side by side with others of different principle, these seem to be all in confusion. But those of us who, under difficult conditions, have tried academical plan most conscientiously, will

^{*} Stated to be arranged after the French style of the period.

testify that it is not always a proper criterion for practical arrangement; and I submit that, in modern English dwelling-house plan of a high class, considering the extreme complexity of the accommodation, this paper simplicity is particularly fallacious. The only efficient test is to follow out, as I have said, the full detail of actual family occupation; in which case the apparent confusion of many a well-organised plan will soon disappear, and the symmetries of the mere paper plan may be found to depend upon a multitude of oversights and inconvenient compromises which could not be submitted to. Again, let me remind you by the way that academical plan is not necessarily classic plan; this title rather attaches to the Palladian mode of monumental inconvenience. But the antagonistic principle, both to the classical and to the academical, is the picturesque, an intentionally irregular mode, somewhat similar to the crude or primitive, but not to be confounded with that which is more accidental. Be all this as it may, however, there is a via media, which I can only call perhaps the non-academical, meaning that which allows to the experienced designer, without depreciating either the academical or the picturesque, a free hand.

Historical Development of House Plan. This evolution of English plan, as applied to town houses, would be a highly instructive subject for consideration, but is not within our reach at present. I would recommend it, however, to some of our rising men of an antiquarian and analytical turn of mind, as a field of study and practical exposition in which, in these struggling times, there may be legitimately earned substantial distinction combined with substantial profit. In and about London itself there are still to be found, unaltered or nearly so, quite a sufficient number of characteristic examples of plan of the sixteenth, seventeenth, and eighteenth centuries, and the earlier part of the present nineteenth, from which a typical selection might be made, and so arranged in chronological order, with reference to the progress of principles, as to prove highly interesting, and not to professional designers alone, but to the curious public at large.

The Plan of a Town.—It is of no use to direct attention in England to the question what the plan of a town ought to be; the answer is that practically it ought to be, in one sense, what it is, but most assuredly, in another sense, something almost diametrically different. Every one of our towns has initiated its own plan by chance, and has developed it in its own way on the same principle. The leading lines are simply the accidental roadways of ancient traffic, and the enlargement of the place has been governed, from time to time, by the demands of business. The law of crowding has always operated in the same careless way; and the only deviation from the rule of happy-go-lucky has been when some indispensable improvement has been boldly effected at the public expense. "The laying out of towns" (as the fine phrase goes) means, in England, therefore, scarcely anything else than the amelioration, by hook or by crook, of their most glaring imperfections; and the only consolation seems to be that the achievements of our more ambitious kindred in America, with their open land and perfect freedom, are, in other ways, no better than our own. The genius of Anglo-Saxon civilisation evidently takes another turn. As we contemplate the grandiose disposition of Paris, we can only wonder how it has come about. So let us pass on.

The Story of Regent Street.—You may find an interesting illustration of the achievement of a great public improvement, and may be surprised at what has come out of it, if you will allow me to point to the history of the famous and familiar Regent Street of London. At the time of the resettlement of Europe after Waterloo, when the Allied Sovereigns paid a complimentary visit to London, the Prince Regent, afterwards King George the Fourth, was somewhat scandalised—as he well might be—at the ungainly appearance of the leading thoroughfares; and the result was the execution of a grand scheme for forming, on the basis of a crooked ancient way called Swallow Lane, a noble new axial avenue,

to which the name of Regent Street was appropriately given, beginning at the Royal Park of St. James's, and, with the help of Portland Place, reaching all the way to the extreme north, where "Marybone Fields," magnificently remodelled, became the Regent's Park. It is the two half-miles of high-class business premises that were built along the more important part of this great thoroughfare, with the residences over them, that constitute our illustration, and everybody who knows London at all knows them well. It goes without saying that they were designed in a manner which was deemed adequate for their stately situation; and no doubt it was universally expected that they would maintain that high character for a couple of centuries or so—the pride of the town. But now, when only three-quarters of a century has passed over them, how have they come to be regarded? Two half-miles of very shabby little shops, below the mark of many a new third-rate street, marvellously made the best of, but cumbering the ground; scarcely worth their ground-rents but for the exigencies of the locality, the showy shop-fronts, and the spacious dignity of the roadway; the wonder being that they survive at all! It is a commonplace sarcasm to refer to the vis inertiae of national property; but that is not our point: it is the times that have changed, while the houses have not changed with the times, and to take any other view of the case would spoil the illustration; in plain language, business has advanced, and the accommodation has been left wofully behind. The original conditions of occupation have so long been obsolete that it is scarcely possible now to realise them. The little shops that were then deemed so ample have every one of them had to take in, not only the back parlour, but every inch of the back garden; the kitchen offices below are warehouse basements, such as they can be made; and as for the residential accommodation above, not only has it been abandoned in that capacity, but there is a common saying that a newcomer will give as much for the shop alone as for the entire house; so that the upper storeys, with their miserable staircases, being unfit for better business, are either utilised for workrooms, lumber-rooms, and storage, or let off contemptuously for what they will fetch to photographers, inferior dressmakers, billiardplayers, employment-agents, chiropodists, actresses, and a miscellaneous host of other such small deer. The shops, even when enlarged to the utmost, are grouped together in a forlorn way in twos and threes and half-dozens; adjoining houses in the back streets are absorbed voraciously; sometimes the streets themselves are overleaped; and the cry is still for more space and more. All the while the structural stability of the houses, never of good quality, has been so sorely tried by courageous alterations that the attention of the public authorities is now and then directed to the appearance of actual danger; and as for sanitary questions, the less said the better. I should think there is not such another instance in the world of so ambitious and successful an enterprise of building improvement being so prodigiously distanced by the advance of society within the limits of a single lifetime. The reverse processes—the failure of a street, its adversity, its decadence—are familiar phenomena, but this is prosperity with a vengeance!

But there is another illustration here suggested, bearing upon the question of street improvement. In about five-and-twenty years the Regent Street leases fall in en masse—and what is to be done then? The problem which the Crown agents will have to face is not merely how to appraise high ground-rents, but how to rebuild at all without disorganising a considerable proportion of the trade of London! However, just for a moment's recreation, let us take a little liberty with the future, and ask each other what will be the character of the great competition of designs, open to all the world, which will of course be instituted by a democratic Government, under the control of the trades unions, in the early years of the all-promising twentieth century. In all probability the winner of that competition is listening to me now, not unconscious of his genius. But think what a mass of other genius he will

have to combat by that time! It will not be all "Queen Anne" then. Bedford Park, advanced in the world, but still "standing upon ancient ways," will naturally restore the lamented

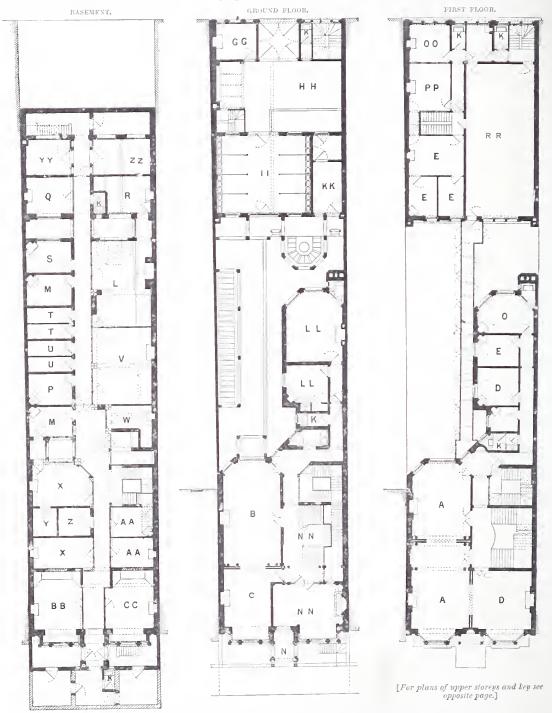


FIG. 2.—PLANS OF A HOUSE IN GROSVENOR SQUARE. J. T. WIMPERIS, ARCHITECT, 1886.

Swallow Lane in the style of Amsterdam; perhaps even Amsterdam herself may come in with the more genuine article; but Paris will meet the challenge with the feminine graces

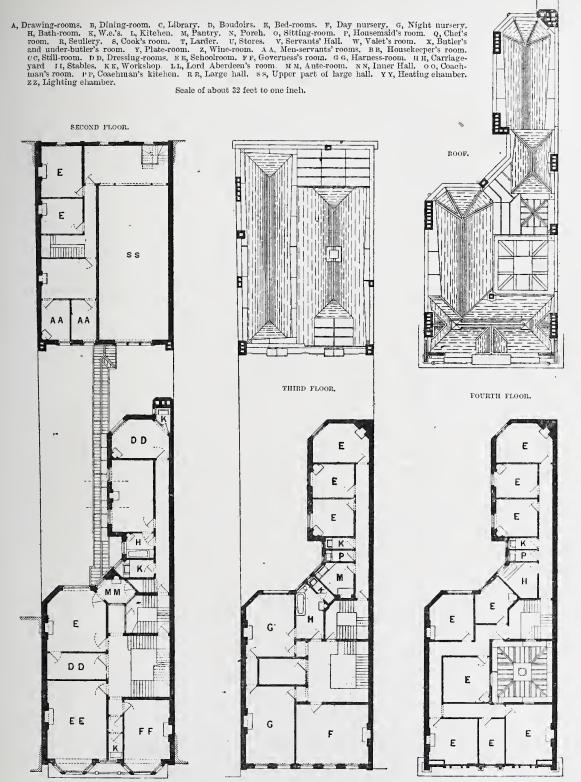


FIG. 3.—PLANS OF A HOUSE IN GROSVENOR SQUARE (continued) 1886.

of her boulevards; brusque Berlin will answer with the masculine Rococo of the Teuton; Vienna will submit examples of semi-Oriental brightness; even venerable Rome may pull herself together to prove that Italy still lives; and New York and Chicago—can it be doubted?—will show the old country how to do a big thing, in nineteen storeys and three hundred feet high, with skeleton of steel and skin of marble! Nor is this all; not only may our gentle "Arts and Crafts" by that time assert their practical pretensions, but fair ladies may have something to say; while sprightly amateurs can scarcely be expected to withhold their endeavours—some Ruskin to shoot a bolt for poetry, some Grimthorpe to explode a bomb for anarchy.

But, more seriously, what ought to be done with Regent Street is becoming a very grave public question. From my own lengthened official connection with the locality, I am of opinion that people are not only ready but anxious to find the money for rebuilding it entirely, as soon as may be permissible; and if Parliamentary authority were necessary for the compulsory purchase of those intermediate interests which are said to stand in the way, I cannot suppose there would be any difficulty in obtaining that. I do not presume, even as a public official, to dictate to those experienced functionaries who are in charge of the property—although, by the way, it is national property, with all the obligations attaching to that condition—but I would respectfully suggest the possibility of beginning to rebuild forthwith, by simply announcing a readiness to entertain whatever private proposals may be offered piecemeal, upon certain general terms that can easily be formulated; and then, I believe, you would have a brand-new Regent Street to show long before the twenty-five years are out, not only as a great benefit to the public and the town, but equally to the advantage of the Crown estate. And if we may suppose the first step to be the construction of a spacious subway along the centre line, perhaps this might accommodate the traffic of rebuilding.

Classification of Town Houses.—Coming now to the detail of my subject, the first or leading class of dwelling-houses in any large town is obviously the Street House, one of a close row where mere standing room is economised to the utmost; this economy of ground being based on two pressing considerations—namely, the costliness of ground-rent, and the operation of the first principles of crowding. Then, secondly, there is the Suburban House, which, in its proper form, has escaped out of the crowd altogether. But, thirdly, we have nowadays a special contrivance called the Semi-detached House, which is on the outskirts of the crowd, where ground is cheaper, and a modified amount of airiness is acceptable for want of more. Then, fourthly, there is the Working Classes' House, which, including the lodgings for the poor, has of late years been the subject of much anxious discussion. Fifthly, and I may say lastly, we have the new and peculiar model of house-plan called by the awkward name of Flats. This classification is, of course, broad and general in character, but I think it will suit the present purpose.

The Street House.—The principle of crowding which is here prominent exercises its most extreme pressure at the foci of town business, and we may form an idea of what that pressure has already come to when in the City of London we see accommodation so tightly compressed that it is actually advertised by the number of square feet of floor-space. This order of street houses, however, does not come within our province; but there is another subsection, and a very important one numerically, which we must recognise—namely, those that occupy the streets appropriated to more ordinary shops, where the crowding of the town is much less severe than at the centre. The incidental peculiarities of plan, however, may still be passed by, for this reason—that the old-fashioned Shopkeeper's House, in which the two departments, the ground floor for the shop and the other floors for the dwelling, were never separated, has gone very much out of use, except in inferior cases. The prosperous shopkeeper nowadays lives away from his business, and at home is a "private resident," or

even a country gentleman. The so-called "upper part" over his shop he therefore lets off, either as business offices, or as a professional residence or other makeshift dwelling-house, or, perhaps most frequently, as subdivided lodgings for a class of occupants quite below his own standard. There are, however, two or three points of plan of which you may still be reminded. In the first place, it is a good rule not to design the basement storey as domestic

offices; it is more valuable for business, and ought to go with the shop, if only for storage. Secondly, it is the rule that such a basement shall be well lighted by pavement lights and otherwise, and ventilated and made dry, fit for a ware-room or work-room. Thirdly, we provide a spacious stair leading down from the shop; because the commercial effect of this is to bring up the basement to the value of a groundfloor adjunct. Fourthly, in superior premises, what is often being done-following the plan adopted in the largest establishments—is to unite the first floor also to the shop, as an upper gallery, by a customers' stair both prominent and handsome; a measure again which confers upon a subordinate floor a groundfloor value.

But turning away now from business premises altogether to the typical dwelling-house, we still must fix our attention upon the principle of crowding. Of course, our street house is of many grades, reaching

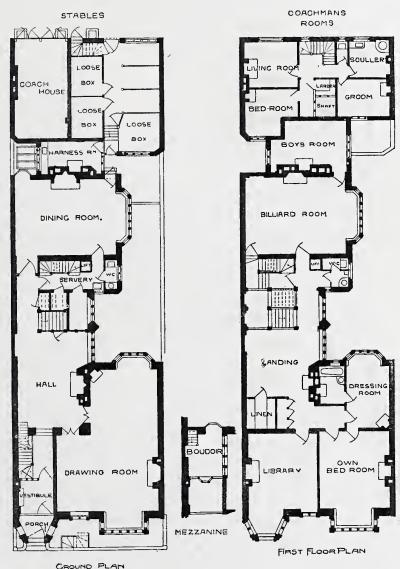


FIG. 4.—PLANS OF A TOWN HOUSE. ERNEST GEORGE AND PETO, ARCHITECTS, 1887.

Scale of about 26 feet to one inch.

from very high to very low, from the dainty home of fashionable society to the pathetic den of slum lodgings. Some of the best of these, and some of almost the worst, I have officially examined within a gunshot of this place of meeting, as I also have elsewhere; and no doubt many of you know more of the matter than I do; but what I wish to impress upon you is the fact that the evil influences of crowding are invariably conspicuous wherever dwellings are crowded; there is always a scarcity of air, a scarcity of light, a depressing aspect, a parsi-

mony of convenience; so that those, whether great or small, who enjoy the privilege of even occasional residence in the open country seem when in the town to gasp and yawn like caged birds. We must, as I have said, admit that this crowding is in principle an evil that is unavoidable; but an evil it still remains—and all the worse, perhaps, if we are so habituated to it as to think lightly of it—when even the natural air is a thing not to be bought by the rich, and the pitiable poor, packed together like waste goods, pass through life



FIG. 5.—PLANS OF HOUSES (WITHOUT A FRONT AREA) IN WESTMINSTER. L. H. ISAACS AND H. L. FLORENCE, ARCHITECTS, 1885.

Scale of about 32 feet to one inch.

a, Drawing-room. R. Dining-room. c, Library. p. Boudoir. E, Bedrooms. H, Bath-room. K, W.c.'s. L, Kitchen. R, Scullery. T, Larder. v, Servants' Hall. x, Butler's pantry. p.p. Dressing-room. MM, Ante-room. NN, Hall. QQ, Morning-room.

in a condition of perennial twilight and decay, kind Nature only letting them down to a lower order of vitality where the spark is not quite so easily snuffed out. As a professional question there is no exaggeration here; I am speaking to practical men on elementary science. In fact, I should like you individually to apply to this question of crowding, even in its least objectionable forms, a very simple professional test. Take any street house that you may be familiar with, large or small, and give it, say, ten per cent. more frontage—I do not ask for more depth—and observe the effect on the convenience of plan. But, it will be said, people cannot afford it; they would be adding, not only ten per cent. to the ground-rent, but ten per

cent. to the cost of building, and ten per cent. to the cost of making and maintaining, cleaning and lighting the street, and so on, and also—perhaps a still more serious thing—adding ten per cent. to the length of every journey in the town. Well, work out the calculation, as

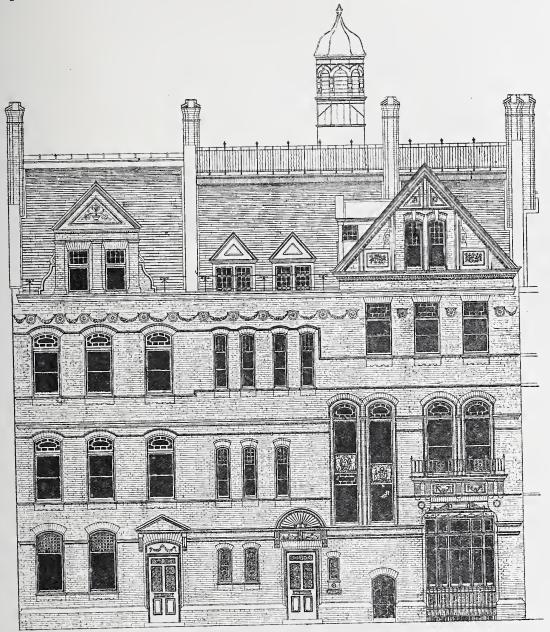


FIG. 6.—ELEVATION OF HOUSES (WITHOUT A FRONT AREA) IN WESTMINSTER. L. H. ISAACS AND H. L. FLORENCE, ARCHITECTS.

against the addition to the amenities of the house and the advantages of elbow-room to the general health and to the traffic no less, and I am not afraid of the issue. What I suggest is that, even on economic grounds, our towns are overcrowded.

Plan of a Street House.—Although it is obviously impossible for me to go into details of plan, there are two points in respect of our ordinary street houses upon which I may say a

BASEMENT.

word. I am entitled to assume, for instance, that every architect instinctively shapes his rooms aright, and disposes their doors, windows, and fireplaces in proper relation to each

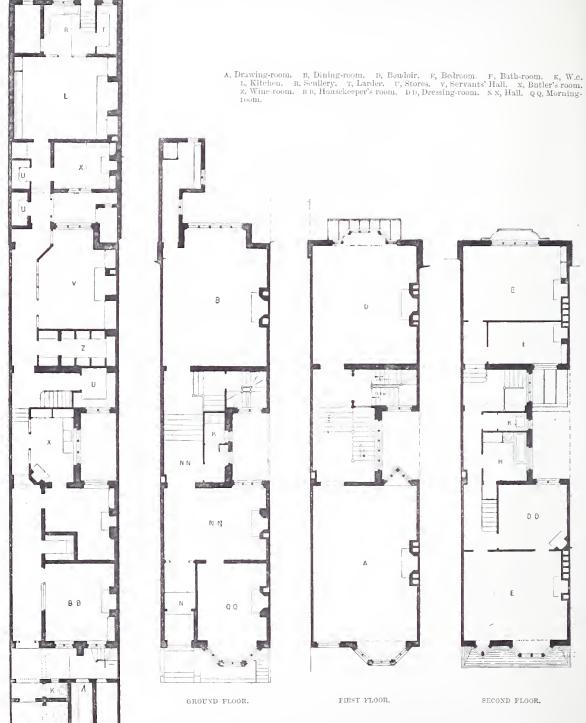


FIG. 7.—PLANS OF A HOUSE IN CADOGAN SQUARE. EDWIN T. HALL, ARCHITECT, 1890.

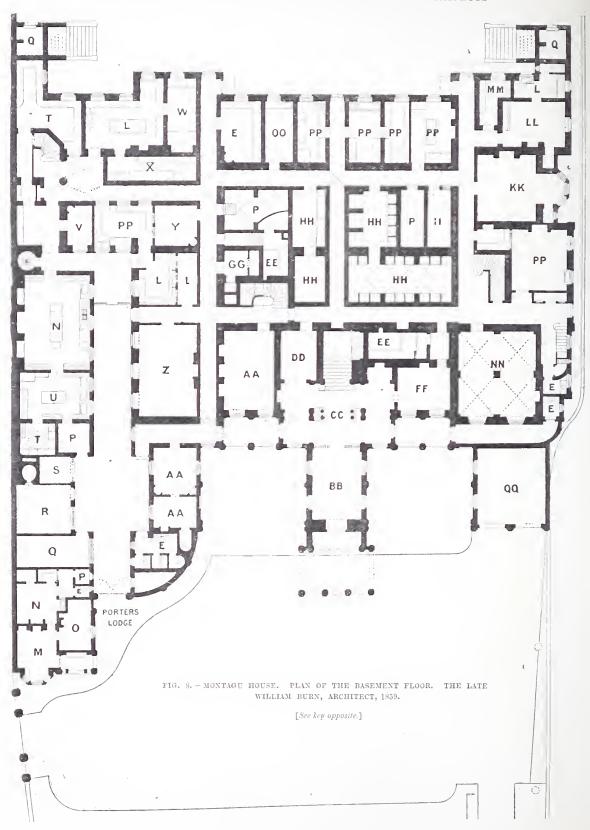
Scale of about 20 feet to one inch.

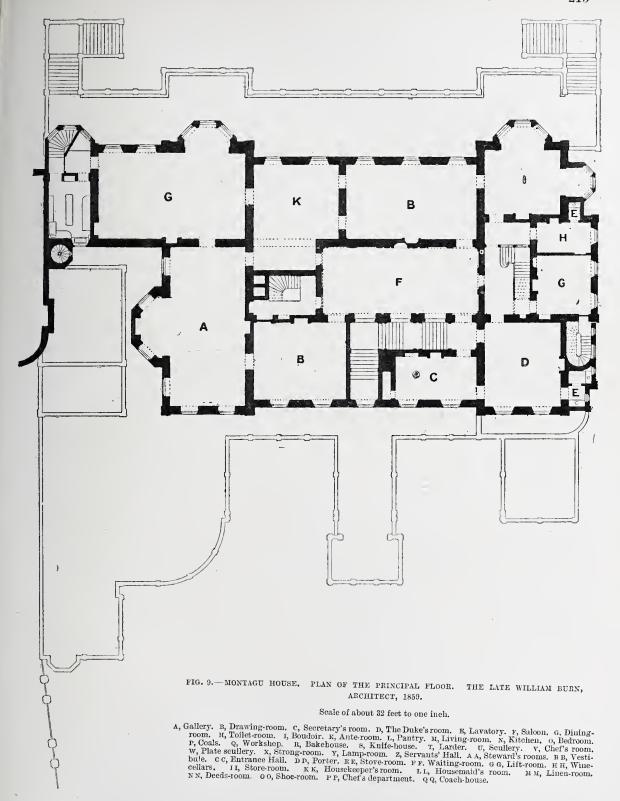
other; but why must he scamp the entrance-hall, degrading one of the most important items of residential convenience and pleasantness to the level of a rabbit-hole? And why, again, attach the title of bedroom to haphazard chambers without ever thinking where even the bedstead is to stand?

We may spare time, however, to attempt a single example of the distribution of accommodation in storeys. I need scarcely say that our first step in designing a street house of any importance, which must necessarily be several storeys high, is to prepare a list of the required rooms, with their approximate dimensions, and to proceed to classify them by area of floor-space, so as to be equally divided between the requisite number of storeys. In the present case it will probably be most instructive to take the case of a good house, in a fashionable quarter of London, worth about £7,000, five storeys in height, and occupying about 2,000 square feet of ground within the walls. I think the scheme of arrangement might then stand thus. On the basement floor, kitchen and scullery, larder and store-room, butter's pantry and bedroom, housekeeper's room and servants' hall, wine and beer cellars, knife-house, closets, &c., corridor and back stair, with front area and vaults for coal and dust. On the ground floor, dining-room and servery with lift, library, gentleman's room and billiard-room, porch and entrance-hall, cloak-room and lavatory, principal staircase and back stair. On the first floor, drawing-room and morning-room, principal staircase and gallery-landing, conservatory, a bedroom suite and bathroom, and back stair and service with lift. On the second floor, principal staircase, bedrooms and dressing-rooms, nursery suite and schoolroom, bath, &c., linen-room, and housemaids' closet, with lift and back stair. On the third floor, bedrooms, back stair with lift, servants' rooms, bath, &c., and housemaids' closet, and a lumber and box room. I should have the entrance-hall wide, well lighted, and warmed; and the billiard-room top-lighted, if only by means of a projecting end with a glass roof. A special corner of the plan ought, of course, to take practically all the water-served accommodation. The nurseries would be adapted for use as bedrooms. The back stair must be sufficiently lighted; and I see no objection to an i

The Suburban House.—I do not here include the rows of street houses which it is too much the custom to crowd together in suburban localities for the sake of "developing" ground-rents; I think such a practice ought, indeed, to be regulated by law, and on a very simple mathematical principle. Draw around the focus of a town a circle with, say, a half-mile radius; and let the circumference represent a street. It will, of course, be in length three miles and one-seventh; and, as a street of close houses on both sides, it would accommodate about ten thousand people. Then draw in like manner a circle with double the radius, one mile; and let the circumference again stand for a street; it would accommodate twenty thousand people; and so on. Now, no one will deny that, on the face of it, the necessity for crowding on the first line cannot extend in the same degree to the second; and, therefore, I say it is a self-evident proposition that the regulations of law, in the interest of the public use of the all-essential air, may reasonably be applied to a restriction of the evil of crowding in proportion to the decrease of the necessity.

But the suburban house, properly so called, is in principle a country house. In good examples it ought to have no basement offices; and even a second storey of bedrooms ought to be limited in extent, or, if possible, avoided altogether, except, perhaps, for servants' rooms: that is to say, the house ought to cover ground as liberally as circumstances will allow; for it





has escaped from the crowd of the town, and can take no excuse for being stinted of anything in reason that belongs to open space. We cannot, however, suppose that this application of the principle is to be followed as a rule; on the contrary, the more ordinary suburban house will in practice have to be designed a great deal less liberally; but it is well to emphasise the principle itself, so that we may take the opportunity of going on now to consider the chief amenities of a good English house, and how the architect has to deal with them.

Convenience.—This is obviously the foremost question of residential organisation. The designer follows out in all its complexity of detail the whole business of family life, and is not satisfied until he has got, not only every door, window, and fireplace, but every standard piece of furniture, in its right place, with a minimum of that occasional compromise to which he must submit. This is the elementary arrangement of the vital apparatus or mechanism of the dwelling, by means of which it will go, while the equally substantial and perhaps more handsome house next door, having been planned anyhow, will not go. I do not dispute the fact that there are good easy folk, not accustomed to refinements, who can accommodate themselves to anomalies; neither do I deny that, for the sake of making the house (as the ladies say) pretty, or quaint, or asthetic, or archaeological, or what not, people of quite another order of mind will consent to sacrifice one kind of fastidiousness for another; but even then I think the architect's duty is surely to provide first and foremost a house that will work.

Privacy.—The English idea of domestic comfort depends very much upon privacy. In a superior house, the dining-room, the drawing-room, the library, the billiard-room, and the hall and staircase, are of a public character; whereas the gentleman's room, sometimes the morning-room, and in all cases the bouldoir, if there be one, are strictly private. Again, the principal bedroom suite or suites and the nursery suite have a special privacy. But another principle of privacy which is also thoroughly recognised is that of the complete separation of the family from the servants, a rule which applies to every house, however small, that comes under the category of a Gentleman's House in England. I have seen it argued in newspaper criticism that this is obsolete conservatism, or aristocratic pride; but I have also heard it suggested (not long ago in this room) that in the arrangement of a town the mansions of the rich and the dwellings of working people ought to be intermingled, I suppose for some political reason. I trust, however, that we may on the present occasion take a more practical view of such matters. We have professionally to plan a house for the prosaic facts of housekeeping; and it is too plain to admit of argument that, just as the intermixture of rich and poor in the disposition of a town would obviously be a nuisance to both, so also in a well-regulated household, the family as one class demand and are entitled to their own privacy, and the servants as another class demand and are entitled to theirs. In fact, the servants' case is the stronger of the two; for, although the constant interruption of family privacy by the entrance of an attendant is a thing that has to be submitted to, a like interruption of the servants' privacy is a thing that is scrupulously avoided by well-bred people.

Aspect and Prospect.—I am afraid it is useless to suggest that the element of aspect, or the relation of the rooms to the sunshine, all-important as it is in the open country, should be materially considered in the streets of a town. The theoretical rule is very simple:
—south-east as nearly as possible for all sitting-rooms; northward or eastward for the dining-room, if not used as a sitting-room, also for the entrance, and perhaps for the gentleman's room and the library; eastward for the chief bedrooms; northward for the kitchen offices; and westward for nothing that can be placed otherwise; or, generally speaking, northward indicates coolness, eastward the morning sunshine, and westward the undesirable level sunshine of the afternoon and evening. In street houses all we can do is to prefer one side of the street to the other, having regard to the situation of the principal rooms; but in the

case of a suburban house it is certainly the architect's duty not to forget aspect in his design. For instance, what is to be done with a suburban site, limited in frontage, and on the north side of the road? The lawn and flower-garden ought to lie southward; and the entrance-front ought to stand towards the north. But to place the lawn between the house and the road, with the approach running along one side of it, is not to be thought of. Or to place the lawn, and with it the drawing-room, on the north, and make a forecourt and the entrance southward, is equally bad. But it is to be observed that this latter course may after all be made tolerable if proper precautions be taken, by laying-out and planting the lawn so as to catch the sunshine aright, admitting a little to the room by a bay window, and by particularly avoiding the radical blunder of adorning the forecourt with flowers, instead of shrubs which alone are admissible. A conservatory, by the way, may be introduced to advantage. Then with regard to the question of prospect nothing can be said; in a town, or on the outskirts, there seldom is any prospect worth considering, but if there should be any it is not likely to be passed over; aspect, however, ought not to be sacrificed to it.

Light and Air.—Relying as I do upon the great first principle that the circulation of the air-ocean, as our vital element, ought to be allowed as free play as possible, I say that the domestic architect, in a climate like ours, is especially responsible for its administration in his designs of plan; and I accept the common formula which couples with air the almost equally important consideration of light. In a cramped street house he has to lament over the impossibility of doing justice to these points; but in a suburban house he can have no excuse for darkness, cheerlessness, closeness, and smells; for he has escaped from the crowd. He may still have to complain of limited space, and especially when he contemplates the proprieties of the external accessories—the formal forecourt, drive, and shrubbery, the lawn, terrace, flower-garden, and conservatory, the stabling and kitchen-garden; but at any rate he has his four fronts, four willing faces turned towards the air and the light, and plainly asking for an abundant supply of both. A few points of plan here occur to me. We ought never on any account to have a dark or fusty staircase. Let us always make our hall as spacious as possible, and as bright and airy. The hall and staircase are not inconsiderable gangways, but two of the most important items of enjoyable accommodation, not to be hurried through, but rather lingered over. Again, we must never light a room by the very common means of a pair of windows with a broad pier between them. Thousands of handsome diningrooms are spoilt in this way; the shadow of the pier eclipses the whole room; and when the artifice is resorted to of disguising it with a mirror, this almost adds insult to injury.

Importance and Elegance.—These considerations, although attainable to the utmost in the highest class of street houses, are more readily provided for on a moderate scale in the suburban house, even when it is of smaller dimensions. Fashion seems to govern here with more freedom. In the last generation the fashion that most prevailed was to make what was called a "square house," with a pair of wings if necessary; and the concealed roofs, balustraded parapets, spacious entrance, and simple symmetries of proportion, suggested the smiling repose of a more southern climate. The fashion of our own time, on the contrary, affects a certain unsymmetrical, scrambling, playful character, with a doorway in ambush, high pointed roofs, prominent dormers, and conspicuous chimneys, all suited to more northern latitudes, where the grey fog frowns, the frost bites sharply, and the snow lies deep and long, and where the bricks and tiles appropriately run to red. Why we should in this way seek yesterday the south, and to-day the north, is not the question; but if the next fashion should accept the conditions of our own fair land, I hope it may abide. At any rate, we may note this contrast:—the previous one of these two fashions was in its way classical, the present one is in its way picturesque. And I am inclined to think it is chiefly

the ladies who like the present one, because it is "pretty," or what we call elegant, while their lords, when they venture to express an opinion, prefer the previous mode, because it is more important.

The Semi-detached House.—This is a hybrid between the more crowded street house and the more open suburban; and as such it constitutes nowadays a favourite class of ordinary, and sometimes expensive, residences for the extension of our towns. But I for one fail to see any real advantage that it possesses, except when on a small scale, over the wholly detached house. The saving in ground-rent, I think, is open to question; and as for the partywall, I need scarcely observe that, of all our structural contrivances, the domestic party-wall is one of the least felicitous. To say nothing of the partnership troubles involved, can anything be done to render this unwelcome partition impervious to sweet sounds? We have long been accustomed to piteous complaints against the barrel-organ on the street, but what is that compared with the pianoforte against the party-wall? A less troublesome question, however, is the suggestion whether the economy of brickwork is a saving after all, or rather a loss in rental when compared with the value of a house wholly detached; I myself think it is, as matter of calculation, rather a loss. I only observe further that the semi-detached house, even when on a small scale, ought certainly not to have a shabby back, but a respectable garden front; also that proper precautions ought to be taken as regards garden privacy; also that light and air ought to be let in judiciously, but liberally, through the flank-wall; and, lastly, that the servants' basement ought to be well ventilated to the open air.

Houses for the Working Classes.—Philanthropists and politicians who are interested in this question must certainly meet with every encouragement from architects, as experts in building, in maintaining the two propositions on which they radically rely—namely, first, that the influence of the mere dwelling, in all classes of society alike, is a weighty agency for good or for evil, and, secondly, that the condition of the homes of great masses of our artisans and their inferiors in large towns is not only unsatisfactory in theory, but in practice deplorable—actually below that level of domestic discomfort where degradation begins to result. How these dwellings are to be improved is, however, a difficult question commercially; and here, again, I think it is the architect who must come to the rescue. The appropriation of private capital on humanitarian grounds can go but a very little way. The provision of model buildings by the municipality or the State is equally inadequate; the object is too vast, and the issues that arise are too complex, too subtle, perhaps too dangerous, to be dealt with on any other principle than the recognition of natural economical law. What our working people want is not the dole of charity; it is proper value for reasonable rent.

But another branch of the subject, and one that in practice asserts itself as a separate question, and indeed a more urgent one, is how to provide lodgings for the inferior, and often abject, classes who are called the Poor; and this is a still more difficult matter to deal with. Not only is the rent that the poor are able to pay a much diminished amount of money, corresponding therefore with diminished accommodation, in quantity or quality or both, but there is the element of precariousness to be considered in the calculation; and I am afraid we must recognise also in the calculation such very peculiar considerations as the uncleanliness of poverty and its remarkable carelessness of damage, to say nothing of dissolute habits and occasionally criminality. Allow me to repeat to you the description of a too-typical tenant of this hopeless order. After paying rent with difficulty for a very short period, he or his wife intimates that he is out of work and has no money. The legal remedy is distraint upon their goods; but the poor furniture is not worth selling, and they are therefore informed that if they will take themselves off, and their things, within so many days, the overdue rent will not be claimed. The answer is that they cannot find another place. Now the landlord is not allowed

by law to put them forth; but he takes the case before a magistrate, who reluctantly makes an order for the police to do so. And then comes our point. The occupation may have lasted for only two or three weeks; but the place is left in such a condition that not only has it to be

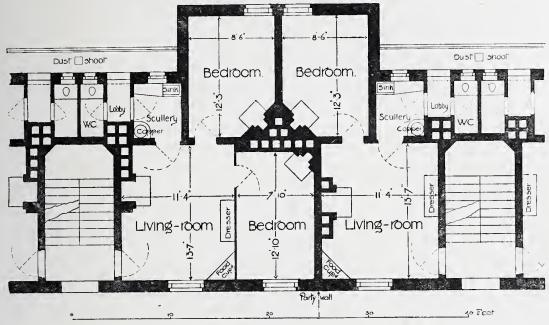


FIG. 10. - PLAN OF L.C.C. ARTISANS' DWELLINGS: SELF-CONTAINED TENEMENTS, 1893.*

thoroughly cleansed, and possibly fumigated, but the ceiling must be whitened afresh, the walls repapered, glass and damages repaired, and the paint touched up or perhaps renewed. This description actually refers, not to old and decaying houses only, but to new houses, and in the

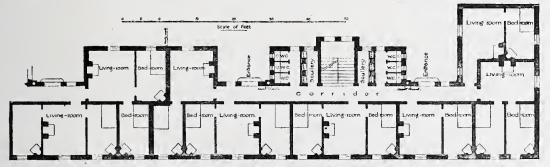


FIG. 11.—PLAN OF L.C.C. ARTISANS' DWELLINGS: ASSOCIATED TENEMENTS, 1893.*

West-end of London: the chronic state of the East-end is notoriously worse. Now, whether in these days we are all born equal or not, what is to be done for those poor people and their

through disconnecting lobby open to the external air. In associated tenements, corridor has rooms on one side only, and sanitary arrangements are concentrated. In the general plan these buildings are constructed with a space between them equal to height of surrounding buildings, and are arranged that each room receives sunlight; no quadrangular arrangement or re-entering angles are permitted; construction is fire-resisting. They are estimated to produce a net return of 3 per cent.—Architect, Thos. Blashill.

^{*} The two plans given above represent the latest plans of dwellings for the poorer classes on the flat system adopted by the London County Council. The associated plan costs about 14 per cent. less per room than the self-contained plan. The chief points of the plans are:—Through ventilation from front to back; light to inhabited rooms not obstructed by horizontal or vertical projections. In self-contained tenements, no passages, separate sculleries with sink under window, and copper; w.c. approached

little children? Lodged they must be, somehow or other; but how? Can they by any exercise of our professional ingenuity be supplied with a passably decent shelter? But there are other poor people not so abject as these; they can pay only very little, but they can pay it, and they mean to pay it; and the foremost problem of housing the poor practically is how to devise for this more deserving class a decent home at a price which they can pay. This most pressing problem the efforts of philanthropists, strange to say, appear to leave almost untouched. It is a remarkable fact, also, that what has been done for the working classes above them seems to have chiefly failed, flying somehow over their heads.

There are to be seen in and about London several distinct types of commonplace workingpeople's dwellings which are easily identified as the simple outcome of their habits. First comes the independent cottage or very small street house, containing a living room and a small kitchen on the ground floor, and two corresponding bedrooms above, with a little yard or garden behind. Secondly, an architect will note with interest an occasional range of houses with an open gallery running along the front at each floor level, for access to so many tiers of lodgings, smaller but still independent. Thirdly, there is the "model lodging-house" so called, or block-building, divided internally into small suites, accessible from dismal public staircases. Fourthly, we must not fail to remark the inferior, but most common and perhaps most popular form of lodgings, in which an ordinary street house, with the usual two rooms on a floor, accommodates a separate household on each storey, with perhaps more quictude if less privacy. Lastly, there is the same kind of house, or any other kind miscellaneously, which is let out in a rough-and-tumble way to the poor, and most generally in single rooms. With regard to the first of these orders of dwellings, the independent cottage of two floors, it seems to me the most desirable of all. Of course, it is really a country type; but in the suburbs, even of London itself, I see no reason why it should not be the general rule. The second model, with the galleries, is to be commended for such quarters of the town as are more crowded, especially if private little balcony yards can be added behind. Thirdly, as regards the great block-buildings, I confess that I am prejudiced against them, as being on the face of the matter too artificial, barrack-like, almost prison-like; and I think many of the inmates must particularly dislike the pervading authority of the concierge and the assertive aspect of his office, and probably of his wife. Then, fourthly, concerning the standard form of the common street house, in which each family has its own floor of two rooms, and the basement and back yard are used in common, one is compelled to own that experimentally it seems to work so well amongst respectable people that it can scarcely be objected to; but it would obviously be easy enough to add very greatly to the comfort of the occupants by planning new houses of this sort expressly for the purpose in view, and introducing such appliances as would make each suite a complete home.

Houses for the Poor.—Now with reference to the dwellings of the inferior poor, what can we as architects say? Can we suggest any plan humble enough to meet the real and practical wants of the very lowly? When benevolent theorists talk as they do about the elementary decencies of life being unattainable with less accommodation than a living room, two bedrooms, a larder, and a private closet, surely this is on the face of it delusive. How is such a dwelling to be paid for? How furnished? How supported? How kept clean? Many years ago I read a Paper here * which advocated the systematic supply of homes for the poor in the humble form of spacious single rooms, specially planned and provided with appropriate appliances, simply to take the place of the insufficiently large and decidedly haphazard single rooms which they now occupy. I still think this is one solution of the problem, which

^{*} Transactions, 1867-68, p. 37.

I will take leave to define as being practically the provision of improved accommodation for the class of legitimate single-room lodgers; a very numerous class, which, from practical experience, I maintain ought not to be ignored for the sake of sentimental prejudice. Of course, much depends upon the size of the single room which can be supplied; but, as regards the decorum, I say, give the wife or mother sufficient space, and she will see to that, and much better, indeed, in one large and airy place than in what is practically the same space, or less, with a partition run down the middle.

Flats.—The final section in the scheme of classification for town houses which I submitted to you at the outset is the recently adopted model which groups a number of private residential suites beneath the roof of a single large edifice, under the strange name of Flats;

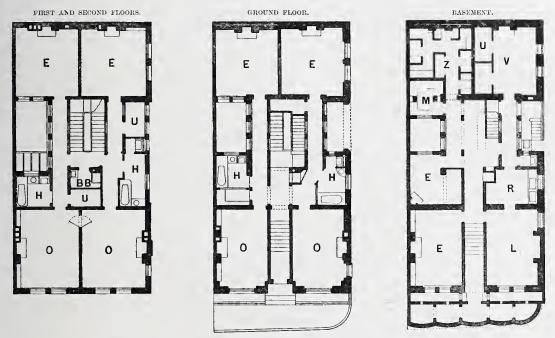


FIG. 12.—PLANS OF SMALL FLATS OR BACHELORS' CHAMBERS, PARK LANE. A. WATERHOUSE, R.A., ARCHITECT, 1884.

Scale of about 26 feet to one inch.

E, Bedrooms. H, Lavatories. L, Kitchen. M, Pantry. o, Sitting-rooms. R, Scullery. U, Stores. V, Servants' Hall. z, Wine-eellar. B B, Housekeeper's room.

and it has to be observed that some of these edifices—now taking the preferable name of Mansions—are not only very capacious, but luxuriously appointed. Whether the idea of these buildings came to us directly from the American "tenement-houses," as would appear to be indicated by the earliest of them, Mr. Hankey's lofty edifice beside St. James's Park, or partly from the French and German model, I am not able to decide; but the name "flats" I presume must be Scotch. In Edinburgh and Glasgow, and indeed in minor towns in Scotland, it has for ages been the custom to divide a house into complete private suites of apartments on the successive storeys, for small family residences, frequently of a superior class, and to call them by this name—flat being Scotch for floor. Everybody knows also that the Continental model is in principle the same; and if the Scotch "flat" and the French "apparte-"ment" both go back historically to the sixteenth century, I should certainly say the Scotch practice had been derived from the French. But the American tenement-house is a wholly modern affair, and is one of the most conspicuous illustrations of the crowding of a town squeezing the accommodation upwards. At any rate, the system of residential flats seems to

have now effected a settlement in London; and, commercially speaking, the speculating builder, and none the less perhaps the speculating dealer in building land, are no doubt making a good use of the element of ground-rent. But socially also there are certain attractions offered fairly enough to residents of several classes, by reason of which the rents which are obtained are unusually remunerative; and consequently, as I need not remind you, these flats and mansions are now being perseveringly built, not only for the gentry who are accustomed to pay handsomely, but for middle-class people who cannot be so liberal, and indeed for people of the working class also who can only pay but little. Moreover, they are being built for special service in another way; many, of course, are for gentlemen exclusively, but some are for ladies exclusively; some are for people with servants, and some for people without; some for people who must not dine at home; and some for people for whom a refectory is provided; and so on; indeed, one can scarcely tell where this specialism may stop. However, it is easy to see that the popularity of such peculiar establishments must come in time to turn very much on questions of salubrity, and I regret to have to say that in this respect medical men are beginning to complain of them. If there is one attribute more than another which English families value in what they almost affectionately call their private house, it is that it guarantees them from being affected by unhealthy conditions that may arise in neighbouring households. To live next door to serious illness, or even in view of untidy habits over the way, is held to be a personal grievance. But the doctors are telling the dwellers in flats plainly that the absence of fresh air for themselves, and the presence of polluted air with their neighbours, not only must be expected to produce ill-health, but must be taken to be realising that disagreeable expectation already. At the present moment, however, it might be unfair for us to discuss this suggestion; we may wait till it is more fully pronounced upon by the medical profession.

The Improvement of the Design of Houses.—I do not propose to say more on this subject than I have already said in passing. No doubt there is room for improvement; but progress, in matters of business, comes not by doctrine, but by development. We see how trade premises advance, in character, in spaciousness, in ingenuity of organisation, and in artistic attractiveness, precisely as the necessity arises by the advance of trade. The improvement of streets also progresses manifestly on the same principle. So it is even with our public buildings. And so it must be with private houses; indeed, it is well understood that dwellings of all classes are improving every day in every town of sufficient importance throughout the land; there are countries here and there in the world that are stationary, but England is not one of them, and that must suffice. There is one point of doctrine, however, which I may again refer to. I have ventured to urge upon you the great and growing importance of fresh air, while at the same time I have not failed to recognise the growing necessities of its great enemy, crowding. I think, as architects, you may better than others succeed in grasping these two points, and perhaps in keeping attention directed to the conflict between them.

I now ask your leave to conclude with some brief notes on certain general characteristics of domestic design apart from mere plan.

A Gentleman's House.—In designing a house for an Englishman who has been accustomed to very good society, there is one fundamental principle which must never be lost sight of by the architect:—everything that bears the appearance of pretentiousness or display must be avoided. Even the natural ambition of an academical designer to achieve tasteful effect must be kept strictly under control. It is not vulgarity only, or ostentatious showiness, that is objected to; I think I may say there must be positive reticence in respect of architectural effort. So far is this carried that it is pronounced to be an imperfection in the capacity of the English gentleman that, as a rule, he is so unappreciative and suspicious in matters of

taste. Substance he is always ready to accept; he will spend his money freely upon the structural quality of the building, and of the furnishing; but in this, as in his dress, he will not consent to be effeminate, or dandified, or diamond-ringed, or conspicuous in any way whatever. He cultivates the sense of what he calls "an assured position," and he has

no need, and no desire, to magnify himself. Even my lady exhibits the same complacent feeling; as much at least as a lady may, for I need scarcely remind you that the æsthetic instincts of a woman, and her enjoyment of the superficialities of grace, are much stronger than those of a man. A characteristic "Gentle-"man's House," therefore, is one in which all conveniences of household business and all family comforts are carefully attended to in the organisation, with dignity but without display, and without the manifestation of effort.

A Picturesque House. People of high class do not generally appreciate the picturesque in their dwellings; but there are undoubtedly some, especially ladies, who at the present moment are exhibiting a decided leaning towards all things of that kind, and this so notably in respect of the management of domestic decoration and furnishing, and even plan, as to make architecture almost a popular amusement. Now the species of picturesqueness more immediately favoured in this

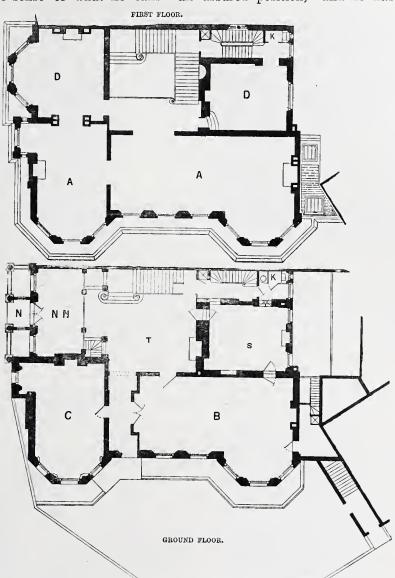


FIG. 13.—AN OLD HOUSE (REMODELLED AND ENLARGED) AT CHELSEA. WM. YOUNG, ARCHITECT, 1874.

Scale of about 26 feet to one inch.

A, Drawing-room. B, Dining-room. c, Library. D, Boudoirs. K, W.c.'s. S, Smoking-room.

T, Hall. N N, Outer Hall.

manner for the moment is what is called quaintness; and although no doubt quaintness is a virtue in its way, I venture to submit that we ought to be very careful how we accept it in building. For it is not a serious and sober virtue by any means, but often rather of the nature of the bizarre, and, when looked at analytically, very much of a jest. The interest attaching to it lies in its oddity; and in architecture, more perhaps than in most

things, that which only tickles the sense of humour can scarcely be endowed with critical popularity. I feel sure, indeed, that the bric-à-brac Renaissance of the present moment will

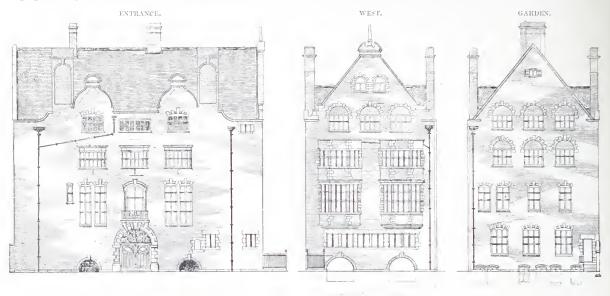


FIG. 14. ELEVATIONS OF A CORNER HOUSE AT QUEEN'S GATE. R. NORMAN SHAW, R.A., ARCHITECT, 1891.

be found to be quite evanescent, in fact only a stepping-stone from the discarded picturesque of the Secular Gothic of five-and-twenty years ago towards some much more appropriate Renaissance of five-and-twenty years to come. The best compliment that can be paid to the mis-

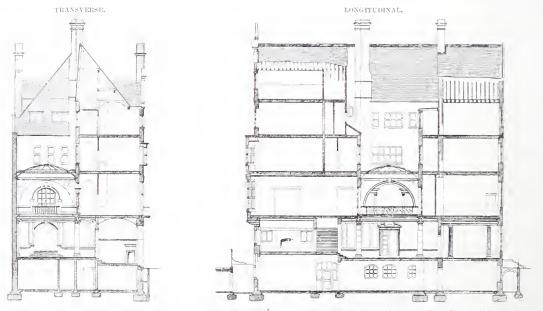


FIG. 15.—SECTIONS OF A CORNER HOUSE AT QUEEN'S GATE. R. NORMAN SHAW, R.A., ARCHITECT, 1891.

Scale of about 32 feet to one inch.

called Queen Anne style, or Flemish Rococo, is that it is clearly a Teutonic, and not a Latin, mode, and therefore on our own side of the racial dividing line; but how far this is sufficient to confer upon it an historical value of its own is another question. In too many cases, although

I do not say clever design is being wasted upon it, its queer Dutch features, its coarse modelling, its crude proportions, its reliance upon delusive draughtsmanship, its characteristic

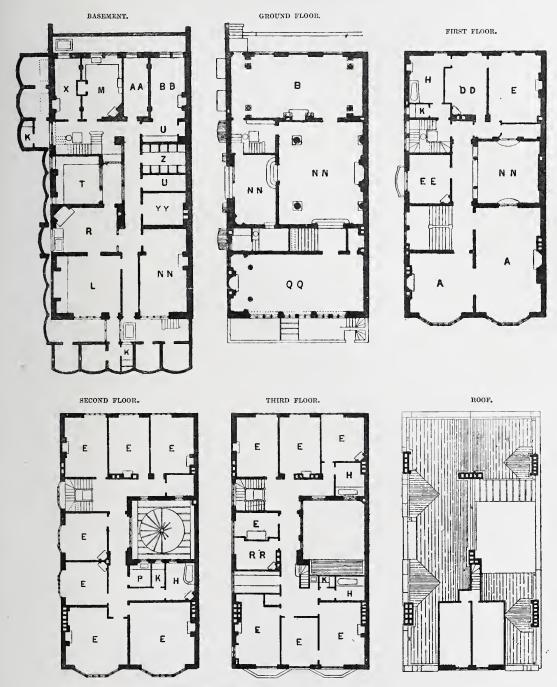


FIG. 16.—PLAN OF A CORNER HOUSE AT QUEEN'S GATE. R. NORMAN SHAW, R.A., ARCHITECT, 1891.

Scale of about 32 feet to one Inch.

A, Drawing-room. B, Dining-room. E, Bedroom. H, Bath-room. K, W.c. L, Kitchen. M, Butler's pantry. P, Housemaid's closet. R, Scullery. T; Larder. U, Store. X, Butler's room. Z, Wine-cellar. AA, Men-servants' room. BB, Housekeeper's room. DD, Dressing-room. EE, School-room. NN, Entrance, inner and upper part of Hall. QQ, Morning-room. RR, Nurse's room. YY, Heating chamber.

preference for materials and decorations of a low class, its eccentricities of plan, and its contempt for dignity, all proclaim that we are being trifled with, and that the guidance of the style ought to be taken in hand much more seriously by the superior men; indeed, so far as it has yet gone, I do not consider its merits to be always on a par with those of the discarded Secular Gothic, which certainly did not laugh at us, if it frowned.

An Artistic House.—I need not describe before such an audience as this what the thoroughly artistic ideal of a dwelling-house may in skilful hands become; but I am bound to refer once more to the fact that in an Englishman's home a little art generally goes a long way. The picturesque I have just spoken of; and if I were to enter into detail about the contrasted element which we call the classical, and which analytically is the quality of repose, I should be obliged to own here again that English taste leans to the side of reticence. I think there is a great deal of common sense in the idea that picturesqueness is best for the country, and classical repose for the street; but even if our town houses were to be wholly designed, as is the rule in France, in a vernacular Neo-Classical mode, the maxim would still hold good that the most refined treatment must not be demonstrative. Careful proportioning can never be overdone; nor good modelling; nor harmonious colour, if sufficiently modest in tone; but too ambitious ornamentation, assertive importance, and even too palpably elaborated graces, must all be eschewed; not only is vehemence voted vulgar, but even the most amiable dressiness is deemed undesirable.

Foreign Houses.—There are only two foreign models to which I will briefly allude the French and the American. France exhibits in perfection the type of plan which in England we have left behind us; while America illustrates in a certain way, in this as in many other matters, what seems to be before us. A private residence of the best class in Paris is a highly refined example of advanced Italian or Neo-Grec Renaissance, academically designed both without and within for artistic grace, but organised more for stately and often grandiose effect than for what we consider to be family comfort. The characteristic Latin cortile is, for instance, still made a prominent feature; the rooms intercommunicate, as in our own Palladian mansions of a hundred and fifty years ago; and the ensemble of the dwelling, if sometimes meretricious, and perhaps always a little ambitious, is highly refined, never eccentric, or quaint, or even picturesque in the sense of a sacrifice of repose. I suppose I must say the style of all French art at the present day is leaning towards effeminate elegance, as contrasted with the masculine vigour which we prefer; and if so, we can scarcely expect, or wish, to see the advance of English architecture taking that direction; in fact, our present picturesque mode may be considered to indicate a tacit and unconscious protest against such a principle, and in favour of muscular virility, if even at a sacrifice of grace. the other hand, if we turn to the United States of America, what we see in domestic architecture is of special interest. There are great activity, a good deal of miscellaneous ambition, considerable promise in respect of artistic character, and—this being the point that concerns us at the moment-a certain amount of that kind of utilitarian enterprise which conduces to progress in interior organisation. It cannot be said that the English mansion is being improved upon as regards its plan, or, indeed, that it is yet emulated; but the practical and empirical inventiveness of the American intelligence seems to be likely to engage itself in the suggestion of novel appliances, and perhaps also in the improvement of the amenities of occupation. Consider, for example, the extent of our deficiencies in respect of such matters as sanitary drainage, heating and cooking without gross waste of fuel, contrivances for ordinary ventilation, the smoke nuisance, the use of gas, electric lighting, the water supply and service, the freezing of pipes, fireproof construction, the use of lifts, and so on, and we must confess that if the Americans, as they are always saving, accomplish results while we are thinking over

preliminaries, we shall be only too glad to have the benefit of such promptitude if they will seriously turn their attention to the wide field of domestic contrivance.

The Jerry-Builder.—An inquiry concerning houses in our towns could scarcely be concluded without asking the question, What can be done with the jerry-builder? If everything we see about us represents, as we are now accustomed to think, the survival of the fittest, by what process of evolution have we arrived at the jerry-builder? Is any further development of the species likely to improve him? Or can any form of constitutional coercion correct his little ways? It becomes plainer every day that we cannot do without the agency of the building speculator. His is the only agency by which our towns can grow; he is all we have for the manufacturer who supplies the house market. Let us look, therefore, at the conditions under which he carries on his trade. In the first place, I am not speaking of an exceptional case when I say he has no capital, and not much character; in fact, he may have only recently made an unsatisfactory arrangement with creditors. However, he knows his business. He knows how to get the land, the credit, and the money. He hopes to make a hit some time, and perhaps it will be this time. But if he fails, well, he will have secured at any rate for his family, out of the weekly advances, a modest "living wage" while the job lasts. He pitches, therefore, upon a piece of suburban land, and looks up the "estate agent and "surveyor" who has charge of it. That functionary will supply the plans and the directions, which are perhaps not worth much; but he will also furnish the certificates, which are worth a great deal. As our adventurer is well aware, he knows how "to make what he can out of "it;" but this cannot be helped, it is one of the little incidents of the adventure. The next step is to find the solicitor, and he is not far to seek. His all-important function is to find the money; he also prepares the documents; and again it is quite understood that he knows how "to make what he can out of it," as another little incident that cannot be helped. Then the freeholder, of course, is "making what he can out of it" in the shape of the readily saleable ground-rents that are to be created out of nothing, upon which he is, however, allowing the builder the usual margin for a little manipulation on his own account. So they go and dine over it, and the work of building is presently in full swing, and may go on for years. Occasionally, by dint of fortunate sales, Mr. Jerry pays his way, and even makes a little money; but we do not require to be told that even this happy result is achieved by very bad building. When, however, as too frequently happens, the speculation collapses, do not forget that all the parties, having been quite wide awake throughout, are quite wide awake still. Freeholder, surveyor, and solicitor pretend to frown; creditors—dealers in materials and the like grumble and submit once more; public opinion pities poor Mr. Jerry, and blames "the "avaricious ground-landlord;" but what is much more to the point is, that Mr. Jerry himself, whenever he can be got to speak confidentially, attributes the wreck of the enterprise wholly and solely to professional rapacity—the ingenuity of the solicitor and the surveyor, in "making what they can out of it," being, as he says, beyond description. For his own poor part, he is neither discredited nor even disappointed; he has had his "living wage" for a little while, and he will try again. This, then, is the explanation of the riddle—how the jerry-builder is the survival of the fittest. He is the legitimate product of a hollow system, and we shall never get rid of him until we get rid of the system he represents; for the strongest measures directed against such a builder must be ineffectual, unless something can be done by way of an attack upon those whose tool he is. I am sure we all as architects would be glad to see this attempted. May I presume, therefore, to offer a purely commercial suggestion? Has the time come for applying to the extension of our large towns, and London in particular, the principle, now successfully made available in so many other matters, of organising joint-stock capital on a large scale? Would this get rid of that secret plundering to which the speculative

builder attributes, with every appearance of truth, the wreck and ruin of his enterprises? I think it would; and I think the thousand-and-one miserable artifices of jerry-building would be promptly and finally driven away by the force of honest competition in the proper form.

The Illustrations.—The reason is obvious why I should not venture to submit to you either designs of my own or those of others to be treated critically. I have, however, invited a few of our colleagues to place on the walls some of their plans and other drawings, the inspection of which, I am sure, must be very instructive; and a small selection of these will be published. I do not presume to offer any observations upon these excellent designs; but I may take leave to say that I think the authors have not only done me a favour personally, for which I owe them many thanks, but have manifested on somewhat delicate ground their loyalty to the profession and the Institute; and I am sure you would not wish me to forget to direct special attention to one contributor, our Senior Royal Academician, Mr. Norman Shaw.

I need scarcely say, as a last word, that I have to thank you very much for having allowed me to take you over such a great deal of ground; not exhaustively—for that would be impossible indeed only superficially, but with a desire to compel your thoughtful attention to a variety of interesting and important questions which I think architects are best qualified to deal with, both as private advisers and as a public guild.—Robert Kerr.

DISCUSSION OF PROFESSOR KERR'S PAPER.

MR. ARTHUR CATES [F.] has forwarded the following note on the Professor's "Story of Regent

"Street" [p. 204]:-

As I may not at this season attend evening meetings, I adopt this method of submitting the following observations on Professor Kerr's suggestion that the rebuilding of Regent Street might be facilitated by the Crown authorities "simply announcing a readiness to entertain "whatever private proposals may be offered " piecemeal, upon certain general terms that can "easily be formulated." A course of procedure such as that so suggested would be only in accordance with the practice which has been generally adopted on the Crown's London Estate for the past twenty-five years, under which proposals for the surrender of existing leases, which may have comparatively short terms to run, and the grant of new building leases to facilitate the consolidation of holdings, and the substitution of one good building for several of inferior type, have been favourably considered; and under such arrangements many of the important buildings of late years erected on the Crown Estate have been rendered possible, all subsidiary interests in the smaller buildings removed having been extinguished: the Queen's Concert Hall in Langham Place being one of the most recent instances of the advantage resulting from the surrendering of outstanding leases, and the grant of a new building lease for the consolidated site.

As regards Regent Street, on the 17th December 1877, in opening the discussion on the Paper on "Middle Class Houses in Paris and Central "London," * by Mr. William H. White (now

the Secretary of the Institute), I dealt with the subject of Regent Street and the great benefits conferred on the metropolis by the magnificent improvements carried out by the Crown in forming that street, Pall Mall East, King William Street, West Strand, &c., and especially commented on Mr. White's suggestion that a particular block of property in Regent Street—an "island," as he termed it—the reconstruction of which he advocated in accordance with his views of the arrangement, appropriate for business and residential houses in Central London—"being "Crown or national property, is above the Law; " so, for more years than I can live, it must remain "beyond all possibility or hope of improvement, "in the direction to which the makeshift altera-"tions of the actual tenant unmistakably point;" and pointed out that the responsible managers of the Crown Estate have but one anxiety—to promote the welfare of the property and of its occupants—and are at all times ready to meet those who may be in a position to effect these improvements. I further said that if he had a client prepared to surrender all interests in the "island" † he referred to, the Crown would be happy to afford all possible facilities for the removal of the

^{*} Transactions, 1877-1878, pp. 21-65; Mr. Cates's references are at pp. 57, 58.

[†] This island of shops and houses, bounded on the principal side by Regent Street, has Warwick Street on the east, Beak Street on the north, and Regent Place on the south. The author of the Paper referred to attempted to show, by plans and elevations, how the island might, under the Parisian system of plan, be made healthy and comfortable, and how the shops might be distinct from the residences over them; how forty shops and houses of different sizes might be made to occupy less space of ground than the twenty shops and houses of different sizes which now crowd the island -and without increasing the average height of the front walls.

houses now standing, and the granting of a fresh term of lease for the erection of his combined

dwellings.

However willing and desirous the Commissioners of Her Majesty's Woods may be-with due regard, of course, to the interests of the Crownto encourage and carry out such arrangements more extensively than has yet been possible, there are great difficulties to be overcome, especially in regard to the Regent Street houses, where, besides the valuable trade interests involved, the real obstacle to the desired improvement is the web of legal restrictions in which most of the properties are entangled by settlements and the like devices, which tend to keep the improvable unimproved, and check in every direction all efforts for development—obstacles which appear to be almost insuperable, except with the aid of empowering legislation specially aimed at them.

There are other considerations which must greatly influence dealing with Regent Street. Any rebuilding such as advocated by Professor Kerr cannot be of single houses forming a mere narrow strip of elevation, perhaps well enough adapted for bold advertisement of the business of some individual tradesman, but, to secure the necessary architectural effect, must be in blocks; and, where such block is not an "island" or of isolated design, due regard also must be had to the surroundings of the property to be dealt with —and any such dealing with the Quadrant would clearly be inexpedient; but wherever it might be practicable to rebuild without erecting a deformity. the proposal of those persons who, in the opinion of Professor Kerr, "are not only ready but anxious "to find the money for rebuilding Regent Street "entirely" will certainly receive the most careful consideration of the Commissioners. How far the extreme restrictions on building and rebuilding in London contemplated by the London Streets and Buildings Consolidation and Amendment Bill, now being promoted as a private Bill by the London County Council, would affect a monumental rebuilding, not only in Regent Street, but throughout the metropolis, is a subject which should receive earnest consideration from the Institute as a matter of grave importance likely to seriously affect the interests of architectural and of business development.—ARTHUR CATES.

Mr. LACY W. RIDGE [F.] referred to the Paper which had been read in terms of appreciation, and characterised it as full of the best architectural humour, and at the same time as illustrating the best architectural precepts. It was impossible at that hour to go into any considerable proportion of the matters brought before them, but on the subject of the London Streets and Buildings Bill, at least, he would say a word; because, in common with the members of the Practice Committee, he had thought a good deal about the Bill. The

Practice Committee and their sub-committee had had the matter under consideration not only since the Bill of the London County Council had been brought forward, but for years before, having, in fact, drafted a Bill of their own, on which, in part, the measure to be brought before Parliament was founded. That Bill embodied several of the suggestions emanating from the Practice Committee; and that, he thought, was a sufficient reason why the Institute should look favourably upon the action of the London County Council in bringing forward a Bill for the amendment of the numerous Acts which now affected building in the metropolis. At the same time, neither that consideration nor any other should blind them to the extreme danger to the property of the individual contained in many of the enactments proposed to be embodied in the Bill. What action it would be necessary in the future for the Institute to take in the matter was now under consideration; but a great deal of attention had been given to the subject by members of the Committee—especially by Mr. Rickman and Mr. Edwin T. Hall; and it was a fortunate circumstance that the subject came upon them at a time when the Institute was prepared, to an extent which could hardly have been anticipated, to take action upon perhaps the most important event which had happened in connection with architecture in London for a great many years. The subject of the Paper tailed in very admirably with the important point they had had to consider; and he begged leave to move a vote of thanks to the author.

Mr. JOHN SLATER [F.] seconded the vote, and said that the difficulties of buildings in towns could only be appreciated by those who had had to do with the planning of such buildings. The Professor had touched upon some of these difficulties; but one of the greatest which he (Mr. Slater) had experienced in his management of a London building estate was to arrange how to maintain for a short time houses, which were inadequate to the requirements of the times, for the sake of carrying out a larger improvement when the leases of other houses immediately next to them would be falling in, in two or three years' time. He had come to the very decided conclusion that it was undesirable to take two or three small houses in such streets as, say, Berners Street and Newman Street, and to rebuild them, when the leases of other houses immediately adjoining would shortly fall in, and one would be able to do so much better. This was a parallel case to that of Regent Street. Another difficulty they had to cope with in designing London houses was the question of corner sites. In a great many cases the corner houses were small, and inadequately provided with light and air at the rear; and if two or three more houses on either side could be thrown in, and a large and comprehensive scheme be carried out, it would be far better than attempting to rebuild any corner house by itself. One subject touched upon by Professor Kerr he (Mr. Slater) had himself given some attention to. He had erected two large blocks of workmen's dwellings in Marylebone; and he was confident that by careful planning, houses could be arranged with good sanitary accommodation and a fair amount of light to all the rooms, which could be put up substantially, and well-built, and pay a good interest on the capital expended. He alluded, however, to buildings for the better class of workmen. But the great difficulty which the Professor had hinted at was undoubtedly what to do for the extremely poor people. That was a problem which he did not think had been sufficiently considered, and was quite sure had not been solved. He concurred thoroughly with what had been stated in the note sent by Mr. Cates as to the difficulty there was in dealing with any large property in London, caused by the entanglement of settlements and other things. On the Berners estate they had been anxious to grant building leases if people would surrender their interests; but sometimes those interests turned out to be three, four, five, six, and seven deep, and it was almost impossible to find them. With regard to the shopkeeper's house, Professor Kerr had mentioned how completely the conditions of living had altered. This was strikingly shown in many houses on the north side of Oxford Street, which were planned and built as shops with residences attached. Within the last ten days he (Mr. Slater) had had to go over one of those houses planned in the way described, and had found that the whole of the area had been covered with pavement, the staircase had been taken down, and the only access to the upper rooms was through the shop. Not one single particle of daylight penetrated into the assistants' dining-room, which was in the basement, and lit from morning to ovening, summer and winter, by gas. Such a state of things could be found in many houses around Oxford Street, and the sooner it was put an end to, the better it would be for the people who occupied them.

Mr. J. J. STEVENSON [F.] said that the Paper had branched out into many other subjects which were certainly not less interesting than the planning of houses—such as the rebuilding of Regent Street, a large step in the process, which was continually going on, of the rebuilding of London. He had had some difficulty in connecting together the various heads under which the Paper was put; and perhaps, if he might venture to say so, there had been some cross division—things said under one head might perhaps equally well have been said under another; but every one would agree that the Paper was eloquent, witty, and most valuable. One great problem in the planning of a town-house was that, given a block of perhaps sixty feet deep and twenty-one feet wide, with no light except at the two ends, how were they to

light that block at the centre? He noticed that in most of the plans exhibited that difficulty had been avoided-being, no doubt, plans of more important houses, on larger sites, where they had more light all round. The plan of the London house had a regular historical development down from the time of King John, when, he believed, the proviso of the London Building Act which insists on party-walls was first introduced; that and the repainting every three years, which was in every lease, dated back almost to the times of the Norman kings. It would be an interesting study to trace the regular development of the house plan—how that plan had gradually developed; how more and more had been crammed into it; how the waste of room had been avoided, and how every inch of space was used. Professor Kerr had noticed one recent change, of requiring even in small houses an entrance hall instead of a narrow passage. One thing wanted to make the London house, with its seven storeys, really fit to live in was, that people should get over their prejudices as to passenger lifts. London houseagents feared that people would object to them as dangerous. Lifts, however, had been put into a large number of houses, with satisfactory results; if they added to the cost of the house, they saved the keep and wages of an additional servant, and served the purpose of a servants' stair.

Mr. ASTON WEBB [F.] observed that, with regard to what the Professor had said about Regent Street, he thought they would all admit that it was one of the finest and most successful streets that London had, on account of the grand lines on which it was laid out. It could hardly be expected that seventy-five years hence Shaftesbury Avenue and some other more modern streets would hold their own as well as Regent Street did to-day. Professor Kerr had spoken of the academical plan of houses. Of course, the academical plan did not enter so much into private houses as into public buildings. What was wanted even in a town house to a certain extent was some little mystery in the plan. A plan might be stately, it might be academical, and it might be of considerable size for a town house; and yet it was possible, he thought, to impart some little mystery and uncertainty into the arrangements. The great thing in a public building was to enable people on entering to find their way to the principal apartments; they should not need many directions, but should be able to go to them easily by wide and very plain corridors. In a private house, after the hall was reached, there should be some uncertainty, he thought, and some little mystery as to where the dining-room, the drawing-room, and the other rooms were. The usual town house had exactly the opposite effect; when one got inside, one could lay out the whole plan, and walk straight away to the principal rooms. Where that could

be avoided, he thought, there was a decided gain. Probably they all knew one or two houses where this had been done, and done successfully, and also without loss of that dignity which the principal rooms certainly ought to have. Another thing in relation to the planning of town houses, where a great deal of improvement might be made, was in the arrangement of the windows. Professor Kerr had mentioned the badly lighted effect in a room which had two windows and a pier in the centre. They would all agree with that; and probably most of them had had an opportunity from time to time, by taking away that pier, of knowing what an immense improvement it was to get a centre light instead of a centre "dark" in the room. But, in addition to that, very often in town houses the windows were made too low down. It was a most common thing to see windows with screens put into them. A window was carried down to the ordinary height (a fixed height of 3 feet or 2 feet 9 inches being taken), and then a screen was put into it, so that the window obviously was not for the purpose of looking out; and the light was so low and near the floor as to be of but little use to the room. Probably, a very picturesque effect could be got, and an opportunity of departing to some extent from the general type of room, by keeping the sill of the windows a great deal higher, and by running the windows nearly the whole width of the room, and so getting the light in a horizontal line, instead of two or three vertical ones. There was a charming example of something of the kind in one of Mr. Norman Shaw's houses at Queen's Gate, the plans of which were exhibited, where one of the principal rooms on the ground floor had a curved ceiling, and practically the room was entirely lighted by a long row of dwarf windows, making practically one horizontal line of light in the room. That made a departure, and gave a most picturesque look. Mr. W. B. Richmond, in a Paper read some time ago, had enlarged upon that and other possible points of deviation from the ordinary planning of town houses; it was a most suggestive Paper as to the ease and opportunity which existed for departing from the regulation room. If Professor Kerr's Paper led to their thinking out such things on new lines, it would still further add to the great obligation under which he had put them.

The PRESÎDENT said that the wide nature of the subject treated rendered it difficult to concentrate remarks, even if one were disposed to criticise where there was so little room for criticism. Professor Kerr, however, had impressed upon them the extreme importance of avoiding overcrowding in all planning, and of securing a sufficient supply of fresh air. The importance of those points could not, of course, be overestimated. In regard to what was a comparatively new departure in planning, in London at all events—that of flats—Pro-

fessor Kerr had directed their attention to the circumstance that doctors had recently impressed upon the occupants of flats the dangers they incurred from want of fresh air, and the insalubrity of their being closely packed. That remark, he thought, applied equally to what they might call the vertical system of planning, as it did to the horizontal. He (the President) could not see that it applied to flats more than to any other system of planning. In the one as in the other, fresh air was essential, and overcrowding to be avoided. If a flat was properly planned, with a sufficient supply of light and fresh air, there was, in his judgment, no reason whatever why it should be more insalubrious than a building constructed on the vertical system. The question of a proper supply of fresh air to the streets and houses of the Metropolis might be taken, so far as he had learned, to be the keynote of the new Consolidation and Amendment Building Bill which was now being promoted by the London County Council. The Institute had for some years advocated the passing of such an Act, and therefore they had every reason to hope the London County Council would succeed in carrying out a good and efficient measure. The Institute would certainly render the County Council every assistance in its power, and it was hoped that many details might be satisfactorily arranged, to which otherwise objection might be made. Some of the principles of the Bill, no doubt, were such that, unless they were modified, the Institute could not possibly concur in them. For instance, the motive of securing for streets and houses a sufficient amount of fresh air and light was admirable, yet the means by which that was proposed to be effected appeared to be perfectly chimerical. The proposal to widen streets according to an arbitrary rule without paying for the land acquired he could only regard as Utopian, and he could not but believe that a principle so confiscatory would be dropped by the London County Council in view of the certain opposition it would create. It would indeed be deplorable were a Bill, the necessity of which is admitted, and the motive of which is good, to be wrecked by the insertion of a proposal so widely severed from practical legislation.

Professor KERR, in reply, said that the subject was a much larger one than he could venture to overtake, and that must be his excuse for all imperfections. He hoped, however, there might come out of it a good deal of further consideration of the very important subject of the improvement of London dwelling-houses. He would like to add that his request for plans to be exhibited on that occasion had been so singularly and unmistakably successful that he thought they might on future occasions, on other subjects than the mere planning of houses, contrive to have similar exhibitions of the current works of their friends.



CHRONICLE.

The London Streets and Buildings Bill.

It will be seen by the notice given in the Supplement issued with to-day's Journal that the President will, at the Ordinary Meeting of the 12th inst., propose to take the necessary steps to lodge a Petition against the London Streets and Buildings Bill, promoted by the London County Council as a private Bill, and likely to be read a first time in the House of Commons on or after its reassembling on that date. Such a petition will secure for the Institute a locus standi to be heard, before any Select Committee, on the principles and details of the proposed measure. Indeed, as some of the provisions of the Bill involve grave questions of principle, the Council of the Institute, after much inquiry, feel compelled to oppose it, in the interests both of the Profession and the Public. There are also numerous and important matters of detail in the Bill which could be improved if fully considered by experts. Architects, however, are known to be completely in accord with the London Council in desiring to obtain an Act to codify and amend the various Metropolitan Building Acts at present in force; and, while reserving the principles to which reference is made above, the Council of the Institute are not only willing, but wishful, to co-operate with the London Council in perfecting those clauses of the Bill which relate to Building.

The Illustrations to Professor Kerr's Paper.

Among several contract drawings of works in London, from the designs of Mr. R. Norman Shaw, R.A., which were exhibited at the Institute on Monday, were those of two houses recently erected at Queen's Gate, together with two books of photographs of the same; and it may be appropriately stated here that the kindly manner in which Mr. Shaw acquiesced in the application made to him for the drawings was even more gratifying than the loan itself. Mr. Alfred Waterhouse, R.A., lent plans of some chambers erected from his designs in Park Lane, and Professor Aitchison, A.R.A., the plans, sections, and view of Sir F. Leighton's house at Kensington.

Plans of Montagu House, Whitehall, erected from the designs of the late William Burn, were lent by his nephew, the President of the Institute, who also lent the contract drawings of a large house erected from his own designs in Ennismore Gardens. The London County Council, through the Superintending Architect, provided tracings of the latest plans of Artisans' Dwellings; and other plans of dwelling-houses—in most cases the original working drawings—were lent by Mr. J. M. Brydon, Mr. Florence, Mr. Ernest George, Mr. E. T. Hall, Mr. Phené Spiers, Mr. J. J. Stevenson, Messrs. Wimperis and Arber, and Mr. William Young. Some exceedingly beautiful photographs of interiors lent by Mr. Bedford Lemere were laid on the table.

The Prize Drawings at Al'ied Centres.

Certain selected drawings—for which Mr. Wigfull [A.], Mr. Tonge, Mr. R. S. Balfour [A.], and Mr. Hennell, gained the Royal Institute Silver Medal, the Soane Medallion, the Pugin Studentship, and the Tite Prize respectively—with a selection of other drawings by Mr. Dods, Mr. G. S. Hill, and Mr. Corlette [A.], to whom subsidiary prizes were awarded, were exhibited last week in Leicester, and are now on view at Birmingham. They will be in Manchester during the week commencing 5th inst., in Sheffield the next week, and in Nottingham the next. The drawings are due at York on the 26th inst., at Leeds on the 5th prox., and at Newcastle on the 12th prox. They will be afterwards exhibited in Glasgow, and remain there till after Easter, when they will be returned to London, taking on their way back Liverpool, where they will be exhibited about the first week in April. The selection is accompanied by specimens of the work submitted for admission to the Preliminary Examination by B. A. Charles, E. M. Charles, W. R. Davidson, P. J. Groom, and A. G. Marshall, Probationers; and by specimens of the Testimonies of Study submitted for admission to the Intermediate Examination by F. Chatterton, F. S. Hammond, G. O. Scorer, E. Tylee, and H. J. Wonnacott, Students.

The Late César Daly.

By the death of the distinguished Frenchman whose long and varied career has been the subject of comment in the Parisian press and the English professional journals, M. Girault de Prangey becomes the doyen of the Corresponding Members of the Institute, having been elected in 1846. There is, then, a wide gap of years among those who have survived, to M. Révoil and the Marquis de Vogüé, two other Frenchmen elected in 1865, and Mr. Cuypers, of Amsterdam, elected in 1866. The half-century of membership during which the Institute counted César Daly among its most esteemed correspondents renders his earliest communication to the general body of British architects peculiarly interesting, and it is gratifying to

know that this delicately-penned letter, addressed to Professor Donaldson, and preserved in the archives of the Institute, is still as crisp and fresh as if it had been dated "Wissous, 1894," instead of as follows:—

Paris: 6 Avril 1844.

Monsieur le Vice-Président et cher ami, - Ayant quelque raison de craindre que ma réponse à votre gracieuse lettre du 26 janv. dernier ne vous est point parvenu, je prends la liberté de vous écrire de nouveau à ce sujet. Je viens donc vous prier de vouloir bien me servir d'interprète auprès de l'Institut Royal des Architectes Britanniques pour lui assurer des sentiments de profonde gratitude que m'ont inspiré l'honneur dont je viens d'être l'objet. Je comprends qu'en acceptant le titre de membre honoraire et correspondant d'un corps aussi illustre que celui de l'Institut Royal des Architectes Britanniques je contracte une grave obligation : celle d'aider de tout mon pouvoir à l'accomplissement du but de l'Institut. Cette obligation, je l'accepte pleinement et entièrement, et vous m'obligerez infiniment en annonçant aux membres de l'Institut que je m'estimerai toujours heureux de me mettre à la disposition de ceux d'entreux (sic) qui visiteront la France, pour faciliter de tous mes moyens les recherches et les études qui pourront faire l'objet de leur voyage. Je serai également heureux aussi de mettre à la disposition de l'Institut la publicité dont je dispose au moyen de la Revue spéciale que je dirige, et cela non seulement pour entretenir nos confrères du Continent des travaux de chacune des séances périodiques de l'Institut, mais encore pour appeler l'attention des artistes et des savants du Continent sur la liste des questions que l'Institut est dans l'habitude de publier, ainsi que sur ses programmes de concours, etc. En un mot, tout ce que je pourrai faire, soit pour favoriser les vues de l'Institut collectivement, soit pour ses divers membres pris individuellement, cela, je le ferai et de grand cœur. Permettez-moi, Monsieur le Vice-Président et cher ami, tout en remerciant encore une fois l'Institut de l'honneur qu'il m'a fait, de vous assurer personnellement de ma très haute considération et parfait CÉSAR DALY.

Many letters have been received at the Institute. especially in recent times, from César Daly, and the half dream in which he indulged the last five or six years of his life brought forth a characteristic communication, most of which was printed as the preface to a description* of his Des Hautes-Etudes d'Architecture, published in 1888. This was a pamphlet in which he made an appeal to the several constituted bodies in France, England, and America, on behalf of the Higher Architectural Studies, the neglect of which, he said, caused the modern architect to occupy a position inferior to the historian, the engineer, and the successful merchant. "Notre enseignement architectural," he wrote, "est partout fragmentaire et manque "d'ensemble d'études générales. Notre art perd " par là de sa grandeur intellectuelle et influe moins "qu'il ne faudrait sur l'intelligence générale des "penseurs." He wished to convene an international conference, to meet in Paris during the run of the Great Exhibition of 1889, for the purpose of considering this question; and such a congress did assemble on the morning of the 20th June

It is to the credit of English Journalism that the best description yet published of César Daly, his career, his pursuits, his mode of life, and his home, appeared in *The Builder* barely a week after the news was received of his death, and its writer may not know that the article has given great satisfaction in Paris. His description of the house at Wissous, known to some British architects and students, is graphic:—

A slow, stopping train brought one at length to the small characteristically French country town of Antony, with its white shuttered houses and broad paved streets with not a soul to be seen in them, and a drive in a country omnibus through the bare-looking unfenced country to the little hamlet of Wissous, with its odd little late-Gothic church. Adjoining the village our friend had found an old French country house, which he had altered and added to, putting a grille flanked by exactly symmetrical lodges towards the little street. Inside this a courtyard gave access to the double ramp of external stone steps leading up to the house door, and on the other side of the house was a large garden, laid out when what were then called "English gardens" were the fashion in

^{1889,} though without that special character which he had hoped to attain. It was a meeting in the Hémicycle of the Ecole des Beaux-Arts, with M. Garnier, and afterwards M. Alfred Normand, in the chair, when César Daly delivered an address of nearly two hours' duration, during which the attention of his audience, partly composed of foreigners, was absorbed in the orator, who remained seated at a table with his manuscript, which he rarely, if ever, consulted, before him; and who concluded by asking for a vote in favour of the creation of schools of Hautes- tudes d'Architecture. César Daly paid a visit to England in August 1891, but as the general work of that session was then at an end, he could not attend a meeting of the Institute. He returned in 1892 to receive the Royal Gold Medal, and made a speech in English which—there is no need for exaggeration—was a marvellous feat of genius, executed without apparent effort, though it came from the heart as well as the head. Holding the medal in his hand, César Daly said that, as it had two faces, it had for him two characters. "On one side is "mentioned the foundation of this useful and "noble Institute; on the other side is the glorious "effigy of your sovereign. I see architecture, "English architecture; and I see Englanditself." His argument, as he expressed it, was that wherever the Queen's effigy rises before the eyes you must see England, for it is the symbol of the nation, adding—"This has been perfectly understood in "France, gentlemen;" and a year later it was similarly understood in the United States of The attention of Her Majesty's Pri-America. vate Secretary having been called, in the letter by which the gift of the Royal Medal was acknowledged, to the words used by César Daly and quoted above, Sir Henry Ponsonby wrote, unofficially, from Windsor Castle, to say that the Queen was much pleased with Monsieur Daly's address.

^{*} The R.I.B.A. Journal, Vol. IV. N.S., 1888, p. 362.

France, with winding walks, shrubberies, a "wilderness," clumps of trees, and a little artificial "mount" near the extremity, whence Paris, on clear days, just asserted itself in the shape of the outline of the Eiffel Tower in the distance. On the first floor our host had his suite of rooms, forming a library, packed as close as they could be with every sort of book on architecture. No place could be more quiet, no seclusion more complete.

Among recent letters received from César Daly was one containing an invitation to Wissous, in order to study the part which architecture plays, or ought to play, in public demonstrations and celebrations, a part which is certainly more pronounced in Paris than in London. "Bouclez votre malle " et arrivez pour voir nos fêtes franco-russes," wrote Another letter followed, but in English, and written with as much care and finish, both with respect to penmanship and style, as the one of fifty years earlier. It was the last, dated 12th October 1893, and concluded as follows: - "Shall I ever "see you again? I am a very old man: 82! "At all events, receive the assurance of my hearty "wishes for your success; and may your increas-"ing efforts in favour . . . of the development of "friendly feelings between England and France "be appreciated at their great worth!"

It would be almost unpardonable repetition to add an account here of César Daly's career, for it was given with much detail by the President when presenting the Royal Gold Medal, and the information was derived from most authentic sources. In fact, so satisfied appeared the Semaine des Constructeurs of its accuracy that a translation of Mr. Anderson's Address [Vol. VIII. N.S., p. 357] was printed in that journal, as part of its obituary notice published on the 20th ult. Other pages of that volume of the Journal also contain notices of and references to César Daly.

The Tiber from the Pente Sisto, Rome.

Mr. William Scott, of Venice Inst. Medallist 1877], Member of the Royal Society of Painter-Etchers, has presented to the Library a proof of an etching of a view from the Ponte Sisto at Rome, taken from nature in the summer of 1883. Since that time the great works for the embankment of the Tiber have been carried out, and the picturesque appearance of the view has been destroyed; the etching is therefore valuable from an archæological as well as an artistic standpoint. On the extreme right is the Palazzo Farnese; lower down is the Church della Morte; beyond this is the Palazzo Falconieri, where the present Pope lived when Cardinal Pecci, and the suspension bridge in the distance. On the left is the Palazzo Farnesina, with the remains of the famous Farnesina gardens; and in the distance is the dome of St. Peter's.

Additions to the Library.

The third edition of Fergusson's *History of Architecture*, edited by Mr. R. Phené Spiers [F.], is an addition to the Library which is sure to be

in great request by readers (John Murray). Mr. Spiers states, in a preface, that in editing this work be has endeavoured to follow the course which Fergusson himself adopted in publishing new editions, viz., by rewriting those portions which subsequent discoveries had proved to be either incorrect or doubtful. By this means the original integrity of the work has been, as far as possible, preserved, the Editor having contented himself, in many instances, by imparting his fresher information in footnotes, and only where a regard for accuracy has made it unavoidable by interpolations in the text. Nevertheless, to render the work as far as possible chronologically exact, considerable recasting, rearrangement, and, in some instances, omission, have been necessary. About forty woodcuts have been specially prepared for this edition, half of which are of subjects not before illustrated, the remainder replacing those which were defective or incorrect.

Mr. W. R. Lethaby is responsible for an admirably written little book on the interesting subject of Leadwork (Macmillan & Co.), old and ornamental, and for the most part English, which has been recently received. Mr. Lethaby prefaces his volume by an apt quotation from Viollet-Le-Duc: "That which gives to the leadwork of " the middle ages a particular charm is that the "means they employed and the forms they " adopted are exactly appropriate to the material. "Like carpentry or cabinet work, plumbing was " an art apart, which borrowed neither from stone "nor wood in its design. Mediæval lead was "wrought like colossal goldsmith's work." Mr. Lethaby has evidently approached this work with all the necessary enthusiasm, though with quite intelligent discrimination. "No metal," he says, "is more perfectly adaptable to noble use "through a range of treatments that cannot be "matched by any other metal whatsoever. It "combines extreme ease of manipulation with " practically endless durability, and a suitability "to any scale, from a tiny ink-well or a medal to "the statue of horse and rider, a Versailles foun-"tain, or the greatest cathedral spire." Without claiming the authority of a history for his work, Mr. Lethaby points out the characteristics of the art of lead-working in the past to show its possibilities for the present and the future. letterpress is accompanied by some sixty illustrations, which give an idea of the ductility of the

Among other additions are the sixth volume of MM. Perrot and Chipiez's Histoire de l'Art dans l'Antiquité, devoted to La Grèce primitive, and containing five hundred and fifty-three illustrations; Part viii., sect. 1, of Murray's New English Dictionary (from Mr. B. Ingelow [F.], who is contributing the instalments of the work as they are issued); and Roget's Thesaurus of English Words, which may be found in the open

cases in the front library by those who write and are unable to determine the selection of the elusive inevitable word.

Mr. Andrew T. Taylor [F.] has forwarded a profusely illustrated monograph of the formal opening by Lord Stanley, Governor-General of Canada, of the Engineering and Physics Buildings of the McGill University, Montreal, of which buildings Mr. Taylor was the architect; and Mr. Arthur Cates [F.] has presented a pamphlet entitled Overcrowded London, by Alderman R. M. Beachcroft, of the London County Council. Mr. Beachcroft makes an able and eminently practical attempt at solving a problem which is becoming every day of more vital importance; he briefly reviews London building laws for the purpose of showing that owners and builders in London are not subject to restrictions which would secure "something adequate in the way of free circulation "and air," and compares these laws unfavourably with the powers invested in all urban authorities outside London under the Public Health Act of 1875 to frame by-laws generally with respect to the sufficiency of space about new buildings.

The Society for the Promotion of Hellenic Studies have sent the recent issue of their Journal (Vol. xii. Part 2), which includes in its interesting and extensive contents, Papers on the pre-Persian Temple on the Acropolis, Excavations on the probable sites of Basilis and Bathos, the Bronze Fragments of the Acropolis, and a Paper on the Development of the Plan of the Thersilion. In the Supplementary Papers, No. 1, of the same Society, various authors deal with the Excavations at Megalopolis, 1890-91, and there is an architectural description by Mr. R. W. Schultz. The Proceedings of the Philosophical Society of Glasgow (Vol. xxiv.) contain a Paper by Mr. G. Washington Browne, on the Planning of Public Libraries; and the Journal of the Royal Society of Antiquaries of Ireland contains many Papers of archæological and architectural interest. An address to the students of L'École Spéciale d'Architecture, by M. Émile Trélat [Hon. Corr. M., may be found in a pamplilet just received from him.

REVIEWS OF NEW BOOKS. VI.

HOSPITAL CONSTRUCTION.

Healthy Hospitals: Observations on some points connected with hospital construction. By Sir Douglas Galton, late Royal Engineers, K.C.B., &c. 80. Oxford 1893. Price 10s. 6d. [The Clarendon Press. Mr. Henry Frowde, Oxford University Press Warehouse, Amen Corner, London.]

This is an excellent book not only by a keen observer but by an experienced constructor, who, at the Herbert Hospital, Woolwich, and elsewhere has given practical proof of his knowledge of the details of hospital construction, and his skill in successfully carrying them out. Most of the books on hospitals are more or less bulky tomes, often unnecessarily profuse over small and less important matters, but here we have a concise statement of the conditions and requirements essential to the realisation of a "healthy hospital."

The long array of authorities consulted by Sir Douglas in the compilation of his "observations" bears testimony to the thoroughness with which he has worked at the subject for many years, and it may not be too much to say that this, his latest volume, is destined to become a text-book for all architects, medical men, and others interested in hospital construction.

The book is clearly written and illustrated, and takes up *seriatim* the many points which go to secure the healthiness of a hospital. These may be briefly enumerated as follows: A good site; an abundant supply of good water; plenty of fresh air; perfect sanitation; and, last but not least, cleanliness.

Around these hang all the law and the gospel of sound hospital construction, and in their attainment has been gradually developed the arrangement of the plan, and the selection of the materials best adapted to the requirements of a modern hospital; for example—to secure plenty of fresh air we owe the disposition of the wards in separate blocks, known as the pavilion system, their isolation as far as possible from the administration and from each other; to the striving after cleanliness, the selection of the least absorbent materials for walls, and floors and roofs, the reduction of all internal angles, and the exposure, as far as possible, of all pipes and other sanitary appliances. On all these points Sir Douglas has much to say, and says it clearly and well. On the first, that of site, architects will sigh as they think how very far from the ideal is the ground, either in itself, or its surroundings, upon which they are often obliged to build. In a large town, especially in London, hospitals must be built where they are wanted, within easy reach of the classes they are designed to benefit; ground is costly and open spaces far from frequent, so that the actual conditions of a healthy site may be far from attainable; yet much may be done to assist in the improvement of the ground air, which, as Sir Douglas tells us, "has a most important influence on the healthi-"ness of a site." Many of the impurities of a bad soil may be got rid of by carting it bodily away and covering the whole surface under the building with cement concrete. Again the ground-floor wards may be raised on open arches several feet above the level of the soil, leaving a free current of air underneath them. This treatment may be expensive; but health, not cost, is the first consideration in such a case. Valuable information is given as to the nature and effect of different soils and sites, the number of square yards per

patient it is advisable to apportion, and the methods by which the site may be improved. It may not always be easy to carry out the prescriptions, but the doctor's advice is none the less valuable on that account.

Then, as to the all-important questions of the dispositions and arrangements of the wards themselves, they are exhaustively treated in four chapters out of the twenty comprised in the book. The "ward unit" is the kernel of the hospital; the number and perfection of these units is the measure of its capacity as a curative institution, or, as Sir Douglas puts it, "The ward "and its appurtenances under one roof practically "constitute a small hospital of itself, and the "multiplication of these, several small hospitals "under one administration;" and he enumerates the three principles which govern the designing of a hospital ward-viz., the number of patients under one roof, abundance of fresh air, and plenty of sunshine; space and light and sunshine mean health; crowding and gloom mean sickness, both for patients and nurses. The gradual development of the plan and size of a hospital ward, and its relation to other wards, and these again to the administration, has been the result of years of study and experiment; and accordingly examples are given, with illustrations, of how the problem has been solved in various countries and in buildings of different sizes. France, Germany, Belgium, America, and England are all laid under contribution; and perhaps it is a pardonable satisfaction to find that our own country with its simple pavilion, with the nurses' rooms at one end and the latrines and bathrooms at the other, still holds its own against the somewhat more elaborate arrangements of our neighbours. It may be useful to contrast the plans of the Hamburg wards (page 152) and the Montpelier wards (page 184) with the Herbert and Colchester wards (page 186), when the simplicity and, as we think, the advantage of the latter, especially in their sanitary arrangements, will become at once apparent. There can be no question that the w.c.'s, lavatories, and bathrooms placed in detached turrets, separated by an air space from the ward blocks and approached by means of covered bridges, is in every way preferable to placing them in a kind of central corridor, as at Montpelier, or near the entrances, as at Saint-Denis.

Into a comparison between the relative merits of rectangular and circular wards Sir Douglas enters very fairly. He gives the data as applied to each, pointing out that "the circular form of "ward is very cheerful," because the windows catch the sunshine at a larger "number of angles "than is the case with the rectangular form." Though circular wards for a small number of patients, say up to twelve, have many advantages, it may be doubted if, apart from the greater cost of their construction, they are economical in other

respects. When a ward comes to be sixty feet in diameter there is a considerable loss of space in the centre, and the supposed gain in the ease of supervision by the nurses ceases to be so apparent. It has been urged also in this connection that if the nurses in a circular ward can see their patients more readily, the patients themselves see too much of each other, so that when a bad case occurs—one likely to have a fatal termination—they all become aware of what is imminent, and the result is anything but conducive to brightness and hopefulness; nevertheless, there is much to be said in favour of circular wards.

Space fails us to follow Sir Douglas into all the details of warming and ventilation, sanitary arrangements and water supply, which go so much to insure a perfect ward unit. They will be found set forth in the fullest manner, the advantages and disadvantages of the different systems carefully weighed and tabulated; but if we have read aright we gather that the balance, and rightly so, is in favour of natural as against artificial ventilation, open fires as against heating pipes, either of hot water or steam. Again, as a matter of course, all pipes and lavatories, sinks, baths, and w.c. apparatus throughout the building should be open and unenclosed, and everywhere accessible. Though these are truisms, they cannot be too strongly insisted upon, so prone are people to stow such arrangements away out of sight as much as possible.

Closely connected with the successful working of the wards is the economical arrangement of the administrative buildings; and in a chapter devoted to them we find their numerous and varied requirements clearly, if somewhat too briefly, set forth; of the number, none have been more vastly improved of late years than the kitchens of the nurses' rooms. The former, with all their appurtenances, are now generally placed at the top of the house, and gas cooking has in a great measure superseded coal and steam, to the manifest gain of cleanliness; as to the nurses' rooms and those of the staff generally, the improvement is even greater.

Time was not so very long ago—when anything was thought good enough for the nurses. There is no truer sentence in the book than this: "The nurses should be lodged in a building apart "from the hospital buildings. It would be advan-"tageous that they should have to pass out of "doors to reach their bed and sitting rooms;" in fact, in every hospital of any size there should be a nurses' home. If the hospital is to be efficiently nursed, the nurses must be in good health, and if they would preserve their health they must be away from the atmosphere of the wards when off duty. The whole tone and status of our nurses have risen as the requirements of modern life have increased. Hence the need of a home or house of their own, where, in airy, comfortable,

well-lighted sitting rooms and bedrooms, they may find that relaxation from the strain of nursing, which is not only their due, but their reward, well earned by the day's work, and their hope for the proper accomplishment of that work on the morrow. "They work better," says Sir Douglas, "in their wards, if they are made com-"fortable; sisters and nurses nowadays are, or "ought to be, educated women," and "It is un'desirable that they should have to seek necessary amusement out of doors." Therefore let us see to it that their home is such as educated women can really feel "at home" in, and find their rest and recreation therein.

With a couple of chapters on special hospitals and one on temporary structures, Sir Douglas Galton brings his admirable treatise to a close. He tells us that "the object he has in publishing "these notes on hospital construction is to place "on record those principles which ought invari-"ably to be followed in every good hospital, and "to point out that those conditions of construction "should, according to recent practice, represent "the minimum standard to be followed in building "a new hospital." And we cannot do better than conclude, as he does, with the hope "that by "bringing together this information, the erection "of large, palatial hospitals in towns or other "localities which are not suited to them will be "discountenanced, and that the hospital archi-"tect, instead of seeking to erect a monument of "his skill and taste in architectural design, will "be content to provide simple structures, abun-"dantly supplied with light and air, in which the "interests of the patients and their recovery will "be not alone the first but the only consideration." May we assure Sir Douglas that the true architect will always be able to show his skill and taste in architectural design while keeping his structures simple; and in so far as they embody the principles so clearly enunciated in this volume, they will approach the realisation of a "healthy hospital." While acknowledging this, however, there is no reason why the architect should not seek to impart a certain artistic distinction to the building even of a hospital; on the contrary, its very simplicity will become an attraction if treated with quietness and dignity, discarding all meretricious ornament, and seeking only for success in breadth of effect and good proportion; while, when we come to think of it, where is a restful pleasure to the eye or a homelike feeling more needed than in a hospital? Having sacrificed to utility, there still remains the claim of beauty, and in their combination lies the truest art. Proportionally speaking, a hospital ward is often, or may be, a very fine room. Why, then, should it not, by judicious colour, and simple quiet effects, be made in some measure less forbidding to those who may have to pass many weary days within its walls? To do all this and more would indeed be "a monument

"to his skill and taste" that even an engineer like Sir Douglas Galton would not grudge its architect; and it is to be done if only the requisite study and thought are devoted to its accomplishment.—J. M. BRYDON.

(16.)

MEDIÆVAL MANCHESTER.

An Architectural History of the Cathedral Church of Manchester, dedicated to St. Mary, St. George, and St. Denys, with illustrations by J. S. Crowther. Edited by Frank Renaud, M.D., F.S.A. Fol. 1893. Price 42s. [Manchester: J. E. Cornish.]

We know that incongruity is one of the elements of the ludicrous; it is also a factor in pathos, and of such pathos Manchester Cathedral is a very type. Standing in its paved enclosure among surroundings which, if not wholly modern, are at least strangely irrelevant, in an atmosphere murky with the dust of commerce and thick with a smoke that blinds the very eye of heaven, this majestic piece of grimy mediævalism wakes a sentiment which few other churches in this country can provoke. Most cathedral towns, be they never so busy, bear upon them a stamp of cathedrality, and in them the sentiment of the church is led up to by a kind of Dean-and-Chapterishness in the neighbouring architecture -not necessarily of a Gothic, but generally of a Georgian type. Of course the modern circumstances under which the church of St. Mary became a cathedral preclude the right to compare it with those cathedrals whose episcopacy is of ancient date; but even in comparison with such pieces of pathos as our City. churches—even St. Peter's on Cornhill—it stands unmatched for a sort of abrupt and solemn aloofness.

To the late Mr. J. S. Crowther, who wrote, though he did not live to issue, the book under notice, the cathedral owes much. It had suffered in a singular degree the ravages of time, weather, and inappropriate restoration. The exterior had been largely built of stone placed on its wrong bed, and much of the replacement had been carried out in the ages when Gothic antiquarianism was rather energetic than accurate. The interior fared worse in a later but less enlightened age " under a pretext of improvement . . . the beauti-"ful columns and arches of the nave, the super-"incumbent clerestory, the great choir arch" and many other portions of the fabric, "were hacked " over with a pointed pick and then coated with "cement three-quarters of an inch in thickness." This "improvement" was undertaken as part of a scheme for the erection of galleries, and resulted not only in the almost complete mutilation of the mouldings, but also in a serious reduction of the springing-stones of the nave arches, which nearly brought the whole building down.

The forty plates, comprising plans, elevations, sections, and details, naturally make up the

principal interest of the volume, but the letterpress is by no means to be overlooked. Mr. Crowther approached the archeology of his subject with a living enthusiasm which thought no detail too small to be significant, and was not satisfied in founding theories on any lighter basis than fact. We learn something of Mr. Crowther's early intelligence from the passage (p. 29) in which he describes how, more than half a century ago, as a pupil in the office of Mr. Tattersall, he made drawings of certain pieces of wrought stone which were accidentally discovered in excavation. For his own amusement he kept tracings of these with an unconscious forethought which, at a later date, enabled him to effect an authentic restoration of parts of the parapet and pinnacles.

Early historians of the building seem to have assumed that no substantial church existed before the foundation under Thomas De la Warre in 1421. This is easily disproved even on documentary evidence, for the royal licence empowers him to "erect "the parish church into a collegiate church." Mr. Crowther supplies further testimony from the building itself. There are no discernible traces of any Norman construction, though pieces of masonry were found which point more or less conclusively to Saxon work. About the existence of an Early English church there can be no doubt. The choir and Lady chapel of this church were rebuilt about 1340, and the nave appears to have survived until the date of the collegiate reconstruction in the fifteenth century.

One of the most remarkable features of the history of the church lies in the fact that when the nave was again rebuilt in 1465 under the wardenship of one Ralph Langley the style adopted was a close imitation of the previous work; the Perpendicular method was in fact abandoned in favour of the already obsolete curvilinear Decorated.

In glancing at the plan the two characteristics most apparent are the convergence of the lines of the choir piers and the unusual multiplication of side chapels which present the appearance of additional aisles. The explanation of the former peculiarity, the convergence, is clearly given in Mr. Crowther's book. Warden Stanley, who was appointed in 1485, was engaged upon the enlargement of the church, and characterised his work by an unusual care and conservatism. He appears to have effected the alteration necessary in the nave by taking down and rebuilding the actual stones of his predecessor's fabric, and to have hit upon the singular and effective device of the convergent lines to get over the difficulty which arose in attaching his widened nave to the narrower east end.

The multiplicity of chapels is due to a local partiality for the system of special chantries which the author thinks it necessary to justify by a page or two on the subject of Purgatory and the doctrine of intercessory prayer. The digression is perhaps

unnecessary, but it is certainly a singular fact that the cathedral should contain so unusual a number of special chapels.

The illustrations are by various hands, and are not of the most modern style of draughtsmanship; still, if lacking in *chic*, they appear to be free from error, and are eminently conscientious.

Owing to Mr. Crowther's death, the work was finally brought to the press and put into the subscribers' hands by Dr. Frank Renaud.

PAUL WATERHOUSE.

(17.)

A LEARNED LODGE OF MASONS.

Ars Quatuor Coronatorum. Being the Transactions of the Lodge Quatuor Coronati, No. 2076. Edited by G. W. Speth, P.M., Secretary. Vol. V. Margate; printed at "Keble's Gazette" Office. 40. 1892.

We find our esteemed member Wm. Simpson is a Past Master of this Lodge, and at work with his pen as energetically as he kindly works for us. "Brahminical Initiation.—The Norse Symbol," is the title of his Paper, the first in the volume, and the continuation of a previous one. Further on will be seen an admirable portrait of him by the helios-Dujardin process. "Who was Naymus "of the Greeks?" is still a question of interest, and herein is considered to have been a skilled mason of the Greek School and College in Rome, engaged by Charles the Great for his cathedral at Aix-la-Chapelle; he then passed on from Aix to England, being employed by King Offa at the building of the Abbey of St. Albans, founded in 973. "Remarks on the Craft Legend of the Old "British Masons" is a very learned disquisition by Dr. W. Begemann, of Rostock, who has studied the language of the various Old Charges, tracing their pedigrees by it. He arrives at the conclusion "that most of the special legends of older times, "as well as of the English period, were introduced "by degrees, and are of a rather late origin. We "may learn this by comparing the different ver-"sions from the Masonic Poem down to the ordi-"nary form." In the concluding paragraph of this first portion of a very interesting contribution, he observes (referring to previous notices of this mysterious personage) "that 'Naymus Grecus,' "or 'Maymus Grecus,' was never 'Nemausus' or "'Nemaus," or the like, but had originally an M"at his head, the 'Tew MS.' reading once "Mammongretus' and once 'Memongritus,' "wherein the t probably was mistaken for c." Is he putting investigators on the right borders of a

"The Masonic Genius of Robert Burns," by Bro. Benjamin Ward Richardson, M.D. (now Sir Benjamin), is a pleasingly written Paper, showing, first, that the genius of Burns partakes of the Masonic order or type; secondly, that his poetic genius appeals to the Masonic brotherhood, and as fostered and fed by that fraternity; thirdly,

that his love for the brotherhood was manifested in the productions of his poetic genius; and fourthly, that the tendency and tenure of his work is Masonic in quality, in the higher and nobler, shall I not say the highest and noblest, forms of masonic liberty and moral amplitude. How well Sir Benjamin has treated these four sections into which he divides his subject, must be learnt by an

attentive perusal of the essay.

"The Tau, or Cross; a heathen and a Chris"tian symbol," by Harriet G. M. Murray-Aynsley,
is a plentifully illustrated account of its history,
tracing the development of the cross as a prehistoric and as a religious symbol. At the conclusion, Mr. Simpson, in the discussion, urged that
the statement that Hindu temples are cruciform,
has often been repeated in books, but it is doubtless founded on a misconception. "Plans . . .
"have the appearance of a cross, but this is from
"accident, and cannot be ascribed to intuition;
". . . any details that may give the square form
"of the main part the character of a cross are
"simply due to the architectural conditions."

Another copy of the inscriptions on the tomb of John Murdo, in Melrose Abbey (p. 143), gave rise to a careful copy being sent (p. 227) with an illustration of the doorway. He was "born in Parysse "certainlie," and it has been conjectured that his name should read "Jean Moreau." "The "Masonic Apron," with eighty-three illustrations, is a laborious contribution of W. Harry Rylands, P.M. No. 2, our worthy Honorary Associate, and the very active Secretary of the Society of Biblical Archæology; an admirable portrait of him is given

in the volume under review.

The installation Address of Professor T. Hayter Lewis, in 1892, treats of the Orientation of churches, &c., with the results lately obtained by Mr. Norman Lockyer and Mr. F. C. Penrose; Solomon's temple and the date of the stones found by Colonel Warren; the well-known emblems and marks; Roman, and later works of the mediæval period; the rapid transmission of information; the master mason and director of works; the Crusader's work in Palestine; thirteenth century work in England; and lay architects, with a suggestive theory as to their introduction to direct the great works of the succeeding centuries.

Mr. R. F. Gould's elaborate inquiry on "The "Assembly," mentioned in each of the Old Charges, at which the mason was bound to attend when summoned, is a learned and exhaustive Paper, but one tending to restrict the meeting to a tribunal for legal or civil purposes, and not to an assembly for the settlement of trade disputes and the extension of craft knowledge. This clause of the Old Charges requires further elucidation; no clue has yet been obtained from Old Records as to the carrying out of this requisition. A series of plates exhibit a picture having reference to Masonry; three chairs used by Lodges at Lincoln (dated

1683) and at Liverpool; officers' jewels; two teapots with Masonic emblems; a Masonic handkerchief: there are also several small views of the castle and other antiquities at Colchester, the place visited by the members of this Lodge Quatuor Coronati at its annual excursion, The Notes and Queries, Obituary, Reviews, and Chronicle contain useful information having immediate reference to craft purposes.

WYATT PAPWORTH.

(18.) EDINBURGH.

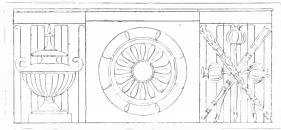
Transactions of the Edinburgh Architectural Association. Vol. II. No. 3. 80. Edin. 1893. Price 1s. 6d. Published by the Association.

The Transactions of the Edinburgh Architectural Association are becoming more valuable every year, a fact that need only be ascertained by a glance at the last number of vol. ii., in which are recorded the many Papers and Addresses delivered throughout the year, besides a good deal of what is interesting in the numerous excursions undertaken by the members. The President, Mr. W. W. Robertson, in the course of his valedictory address points out that the Session 1892-93 marks a new era in the history of the Society; he says, "We have started in new premises with increased "responsibilities, and I hope that when the transi-"tion stage is fairly passed, we shall be able to "give much increased advantages to our members." An account is given of the annual excursion to that rich field of architectural interest around Cupar-Fife, as well as many other excursions to buildings of local interest; these outings seem to be admirably organised and conducted by the leading members of the Association.

A very interesting report of a Paper by Professor G. Baldwin Brown, M.A., on Bronze Doors and their Artistic treatment opens the volume. The author very clearly distinguishes between bronze gates ornamented with due regard to structural consistency, and doors designed for the display of ornament, where the sole charm lies in the beauty of the enrichment considered in itself. The latter type, to which the famous Old Testament doors by Ghiberti at the Baptistery of Florence belong, he considers extremely misleading as models for

educational purposes.

Dr. R. Rowand Anderson in his descriptive Paper on Dunblane Cathedral is of the opinion "that the structure might at any time, but for the "restorations [recently completed by himself], have "collapsed into a heap of ruins, and neither the "architectural nor pictorial aspect would have "remained to delight us. By restoring this edi"fice to its original use as a place of worship, it "may now with ordinary care be handed on from "generation to generation." A few unpublished Papers by the late Mr. John McLachlan, read at various dates before the Association, close this most excellent pamphlet. A. N. PRENTICE.



9, Conduit Street, London, W., 1 Feb. 1894.

MINUTES. VII.

At the Seventh General Meeting (Ordinary) of the Session, held on Monday, 29th January 1894, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the chair, with 35 Fellows (including 8 members of the Council), 52 Associates (including 2 members of the Council), and several visitors, the Minutes of the Meeting held 15th January 1894 [p. 198] 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:—William Gregory Watkins (Lin-

coln) and Percy Frank Hockings.

A Paper, by Professor Kerr [F.], entitled Observations on the Plan of Dwelling-Houses in Towns, was read by the author; and, having been discussed, a Vote of Thanks to Professor Kerr was passed by acclamation, and the Institute adjourned at 10 p.m.

Erratum.—In the Minutes of the Sixth General Meeting [p. 198], the Ashpitel and subsidiary Prizes of books were erroneously placed among the Travelling Studentships 1893.

PROCEEDINGS OF ALLIED SOCIETIES LIVERPOOL: SESSIONAL MEETING. Imagination in Planning.

On the 15th ult. a Paper bearing the above title was read before the Liverpool Architectural Society by W. H.

Bidlake, M.A. [A.], the full text of which is here given :-In that very modern novel, The Wages of Sin, the artist, Colthurst, is conscious of a strongly-marked dualism in his nature: a cold, clear, intellectual side, and a glowing, emotional one. Let us hope that we all, in some degree. share this characteristic with him. For while the commercial man does not need the emotional in his daily business, and often contrives to suppress it with undoubted success, to the architect, if he is worthy the name, it is essential; it is the atmosphere in which his ideas are born, grow, and blossom. In these days we are beginning to regard the architect as one who, in his own person, can combine all the various trades and professions known to civilised life, including those of lawyer, estate agent, engineer, landscape gardener, and cabinet-maker. But is not the ideal architect, rather, one who selects and gathers round him the most suitable men for his purpose, experts in divers callings, and compels them to give their best, leaving them, within limits, a certain latitude, but inspiring one and all-sculptor, craftsman, and labourer with a sense of fellowship of purpose, the embodiment of an idea which he has dreamed of, which he has pictured in his imagination as when a boy he pictured the palaces in the Arabian Nights?

His work does not end with the preparation of T-square and set-square plans and elevations, and tracings for the contractor with full-size details to boot, with a periodic and perfunctory visit of inspection in cold blood. There must be feeling in him, virtue that goes out of him, an

atmosphere of enthusiasm pervading him. And this feeling must dominate every part of his work, details as well as general conception, plans as well as elevations.

At this assertion up jumps the "practical" man and protests. He says, "We don't want any imagination in "the plans, please; convenience and thick walls, clothed "with a suitable elevation." Ah, we at once recognise the "practical" man! His "practical" nature is his forte. "I am not a bit sentimental, I am practical," he says, with the same unction as the Pharisee who rejoiced that he gave tithes of all he possessed. In the same spirit the true-born Britisher will say with swelling pride, "I know "nothing about art," and then glance round upon the

bystanders for a commendatory chuckle.

We have two racial elements combined in our nature—the Celtic, which is emotional, and the Teutouic, which is rational. Our practical man is an over-Teutonised one. But, besides that, he represents a reaction, and should receive attention. He remembers the time when all convenience in a plan was sacrificed to an idea; a lodge must be the exact model of a Grecian temple in antis, or amphiprostylar; a church vestry must be the literal reproduction of the Caryatid wing of the Erectheiou or the Acropolis; or rooms and corridors must be dark and ill-ventilated because small windows are necessary to give the building an aspect of mediavalism.

So well has the general public taken note of these thiugs, that with rough and ready logic it has concluded that the artist nature and the practical one are antagonistic. Let us beg our friends that when they are "putting in a word "for us" to a would-be client they will not say we are

artistic, and so ruin our prospects.

But are the imaginative and practical elements in planning incompatible? Are they so hostile that it will be like dividing a house against itself to introduce both withiu its walls? That they are not only compatible, but are a mutual help, I think some of the plans I propose to throw upon the screen of ancient and modern buildings will be sufficient evidence. For, after all, life, as it passes, depends upon emotion, and the stimulation of healthy and ennobling emotions exerts a very practical influence on our daily walk and conversation.

An architect calls in his imagination to his aid to strike the keynote of his building, the fundamental tone, supported and enriched, as with harmonics by his subordinate ideas. The public building will be expressed by a formal, symmetrical, and academic plan; the dwelling-house will be the embodiment of those customs and traditions of English home-life. And within the walls of the one and the other, what poctry may there not be of light and shade, what an aroma of association and tradition, what a rainbow of suggestion, what mystery, what revelation, quickening the blood by its unexpectedness, what contrast and

vivacity, what proportion and grace!

It is the object of this Paper to maintain that a very practical and convenient plan may be lacking in all these attributes, and that a plau may possess one or all of them without the least sacrifice of convenience and practicability. A protest here becomes necessary against the habit of those architects who think out their plan in its entirety, and then set about the adaptation of the elevation. It is the uext worst thing to designing the elevation first and making the plan fit. Plan and elevation are indissolubly joined together. To adopt an illustration from acoustics once more, they must both give out the same fundamental note, and the harmouics may only vary slightly, as consistent with the different circumstances of external and internal design. On this account it is even impossible to consider the question of imagination in planning without reference to the elevation also. Take, for instance, the intersection of the nave and transepts of a Gothic cathedral: does it not suggest the proper position for some grand dominating external feature, a tower or spire; and is

not the very recognition of this requirement the chief glory which enhances the English Cathedral as compared with its Continental sister? If, therefore, the plan suggests some characteristic of the elevation, the elevation will in turn require provision to be made for it in the plan. Could anything be more wonderful than the plan and interior of St. Sophia at Constantinople? Who of those who have seen it would deny the imagination instinct in

every part?

Circular-domed churches had been used by the early Christians again and again, but the plan did not suit their ritual, it was not a convenient one. But what a grand, allpervading, unifying sense the dome inspired! Must they abandon it for convenience' sake? The practical man says, "Yes, it must go." Anthemius thought otherwise.
"I will keep the dome, and make it embrace and pervade "a basilican plan"; and, supporting it with semi-domes, which in their turn were supported by semi-cupolas and vaults, he so arranged the parts that the eye of the worshipper travelled upwards from vault to cupola, cupola to semi-dome, until he felt the brooding, suspended dome, as the presence of some mysterious being which he almost feared to look at, and the sense of the approach of the Divinity filled his soul. Surely here is imagination in planning complete, and without the sacrifice of practical

Or take again the plan of an ancient Egyptian temple. What structure could be more evidently intended to strike the imagination than the Pylon; and to impress the common people with the jealous exclusion of the priests, the mystery of the worship of the gods, and the eternity of their earthly fanes, as of the halls of Osiris? And note the imaginative treatment of light and shade in the temple of Amen-Ra, at Karnak. The deep portal opens on to the sunny cloistered court which leads past a second Pylon to the magnificent Hypostyle Hall, in which the Initiated only might await the appearance of the divine image. Here all is mysterious gloom and twilight, and the columns are placed so close together that the enclosing side-walls are nowhere visible; and, vast as it is, the imagination pictures it as still vaster, as indefinite, illimitable. And from the sanctuary outwards, through aisle of pillared hall and open court, through portal and along the dromos, the axial line of the temple is marked as of a continuation of a ray of that star at whose rising the temple was dedicated, and whose return was daily welcomed by the songs of the priests on the flat temple roof.

Of the magnificent group of buildings on the Athenian Acropolis, the Propylæa was not the least remarkable, and it held the same relative position there that the Pylon did in Egypt. It led the festive worshippers up the long flights of steps, under the shadow of the Doric portico and the Ionic colonnade, until the dazzling fairy picture burst upon them, set round with the shadowed porch as in a frame.

Mr. Penrose has shown that the various inclinations of the axes of the temples there were probably due to their pointing to the rising stars to which the temples were dedicated. Still, the æsthetic gain of the angle at which the Parthenon is viewed to one approaching it from the Propylea is undoubted. And are we so bound by our T-square and set-square that our buildings must be always set out on rectangular lines? Imaginative quality may sometimes be imported into a plan by a departure from this rule. The entrance gateway of Haddon Hall is placed near an angle of the first quadrangle, but the passage-way is taken through the buildings in a slant direction, so that, instead of looking along the side of the quadrangle to that exactly opposite, one views the two further sides in pleasing perspective. I do not think the practical man could raise any objection to this, yet it makes all the difference in its effect on the imagination. What could be more suggestive than the arrangement of buildings in a college? The entrance gateway marks the jealousy and proud exclusiveness of learning, but once pass it and the noise of the vulgar street seems far away and distant; here in the quadrangle is a eultured calm. The hall here, the chapel and library there, and the living-rooms around suggest community of living and unity of aim, a veritable republic of letters. Of course, the buildings might have been more economically arranged on the flat system - on the very flat system!

The planning of an ancient Greek house is full of charm. In that of Pansa at Pompeii, what a vista would have stretched before one on entering from the street—the light and shade of the atrium, the glimpse through the parted curtains of the tablinum of the sunny peristylium beyond with its sparkling fountain, and further on the triclinium, festooned with vine and opening out through the verandah

on to the garden!

Our long winter and want of bright sunlight would make such an arrangement unsuitable in England, although the practical man thinks that need not trouble the artistic man. In the Badminton Club, in Piccadilly, Colonel Edis has designed a covered fountain court which may be regarded as analogous to the Greek atrium. Into it look the windows of the card and writing rooms, and at the end, approached by a flight of steps, is the coffee-room. It affords an excellent example how immensely a plan gains

by the introduction of a play of fancy.

It is, however, more in public buildings that this symmetrical treatment is called for. Selecting the Thermæ of Agrippa as an example, we shall at once note this symmetry. The splendid vaulted tepidarium, with its apsidal ends, occupies the central axis, and through the open colonnades at the sides one may look across the broad swimmingbaths, or piscinæ, to the sunny cloistered courts, or peristylia, beyond. There is no grand staircase here, which is so important a feature in our own public buildings, and which, with the entrance-hall, occupies the position here assigned to the tepidarium. There is hardly any part of a plan which so lends itself in an imaginative treatment as a public staircase. Excellent examples are afforded by those of the Genoese palaces, the Fitzwilliam Museum at Cambridge, and many mansions of the Renaissance. central ascent, with the vista leading from the first landing, the side return flights, and the surrounding open colonnaded or areaded galleries, afford a splendid opportunity for the architect who is capable of availing himself of his good fortune. The very stairs excite our curiosity, our sense of mystery. Where do they lead to? What sumptuous rooms must they be to which this grand staircase serves as approach! What play of lines, what effect of light and shade, what intricacy of parts, what spaciousness of the whole! And how mean a large public building seems without a good staircase, and how disappointing to have a good staircase lead to a mean suite of rooms! Nothing that is paltry, or small, or mean, or weak, will touch the imagination. And a building may be very paltry although of large size, and although it completely satisfies practical requirements.

A cathedral, and pre-eminently Westminster Abbey, stimulates our imagination in the highest degree. This is, of course, due to many causes; but the plan is a very important one. The long vista of the nave and the broad transepts are so dignified and so suggestive, the organ-screen, by partly hiding the choir, excites the sense of mystery and increases the apparent size of the building, while the ehapter-house and quiet cloister both add their charm to the group. There are those who would like the abolition of our cathedral organ-screens. They say it spoils the view. Evidently they belong to a Teutonic race. How much of the interest of King's College Chapel at Cambridge is derived from the division of the building by the organ-screen! A building which consists of one large room like this does not certainly present a very complex problem of planning, and yet the very proportions of the building may help to excite the imagination. How satisfactorily a basilican

church is terminated by the apse which, so to speak, focusses the altar to which all the lines of the plan seem to lead!

The church of Mr. Mileham at Highgate is an example of the way in which one large room may be full of suggestion The recesses between the piers and the staircases within them, the side galleries and choir galleries, and the passages on the top of the walls, all excite our fancy But what is to be said of the Nonconformist chapelespecially the Gothic variety? I do not rest upon my personal opinion. The sense of the paltriness and the meretricious character of their design has become part of the universal consciousness. There are exceptions, happily. Perhaps the sturdy Protestant Reformation which produeed a plentiful crop of Puritanic barns, the progenitors of the Congregational chapel, was a very Teutonic one, and the imaginative Celtie element in the population held aloof and remained Cavalier and Catholie. Poverty, however, is not the chief sin of the ehapel: it is a far deadlier one— Falsehood. The building must usually be ornate Gothic; it must have a steeple with belfry lights. No bells will ever ring there. It is an expensive sham. A grand Gothic doorway leads to a blank wall, in the eentre of which the papers on the notice-board flap in the draught. There are Gothie areades inside, but the columns are of iron six inches in diameter, and the arches are of brick, run with plaster mouldings. The seating is of the most glaring yellow varnished pine, and the upholstery is of sky-blue, "in order," as the art member of the building committee would say, "in order to harmonise." There can be no imagination in the plan of such a building, because it is an attempt to borrow the traditional forms which are the expression of a ritual foreign, or even obnoxious, to the Noneonformist worshipper.

One of Wren's City churches—St. Stephen's Walbrook—is especially interesting in its plan, which is not only well suited for galleries, but, what is far better, where galleries have to be provided they may readily be made a necessary part of the design. This building is perhaps better suited for chapel than church purposes, and Mr. Cubitt has adopted its internal arrangement, at the same time adding the galleries, in the very successful chapels he

has erected at Highbury and Birmingham.

In domestic planning the tastes of the owner should find some expression. All Englishmen are - or are supposed to be-hospitable, and anxious to extend a warm welcome to their guests. A spacious but snug and well-warmed entranee-hall should express this. Usually it expresses the reverse. In town houses it is little more than a dark eorridor in which the servant and the visitor find it difficult to pass each other, and where the latter is kept waiting while he is announced by the former, as though he were waiting at the Customs Office while his passport was being examined. Mr. Francis Hooper, in a clever set of plans, has shown how a very pleasant entrance-hall may be obtained in a town house of only sixteen feet frontage. The entrance from the poreh does not allow the visitor to see the whole at once; the fireplace, with its snug sideseats, where he may wait comfortably on a cold day, coming gradually into view: and thus is added the charm of unexpectedness.

In the plan for a house of thirty feet frontage a pretty effect is obtained by a glimpse of the inner hall, which is several steps higher than the outer one. Differences of level afford much assistance in introducing an imaginative element in planning, and of this Mr. Norman Shaw has often availed himself. In No. 185, Queen's Gate, erected by him, the bedroom corridor forms a gallery overlooking the inner hall, which is covered by a small dome; and the staircase leads out of, yet is in a measure cut off from, the inner hall.* This, besides keeping the hall warmer, affords a

We should, however, be on our guard against the caricature of all these things, by crowding them into the plan of a small house, as in the case of the many dolls' houses which are springing up everywhere in the suburbs of our large towns. A musician writes a beautiful song, and in time the street pianos take it up. Nothing is safe from being vulgarised. Our practical man, before he leaves ns, nrges that all these ideas mean expense, and that an architect should consider his client's pocket. A bedizened and over-upholstered drawing-room may mean expense, but one of refined proportion needs only the expenditure of an architect's thought, and that, on the five per cent. principle, has no recognised value. But it is those who cannot appreciate anything which others admire who are found to

urge objections against it.—W. H. BIDLAKE.

SHEFFIELD: SESSIONAL MEETING.

On the 16th nlt., at a meeting of the Sheffield Society of Architects and Surveyors, the President, Mr. E. M. Gibbs [F.], in the chair, a Paper was read by Mr. H. W. Lockwood on "Symbolic Architecture." Urging that to be thoroughly successful a building should by its design tell the beholder for what purpose it was designed, Mr. Lockwood, taking some of the most recent and best known architectural works in the city, attempted to deduce from them evidence of symbolic intentions on the part of their designers. From the discussion which ensued, however, and in which the designers whose works were cited as illustrations took part, it transpired that the symbolism discovered in the buildings had had no existence in their minds.

LEEDS AND YORKSHIRE: SESSIONAL MEETING.

On the 22nd ult., at a meeting of the Leeds and Yorkshire Architectural Society, the President, Mr. G. Bertram Bulmer [F.], in the chair, a Paper was read by Mr. J. Lane, of York, on the subject of "English Cathedrals." Among the evidences, he said, during the present century which pointed to the rapid development of art, nothing was more decided than the revival of Gothic architecture as exemplified in the multitude of new churches and restorations of fabric of the older cathedrals in every part of the British Isles. Though, with a few isolated exceptions, time and the exigencies of civil war had removed contemporary specimens of domestic architecture, the cathedrals of England had defied the ravages of time, wars, revolutions, and so-called restorations; and remained as mementoes of

pleasing effect in the light streaming down the stairs and through the archway from the staircase window, which is partly or wholly hidden. It suggests so much that may be, and the pictures of the imagination are always fairer than the reality. If a hall should express welcome, a drawingroom should be the room of social culture. It is perfectly hopeless to make an evening party "go" if the drawingroom is square and the guests all sit round with their backs to the wall, and feeling miserably self-conscious. Architects may be more frequently responsible for the failure of domestic social entertainments than they are aware. A drawing-room should at least be L-shaped, so that one half cannot see what the other half is doing, which may altogether be conducive to a feeling of snrprise. Or it should be broken by deep bays or recesses, whereby the company may be broken np into groups of like tastes: a bay for men to talk politics, and a secluded corner for any couple intent on domestic polities. Such drawing-rooms are to be found in many of Mr. Norman Shaw's honses, as at Hopedene, in Surrey. At Pierrepoint, in Surrey, another country house by the same architect, the plan is made more picturesque by placing the subordinate parts of the house at a slight inclination to the main portion. A similar deviation from rectangular setting-out gives interest to Folkton Manor House. It allows of a quaint hall, and the inclined wings of the building seem to focus the entrance, as well as to shelter it.

^{*} See Professor Kerr's Paper, pp. 224-25.

the nation's early piety, and to show that abbot, prior, and monk of pre-Reformation days could design and erect edifices of surpassing grandeur and beauty, to furnish models for future designers. The unique octagon of Ely, the spire of Salisbury, the nave of Winchester, the west window of York, the five aisles of Chichester, the west front of Wells, Peterborough's painted ceiling, Lincoln's angel choir, Exeter's minstrel gallery, were instances of originality which justly claimed their admiration. The Gothic style lacked the colour decorations which added so much to the picturesque interiors of the classic styles, but the beauty of the carving was brought into prominence, and the vaulted roofs and clustered columns afforded outlines wanting in the St. Paul's style of interior.

Mr. Francis William Bedford [A.] has been appointed Hon. Secretary of this Society, in succession to the late

Mr. Mettam.

GLASGOW.

The Architecture of the Italian Renaissance.

The fifth of the series of lectures by Mr. William J. Anderson [A.] was delivered on the 24th ult. in the Corporation Galleries, Glasgow. The special division treated of was "The Culmination of the Renaissance in "Rome." This was distinguished from earlier phases by the suppression of elements of design foreign to classical taste, as well as by a greater facility in composition, richness of modelling, and artistic reserve. It certainly partook more of the nature of an antique revival or reproduction than in the earlier stages, but was amply justified by its success, if by nothing else. For there can be little doubt that much of what was produced during the first half of the sixteenth century, in architecture as well as in painting, was superior in many ways to anything that had been done before. Never were the arts more united in a common purpose, nor had they at any time abler exponents. In the painting of Raphael, Sodoma, Titian, and Miehelangelo, the sculpture of Michelangelo, and the architecture of Baldassare Peruzzi, Antonio da Sangallo the younger, and Sanmichele of Verona, all art subsequent to that of Greece culminated; and the short interval embraced between the years 1506-1550 may be regarded on the whole as the most brilliant in art history. Bramante's architectural work led up to this central period of the Renaissance, but does not properly belong to it, and the lecturer believed that chiefly to Peruzzi's genius the change was due. To him without question could be ascribed the Grecian tendency, which, happily without archeological correctness, was a distinguishing mark of the work of the period. In so far as it was a resurrection of the antique, the Renaissance was appropriately consummated in the Eternal City, heart of the ancient world; and naturally, for Rome had in these latter days recovered some shadow of its former prosperity. If it did not wield its empire over Europe as at one time, it became the centre of an influence which has moulded the art and architecture of the civilised world more than any other. In illustration of the Roman palazzi numerous views and details were shown, including the Farnese, Massimi, Stoppani, Spada, and the Villa Medici. Besides other ecclesiastical work, the church of St. Peter was considered in some detail, Bramante's dome, Raphael's and Peruzzi's designs, and plans, elevations, and views of the existing fabric being put upon the screen. This magnum opus of the Renaissance, belonging in part to the period, seems to have been restudied by each new architect on his appointment, who deviated more or less from Bramante's original intention. Michelangelo's Greek cross was a much more restricted scheme than either Bramante's or Peruzzi's, and eliminated many of their beauties, while in turn it was subjected to the unfortunate additions of the seventeenth century. In such ways did St. Peter's fail to attain surpassing excellence, and the most perfect examples of the style are of much smaller extent, and for the most part domestic buildings. Of these, in Rome, the Villa Farnesina, Pal. Massimi, Ossoli, Sacchetti, and one in the Via Giulia are perhaps the purest in taste.

THE ROYAL ACADEMY OF ARTS.

The Advancement of Architecture.

The first of these lectures was delivered at the Royal Academy on Monday, the 29th ult., by Professor Aitchison, A.R.A. [F]. By way of preface, the lecturer urged upon students the need of cherishing a conviction of the importance of their art to mankind, without which they would lack the impulse to give the time, energy, and devotion to its study that its merits demanded. By "devotion" he meant to express the frame of mind the student should bring to the study of architecture in the hopes of advancing it for the benefit of mankind—a devotion that must not look to profit, honour, or fame in its pursuit, and only for that meed of pleasure of which the poet sang—"There "is a pleasure in poetic pains that poets only know."

The higher energies of mankind were now mainly devoted to the solution of the problems of nature, particularly of that grand problem of the ultimate atoms of which the universe was composed. The world owed a debt of gratitude to those men who pursued their profound studies with no further reward than the knowledge they gained. Yet such studies should not absorb the best energies of the day, to the neglect of that which should ennoble and delight mankind. Such ennobling pleasures the triumphs of architecture unquestionably afforded. Though the most beautiful buildings might not exceed in beauty the finest things in nature, they appealed more strongly to man, as being made by man for his delight. To see fine buildings in the midst of nature was like hearing one's native tongue in a foreign land. In the matter even of size, as Mr. Ruskin had pointed out, there was no sheer plane in nature that equalled the front of a large building-as witness the pinnacled plain near Amalfi, resembling in the distance a medieval town, where the biggest rock seemed smaller than a Gothic cathedral. Blind force acting on dead matter ages beyond count could never excite the same admiration as that due to high intelligence. Hints for forms and arrangements might be culled by genius from nature's works, but experience alone could show that such hints when worked up produced the desired effect. From nature's works the rough-hewn sources of emotion were obtained; while from buildings could be learned the devices for producing the same emotions in less gigantic works. In architecture there was a recurrence, a symmetry, a rhythm, an ordered alternation of light and shade, of flatness and projection, and a delicate proportioning that produced in one a calm feeling of delight; there were, too, the repeated alternations of contiguous light and shade that excited the eye, contrasted with smooth surfaces that gave it rest, and in the occurrence of varied and contrasted forms that made the æsthetic part of architecture peculiarly attractive-producing a vague and indefinite delight, a feeling akin to that experienced in listening to exquisite music without words.

Architecture, again, told of a nation's desire to perpetuate by monuments its feelings of adoration, its admiration for the glory it had achieved, the grandeur it had attained—not only keeping alive the memory of dumb nations, but affording a measure of their wealth, power, and greatness, and the most concise compendium of the culture they had attained. Architectural remains should be as clearly indicative of the capacities of a nation as the shape of an extinct creature to an anatomist from the fragments of its bones. After touching upon various other characteristics peculiar to architecture, the lecturer quoted illustrations from Dante, Chaucer, and Milton, and dilated upon the

influence of the art upon the poet, the painter, and the sculptor in all ages. Was not such an art, therefore, worthy the devotion and striving of architects, the aspirations and efforts of students, to put it once again into the way of improvement and progress? Honour or glory they could not expect to achieve nowadays; it might be, however, that their art would yet be restored to the place it had formerly occupied in the estimation of the nations, and future architects become as famous as Ietinus or Callicrates, Brunellesco or Bramante, Palladio or Wren. Yet, truly, the world had received as much instruction and delight from the work of nameless Roman, Gothic, Saracen, and Renaissance architects as from those who stood in the temple of fame.

The fine arts were necessarily progressive; but it could not be claimed for architecture in the present age that it had organically developed. In the very early Renaissance days it was thought that perfection had been found in ancient Roman architecture and in the precepts of Vitruvius: in consequence, architecture had then ceased to be a progressive structural art. Though the model had been changed, this Renaissance fallacy had not been shaken off.

Could architecture be got into a progressive state again? And how? Archæologists knew the slow evolution, extending over many centuries, of the different styles; yet critics of the present day expected a new style to be ereated, as it were, to order. It must be admitted that as yet there was no architecture in Christendom that, in the eyes of the student, could be called good, true, and distinctive of the present century. In bygone days men engaged in rapidly progressive fine arts treated with contempt the work they had surpassed, as men of science did exploded theories; but such was the humility of the modern architect that his talents were often spent in restoring old buildings, or in erecting imitations of the past. To get a popular opinion of the absence of any distinctive style of the day, tell any one that no past style should be used, and he would ask with astonishment, what could be done if it were not Classic, Gothic, or Renaissance. The architect, in too many cases, was treated like a burlesque actor, whose business it was to parody the expressions of former national character, and not to give expression to that of his own. Archæology was a charming science, of great interest to every one, and of the highest importance to the historian; but it was not only not architecture, but when used as a substitute was fatal to it. The ideal of the archæologist and the ideal of the architect were as the poles asunder. Progress, the watchword of architecture, with the archeologist was the unpardonable sin. The architect's canon was that every part of a building should be good in itself, and help to produce the proper effect. The archeologist's canon was to have precedent-no matter how the architect of earlier days had bungled or had spoiled his building, those blunders had been made ages ago; and the archeologist was satisfied, perhaps delighted, if they were reproduced. All the architectures now called styles could never have come into being if each nation had determined that Greek architecture was perfection, and no improvements in arrangement, construction, or æsthetics could be made.

The question to be considered was how the genius, capacity, skill, knowledge, and taste of the present day They must could be mirrored in their architecture. first make up their minds as to what they wanted. Classing their needs as material and intellectual, the lecturer dealt with the external features of a building with reference to their utilitarian purposes and æsthetic effect, dwelling especially upon the great possibilities and the scope which existed for originality in the materials which science had prepared ready to their hand in iron and steel. With such materials the mind almost shrank from contemplating the possible sublimity of buildings designed for the nation by the highest talent and for the purpose of exciting the highest

emotions. Picture to oneself their colossal size, their novelty and beauty of shape, their perfection of composition, and the exquisiteness of their detail, glowing, too, with the colours of enamel, and gloriously adorned with

sculpture and painting!

In conclusion, the lecturer affirmed his confidence in the rising architects of the day, if they were not led away by false teaching, or demoralised by the desire of becoming rich. They had in one respect distinguished themselves above the students of all other professions by their thirst after knowledge, for they had not only taxed themselves to get it, but organised the only complete architectural school*in the kingdom. As far as they knew how, they had used every exertion to acquire the deep and varied knowledge which was requisite for the most exact-

ing profession that existed.

Dante had arisen, in response, as it were, to the yearnings of thirteenth-century Italy after a language in which to enshrine the stirring thoughts and actions of the time. If architects and students still remained as eager, energetic, and persevering as they now were, that advent might be parallelled in the near future by the appearance of a genius who was destined to carry architecture on its new path, who would found a school which would give to the world a succession of buildings of a vastness, an impressiveness, an exquisiteness, that would cast into shade and insignificance all the architectural triumphs of the past.

LEGAL.

The Metropolitan Building Acts.

The case of Wallen v. Lister, in which a considered judgment was given by a Divisional Court on the 20th ult., decides a case of great importance to builders. In September 1892 Lister was erecting a building in St. Pancras, when Wallen, the district surveyor, served on him a notice under section 45 of the Metropolitan Building Act 1855. Lister made default, and was summoned and ordered to obey the notice; but before the order was made he had completed and left the building. A summons was then taken out for penalties for non-compliance, but the case was dismissed by the magistrate and, on appeal, by the Divisional Court, on the ground that section 45 did not authorise the service of notices or requisitions on builders who were not actually at work, and that consequently the original notice and the magistrate's order for compliance with it were given and made without jurisdiction.

In Nixey v. The London County Council the Court had to determine the effect of the provisions in the London Council General Powers Act 1890 as to the building-line, on those under the Metropolis Management Act 1862. A builder had a corner plot in Fulham, which had been laid out for building before the passing of the Act of 1890; and when he built on it the architect of the County Council certified a building-line which made his building illegal. On appeal to the appellate tribunal under the Act of 1890, the decision of the architect was confirmed as to the line, but the tribunal said that the case was within the exceptions to section 33 of that Act as to corner houses. The Council then contended for, and the Court (Mr. Justice Day and Mr. Justice Lawrance) adopted, the view that section 33 did not affect the Act of 1862 (ss. 74, 75), and that the appeal to the tribunal had been under section 28, and not under section 33, of the Act of 1890. It had been generally believed that the passing of section 33 was based on an admission that the prior Acts did not effectively deal with buildings abutting on two or more streets. Assuming the decision is correct, it must be remembered that the building owner is entitled under the prior enactments to compensation when he has to set his house back.

^{*} The Professor obviously refers to the Architectural Association (London).



MOSAIC AND FRESCO. By C. Harrison Townsend [F.], Mr. James C. Powell, Mr. G. Salviati, and Mr. N. H. J. Westlake, F.S.A.

Read at the General Meeting, Monday 12th February 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

INTRODUCTORY.

MR. PRESIDENT AND GENTLEMEN,-

HERE is a peculiar and appropriate fitness in the consideration by the Institute, at the present time, of the allied subjects about which I am to speak to-night. I hope we are of those who look upon the art of our day, not as parochially divided by the boundary lines of nationalities, but as a movement, and a whole, exhibiting different manifestations under various governing circumstances and influences. And comparing, in this spirit, England with the other nations—her compeers, I will not say her rivals—we cannot fail to see that of the whole large territory of art there is one field in particular she has marked as her own domain. We whose work lies (as does my own to some extent) on the Continent have the opportunity of watching the growth of recognition—albeit more or less grudging—of the high position our English modern school of decorative artists is having ceded to it, as of right, in such crafts as, for instance, wall-paper and textile design, stained glass, carpet and tapestry weaving, and others of the "arts that wait upon architecture." With all disposition for impartiality, it must be granted that a comparison between such evidences as the late Arts and Crafts Exhibition, and its French successor at the Grafton Gallery, leaves—notwithstanding much that can be said by way of adverse criticism against the former—a solid balance of weight in its favour. Many of the exhibits showed indeed "the Scholar's, not the Child's, "simplicity;" but a reversion to even a borrowed simplicity is a relief, after two generations of ornament that was manufactured and not spontaneous—that was an unintelligent application rather than a natural growth. There were plenty of examples, as I say, of a pseudosimplicity, an affectation, an eccentric disregard of precedent; but I think we could discern in them all, even in those we liked the least, that characteristic upon which is founded the reputation we, as a nation, have gained, and are increasing, for our decorative-art productions. I refer to the evident determination of the English craftsman of our day to master the principles and nature of the material with which he is concerned, to consider how these bear upon and influence his design, and, accepting them as canons absolute—limitations indeed, but not hindrances—to produce a work carried out in loyal submission to these conditions. In his stained glass he welcomes the lead-lines; he does not use it under protest and by stealth, as in so many of the Grafton Gallery examples. His wall-papers try for no fraudulent effect of hung tapestry; with his inlay slips of wood he tries to build no group of realistically treated flowers, no landscape full of atmospheric effects. He obediently accepts, I repeat, the limitations of his material, sure that by doing so his work can alone hope to be true and good and worthy.

We architects are willing—nay more, we are anxious, in growing measure—to relieve the grey gloom of our climate by the introduction of colour on the façades and the wall-surfaces of our buildings; and we hail with welcome such craftsmen eager to work out, and apply with conscience, proper principles in such arts as help us to attain that end. To both of us, architect and craftsman, the study of the two arts of Mosaic and Fresco comes laden with many possibilities of hope. One's regret to-night that either of the subjects by itself might well claim—and more—the whole of our time for its treatment is alleviated by the reflection of the advantage of considering them in their relation to each other, and as covering, practically, the whole field of pictorial decoration by means of figure-subjects. For I take it that it will be Mosaic of that kind rather than the pattern-work of ancient pavements that will be treated of on this occasion.

Mosaic is easily defined. It is the construction of a decorative design by means of small cubes, or tesserae, kept permanently in their position by means of cement in which they are bedded. This definition at once brings us face to face with the consideration of the question of how far, and in what manner, these materials, when properly employed, influence the design of the work we have in view. We can get large help in this inquiry by a careful study of the works of the past; and we shall find that the storeyed walls of Ravenna, Venice, Monreale, have a special and individual message to us students of Mosaic, besides and beyond that which they have uttered to the faithful for centuries past.

Considering, first of all, the cement, we find that the Roman formula was a very simple one, being a mixture of lime and fine brick-dust in the familiar proportion of three to one. A later formula is given by Ciampini in the seventeenth century, and, in this, Tiburtine marble-dust, in the same proportion as before, replaces the pottery or brick-dust. Two coats of cement were not looked upon as of necessity, but, when employed, the first contained pozzolana (which is a tufa substance found in the South of Europe) and brick-dust in the proportions of about two to one.

The contemporary references to Muziano di Brescia as "the first to execute oil-mosaics" do not accuse him, as has been supposed, of painting on his mosaics in an oil-medium, but are explainable by the fact that to him is due the replacing of lime-cements by those in which oil plays an important part. This notable invention meant that, in place of the three or four hours during which lime-cements set hard, the new material allowed the mosaicist as many days, with the further advantage that it was laid in one coat.

Modern workers vary greatly as regards the cement they use. Among the best formulæ is certainly that of Mr. Richmond, employed at St. Paul's, in which linseed-oil and wax are ingredients. Mr. Henry Holiday uses ordinary glazier's putty. Finally, as regards the cement, it should be the artist's endeavour not—as is so invariably done—to treat it as a surface on which the tesseræ are applied, but as a material in which they are placed. He should regard the joints between the separate cubes, naturally resulting from the last treatment, as features of his design, and look to them to obtain a boldness of handling and vigour impossible if he places the tesseræ absolutely close together.

However desirable, it is nevertheless not always possible to execute a mosaic in situ. The ordinary method, however, of studio-work—that is, to fix the cubes face downwards with gum on a reversed tracing of the subject—should never be adopted. In its place that called by the Italians Mosaico a rivoltatura should be employed. By this process the tesseræ are laid, face upwards, in a bed of pozzolana, slightly damp, which forms a temporary joint between each cube. Coarse canvas is pasted on the work; it is lifted up, and the pozzolana brushed out of the interstices. On being applied to the wall-surface, slight pressure causes these to be filled by the cement and the whole work held firmly.

The manufacture of the smalto from which the tesseræ are made is a subject on which Mr. Powell, who is to follow me, will, I hope, have much to say. He has removed from us the reproach (to which the French, as I learnt when I visited their Government Mosaic Studio last year, are still open) of being obliged to send to Italy for this material. And his firm has introduced certain very successful varieties, such, for instance, as the beautiful ranges of golds they are able to supply. The ordinary modern gold is distressingly dead and brassy in its effect, and is introduced with deplorable results in the works of restoration—destruction "the "wise it call"—lately, and now, being carried out at St. Mark's and at Ravenna. Study, in connection with the treatment of gold backgrounds, the "Birth of the Virgin" by Orcagna in the Italian Court, South Kensington Museum. Here you will find all varieties of tones of gold, from the coppery to the bright yellow, that the tesseræ are sometimes three-quarters of an inch square, and that the cement joints have sometimes a width of over one-sixteenth of an inch. Above all, a multitude of tints is to be avoided, and the twenty-five thousand boasted of by the Pontifical Studio in Rome are to be mentioned only with horror. A scatola di degradazione or colour-box of some thirty tints is amply sufficient for the purpose of the true mosaic artist.

Such then, the cement joint and the opaque glass cube, are the two factors, and the only two, in mosaic work. And what do they impose as conditions on the artist? The history of the art will teach us best, though I may say that this is a field that is left almost untouched, and that a worthy and comprehensive book on the history of Mosaic, read in the light of old examples, is a real want in literature. There is, however, reason to think that before very long this gap will be more or less adequately filled.

Some of the axioms that seem to be indicated by a study of what our predecessors have left us to profit by or avoid would seem to run as follows:—

- 1. The joint is an integral element in the structure of the picture. It should play its part in the design.
- 2. The surface should not be brought to a dead smooth level. Very beautiful effects are produced by the light as it plays on the variously set planes of the tesseræ.
 - 3. A minimum, not a maximum, number of tints produces the happiest result.
- 4. It should always be remembered that mosaic requires a simple, bold, uncomplicated treatment. It is to be seen and judged of from a distance.
- 5. There must be no introduction of aerial effects or atmosphere, nor a striving after realism. The work is decorative rather than imitative; and its figures, trees, and buildings are *symbols* only. In a word, so far as to express an idea in the most direct and absolutely simple way is impressionism, then and to that degree is the mosaic-worker a true impressionist.

As regards the second matter to be treated this evening, I can only presume that I have been asked to say something on the subject of Fresco because it has fallen to my lot lately to have to consider how, and by which of the various processes of that form of art, to arrange for a series of full-size figure compositions in a church I have lately finished. Fresco-work in England is (but need not be) of such rare occurrence that perhaps there may be some little interest in explaining briefly the method there adopted. Throughout the whole of the design of my little building I bore in mind the intention of decorating its interior in polychrome. As this treatment was to be its main feature, the exterior, for instance, was kept entirely plain and simple; and effect was gained by proportion and the colour-value of its material, rather than by any elaboration of detail or mouldings. In the interior the problem was to obtain, notwithstanding the unusual lowness of the building, a maximum amount of surface—not being a flat ceiling—upon which to execute a series of all but life-size subjects.

This the semicircular form of ceiling enabled me readily to do, the springing-line of which is but seven feet from the floor.

About half-way towards the highest point of this barrel-ceiling a moulding runs the length of the church, and, while it is proposed that the upper portion shall be enriched in plaster surface ornament and solidly gilt, the surface below this moulding to the springing-line is left free for the work of the Fresco-painter. Divided as it is by the "bonnet heads" over the windows, it resolves itself into a series of two large spandril-pieces on each side, and of a smaller one against the west and another against the east walls. So much for the surface at the disposal of the artist; now as to its method of treatment.

Fresco really means a chemical process successfully carried out. The artist and I had the great advantage, throughout the work of which I am speaking, of the assistance and advice of my client, Professor Roberts-Austen, Chemist to the Mint, and amongst the very highest scientific authorities. According to the system of Herr Adolf Keim, of Munich—which, by a process of elimination of the other methods, we were led to adopt—an ordinary rough-rendered plaster may be the starting-point. This was the case with us, though when one starts from the bare wall it is as well to dress it with a very thin foundation-coat of four parts of sand, marble-dust, and infusorial earth (that is, calcined fossil dust), well mixed together, to one of lime. Then on this is laid the first coat of rough plaster ready to receive the printing-ground. This consists of quartz-sand, marble-dust, and infusorial earth mixed together, and added in the proportions of eight parts to one of lime, and laid thinly, say about one-eighth of an inch thick. Throughout, care must be taken that the water is free of lime, to which end only distilled water should be used.

The under-coat and the painting-ground, or *intonaco*, being perfectly dry, a solution of hydro-fluosilicic acid is supplied, which prepares the material more readily to absorb two successive coats of diluted silicate of potassium, and the surface is ready for painting. The pigments have to be obtained from Herr Keim, or his London representatives, for they are all selected from the point of view of being equally acted on by the alkaline fixing fluid. This consists of silicate of potash treated with caustic ammonia and caustic potash, and is applied hot. It forms a film of carbonate of lime *plus* a silicate of calcium on the face of the work, which then presents a surface that is, from the chemist's point of view, impregnable to atmospheric attacks, and indeed to the action of acids or caustic potash.

So much for the process of which Mrs. Lea-Merritt, the artist, is showing her complete mastery in the series of Frescoes being painted by her in the little church I have alluded to. I thought you might forgive my exceeding my limit of time by describing it in detail, for I imagine that the principal function of these Meetings is to offer, and to avail ourselves of, the opportunity of sharing in experiences, an account of which may make smoother the path of some fellow-architect.

C. Harrison Townsend.

MOSAIC: ITS MATERIALS AND METHODS.

Mr. President and Gentlemen,—

HE subjects before you to-night are so vast and full of interest to the architect that I feel it very difficult to know how to deal with the one allotted to me—viz. the Art of Mosaic—so as not to waste the time at my disposal. With such libraries as are now available to most of us, it seems useless to launch out into an elaborate history of the art, and I need only give you my own experiences, and offer any suggestions that have occurred to me whilst studying this branch of my work. I do not propose to say anything about floor mosaics, or any kind

of marble mosaic, but to confine my remarks to the use of glass in the decoration of walls and roofs. At what time glass was first used for wall decoration it is difficult to say, but one of the earliest examples I am aware of is that which formed the decoration of the Villa Cassia near Rome, many fragments of which were found when excavating there a few years ago. The Villa, which is some four Roman miles from the Porta del Popolo, is said to have belonged to Lucius Aurelius Verus, son-in-law of Marcus Aurelius, and would date the work as belonging to the second century. This glass, some pieces of which I am able (through the kindness of Mr. Franks) to show you to-night, which is from three-sixteenths to one-quarter inch in thickness, is of varied colour, and worked into geometrical patterns like the drawing exhibited. The method of using it belongs more properly to the art of opus sectile than opus tesselatum, and I draw your attention to it because I think it was made in a manner similar to that which was afterwards manufactured for the mosaics of Rome, Ravenna, and elsewhere, though in this case the surface of the slab of glass was used, and not the fracture, as was afterwards the case.

MATERIALS FOR GLASS MOSAIC.

The glass, which is rendered opaque by the addition of oxide of tin, is coloured as required by one of the metallic oxides: this is melted in crucibles placed in the furnace, and when sufficiently fused is ladled out in small quantities on to a metal table, and pressed into circular cakes about eight inches in diameter and from three-eighths to half an inch in thickness; these are then cooled gradually in a kiln, and when cold are ready for cracking up into tesseræ, which can be further subdivided as the mosaicist requires. It is the fractured surface that is used in mosaic generally, as that has a pleasanter surface and a greater richness of colour; the thickness of the cake, therefore, regulates the limit of the size of the tesseræ, and the fractured surface gives that roughness of texture which is so valuable from an artistic point of view. I do not know what is the exact composition of the old enamel, but it seems to be about one part sand, one-third soda, one-sixth tin, and one-sixth lead. Oxide of tin is used for the whites because it gives the granular surface which is so pleasant; a pure white can also be got by the use of arsenic, and this is used for the enamel from which watch-faces are made, and the white enamel of thermometer tubes; it is much more brilliant and glossy in surface than the tin white, and for that reason is not so suited to mosaic work. Another white is got by the use of cryolite, which is composed of soda and fluor-spar. From the oxide of copper we get three colours; from a larger amount of copper and a lesser of the oxygen we get red, and with a less amount of copper, a green; and with still less copper and more oxygen is obtained that beautiful turquoise blue which the ancient Egyptians and Romans were so fond of using. From the oxide of cobalt come all the purple blues, from chrome a mustardy yellow, and from uranium a more orange yellow; but as this oxide is of only recent discovery, possibly charcoal as well as iron may have been the colouring matter of the old yellows. Textbooks are fond of quoting antimony as the oxide from which yellow is produced, but we have never been able to obtain the slightest tinge of yellow from it. Gold produces the pinky reds, and flesh-colours are produced from very small proportions of it. Manganese gives us purple; and an excess of it, with the addition of cobalt, a blue black. The oxides of iron, platinum, and nickel are also used. For very small mosaic a cane can be made by gathering a small quantity of the enamel on the blowpipe, and shaping it by patting each side so that it becomes square, and then, by attaching to it another piece of molten glass, it can be extended by drawing it out whilst yet hot to the required substance, when it will still retain its square form. Another method of making enamel for mosaic work is in a manner similar to that described by Theophilus as the method of preparing glass for the champlevé and cloisonné enamels—viz.

by grinding glass to powder and fusing it in closed kilns in the shape of tiles or slabs of glass, the colouring matter being added in the same way to the base as with the other material, and by the use of the same oxides. The surface of these slabs is pleasant and of an egg-shell glaze, and can be used for mosaic, and has been used in some of the nimbi of the angels in the apse panels at St. Paul's, where shapes were required larger than the fractured surface would give; but the fractured surface in this material is still, I think, the best, and gives a more liquid colour than the face. This is the material of which the greater part of the St. Paul's work is being made, though both materials are employed. For the black outlines we find a glass made in the first-described way the best, and, contrary to the other colours, the surface gives a better effect than the fracture. In a case exhibited by us to-night are specimens of the colours that up to the present have sufficed Mr. Richmond for the St. Paul's work. When I was at the Venice and Murano Company's works at Murano, I was told they had made 37,000 colours and 400 shades of gold!

We must now turn our attention to another most important material for mosaic—viz. the gold. The way of making gold with us is as follows:—We first blow a thin sheet of clear glass; and on this is laid, with a little water, the leaf of gold specially beaten to the required thickness. These sheets of glass, with their gold leaf attached, are then taken to the furnace and made thoroughly warm on the marver, the side with the gold leaf being uppermost; molten glass of red, blue, or green colour is poured on them, and this unites at once with the thin sheet, and by pressure they are joined into one cake. Silver is made in a similar manner. If instead of white a tinted glass is used for the surface, you can, of course, alter the colour of your gold; for instance, a thin sheet of pink glass will give you a golden ruby. When gold was first made in this way I cannot say, but we find it in use in the fourth century, after which it was largely used in all mosaic wall-decoration; and no wonder, for the effects produced were most gorgeous. Perhaps it may interest you if I call your attention for a moment to those little plaques of gold, with subjects etched on them, which were found in the catacombs of Rome. Specimens of these, from the collection of Mr. C. W. Wilshere, are to be seen in the South Kensington Museum: these were made in a similar way. This process, known to the Romans, was used by them in the third century for the decoration of vessels of various shapes, and this, no doubt, led to the use of gold in their mosaics. It is, of course, of the utmost importance that the glass which forms the face and that of the back should be of the same composition, though differently coloured, or the two will not join entirely, and the front will tlake away, and the gold leaf become exposed and disappear.

The gold cake made as above described is now manufactured with such precision that it is perfectly even both in surface and colour; and if used, as in so much modern mosaic, flatly laid, it will not give the effect one admires so much in the old mosaics, but will give more the effect of gold paper. Any one who has carefully looked at specimens of the ancient gold tesseræ will have observed that many of them are imperfectly covered with the gold leaf, and that interstices occur in which the backing colour is seen showing through and influencing the tone of the gold; this, one might think, was due to imperfect manufacture—and to a certain extent may have been—but the old masters of mosaic knew what looked well, and did not attempt to improve away what was so useful. I found that by subjecting the gold cake to a greater and longer exposure to heat, the leaf of gold, although protected by its surface glass, contracted in parts and gave the interstices which showed through them the backing colour. Consequently, by using golds exposed in their manufacture to varied heats, and by using golds backed with different colours, a great variety of effect can be produced; and by placing the tesseræ irregularly in the cement bed, so that the light strikes them at different angles, a gorgeous effect can be obtained much more like the old gold grounds. Then, again, gold subjected to a

longer heat must be more durable and less likely to perish through the surface glass becoming detached.

With such a field of materials—to which the ancients sometimes added white marble and cocola, mother-of-pearl, and, as in the case of the mosaics at Parenzo, whole oyster shells—it is not surprising that so many celebrated artists in the past tried their hand at mosaic art, failing or succeeding according as they were restrained by the limitation of the material.

Of the cements used for the fixing of the mosaic I need not say much, as excellent formulæ are given in different books; and I cannot do better than refer you to those excellent Papers read before the Society of Arts* by Mr. Harrison Townsend, in which he gave recipes of water and mastic cements. The latter of these we are using at St. Paul's. Its setting gives time for any alteration that may be necessary, but when once set it is impossible to remove without breaking away the tesseræ and cement together, which we found on Mr. Richmond wishing to make an alteration some three or four months after the work was done.

METHODS OF WORKING.

In making the first sketch design for the decoration of curved surfaces, such as domes or vaults, it is best, I think, to prepare plaster models to scale, from which the exact effect of the work when executed in mosaic can be obtained, which would be impossible in a drawing on the flat, displayed in the usual way. I show some models that we have prepared for the decoration of a church, which are made to an inch scale; these are easily coloured on the plaster after it is sized, and perfectly easy to correct or alter as one goes on. The full-size cartoons are next prepared, and if the sketch models have been carefully completed, and the work is simple in character, drawings in black and white will suffice. As these drawings must be prepared on the flat, they will require fitting in position, if on curved surfaces, and making good before they can be worked from. For more elaborate work coloured cartoons will be necessary. For the work at St. Paul's Mr. Richmond has made his cartoons partly in pastel necessary. For the work at St. Paul's Mr. Richmond has made his cartoons partly in pastel and partly in water-colour. Some of these were exhibited recently at the Arts and Crafts Exhibition. The cartoons are next carefully traced so as to transfer the design to the wall for the mosaicist to work from, and all is then ready to begin working.

Now must be settled that most vital question in connection with mosaic: Are you going to work it tessera by tessera to the wall itself, or are you going to work it in a studio away from the place it is ultimately to occupy, and in a light different from that it will ultimately receive? I think there can be no doubt that the former was the way in which all the old mosaics were worked and from the experience I have goined provided the artist can properly emprying

were worked, and, from the experience I have gained, provided the artist can properly supervise the work, it is undoubtedly the best from every point of view. It is, I think, a quicker method, and therefore a cheaper way of working; moreover, what is more important, the mosaicist can see his work grow, and take a more intelligent interest in it, resulting in the display of an artistic feeling which with the paper methods it would be next to impossible to rouse. an artistic feeling which with the paper methods it would be next to impossible to rouse. Another great advantage is that the tesseræ are once for all placed in position by the mosaicist, and retain the inequality of surface given by the varied pressure of the hand, and the finished work has not the dead-level appearance usually presented by the other methods. Another process, where the former is not possible, is what is termed the paper process. Here the design is traced, and reversed on to sheets of paper or canvas, and each tessera is fixed, face down, with paste on to the tracing prepared; in this way you can see what you are doing only so far as the colours are concerned, because they are the same throughout; but that is impossible with the gold or silver tesseræ, as their back is generally a red or blue glass, so you are entirely in the dark as to the general effect of your work. When all is finished, it is cut up into

^{*} Cantor Lectures on "Mosaic: Its History and Practice," Journal of the Society of Arts, vol. 41, pp. 748, 772.

convenient-size pieces about twelve inches square, which are taken to the place they are to occupy, and fixed into the bed of cement, and patted into it till the cement sets; when firmly fixed, the front surface of paper or canvas is easily removed by damping it, and the face of the mosaic is seen for the first time. In this process it is almost impossible to obliterate entirely the joinings of the different sections, which is objectionable, and the finished work must retain the surface given it by the fixer, who is most likely not the mosaicist. Another method is described by Mr. Harrison Townsend in the Paper I have referred to, and is called Mosaico a rivoltatura; but in this, so far as I understand it, though the mosaicist is enabled to see what he is doing, yet the finished surface of the work would be the same as in the former method.

I had an experience of a somewhat similar method in carrying out the mosaic picture for Clifton College Chapel, designed by Mr. Holman Hunt, of the subject of Christ with the Doctors in the Temple. The drawing, which was done in water-colour, measured four feet by two, which was half the size the mosaic was to be; it had therefore to be enlarged, which was done by photography. Tracings on sheets of glass were made from the enlarged photograph, and on these were also shown the lines the tesserae were to take; these lines were all fixed by burning them on to the glass, so that they could be preserved when making any alteration to the work. The mosaicists then built their work on these sheets, fixing each tessera on a bed of whiting so that the work could be seen as it progressed. The design and colour of the water-colour picture were so complex that it was necessary to shape almost every tessera by grinding it on a stone; the high lights on the end of a nose, a knuckle, or a finger-nail were cut to the exact shape given in the picture. To do this it was necessary to use the smoother face of the glass, and not the fracture, which would have been too rough for work going so near the eye. When all was finished, strong linen was pasted over the surface of the mosaic, and when dry the temporary cement was removed from the back, and the mosaic was fixed, with its permanent bed of cement laid on a slab of slate, and finished with a smooth surface, rendered necessary by the great finish of the original picture and the position it was to occupy in the chapel—viz. some four feet above the sanctuary floor.

To refer again to the work at St. Paul's: the two spandrils over the arch of the first bay of the choir from east on the north side, and the two spaces on either side of the clerestory window above, were worked on slabs of slate scored across diagonally to serve as a key to the cement. The first two of these were worked in Mr. Richmond's studio at Hammersmith, so that he might work on them himself, and explain to the men his views how the tesseræ should



SIR C. WREN'S BRICKWORK AT ST. PAUL'S.
Stretchers, 8" × 23"; headers, 35" × 25".
Joints, one quarter inch.

be laid. The other two were done at the Whitefriars works. The mastic cement was first worked on to the slate, and on that the outlines of the design were transferred from the tracing, and the tesseræ worked in one by one, so that the same surface was obtained as though it had been worked on the wall direct, and in this way the men could see exactly what they were doing. These slates were then taken to St. Paul's and fixed in their places, the wall being

first of all cut back so that the face of the mosaic should be the same as the previous wall-face. The slates were first fixed to the wall with the mastic cement, resting on slate blocks fixed into the wall, and fitted into holes cut in the slate slabs, and they are screwed and cramped into the wall as well; the mosaic was then worked over the joints of the slates and all was finished. But when seen in their places, though they had looked all right in the studio, it was found that they were not nearly bold enough in outline, and it became necessary to strengthen the effect of the mosaic by adding black outlines round the figures and strengthening

the lines of the drapery, showing that it is almost impossible in such work to gauge the necessary strength when done apart from the surroundings and in a different light. Mr. Richmond then wisely determined to work everything in situ, and direct on to the wall itself. On the curved surfaces, such as the shallow eastern dome of the choir, the four pendentives and three apse panels, the plaster was removed and the most beautiful brick-work revealed [see diagram], which has formed an excellent key for the cement. On all the vertical stone panels the face has been removed and a rough surface left to provide a key for the cement.

With a few suggestions I will close what I have to say. In the first place, if mosaic is to flourish and become one of the recognised means of decoration in this country, we must study where to place it to the best advantage in our buildings, and this must not be too near the eye, where fresco and painting will look better. In the old churches of Italy you seldom find it lower than twelve or fourteen feet from the floor-line; at Ravenna, in the Church of Sant' Apollinare Nuova, the celebrated processions of saints on the side walls of the nave are twenty feet from the floor-line; in the church at Monreale the mosaic is at about the same height, all below being lined with slabs of marble divided by bands of geometrical mosaic like the work of the Cosmati, which can always be used low down, being so elaborate in detail, and generally worked with the surface of the sheets of glass. Let our designs be broad and simple, and the draperies designed so that they can be worked in lines of tesseræ; use the joints of the cement, like the lead-lines in stained glass, so that they will assist the drawing, and do not try and disguise them. In coloured grounds you can make them play an important part; by widening the joint and showing more cement you can grey your colour, or by not letting the cement show on the surface you can get a dark joint and strengthen your colour; this is the case in some of the blue grounds at Ravenna. If you are using gold for the grounds of your design, spread it over all parts of the work, such as patterns on the dresses, the high light of a wing, or in flower or fruit; in this way you soften the effect of the outlines, and prevent the object in your design forming silhouettes on the gold ground. Outline all the forms in your design with a row of one or two tessere, but over the rest of the ground place them in various directions as may suggest themselves to the mosaicist. Wavy or scolloping lines look well. To emphasise figures or other objects in your design you can outline them with black and blue, or black and red or brown, according to the local colour and the strength you wish to give your work. For work to be seen at a great distance and placed next to gold you can use a black outline an inch in width. Gold will always eat through your colour and lessen the strength of it, much as white will do in stained glass.

The size and shape of the tesseræ are important, and will be controlled by the necessities of the design, and the distance the work is to be seen from the eye. As the fracture of the glass is what is used, the thickness of the sheet or slab of glass will also control it. At Ravenna a tessera three-eighths of an inch square is an average size, but in the mosaic over the altar in the chapel of the Archbishop's palace the tesseræ are one-fourth of an inch. This is one of the very few examples of ancient mosaic placed near the eye. In the Baptistery of Florence the tesseræ of the dome are small, about one-fourth of an inch, and some of the black outlines one-eighth of an inch only. The shaping of the tesseræ should not, I think, be roughly or carelessly formed, but should preserve a certain neatness which would look workmanlike, but at the same time not mechanical. For outlines it is useful to have pieces in length two and even three times the width of a tessera: it gives a pleasant variety. Examples of these can be seen in the original mosaic by Orcagna in the South Kensington Museum. The tesseræ should also be carefully laid in the cement bed in a workmanlike fashion, beginning with the outlines and then filling in.

Do not use a great number of colours: all the best decorative work of the old masters is produced by few rather than by many; and the skill of the artist will be shown in this. With five colours good flesh-work can be produced. Do not attempt pictorial effects such as are easy to do in painting, but which can only be obtained by immense labour in mosaic, and which when accomplished seem to be spoilt by the jointing of the tesserae; this has led the Vatican mosaicist, to my thinking, into such pitfalls of misplaced art, in those copies of the pictures of the great masters of Italy, which are placed immediately over the side altars of St. Peter's. On account of their nearness to the eye, it has been necessary to destroy the fractured surface of the tesserae by rubbing the whole surface down to a smooth face, and filling in the joints with wax coloured to match the surrounding colours. I believe the general opinion of these copies is that they are bad pictures and bad mosaics, and that they will only hand down to posterity a false impression of their magnificent originals.

JAMES C. POWELL.

MOSAIC IN GENERAL, AND THE LATE DR. SALVIATI'S WORK.

Mr. President and Gentlemen,-

N responding to your kind invitation to give a short lecture on Mesaic, I feel I have undertaken rather a difficult and delicate task—first, because the subject has been already treated by other more competent authorities; and secondly, because I could hardly do so without acknowledging how much we are indebted for the revival and the improvement of this art to the researches, study, and most devoted perseverance of my late father. I have, therefore, to ask your kind indulgence in my effort to contend with these difficulties.

By the term "Mosaic" is meant a work formed by the use of a number of separate pieces, varying in size, of a hard and durable material. Sometimes these pieces are of marble, sometimes of enamel—improperly described as glass; and being of different colours, forms, and sizes, they are made to produce more or less successfully, according to the skill of the workmen in dressing and joining them, the same result that the painter obtains by means of his pencil and brush. These pieces, when placed together, are fixed on cement, the nature of which differs according to the various kinds of work to be executed, and the composition of which has varied considerably at different times and places; and when so joined, the whole forms one solid and uniform body of unquestionable durability.

Mosaics, as they are used and manufactured in the present day, are of two kinds. The one (like that made up of different coloured woods) is known as "inlaid" or marqueterie mosaic, and is so manufactured that the surface of the work is thoroughly smooth; a result produced by placing the edges of the stone or enamel pieces perfectly close and adherent to one another, and subsequently rubbing and polishing the entire surface. Such kind of mosaic is generally used in the production of personal ornaments, such as brooches, earrings, or bracelets; or objects of house decoration, as tables and other articles of furniture. In this way are worked the fine "Florentine" mosaics, which are made up of stones, some of them precious, such as "lapis lazuli," "malachite," &c. The "Roman" mosaics, too, are of similar nature, although representing more especially (and often with extraordinary effect) landscapes, fruits, flowers, views, animals, &c., as they are manufactured of very thin pieces of enamels of numberless colours, rubbed and polished. The Venetians also work in the same way, when they intend to produce similar fancy articles, by using smaller or larger pieces of enamels according to the different patterns, which are generally of a polychromatic and geometrical character.

The other kind of mosaic is made by using stone or enamel pieces cut into irregular shapes, which are then put together, more or less closely to one another, so that between them the joints are seen. It will be at once understood that the work does not look smooth, but rough. In this case the style of mosaic is known as *Monumental* or *Byzantine*. This was the kind used by the ancients, and is the most fitting, and that generally adopted, for the purpose of architectural decoration, both for the interior and exterior of buildings.

Although learned writers differ much as to the time and place of the origination of the art, there can be no doubt that it was known and practised at a very remote period, for we read in Holy Writ (Esther, chap. i.) that a pavement formed of pieces of various colours was a feature of the magnificent decorations of the palace of King Ahasuerus. Doubtless, mosaic was first used for pavements, and was made wholly or in part of marbles and precious stones. Mosaic made of these materials was known either as Lithostratum or Opus tesselatum, vermiculatum, Alexandrinum, according as it was formed of large or small pieces and represented figures or otherwise. Lithostratum mosaic was composed of tablets of marble, sometimes interspersed with precious stones, on which no figure was shown at all. Ciampini, in his work Vetera Monimenta, affirms that the first example of such mosaic floors was in Persia. Against this opinion we have the statement of Abbot Hasselin upon ancient mosaics, that they had their origin in Egypt. Laborde states that the practice of embellishing pavements with rich and precious stones was followed in Eastern countries before it made its appearance in Greece.

It would seem that the earliest tesselate mosaic (composed of small pieces of marble) was made in Greece, and some authorities assert that its inventor was Sosus of Pergamus, who executed that charming mosaic, now in the Museum of the Vatican at Rome, of which Pliny wrote: "Celeberrimus fuit in hoc genere Sosus. . . . Mirabilis ibi columba bibens et aquam "umbra capitis infuscans." Historians assert, however, that the mosaic pavement of the Temple of Olympia was executed at least two centuries before the time of Sosus of Pergamus; and much praise is due to Parnesus, who decorated with mosaic the temples of Jupiter at Olympia and of Minerva at Elis. The ancients well knew the advantage of colours, and the prominence that should be given to them in architectural decoration, and therefore, having used marbles of different colours and painted substances without being able to obtain the effect they desired, they became aware of the necessity of discovering some other materials for the purpose of mosaic in order to obtain those varieties of tints and shades which natural substances could not supply. Thence arose the use of coloured glass, first transparent, then opaque—that is, enamel—as the fittest material for obtaining the desired advantages, and also for its power of resistance to atmospheric attacks. Pliny calls this, a new invention of its time, "e vitro novitium et hoc inventum."

The next step in improvement was with the view of producing more striking and brilliant effects, and for this purpose the ancients thought of incorporating the precious metals; but as this would be beyond measure expensive, a simple means of obtaining similar results was invented, and thus gold and silver enamels were introduced into mosaic works. These enamels are, in truth, made of the precious metals, but in such thin sheets that their use is comparatively inexpensive. The process is a difficult one, for to produce true gold and silver enamels, great knowledge and experience are necessary. As everyone does not possess a clear and distinct knowledge of the difference between coloured and gold and silver enamels, it may not be out of place to say a few words upon the subject.

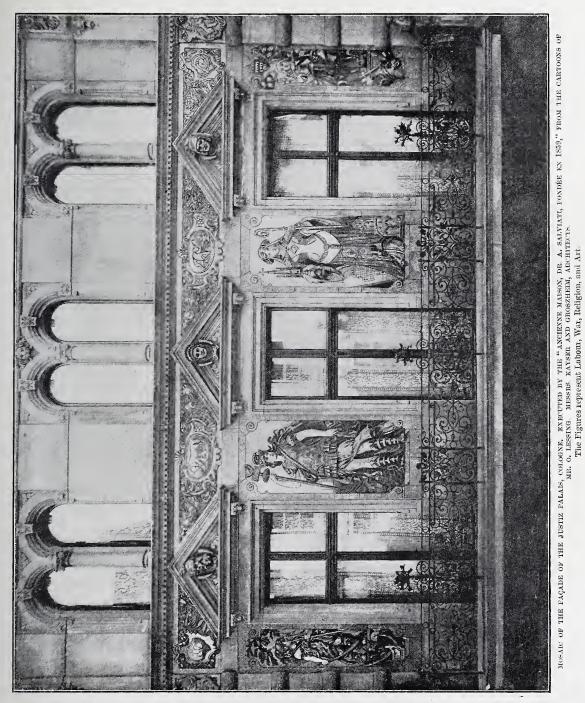
Coloured enamels are made of vitreous paste. They are formed of the same silicious and other materials of which common glass is made, but to these materials are joined other mineral elements, which, when fused along with them, impart to the vitreous paste its density

and its colours. In this way the greater or less degree of opaqueness, purity, and solidity of the enamel, the quality and beauty of its colours, and even the most varied and endless shades of the same tint, are all dependent on the quantity and quality of the mineral elements aforesaid in union with those of common glass, and on the degree and continuance of the heat to which the whole composition is subjected in the furnace. Gold and silver enamel, on the contrary, is the result of a very different operation. On a ground consisting of a thick layer of glass or enamel (according as it is intended to render the gold enamel transparent or the reverse, or to impart to it a warm or variegated colour), there is laid and attached by the action of fire a sheet of gold or silver leaf; then a coating, almost as thin as a hair, of the purest glass, which may be either colourless, or of any shade of colour desired. Thus, these three layers fused together become perfectly united and form a single body. Should the fusion be completely successful, the metal will be permanently protected against all possibility of injury from exposure to the air, from dust, from gas, from smoke, from insects, and in such a way as to lose nothing of its purity and splendour. When this most delicate upper coating of glass possesses the requisite fineness and purity, and when the entire extent of the sheet offers no inequalities of thickness, the gold or silver appears in all its natural beauty, and the glass with which it is covered is scarcely discernible at all. When the reverse of this is the case—when the gold remains, so to speak, entombed between the upper and under layers, and does not present an even surface—then the eye becomes arrested by the glitter of the glass rather than the brilliancy of the metal, and the mosaic-work bears the utterly false appearance of being varnished over. These explanations will show that the manufacture of enamels for mosaic is attended with very considerable difficulty and inconvenience, and that to obtain ease and certainty in their production, according to the purpose they are destined to serve in imparting to mosaic-work an effective and pictorial appearance, coupled with the utmost durability, not only is a knowledge of general principles in their manufacture necessary, but also long experience and continual and laborious experiment.

In speaking of *coloured enamels* it should be explained that it is very difficult to produce in an exceedingly hard and vitreous material the many beautiful and delicate shades of colour required to impart to mosaic-work the identical effect which the painter obtains simply by the use of oil or water colours, and also to avoid those faults which would eventually affect one of their chief requirements—viz., durability.

With regard to gold and silver enamel, it must be remembered that the whole process has to undergo the action of the fire, and that it is extremely difficult to protect the delicate gold leaf from becoming disturbed, or torn, or crumpled, and to guard against the introduction between the glass and the metal of minute bubbles of air, the effect of which would be sooner or later to separate the delicate film of glass from the metal; nor, again, is it an easy matter to give the surface of the enamel tablet the smoothness and evenness required, with an entire absence of waving lines or sinuosities of any kind. But suppose the manufacture of the enamels to be in every particular in accordance with the requirement of the mosaic art, and that they are used by a skilful craftsman, then there can scarcely be conceived a more perfect, everlasting, and exquisite means of decoration, which can be made subservient to architectural design either in the interior or exterior of buildings. In The Stones of Venice Mr. Ruskin says:-"There are two means of delight in all productions of art: colour and form; the "most vivid conditions of colour obtainable by human art are those of works in glass and "enamel." In consequence of the peculiar excellence of the material elements, and their capacity for imparting to any mosaic-work the effect of painting and gilding, this art is admirably adapted to every mode of artistic expression, handing down to remote generations, in the most durable, magnificent, and expressive form, all the sacred memories of the past,

in a language which cannot be effaced so easily as that spoken by painting or engraving, or indeed by any other known method of decoration. Should the interior or exterior of a mosaic



picture become dirty or dull through the action of gas, damp, smoke, or insects, it may easily be washed, and the whole work made as beautiful as when originally fixed, and without in any way altering or injuring its value. Now, in the case of an oil or fresco painting which may

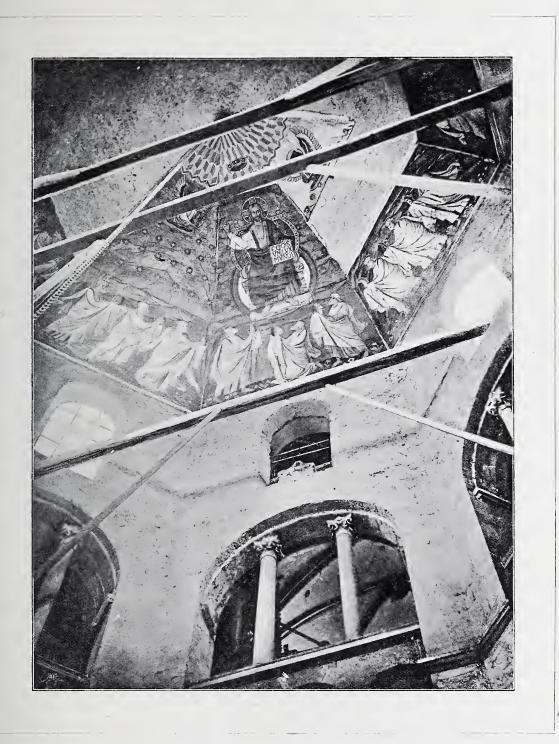
have been damaged or almost destroyed by the action of time or other external influences, this process of restoration cannot be employed, as the work could never be brought back to its original freshness and beauty.

With the rise and spread of Christianity the art of Mosaic entered on a larger and grander field, and received a new life. It became a powerful means of supporting the dogmas of the Christian faith, and in course of time grew to be a real and true Art in itself. Here again we find mosaic mostly encouraged and advanced in the East, especially by the Emperor Constantine, who authorised the prefects to spend immense sums of money in building churches and decorating them with mosaic. Superior to all other, we see the grandest model of Byzantine building, the Church of St. Sophia, filled with mosaic. In England examples of enamel mosaic are very few and of one period (thirteenth century), being found in Westminster Abbey, on the tombs of Edward the Confessor and Henry III., and on that of the son of William of Valence, all made by Italian artists. There is, however, a greater quantity of tesselate mosaic (Opus Alexandrinum) used in the earliest times for pavements, as, for instance, those at Westminster and Canterbury.

The home of mosaic, however, in nearly all ages seems to have been Venice. There the art, expelled from Byzantium, found a shelter, and a wider field for its development. There Greek artists founded schools for the practice of mosaic, teaching the Venetians, and imparting the skill to produce works to willing scholars, who soon became greater than their masters. There was the glorious basilica of St. Mark, which during many ages was being covered with masterpieces of mosaic decoration, and which has become a marvel of beauty, richness, and originality—all who have seen, all who have spoken and written about this church have told how charmed they were with it; for, while presenting a collection of many styles of architecture, it also enshrines every possible example of mosaic decoration from the middle ages down to our own time. "Never had city a more glorious Bible," wrote Mr. Ruskin in *The Stones of Venice*; and Street, in his work *Brick and Marble*, says: "Over and over again "when at Venice must one go into St. Mark, not to criticise, but to admire."

But even in Venice the age of glory and prosperity was not to be perpetual. There came a time when the Queen of the Adriatic declined, and the sunset of her political and industrial day was also the time of decadence of the mosaic art. When at length the Republic died, the art which had taken such deep root there fell into lethargy. But it was not dead. The elements of its existence and prosperity were not so much dependent on political changes as they were bound up with the nature and spirit of the people, so that they were capable of being awakened and directed towards a noble and successful purpose, which aroused among civilised nations a warm and powerful agency in aid of art and true religion.

Such were the thoughts and incentive of my late father, Dr. Salviati, when he witnessed the rapid decay, for want of repair, of this beautiful art. Enkindled by a desire to revive it in Venice, he abandoned his lucrative profession in the Forum, and directed all his energies and his capital to the development of the ancient famous Venetian manufacture of gold and coloured enamels, culisting in his aid the skill, practical aptitude, and long experience of an artist in Murano, who had spent his life and fortune in making a series of experiments, and who thoroughly succeeded in maintaining and improving upon the ancient method of making enamel. His next step was to found a School of Mosaic, selecting the chief artists from the School of Painting of the Venetian Imperial-Royal Academy, while the artisans were taught the principles of geometry and drawing. He next undertook journeys to distant parts in order to study the best examples, and to be in a position to instruct others and assist in their continual improvement. Many and many were the obstacles to be overcome before he could hope to realise success; but the most serious one was the cost of manufacture, which, according



MOSAIC OF THE DOME OF THE CATHEDRAL OF AIX-LA-CHAPELLE. EXECUTED BY THE "ANCIENNE MAISON, DR. A. SALVIATI, FONDÉE EN 1859," FROM THE CARTOONS OF BARON BETHUNE.

Plans and a Section of the Cathedral of Aix-la-Chapelle are given in Isabelle's Les Edifices Circulaires et les dômes, classés par ordre chronologique. (Paris 1855. Pl. 54-55.)

to the old system, was of so elaborate and expensive a character as to prevent the more general employment of this form of decoration.

The old mosaics were worked on the spot they were destined to decorate. The mosaicist, having prepared the surface of the wall and covered it with a layer of cement, produced his subject by putting on the enamels piece by piece; it will be readily seen that this system of working occupies necessarily a long time, and entails considerable cost. It is not to be wondered at, therefore, that people in modern times have been alarmed at the probable expense of the work, and to this cause we must attribute the decay and long dormant condition of the art. The method invented by Dr. Salviati is far simpler, and by it we are enabled to produce mosaic work in our establishment in Venice so that it can be conveyed to any place for which it is intended, ready made and quite prepared to be immediately fixed on the cement, whether the position be circular, horizontal, or perpendicular. The subject, after being designed upon paper, is cut into various pieces, which are distributed to different artists, each of whom is employed in covering with mosaic such part of the general subject in which he is specially skilled. These pieces are worked upon paper on the reverse side, and when finished they are packed in cases and sent to the place intended to be decorated. Here the subject is again put together and fixed in the cement on the spot.

Doubts have been expressed whether mosaic work for exterior decoration will stand a northern climate, especially that of England. I can speak with positive certainty that there are no grounds whatever for apprehending danger. As far as the enamel itself is concerned, if it be well made, it is absolutely indestructible. What influence can affect it? cold or frost, nor rapid changes in the state of the weather; these could only affect materials extremely expansive; but the good enamel which is used has, perhaps, less tendency to expand than any other material. The damp cannot injure it, because it is less porous than clay, stone, marble, &c., and I can bring forward many instances in which the marble has decayed, but the mosaic remains as good as new. If danger is apprehended from smoke, dust, &c., enamel has a peculiar claim to be preferred to other methods of coloured decoration, for it can be easily washed and cleaned. It will suffice to mention one example only, which stands before the eyes of everybody, namely, the mosaic which my late father was commissioned by the late Sir Gilbert Scott to execute for the decoration of the Albert Memorial in Hyde Park. This mosaic has stood exposure to the weather for over a quarter of a century, and G. SALVIATI. affords one of the best evidences of its durability.

MOSAIC AND FRESCO: ARE THEY LIVING ARTS?

Mr. President and Gentlemen.—

Y intention to have given you a short Paper on Mosaic and Fresco, in response to your kind invitation, has been frustrated by an illness: but I promised to write a few notes, and herewith send them. Before, however, commenting on the best way of recovering these Arts practically—and I speak from some experience, having for thirty years been connected at various times with important works—let us ask ourselves three plain questions:—

- 1. If it is possible really to revive Mosaic and Fresco, to make them living arts, and not archæological studies?
- 2. If it is possible—whether they are the most suitable art media for the climate and the modern condition of arts?
- 3. Or, whether the more modern methods are not the more durable in this country, as far as their durability can be measured?

The first and second questions involve some sentiment in their consideration; the third is a mere question of fact from ascertained data. Concerning my first point, is there sufficient scope and patronage to support them, even if it were possible to revive Mosaic or Fresco, and to found a big school wherein successive students and masters may thoroughly enter into the work, and in course of time learn to design and manipulate works full of brain and heart, using these methods of art with facility, as though to the manner born, not, as I have said, only as archæological studies?

Concerning Mosaic, I have worked in connection with many earnest, intelligent attempts to revive this since 1860. Mr. Samuel Fisher, sen., a very able and persevering man, tried very hard to establish mosaic works, and used mind, money, and time in an enthusiastic way. Where is his Atelier? What is his experience? Mr. Jesse Rust, Messrs. Minton, Messrs. Maw, Messrs. Powell—what do they say of the South Kensington School, and the result of the examples they obtained? The late Dr. Salviati, and his commercial efforts in this direction? Are these schools prospering to the extent that it was supposed that they would? I should doubt it.

I have seen effective modern Russian mosaic, and some secular work in Paris, but that on the new façade of the cathedral at Florence is, in my opinion, weak in the extreme—an attempt at showy effect, miscalculated and misplaced. My own impression is that mosaic work is alive to a certain extent as an art in Russia, because it is the result of a tradition nearly unbroken, and is in tone with their architecture and rites, as it was with the Christian Greek.* The condition of the great Western Basilicas also suited Mosaic, and it added grandeur to their grandeur. It obtained distance and a clear view, without twisting one's neck.

Laying aside for the moment the modern methods of making mosaics in most workshops, where they are manipulated upside down, and all the other minutiæ of manufacture, let us look at the matter from an æsthetic point of view. Mosaic is not the art for churches with elaborated details and modern rites, with figured musical orchestral accompaniment. It revels not in minutely detailed beauty or the delineation of delicate sentiment, but as an accompaniment of a simple, sublime whole. A chorus of deep, strong voices in simple tones; the Holy Sacrifice mystically hidden behind the Iconostasis; an architectural surface almost undisturbed by complicated mouldings; the walls glittering with the facets of the mosaic cubes, forming figures of immense size, of grand and ascetic aspect, monotonous and solemn, as the architecture and rite—that appears to me to be the home of mosaic. Is that state of art and ritual possible or probable here in future?

Concerning the second and third points, I have often asserted, and still maintain, that a sound wall will hold a painting as firmly as a mosaic. If it is damp—no matter what cement is used—the mosaic will fall from it either in detail or like a marble slab, and I have seen the mosaics of the sixteenth century in the same edifice as oil-paintings of the same date, in a far worse condition. Then why have recourse to a secondary art—a copy—unfitted for your building, when you can have the artist's own delineation as permanently fixed? As to an artist himself executing his own cartoons in mosaic, experience will tell you how far that can or will be done.

Fresco, like Mosaic, has had much enterprise, talent, time, and money bestowed on its revival, or rather culture (for I do not think we had at any time a School of real Fresco here); but my own impression is that there is not sufficient patronage here to found a small school, even if its durability is proved. The amount of monumental painting done in England is

Schultz and Barnsley, contain a number of drawings of churches with their mosaics and frescoes which partially illustrate my observation.—N. H. J. W.

^{*} The reproductions of ancient Greek Christian Art and Architecture, now in course of publication by the British School of Athens from the drawings of Messrs. R. W.

small—very small, when we compare our population and our wealth with those of other countries; and I think the failures that have taken place so publicly have damped the patronage of this branch of art. Moreover, there is little doubt in my mind, notwithstanding the beauty of Fresco, that it is less fitting and less durable in this climate than many other forms of mural painting. For my part, I prefer the methods that have supplanted Fresco.

Historically, there are really good reasons why Fresco and Tempera in Italy entirely supplanted Mosaic, and why they in time were supplanted by other media. Many resins and oils form durable media when used with such inexpensive vehicles as petroleum, benzoline, or paraffin, all of which escape the blackening effects of turpentine.

In conclusion, let me say I am no pessimist. Nothing would delight me more than to see some good new Mosaic or Fresco, or a School of new Mosaicists and Fresco-painters; but an art or style once absolutely dead takes a lot of reviving. I think, therefore, that if mural painting continues it will be in modern media.

N. H. J. Westlake.

DISCUSSION OF THE FOREGOING PAPERS.

Mr. J. D. CRACE [H.A.] proposed a vote of thanks to the authors of the Papers for bringing before the Meeting a subject of such architectural importance as mosaic decoration. That subject was large enough in itself to occupy more than one Meeting, and it was not unnatural that the subject of fresco had been dropped a little into the background. Before alluding to the different points in the Papers, he would mention two other forms of mosaic, both of some antiquity—one of great antiquity—which had not been alluded to in the Papers read, but of one of which he thought he saw an illustration on the wall. The two octagonal tiled subjects he imagined to be representations of a form of mosaic which existed in the Museum at Naples, and was found, he thought, either at Pompeii or Herculaneum. There were very few examples of it in existence; but they were curious as being beautifully worked instances of mosaic of some vitreous substance very closely fitted. The other example was of a system of tile mosaic which was Moorish, the ornamental design of which was entirely carried out in glazed tiles cut into the shapes shown, of the different colours. The tiles were about an inch thick, and were embedded in plaster cement. These forms of mosaic were both variations from either of those mentioned by the readers. Returning, however, to what had been mainly the subject of the Papers read—mosaic decoration as ordinarily understood, such as they saw at Ravenna and Venice—he was delighted to hear Mr. Powell's practical exposition, not only of the work, but of the methods of working, which showed that Mr. Powell was artist enough himself to have a very great appreciation of the methods which really contributed to the ultimate artistic effect. One of those was the setting of the tessere themselves, that they should not be set on too absolute a plane. Another most important point, which had been, however, disregarded by almost everybody who had carried out mosaics on a small scale in

England, was that where figures were worked on a gold ground the gold tesseræ should be repeated in the garments and accessories, otherwise the figures would unfailingly be silhouetted as a dark mass against a glaring background of gold whenever the light fell at a reflecting angle. That, he was glad to notice, was a point that had been carefully considered in the decoration now being carried out at St. Paul's. Another point with reference to gold-ground mosaics lie thought had not been sufficiently dwelt upon, and that was that their value was considerably diminished directly they were placed on a flat surface. A gold-ground mosaic was only at its full value when on a curved surface or on a surface which at some point or other merged into a curve. At St. Mark's, Venice, which was perhaps the most familiar example, there was no portion of the field covered with mosaics but what was let gradually into some curved formation either at the angles which were rounded off, or at the spring of the roof where it formed a wagonheaded semi-circular vault. In a large flat surface with gold-ground mosaic, it ran the risk of looking very dark in some lights and in others very glaring; although that, of course, was greatly modified by the proper setting of the mosaics with an irregular surface. The decorations going on at St. Paul's were, perhaps, the most important work of the kind they were likely to see in this country, and any one might well be proud of having taken some share in them. They were being most carefully thought out and most thoroughly studied, both by the artist and by Mr. Powell, whom he could only speak of also as an artist in the matter, as weuld be evident to anybody who examined that work; and if he might offer criticisms at all, it should be understood that they were offered with considerable diffidence and in the most friendly spirit. He could not help thinking that there was a tendency in what was being done at St. Paul's to obliterate some of the features of the architecture, which he did not think should be so much merged

in the decoration. Between the mosaic surfaces and the architectural features, such as the rib structures which crossed the vault, and features of that kind, there seemed to be a want of outline and definition. Another point which he thought would be evident to the artists themselves, when the scaffolding was sufficiently clear for the work to be seen at its full distance, was that the draperies, the garments of the figures, were overbroken up—were not, in fact, simple enough. It was evident, however, that the most careful study had been brought to bear upon the work, and every one would watch its progress with the greatest interest. In common with every great work there might be much to criticise, but every one would recognise the unusual difficulties which must attend the carrying out of such a work on so

exceptional a scale. PROFESSOR ROBERTS-AUSTEN said that with regard to the little church which Mr. Townsend had built at Chilworth, it seemed to him that the chemistry process adopted in the fresco decoration was as nearly as might be perfect. Mr. Townsend had fully described that method. He mentioned that the biting of the ground which was to receive the colours was effected by hydrofluoric acid; that was according to the original description given by Mr. Rivington. Probably, however, it would be found desirable to effect that biting, not by the acid named, but by oxalic acid, which, although weak, was sufficiently strong to decompose the marble base, and at the same time to form oxalic lime, which would bind all together and add to the coherence of the mass; and then there seemed to be no difficulty in applying the colours, which were mostly metallic oxides, and fixing them with silicate of potash. The effect of the work, so far as he was able to judge, seemed to be exceedingly beautiful, and, he was confident, would prove very durable. It seemed not a little remarkable that although the first description of that method was given to the Society of Arts in February 1884—just ten years ago — Mr. Townsend's work at Chilworth was, he believed, the first which had been executed by that most interesting and remarkable method. In conclusion, the Professor stated he should be glad to give to architects interested in the process any aid that he could in carrying out such work.

Mr. J. M. BRYDON [F.] seconded the vote of thanks, but felt that the subject was too large a one for discussion on one evening. The Papers had treated more of mosaics than of frescoes; but he hoped that on another occasion the latter subject might be more fully dealt with and discussed. They were, he thought, especially indebted, in the first instance, to Mr. Townsend for the able manner in which he had dealt with the principles which should guide the work, and it was gratifying to find that simplicity, dignity, and quietness were as the essence of the whole

work. He ventured to think that they were the essence not only of mosaic work, but that they should be the guiding principle of all their work. They were running into over-ornament, and it was gratifying to find that this was a process which enforced simplicity, dignity, and quiet. It had been most instructive to listen to the practical exposition given by Mr. Powell of the process of getting the work done and put in situ; and he was glad to find a reversion to the old process of sticking the tessere in their place on the spot, and not on pieces of paper upside-down in the studio. All great work of that kind, he felt certain, should be done on the spot, which was the only way to get what they hoped would be the real effect when the work was finished. They could not possibly get that effect when standing in the studio with the work upside down, or even right side up. For work to be done at the height necessary at St. Paul's, the real old way must be adopted which Mr. Powell had described, and that was to put the tessere in the place they were to occupy, which was the plan Mr. Richmond was now adopting. The work at St. Paul's was certainly one of the greatest experiments of mosaic work that had been done in England for many years, and every one who loved the Cathedral, and had any care for his art, would hope the work would be a success. If he might venture on criticism, it would be as to the style of the mosaics themselves. So far as could be gathered, the style was scarcely the style of the church; it seemed to him some centuries earlier than the work it was to adorn. Whether that was a right principle to act upon the success of the effort would probably determine; but at the first blush, looking at it from an architect's point of view, it seemed that in a seventeenth-century church the early work of Ravenna was scarcely the style to choose. That was, however, merely an architect's criticism, and did not apply to the work as such; for that the result would be the best test. It was indeed a most interesting experiment, and it would be interesting to see its real effect in such a church as St. Paul's. It was to be hoped the architectural lines would not be destroyed, as had been hinted at by Mr. Crace. When he heard of the chipping away, and so on, he had to confess he felt it was enough to make Wren turn in his grave; but still, the end might justify the means, and they all hoped it would do so.

Mr. R. PHENE SPIERS [F.] said it might interest some present to learn that thirty years ago, and perhaps more (long before he undertook the designs for the work), the late Mr. Burges was of opinion that the proper way to decorate St. Paul's was to strip off all the mouldings inside and cover the whole surface with gold mosaic. That was no doubt in one sense the proper treatment by which to get a properly decorative effect, and the remarks of Mr. Crace emphasised that. He

pointed out why a mosaic always looked better when it ended in a curve of some kind; and any one who had seen St. Mark's or any Byzantine church would observe that the mosaic work was produced on that principle; it was always merging from the plane into the curved surface. Of course, subsequently, when Mr. Burges was called upon to make designs for the decoration of St. Paul's, he limited his scheme, and attempted to decorate portions with the mosaics up above, and proposed to do what was worse than Mr. Richmond was doing—namely, to cut off three inches all over the place in order to cover it with marble. When that was announced, it was treated as such a terrible thing to do that the idea was at once given up; but he (Mr. Spiers) knew that Mr. Burges thought over the subject very seriously for many months, and that he had the greatest difficulty in knowing how to bring a forcible style of decoration and colour which would harmonise and not interfere with Wren's lines. It was very fortunate, he thought, that Mr. Burges's design was not carried out, because one could not but be impressed with the immense beauty of the coloured stone there now; and, so far as the walls were concerned, it was infinitely finer than any marble decoration that could be put on. Mr. Spiers then referred to the interest taken in mosaic work by the late Sir Digby Wyatt, who had to a certain extent introduced such work for pavements, and had more than once lectured before the Institute on the subject, and striven to the utmost to introduce revival of mosaic work.

Mr. A. T. BOLTON [A.] remarked that Sir Digby Wyatt's article on mosaics in the Architectural Dictionary formed an admirable summary of the subject before them, as he had acknowledged elsewhere. The difference between St. Paul's and St. Mark's was that the latter had practically no architectural lines at all; it was a great brick carcass plastered inside with mosaic. In St. Paul's, on the other hand, all the lines were strongly defined—by archivolts, entablatures, pilasters, and other means of emphasis; whereas in St. Mark's the only forms employed were borders of decorative design worked in the mosaic itself at the angles. Consequently it was very likely that, if the lines in St. Paul's were not decorated to some extent, the mosaics would have the effect merely of a series of pictures in panels. That, he thought, was really the effect of the pendentives already executed in the dome, which were very like paintings in fresco; and what Mr. Richmond had evidently aimed at was to give the effect of a mosaic interior to St. Paul's by more or less disguising its lines. Thus, in the apse the dividing bands were gilded and then patterned over in red, so that at a distance they would be lost in the general surface of the gold mosaic background; but inasmuch as gilded stonework, as might be seen by that already gilded

in St. Paul's, turned a peculiar tone after a time, getting much darker (which mosaic cubes would not do), it was very likely that, after all, Wren's architectural lines would assert themselves. Another point of general modern practice was that the gold ground in mosaics was executed with larger cubes than the rest of the work, probably because gold was more expensive, and there was thus less waste in chippings; it had the defect, however, of emphasising the background in a not very pleasing manner. With regard to cartoons, they had been told the interesting fact that Mr. Richmond began to do his with pastels, and afterwards in water-colours. When at Venice, he had seen some mosaics being copied from cartoons in oils, composed in large surfaces of colour, and in which practically there were no lines shown at all; whereas he had seen artists at Palermo copying old mosaics by painting the figures in strong lines, which gave their character, and proved how much the treatment of the old work was in line. Some of the cartoons exhibited were painted all over with joint lines; but as mosaic was composition in cubes, it would, he thought, be better to paint them, and not the joints, and he instanced a drawing so executed.

THE PRESIDENT expressed his appreciation of the Papers which had been read, and the gratification he had experienced in hearing experts repeatedly emphasise the importance of simplicity in mosaics, in respect both of colour and of treatment. In regard to simple treatment of drapery, to which Mr. Crace particularly referred, they had an object lesson before them in one of the cartoons exhibited. The figure of Ahab in the example referred to was dignified from the simple form of the drapery enfolding it; the figure of Elijah, if he might venture on the criticism, compared, to his mind, less favourably in that respect. A vote of thanks had been moved and seconded to the authors of the Papers read that evening, and he thought it would be in consonance with the wish of the Meeting if they coupled with it a vote of thanks to those who had been kind enough to lend the illustrations which were hung on the walls.

Mr. JAMES C. POWELL, in responding, said that with regard to the mosaics at St. Paul's, in the absence of Mr. Richmond he would not take upon himself to answer the criticisms made upon the work; but the Dean of St. Paul's had that afternoon consented to a proposal to invite the members of the Institute to the Cathedral on Saturday the 24th of February, between the hours of 2 and 3.30 p.m., that they might have a private view of the work, and judge for themselves from what had already been accomplished.

THE PRESIDENT said the announcement made by Mr. Powell was one of very great interest, and he should certainly make a point of responding to the Dean's invitation, and no doubt many other members would do the same.



CHRONICLE

The Spring Examinations.

A Preliminary Examination of Pupils and others desirous of qualifying for registration as Probationers will be held in London, Bristol, and Manchester on the 20th and 21st inst. An Intermediate Examination of Probationers desirous of qualifying for registration as Students will be held in London on the 20th, 21st, and 22nd inst. An Examination to qualify for candidature as Associate is to take place in London and at some of the Allied Centres during the week commencing 5th prox. The number of fresh applications for the Preliminary is 77, and there are also 13 relegated applicants; while the Probationers to be examined number 36. To the Examination qualifying for candidature as Associate, admission is asked for by 101 applicants, 42 of whom were relegated to their studies at previous examinations.

The London Streets and Buildings Bill.

The President, pursuant to notice, asked leave of the General Meeting last Monday to petition the House of Commons against a Bill which the London County Council are promoting for the purpose of consolidating and amending the enactments which relate to buildings in London. The Bill, said the President, contained certain matters of which they could not as architects approve. He asked the members to clearly understand that it did not follow that the course proposed by the Council of the Institute involved an inimical position on their part to the London County Council. On the contrary, they were at that moment doing what they could to assist the London Council in carrying through Parliament a really good and beneficial measure. A conference had been arranged, between representatives of the Council of the Institute and of the London Council, in the course of the current week, and the President trusted that the meeting would remove, at all events in point of detail, many of those matters to which architects took exception. There were, however, certain principles involved in the Bill, to which it was not necessary then to refer, that they could not possibly accept; and it was necessary, if they desired to take action at all, to lodge a petition against the proposed measure by a certain date.

This was done, as may be seen on reference to the Minutes [p. 277]; and a proposal made by Mr. Tavenor Perry [A.], which was supported by Mr. Wm. Woodward [A.], to hold a General Meeting of the Institute for the purpose of considering the Bill was received with favour, a resolution to that effect being unanimously passed. In the course of the short discussion that took place on this matter, Mr. A. Crow [F.], Mr. C. Fowler [F.], Mr. Hansard [F.], Professor Kerr [F.], Mr. Alex. Payne [F.], and Mr. R. Williams [A.] also spoke.

The Royal Gold Medal 1894.

The nominee of the Council in the matter of the Royal Gold Medal for the current year is Sir Frederic Leighton, Bart., P.R.A. [H.A.], and last Monday the President announced to the General Meeting that the Council proposed to submit his name to Her Majesty the Queen as a fit recipient of that honour. The day of election is Monday 12th prox.; and any twelve Fellows, desiring to substitute any other name, should deliver in writing to the Secretary of the Institute the name they propose to substitute prior to the 26th inst. The President in making the announcement, after the By-law [64] had been read, said:—It is my duty to announce that at a fully attended meeting the Council resolved to propose as a fit recipient of the Royal Gold Medal of 1894 the name of one who is the typical representative of the Fine Arts in this country, one who is not only a distinguished painter, an eminent sculptor, a fluent linguist, and a finished orator, but who, by his literary productions, and more particularly his Royal Academy addresses in recent years, has evinced an intellectual grasp and a familiar knowledge of our art which have influenced, and cannot fail to influence, materially, the promotion of architecture. I have, therefore, on behalf of the Council, the greatest possible pleasure in proposing to submit to Her Majesty the name of the President of the Royal Academy of Arts, Sir Frederic Leighton.

It may be interesting to note that of the forty-six Royal Medals awarded since the foundation of the Queen's gift in 1847, twenty-nine have been presented to subjects of Her Majesty: twenty for their executed works as architects, and nine for their works as men of science or men of letters. The remaining seventeen recipients consist of eight Frenchmen, four Germans, three Austrians, one Italian, and one Citizen of the United States. Of the forty-six Royal Gold Medallists only thirteen survive.

on survive.

Visit to the Works of Decoration at St. Paul's.

An announcement was made, last Monday, by Mr. Powell, that the Dean had given his consent to a proposal to invite members of the Institute to visit St. Paul's Cathedral on Saturday 24th inst., between 2 and 3.30 p.m., for the purpose of inspecting the new mosaics executed by Messrs. Jas. Powell & Sons, of Whitefriars, from the

designs and under the direction of Mr. W. B. Richmond, A.R.A. The President has signified his intention to be present, and cards of invitation, restricted to members of the Royal Institute of British Architects, are to be sent by Messrs. Powell & Sons to the Secretary of the Institute, to whom application should be made by letter.

Illustrations to the Papers on Mosaic and Fresco.

Mr. Harrison Townsend [F] sent sections, elevations, and a plan of the small mission church now being painted in fresco by the process he described, and also a sketch model of a mosaic treatment to a London church; Mr. James C. Powell sent specimens of mosaic, drawings of various works, and two interesting photographs, among others, of a mosaic "picture," by Mr. Holman Hunt, one being a photograph of the artist's design, the other a photograph of the executed mosaic; and Mr. Salviati sent photographs of works executed by his late father and himself in various parts of Europe. The South Kensington Museum, by the kind intermediary of Mr. C. Purdon Clarke, C.I.E. [F.], lent the following for exhibition:

Paper Casts. - Roman wall mosaic in Santa Maria in Trastevere, Rome. 2nd century A.D.

The Adoration of the Magi. From an original fragment now in the sacristy of Santa Maria in Cosmedin, Rome. 8th century.

Coloured Drawings .- Copy of the mosaic on the vault of Santa Costanza, Rome. The culture of the Vinc. Early 4th century A.D.

Mosaic in Santa Costanza, Rome. Early 4th century A.D. Mosaic in Santa Costanza, Rome. Early 4th century A.D. The Good Shepherd. In SS. Nazoro e Celso, Ravenna. 5th century A.D.

Mosaic in the triumphal arch of Santa Maria Maggiore,

Rome. 5th century A.D.

Four female saints. In S. Apollinare Nuovo, Ravenna. 6th century A.D.

Four male saints. In S. Apollinare Nuovo, Ravenna.

6th century A.D.

Copy of mosaic in the apsc of SS. Cosmo e Damiano, Rome. 526-530 a.d.

Mosaic in the vault of the apse of Santa Francesca Romana (formerly known as Santa Maria Antiqua), Rome. 10 century a.d.

The Virgin. From the mosaic in the Archbishop's Palace, Ravenna. 12th century A.D.

Mosaic Pavement in Santa Maria in Trastevere, Rome. About 1280.

The Coronation of the Virgin with saints below. Copy of the mosaic in the apse of Santa Maria Maggiore, Rome. By Jacopo da Turita. About 1300.

Copy of mosaic picture in apse of Santa Pudenziana, Rome. Modern.

Mr. Clayton contributed specimens of Burmese Mosaic, a Panel at Oxford, design for marble mosaic at Chester, and for glass mosaic at the Guards' Chapel in London; Mr. J. D. Crace [H.A.], sketches by himself of mosaic decoration at Constantinople, Ravenna, Rome, and Venice; Mr. Walter Crane, two designs for mosaic decoration; Mr. A. H. Hart [A.], some studies in Italy; Mr. Aldam Heaton, a drawing of mosaic at Pisa, and

five cartoons for ceiling decoration; Mr. T. R. Spence, specimens, a model, and designs for various works; Mr. H. Walter Lonsdale, photographs of glass mosaic, and the sketch design for some wall paintings lately finished, but in oil, not fresco; and Mr. A. T. Bolton [A.], the Soane Medallist of last year, some studies of ancient examples of mosaic in Italy and England. The Venice and Murano Glass Company also contributed.

A Teaching University for London.

The Royal Commission appointed some two years since by the late Government to consider and report upon the subject of a Teaching University for London have issued a summary of the various recommendations contained in the first part of their report, which relates to the constitution and conduct of the University. This summary the Commissioners desire to be understood not as in any way controlling or placing an interpretation upon the detailed paragraphs of the report, but only as calling attention to the main conclusions. The recommendations of the Commission, which, as becomes a scheme dealing with so vast a population and such varied interests, are large and comprehensive, were published at length in The Times of the 6th inst., and it will be sufficient here to mention the principal provisions. The Queen is to be Visitor; there is to be a Chancellor elected for life by the Convocation of the University; and there are to be three bodies—viz. the Senate, consisting of the Chancellor and sixty-five members; the Academic Council, composed of the Vice-Chancellor and fifteen members; and Convocation—who are to distribute among themselves the powers of the University. The Senate, which is to be the supreme governing body, with power to frame statutes and ordinances, which shall be alterable only by the Queen in Council or by the Senate itself, is to be composed of representatives of educational bodies in London and of other sources of authority—to wit, the Crown, various Secretaries of State, Convocation and the different Faculties, the Colleges of Physicians and Surgeons and similar bodies, the Inns of Court and the Incorporated Law Society, the Royal Society, the Royal Institute of British Architects, the Royal Agricultural Society, the Institutions of Civil and Mechanical Engineers, the Trustees of the British Museum, and others; the Corporation of London, the Mercers' Company, and the London County Council—in all, sixty-five members. In addition to the legislative functions of the Senate, among its more important duties will be to confer degrees and appoint professors and readers, upon the report of the Boards appointed for the purpose of selection; and to decide such questions as the admission of new "Schools of the University." The Academic Council are to have jurisdiction over the educational, as distinct from the constitutional, work of the University. They will exercise control over the schools of the University and Boards of Studies, determine curricula of study and examination, and settle courses of study to be pursued at any school of the University, after consultation with the authorities of the institution concerned.

Free Lectures on Building, &c.

Under the auspices of the Worshipful Company of Carpenters, a course of free lectures on matters connected with Building will shortly be delivered in the Hall of the Company. The first lecture, at which Lord Claud Hamilton is to preside, will be given by Professor Unwin, F.R.S. [H.A.], on the 21st inst., the subject being "Niagara, and "the Works for its Utilisation." On the 28th inst., Sir Douglas Galton presiding, Professor Corfield [H.A.] will lecture on "House Sanitation." On the 7th March Mr. T. E. Colleutt [F.] is the lecturer, and his subject "The Imperial Institute," Sir Joseph Fayrer presiding. Professor Banister Fletcher [F.] lectures, 14th March, on "The Englishman's Home," Sir John Lubbock presiding; Professor Silvanus Thompson, D.Sc., F.R.S., 21st March, on "The Production of "Electric Motive Power," the Master of the Company presiding; and Professor Roger Smith [F.], the 28th March, on "Modern Institutions, "Asylums, and Hospitals," Sir James C. Lawrence in the Chair.

Additions to the Library.

Apart from the contributions of cognate Societies there have been comparatively few additions to the Library since the last issue of The publishers (Messrs. Crosby the Journal. Lockwood & Son) have again made their annual donation of Lockwood's Builders' and Contractors' Price-Book for 1894, which contains the usual valuable information in a handy form, besides some additions with respect to electrical lighting appliances, made in anticipation of the increased interest in this form of illumination which the expiry of numerous patents is likely to create. In the appendix may be found the principal provisions of Acts of Parliament relating to building and sanitary matters; the various rules and regulations issued by the London County Council, the Corporation of the City of London, and other public bodies; and the Heads of Conditions of Contract drawn up by the Institute and the London Builders' Society. Mr. Henry C. Jones and Mr. George Wallace have presented an Abstract (which they have compiled in pamphlet form) of the Clauses of the London Streets and Buildings Bill, with an index to the principal The Glasgow Architectural provisions, &c. Association has contributed the fourth volume of its Sketch-Book, which contains numerous measured and other drawings of places of architectural importance, including plans, elevations,

sections, and details of the Crypt or Lower Church of Glasgow Cathedral, from the pencils of various artists, and the south transept of Dryburgh Abbey, measured and drawn by Mr. Andrew Muirhead. Mr. Wm. Fraser provides an illustration of the old pavement in Fountains Abbey, which is supposed to be the remains of the *Pictum* Pavimentum bestowed on the church by the abbot, John M. Cancia, between 1220 and 1247; and the artistic value of the collection is enhanced by two drawings of Mr. Andrew N. Prentice [A.], done respectively at Florence and Bologna. The Transactions of the Essex Archaeological Society (Part iv., Vol. IV.) contain illustrations and notes of Hedingham Castle and Church, and of a sculptured pillar of stone, presumed to be the stem of the village or churchyard cross, by Mr. C. F. Hayward [F.], and a Paper on St. Michael's Church, Braintree, by the vicar, the Rev. J. W. Kenworthy. Chapters I. and II. of Etude sur la sculpture Brabanconne au moyen âge form the principal contribution to the Annales de la Société d'Archéologie de Bruxelles (Vol. VIII., Part i.); and in No. 1, Vol. III. of Arte Italiana decorativa e industriale the first of a series of articles under the title of L'insegnamento artistico-industriale in Europa deals with Italian work in the South Kensington Museum. Mr. Oswald Fleuss contributes three designs to the first instalment of Church Embroidery, published by Messrs. R. Sutton & Co., London.

REVIEWS OF NEW BOOKS. VII. (19.) ANURÁDHAPURA, CEYLON.

Archæological Survey of Ceylon. Anurádhapura: Fifth Progress Report, April to June 1891. By H. C. P. Bell, C.C.S., Archæological Commissioner. Colombo, 1893.

This Report by Mr. Bell of his explorations at Anurádhapura is rather a short one; but the amount of work done is not to be estimated by the length of his account of it. In a number of instances where remains have been brought to light, the explorer defers his description of them till they have been more thoroughly examined, and he can write with more certainty as to their real character. This is a good sign, as it shows he does not jump to his conclusions too rapidly. The extent of the explorations may be inferred in this Report from the plates, of which there are over thirty, many of them of much interest from the details they give of the architecture and construction at Anurádhapura. The Government have largely increased the number of coolies, and with this increased force Mr. Bell is now able to make greater progress with his work.

The short detailed summary of the work done might be given here, but it would be all but meaningless without a plan of Anurádhapura,

which the *Report* very much wants. As a large part of the explorations has been that of clearing out the jungle and tracing some of the main streets of the ancient city, it is to be hoped that the

next Report will supply this want.

The greater part of the *Report*, as well as the plates, are devoted to the exploration of the Vijayáráma Monastery. The old road to it had to be cleared out through the jungle, and it is a mile and a half to the north of the Jétawanarama Dágaba, the most northern of all the Dágabas at Anurádhapura. There is much to be done yet at this monastery before it can be all thoroughly understood, but already enough has been made clear to excite a sufficient interest in the remains. The Dágaba in the central enclosure seems to have been well explored, and Mr. Bell's restoration of it has every appearance of accuracy. He found nothing in the relic cell, as it had been opened before, but luckily the spoilers left some small copper-plates, thinking them of no value; but they supply a date for the Dágaba—about the middle of the tenth century A.D.—and thus, as Mr. Bell observes, we have a chronological starting-point now for "a comparative study of " styles and forms of the sacred architecture of "Anurádhapura," In the Viliára No. 1, within the enclosure, Mr. Bell supposes there were four disana, or thrones, on which he is inclined to suppose stood "the four Manushi Buddhas who " preceded Gautama in the present Kalpa." This would be a different arrangement from what is found in Burmali; there they count three Buddhas before Gautama, the latter making the fourth; and in the temples the four are placed each in one of the cardinal points.*

Mr. Bell thus describes the Vijayáráma reruains:—"Broadly, the monastery may be said "to have consisted of a raised oblong site, 288 "feet north and south by 268 feet east and west, "walled, with entrances at the cardinal points, "enclosing a dágaba and three viháras, and an "open hall attached on the north. Surrounding "this enclosure was first a procession path [vidiya], "then twelve annexes evenly grouped, with the "chief pansala, a bath-house, and a few other "buildings on the south and west—the whole

* "Compare Cunningham's Topes of Bhilsa, p. 191. It "there appears that at No. 1 Tope at Sanchi, within the "enclosure and immediately facing each entrance, there is a large figure, once under a canopy. That to the east "Major Cunningham considers to be Krakuchanda, first " 'mortal Buddha; that to the south, Kanaka; to the west, "'Kasyapa; and to the north, Sakya Sinha' [Gautama]. "Hence it would appear that the figures in the Ananda "were not placed arbitrarily, but according to orthodox "Buddhist tradition." Yule's Mission to the Court at Ava, p. 39, note. "The Ananda" mentioned in Yule's note is one of the old temples at Pagan, in Burma, where he found the four Buddhas facing the cardinal points; and the object of the note is to show that this was the same arrangement that Cunningham found at Sanchi. In each case Gautama is the fourth Buddha.-W. S

"covering an area of twelve and a half square " acres—bounded by a quadrangular prakaraya, or "outer wall, of stone, 600 ft. by 900 ft., traces of "which may be seen chiefly on the east." * This procession path round the whole of the central enclosure would indicate that it was all considered to be very sacred. It is a large space for a pradakshina, and I can recall at the moment no temple or shrine, either Buddhist or Brahminical, in India with a procession path of such a size. We have to go still further south, to Stupas such as that of Boro Buddor in Java—where the path would be still longer—to find anything like the one at

Anurádhapura.

The plan of the Vijayáráma Monastery suggests an origin in Indian temples,—which, so far as I can recollect, has not yet been given by any one. The temples of Northern India present a strong contrast with those in the south, from the great difference in the space of ground they cover. In the north temples occupy-little space, often there is not even a wall round them; while in the south they are many of them of vast extent, with a number of rectangular enclosures, such as those represented in the plan of Vijayáráma. Fergusson, when he wrote his first Handbook of Architecture, published in 1855, compared them with Egyptian temples, but thought that the resemblance was greater to the old temple at Jerusalem, with its Haram enclosure, the Stoa Basilica of Herod's temple bearing a strong resemblance to the Choultry of the Madras temples, with its 1,000 pillars. In the plan of the old Singhalese monastery, with its enclosing walls, we have the same arrangement as in the southern temples of India, and that too almost on the spot; we have only to suppose that the Buddhist establishments in the south part of the peniusula were similar to those we now find at Anurádhapura; and that on the downfall of Buddhism the Brahmins took possession of them. The result would be that the dagaba and other halls or shrines would be converted, or replaced by temples of Siva or Vishnu—or other deities of the Hindu Pantheon. This is what has often occurred in the history of religions. The triumphant faith succeeds to the temples of the vanquished, and merely changes them to suit its own requirements. As a case in point, it is now supposed that the temple of Jagannatha at Puri † was originally a Buddhist establishment. In this case, if the type for the southern temples can be found in India, it becomes unnecessary to go to Egypt or Jerusalem for it. I gave this theory merely as a suggestion, which must fall or stand as further evidence may turn up. In a former notice of the Ceylon explorations I made some other suggestions of origin—which came into my mind from reading the Reports; if any of these should turn out to be correct, it will show the value

of the work done, not merely as it advances our knowledge of the archæology of Ceylon, but also from its throwing new light on the archæology of India.

WILLIAM SIMPSON.

(20.)

THE POORER DWELLINGS.

The Dwellings of the Poor and Weekly Wage-earners in and around Towns. By T. Locke Worthington, A.R.I.B.A., with an Introduction by G. V. Poore, M.D., F.R.C.P. Small 80. Lond. 1893. Price 2s. 6d. [Messrs. Swan Sonnenschein & Co., 6 White Hart Street, E.C.

To review a work on the dwellings of the poorer classes by so industrious an inquirer as Mr. Locke It is more to the Worthington is invidious. purpose to simply recommend all who are interested in the subject to obtain the book, and make themselves acquainted with the facts and propositions contained in it. Of all human failings that of poverty is perhaps the greatest—at any rate, it is the one that is most heavily punished —and the habitations of such do not afford a very cheerful subject for consideration; not, at least, to those who have tried to do their best towards alleviating the lot of this less fortunate portion of humanity. In the history of civilisation it would appear that the improvement of the condition and the increasing luxury of the upper classes are somehow balanced by a corresponding depression in the circumstances and conditions of the poor. It is to the improvement of their condition, whether by Act of Parliament or otherwise, that we must hope to counteract the tendency of the extremely poor to develop into Socialism and blind hatred of those whose position in life is as enviable as theirs is the reverse. Mr. Worthington treats the subject as if it were one altogether amenable to legislation, and that ultimately perfection might be attained by that means. We admit that many improvements have been made, and must continue to be made, compulsorily, but think that, while it may have been an easy task to settle Trinity High Water by Act of Parliament, it is impossible, except by patient, gradual, and well-directed efforts, to change natures which are vitiated by birth and evil surroundings. Their improvement is almost of as much importance to all other classes as to themselves, and where all are so interested in the attainment of an end it is difficult to explain the slowness of progress; but the real battle is against ignorance, uncleanness, and vice, all of which are principal factors in regard of poverty, disease, and misery. Worthington is especially to be commended on his strong advocacy of decentralisation and the provision of proper air spaces around dwellings; and it is to be hoped that in time the more deleterious of modern developments, often misdirected efforts of philanthropists, may to some extent be undone. In his recommendations as to sanitation we cannot but generally agree with Mr.

Worthington, though they are sometimes of such a kind as to provoke the simile of trying to hammer the obvious into dull intelligences. The little work terminates with no fewer than eighteen conclusions, all suggestive of much thought and earnestness on the part of the author, but we are glad to find that he is sufficiently modest not to consider them infallible. There can be no finality in the matter; there will always be a better state to be attained, and we must be grateful for any little advance.

WILLIAM CHARLES STREET.

(21.

ELEMENTARY DESIGN.

A Text Book of Elementary Design. Science and Art Series. By Richard G. Hatton. 80. Lond. 1894. Price 2s. 6d. [Messrs. Chapman & Hall, 11 Henrietta Street, Covent Garden, W.C.]

This is a small handbook of 115 pages, forming one of a new Science and Art Series. It is likely to be of public use, and it will always hold an honourable place in the series. Mr. Hatton imparts what he has to say in the form of instruction to a class, and a great deal that is put before the reader is what an art student requires. The language is terse and crisp, and, better still, to the point. No useless space is taken up by lengthy description, and the book is an admirable example

of much information in brief space. After a few prefatory remarks with respect to the mode of teaching in class, and the wants of the students, the book begins with a chapter on some principles of Decorative Design of decidedly original kind. We may be surprised at the opening statement that "no one has a right to dictate "principles of art or taste." People do, and people will; and the general acceptance of our author's dictum would be to greatly limit the number of art manuals. It is followed, however, by the goodly advice that "Designers must aim "at producing things that they like to look at;" and all through the book there are propositions equally sound and valuable. Among these may be mentioned: "Decorative features must be "developments of structure, not additions to it;" and, to quote another only: "The decoration must follow and confirm the structure."

The second chapter divides forms into Dynamic and Static, as they are called by our author, and many cuts are given to illustrate his meaning. How far the division may be a help to the art student may be doubtful, but two of the sketches given, expressive of weight but mobility, and of immobility, are certainly suggestive and of value. This chapter is followed by others on the "Para-"dox of Decoration;" on the "Construction of "Details," one of the best in the book; and another one on "Filling Spaces," which is a capital counterpart to it. There are chapters on the Distribution of Masses, the Method of Delineation, &c., together with others of much technical

and useful interest on the setting out of repeating borders, endless patterns, and such like, with here and there just a touch of what I have heard called "art jargon," a little of which, however, may be useful to know. Figure 152 is an example of Italian Sgraffito decoration with a decidedly awkward curve. But this, to our author, has a "quality of luscious wealth."

The book is well illustrated with a profusion of sketches, which well bring out the meaning of the letterpress. They are almost all original designs, and not copies of old examples, and they are capital examples of decoration—for the most part. Some of the bordering patterns are very good, and many of the filling-in sketches are not only beau-

tiful but eminently suggestive.

I have said sufficient to show that this little manual is deserving of more than ordinary attention; and when it is remembered that its small price places it within the reach of all art students, it will be matter for surprise and regret if it is not made use of by the class for which it is intended, to a very large extent.—E. P. Loftus Brock.

(22.)

ELEMENTARY EGYPTOLOGY.

Egyptian Art: An Elementary Handbook for the Use of Students, &c. By Charles Ryan, 8vo. Lond. 1894. Price 2s. 6d. [Messrs. Chapman & Hall, 11 Henrietta Street, Covent Garden, W.C.]

This readable little work may prove a useful handbook for beginners in the study of Egyptology, as it gives a fairly good short epitome of the history of Egypt from the remotest times—of course a great deal has been necessarily omitted; but it would be well if the author were to revise

some of his minor details.

He has divided the book into eight chapters, the first four being devoted to the history from the earliest times to the close of the reign of Rameses III., the first king of the twentieth dynasty, circa B.C. 1200. The ancient Egyptians were not autoclithonous, as the author quotes in his first chapter; nor were they negroes, as others have sometimes stated; but they were of the Caucasian race, and came from some part of Asia; at what period it is unknown, but it is supposed from what we do know that they were highly advanced in civilisation when they first settled in the valley of the Nile. There is very little to remark upon in these first sections of the book, as the information given is simply a slight résumé of the principal events connected with the subjects treated upon.

Mr. Ryan advocates the formation of museums and art collections in all our great schools; such a course would be most useful and instructive. But he should read some recent works before he issues a second edition of his handbook, which I trust may be called for, in order to correct errors; as, for instance, when speaking of Isis nursing Horus, he informs his readers that the

moon was her sign, but states she had many others; it is a pity he did not select one of the others, as she had no connection with the moon, but she is generally now considered to have been a

goddess of the Dawn.

Referring to the Shepherds, or the Hyksos, as they are usually called, he states: "The Israelites "retained their language, literature, and religion "in a considerable degree while there; though "the incident of the golden calf in the desert "suggests their familiarity with, and trust in, the "worship of Ptah." I must admit I am at a loss to understand what the connection is between the setting-up of the golden calf in the desert and the worship of Ptah, unless it was, as we suppose, that the golden calf was a form of Apis, the sacred bull of Memphis,—whose worship was introduced there as far back as the first or second dynasty,—who was sacred to the god Ptah.

Then he gives an account of the tombs, upon which I have no comments to make. The next chapters are devoted to the Ptolemaic and Later Period. Upon religion, &c., in the latter I take exception to the statement that Osiris was the sun, as all Egyptologists are of opinion that Rā was the sun, and that Osiris was the sun of yesterday, or the dead sun, and as such he was the god of the dead. Upon page 76 there appears to be a misprint, as it was Psamtek III. who was king of Egypt when he was defeated by Kambyses, and not Psamtek II.

The book concludes with an appendix and a list of the Egyptian dynasties, the latter being a very useful addition, but the former is rather antiquated as to the description of the objects and amulets; as, for instance, when mentioning the Sistrum—which is a musical instrument—the author states that it has upon each side the head of Isis and Nephthys, whereas it is considered to bear the head of Hathor on each side. The mysterious eye of Osiris should be the eye of Horus, or the Utchat; it was supposed to typify good health and happiness under the protection of the sungod. Scarabs were emblems of Rā, the Sun, and typified the resurrection and the renewal of life after death; they were also emblems of creation.

The Asp was probably the Urœus, which was a symbol of sovereignty, and was worn in front of the head-dress of the kings and of gods. It was also employed as a determinative or emblem of all the goddesses. The vulture, he states, was a symbol of Isis, whereas it was an emblem of the

goddess Mut.

The book is amply illustrated; and, though the illustrations are not original, they are useful to enable the reader to follow the text. I trust it may prove beneficial in encouraging beginners to continue the fascinating study of Egyptology, by going further afield and reading the valuable works now published in many countries upon this science, to which the author of this little work introduces them in an interesting manner.—F. G. HILTON PRICE.



LONDON AND ITS COUNCIL.

By Arthur Edmund Street, M.A. Oxon. [F.]

There is, let us hope, little real difference of opinion at the present day as to what London needs, or even as to the necessity for some individual sacrifice in the promotion of the common good. We may say that many of the elements of health and beauty are wanting, or lament that almost complete absence of unity which is so noticeable; it is little more than the expression in different words of a consciousness of which the subject-matter is identical.

The most grudging of ratepayers will admit that the squalor and ugliness which are almost at his door carry with them physical and moral evils, for the existence of which our humanity is bound to leave no excuse. He may even concede that the richest city in the world, to use the time-honoured phrase, should, architecturally, be less suggestive of a congeries of third-rate towns—that the heart of London should rightly be no mere geographical expression, but should have some of that reality which belongs to the phrase when it is used of Paris or Vienna.

So long as we confine ourselves to general propositions such as these he is wholly sympathetic; it is when we come to details, to questions of ways and means, that the ratepayer begins to look doubtful.

In a problem of this sort an architect is not a wholly irresponsible being. His training and practice must have taught him something of the difficulty with which anything like heroic measures are hedged round. This being so, it was somewhat odd, and, I think, a little to our credit, that so sympathetic and kindly a tolerance should have been extended to Mr. Cawston's presentment of his somewhat over-comprehensive scheme.* Two or three members of the County Council attended on that occasion to get the earliest possible information as to the panacea which was to cure all our ills; but the elixir was firmly, if politely, declined, as being quite beyond the means of poor men; and now we find these same gentlemen asking our opinion as to the merits of a prescription, which they are presently to ask power to dispense, with an object by no means wholly dissimilar—a prescription which, however, contains certain elements so distasteful to us that, in spite of the character we have to maintain, we can hardly avoid making wry faces in anticipation.

Is it then that our fervour oozes away when we are asked to descend to particulars, from considerations of artistic propriety to those of pounds, shillings, and pence, or are there points in the London Streets and Buildings Bill — in the view which those who have drafted it take as to the irreducible minimum of light and air to be required, and in the measures to secure it—with which fault may legitimately be found? One thing is quite certain, that what we architects ask for is almost precisely what the London County Council as men of business have it in their minds to secure—sound building, systematic laying-out, more open spaces, broader and straighter thoroughfares. The main difference between us is, that while we are comparatively unfettered, the feeling of responsibility is, or ought to be, paramount with them. We look at the whole question, including the expense, in a large way. They feel bound by pecuniary exigencies to a somewhat baldly utilitarian policy, and to a severity in the exaction of penalties from those whose ill fortune rather than their fault may have linked their interests with an offending structure or an insanitary area, which is greatly to be deprecated.

With regard to the maximum of encroachment on the common fund of light and air, so to put it, which is to be allowed in the future, it is impossible to assent to what is proposed unless—and this means putting undue power into some one's hands--the circumstances are to be taken into account in each individual case. To limit the height of a building to the width of the street on which it stands may be generally reasonable, but the indiscriminate application of the principle that the bulk of a building is to be contained within a so-called "diagonal," starting from the back boundary at the pavement level and inclined to it at an angle of 45° towards the front, with a clear space of at least 10 feet deep across the whole width, is to discount the value of a building site quite unwarrantably. Again, one may reasonably complain that a structure of monumental character -not being a public building,—though it may run up to a height equalling the width of the street which it fronts (up to 75 feet at the eaves), and for 40 feet back along the side, is to be restricted from that point on to a height no greater than the width of the side street, however insig-

We do not ask that the laws of hygiene should be forgotten for a moment, but we do ask that their application should not be strained. It is probable that over a considerable portion of the area of London we have already reached the limit of perfectibility. Given a vast aggregate of human beings, and that limit cannot be indefinitely extended. Already we are rearing up hundreds of

nificant that may be.

^{*&}quot;Advantages of adopting a General Scheme in making "Improvements to London Streets," The R.I.B.A. Journal, Vol. IX. N.S. pp. 159, 168.

thousands of relatively bad lives which under the old conditions would have been wiped out whole-This is as it should be, and there is still a very great deal to be done in the same direction, but we can hardly expect to go on lowering the death-rate as we have in the past. Already it shows ominous signs of backing; with every poor life saved we are providing so much food for disease. It is only within the last generation that there has been a veritable city population, hemmed in by mile upon mile of bricks and mortar, and descended from parents and grand-parents brought up under like conditions, and the result of this lowered vitality is seen in the alarming prevalence of such diseases as diphtheria, which, like so much else that we would rather keep out, has been attracted to London from the country. As the population gets more weakly, so will the struggle tend to be more and more in favour of these interloping ailments, and against a lowered death-rate, and because of improved conditions as much as in spite of them.

When we turn to Mr. Beachcroft's very clear explanation* of the policy of the Council, the impression of the stringency of their proposals is unfortunately confirmed, as well as a sense of some injustice in the incidence of the taxation for improvements. This is not the place to discuss the position of the ground-landlord. The progressive party may or may not be right in their contention that he has escaped too lightly in the past. Practically, the tenant has to bear all the onus of increased rates; he cannot assess them with any accuracy beforehand, nor can he arrange a sliding scale so that rent may diminish as rates rise. Whether we recognise this or not we shall at least agree that the prospect of reducing the rating, which is as haphazard as other characteristically English institutions, to some system, and settling once for all the liability of the various persons interested is a most agreeable one. Meantime Mr. Beachcroft proposes to skin the lamb to some purpose. Suppose, he tells us, it is decided to set back the buildings in a certain street for purposes of health and not for purposes of traffic; then that land will not be acquired by the County Council, and there will be no compensation at all. The owner may treat and regard that part of his site which he has to give up as his forecourt, and is entitled to derive what satisfaction he may from the contemplation of it. He will get no other. The new law would not operate till a building was worn out, it is true, and, for the owner threatened with such pains and penalties, that moment, needless to say, would never come. Instead of rebuilding, he would cobble and patch to all eternity; then will a hawkeved County Council "exert increased vigilance,"

which may be interpreted as meaning that it would find a reason for pulling the house down. The owner would then retire gracefully to the line of frontage determined on, and might think himself lucky if he were not called on to "pay for any "increased value or improvement which may "have accrued to the building by reason of the "setting-back." But what if the restricted site allows of no building? and this brings us to the point of view of the ratepayer. Obviously, where the setting-back of the houses makes it impossible to rebuild, the Council is forced to buy the sites, and their purchase would involve that of the property adjoining if they were to be made any use of. This opens wide possibilities of expenditure, and makes one the more anxious that no mistake should be made as to the necessary width of streets, which might land us in purposeless extravagance. Unhappily there are whole workingclass quarters which admit of no doubt whatever as to their condition, which are crowded with a population tied more or less to the neighbourhood, and standing in the relation of about two to one to the number which buildings erected on the site under existing regulations could be looked to to accommodate.

These sites, unfortunately, are often so entirely devoid of attractiveness that the County Council find it impossible to get any Artisans' Dwelling Company to take them off their hands, and the Council have to undertake the work. Meantime quite half of those who have been dislodged have to be housed in the neighbourhood, at great expense, and with results not altogether satisfactory: many families are housed and unhoused repeatedly as they wander from one condemned block to another, and, when all is done, most of the original tenants have got dispersed, and the buildings are, as often as not, occupied almost entirely by newcomers.

What is to be the solution? Are the County Council to buy land in the suburbs, build model houses for working-men, incidentally raising the death-rate in the neighbourhood by filling it up, obtain a sufficient service of cheap trains, morning and night, from the railway companies, and then find their houses snatched up by country people? Something like this is a common experience. The fatal attractiveness of London must be dealt with seriously, and houses built for a special class confined to that class. What all this means in salaries of clerks, overseers, and so forth, is not easily calculated, but if there is no other solution we shall have to accept it. We have got to do our labour of Hercules heroically or piecemeal, and, at least in part, heroically.

But, to use a vulgarism, where do the ratepayers come in? They are to do all the paying of the piper; are they never to have the calling of the tune? If the County Council are to act as a great landlord; if they are to be entrusted with the vast

^{*} Overcrowded London: a Lecture given in Bermondsey Town Hall, 23rd Nov. 1893, by R. M. Beachcroft, Ald., L.C.C., for the London Reform Union.

discretionary powers contemplated in this new Bill, it must be under sufficient safeguards and restrictions. "Quis custodiet ipsos custodes!" the patient ratepayer may well exclaim. It would have been satisfactory, at least as a guarantee that the County Council recognise the right of the ratepaying public, that something of this should have been recognised in the Bill, some code of rules included to define and crystallise the somewhat

vague powers of this Colossus.

What all patriotic Londoners want is to make their city worthy of herself. To compass this end the formulation of a complete scheme of improvement similar to that which is in force in Paris is essential. Something of the sort is said already to exist in the pigeon-holes of the County Council; but, with every confidence in the capacity of their advisers, it is impossible not to feel that such large and vital questions ought not to be the subject of any such hole-and-corner settlement: it is a question on which the leaders of our profession, the natural representatives in such a matter of the ratepayers at large, ought to be heard. We have been told that to make the scheme public would be to make it impossible; that buildings would at once be run up with a view to compensation, and claims for damage mount beyond all possible hope of satisfying them. This is not the experience in Paris, but surely the members of the County Council are over-modest when they profess their inability to lop off the heads of such a Hydra. Let us, at least, put it to the test. We do not want to make London yet another bad imitation of Paris—bien entendu! there are too many of them already; but we do want a measure of the orderly, logical, systematic procedure which is the good point in French officialism. It would be better, even, that the liberty of the subject should be interfered with, than that new Regent Street should be another Shaftesbury Avenue.

A. E. STREET.

NOTES, QUERIES, AND REPLIES THE LONDON COUNCIL'S BILL. A Handy Abstract.

To be saved the task of plodding through the hundred and ninety odd clauses and innumerable sub-clauses of this Bill, with the tiresome iteration and tautology inevitable in such literature, should be indeed a subject for rejoicing; and busy men will welcome the little work entitled A Handy Abstract of the Clauses of the London Streets and Buildings Bill, compiled and issued by two officials of the St. Giles's Board of Works, Mr. H. C. Jones, solicitor and clerk, and Mr. G. Wallace, engineer and surveyor, respectively to the Board. It is, of course, impossible within the limits of a small pamphlet to include all the details of so large a measure; but a short cut, so to speak, is here provided to an intelligent understanding of

the objects aimed at in the legislation proposed, and the reader may gauge with the minimum of trouble some of the possible results if the Bill become law. The subjects treated in each of the fifteen parts and four schedules into which the Bill is divided are here given; and these are followed by a concise epitome of its provisions, taking them clause by clause. Not the least valuable portion of the work is the Table given at the end, comparing the Bill with the existing law, and showing the sections of the Acts proposed to be repealed, and the corresponding clauses in the new measure. The various clauses containing legislation on new lines are also enumerated in the Table, and among these may be mentioned clause 14, which empowers the County Council to require buildings in new streets distant more than two miles from St. Paul's to be set back a specified distance; clause 30, requiring the provision of open space at the rear of new buildings of not less than 150 square feet, such open space to belong exclusively to such building, and to extend laterally throughout the entire width, the distance across the open space not to be less than 10 feet; clause 35, requiring the superintending architect to determine which is the front and which the rear of a new building; clause 49, requiring new buildings exceeding 60 feet in height to be provided on storeys above 60 feet from street level with reasonable means of escape in case of fire, no such buildings to be occupied until the Council have issued a certificate that this regulation has been complied with; clause 99, prohibiting the erection of buildings within 50 feet of premises used for any dangerous business, except where a structure built before 9th August 1844 is burnt down and rebuilt; sub-clause 3, prohibiting the carrying on of any dangerous business in any building or vault, or in the open air, at a distance of less than 40 feet from any other building or vacant ground belonging to any other person than his landlord match-making, or the manufacture of turpentine, naphtha, varnish, tar, resin, Brunswick black, &c., are considered to be dangerous businesses within the meaning of this clause; clause 100, prohibiting the erection of dwelling-houses within 50 feet of a building used for a noxious business, such as that of a blood and bone boiler; but by clause 101 the provisions of the two previous clauses are not to apply to any public gasworks or premises used for distillery or rectification of spirits under the survey of the Commissioners of Excise; clause 125, empowering the district surveyor to enter and inspect all work during progress or within three months after completion, also to inspect exempted buildings at all reasonable times for the purposes mentioned. As fully half the Bill, however, is devoted to entirely fresh legislation, it would be a task of some magnitude to call attention to all the new clauses. A clean sweep is to be made of no fewer than thirteen existing Acts, ranging from the Metropolitan Building Act 1844 to the London Council General Powers Act 1893.

Alderman Beachcroft on Overcrowded London.

From Lacy W. Ridge [F.]—

Mr. Aldermau Beachcroft is a member of the London County Council who by his professional experience is necessarily well acquainted with the circumstances connected with the tenure of property in London. This gives importance to a Lecture delivered by him in Bermondsey Town Hall in November last, and now published in pamphlet form by the London Reform Union. It is impossible not to regard the Lecture in connection with the Bill about to be presented to Parliament for the reform of the London Building Laws, a Bill to which the Institute, through its Practice Standing Committee, has devoted, and is still devoting, much attention.

The proceedings of the Metropolitan Board of Works and of the Commissioners of Sewers in the City, dealing with unsanitary areas under the Act of 1875, and the subsequent proceedings of the Council after obtaining further parliamentary powers, are passed in review by the Lecturer, and the financial results tabulated. These are pronounced unsatisfactory, while it is incidentally mentioned that the insistence by the Council upon proper air space for the buildings has delayed rebuilding on cleared sites for seven, eight, or even ten years, and that "after repeated futile " auctions the Council has been obliged to under-"take the work itself, and the cost per head of " persons relioused has been very nearly doubled." If the regulations of the Council as to the spaces about buildings are those embodied in their Streets and Buildings Bill, it is not to be wondered at that the results above described have been reached.

It is recorded that on the 1st November last the Council, impressed by the gravity of the situation as shown by a scheme for rebuilding in Somers Town at the cost to the ratepayers of £100 a head, postponed further action. The Lecturer then proceeds, by subtle steps, to map out what practically amounts to a scheme for transferring to the private owner the loss of rebuilding the crowded parts of London on more sanitary principles, which the Council will not, or dare not, undertake as the corporate representatives of the public. The process is the enactment of severe building regulations as to streets and open spaces, which are to be applied not only in newly laid out building estates, but whenever houses are rebuilt.

The effect of these proposed regulations on the work of architects and the interests of their clients is a matter of importance to the Institute.

It is suggested that regulations of the sort are in force in provincial towns. In this, as in other things, direct election appears to have given the county of London a Council unable to rise above mere provincialism, and incapable of recognising that rules endurable enough in the country may be quite inapplicable to a district containing in the City the commercial capital of the world with land of value nowhere else approached, and in the city of Westminster the administrative and legislative capital of the empire with all which it implies. It is manifestly useless, in such a matter as this, to compare London with such places as Brighton, or with its own suburbs of Hornsey or Willesden, which exist almost entirely for residential purposes, and where on open sites the regulations of the Model Bye-laws may be reasonably applied. It is argued that the Public Health Act defines as "new buildings" all buildings pulled down to the ground-floor, and that consequently, in the provincial towns generally, the regulations of the Model Bye-laws as to the spaces about buildings are applied to all new buildings on old sites. Reference, however, to a collection made in 1887 by the Practice Committee of the bye-laws in force shows that in Birmingham, Bristol, Bradford, Leeds, Leicester, Wigan, and Glasgow—and it is with such towns as these only that London can be compared at all—regulations far less severe than the Model Bye-laws are in force, while in every case there is a dispensing power reserved to the local authorities, at whose option the bye-laws are enforced or relaxed.

It is true that the London County Council in their proposed Bill reserve to themselves the right to relax the enactments in special cases; but such a power as that, easily enough exercised in a small community, is liable in a vast area like London to become the cause of great delay, uncertainty, and even oppression. It would be nearly impossible to form any idea of the value of a piece of ground while it remained a matter of uncertainty how far it could be covered with buildings and to what height they might be raised. It is extremely improbable that in any town in the kingdom "new buildings" on old sites are habitually set back behind the line of frontage, so as to give the prescribed width to the road under the Model Bye-laws, without compensation. At any rate, the County Council have thought it necessary to introduce into their proposed Bill a clause (No. 31) which speaks in much more certain terms than the Model Bye-law relied on by Mr. Beachcroft. It seems probable, however, that not even the slow but gradual improvement anticipated would be effected, as owners of property would keep up almost any existing building rather than set their fronts back beyond the line of frontage of the neighbouring buildings, so that they would be recessed between two party walls, to the great detriment of their light and air. For this a useless space of ground in front, even though it be enclosed by a wall seven feet high, is but a sorry compensation. The contemplated stringent application of the sanitary powers of the local authorities might do something to bring about rebuilding. The whole scheme, however, ignores, and must almost fatally discourage, the real source of nearly all building improvements in London, the desire to make the sites more available by removing old and unsatisfactory buildings, not because they can be kept going no longer, but because they can be reconstructed so as to be more available, and to bring in higher rents. Like all other excessive interference with the liberty of the subject by authorities local or imperial, the details of the Bill will, if enacted, probably fail, and give more occasion for such remarks as that of the Alderman's critical working man who spoke of the unhousing of the Working Classes Act.

Light and Air in London Slums.

From Robert Williams [A.]—

For the purpose of some lectures which I am now giving on "Light, Air, and Space in relation "to Workmen's Homes," I have prepared some large coloured diagrams, showing how, under the present Act, a slum is built, and showing, by contrast, how the new Bill would remedy this. Should the Institute care to use these diagrams in its deliberations they are at its disposal, with the exception of two dates, viz. the 15th inst. and March 7. How urgent a matter this light, air, and space question is may be gauged from the last census returns, which show that in London alone no fewer than 484,395 persons were living in 136,091 rooms —that is to say, 3.55 persons to each room! Allowing a space of 225 square feet to each room and its curtilage, this would give for the 107 acres 3,612 persons per acre—or about one and a half to a square yard!

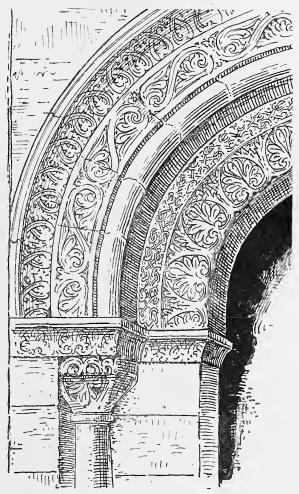
Many visits to the crowded quarters of the eastern and southern districts, and visits to the rooms, and conversations with the pent-up working dwellers, have burnt into my heart the desire to do what in me lies to get for these people a little more earth space. No nobler work surely could engage the powers of an architect; and it is from no spirit of antagonism that I have taken up this attitude, but rather that it is irresistibly borne in upon me to do what I can in the matter.

From Mr. CLEMENT HEATON (Neuchâtel)—

As suggesting a line of thought which I will attempt to give expression to in the following note, I send you a sketch of a portion of a window arch of the Church of Saint-Pierre, Geneva. It is a very fine example of what I take to be Rhenish work, and has been formerly overlaid with later masonry. This is probably the part which Fergusson dates as about 950, apparently on the strength of Blavignac's work. But this was published in 1853, and later discussion seems

Some Notes on Rhenish Work.

to have determined a later date—the middle of the twelfth century. After having been accustomed to English Gothic detail by daily contact with examples, the contrast remarked by seeing examples of this Rhenish detail is considerable. One has the feeling of being in presence of a new set of ideas—a feeling which gathers strength with familiarity. In view of what Fergusson says of the style [History of Ancient and Mediaval Architecture (ed. 1893), vol. ii. pp. 211, 212],



WINDOW ARCH, SAINT-PIERRE, GENEVA.

some notes on it generally may not perhaps be uninteresting.

It recalls the Norman work we have in England to some extent, but it is more refined in scale, a different set of motifs prevail, and it is more carefully executed. It is, in fact, a higher class of work in every respect, though it varies in excellence according to date and locality. Its parentage appears certainly to be the Byzantine work, and as this is the continuation of Greek tradition, it is practically the continuation of the principles started

in Assyria, coming through Greece, Byzantium, and Germany. As the Princess Theophanie introduced enamelling into Germany from Byzantium on her marriage with Otho in 973, it seems reasonable to suppose other traditions were brought in at the same time. It was at this epoch that goldsmiths' work was so highly esteemed—indeed, it seems evident this goldsmiths' work constituted the ideal of all that was precious or beautiful at this age. Does not this explain the presence in stone of such metallic-like treatment and motifs? The "ties" round foliage stalks, and the interlaced band-work find a natural origin therein. As it is the fact that Irish MS. designs were suggested by enamelled metal-work, that in Egypt and Assyria motifs of ornament are also directly traceable to metal-work, it seems natural enough it should be so here. In any case this stone carving has a most delicate fretted look, giving the coarsest material an appearance of richness and

It would not be an unprofitable study to examine the principles which led to this, for they constituted the mainspring of action to whole peoples and epochs, and are available now as much as ever, offering a path to new developments of architectural adornment with safety and success. They are the reverse of those of all our Gothic ornaments—for whereas Gothic work has raised relief as its prevailing (though not exclusive) character, this Rhenish work is concave with raised edges, giving a surface of raised lines catching the light, concave surfaces with gradated shadows, and spicy bits of black between the lines. The contrast of line and shadow and black points is perfect, and in bright sunshine or dull weather holds its own and never looks tame. This is not an aecidental mannerism, but a definite system of work, adhered to in the coarsest examples. The same characteristics are present in the capitals illustrated in Mr. Simpson's Paper [pp. 97, 98]. and in Indian and Oriental work generally.

A Short History of Mosaic Decoration.

A perusal of the practical contributions, last Monday [pp. 245–262], to the study of Mosaic decoration and Fresco painting may be profitably followed by reading La Mosaïque Chrétienne pendant les premiers siècles, which originally appeared in the Mémoires of the National Society of Antiquaries of France (52nd volume) and was published last year in pamphlet form by its author, M. Eugène Müntz [Hon. Corr. M.], the learned Curator of the École des Beaux-Arts, Paris. The pamphlet, which contains some ninety octavo pages, fully illustrated, is divided into two parts: (1) "La "Technique" and (2) "La Mosaïque dans les "Catacombes." The first part is accompanied, as

an appendix, by extracts from a manuscript in the Barberini Library entitled "Ricette per fare vetri" colorati et smaltati d' ogni sorte havuta in "Murano, 1536." These "ricette" or "recettes" or "recettes" are stated by M. Müntz to differ notably from those of the fourteenth and fifteenth centuries published by Signor Milanesi—Dell' Arte del Vetro per musaico, 80. Bologna 1864—in the fifty-first volume of the Scelta di Curiosità letterarie. Though the orthography of the manuscript is stated to be in a horrible Venetian dialect, and certain passages are almost unintelligible, M. Müntz has been able to give a literal copy, which he guarantees exact (pp. 56-61).

The second part of the Pamphlet, the mosaic work of the catacombs, is particularly interesting from the large amount of information on the subject it contains, reduced to readable compass, and duly accompanied by minute references to

authors cited.

M. Müntz attempts at an early stage to controvert an impression generally well accredited. Glass mosaic, he says, is thought to be essentially of Christian origin, and is often called Byzantine mosaic; while marble mosaic is considered to be the only kind of incrustation used by what may be called classical antiquity. This, says M. Müntz, is a singular exaggeration. The use of enamels (pates d'émail) was already very general in the first century of our era, as may be proved by innumerable fragments preserved, among others, at Pompeii, exclusively composed of tesseræ of enamel similar in all respects to those seen in Christian basilicas. At the Museum of Naples, for instance, among objects obtained from Pompeii, there are columns (of brick or rough masonry) incrusted with such tesseræ; and M. Müntz contends that incrustations of glass or of enamel were known to the Egyptians, as may be tested by examples preserved in the British Museum. At Turin, in the Museum, there is a coffin upon which are hieroglyphs filled in with glass.

REPLY.

Helmingham Hall [pp. 25, 59.]

Under the head of "Queries" in the issue of 9th November last, information was desired respecting the interior of Helmingham Hall, and plans, sections, and views were asked for. The Hall is one of the finest specimens of a moated residence in the country; and, by the kind permission of Lord Tollemache, a member of the Suffolk Institute of Archæology has taken a series of views both of the exterior and interior, and he would be happy to supply copies. His views do not at present include Queen Elizabeth's bedroom, which when he was there was not available for the purpose; but he has his lordship's permission to go over again and photograph the room, and he hopes to avail himself of the kind offer during the summer months.

^{*} Traces of traditions of Roman work are also met with, and in some cases the interlaced work seems of Irish origin, so there is considerable complication.—C. H.



9, Conduit Street, London, W., 15 Feb. 1894.

MINUTES. VIII.

At the Eighth General Meeting (Ordinary) of the Session, held on Monday, 12th February 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the chair, with 33 Fellows (including 10 members of the Council), 30 Associates (including 1 member of the Council), 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 29th January 1894 [p. 240] were taken as read and signed as

The following candidates for membership, whose admission to candidature had been approved by the Council, were recommended for election, namely: - As FELLOWS: John Perrins Osborne [A.] (Birmingham), Thomas Batterbury [A.], George Hubbard, Jethro Anstice Cossins (Birmingham), Frank Barry Peacock (Birmingham), Walter Talbot Brown [A.], (Wellingborough), James William Fisher (Wellingborough), David Jenkins [A.] (Llandilo), Howard Chatfeild Clarke, Joseph Morris (Reading); As ASSOCIATES: Charles Kempson (Leicester), Harry Barnes (Sunderland), John Ernest Mowlem (Swanage), Henry Dearden (Batley), Edward Box Wetenhall, Ernest Robert Barrow (Ashpitel Prizeman 1893), William Henry Ashford (Rhayader), Arthur William Sheppard, Harold Clapham Lander (Student 1892), David Forbes Smith (Salisbury), William Tillott Barlow, Francis Peter Halsall (Southport), George Ernest Nield, John Robert Earnshaw (Manchester), Franklin Kaye Kendall (Student 1892), Roger Francis Bacon (Student 1892) (Reading), Harry Evan Jones, John Rennison Little (Bolton), Arthur James Forge, Frank Lishman, Arthur Hill Morgan (Hoole), Doug'as George Salier (Tasmania), John Lloyd Houston, George Harry Mael Trew, John Humphreys Jones, B.A. Lond., John Newnham, William John Childs (New Zealand), Alfred Kirk Brown (Hull).

The following Fellows, attending for the first time since their election, were formally admitted, and signed the Register, namely:-Charles James Smithem and

William Larner Sugden.

The President gave notice, in accordance with the provisions of By-law 40, that an election to the office of Associate-Auditor would take place at the next General Meeting to be held 26th February 1894, and that the said election would be decided by Resolution of the Royal Institute, Mr. G. A. T. Middleton [A.], who was elected to the office last year, having resigned it.

Pursuant to notice given, the President having moved

and Professor Kerr [F.] having seconded, it was

RESOLVED, that the Council of the Institute be instructed to take the necessary steps to lodge a petition to the House of Commons against "A Bill to Consolidate " and Amend the Enactments relating to Streets and "Buildings in London"-the suggested short title of which is "The London Building Act, 1894"-in order to secure for the Institute a locus standi to be heard on the principles and details of the proposed measure before any Select Committee that may be appointed for the purpose.

It was further, on the motion of Mr. J. Tavenor Perry [A.],

RESOLVED, that a General Meeting of the Institute be convened for the purpose of discussing points of the Bill, and advising thereon.

In regard to the award of the Royal Gold Medal for the current year, the Hon. Secretary having read By-law 64, the President announced that the Council proposed to submit to Her Majesty the name of Sir Frederic Leighton, P.R.A. [H.A.], as a fit recipient of that honour.

Papers on Mosaic and Fresco by Mr. C. Harrison Townsend [F.], Mr. James C. Powell, Mr. G. Salviati, and Mr. N. H. J. Westlake having been read and discussed, a vote of thanks to the authors and to the several exhibitors of illustrations on the subjects thereof was passed by acclamation; and Mr. Powell having acknowledged it, the Institute adjourned at 10.15 p.m.

Errata.

Page 238, Review No. 17, line 4 of text, for "The Norse "Symbol" read "The Noose Symbol." Page 239, 1st column, line 20 from top, for intuition read intention.

PROCEEDINGS OF ALLIED SOCIETIES.

CARDIFF: ANNUAL DINNER.

On the 1st inst. the Annual Dinner of the Cardiff, South Wales, and Monmouthshire Architects' Society was held at the Angel Hotel, Cardiff, the President, Mr. E. Seward [F.], in the Chair. Among the guests of the Society were the Mayor of Cardiff (Mr. Councillor Frounce), Mr. J. M. Brydon [F.] representing the Council of the Institute, the Chairman of the Cardiff School Board (Mr. Lewis Williams), the Vicar of St. John's Church, Cardiff (the Rev. C. J. Thompson), Mr. T. Forster Brown, Mr. T. H. Thomas, Town Clerk and Borough Engineer of Cardiff, and others. After the usual toasts, Mr. T. Forster Brown proposed "The Cardiff, South Wales, and Monmouthshire "Architects' Society," and referred to the enormous improvement in the condition of the houses of the working classes in the matter of ventilation, sanitation, &c., brought about through the efforts of the architectural profession. The Hon. Secretary, Mr. J. Coates Carter, then gave a short retrospect of the work of the Society from its commencement in 1890. The Society, he said, was originally started, under the title of the Cardiff Architects' Society, for the purpose of promoting friendly feeling and intercourse among the members of the profession in practice in Cardiff. It was soon found necessary, however, to extend its scope. As a first step they offered prizes for measured drawings and sketches, open to all architectural students in their district, of which the results so far had been most excellent. Last year the Society was extended to include the whole of South Wales and Monmouthshire; and architects' pupils and assistants were admitted as Associates of the Society, but took no part in the business meetings. Application was then made to the Council of the Royal Institute of British Architects to be constituted one of the Societies allied to that body, which application was at once granted. Mr. Carter further pointed out that besides the gratification afforded to members of having the Central Society of the profession officially represented that evening - in the person of Mr. Brydon, who was doubly welcomed as an architect whose work most of those present knew and admired, and also as a member of the Council of the Institute-they had this substantial advantage, that in future the local examinations of the Institute could be held in Cardiff, and thus much time and money would be saved to young architects from South Wales.

The alliance with the Institute, which appeared very popular amongst the members of the Cardiff Society, was again referred to by the President in responding to the toast, particularly the Society's improved status, the opportunities for usefulness it now commanded, and the direct and solid advantages which would accrue to its students. Mr. J. M. Brydon, responding to the "Kindred

"Arts and Seienees," commented upon the recent allianee of the Society to the Institute, and made suggestions towards a greater community among architects, seulptors, painters, and decorators.

LIVERPOOL: SESSIONAL MEETING.

On the 5th inst., at a Meeting of the Liverpool Architectural Society, Mr. Basil Champneys read a Paper on "The "Relations of the Practical and the Ideal in Architecture," of which the following is a summary:—Architecture, no less than the other arts, such as Poetry, Painting, and Sculpture, aims at an ideal result by the use of the material and actual. It differs from the other arts mainly in two respects: the first, that it is far more closely bound than other art by practical conditions; the second, that its use of the actual world is far less direct and more abstract, and consequently far less easy to detect or define.

Art, in order to teach its full development, employs both the physical and the moral world as its material. Nor is it difficult to trace the process in the case of the other arts. Architecture undoubtedly aims at cognate effects, but in a

manner less easy to recognise.

The principal elements of architectural effect are form or outline, and proportion. Whether these are founded on innate ideas or are the abstracted results of experience, it is certain that the sense of both may be indefinitely developed by the study of the physical forms of the natural world; and by this means the relation of architectural

form to the physical world is established.

It is less easy to see how architecture is capable of expressing ethical ideas, especially if in our analysis we dissociate it from the ancillary arts of sculpture and painting, which arts may readily express such ideas in close association with architecture, though they are not of the essence of the art. We may perhaps detect the expression of ethical ideas more readily in styles than in individual buildings. If we take what are probably the three great styles of the past, Egyptian, Greek, and Gothie, and adopt Mr. Coventry Patmore's constructional analysis of these, we shall find that the essential idea conveyed by them severally is that of weight predominant, weight adequately earried, and weight transformed into aspiring lines. We may, without strain, convert these terms into their ethical equivalents, and consider the styles to be expressive of materialism, reason, and spirituality; and thus each great architectural invention will be found to express accurately the essential ideas of the civilisation which gave it birtli.

There are also many indications in the terms which we apply to individual buildings of their capabilities of expressing moral, philosophical, or religious ideas.

If, then, architecture, notwithstanding its strict servitude to practical requirements, is capable of compassing the same ideal intention as the other arts, its claims as an art should be of the highest kind, and its ideal aims should be emphasised both in theory and in practice. Its practical achievements should be considered only as a means to a higher end; and all methods which tend to confound it with purely practical avocations should be rigidly discouraged as calculated to obscure its ideal aims in the mind both of the public and of those who practice it.

LEEDS AND YORKSHIRE: SESSIONAL MEETING.

On the 5th inst., at a Meeting of the Leeds and Yorkshire Architectural Society, the Presideut, Mr. G. B. Bulmer [F.], in the Chair, Mr. E. Guy Pawber [A.] read a Paper on "Notes on Some Bavarian Towns." After a few brief introductory remarks in reference to the peculiar interest of the towns and villages in the country around Wurzburg, the lecturer gave a graphic description of Rothenburg-on-the-Tauber. Situated on a spur of rock overlooking the valley, it is entirely surrounded by its original wall and towers, over thirty in number, and contains

many buildings and houses of great interest and charm. Founded in the tenth century, with frequent enlargements during the Middle Ages, it retains most of its original features intact, and perhaps no town in Europe impresses one with such an air of Mediævalism as Rothenburg.

The fine Renaissance Rathhaus on one side of the market-place is a typical example of the municipal buildings in Southern Germany at this period, with its high pointed roof, gabled at either end, and very strongly marked horizontal strings, contrasting forcibly with the vertical lines striven for in the buildings of Northern Germany. The larger houses in the principal streets are simply designed, and generally with plain gables, but containing open courtyards behind of great beauty and picturesqueness. The smaller houses are built of timber, entirely eovered with plaster, the common method of building in this part of Bavaria. The fountains in the streets, the wrought-ironwork and beautiful window grilles are very noticeable, and the peculiarity of the large entrance towers and gateways, having one side of the tower originally open to the town-probably so that means and weapons of defence could be handed up, or commands given to the inhabitants below, during periods of siege. The villages in the district are very picturesque, the houses being built of timber and plaster, and painted in various colours, and the roof invariably covered with red tiles.

Wurzburg was described, with its beautiful bridge spauning the Main, and rows of large statues of the Bishoppinees who once ruled this part of the country. The Rathhaus is one of the most striking buildings in Wurzburg. Dating from the fourteenth century, it is absolutely plain, and has a large square tower without mouldings or decoration of any kind, until the top, when a pilastered and corbelled storey carries an octagonal roof and open eupola of very beautiful design. Modern ideas and innovations have swept away most of the older work in this eity.

Aschaffenburg-on-the-Main has some excellent domestic work of a quiet and refined character, but the glory of the town is the magnificent palace, standing on a noble terrace overlooking the river. Built, in the early part of the seventeenth century, of red sandstone, in the form of a square, it has four large towers at the angles, carried up with bold mouldings into octagons, and thence into tall open cupolas. The roofs are covered with small grey slates, bleached and weathered to a beautiful silver-grey colour.

Slates now rapidly begin to take the place of the red tiles used in Bayaria, and the slate roofs and walls and methods of hanging were dealt with in detail by the lecturer. They are chiefly obtained from the quarries around Caub, on the Upper Rhine, whence they are sent to all parts of Germany and other countries, reached by its tributary waters. Frankfort contains some beautiful examples of slate hung houses, the various designs and ways of hanging being well worthy of study. The softness and texture of these large roof and wall surfaces covered with small slates seem perhaps preferable to our Euglish way of using such large ones, sometimes entirely out of seale with the walls below.

The lecturer, in conclusiou, touched upon the earlier buildings in Southern Germany, when built of rubble stone, being entirely covered with plaster, and instanced many examples of old buildings, untouched from their commencement, and yet possessing unmistakable evidences of having been entirely plastered, and, on the sides not exposed to the weather, still retaining the plaster intact. The bulk of the buildings in Rothenburg, Wurzburg, and other towns and cities are plastered, and, from evidences seen, coeval with the time they were built.

MANCHESTER: SESSIONAL MEETING.

On the 6th inst., at a Meeting of the Manchester Society of Architects, the President, Mr. E. Salomons [F.], in the chair, a Paper was read by Mr. H. W. Chubb,

Assoc.M.Inst.C.E., entitled "The History and Develop-"ment of Locks and Safes," the subject being treated from two points of view, the mechanical and the artistic. The method adopted by the Greeks for fastening and bolting doors was described; and the hook or sickle-shaped key probably used by them had been discovered in various parts of France and Germany; a key of similar pattern found by General Pitt-Rivers at Lewes was ascribed by him to the late Celtic period. The Phœnicians might have been the agents of its distribution. In some forms of this key appeared the mechanical embryo of the Egyptian lock. Though little direct evidence existed about Egyptian locks, one was shown in a bas-relief at Karnac; and on a wallpainting in the Temple at Abydos, Rameses II. was depicted in the act of opening the door of a shrine by means of a golden key formed like a human hand and arm. A comparatively modern key brought from Cairo was shown by the lecturer, in which the shank of the key was the arm, and the pegs the fingers of the hand.

Some primitive wooden locks to be seen in use at the present day in places so far apart as the Hebrides and Faroe Islands, and the less frequented parts of Galicia, Roumania, and Servia, had also been observed on the West Coast of Africa. The Roman padlock, so styled, was now almost in universal use in China; and the lecturer questioned if it were not rather of Celestial origin. A very curiously shaped Chinese lock of modern construction was described to be almost exactly similar to old Roman locks preserved in the British Museum. A simple device which the lecturer pointed out in two antique bronze keys dug up in London formed the subject of present-day patents, and not a year passed without some enthusiastic inventor rediscovering it and offering to part with his idea for a consideration. A class of Roman keys quite unique were those attached to finger-rings; several of these were exhibited by the lecturer, who himself was wearing one in which the key folding behind the signet opened several locks en suite. Keys and locks in use in various countries in mediæval times were described in detail; a locking bolt of the thirteenth century, to be seen on the cathedral doors of Chartres, Rouen, and in some of our own cathedrals, having been met with by the lecturer on the door of the inner temple building at Kandy, where the piece of ivory called Buddha's Tooth is kept. The fifteenth and early sixteenth centuries produced the most beautiful specimens of keys, the Germans excelling more particularly in the decoration of lock plates. These appear to have been so highly prized that their owners carried them from place to place as they changed their residence. Coming to later Renaissance work, the lecturer quoted from Mathurin Jousse's book, published in Paris in 1627, in which the art of the period is well and graphically described and illustrated. A good idea of the keys of the eighteenth century could be gained from Chamberlain's collection, presented to the British Museum by Mr. Octavius Morgan in 1888.

The lecturer then dealt with the second part of his subject—boxes, safes, and strong-rooms—in which the interest centred more upon modern work. The ingenuity of safemakers had to be constantly at work to battle the army of skilful burglars. The various systems of strong-rooms and safe deposits at present in use were described, the more important being fitted with the chronometer lock, commonly called a "timer," an ingenious contrivance which controls the bolts independently of the keyless combination locks. The owner, when closing his door for the night, sets his time-lock to run off guard at any hour he selects the following morning. If a burglar, either by force or fraud, obtains the secret of the numbers of the combination locks, he cannot open the safe if the "timer" be on guard. These may be set to run seventy-two hours. The lecturer further dealt with the materials used and mode of construction, and concluded with a reference to

the application of electricity as affording additional means of security. Several wall diagrams, specimens of old locks, and various mechanical models were exhibited during the lecture.

THE ROYAL ACADEMY OF ARTS.

The Advancement of Architecture.

Professor Aitchison's second lecture on the Advancement of Architecture was delivered on the 1st inst. The fol-

lowing are a few extracts:

Most buildings have some special use for their main ends; the distinction between them is the relative proportion between the parts for emotional and unemotional use. The commonest sort of buildings are wholly for material needs, and buildings gradually rise in position as the emotional parts prevail over the material. Religion, however, has been, and must always be, the mother of architecture in its highest sense; for beyond providing for the ritual, the whole cause of the building is to raise the highest emotions. I cannot conceive man ever being without religion; by it his natural curiosity about himself and the universe is attempted to be satisfied, the question of what is happiness is defined, and he is shown how he may try to attain it; by it he is taught to bear the terrible ills with which life is fraught, and how to purge his soul from guilt. A cube, with a recess for the altar, was the shape chosen by the early Christians for their church. The shape we now have is mainly accidental. Constantine saw in his vision a cross, and he presented the Christian community of his day with the unused Basilica of Lateranus, in which the Christians saw the taw, or primitive eross, in the junction of the transept in front of the judgment seat with the nave.

The Roman Church greatly enlarged the early Christian symbolism, and either invented, or adapted from the Pagans, an elaborate ritual, both grand and impressive. No one who has seen the open-air service of the Corpus Domini at Venice can fail to have been struck by its grandeur and solemnity. From the left door of St. Mark's the procession emerges; besides the officiating priests bearing candles, each confraternity of Venice sends some at least of its number, dressed in the handsome costumes of the sixteenth century, who bear on their shoulders a tray, or baldachin, containing the sacred relics in their gold and silver cases, enriched with enamel or jewels. Each confraternity is accompanied by children dressed as cherubs, or personating the childhood of the holy personages of Scripture, leading lambs, kids, or a donkey adorned with flowers. In the centre of this procession is the Patriarch of Venice, with the attendant priests and acolytes, sumptuously attired. By the time the procession has brought the Patriarch to the centre of the square, the foremost group has passed under the Procuratie to the right door of St. Mark's; the Procuratie is lined with sightseers, and the open square is crowded with gondoliers, peasants and their families, all dressed in their holiday attire. At the end of the celebration of the Mass a bell is rung as the Host is elevated and incensed, and then the whole crowd fling themselves on to their faces or knees in the blazing sun. The effect of this sudden and united adoration of the multitude is quite electrical, and, when once seen, can never be forgotten. .

The want of grand houses to mark the gratitude of the nation to its great men is only one of the proofs of the ignorance of our statesmen of the value of fine arts. No one can see Blenheim without being struck with its architectural magnificence as well as its size; and consequently Marlborough's victories over the armies of Louis XIV. are constantly being recalled to the memory of succeeding generations; while Wellington's house is neither large enough nor admirable enough as a work of art to excite attention. It is, however, a house rather more important than a common one, and so can be used by those who know it to point a moral or adorn a tale. We miss, too,

in the fitness of things, a house to Nelson, who did quite as much for the preservation of England as Wellington himself. Of course, the saving of the nation from conquest is the most important service a man can render to his country; though I cannot help thinking that diplomatists, who secure this end without the horrors of war, are quite as deserving. I suppose the State has a right to restrain its public honours to soldiers, sailors, and diplomatists; but even to them the presentation of a really fine house is the most useful and enduring memorial of the nation's gratitude. Wealth is due to these great men, as they have preserved that of the whole country; to be made equal with the highest of the living is not much, for they are already their superiors; bronze statues make their personality known, but in any popular commotion these may, like the statues of the great Sejanus, be turned into coal-scuttles and warming-pans.

There are, however, other great men who not only confer benefits on their own country but on the world at large, who, I think, might too be honoured in this way during their lifetime. Their achievements are not so striking at the time, nor are they so forcibly brought home to every one as victories are; eonsequently their works, discoveries, or inventions are only fully appreciated after their death. Shakespeare and Milton, Bacon and Locke, Inigo Jones and Wren, Newton and Dalton, Watt and George Stephenson, Reynolds, Constable, Turner, and Flaxman, have done more for their country than any conqueror; for they have not only enriched and immortalised their country, but have helped forward every other civilised nation.

It might be supposed that the leaders of labour—I do not mean the misleaders—would desire to celebrate their well-earned fortunes by magnificent houses; but, like those successful in fraud and adulteration, they are mostly content to enshrine themselves, their achievements, and their wealth in the ready-made house of the speculative builder. Poverty, the leasehold system, want of sense, and want of taste keep London very free from magnificent houses....

I eannot help thinking that, if the outside of isolated public buildings were made the outcome of the inside, they would differ greatly from those formerly in fashion here. Then the architect's idea was to make a box, and sometimes a very beautiful box, into which the group of buildings was put; but under such conditions it was impossible to judge the purpose of the building from the outside. Some eminent architectural critics say that to insist on the outside being the outcome of the inside is a most pestilent heresy; they contend that a beautiful front is wanted to excite admiration, and, if this be achieved, what more can be desired? In answer to this, it may be said that a building designed on such principles does not emulate one of Nature's organisms.

It may now be well to consider of what a building consists when looked at from the outside. It consists of walls and a roof, unless the roof be flat or hidden, and then of walls only. If there be windows, we conclude there must be a roof. It may be as well to speak of the doorway before the windows; for if Dr. Dörpfeld's theory, that Greck temples were lit only from the door, be the true one, windows were not wanted, and the size of the doors must have been proportioued to the spaces to be lit. Doorways in medieval buildings were sometimes used for lighting, as at the Lower Church at Assisi. In Gothic cathedrals the height of the doorway is said to have been regulated by the height of the banuers carried in procession. . . .

A balcony is not a bad thing if we have a garden or a prospect to look at, and a fine day; occasionally it is agreeable in a street, if you want to address the mob, to see a fight or a procession, and it is admirable for catching cold in at an evening party; but unless you go down to it by a flight of steps it spoils the appearance of all the windows behind it.

In Venice, that city of balconies, there were constant processions on the wider canals that were lined with palaces, and the water and its reflections alone form a lovely picture to look at.

Parapets or balustrades are necessary where there are flat roofs, not only to prevent persons falling off, but to give the real scale of man to a building. I cannot eommend those gigantie balustrades that are put up as a finish to a front, as they destroy the scale of the building, nor those of ordinary size used to hide mean roofs, that are perched up so high that when you are in the gutter the bottom of the balustrade is level with the crown of your hat.

THE PLANNING OF THEATRES.

Outhe 13th inst., at the monthly meeting of the Glasgow Architectural Association, Mr. Alexander McGibbon [A.], President, in the Chair, a Paper was read by Mr. William Tait Conner [A.] on "Planning of Theatres." After a short sketch of the development of theatre planning, the regulations laid down by various countries for the erection of theatres, and the restrictions as to site, were next considered. The only perfect site was said to be an isolated one, and with a slope towards the stage in preference to being level, as this effects a saving in excavation and facilitates the drainage; and simplicity of plau was urged as being essential, so as to be easily grasped by the audience. The remarks on planning were divided into the following heads: Approaches, consisting of entrances, exits, and staircases; the auditorium and its fittings; and, lastly, the stage, comprising dressing-rooms, scene-docks, &c. In regard to entrances, it was recommended that the audience should be admitted by a special passage till the pay-box was passed, and then discharge into the main eorridor, thus leaving it free at all times for exit. The various descriptions of barriers for reducing the width of passages for entrance and lifting checks were described, also the position of pay-boxes and booking-office. Exits should be as short as possible and free from everything of a movable character, two, at least, being provided for each part of the house. All doors should be fitted with automatic panic bolts, and have the word "Exit" above in plain letters. Staircases should not be in long straight flights, nor yet too short, twelve steps being considered the maximum and three the minimum number; the landings should be the full width of the staircase and never broken by single steps, the rise and treads being kept uniform throughout, two staircases at least to be provided to each section of the house. In dealing with the auditorium, the substitution of cantilevers for supporting the balconies in place of columns was considered the greatest improvement in theatre construction within receut years. The arrangement of seats and gangways in relatiou to local by-laws was pointed out, and various patent seats described. The dimensions of the seating in the different parts of the house and the sighting were also touched on. The auditorium should be well provided with windows, and balconies with escape stairs were also recommended. The necessity of making the entire building as far as possible fire-proof was emphasised. In connectiou with the stage, it was shown how its dimensions were governed by the height and width of the proscenium opening. The posi-tion of the scene-docks, dressing-rooms, stage entrances, workshops, &c., were explained, and diagrams showing the arrangement in some of the most modern theatres were exhibited. It was strongly urged that all theatres should be supplied with a fire-proof curtain; those of the iron lattice type covered by some incombustible material, sliding in iron guides and worked by hydraulie power, were recommended. The lighting, heating, and ventila-tiou were briefly alluded to. The Paper was illustrated throughout by diagrams and photographs thrown on the screen by lime-light.



THE NEW SCIENCE LABORATORIES AT UNIVERSITY COLLEGE, LONDON. BY Professor T. ROGER SMITH [F.]; Professor T. Hudson Beare, B.Sc., M.Inst.C.E.; Professor J. A. Fleming, M.A., D.Sc., F.R.S.; and Professor G. Carey Foster, F.R.S.

Read at the General Meeting, Monday, 26th February 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

THE BUILDINGS.

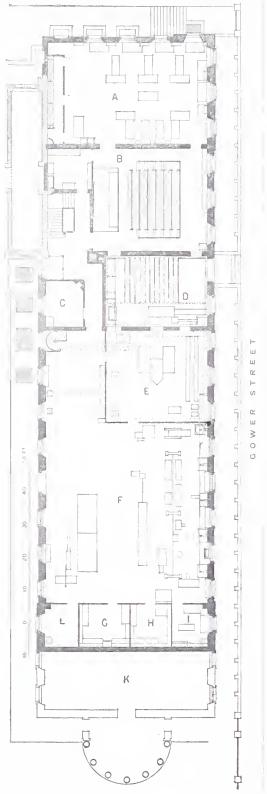
MR. PRESIDENT AND GENTLEMEN,-

HE object of this Paper is to describe the additions and alterations which have recently been carried out at University College, London, in order to form a series of laboratories, buildings devoted to the practical study of science and applied science. These laboratories are, it is hoped, sufficiently extensive and complete to be worthy the attention of members of this Institute at a time when technical scientific teaching is one of the prominent subjects of the day.

University College has again and again been a pioneer in the cause of technology, and it has sometimes happened there, as to other pioneers, that those who have followed have been able to remedy some of the imperfections which have been found in the original installations. This has been emphatically the case with engineering. The first engineering laboratory set up for teaching purposes in the United Kingdom was that established by Professor Kennedy in the year 1878 at this College, in a basement not well lighted, certainly spacious, but with no other special adaptation to the purpose than that it had a solid floor; and most of the numerous engineering laboratories which have been since established have had far better buildings provided for them. It is for the many students now working in this department, which has thriven exceedingly, that a new and suitable laboratory, together with a spacious and light studio for mechanical drawing, was urgently required.

Side by side with the needs of the department of mechanical engineering stood the even more pressing ones of a sister department—that of electrical engineering, which was so cramped for room that it was impossible for it to make any progress; and for this section of the College work it was accordingly decided to make proper provision at the same time.

A third branch of study, not so specialised, but at the very root of all technical work of a scientific kind, is physics. The Professor of this science was but indifferently lodged. His classes had not room enough, and they occupied parts of the building which had been designed for other purposes, and were so ill fitted to the requirements of physical observation and experiment that there was no room in his department where the equilibrium of a delicate balance would remain undisturbed if any one walked across the floor! It was accordingly



Professor's beture room with apparatus-room adjoining. c. Bleetrical Professor's private room, engineerom. c. A cancule-chig professor's private room, customeroum, c. A cancule-chig room. u, Caboric currence adjoins room c. The hardred walls show the end of University College School. AND ULB B. Bleetrieal GROUND FLOOR OF Electrical laboratory with photometric gallery and photographic dark-reon adjoining, p. Dyonno-coon, with special antener from Gower Street. 8, Knighteering Protessor's meter-room, 4, Office, 8, Future extension, 4, Engineering Protessor's private room. almost as pressing a necessity to provide new quarters for physics as for mechanical engineering and for electricity.

It was not difficult to estimate the amount of floor area which should be provided for each of these departments, but it was less easy to settle where and how that floor area was to be formed, for the extent of the required space was great, and it was indispensable that much of it should be on the solid. Where heavy machinery is to be fixed, its bed must rest on the earth. Where the most sensitive and delicate of instruments are to be used, it is necessary to avoid any chance of vibration, and here again the earth is the best base. There is also great practical advantage in having as many of the rooms belonging to the same department as possible all on the same floor; and, without going through all the stages of the careful consideration given to the matter, I may state that there was absolutely no choice. No unoccupied land remained at the disposal of the Council on which a building supplying what was required could be erected, except a small part of the south quadrangle in the rear, and the space along the western or Gower Street front of the great front quadrangle.

The new physical laboratory, which however furnished only a small part of the accommodation needed for physics, was accordingly erected in the rear, and to the electrical and engineering laboratories part of the front space was allotted.

Designs were made providing for the largest amount of space compatible with retaining an adequate opening in the centre of the new front; and of these Mr. Brewer has been good enough to make two views (one of which is given in the illustration facing page 288), which give a general idea of what is contemplated. Very nearly the whole of one block occupying the southern half of the long frontage had to be commenced in order to afford as much ground-floor space

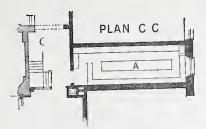
as was wanted; but, unfortunately, only part of the upper floors was called for at the time, and financial considerations absolutely prohibited anything more being done than it was essential to do, with the result that much of the building is temporarily roofed in as a one-storey building, so that externally the new laboratories look very unfinished indeed; but each of the departments actually constructed has been entirely completed internally, and has been, or is being, equipped in the most thorough manner down to the minutest points.

In the architectural treatment of the building the details of the original have been most scrupulously followed, and towards the quadrangle the original ordonnance is in every respect continued. Towards Gower Street some small variations of great practical utility have been made, the most considerable being the introduction of a third storey of openings along part of the front.

We now turn to the disposition of the laboratories as built [fig. 1]. The engineering laboratory consists of a building 98 feet by 50 feet internal measurement, with four small rooms cut off from it at the north end, and a large space for the steam-engine enclosed by a glass partition, the remainder being quite open and full of machinery and tools. The walls are lined with white glazed bricks. There is ample light. The laboratory is covered by a very light temporary roof of steel trusses, slated on boarding and felt, and with a sky-light. The floor is a wood-block floor on concrete, and where the lathes and other large tools come, blocks of cement concrete were put in to receive them. Cast-iron brackets to carry shafting were built into the walls, and gas, water, and electric light are laid on. is no basement under the laboratory, but one is formed under the buildings adjoining.

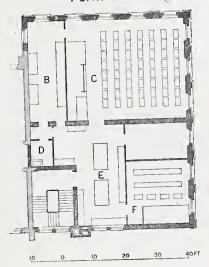
In this basement there is a forge, and at the basement level, but not under any part of the building (so as to avoid any possible risk to the fabric from explosions), is formed the vault for a boiler-house. Also in the basement, but extremely well lighted owing to a fall in the ground, is placed a large carpenters' shop, available for all the engineering students. In the basement there are also lavatories and a heating chamber. As the management and testing of the boiler is part of the training of the students, a spiral staircase connects the boiler-house directly to the laboratory.

On the first floor [fig. 2, BB], over the electrical department, a lecture theatre and a class-room and professor's private room are provided. The Professor of Graphics as well as the Professor of Engineering lectures here. Behind the lecture theatre a large diagram-room has been formed,



BASEMENT ELECTRICAL DEPARTMENT.
A, Accumulator-room.

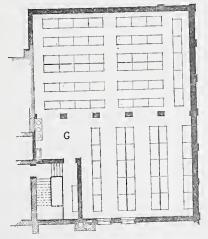
PLAN BB



FIRST FLOOR ENGINEERING DEPARTMENT.

B, Apparatus-room. C, Lecture-room. D. Photo-graphic developing room, with dark lobby. E, Museum. F, Lecture-room, with private room for Professor of Graphics.

PLAN A A



SECOND FLOOR ENGINEERING DEPARTMENT.
G, Engineering drawing-office, top-lighted.

FIG. 2.

and adjoining it is a dark room with a dark lobby for photography. A museum serves as ante-room to all these rooms, with the double advantage that no space is wasted in corridors, and that the students cannot help seeing the specimens as they pass to and from their lectures and classes.

The whole of the second or topmost floor [fig. 2, AA] is devoted to engineering-drawing, and graphics. My own architectural and constructional drawing classes, which the Carpenters' Company maintain, also meet three evenings in the week in this room. This studio, for such it is, is chiefly top-lighted, and provides a floor area of 3,140 feet super including the staircase, which it is fair to include if these figures are to be used as suggestive in other cases. Each student has a desk 5 feet 6 inches by 2 feet 8 inches, with a drawer for instruments and a stool for his own use, and 82 students are provided for, giving 38 feet per student for the space required in this department. A sink for washing palettes and three hand-basins are provided.

The total floor area provided in these buildings on all floors is 19,215 feet, and, assuming the number of engineering students (electrical and mechanical together) at 120, the floor space for each will stand at 160 feet. The mechanical engineering students, however, occupy more space owing to their drawing-room, and owing also to the ample floor required by their engines; and for each of them, assuming the number at 80, we have had to provide 182 feet of floor.

In the lecture theatres the seating is as follows: The floor is flat, which I personally consider undesirable in a lecture theatre, but which the professors who use it desired. The total floor area of the mechanical theatre is 1,181 feet, divided among 56 students, or 21 feet to each. In the electrical theatre, 1,120 feet among 54 students gives nearly 21 feet to each. The electrical theatre is not seated with separate benches, but the large floor area is occasioned in part by the large free gangway which is allowed all round the raised gallery. At the back this gangway is 8 feet wide, and affords room for a long working-bench under the windows, while the back of the gallery is adapted for the preparation of diagrams on a large scale. The gallery seats are 2 feet 6 inches from back to back, and each student has 24 inches of desk. In the physical theatre, to which I shall presently have to refer, the Professor desired to reserve a considerable space near the lecture table for models and apparatus. The total floor space is 1,166 feet, divided among 79 students, giving to each one $14\frac{1}{2}$ feet. It should be pointed out that in all these lecture theatres the rows of seats for students are straight, and not arranged amphitheatrically on plan. Experience shows that this answers best.

Returning now to the ground storey, I will describe the remainder—the southern half—of that floor [fig. 1]. This half is dedicated to electrical engineering. Here again, thanks to the good judgment of Professor Fleming, who knew exactly what provision he wanted, we have been able entirely to avoid corridors, except one short length of entrance corridor and lobby leading to the door of the engineering laboratory and to the staircase. Three divisions occupy the space: (1) The electrical laboratory at the south end, a large and very light room; (2) the lecture theatre, with its apparatus-room; and (3) the dynamo-room. It is quite true that the lecture theatre forms a passage room, but this arrangement the Professor deliberately adopted as consistent with the manner in which he would work his department, and it has helped in the elaboration of a very compact plan.

The laboratory is a large room measuring 50 feet by 32, having a dado of wood 6 feet high, and the walls above that level lined with gault bricks. In order to secure quietness and to keep out the dust the windows are double, and blinds which will completely shut out the light are fitted to them. Some difficulty was experienced in obtaining a material sufficiently opaque; but an admirably dense fabric was at last supplied by Messrs. Guynan, known as "opaque" cloth, and specially prepared for such purposes.

Strong and thick stone slabs for tables are built into each pier at about table height, and form steady tables to carry various measuring instruments. Similar slabs are provided in the north wall, and all windows have them in place of the usual window-board. This has been found to be an excellent way of obtaining a perfectly trustworthy support for delicate apparatus. Were the wall subject to vibration, of course this method would be useless, but the greater part of it is remote from the road, and even where it is parallel to Gower Street it does not seem at all affected by traffic—thanks, no doubt, to our having had to go down to a depth of considerably over 20 feet below the street-level in order to reach a sufficiently good foundation, and to our having an open area between the wall and the street extending downwards below the level of the basement floor.

Channels were constructed in the floor of this room, along which the leads of electric wire can be conducted to the spots where they are wanted, and in the walls composition bricks are built in at intervals, to enable any fittings which have to be secured to the walls to be readily fixed. An iron rail on wrought-iron brackets goes round the walls as near the top as possible, for hanging arc lamps. At the east end of this room is the photometric gallery, a long and narrow room, perfectly dark, and with the whole of the walls, ceiling and fittings painted a dead black, in which the intensity of various kinds of light is measured. A small photographic developing room is attached to this gallery.

graphic developing room is attached to this gallery.

The lecture theatre has an apparatus-room lit by electric light quite close to the lecturer's platform, and the channel for conveying wires to the laboratory passes absolutely under his table, so that any connections required for lecture purposes can be made with the utmost facility—indeed, the keynote of the whole disposition is that the Professor at his lecture table has his whole department round him and can literally touch the wires leading to and from everywhere. Even the darkening of the windows of his lecture-room can be done from the table.

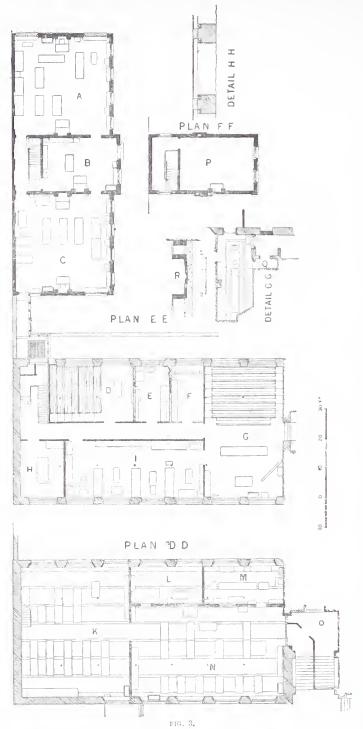
Adjoining is the dynamo-room, where the electricity is generated. Here a large pair of gates has been formed to admit of heavy machinery coming in and out. (It may be worth while to add that a similar provision is made in the engineering laboratory, but, for sufficient

Adjoining is the dynamo-room, where the electricity is generated. Here a large pair of gates has been formed to admit of heavy machinery coming in and out. (It may be worth while to add that a similar provision is made in the engineering laboratory, but, for sufficient reasons, in the east wall.) The floor of the dynamo-room is a most important part of the structure. It was not simply necessary to afford a good solid base for the gas-engine and the various dynamos, but it was also essential to have the means of moving the latter about, or changing them for machines of other construction; and above all was it essential so to construct the foundation that as little vibration as possible should pass into the other parts of the building, whatever the speed at which these engines were driven.

the building, whatever the speed at which these engines were driven.

After a good deal of consultation the following mode of construction was adopted. After excavating the solid earth to the required depth, a mass of 2 feet of Portland cement concrete was laid over the entire floor, with an extra depth for the bed of the gas engine; but it was prevented from touching the walls anywhere, a space of 2 inches being left clear all round, which was afterwards closely packed with slag wool. In this concrete were embedded the anchorplates of long holding-down bolts, and in order to secure the absolute accuracy of their position a skeleton template of the whole floor was prepared. By the help of these bolts a series of teak beams, each 6 inches by 4 inches, of a dovetailed section, was secured on the upper surface of the concrete 18 inches apart; the spaces between the teak beams were then filled in with granolithic cement slightly channelled on the surface, to assist in the running-off of water. A 6-inch channel is left almost all round the room for electric light mains, and is provided with a teak cover.

On the teak beams the engineers find fixing for their machinery, and can readily change its position if they need. The power from the gas engine is conveyed to the dynamos through shafting secured to the walls on iron brackets, but fortunately no vibration is occasioned by this



Plan D D, Basement Floor of Physical Department. K, Electrical laboratory; the detail G G adjoins this room. L, Balance-room. M, Work-room. X, General laboratory. o, Store-room. The steps adjoining lead up to general ground floor of College. Plan EF, Ground Floor of Physical Department. D, Class-room. E, Chemical-room. F, Stores. G, Lectune theatre. H, Professor's private room. 1, Apparatus-room. Plan F F, First Floor of Physical Department. A. B. c, P, Rooms used by advanced students. Detail G G, Accumulator-room adjoining basement. Q, Entrance to accumulator-room from use from area.

Detail R, Section through floor and benches of dynamo-room; this also applies to fig. 2, A.

Detail H H, Section through floor of basement.

arrangement, which allows of power being conveyed to the engine-room of the engineering laboratory, if needed. The usual throbs of a gas engine, which are often felt to long distances in a building, are also absent, partly because the engine itself is a good one, and partly because its exhaust is conducted into a silencing chamber constructed according to Professor Fleming's directions. This chamber consists of a cylindrical iron vessel partly sunk in the floor and filled with large stones, and appears to answer its purpose admirably.

The accumulator-room [fig. 2, ccl is an important part of an electrical installation, and as the storage batteries give off acrid fumes its ventilation is a matter of importance. It is placed in the basement, and is entered by double doors. We arranged to bring the chimney-flue from the furnace of the hot-water apparatus close to it; we carried up a separate air-flue with an inlet at the ceiling-level of the room to be ventilated, alongside of this furnace-flue, and, thanks to the fact that the flue is a high one, and to the stimulus which the draught in it receives from its neighbour, we have set up a very efficient outgoing current which carries off any unpleasant smells very briskly. A kind of stillage is formed of slabs of oiled slate laid upon half-brick continuous walls of blue brick in cement to carry the accumulators [fig. 3, R], and a floor with sufficient slope for water to run off freely is laid with blue bricks, and with channels of similar material. All the woodwork of this room is painted with anti-sulphuric enamel paint.

The staircase has been constructed with an open well-hole from bottom to top, and a girder has been thrown across it at the highest ceiling-level, so that experiments on long wires or cords may be carried out. It is constructed of Walker's artificial stone, and one of the steps, formed with a small steel joist as a core, was tested by building it into a solid wall and weighting it heavily at the end, and was subsequently destroyed by dropping heavy weights on to it from a height. Its endurance before cracking showed very considerable strength, and the stubbornness and tenacity which it exhibited after its first crack, and before it was finally destroyed, gave me a very high opinion of the value of this material for the landings and staircases of a public building. It may, perhaps, be well to take this opportunity of devoting a few words to an account of the other materials employed, though nothing unusual was attempted. The walls generally are executed in brickwork in cement, the bricks being Fletton bricks, faced with Portland stone, and they stand on Portland cement concrete. We sank a trial pit, and from the results it gave anticipated that we should have to go, chiefly through made earth, for more than 20 feet for a foundation, but fortunately in one part of the building an excellent bed of gravel was reached nearer the surface. Possibly this had elsewhere been dug out in early days. The roofs are slated. Fireproof construction was not judged necessary in the floors, which are carried on steel girders.

The works were let in three separate contracts; each, curiously enough, was gained in limited competition by a different firm. Messrs. Bush built the engineering block, Messrs. Brown, Son, & Bloomfield the new physical laboratory, and Messrs. Titmas & Sons altered the old buildings, and in each case the work was very satisfactory.

I now propose briefly to describe the provision made for the large department of physics. This consists partly of the old engineering laboratory, and the first-floor rooms and lecture theatre above it, all being altered and recast, and partly of a new building on the ground level connected to both floors of the adapted old building by a covered way, which has been already alluded to.

The chief interest to an architect of this part of the work lies in the degree in which it was possible to improve the lighting of what had hitherto been a dark—or at best a very unequally lighted—department. In several places it was possible to enlarge the window openings by lowering the sills. In most it was found possible largely to increase the access of light by splaying the window heads outside or the jambs inside, and as the walls are very thick a really remarkable increase of light was obtained. To a great extent the old walls were refaced with white glazed tiles instead of plaster, and where new walls were built they were faced with white glazed bricks, and the result of the two operations has been to secure an increase of light which adds to a remarkable extent to the serviceableness of the buildings.

The new laboratory is a simple brick building, with a few mouldings executed in moulded brick round the openings, and many windows. It contains on the ground storey [fig. 3, A, C, B] two large laboratories and a central room. On the first floor [fig. 3, P] there is one room and a photographic dark room completely fitted up. It may be noticed that a long stretch of space can be obtained against the rear wall by setting open the doors, and that a window occurs at the end of such space. This has been arranged to admit of experiments on rays of horizontal light of considerable length. All round the walls solid stone tables similar to those already described are built in, and gas is taken to every working table. The floor is solid, resting on the earth, and is happily remote from any causes of disturbance. The floor of a large laboratory in the basement storey of the old building is also practically a solid one, but formed specially, since the earth had been a good deal disturbed. Sleeper walls at a distance of 6 feet apart were carried from end to end of the laboratory, carrying stout stone curbs, the top of which is flush with ordinary wooden flooring [fig. 3, detail H H]. The working

tables are all constructed with legs of such a space apart as to rest on these curbs, while the students and assistants stand on the wooden flooring between, and in this way the steadiness of the tables is secured. The amount of floor space appropriated to the department of physics is 11,273 feet, of which 3,117 is in the new laboratory, and 8,156 in the adapted building. Out of this total of 11,273 feet of flooring no less than 6,813 is carried on the solid earth.

The heating of the new physical laboratory is carried out by means of the Falkirk Iron Company's controlled combustion stoves, and by open fireplaces in the smaller roon s. The rest of this department is heated from the low-pressure system which warms the college buildings generally. In the new wing it was decided to employ a "medium pressure" apparatus, and though my prejudices are not in favour of this method, I am bound to admit that the ease with which it can be introduced into every part of the building, and the large amount of heat which it throws out, are very much in its favour, and that those who make use of this department are satisfied with the results, the only complaint as yet being that the staircase and lobby are too hot.

All the three new departments are lit by electric light, and Professor Fleming has made all the arrangements for, and supervised the carrying out of, a very successful installation.

Having completed my account of the new buildings, there remain only the fittings, so far as the architect had to control them, which seem to require a brief notice. The fittings used

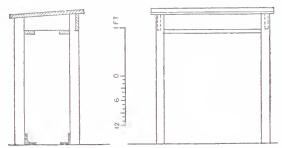


fig. 4.—students' desks in engineering lecture theatre, fig. 2, ϵ .

in the engineering department include some which are simple, and require no special description. The desks in the lecture theatre have been newly designed, and are arranged so that each student has a separate desk large enough to make small drawings in addition to taking the ordinary lecture notes, and are so spaced as to give the Professor ready means of supervising the drawings. The top of the desk is sloped [fig. 4], and measures 2 feet 6 inches by 1 foot 6 inches; under the top,

between the legs, a back and sides are framed, and to the bottom of the sides two laths are fixed, so that a recess is thus formed that will take a half imperial board. The cases for diagrams are arranged for storing them in rolls, and are 6 feet by 2 feet 6 inches in the clear and 6 feet high, with a door of the full width and height at each end. There are two ordinary shelves in the height, and in addition nine open shelves, each formed of four oak laths 3 inches by $\frac{5}{8}$ inch, fixed to the styles of the framed sides.

In the electrical department the fittings are almost entirely new. In the laboratory the work tables standing in the room are of a uniform size, the tops 6 feet by 2 feet 9 inches, to allow of combination if required. The work benches have tops of the same size, but are designed to stand against the walls, and have above the top a wooden skirting, and below the top each table has three deep drawers and three cupboards [fig. 5].

In the photometric gallery a railway is formed for moving the light to be tested; this is 22 feet long and is carried on fir bearers. The rails are 6 feet apart, and are formed of rails out of 8 inches by 2 inches, with 1 inch square ebonized mahogany strips glued and tongued on the upper edge, and the whole painted black. The distances representing candle-power up to 100 have since been calculated and painted on.

In the theatre the ordinary slate or blackboard has been replaced by one of plate glass, with a ground surface for drawing on, and backed with black cotton velvet. The lecturer's table in the electrical theatre is somewhat elaborate [fig. 6], and is specially arranged with a

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

INCORPORATED SEVENTH OF WILLIAM IV. AND FIFTIETH OF VICTORIA.

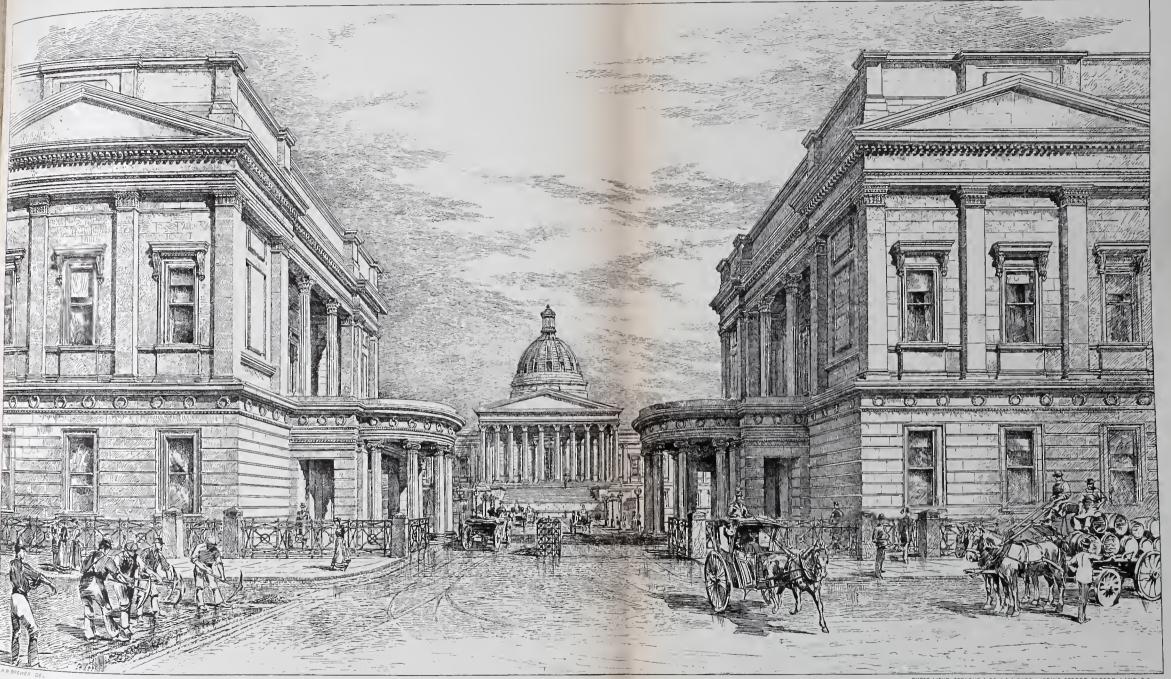


PHOTO-LITHO, SPRACUE & CO 4 & 3 EAST HARDING STREET FETTER, LANE E.C.



view to easily controlling the various currents obtained from the cells. In addition to four cupboards, two of which contain all the terminals, and the nest of drawers under the top, the centre portion is left quite open, and at each end a broad recess 8 inches deep is formed,

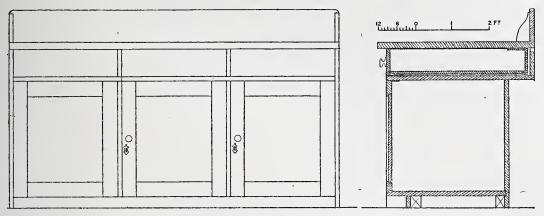


FIG. 5.—STUDENTS' WORKING BENCHES IN ELECTRICAL LABORATORY, FIG. 1, A.

The bench is arranged to stand against a wall, with space for hot-water pipes behind it.

and the cables from the accumulator-room, which is situated immediately below, are brought up and placed directly under the Professor's control.

The fittings of the physical laboratory are largely those already in use, or similar to them, and are slightly alluded to in Professor Carey Foster's Paper.

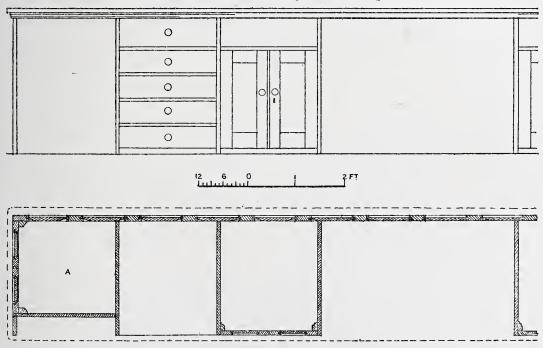


FIG. 6.—PLAN AND ELEVATION OF ONE HALF OF THE ELECTRICAL PROFESSOR'S LECTURE TABLE.

A, Cupboard receiving terminals; there is a similar cupboard at the opposite end.

In closing this account I should like to acknowledge the uniform and most valuable support and assistance rendered to me by the Chairman of the Building Committee, Sir Douglas Galton. Mr. Elsey Smith, though not nominally joint architect with me, was so

actually, and much of the detail of the undertaking was worked out by him. If, however, the buildings and fittings are adapted to their purpose, it is very largely due to the fact that, from first to last, we were in constant communication with the Professors who were actually working in the old quarters, and were to occupy the new. An architect so placed enjoys an advantage which when he is preparing competition designs from a printed programme drawn up by strangers is totally denied him, and I have in no instance in my practice been more sensible of the value of this sort of co-operation than in the present one, when I have worked in concert with my three colleagues, Professor Carey Foster, Professor Fleming, and Professor Beare, each of whom has kindly consented to give us some account of the special features of his own department.

T. Roger Smith.

THE MECHANICAL ENGINEERING DEPARTMENT.

MR. PRESIDENT AND GENTLEMEN,-

Mechanical Engineering Laboratory and Workshop.—This is practically one large room 98 feet 7 inches long, and 50 feet wide, covered by a single span roof, and therefore having top as well as side lighting, the light being perfect. At the north end are four small rooms divided off by wooden and glass partitions, used for the following purposes: Professor's private room, office, cement testing room, and chemical or calorimeter room; while the southwest corner is separated from the main laboratory by a glass partition and forms the engine-room.

- I. Cement Room.—This is fitted with two stone benches, on which the materials under test can be gauged, and afford space for six students to work at once; under these stone benches are shallow concrete tanks, in which specimens are placed for setting. There are also two strong wooden benches on which the rest of the apparatus in use is placed. The apparatus consists of forty moulds for tension and twelve for compression blocks, and all the usual gauging tools; also sets of sieves for fineness tests, and a testing machine of the standard German type with automatic shot run. It is intended to obtain Mr. Faija's apparatus for blowing test, and a few other small accessories, during the coming year. experiments are those usually carried out by students:—Tests for blowing, time of setting, fineness of grinding, weight, and the tensile and compressive strengths both of neat cement and of cement and sand. Regular series of tests are made to determine the laws of increase of strength of such briquettes with age, the value of fine grinding as shown in sand and cement tests, the proper proportion of water to be used, the effect on result of quickness of application of load, and, lastly, the relation of compressive and tensile strengths. All the tensile tests are made on the special machine, while the compressive tests are carried out on the large testing machine in the main laboratory. It is believed that by such a series of tests students acquire a thorough knowledge of the properties of cements and of the readiest means of ascertaining their quality.
- 2. Chemical Room.—This room is fitted with wooden benches, one of which, covered with a lead top, has a large lead sink fitted in it. The work carried out in this room falls under two heads: (a) Determination of calorific value of fuels; (b) Analysis of furnace and other waste gases. (a) Calorific Value of Fuels.—For this purpose a calorimeter is used in which combustion is supported by the use of a jet of pure oxygen. The calorimeter is of great accuracy, and is so constructed as to require very little correction for radiation losses; regular tests are made with it of the fuel used in all boiler trials, and of general samples of coal. (b) Analysis of Furnace Gases.—During all boiler trials samples of the waste gases are collected and volumetrically analysed in a simple fashion by absorption of the oxygen, carbonic acid, &c., thus enabling a complete heat account to be made out in any boiler trial.

3. Main Laboratory. The equipment of this room consists of machine tools and the testing plant. The following machine tools are those which have been usually adopted for college purposes, and examples of all occur in the laboratory—namely, lathes, drilling machines, planing machine, shaping machine, and milling machine; there are also cutters, grinders, grindstones, and emery-wheels. All the specimens of the materials used in the laboratory for testing are prepared in these machines; in addition a good deal of apparatus is made for lecture and demonstrative purposes, and also models of machine parts and The tools are used rather for purposes of instruction than for the actual mechanisms. teaching of handicraft, which must necessarily be afterwards or previously acquired during an actual pupilage or apprenticeship in an engineering workshop; still, as the above work is mostly carried out by students, they acquire a considerable amount of skill in the use of the The main shafting is carried by brackets bolted to the wall of the commoner machine tools. building, and the countershafting by two long beams supported on cast iron A frames, power being supplied by a Crossley gas-engine of the latest type.

Testing Plant.—(1) Large testing machine made by Messrs. Greenwood & Batley, of Leeds. This is of the horizontal type, capable of exerting a maximum pull of 100,000 lbs., and can be used for tension, compression, or bending tests. It is fitted with two pumps, the one for hand power used for small loads and for elastic tests, the other a power pump driven by the gas engine and used for heavier work. This latter pump does not deliver the water direct to the cylinder of the testing machine, but to an accumulator loaded to a pressure of one and a half ton per square inch. The water used in the test being drawn from this accumulator, an absolutely steady pressure on the ram of the testing machine is secured during any test free from all pump pulsations. All the valves are close to the hand wheel, which, by means of a pitch chain, runs the jockey weight out along the steelyard; the whole test is therefore under the control of one observer, the accumulator itself automatically throwing the pump belt off and on. The valves are also so arranged that if it is desired for any purpose, the accumulator can be cut off altogether, the pump then delivering straight to the cylinder of the testing machine. Extensometers are used with this machine for measuring the very small strains below the elastic limit; they mechanically exaggerate them 100 times, allowing an extension or compression of $\frac{1}{10000}$ of an inch to be measured. On this machine the students carry out elastic tests of all the materials commonly used by engineers; standard specimens are provided for the purpose, the same piece being subjected to each kind of strain; they are thus able to determine for themselves the values of the various coefficients of elasticity, and the relations which exist between them. They afterwards test to destruction similar specimens, generally prepared by themselves, making complete observations of the strains right up to the fracture point; all the data are afterwards plotted in the form of stress strain curves.

Among other experiments carried out on this machine which may be mentioned are series of tests to determine the laws for the variation of strength of struts with different proportions of length to diameter, and with different forms of ends; also another series to determine the best forms of cross sections of cast-iron beams; and the values of the ratio of the direct tensile strength of any material to its tensile strength as deduced from beam tests, or what Sir Benjamin Baker has called ϕ . On this machine also are carried out the compressive tests of cement and concrete cubes, of building stones, and of bricks and brick-work masses.

(2) Smaller Machines.—These machines were all made in the laboratory itself, and include a beam-testing machine for spans varying from 10 inches up to 50 inches, suitable for all small section beams, a torsion machine capable of testing up to $\frac{3}{4}$ -inch diameter, and a special machine for long struts. These are all fitted with special exaggerating strain-

measuring gears, and experiments similar in outline to those on the large machine are carried out. Among the smaller plant in this room may be mentioned, apparatus for testing indicator springs, for determining the friction in pulley blocks and lifting tackle generally, and for falling-weight tests of beams. A special feature is the provision of two large drawing-tables at which the results of all the experiments may be at once worked out and plotted under the supervision of the laboratory demonstrators.

Engine Room.—In this room will be placed the experimental engine now being constructed by Messrs. Plenty of Newbury, and delivery of which is daily expected. The engine is of marine type, compound inverted vertical, the cylinders being 6 inches and 12 inches in diameter with a 12-inch stroke. It is completely jacketed throughout, and can be tested with all or any of the jackets not in use. The speed can be raised from 50 to 300 revolutions a minute, and it can be worked as a coupled or non-coupled compound, or either cylinder independently, and in every case either condensing or non-condensing.

It is fitted with a surface condenser, the air pump for which is worked by a small independent engine. Thermometers and pressure-gauges are fitted throughout, and by means of special thermometers the temperatures of the cylinder walls at varying depths will be determined. All the necessary calibrated tanks for collecting the air-pump discharge, jacket water, &c., are placed alongside, the condensing water being measured both by meters and by discharging it over a weir. By means of this engine the students can practically study the working of the steam engine in every possible way, and deduce for themselves the various empirical laws which have been laid down; it is also hoped that research work of a very valuable character will be carried out on it, on the important point of initial cylinder condensation. Steam is supplied by means of a 20 horse-power boiler situated in an annexe; this is of the loco type, and is completely fitted for thorough tests of its efficiency and for the determination of boiler losses and the best means of reducing them. Joint or separate engine and boiler trials can thus be carried out. It should be mentioned here that the gas engine which supplies power to the laboratory is also fitted up for tests of its thermodynamic and mechanical efficiency. For this purpose the cooling tank is shut off, and the cooling water drawn straight from the main through a Kennedy water-meter; from the jacket it escapes to the drain, the temperatures of inlet and outlet being measured. The gas passes through a Standard meter made by Messrs. Wright, and can be very accurately determined. It is intended to fit up an apparatus by which the volume of air used can be ascertained, and also the temperature of the exhaust gases; by this means a complete heat account of any trial could be made out.

Hydraulic Apparatus.—In the engine room are fitted up the various tanks for hydraulic experiments. These involve experiments on flow of water over weirs, through various orifices, through pipes and along open channels, the discharge from all being led into carefully calibrated tanks, enabling the students to verify for themselves the formulæ usually adopted in calculation on flow of water, or even to deduce formulæ for themselves.

In addition to the apparatus described, the following plant will be put up in this laboratory during 1894:—(a) Complete plant for testing lubricating oils, and for experiments on journal and pivot and screw friction; (b) Apparatus for testing gauges and indicators by means of a mercury column.

Woodworking Shop.—This is situated in the basement, but is well lighted, as owing to the natural slope of the ground it is only partly basement. It contains at present seven benches affording room for twenty-eight students at once, also two lathes, and complete stocks of the ordinary hand tools. Each student has a set of the most useful hand tools, and for these he is responsible; no work except that sanctioned by the instructor is carried out, and, as far as possible, it is made a progressive course of instruction in woodworking with special bearing on

										ON ON	1		
U.C.L. Test	Marks on	Dimensions.			Began to crack.		1		_	_	_	_	REMARKS.
Number	Piece.	Breadth Ins.	Length Ins.	Area Sq. Ins.	Pounds. Sq. In.	Sq. Ft.	Sq. In.	Tons. Sq. Ft.					
1418		4.22	9.05	38.19	2140	137.6	2205	141.8				{	Broke up completely, yellow, some einder.
1419		4.23	9-17	38.79	1991	128.0	1991	128.0				{	Broke up completely, yellow, little einder.
1420		4.19	9.00	37:71	1923	123.7	2781	178.8				{	Cracked only at one corner at max. load; further cracks developed, and gradually spread all through brick. On removal from machine, it broke up.
												() ()	colour yellow, little einder. Much darker in colour, much
1421		4.15	9.05	37.56	2309	148.5	2309	148.5			•••	{	cinder, friable, broke up com- pletely.
No	te.—All we	ere prepai	ed for te	Means sting by		134·4 a thin 1	2321 layer of l	149·3 Plaster o	of Paris	on opposi	ite faces,	au 1 parin	g these smooth and parallel.
	Table 2.	Керо	RT (DAI	ED JUI	Y 28,		on Cru				UR FLET	rton Br	ICKS RECEIVED FROM
1518 {	Moulded L.B.C.	4.16	8.81	36.78	1370	88.1	1935	124.4				{	Broke up completely. Reddish- brown at outside. Blacker
1519	do. Marked	4.12	8.82	36.31	2201	141.5	2514	161.6					towards centre. ditto ditto
$1520 \left\{\rule{0mm}{3mm}\right.$	by steneil mark Flet- ton Brick Co., 16 Hol- born Via. P	4.12	8.38	34*52	2234	143.6	3059	196*6					ditto ditto
1521 {	do. W	4.20	8.82	37.94	2227	143.2	2767	177-8				{	ditto, but of a much redder tint throughout.
												,	unoughout.
	-			SEPT	putting EMBER	8, 189	92) on	Crushi	ING TES	STS OF		ECIMENS	g them smooth and parallel. s of Portland Stone,
	-	REPORT	DATEI	SEPTION SEPTIO	putting EMBER " CUBE Height	a thin 1 8, 189	layer of 1 02) ON CEIVED Cru	Plaster of Crushi FROM I shing Lo	MESSES.	STS OF	Two Si & Son.	PECIMENS Mean weight of	-
	ABLE 3.—	REPORT	(DATE	SEPTION SEPTIO	putting EMBER " CUBE	a thin 1 8, 189	layer of 1 02) on the ceived 1	Plaster of Crushi FROM I shing Lo	ing Tes Messrs.	STS OF	Two Si & Son.	PECIMENS	<u> </u>
T	13·5·92 C.W.M. Brown Portland	D Breadth. Ins.	DATE:	SEPTI 21 S. Area. Sq. Ins. 4.98	Putting EMBER "CUBE Height of Cube.	a thin 1 8, 189	layer of (2) ON CEIVED Cru Lbs. per Sq. In.	CRUSHI FROM I shing Lo Tons per sq.In.	MESSRS. rad. rons per Sq. Ft.	STS OF	Two Sr & Son. Density com- pared with Water.	Mean weight of 1 c. ft.	-
T	13·5·92 C.W.M. Brown	Breadth. Ins.	DATEI	sting by $\begin{array}{c} \text{SEPT:} \\ 2\frac{1}{4} \end{array}$ s. $\begin{array}{c} \text{Area.} \\ \text{Sq. Ins.} \end{array}$	putting EMBER " CUBE Height, of Cube.	a thin 1 8, 189 s, rec	Cru Lbs. per Sq. In. 6650 6336	CRUSHI FROM I shing Lo Tons per Sq. In.	Tes Messes. Pad. Tons per Sq. Ft. 427.4	STS OF BUSH	Two Si & Son. Density compared with Water.	Mean weight of 1 c. ft. in Ibs.	S OF PORTLAND STONE,
T	13·5·92 C.W.M. Brown Portland do.	Breadth. Ins. 2·23 2·23	imension Breadth. Ins. 2.23	sting by SEPT: 21 s. Area. Sq. Ins. 4.98 5.00	putting EMBER " CUBE Height of Cube. 2.23	a thin 18, 189 s, REC	2) ON SEIVED Cru Lbs. per Sq. In. 6650 6336 6493	CRUSHIFFROM I shing Lo Tons per Sq. In. 2.97 2.83 2.90 TS OF A	ros Tei Messrs. ad. Fons per Sq. Ft. 427·4 407·2 417·3	STS OF BUSH	Two SI & Son. Density compared with Water. 2.20 2.20	Mean weight of 1 e. ft. in 1bs.	S OF PORTLAND STONE,
T	13·5·92 C.W.M. Brown Portland do.	Breadth. Ins. 2·23 2·23	imension Breadth. Ins. 2.23	sting by SEPT: 21 s. Area. Sq. Ins. 4.98 5.00	putting EMBER " CUBE Height of Cube. 2.23	a thin 18, 189 s, REC	Cru Lbs. per Sq. In. 6650 6336 6493 ER TES	Plaster of CRUSHIF FROM I Shing Lo Tons per Sq. In. 2.97 2.83 2.90 TS OF A. BUS:	ros Tei Messrs. ad. Fons per Sq. Ft. 427·4 407·2 417·3	STS OF BUSH	Two Si & Son. & Son. Density compared with Water. 2-20 2-20	Mean weight of 1 e. ft. in 1bs.	FORTLAND STONE,
T 1525 {	13·5·92 C.W.M. Brown Portland do.	Breadth, Ins. 2-23 2-23 4.—RE	imension Breadth. Ins. 2.23	sting by SEPTI 2 1 s. Area. Sq. Ins. 4-98 5-00 TENS	putting EMBER " CUBE Height of Cube. 2.23	a thin 18, 189 s, REC	Lbs. per Sq. In. 6650 6336 6493 ER TES	Plaster of CRUSHIF FROM I Shing Lo Tons per Sq. In. 2.97 2.83 2.90 TS OF A. BUS:	Messes. ad. Fons per Sq. Ft. 427-4 407-2 417-3 A SAMPPH & Sc	LE OF 1	Two Si & Son. & Son. Density compared with water. 2-20 2-20	Mean weight of 1 e. ft. in 1bs.	Broke quite fairly.
T 1525 { 1526	13·5·92 C.W.M. Brown Portland do.	D Breadth. Ins. 2-23 2-23 4.—RE	DATEI imension Breadth. Ins. 2-23 2-25 PORT Of	sting by D SEPTI 2 1 s. Area. Sq. Ins. 4 98 5 00 N TENS	putting EMBER " CUBE Heigh, of Cube. 2-23 2-21 ILE ANI	a thin 18, 1892)	Auger of	Plaster of CRUSHI FROM I Shing Lo I Tons Per Sq. In. 2.97 2.83 2.90 Property of the CRUSHING SHING SHING	MESSRS. ad. Fons per Sq. Ft. 427-4 407-2 417-3 A SAMPH & Sc. Perceon a 50 m 14-0 TESTS	BUSH LE OF I	Two Si & Son. & Son. Density compared with Water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE PORE	Mean weight of 1 c. ft. in lbs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes
T 1525 { 1526	13·5·92 C.W.M. Brown Portland do.	D Breadth, Ins. 2-23 2-23 4.—RE	DATEI imension Breadth. Ins. 2-23 2-25 PORT Of	Sting by D SEPTI 2 1 s. Area. Sq. Ins. 4-98 5-00 N TENS EPTEME	putting EMBER "CUBE Height of Cube. 2:23 2:21 ILE ANI ER 8, : RECE	a thin 188, 1898, REC	Layer of 192) ON Cru Lbs. per Sq. In. 6650 6336 6493 ER TES: ESSRS. A Breakin in L per Sc. 452:1 ON CRU	CRUSHI FROM I shing Lo shing Lo shing Lo shing Lo shing Lo shing Lo co	MESSRS. ad. Fons per Sq. Ft. 427-4 407-2 417-3 A SAMPH & Sc. Perceon a 50 m 14-0 TESTS	BUSH LE OF I	Two Si & Son. & Son. Density compared with Water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE PORE	Mean weight of 1 c. ft. in lbs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes Some very small air-holes.
T 1525 { 1526	13·5·92 C.W.M. Brown Portland do.	D Breadth, Ins. 2-23 2-23 4.—RE Mea	DATEI imension Breadth. Ins. 2-23 2-25 PORT OF	SEPTEME	putting EMBER "CUBE Height of Cube. 2:23 2:21 ILE ANI ER 8, : RECE	a thin 18, 189 s, REC	Layer of 192) ON Cru Lbs. per Sq. In. 6650 6336 6493 ER TES: ESSRS. A Breaking Lyer Sc. 452-1 ON CRU FROM M Breaking Pounds.	Plaster of CRUSHI FROM I shing Lo I shing Lesses.	MESSRS. ad. Fons per Sq. Ft. 427-4 407-2 417-3 A SAMPH & Sc. Perceon a 50 m 14-0 TESTS	BUSH LE OF I	Two Si & Son. & Son. Density compared with Water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE PORE	Mean weight of 1 c. ft. in lbs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes Some very small air-holes.
T 1525 { 1526 }	13·5·92 C.W.M. Brown Portland do.	Breadth. 2-23 2-23 4.—RE Mea A PORT (D Breadth.	DATEI imension Breadth. Ins. 2·23 2·25 PORT Of n of six tage 7 day ATED S imensions Breadth.	sting by D SEPTI 2 1 s. Area. Area.	putting EMBER " CUBE Height, of Cube. 2:23 2:21 ILE ANI ER 8, RECE Began to Pounds.	a thin 18, 189 s, REC	layer of 192) ON 1921 VED 1921	Plaster of CRUSHI FROM I shing Lo I shing Lesses.	MESSRS. ad. Fons per Sq. Ft. 427-4 407-2 417-3 A SAMPH & Sc. Perceon a 50 m 14-0 TESTS	BUSH LE OF I	Two Si & Son. & Son. Density compared with Water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE PORE	Mean weight of 1 c. ft. in lbs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes Some very small air-holes. CEMENT CONCRETE BLOCKS Broke quite fairly, good sound concrete, apparently grave and eement.
T 1525 { 1526	13·5·92 C.W.M. Brown Portland do. Table	Breadth. 2·23 2·23 4.—RE Mea	DATEI imension Breadth. Ins. 2·23 2·25 PORT Of an of six tage 7 day ATED S imensions Breadth. Ins.	sting by D SEPTI 2 1 s. Area. Sq. Ins. 4 98 5 00 N TENS EPTEME Area. Sq. Ins.	putting EMBER " CUBE Height, of Cube. 2:23 2:21 ILE ANI ER 8, RECE Began to Pounds. Sq. Ins.	a thin 18, 1892, IVED 1 crack.	layer of 192) on Cru Lbs. per Sq. In. 6650 6336 6493 ER TES: ESSRS. A Breakin in L per Sc. 452-1 ON CRU FROM M Breakin Pounds. Sq. Ins.	Plaster of CRUSHI FROM I Shing Lo	Messes. Messes. 427.4 407.2 417.3 A Sample on a 50 m 14.0 Tests A. Bu	LE OF DON. Fineness ntages retest on the SH & S	Two Si & Son. Density compared with water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE POISON.	Mean weight of 1 c. ft. in Ibs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes Some very small air-holes. CEMENT CONCRETE BLOCKS Broke quite fairly, good sound concrete, apparently grave and eement. Broke quite fairly, good sound mixture, apparently loam and eement.
T 1525 { 1526 }	13·5·92 C.W.M. Brown Portland do. TABLE	Deport (Deport	DATEI imension Breadth. 2·23 2·25 PORT Of n of six tage 7 day ATED S imensions Breadth. 7·60	sting by SEPTI 21 s. Area. Sq. Ins. 4·98 5·00 N TENS EPTEME s. Area. Sq. Ins. 24·9	putting EMBER "CUBE Height of Cube. 2:23 2:21 ILE ANI ER 8, RECE Began to Pounds. 1735 1134 1102	a thin 18, 1892, IVED 1 crack.	layer of 192) ON CFUVED Cru Lbs. per Sq. In. 6650 6336 6493 ER TES: ESSRS. A Breaking in L per Sc 452-1 ON CRU FROM M Breaking Pounds. Sq. Ins.	Plaster of CRUSHI FROM I Shing Load 12-90 FS OF A BUSING LOAD SHING (ESSRS. g Load Tons. Sq. Ft.	Messes. Messes. 427.4 407.2 417.3 A Sample on a 50 m 14.0 Tests A. Bu	BUSH LE OF D. Fineness mages reach on a service of This service serv	Two Si & Son. Density compared with Water. 2-20 2-20 PORTLAN tained a 75 mesh 22-0 REE POISON.	Mean weight of 1 c. ft. in lbs. 137-6 D CEME	Broke quite fairly. Broke quite fairly. Time of setting 100 minutes Some very small air-holes. CEMENT CONCRETE BLOCKS Broke quite fairly, good sound concrete, apparently grave and eement. Broke quite fairly, good sound mixture, apparently loam and

^{*} See reference to Tables on p. 294,

the lecture-work. It is intended to provide in addition to the present tools a saw-bench and band-saw machine, and to put up some shafting, power to be supplied by a small electric motor worked off the current supplied by the Vestry.

Forge.—This is also in the basement, next the boiler house, and contains a convenient-sized forge, anvil, and all the usual smith's tools. It is almost entirely used for work in connection with the making of laboratory apparatus and for tool-making.

Drawing Office.—Occupies whole of upper floor; each student is provided with a separate drawing-table fitted with lock-up drawer. There are one hundred of these. This room is open for work all day, instruction being given during the afternoons.

Lecture Theatre, Museum, &c.—The former provides seating accommodation for sixty students, each one having a small table supplied with drawing-board and T-square; demonstrations can thus, if necessary, be given, during which the students draw accurately to scale the diagrams and constructions worked out on the black-board by the lecture. The lecture-table has gas and water laid on for experimental purposes. Behind the theatre is a room for the preparation of experiments, and for the storage of models, lecture apparatus and diagrams, and also a dark room for photographic work. The museum forms an ante-room to the lecture theatre; it has wall-cases all round in which are exhibited models of important mechanism, of various link works, valve gears, machine parts, &c., and two centre show cases for the exhibition of typical fractured specimens of instruments such as indicators, integrators, &c., of specimens of engineering materials, and of various electric cables, insulators, &c.

It may be mentioned here that during the erection of the building, tests were made in these laboratories of the various materials used by the contractors; the details of these tests are given in Tables 1 to 5 [p. 293]. The general results are as follows:—

Table 1.—Crushing Tests of 4 London Stock Bricks
Began to crack at a load of 134.4 tons per sq. foot.
Crushed up ,, ,, 149.3 ,, ,, ,,
Table 2.—Crushing Tests of 4 Fletton Bricks
Began to crack at a load of 129.1 tons per sq. foot
Crushed up ,, ,, 165.1 ,, ,, ,,

Table 3.—Crushing Tests of two $2\frac{1}{4}$ " cubes of Portland stone Crushing load 417.3 tons per sq. foot

Table 4.--Tensile tests of Portland cement
Strength after 7 days 452·1 lbs. per sq. inch
Table 5.--Crushing Tests of 3 Portland cement concrete
blocks: Mean crushing strength 92·7 tons per sq. foot.

T. HUDSON BEARE.

THE ELECTRICAL ENGINEERING DEPARTMENT.

Mr. President and Gentlemen,—

HE portion of the new buildings allotted for the purpose of teaching electrical engineering consists of six rooms, in all of which the interior arrangements have been carefully designed for this purpose. The four principal rooms open into one another. These are the dynamo-room, the lecture theatre, the apparatus-room, and the electrical laboratory. The general arrangement of the building permitted the dynamo-room floor to be placed on solid ground, and thus secured the possibility of making both floor and machine foundations of great steadiness. This dynamo-room is 31 feet long and 22 feet wide, built in white glazed brick. The plant placed in the dynamo-room consists in the first place of a nine horse-power nominal Otto-Crossley gas engine, capable of working up to 19 indicated horse-power. This engine is fitted with all the most recent improvements. It is bedded on a slab of Yorkshire stone resting on the concrete foundation floor, 24 inches in thickness, which is carried over the whole room. In this concrete floor all the pipe trenches are formed, and these last are lined with brick and covered with the usual cast-iron chequer plates. The engine is provided with the latest pattern of self-starting arrangement adopted by Messrs. Crossley Brothers. This contrivance consists simply of a massive cast-iron chamber, into which a charge of gas and air is pumped by an auxiliary hand-pump. If the

engine is stopped, so that the crank is on the middle of the top stroke, it suffices to fire the compressed charge at a touch-hole to start the engine even under full load. This arrangement is as simple as it is effective, and not the slightest difficulty has ever been experienced in starting the engine with it. The engine is provided with two very massive flywheels, to secure steady running, and the crank shaft carries outside the left-hand wheel a Mather and Platt clutch pulley 60 inches in diameter, and on the right-hand side a 36-inch pulley for driving on to a counter-shaft. From the Mather and Platt clutch pulley is driven by a belt a Crompton continuous current six unit dynamo, which is employed exclusively for charging the secondary battery. This clutch pulley permits the charging dynamo to be thrown into and out of action whilst the engine is running. The engine is provided with a double service of cylinder cooling water: one service being brought from two wrought-iron tanks placed on an elevated platform in one corner of the engine-room, and the other service comes direct from the water supply mains of the building, and is taken through a water meter. The water circulating through the cylinder jacket from the continuous supply is carried away by a funnel into the main drain. The temperature of the in-coming and out-going water can be taken with thermometers, and the quantity of water which circulates is registered by the meter. Hence the number of units of heat removed from the cylinder becomes known. gas for the engine is taken direct from the street mains, through a separate gas meter. indicating gear fixed to the engine operates a new form of high-speed indicator by Elliott Brothers, which gives a particularly good card on gas engines. It will be thus seen, then, that all arrangements have been provided for making a technical study of the gas engine itself as a prime motor.

The whole of the gas engine plant and engine work has been supplied by Messrs. Crossley Brothers, of London and Manchester, who have carried out the work entrusted to them in the best possible manner in accordance with the designs of the Professor of Electrical Engineering. Against one wall of the dynamo-room is fixed a series of cast-iron brackets, which carry a two-inch steel counter-shaft. This counter-shaft is driven by a belt from the right-hand drum of the engine, at a speed of 280 revolutions per minute. This counter-shaft carries a fast and loose driving-pulley with belt shifting gear. The shaft is cut in the centre and provided with a clutch-gear and two driving-pulleys, one on each side of the clutch. These pulleys are connected by belts with the two pulleys of a Kummer dead weight transmission dynamometer, placed on the floor in line with them. When this clutch is open and the gas engine is driving on to one half of the counter-shaft from the drum, the other half of the counter-shaft can be driven either direct or through the transmission dynamometer, and a measurement made of the power thus being given to that half of the shaft, and from which any dynamo or dynamos may be driven. The counter-shaft is supported upon ball-bearings which are carried on wrought-iron brackets built into the 14-inch wall set in cement which carries them.

Returning, then, to the construction of the dynamo-room floor, it has already been mentioned that this consists of a concrete floor 24 inches in thickness. This concrete is finished 2 inches from the wall all round the room, and slag wool packed into the interspace. On the concrete are laid, 18 inches apart, teak beams 6 inches deep by 4 inches wide. These beams are held down by 24-inch holding-down bolts, which pass right through the concrete, and are terminated in anchor plates at the bottom. The space between the beams is then filled in with granolithic cement. The cement is cupped out between the beams, and given a slight cant towards a main drain running down the room formed in the cement. By this means oil or water spilt on the floor is easily got rid of and the floor kept dry. The floor has proved itself to be so satisfactory that no sensible vibration is propagated up the building when the engines and dynamos are at work; and delicate electrical instruments can be used in the

room when the engine is in operation. The silencing-chamber of the gas engine is placed in a pit in one corner of the room, and is air-jacketed to keep the temperature of the room down. The engine discharges into an exhaust pipe carried up a brick chase in one corner of the room, and then through the roof.

Turning next to the dynamo-plant, this consists, in the first place, of a Crompton continuous current dynamo, giving an output of 45 amperes at 140 volts. This dynamo is driven direct from the Mather and Platt pulley of the dynamo. The duty of this dynamo is to provide the charging current of the secondary battery. The electromotive force of this machine is regulated by a variable resistance placed in the circuit of its field magnets, whilst an automatic cut-out is placed in the main circuit to prevent the charge of the cells from coming back into the dynamo. In addition to this dynamo, the room contains a very useful and excellently designed motor-alternator plant, by Messrs. Johnson and Phillips. This machine consists of four independent dynamos bolted down on to one common cast-iron bed-plate 10 feet in length. Each half of the machine comprises a direct current motor, which is directly coupled to a Kapp alternator, each dynamo being of 5 horse-power, or capable of an output of 3,500 watts. Each coupled motor-alternator has a pulley with a flange on it, and the machines are so set on the bed-plate that the pulley flanges are in close contiguity with each other, but do not quite touch. The flanges can, if need be, be coupled by two bolts so as to unite the two halves of the shaft into one, and make all four dynamos drive together as one machine. With this compound motor alternator it is possible to carry out an immense range of instructional work. Thus, either motor can be driven by the current from the secondary batteries, and will drive its own coupled alternator. Hence, by properly exciting the fields of the motor and alternator, an alternating current is furnished by the alternator of any required frequency and electromotive force within certain limits. The two halves of the plant can be driven together or separately, and the alternating currents delivered by the alternators may be put in any relative difference of phase by properly uniting the pulley flanges with the coupling bolts. As an illustration of the work which may be done with this plant in teaching, besides employing it for the generation of either continuous or alternating currents, we may point out that the following experimental work can be carried out.

1. Either plant may be run separately by a belt from pulleys on the counter-shaft, and will produce from the alternator an alternating current of 100 volts or 150 volts, according as the fields are arranged, the current being 35 amperes, and from the continuous current machines a continuous current of 35 amperes and 100 volts or less.

2. By coupling the shafts rigidly together they may be run as one plant, and either the currents or potentials of the two similar machines added together, thus giving continuous or alternating currents of 35 amperes at 200 volts, or 70 amperes at 100 volts.

3. Either of the continuous current machines can be run as a motor by current from the secondary battery, which is charged by the Crompton dynamo. By regulating resistances the speed may be regulated within wide limits. In this way alternating currents of various frequencies can be drawn off from the alternators either separately or running as one machine.

4. The two separate plants may be coupled together by the bolts through the respective pulley flanges, so that the alternating currents given by the two alternators are in any relative phase. They may be coupled together so as to give the effect of a two-phase generator, with the alternating currents 90° different in phase.

5. Efficiency tests can be made on the combination either of continuous and alternating current machines or of two similar machines.

6. The alternators can be run in parallel, each being driven by its own separate motor, and the conditions of parallel working thus explored.

In addition to these dynamos there is also a small $\frac{1}{2}$ horse-power continuous current Crompton dynamo, a 2 horse-power Westinghouse alternator, and a small Stanley direct current motor for experimental purposes. On a spare set of slide rails any dynamo can be bolted down for test, and driven from the counter-shaft or by a continuous current motor. It will thus be seen that the dynamo-room is provided with plant for teaching thoroughly and practically the testing of dynamos. The walls of the dynamo-room are occupied with the switches and resistances for operating these dynamos and motors. There is, in the first place, a resistance frame which acts as a standard power absorber. This consists of eighty wires of Hadfield's manganese-steel each 25 feet long, stretched up and down one side of the room over porcelain insulators. The wires can be joined in parallel as required by a set of special switches. When so arranged, their resistance is capable of dissipating a power of 8,000 watts, or about 11 horse-power. This is used for taking up the power of dynamo machines under test. Other resistances are provided for starting the continuous current motors, for varying the fields of the alternators and continuous current machines. The dynamo-room is well lit by a skylight roof, warmed by hot-water pipes, and provided with gas, water, and electric incandescent lighting. A small vice-bench under the window enables all small repairs to be done on the spot.

The dynamo-room opens into the lecture theatre, which is 32 feet wide and 35 feet long. On a platform is placed a lecture table, 20 feet in length. To the back of this platform are brought the electric mains from the dynamo-room. These are laid in covered chases on the floor, and all this cable work has been carried out with the highest quality of india-rubber covered cable laid in white wood casing, and no joints are made in any position under the floors. The cables from the dynamo-room conducting the current from the various machines all terminate in lock-up cupboards at each end of the lecture table, and thence proceed to a main switch-board at the back of the lecture table.

The battery charging current from the Crompton dynamo is brought through an ammeter and voltmeter to a main battery switch-board, and thence it is distributed to the secondary battery in the room beneath. From this switch-board a main runs all round the laboratories, distributing at various points as required continuous current at a pressure of 100 volts. The currents from the two alternators are brought to the lecture table, one to one end and the other to the other. Experiments with two-phase currents can thus be shown. The arrangements for charging and discharging the secondary battery are conveniently to hand, and the instruments show at a glance what current is going into the battery and what is coming out of it. In front of the lecture table is a raised gallery of seats capable of seating sixty students. At the back of this gallery, in a space 8 feet wide under the windows, is a long work-bench fitted with vices, at which instrument making and other similar metaland wood-work is carried out. The lecture-room is well lighted by pendant incandescent electric lamps, and the switch-board for controlling the supply of the lighting current, which comes from the St. Paneras Electric Lighting Station, is placed at the back of the lecture table.

At the end of the lecture table is a specially designed vertical electric lantern, for projection work. This is operated by a Brokie arc lamp with inclined carbons. The arrangement has been so worked out that not only lantern slides but any apparatus capable of projection can be immediately shown on a 10-foot screen by simply switching on the arc lamp. The lecture-room can be darkened in a few seconds by pulling up dark blinds over the three windows which light the room. These blinds are pulled up by cords, which are brought over the ceiling to the back of the lecture table. Every arrangement has been made for quickly and readily enabling any experiment to be shown which requires the optical lantern to exhibit

it. At the sides of the room and at the back of the lecture table are suitable screens for carrying diagrams and plans.

The electrical laboratory opens out of the lecture-room. This is a room 50 feet long and 32 feet wide. In order to secure quietness and to keep out the dust, the room has been built with double windows, the outer ones being ordinary sashes, and the inner ones French windows. Black blinds are provided, so as to darken each window when required. All round the room a series of stout stone slabs are let into the wall at a height of 4 feet above the floor, between the windows. These stone slabs are intended as steady tables to carry various measuring instruments. It is found by experience that it is better to arrange the steady tables in this way than to build them up as brick pedestals through the floor of the room, because advantage is then taken of the greater steadiness of the footings of the main walls, and the central portion of the room is kept clear. Across and around the floor of the laboratory chases are left, covered in by floor boards, in which electrical mains are carried, and these terminate in lock-up switch and fuze boxes in various parts of the room. At one end of the laboratory is a long photometric gallery, 30 feet long, 10 feet high, and 6 feet wide. In this gallery is placed the photometer and various apparatus required in testing are and incandescent lamps. One end of this gallery is formed into a small dark room for photographic purposes.

Around the room are placed a series of strong tables having drawers and cupboards, and each of these tables is provided with electric currents from the mains, and with a special circuit for working the incandescent lamps required by the galvanometers. In the centre of this room numerous other tables are arranged for special work. On the stone steady slabs are placed all the standard electrical instruments, and the general principle has been adopted of having each particular piece of apparatus required for each special electrical measurement set up and arranged so that it is never disturbed, and is always ready at a moment's notice for use and experiments. One side of the room is devoted to the current weighing instruments and standard voltmeters. The laboratory is provided with a very fine set of Lord Kelvin's standard electrical balances and electrostatic voltmeters. These balances are checked by weighing the copper deposit produced in a voltmeter in circuit with them, and for this purpose an Œrtling chemical balance has been specially built, and which is a remarkably fine instrument. On other tables are set up the apparatus for the measurement of resistances, insulation tests, magnetic induction, electrical capacity and potential, and as these permanent pieces of apparatus are never disturbed, a great economy of time is effected in setting up and taking down apparatus. In addition to the above, the experimental apparatus is provided for complete tests of alternating current transformers and other alternating current appliances.

Beneath the lecture-room is a large accumulator-room built in white glazed brick. On stone shelves round the room are placed fifty-four cells of a Crompton-Howell battery. This battery has a storage capacity of 200 ampere-hours, and will discharge at the rate of 100 amperes. The current from the battery is laid on to all the working benches of the laboratory.

It will thus be seen that every facility has been provided for giving instruction in electro-technical work and also for original research. Although other laboratories may be larger in room space, few are better provided with the appliances for research, and the great care with which all the details have been considered has resulted in providing the most convenient and expeditious methods of carrying out the work intended to be done in the laboratory.

The general plan of the laboratory, of having all the rooms opening one into another, is an immense convenience, and saves much time. The arrangement of apparatus in permanent groups for special measurement effects also a great economy in time, as apparatus once set up is not unnecessarily disturbed. The care with which the heating and ventilation have been considered, as well as the universal adoption of the electric light, has made these laboratories exceedingly comfortable to work in. The rooms are all excellently lighted. Although the laboratory stands in a main street, yet no difficulty has yet been found to arise from vibration. The stone steady shelves let into the main walls provide all that is necessary in the way of support for the instruments which must be kept steady.

Besides the above rooms, a diagram- and model-room, apparatus-room, and professor's private room are included. The apparatus-room opens into the lecture-room close to the lecture table. The apparatus-room is well provided with dust-tight apparatus cases and cupboards for the laboratory apparatus. Access is obtained to the accumulator-room when required by a cellar-flap door opening out of the lecture-room, and through this opening any cells can be hoisted up or let down which are required for examination.

In the arrangement of electric mains and in the installation of the electric lighting work only the highest class of material was allowed to be employed. The electric lighting work has been admirably carried out by Messrs. Belshaw & Co., under the specification of the Professor of Electrical Engineering; the gas engine and engineering work generally by Messrs. Crossley Bros.; the accumulator and dynamo plants by Messrs. Crompton & Co.; and the motoralternator plant by Messrs. Johnson & Phillips.

The electrical fittings, switch-boards, fuzes, switches, casing, wire, and other accessories were supplied by the Edison-Swan United Electric Light Company and the General Electric Company, and no expense has been spared to make the equipment of the laboratory as complete as possible, and to place University College, London, as far as possible in the front rank in the provision of means for teaching the principles of the important subject of electrical engineering.

J. A. Fleming.

THE PHYSICAL DEPARTMENT.

Mr. President and Gentlemen,-

N order to explain the purposes that had to be kept in view in dealing with the space allotted to this Department, it will be well to give a short outline of the courses of instruction in Physics at present given in the College, so as to indicate the various wants that had to be provided for.

From our present point of view these courses may be conveniently divided into those which are carried on in the lecture-room and those carried on in the laboratory. The former consist of (1) two courses of lectures on Theoretical Mechanics, one very elementary and the other rather more advanced, both with experimental illustrations; (2) a general course of (about ninety-five) experimental lectures on the main branches of Physics, including Heat, Electricity, Magnetism, Light, and Sound; (3) a more advanced course (of about 140 lectures) on the same subjects (this course is mainly mathematical, but in part also experimental); (3) a short course, given twice in the year, of about twenty experimental lectures specially intended for medical students. In all, some twelve or fourteen lecture-room classes are held every week. To accommodate these, two lecture-rooms are provided. They are marked in the plan "Lecture Theatre" and "Class Room" respectively [page 286]. The former is seated for about eighty students, and the latter for about forty-five. Both these rooms can be readily darkened for showing optical experiments or for lantern demonstrations. In the larger room a space about seven feet square on the wall behind the lecture table is painted a dead white to serve as a lantern-screen. In this room also an oxyhydrogen light or an electricare light can be used whenever either is wanted, and electric currents up to thirty amperes

can be drawn from a secondary battery of forty-four large cells. In both rooms the lecture tables are, of course, supplied with gas and water.

On the same floor as the lecture-rooms, and opening directly out of the principal one, is the Apparatus Room, fitted with seven large glass cases for keeping the apparatus used at lectures. Although there are two doors into this room, it is not intended that it should ever be made a thoroughfare. A storeroom is provided for keeping such necessary matters as can be more properly classed as material than as apparatus. There is also a small chemical laboratory, where the operations frequently required in order to prepare substances for experiment can be carried on out of the way of the physical instruments.

The laboratory instruction is of two kinds—first, class-work for elementary students; secondly, the individual work of those who are more advanced. The basement of the central wing of the main building is principally devoted to the more elementary laboratory-work, and a separate building, measuring about eighty-five feet by thirty-two, is used as the senior laboratory. This is connected with the main building by a glazed covered way.

At present, all students of the general elementary course of Experimental Physics are expected, besides attending three lectures a week during the College Session, to attend one hour a week for working numerical exercises on the subjects of the lectures, and an hour and a half for practical laboratory work. For this last part of the work the class is divided into three divisions, the members of which attend on specified days in the room marked "General Laboratory" on the Basement plan [p. 286]. This room is arranged with sixteen working places for two students each, each working place affording table-room measuring 6 feet by 2 feet 9 inches, and being supplied with gas. Water is laid on at two sinks, but not at the working tables.

There is room for thirty-two students to work together, but I have not yet ventured to have more than twenty-four at once. This number, working two together, all make the same experiments at once. These experiments consist almost exclusively of simple measuring operations, and it has been needful in some cases to devise special forms of apparatus capable of being multiplied sufficiently to supply the whole class at a moderate cost.

With regard to the fittings and general arrangements of the room, there is very little to say, these having been kept as simple as possible. Almost the only thing calling for remark is the way in which the tables are supported on sleeper-walls capped with flat stone slabs, 12 inches wide and 6 feet from centre to centre, as has been already described in the account of the buildings. The tables are of deal, stoutly made, and stiffened by diagonal braces between the legs. They measure 6 feet by 2 feet 9 inches, and are 3 feet high. They stride across from one sleeper-wall to the next, two feet being on each. They are thus solidly supported, and afford all the steadiness requisite for ordinary operations.

Another room in the basement is arranged as a Junior Electrical Laboratory, and at present it will probably be chiefly used for a course of instruction in Electrical Measurements, intended specially for students who are afterwards to enter Professor Fleming's courses of Electrical Engineering.

The advanced laboratory consists of four rooms, two of them measuring 32 feet 9 inches by 30 feet 9 inches, and the others 24 feet by 16 feet. These are contained in a separate building, which is so planned that, if at any future time it is found desirable, it can be divided into a series of five rooms on the ground floor, each measuring 24 feet by 16 feet, and one room of the same size above; or the upper floor can, if needful, be extended over the whole.

Here, again, there is but little to mention in the way of special fittings. Everything has been purposely kept as simple as possible; for in the case of a science that is advancing so

rapidly as Physics, and the educational requirements of which are undergoing such rapid development, any complicated arrangements planned for special purposes are liable before very long to drop out of use, and are then more likely to prove impediments than helps. Gas and water must be at hand, and above all things steady supports are essential. In respect of this last requirement, the situation of the laboratory, near the south-east boundary of the College ground, is decidedly favourable.

There is no heavy traffic within a considerable distance of the buildings, and, for a site in the heart of London, the soil is fairly free from tremors. The special precautions taken with a view to steadiness are as follows:—The floor is formed of wooden blocks laid directly on a bed of concrete 6 inches thick; stone slabs project from the walls in various places to serve as supports for instruments; short wooden beams are built into the walls near the roof, and serve as firm points of support for anything that has to be suspended from above; lastly, breeze bricks are let into the (unplastered) walls at intervals, both horizontally and vertically, of 2 feet from centre to centre. These bricks will hold nails and screws as firmly as wood, and by means of them a firm attachment to the wall can be obtained at any time without plugging or risk of loosening the brick-work.

The rooms in the main building are lighted throughout by incandescent electric lamps, the current being obtained from the St. Pancras Parish mains. G. Carey Foster.

DISCUSSION OF THE FOREGOING PAPERS.

Mr. P. GORDON SMITH [F.] said, without attempting to discuss the details of the Papers they had listened to, he could not but admire the skill with which Professor Roger Smith had concentrated so much useful accommodation on so confined a site. He had succeeded, he thought, in producing a splendid set of laboratory offices. Professor Roger Smith had expressed his own conviction that a flat floor for a lecture theatre was not altogether the best, but that his colleagues in the undertaking preferred it. He (the speaker) had no doubt they had got just the right arrangement; but he could not help sympathising with what the Professor felt, namely, that for demonstrations at a lecture table, the conditions, perhaps old-fashioned, seemed to point to an arrangement by which the audience would be raised so that they might have a better view of what was going on at the table; and view of what was going on at the table; and he should like to hear the views of the Professors bearing upon that point. On behalf of the Science Standing Committee, of which he had the lionour to be Chairman, he would propose a vote of thanks to Professor Roger Smith for his valuable Paper, and also to Professors Beare, Fleming, and Carey Foster for their appended Papers. The material which had been placed on record in the Journal would, he was sure, be of extreme value to many architects who would be called upon from time to time to design the various technical schools and centres of education which were being promoted throughout the country.

Professor KERR [F.] seconded the vote of thanks, and said that the Paper which had been read, and the illustrations which accompanied it,

showed in a very striking manner what had to be done in the way of complicated arrangements by architects nowadays under special circumstances. Professor Roger Smith and his distinguished colleagues had to all appearance produced an exceedingly complete and serviceable design in every respect. From what he knew of some of them personally, and of the others by name, he should have expected that they would have accomplished that result—he would not say with ease, because it was no easy matter-but certainly with such facility as attached to scientific work done secundum artem. To follow out anything like a discussion of the details of the arrangement was, as Mr. Gordon Smith had said, impossible. But they, as architects, must see that this was but one of many illustrations of the necessity for carefully considering the internal economy of their buildings. Some of them were old enough to remember the time when buildings of the kind described would have been designed in a very classical manner, and constructed in a very substantial manner, and the Professors of the several departments would then have been allowed to settle down in them, and to do as they best could. But that state of things was no longer tolerable, and he presumed that Professor Roger Smith's colleagues had personally been allowed to instruct the architect in all the minutiæ of their paraphernalia, and that he had to accommodate himself to the requirements for those minutiæ without any excuse for aberration or shortcoming. With regard to architecture nowadays in its practical form, they must all of them remember, and especially the young men, that the public in a practical country like theirs,

and fast becoming more than practical by the absolute necessities of science, art, and other considerations, would require an architecture of the utmost possible skill as regards internal organisation. He thought, therefore, that the illustration which had been afforded them of the painstaking care with which the organisation had been accomplished was a most important thing; and although probably they would not be able to conduct a lengthened discussion upon such a subject, yet he hoped they would hear some observations from Professor Carey Foster and others skilled in such matters, so as to encourage architects in putting their shoulders to the wheel to assist them when occasion required in producing absolutely perfect results in respect of the internal organisation of

buildings. PROFESSOR UNWIN, F.R.S. [H.A.], said that the exceedingly modest and interesting Papers which had been read, relating to so very necessary and important a work, were so explicit that they did not invite much discussion. One could not but congratulate University College that, having been in past times, as was often quite justifiably said, the pioneer in some branches of scientific education, it had now brought its engineering school and equipment up to a level with some other more modern institutions which had grown up in the last dozen years. For the first time in this country there was established an engineering laboratory in connection with the engineering school, and it was a very meritorious achievement. It might, perhaps, be of use, by way of comparison with the figures given of the space required by the laboratory of an engineering school, to shortly give two or three figures from the Central Technical College in Kensington. They had there altogether two hundred students, but they were divided into three distinct divisions, and he supposed in the engineering department by itself they had not more than eighty regular students—about the same number as University College. They had there an area for the carpenter's shop of about 1,000 square feet; for the workshop, laboratory, and boiler-room they had altogether 7,000 square feet; for the drawing office about 2,400; for the class-rooms a little over 1,500; and for the lecture theatre, in addition to that, about 1,500 square feet. Those were rather larger areas than at University College, but not greatly so—the electrical department there, he supposed. occupied at least as large a space, and probably larger. It was almost a defect, he thought, that, in regard to the equipment of engineering schools, the laboratories were getting almost too much of an identical form; it would have been almost preferable if in different laboratories certain special directions of plan had been a little more specialised. In the engineering laboratory design he did not note anything which was not very much in common with almost every modern

engineering laboratory. But there was one point raised in the Papers on which, as it dealt with the equipment of an engineering school, he might say a word. In the arrangement of the equipment of the school at University College he thought the workshop took rather too subordinate a place. He had been teaching engineering now for twenty-five years, and he supposed that twentyfive years ago no one was less favourable than he was to the attachment to the engineering school, not, indeed, of a laboratory, but of a workshop. Experience during those years had taught him that the workshop was a very important part of any modern engineering school; and in coming to that view he believed he was in accord with the universal experience in America, where the schools, on the whole, were very much better equipped than in England, and where, universally, the workshop in the college took an important place. In the first engineering school in which he had taught the students were six months in the dockyard workshops and six months in the scientific school, and a better arrangement than that it was hardly possible to imagine; but it was not an arrangement which it was practicable to adopt in ordinary cases. If they had not that sandwich arrangement of work and scientific instruction, then they must do one of two things: the workshop must be taken before they come to college, or they must go to the workshop after having been at college, unless there was a workshop at the college. If the work was taken before coming to college, his experience was that the student who had been for some three years doing practical work in engineering had so lost the habit of study—the kind of study, he meant, necessary to college—had so lost the power of application in mathematics, that they could never do with him what they would like to do with any good student; he had got rusty in the kind of work which went on in college. If the workshop, therefore, was not taken first, and if a lad came straight from school to college, and if they gave him no practice with tools, a great deal of the engineering instruction went over his head. At the Central Technical College a definite regular course of workshop instruction was given; they did not give a very large amount of time to it—he did not think, on the whole, it amounted to more than four and a half hours per week-but he did find that, with that limited amount of instruction, the lads got ideas and the power of understanding the meaning of the lecturer, which they did not get in any other way. He therefore attached a great deal of importance to the workshop. Professor Beare had told them in his Paper that the lads in his laboratory did use the tools, apparently in preparing specimens for testing, and so on. That was good, so far as it went. He did not pretend to any infallibility in the matter, but his own experience rather led him to think

that that kind of work was not particularly instructive; that if they were going to use the workshop in the college, and not to give up more time than they could well afford to workshop instruction, then the workshop should be a course by itself—that it should follow a more methodical and graduated arrangement, and that the preparation for testing should be left to the ordinary workman—it was rather too monotonous for the ordinary student. However, he was merely expressing his individual opinion for what it was worth, after some years of technical teaching. He congratulated University College very much indeed that, having begun with a laboratory, it had now proceeded to enlarge and improve its

laboratory until it had got so good a one.

Mr. H. H. STATHAM [F.] said that theirs was an architectural society, and he thought the evening ought not to pass over without something being said from the architectural point of view also. It seemed to be entirely forgotten that the Professors of University College were in possession of a building, by an eminent architect, which was one of the ornaments of London. They had heard no reference whatever made to what was the original design for that building, or as to the extent to which that design had been considered, except the one remark that the internal ordinance of the quadrangle had been carried out. But he did not believe that Wilkins ever intended that internal ordinance to be carried round the Gower Street side at all. He had challenged the Professors of University College to produce evidence of it, and he had got no answer; but there was in the library of the Institute a small old-fashioned engraving which was marked as the "Design accepted by the Committee "of University College," and although it was a very poor little thing, as they now called architectural drawings, he thought it easy to see what was Wilkins's intention from that drawing with regard to the building. The two side wings, the North and South Wings, were ultimately to be brought up to the street; they were to be connected by a low ambulatory of one storey—that was omitted from the drawing for the sake of clearness, but it could be seen by the plan what was meant—and the fronts of the street were not to be treated with flat pilasters like those shown in the drawing, which were even flatter in execution than there illustrated; the front was to be broken, the centre part brought out, and the upper portion to be a portico of four columns, standing free. It would appear, then, obvious to every architect that Wilkins's idea was that those porticoes were to be a kind of echo or balance of the centre portico. He was not so bigoted as to say that, when the College wanted more room inevitably for their workshops, they were not to consider that first; no doubt they were bound · to do so; but he thought a little more attempt might have been made to carry out what he con-

ceived to have been Wilkins's design, and that, at all events, they might have heard some reference to that point, and some regret that it should have been necessary to spoil the work of an eminent architect, and to deprive that part of London, which had few attractions, of one of its beauties, and of an open space which they could ill spare. He confessed he should have felt a little more kindly towards the College authorities if they had been more straightforward in the matter. On the day when the laboratories were opened, his old acquaintance Mr. Horsburgh, the Secretary, told all the reporters that it was quite wrong to suppose that they were going to close the quadrangle or blot out the dome—that there would be a space of 100 feet in the centre. As several of the Professors of the College were present at that Meeting, he should like to ask from whom that remarkable statement emanated. Of course, the daily paper reporter swallowed everything that was told him; but he (the speaker) went and looked at the place, and saw at a glance that there could not be half that space. He himself had had it measured that day, so as to be quite certain, and he should like to ask their attention to one or two little figures. On the plan which was to be published in the Journal [see illustration facing page 288] by the scale the length of the Gower Street front when completed was to be 213 feet. He had measured it carefully, and up to the centre from the corner to the central axis it was 237 feet; that left 24 feet on each side of the centre—that is to say, the magnificent opening in the view was 48 feet from one corner to the other. He thought they could not accept that view as exactly representing the facts, and he therefore wanted to know why the public were informed that there was going to be 100 feet opening. There was something else beyond that. The semicircular porches on the plan which was to be published in the Journal projected 21 feet beyond the main line of building. That together left just 6 feet between them. [The speaker here produced a block plan of his own, which he said showed exactly how it would work out.] He did not think there could be any view of the cupola like that shown in the drawing, which he thought was a delusive view, and he would like to know, unless it was proved to the contrary, whether the Council really meant to include that as an illustration in their JOURNAL, because his opinion was that they would be misleading their readers if they did. At all events, he wished to put the general proposition that the building by Wilkins was a great possession, was a very valuable and remarkable building, and he thought it was being treated without sufficient regard to its original architectural design, and that the illustration referred to did not show correctly what was to be carried out.

MR. R. ELSEY SMITH [A.] said that, as he was working in conjunction with his father in the matter, and had had to do with the measurements of the building, he would like to answer Mr. Statham's statement on that fact. He thought that he knew how Mr. Statham had been led into the error, because he had assumed, what he (the speaker) had always assumed, that the centre of the two porches which formed the entrance to the College was in the same centre line as the centre line of the portico. That was not the case; there was a difference of 10 feet [see the speaker's note at end of Discussion] between the axis line of the portico and the axis line of the present gateway of the College; and 10 feet on either side of the centre line threw an extra 20 feet into the space that Mr. Statham had described as so narrow. There was not, of course, 100 feet between the two, and it was never intended that there should be; and how anyone came to make that statement he could not answer. But, as a matter of fact, the drawing referred to had been set up by Mr. Brewer from actual measurements as the whole dimensions of the front had been set out, and Mr. Brewer had sufficient reputation, he thought, for them to consider his drawing as accurate. He thought he could explain how easy it was to make such an error in the measurement of the front. No one from looking at it in the street would detect that the axis of the present gateway was not on the axis of the great centre portico; it was natural to assume that it was; but, as a matter of fact, from careful measurement of the whole of the central area, he might state that it was not the case.

Mr. STATHAM [F.] said that the gate was shown central with the axis on the large scale ordnance map, which he compared with the building, and it was easy to see when one was on the axis by standing opposite, on the other side of Gower Street, and getting the position in which the cupola stood symmetrically over the columns—which he did—and he was quite certain that the gate was not 10 feet away from the axis, nor

anything like it.

MR. WILLIAM WOODWARD [A.] said that such questions of measurement were, of course, questions of fact, and it seemed very extraordinary that Mr. Statham should go to the building and make the error which, according to Mr. Elsey Smith, he must have made to account for the difference of 10 feet. But, apart from that, Mr. Statham's criticism appeared to be based upon the fact that Professor Roger Smith had not done what Wilkins intended should be done with his building. He (the speaker) had not the slightest doubt that, had Wilkins been commissioned to erect laboratories in the latter part of the nineteenth century, with the contracted site that he had to deal with, he would have had to place those laboratories somewhere; and if Mr. Statham

would for a moment direct his thoughts to Oxford, he would find that, however beautiful the dome and portico of University College were, they would not be hidden from view even by the contracted dimensions in front that he referred to. According to the block plan, they had only to enter into the quadrangle and admire to their hearts' content Wilkins's beautiful work. Therefore he could not see that the slightest blame attached to Professor Roger Smith for having dealt with the exigencies which the latter part of the nineteenth century demanded, and which Wilkins had nothing whatever to do with when he designed University College. Mr. Statham had not criticised the architecture of the new building at all; he had not ventured to criticise Professor Roger Smith's addition to University College. The front to Gower Street, if he might be permitted to say so, was a plain, straightforward classic front, showing due regard, even in its smallest detail, to the original design of Wilkins. Therefore Professor Roger Smith, having been commissioned to erect the buildings, and having a site which he could not enlarge, had satisfactorily got over the difficulty, and they would have in Gower Street what they had in Oxford—a proper collegiate quadrangle.

Professor CAPPER said that in taking part in the discussion he must apologise for doing so, not as an architect, but as an engineer. He had had the privilege of being a student at University College under Professor Kennedy, when he was professor there, and he took great pleasure in putting upon record the immense amount that he owed to the study which he carried on there under the Professor's system of laboratory teaching. All who were teaching engineering looked up to University College, and to Professor Kennedy, as being the pioneer in the present system of laboratory instruction for engineering students. He (the speaker) was at present connected with what used to be considered as a rival institution, but which was really a friendly co-operative institution— King's College. The arrangement there was somewhat intermediate between the state that Professor Unwin suggested and the one which Professor Beare had upheld in his arrangement of the laboratory. He thought he was right in stating that King's College was the first to systematically organise the workshop training for engineering students which Professor Unwin had adopted, and with his views he entirely agreed. It had been his (the speaker's) endeavour to so modify the teaching there as to make the workshops preparatory and complementary to a laboratory such as that described. He had at present a very wellequipped laboratory, which had about 2,500 feet of superficial area, in addition to carpenters' shops and workshops which took up over 3,000 feet more. Unfortunately the buildings that he was using at present were not specially adapted for the purpose in hand; they were more or less in the same

state as regards accommodation that the laboratory at University College was in before the change was made. Schemes were on foot to bring about what he hoped would be a counterpart to the laboratory described, and that, he thought, together with University College, would stimulate in London-as Professor Unwin's teaching at the Central Institution had stimulated—high scientific instruction for engineers. As to workshops, he entirely endorsed what Professor Unwin had said. If they did not get a student who had been in the workshop through actual factory training, it was almost essential that something should be done to give him facility in the use of his fingers before he could profit by experimental training, and, secondly, to give him some acquaintance with the practical working of the tools, machines, &c., which one had to refer to in one's lectures. He had had a number of students who had previously been through the factory, and here and there he found one who had kept up his habits of study, and consequently could be taught in a very efficient manner. But these were exceptional cases. It was practically very difficult to do so. And therefore, as it was impossible to sandwich factory and college, at any rate in London, the greater number of students wisely came straight from school to college. For such it was essential to provide systematic practical instruction of a limited kind, not in any sense to replace factory training, but to enable them to comprehend what one was lecturing about; and it was this principle that he had followed.

 M_R . C. FORSTER HAYWARD, F.S.A. [F.], referred to the way in which Professor Roger Smith had constructed his laboratory and some of the details connected with it, and said that he had himself had some experience in such matters, and he knew the difficulties of working the details in an architectural building. As an old schoolboy of University College, he was thoroughly acquainted with the building before any wings were added, and he must be allowed to condole with his friend Professor Roger Smith in having had put upon him the necessity of blocking out the delightful view of the dome and the building of University College. He must feel, as all of them felt, that, whatever the exigencies of the case, it was a misfortune to lose the view of such a delightful object of architecture, which was evidently designed by Wilkins to be seen from Gower Street. Even the Professors of University College ought to have thought very seriously over the matter before they took that space of ground. Would it not have been possible to pull down one or two houses at the back, where the laboratories were, and to have added a series of laboratories all connected together, all connected with the theatres, all connected in one way in the most central position? This, he thought, would have been much better for the purpose

than bringing the laboratory to the front of Gower Street, where there was considerable traffic. For his part, he should ever regret—as all those who as schoolboys had grown up to love the buildings of University College would regret—not only as an architect but in every other sense of the word, that they should appear to be doomed to lose the delightful view of the quadrangle. A quadrangle to be worth anything must be very much deeper than the new buildings allowed, and it should have a very much wider opening than anything there provided. No doubt the exigencies of the case, as Mr. Woodward had said, would have compelled Wilkins to have done something; but he thought he would have he liestated before he built out quite so much as appeared to be intended to be built out. Was it not quite possible to save a considerable piece by finishing the building in a different way from that designed—finishing it as it now was, and not putting another storey on the Physical Laboratory? It was quite possible, he submitted, to design it in such a way that the dome itself, from a distance at any rate, would not be hidden out; and there was no reason, so far as he could see, why it should not be finished with the walls as they now were. Professor Roger Smith, he was sure, could do it much more effectually architecturally than the way in which it appeared likely to be carried out if he had the backing up of the Council of University College. He hoped that they would reconsider the matter, and remember that they were the custodians of a very fine and handsome building, which was never intended to be so built out, and that they would actually be destroying a very important part of the architecture of London if they carried out the plan proposed. It would be quite possible, he was sure, to purchase some of the houses at the back of the College and to add more there if necessary. Why not, at any rate, purchase those three or four houses in Gower Street on the righthand side, and open out the school playground a little more? He knew it was quite on the cards that the school itself might be removed elsewhere, and so more room would be gained to build on that site than appeared on the plan.

Professor CAREY FOSTER said that he personally was under a great debt of gratitude to Professor Roger Smith and to Mr. Elsey Smith for the extremely great trouble they had taken in their efforts to meet his views in the planning of the Physical Department of the College in every detail that presented itself. The matter was not altogether a straightforward one, from the peculiarities of the buildings they had to deal with—he meant the adaptation of the pre-existing buildings. The new part was straightforward enough; it was a fresh start, and they could do what they liked, so far as the site went; but on one side they were dealing with an existing building which was divided into definite units of length.

Windows, as shown there, appeared at rather close intervals, and the piers between them could not be interfered with in any way, as they carried the whole weight of the superincumbent block. And not only was there that limited possibility of dealing with the space, but there were also iron columns supporting the floor above, which also to a considerable extent limited the possibility of dealing at will with the space. They had to divide the floor in consideration of those fixed points. But he thought the result had been that University College now possessed as good a physical laboratory, taking it on the whole, as any similar institution in the country, and was well adapted for the purpose. Complicated arrangements were avoided as far as possible, so that the plan might be left elastic, and any new requirements might be met as they grew up from time to time.

PROFESSOR HUDSON BEARE wished to add his testimony to that of Professor Carey Foster as to the very great debt of gratitude they owed to Professor Roger Smith and Mr. Elsey Smith for the way in which they had carried out their views and desires in the new buildings. On the limited ground to which they were tied down, it was no easy matter to scheme provision for all their requirements, and it was entirely owing to the extreme care taken by Professor Roger Smith that the result had been so satisfactory. He had been in occupation of his floor since last October, and he had found it meet his requirements in every point; and if Professor Fleming had been able to be present he would have said the same They were delighted with the whole place; it was convenient for work, well lighted, well heated, and remarkably free from noise, considering that it stood on a street open to a large amount of traffic. Owing to the double windows and the substantial nature of the whole structure, they were not incommoded in the least by the noise of the traffic. In his own laboratory on the ground floor he could not hear the street noises in the day at all. In the first-floor lecture-theatre the noise of the traffic was heard, but not sufficiently to impede lecturer or students attending. A question was asked as to the floor of the theatre on the first floor being a flat floor and not raised. It was done at his own desire and that of Professor Pearson, who lectured there. Nothing was shown practically in the way of experiments; it was very largely models and blackboard work, and for that purpose it was not so essential that the pupils should be on raised benches. The lecturer's platform being raised considerably above the floor level, the blackboard was in full view of the students, and there was no difficulty even in the back benches in seeing everything that was going on. It was done partly to gain more accommodation, and partly that they might get about among the students during demonstrations

and exercise class-work, and it was found very satisfactory. There was one point of very considerable importance, not merely to engineering laboratories, but to all buildings at the present day where machinery and plant which are likely to cause vibration are to be placed in buildings used by other people, and that was the method adopted of cutting off the vibrations from the walls. It was the method adopted in the dynamo-room and also in his own engine-room. The whole of the concrete of the floor was separated from the main walls, the space being filled in. He had to lecture on the floor above, and, though the 90 horse-power gas-engine in Professor Fleming's dynamo was running constantly all day, there was not the slightest vibration, although the shafting was attached to the wall, which just joined the wall of the main building. He himself could not tell whether the machine was running or not; the silencing chamber was most effectual in deadening the noise. With reference to the teaching of students in laboratories and workshops, he knew that Professor Unwin had had a wide and varied experience in teaching engineering; he deservedly held probably the premier rank in teaching engineering; and therefore his opinion was one worthy of attention by everybody. To a certain extent, he (the speaker) agreed with what had been stated. He did not mean by the paragraph on page 291 that they did not attempt to teach handicraft. They did do that, but only to a limited extent, because all their students invariably passed from them into the workshop afterwards, and served an apprenticeship, or had come from the workshop, and their time was so taken up with lectures and laboratory work and drawing work that it was difficult to find spare time. What little time they had he had taken up for that very purpose of handicraft work-not in his old laboratory, but in the new laboratories he had made that new departure, and as time went on he hoped to increase it. He had not found, however, that students who came from workshops were so unsatisfactory as Professor Unwin said they were. One or two of the best students who had left University College had been students who had already served an apprenticeship in factories and workshops; and they were the most satisfactory students, because in the factory and workshop they had learnt the value of time, and the necessity of taking advantage of every opportunity put before them. Young lads who came straight from the restraints and discipline of school into the freedom of a college such as University College very often failed to do so, and their college course was not as satisfactory and useful to them as it might have been if they had learnt by previous experience, in the practical work of life, the value of taking advantage of all their opportunities.

THE PRESIDENT said it was extremely satisfactory to hear, upon the authority of the learned

professors who had made use of the buildings since their erection, that they answered admirably the purposes for which they were designed. The architectural question was, of course, one which must interest architects, and could not fail to do so. The facts brought forward by Mr. Statham certainly appeared to be very circumstantial. He was not a man, he thought, who was likely to make statements of the kind without having carefully satisfied himself as to their accuracy; at the same time he could scarcely think it credible that any architect of experience or repute would so set out additions to a very important public building as to produce the result that the buildings on either side of what was intended to be a wide central opening should be within six feet of touching each other. He could scarcely believe that credible, and no doubt the result would prove that some error had crept in to account for it. With regard to the façade itself, if it had been possible he confessed he should have liked it had the opening in question been more of the proportions indicated, he supposed in error, by Mr. Statham's informant. If it had been 100 feet instead of 50 feet wide they would all, no doubt, have been pleased. At the same time, it was fair to remember that the circumstances in the days of Wilkins, when the building was designed, were very different indeed from the circumstances of the last stage of the nineteenth century; and had Wilkins for one moment conceived what the century would have produced, possibly he might have indicated a very different completion to his building from that which he thought of. In any case, the pressure put upon Professor Roger Smith to obtain the accommodation was, no doubt, very severe, and he hoped he would receive in good part the slight criticism he (the President) had ventured to make; indeed, he had little doubt but that it received his full architectural sympathy.

Professor T. ROGER SMITH [F.] acknowledged the vote, and wished very cordially to thank his colleagues who were using the new buildings for the kind way in which they had testified to the fact that they found themselves comfortable. He thought that was very much due to the fact that they knew what they wanted, and were able to give the necessary advice and the necessary instruction, and were willing to take any amount of trouble until the thing was got as right as it could be got. One point upon which he was rather strong was on the question of the sloping floor; and he had an experimental proof, because the class-room in which he had lectured himself for years used to have a raised floor, and within the last few months the College had judged it expedient to flatten his floor, to suit the views of the gentlemen who taught geometrical drawing on a flat floor, and he found the room far less comfortable to speak in on two grounds—first, he could not command the students so thoroughly

as he could when those in the rear were rising a little above the heads of those in front; and, secondly, it was a far less pleasant room to speak On both grounds—because the lecturer could see his audience, and because the wall opposite to him was screened by the audience and the echo was lost, which even in a small room was often occasioned by a wall directly facing him—the sloping arrangement of seats was, in his opinion, desirable in any lecture-room and any class-room. As to the architectural question, when he (the speaker) rather designedly made the subject a technical paper only—it was arranged with the Science Standing Committee—it appeared to him that if the work he had to do had any claim to be considered, it was because science pursuits were assuming great proportions, and he might be able to furnish a certain amount of information which might be useful to his colleagues as to what was necessary in any well-equipped scientific laboratory, and he kept to that text. He felt that the responsibility of dealing with a building with the architectural claims that University College had was very great; but, when the undertaking was started, several gentlemen, members of the Building Committee, were Oxford and Cambridge men, and their wish was to enclose the quadrangle entirely, and they quoted the case of several colleges in each of those Universities which were magnificent buildings, and the beauty of which was not seen until the quadrangle was entered. He thought that a building which was entirely a quadrangle had a dignity and nobility which a three-sided building open to the street had not; and he was not at all sure that University College would not have gained rather than lost if, supposing the building to be carried out entirely, it had been enclosed. At the same time, he had fought rather hard for the retention of the centre opening, and what had been arranged was the result of a compromise. He should not have the smallest objection, if he ever had the honour of completing the building, but should be only too glad that the gap should be wider than was shown upon the plan; and, as Mr. Hayward had pointed out, there was no difficulty in the building being finished at the point where it now ended. But he entirely disclaimed the imputation that they had spoiled the building by shutting it in. A quadrangle was a very natural feature of a building-of a collegiate building especially—and a three-sided building did not, strictly speaking, possess a quadrangle; and in many points of view the quadrangle, as it was at present, had a comparatively incomplete look. He quite admitted that from Gower Street the splendid portico and steps were now better seen than they would be when the building was completed like the design on the walls; but the demands for accommodation had been imperious and were imperious; and he believed that at no very distant time it would be necessary to

carry out practically the design illustrated in the drawings. If Mr. Statham would stand between the two porches and look at the Hospital, he would find that the centre of the Hospital was not then opposite to him. [Mr. Statham was understood to say that he had noticed it.] The Hospital was, no doubt, set out exactly opposite to University College, and it was a striking thing, when attention had once been drawn to it, that the centre doorway of the Hospital did not face one when one stood between the two porches, which was a rough way of recognising that what Mr. Elsey Smith had said was correct. In conclusion, he would say that he admired Mr. Statham for the interest the latter took in what was one of the architectural beauties of London; and if Mr. Statham had been led to push his view rather harder than he should have wished him to push it, at the same time he quite recognised that there were but few men who had any zeal for architecture, and still fewer who were in the position which Mr. Statham enjoyed of being able to say a word in season which would be heard by the whole of the public with regard to architectural buildings. He therefore acknowledged that the duty fell upon Mr. Statham, more perhaps than it did upon most people, to be a jealous guardian of their architecture at large, and he recognised that The Builder had, in countless instances, done good service in that respect.



Mr. R. ELSEY SMITH [4.], referring to the figures given in his remarks [p. 304], has forwarded a correction as follows:—

I have since referred to the drawing from recollection of which I spoke, and find that the distance there shown between the axial line of the centre of the pediment is five feet, not ten, as I stated from memory.

Mr. H. H. STATHAM [F.] has forwarded a note as an addendum to his remarks [p. 303] as follows:—

With reference to Professor Roger Smith's remark about the doorway of University Hospital in his reply, allow me to say that he is mistaken if he supposes that the door of the Hospital is central with the College buildings. A glance at the Ordnance map might have shown him the contrary; and if he stands on the middle of the step of the Hospital doorway, and looks at the College, he will see the apex of the cupola perceptibly to the left of the apex of the pediment, showing that he is on the left of the axial line.



CHRONICLE.

THE INTERMEDIATE EXAMINATION.

At the General Meeting of the 26th ult. the President announced that an Intermediate Examination to qualify for registration as Student had been held at the Institute on the 20th, 21st, and 22nd ult.; and that of the 38 Probationers who applied, there had been admitted 36, of whom 35 presented themselves and were examined. Twentyone had passed, twelve had been relegated in three, four, or five separate subjects, and two in all subjects. The President further stated that the majority of those relegated had failed on subjects II. and IV.: namely, "The Several "Varieties of Classic Ornament," and "The "characteristic Mouldings and Ornament of each "Period," in which accuracy of delineation is indispensable. He was of opinion, from information he had received from the Board of Examiners, that no one need feel disappointed by being relegated; on the contrary, experience showed that it was of the greatest possible advantage to students that they should be relegated, because they thereby had an opportunity of making themselves much more familiar with the subjects in which they had failed than they were before. The twenty-one, placed by the Board of Examiners in order of merit, are :-

INNOCENT: Charles Frederick; 18, Wellesley Road, Sheffield [Master: Mr. C. J. Innocent*].

THOMSON: George; 20, Lyddon Terrace, Leeds [Masters: Messrs. Perkin* & Bulmer*].

HUNT: John; 18, Dorset Square, N.W. [Master: Mr. F. W. Hunt*].

CHAPMAN: Henry Ascough; 52, Newborough, Scarborough [Master: Mr. J. C. Petch].

BLOW: Percival Cherry; St. Peter's Street, St. Albans, Herts [Master: Mr. A. H. Tiltman*].

OWEN: Richard Herbert; 293, Clapham Road, S.W. [Masters: Messrs. Jennings* & Bucknall].

NELSON: Clement Osmund; 16, Scarsdale Terrace, Kensington, W. [Master: Mr. J. Butler].
PRICE: Llewelyn Bankes, B.A. Oxon.; 64, Cannon

Street, E.C. [Master: Mr. Charles Henman*].

OWEN: Segar; Newholme, Grappenhall, nr. Warring-

ton [Master: Mr. W. Owen*].
DEVALL: George Harry; St. Elmo, City Road, Birmingham [Master: Mr. Alfred Long].

SHEPHERD: Herbert; 37, Larkfield, Richmond, Surrey | Master: Mr. John Scott].

HILL: Richard Henry Ernest; 3, Lombard Court, Lombard Street, E.C. [Master: Mr. R. H. Hill*].

HARRIS: Charles William; 96, Durning Road, Edge Lane, Liverpool [Master: Mr. H. Hartley*].

POTTS: Henry Miller; 13, Windsor Terrace, Newcastleon-Tyne [Master: Mr. Joseph Potts].

GRAYSON: George Hastwell, B.A. Cantab.; c/o Messrs. Willink & Thicknesse, 14, Castle Street, Liverpool [Masters: Messrs. Willink* & Thicknesse].

HARRISON: Arthur; 99, High Street, Stockton-on-Tees [Masters: Messrs. Wetherill & Whipham]. NEWMAN: Percival Corney; 33, Cologne Road, New Wandsworth, S.W. [Master: Mr. G. Hamilton

Gordon*].

MOSLEY: Wilfrid Rowland; 4, Clarendon Place, Leeds [Masters: Messrs. Chorley* & Connon*].

ALDRIDGE: Ernest Charles; Central Buildings, North John Street, Liverpool [Master: Mr. C. Aldridge*]. RICH: Roland; 6, Jesmond Gardens, Newcastle-on-Tyne [Master: Mr. F. W. Rich].

BORISSOW: Ernest; Vicarsbrook, Chaucer Road, Cambridge [Master: Mr. W. M. Fawcett,* M.A. Cantab.].

The asterisk (*) denotes Members of the Institute.

The twenty-one Probationers just passed, added to the fifteen who passed in November, increase the number of Students on the Register to 109.

Election of an Auditor, 1893-94.

At last Monday's General Meeting, in pursuance of notice given on the 15th ult., Mr. F. W. Marks [A.] was elected an Auditor by Resolution of the Institute. This was necessitated by the fact that Mr. G. A. T. Middleton [A.], who had been elected the Associate-Auditor by the Annual General Meeting of last May, is compelled by absence abroad to relinquish the duties of the office.

Visit to the Works of Decoration at St. Paul's.

The opportunity afforded members last Saturday, through the kind offices of Messrs. James Powell & Sons and the courtesy of the Dean and Chapter, of visiting St. Paul's for the purpose of inspecting the new Mosaics was taken advantage of by some sixty members, the President, Hon. Secretary, and several members of the Council being among the number. Mr. James C. Powell acted as cicerone, and the keenest interest was evinced by all present in the very beautiful work his firm are executing from the designs and under the direction of Mr. W. B. Richmond, A.R.A. One would like to have seen a practical illustration of the methods of working treated of by Mr. Powell in his Paper, and the actual manipulation of materials by the workmen, but it was a half-holiday, and the wish could not be gratified.

Architects' Benevolent Society.

The Annual General Meeting of the Architects' Benevolent Society will be held at 5 p.m. on Wednesday, the 14th inst., in the rooms of the Institute. Mr. J. Macvicar Anderson, the President of the Society, will take the Chair. Mem-

bers of the Institute are invited to attend the Meeting, at which the annual report and balance-sheet of the year 1893 will be submitted.

Hygiene and Demography.

The eighth International Congress of Hygiene and Demography will be held at Budapest from the 1st to the 9th September next, under the patronage of the Emperor of Austria, and the presidency of Count Karolyi. It will be remembered that the last Congress was held in London in August 1891, under the presidency of the Prince of Wales. In forwarding the Provisional Programme, the executive committee invite the cooperation of all public bodies concerned in works relating to public health and hygiene, and urge upon the Institute the advisability of nominating delegates to represent the corporate body at the Congress. The subjects for discussion are to cover a much wider field than those treated at the London Congress, the divisions under the head of Hygiene alone numbering no fewer than nineteen. Sections 1 and 2 deal with the Ætiology of Infectious Diseases and the Prophylaxis of Epidemics; sections 3 to 6 with the Hygiene of the Tropics, of Trades and Agriculture, of Children, of Schools; section 7, Articles of Food; sections 8 to 11, Hygiene of Towns, Public Buildings, Dwellings, Communication (Railroads and Navigation); 12, Military Hygiene; 13, Red-Cross Societies; 14, Saving of Life; 15, State-Hygiene; 16, Hygiene of Sport; 17, Baths; 18, Veterinary; 19, Pharmacology. The office of the Secretary-General, Professor Dr. C. Müller, will be at the Rochus-Hospital, Budapest, until the 20th August 1894, and after that date at the Royal Joseph's Polytechnicum of that city.

Additions to the Library.

The Library has acquired a folio on a subject on which there are curiously few authorities. Die Holzbaukunst Norwegens is a German translation of a Norwegian work of Professor L. Dietrichson (of the Christiania University) and Herr H. Munthe, and deals with the wooden architecture of Norway, mediæval and modern. The work is divided into three parts: (1) wooden churches, (2) secular architecture of mediæval times, (3) contemporary wooden architecture; and contains, besides thirty-one plates, over two hundred illustrations in the text. Other recent acquisitions are a couple of copies of the second edition of Fergusson's Handbook of Architecture (London, 1852), for the Loan Collection; and Excursions in the County of Kent, by T. K. Cromwell (London, 1822). The last volume comprises brief historical and topographical delineations, accompanied by some fifty delicately executed engravings. The publishers, Messrs. E. & F. Spon, have kindly presented their Builders' Price Book for 1894, by Mr. W. Young [F.].

Additional information has been added to this latest edition of a useful book, including a chapter on electricity, with complete specifications and estimate of electric-lighting installations.

Professor L. Cloquet, of the University of Ghent, architect, has forwarded his Essai sur les principes du Beau en Architecture [Société de Saint-Augustin, Desclée, De Brouwer et Cie., Place du Lion d'Or, 8, Gand, 1894], composed with great care, and eminently practical in its argument and deductions. The Essay is divided into nine chapters, the most interesting being (V.) Decoration, (VII.) Harmony of Proportions, and (VIII.) Symmetry. Monsieur A. Barthélemy has presented his Report to the Director of the Beaux-Arts in France upon L'Organisation des Arts aux Etats-Unis, which was originally published in the Bulletin des Musées of March-May, 1893 [Imprimerie Garnier, 15, Rue du Grand-Cerf, Chartres; 1893]. In America, he says, the future belongs to the Western States; and he lays stress upon the influence which the Chicago Exhibition will have upon the artistic movement in the United States.

The Superintendent of the Department of Revenue and Agriculture, Calcutta, has forwarded a pamphlet on the Kalyani Inscriptions of Dhammacheti, by the eminent authority Mr. Taw Sein Ko, who has been entrusted by the Government with their restoration. A well-known pamphlet has been received from the author, Mr. William Simpson [H.A.], entitled The Tower of Babel, and the Birs Nimroud, originally published in the Transactions of the Society of Biblical Archaeology, vol. ix. pt. 2, 1888; and a reprint of the Paper read before that Society.

The Society of Architects of Russia has forwarded from St. Petersburg the various parts which constitute the volume of the Russian Architect for 1893. These contain sixty plates of recent Russian architecture; and, so far as one may judge from the names attached to the plates, the works have been mostly designed by architects of French, German, and Scandinavian nationality.

THE TRANSACTIONS, N.S. 1885–1892.

As there apparently exists in the minds of members of the Institute some misapprehension respecting the change which took place, last November, in the issue of the first number of a "Third "Series" of the Journal, it may be useful to state definitely that the "New Series" of the Transactions was concluded at the end of 1892, and that there is no intention of continuing them in the old form. The principal Papers read at the Sessional Meetings of 1892-93 appeared in full in the ninth and concluding volume of The R.I.B.A. Journal; and those few that were not published in full and illustrated appeared in that same volume in abstract. For some years prior

to 1893 it was usual to publish a fortnightly periodical during the Session, and at its close an annual volume. These two publications are now merged into one, the present Journal, which this Session bids fair to make a volume of some 700 pages, exclusive of plates, lithographic illustrations, index, &c.

Under the old system, it was usual to publish on the subsequent Thursday an abstract of the Paper read at a Monday's General Meeting, with a full report in the first person of the discussion which followed the reading of the Paper, and to publish the complete Paper with a number of illustrations in a separate volume, which appeared at the close of the year. The result in many instances was that the fortnightly journal was regarded as a circular ultimately intended for the waste-paper basket, and the annual volume treated as a kind of keepsake, which was generally looked at but rarely read. Under the new system, the full Paper, with all its illustrations and the discussion upon it, appears in the Journal—the only publication of the Institute, except, of course, the Kalendar and sundry Papers - three days after delivery at a General Meeting, and in a form that admits of conversion, at the end of a Session, into a bound annual volume, the cost of which in its complete state will be similar to that of a volume of the old Transactions, though it will contain at least 250 pages extra of text, namely, twenty-four shillings in stiff paper covers, with the corporate seal in brown on the face, or twentysix shillings bound in cloth with leather back, and the corporate seal in gold on the face.

Recent inquiry into the stock of volumes and parts of Transactions now held by the Institute has shown that, though several copies of volumes published in certain years remain, no complete set of the Original Series can be made up. But, as regards the "New Series," several complete sets remain, available for purchase, at a cost of nine guineas the set of eight volumes, bound in thick paper covers, or ten guineas bound in cloth with leather back, as before described.

The so-called New Series of Transactions, 1885-1892, eight volumes in all, must always possess exceptional value from the fact that comparatively few copies were published, that many of the authors of the Papers therein are distinguished in their line, and that most of the illustrations with which the volumes are embellished are extraordinarily good. The first and second contain, with 20 other heads of subjects, Mr. Alex. Graham's remarkable Papers on the Roman Occupation in North Africa, mainly illustrated from sketches and measured drawings made by himself, and from a few photographs. The third volume is especially valuable on account of Mr. T. G. Jackson's Paper on the Architecture of Dalmatia; the revised Notes, by Mr. Wyatt Papworth, on the Superintendents of English Build-

ings in the Middle Ages; and the late William Burges's famous Paper (reprinted) on Architectural Drawing in the Middle Ages. It also has Mr. Brindley's "Marble: its Uses as suggested by the "Past," with a map of the principal quarries worked in the time of the Romans; and Mr. William Simpson's "Mud Architecture: Notes " made in Persia and other countries," which has helped further than any similar communication to an elucidation of the Oriental methods of dome and vault construction. This volume also contains a Paper in French by M. Paul Sédille [Hon. Corr. M.], with an English translation, entitled "An Essay on the Revival of Coloured "Architecture in France," and a Paper in English by the Cavaliere Giacomo Boni [Hon. Corr. M.] on the Ca' d'Oro and its Polychromatic Decorations. In the fourth volume is another most valuable Paper by Mr. Brindley on "The Ancient "Quarries of Egypt," with an historical and topographical note by Mr. E. A. Floyer, and a geological map, &c., by Mr. W. Topley, F.R.S. The recent development of Vienna is also very ably treated therein by Mr. Farrow. In the fifth volume are, notably, Sir Richard Temple's "Picturesqueness in reference to Architecture," and Professor Baldwin Brown's "Origin of Roman "Imperial Architecture"; and, among several other subjects, the late George Edmund Street's contributions to the Institute Transactions, in the way of Sessional Papers, are therein collected together, re-edited, and carefully revised, with all or most of the original illustrations, some being reproductions of Street's own drawings. Volume VI. contains twelve heads of subjects, amongst which are Mr. Gotch's "Renaissance in Northamptonshire," Count R. d'Hulst's "Arab House of Egypt," and Mr. Penrose's "St. Stephen's, Walbrook." Volume VII. has the "School of Bramante," by Baron H. von Geymüller [Hon. Corr. M.]; Mr. Starkie Gardner's "Wrought Ironwork: Mediæval "Period;" and Mr. H. W. Brewer's "Churches "in the neighbourhood of Cleves;" with nine other heads of subjects, some of which embrace several Papers by different authors. In Volume VIII. Mr. Starkie Gardiner continues the subject of Wrought Ironwork, taking up the period of the Renaissance; and the same volume contains Mr. Edwin T. Hall's Paper on London Building Legislation, with a Draft Bill, prepared by the Practice Standing Committee, for the codification and amendment of the Metropolitan Building Acts (first portion to end of Sections describing construction). Papers on stained glass, with numerous illustrations, are also to be found therein.

The eight volumes comprise 101 heads of subjects or combined contributions, with more than 900 plates and lithographs (some of double page), process blocks and zinco diagrams; and inclusive of portraits of Cockerell, Donaldson, Street, Viollet-Le-Duc, and Mr. Alfred Water-

house, R.A. A facsimile in Volume VI. of a pencil sketch, by Ingres, of the late Professor Cockerell when a young man, and another in Volume VII. of a pencil drawing by Mr. H. W. Brewer, are of their kind two of the finest specimens of wood engraving.

NOTES, QUERIES, AND REPLIES.

Fresco and other Decoration fifty years ago.

In connection with the subjects which engrossed the attention of the General Meeting of the Institute on the 12th ult., it will be found interesting, and not perhaps unprofitable, to hark back fifty years, and see what was thought and written on Frescopainting by experts of that day. Prominent among these was the late Mr. E. T. Parris, who dealt with the matter in a Paper on "The Application" of the Higher Branches of Painting, especially "in Fresco, to Architecture," read before the Institute on the 14th of February 1842. The MS. is in the Library, and the passages here quoted from it are fairly representative of the author's views:—

As a decoration it surpasses every other mode of painting; its grand and impressive tone of colour, with a boldness and decision of outline rejecting all meretricious ornament, and its combining with large masses of architecture, give a dignity and majesty commanding silence and admiration. . . . I must observe that much of the richness and brilliancy of Fresco depends on the stucco ground reflecting light through the colours applied. . . . The artist, however, will be greatly disappointed who imagines the same effects will be produced as in oil, or that he can trifle with Fresco by improving his first sketch or idea. There can be no toning down, no glazing with maguelps or mediums, no magic touches, no fortunate accidental effects-in fact, there is no retouching in Fresco. Each part must be matured on the cartoon from which the picture is to be painted-all is sober, steady, hard work on a damp wall, perhaps with the inconvenience of a new building, away from home and a warm studio; all trifling details so fascinating in themselves must be avoided, everything must be generalised. Grand, powerful, and severe, the artist must live, as it were, in a bygone age, with statues, heroes, temples, and monuments ever in his thoughts, and forget the temptations of annual exhibitions. He must be assisted, not by workmen, but by pupils who are likely to rival if not surpass him; he requires space at home to prepare his cartoons, he must lay his own grounds, or see it done himself; his physical strength must equal his enthusiasm, no fear of danger when on elevated scaffolds; nor will his work either progress or have the desired breadth of effect unless he works long days without intermission, for when the plaster is once set he can do no good except by ripping it off with the trowel, if he wishes to make an alteration.

A further quotation from the same Paper may be permitted, as possessing some local interest at the present moment:—

It will be remembered that in 1821 a new ball and cross were placed on the summit of St. Paul's Cathedral, and as the interior was intended to be cleaned, the question was much agitated respecting the paintings in the dome by Sir James Thornhill. It was stated publicly that the expense of raising a scaffolding would be so great that but faint hopes were entertained of its being effected. I immediately turned my attention to the subject, and con-

trived an apparatus for the purpose of getting at the paintings. The model remained by me until 1829, when Mr. C. R. Coekerell, desirous of seeing the paintings cleaned and restored, submitted the model in the most liberal manner to the Dean and Chapter, introducing me at the same time as the inventor. The apparatus was considered adequate to the purpose, and my estimate for restoring the whole of the painting, gilding, &c., above the Whispering Gallery was £1,000, and no charge for scaffolding! But this sum was too large, and the plaster has been dropping from the wall ever since—it had then decayed above five feet all round the dome, and I am certain that in a few years the whole of the brickwork will be exposed. What would H.M. the King of Prussia think on entering our Metropolitan Cathedral! . . . The artists of this country are now expected to come forward and prove their abilities. How often they have done so, but how coldly they have been received! When Barry proposed to paint subjects on a large scale gratis for St. Paul's, with Reynolds, West, Dance, &c., the answer from Dr. Terrick, the then Dean of St. Paul's, was that "he was determined "never to give way to Popery by having paintings in "churches." Reynolds returned to his portraits to enrich his country in that way, and Barry to paint the great room at the Society of Arts in the Adelphi.

It is curious, wrote Mr. Parris, to note the scale of charges for architectural decoration in England during the last 200 years—that is, from the arrival of Rubens, in 1630, to 1730, when Thornhill was in his zenith, and from 1730 to its almost total extinction (sic) in 1842. According to him, the sums paid per yard were as follows:

Verrio, when he became blind, received a pension of £200 for life. In 1775 Cipriani received £2,000 for cleaning (sic) the Rubens ceiling; and in 1777 Barry received by the exhibition of his paintings at the house of the Society of Arts £503 2s., the colours having been supplied to him without charge. These statistics may or may not be correct, and Parris does not say whence he obtained them. But the undercurrent of indignation at the employment of foreign artists, which accompanies his flow of eloquence, is quite geuuine. "In the present state of Art [in 1842] "in this country," he says, "the historical "painter does all with his own hands. If he has "a commission for a large work, his time is not "spent in making careful cartoons and studies [which would have been the case had he painted in fresco, and consequently had around him in his workshop pupils and assistants, but is "evaporated in refining on his performance, "which, if publicly exhibited, is altered to suit "other pictures of different styles that will never "again be near it when in its proper destination." "The time of the artist is his bread. Patrons are "expected to reduce their rents; and, with the "present public cry for political economy, how is "it likely that we can compete with other "countries in price? We are then told that we

"can neither paint nor draw in fresco, the real "truth being that others cover more space at a "less cost. . . . I trust that we shall be able of "ourselves, not only to embellish the Houses of "Parliament, but all other public edifices without "foreign aid—alike in oil, encaustic, and fresco."

The late Mr. John G. Crace, in a letter addressed to the Hon. Secretary, Professor Donaldson, read in General Meeting on the 6th November 1843, gave an account of the frescoes which came under his notice during a tour in Germany and the north of Italy, which he had undertaken with a view to studying the processes employed in Fresco and Encaustic Painting, to form an opinion as to the effects produced, and to judge how far those effects would surpass painting in oil, in appearance and in durability. This letter is also preserved in the Library, and the following are a few extracts:—

The effects produced surpass paintings in oil in solidity and clearness, but owing to the limitation of colours employed, there always appeared to me a certain yellow-brown, dry effect, and a want of the richness of paintings in oil. In the grand freseo by Cornelius of the Last Judgment I think this must be felt by all, and in the beautiful subject by Veith at Frankfort this defect is still more apparent. . . .

As to the durability of fresco, in the older examples that I noticed in Italy, though the paintings had preserved to a considerable extent their original colouring, yet the effect was in almost all cases impaired by the decay of the plaster ground, the surface of which had crumbled through the action of the atmosphere. At Venice, where works on a grand scale have been executed in both fresco and oil, I was eurious to compare the relative defects and advantages of each, and found that, though the paintings in oil of some masters had much darkened, yet with others, particularly Paul Veronese, the effects were still clear and fresh, and, upon the whole, being in better preservation, surpassed the actual appearance of most of the frescoes. In the grand works lately executed at Munich, they have been too recently done to allow of an opinion being formed; yet in the exterior specimens at the Post Office and the Hop Garden signs of deeay are very evident.

Upon the whole, reflecting on all I saw, considering the difficulties of execution, the liability of decay in the ground, and the impossibility of reparation if injured, I could not perceive any great advantage over oil. In this country must further be added the additional likelihood of decay from our damp elimate and discoloration through smoke and fog. On the one side, it has great advantage in being seen to perfection in all lights, and therefore particularly desirable for painting architectural effects in chiaro-oscuro, in the clearness and the soundness of its colours. On the other side are the disadvantages I bave already enumerated.

With reference to the above, Mr. J. D. Crace [H.A.] states that, in 1843, his father went to Munich on purpose to ascertain what method of fresco was being used there, and how far it promised success. He was a good deal impressed by what he saw, which was, at that time, much in advance of other modern work. But in later years he was quite convinced that true fresco is, as a method, quite useless in England in large cities, where the acids from the coal-smoke attack and destroy the surface of the lime "intonaco," besides staining and saturating

the colours. It is often forgotten that the turpentine used in the so-called "spirit fresco" will become *quite as dark* as an oil medium with lapse of time.

The Decoration in Mosaic of St. Paul's Cathedral.

From R. Phené Spiers, F.S.A. [F.]—

The decorative works in mosaic now being carried out at St. Paul's are the outcome of an appeal to the public (made as long ago as 1858 by the late Dr. Milman, then Dean of St. Paul's) for subscriptions to a fund to complete the decoration of the cathedral in accordance with the intention of its architect, Sir Christopher Wren. The amount subscribed in 1871 had reached the sum of £40,000, when, on the occasion of the public thanksgiving held in St. Paul's for the recovery of the Prince of Wales, a special appeal was made, in consequence of which the subscriptions rose rapidly to £56,000. Through careful nursing, judicious investment, &c., this sum two or three years ago had grown to over £90,000.

In 1873 the late Mr. William Burges, who had made a special study of the iconography of the French cathedrals, was applied to for the production of designs, to be worked out in conjunction with Mr. Penrose, the architect of the cathedral. A model showing the same was exhibited in the Royal Academy in 1874, but it raised so great a storm of criticism from Churchmen of all degrees that nothing further was done for the moment. In June 1877 a sub-committee, appointed by the executive committee of St. Paul's to report on the best mode of proceeding in the execution of the decoration of the great dome in mosaic, recommended that the scheme proposed by the late Alfred Stevens (the sculptor of the Wellington Monument), on which he was working at the time of his death, should be accepted; that Sir Frederic Leighton, P.R.A., and Mr. Poynter, R.A., should be commissioned to prepare cartoons for the various panels, and Mr. Hugh Stannus (a pupil of Mr. Stevens) cartoons for the architectural framework of the design. This scheme also was set aside, but it will be remembered that in the Galleries of the Royal Academy in 1892, one of the circular panels, worked out subsequently by Sir Frederic Leighton, was exhibited, the subject being "The "sea giving up the dead."

It should be noted that for years work of some kind has been carried on in the great dome, the eight spandrils of which are filled with mosaics executed by the firm of Salviati of Venice from cartoons designed by Mr. G. F. Watts, R.A., by Mr. Townroe from Alfred Stevens's designs, and by Mr. Britten. Statues also are now being placed

in the niches of the great drum.

The work now being carried out under Mr. Richmond, A.R.A., is confined to the choir; as regards its nature and methods, it was described by Mr. Jas. C. Powell at a meeting of the Institute held

on the 12th ult., and reported in the last issue of the Journal. The scheme of treatment, and the subjects with which it is proposed to decorate the choir generally, are, it is stated, to form the substance of a Report to be issued on the 5th inst. by the cathedral authorities.

A Primitive Mode of Construction still practised in the South of Italy.

From William Simpson, R.I. [H.A.]—

It was as far back as 1869, on my first visit to Brindisi, that I noticed from the railway in passing Trani and Bari a peculiar kind of buildings in the vineyards and fields. These are very old towns, and are mentioned by Horace, who speaks of the fishy smells he encountered in them. The country is very rocky, with a slight covering of red soil, through which ledges of rock crop out, producing ridges; these, with the olive trees, of which there are large groves or forests, recalled to memory many places in Palestine. The cultivation of the olive is one of the chief employments of this part of Italy, and consequently there is a good amount of field-work required, and the peculiar buildings were evidently what we should call "outhouses" in connection with these operations. I still remember how I was attracted by these structures -watching them carefully as the train went along; and the conclusion grew upon me that, while the ordinary houses had changed as time advanced, somehow these field-buildings had been constructed from some primitive period without changing to any great extent the original type. It must be confessed that, from our knowledge of mutation which all building construction has undergone, this did not seem at all probable; but there were the buildings, and the puzzle was how to account for them by any other theory. I am now able, I think, to show that this first guess is in all probability the right explanation.

It was my fate to pass along the railway to Brindisi a number of times after the date mentioned, but it chanced to be always at night. In October 1878 I was on my way to India, and luckily on this occasion it was daylight when I reached Trani and Bari, and I was able from the train to make rough sketches. Sketches made under such circumstances can have no pretensions to perfect accuracy, and they ought to be accepted as only giving a general idea of the structures.

None were visible to the north about Foggia, but on reaching Barietta they began; at Trani and Bari they were numerous; a dozen, or even a score, of them might be all visible at one time. At Brindisi I could see none, neither from the train, nor in walks about the outskirts of the town. M. Perrot, to whom I shall have again to refer, says that "they still exist in the districts "of Bari, Lecce, Otranto, and Puglia." Lecce

^{*} History of Art in Sardinia and Judæa, vol. i. p. 47.

and Otranto are in the "heel of the boot"—the southernmost corner of Italy. Those I saw about Barietta were simple cone-shaped, small places, like figs. 1 and 2. These had generally a window, which in most cases was behind. As I came south some of them had the conical outline broken externally by one or two steps or terraces, as in figs. 3 and 4. Most of them are round in plan; but about Bari some were rectangular below, surmounted by a dome above [see fig. 5]; and one I saw of this kind had two domes to cover the roof [see fig. 6]. Some had narrow, rude stairs outside [see figs. 6 and 7]. One I saw had what seemed to be a kind of Persian water-wheel [fig. 7]. Very few were plastered, but I noticed one which was not only plastered, but was also decorated with large daubs of blue and red; this particular one may have been attached to a garden and used as a summer-house. MM. Perrot and Chipiez give an illustration of one of these places at Puglia, it is similar to fig. 4; and another in Otranto of the simple conical form, like figs. 1 and 2.*

The stones used in construction were small, and, so far as I could make out, no mortar was used. The enclosing walls of the fields were of the same kind of masonry—what a Scotch mason would call "dry dykes." In one or two instances there were lintels over the doors, but generally there were rude arches. I managed in one case to make a rough note of an arch [fig. 8], which is primitive enough in its form and construction. How the domes were constructed I had no chance of knowing, as I have not seen the inside of any of them; but from M. Perrot I learn that they are not on the arch principle. In a great many of them a stone, which had the appearance of a rude cross, projected as a terminal from the top of the dome.

The above are the principal data, according to my notes made at the time, but the circumstances under which they were made must not be overlooked when their accuracy is considered. Once, somewhere in the country, I met a botanist, with his vascullum slung on his back, riding. He asked me a question as to where he could find some particular polypodium, and I felt inclined to laugh at a botanist studying ferns on horseback; but it was reason of a high order in comparison with studying architectural details from a train running at full speed.

However slight my means of observing these peculiar buildings may have been, it turns out that my first impressions regarding them were fairly correct. On the occasion in 1878 when I made sketches from the train, an Italian gentleman in the carriage, seeing what I was doing, told me that they were ancient, and were for agricultural purposes, including animals—I assumed for housing them when necessary. He

wrote the name they were known by, which is yet on one of my original sketches. It is "Capanna "o Pagliaia." This may be a local name, a kind of patois, and would mean something like cabin for straw or chaff. M. Perrot calls them "Truddhu," and connects them with the Núraghs of Sardinia, which was one of the ideas that occurred to me when I first saw them; and this led to my supposition that they were the continuation of a primitive form of building. At the same time I also thought of the so-called Treasury of Atreus, at Mycenæ, which is a tomb, and not a singular example of that form; if such a building had been constructed above ground, and not covered over with earth, it would have been only a variant of the same style of structure. The Brochs of the north, which have been likened to the Núraghs, are again another illustration of this primitive style. It will be noticed that fig. 6 differs but little from the houses in Jerusalem at the present day. From these examples, I come to the conclusion that the truddhus of Southern Italy are the descendants of a manner of building which was more or less common at some early period over a large portion of the Western world.

M. Perrot says that the name "truddhu" is from the original Latin, which was "trullum, "the d being equivalent to l in the local dialect."* He quotes Lenormant—and I copy the quotation, as it gives important details—who writes that the truddhu "is a massive conical tower, built almost "with uncut stones loosely put together, the "facing alone exhibiting more care in the fitting "and shape of the material, without aiming at "uniformity. The interior of the edifice is occu-"pied by a round vaulted chamber, shaped like a "'tholos'; this form being obtained by a series " of corbelled and superimposed courses. As a "rule, this is the only apartment on the ground-"floor, to which a low doorway, with a huge slab "forming the lintel, gives access. It sometimes "happens that the truddhu is of more than " ordinary size, when a second chamber is placed " on the second floor, which is reached by a narrow "winding staircase, always seen on the outside of "the building even when no second chamber "occurs; for it communicates with the paved "terrace on the top, investing the edifice with a "truncated, cone-like aspect. The terrace is " generally flat, but it assumes sometimes the form " of a circular, gently sloping roof, growing to a "point towards the extremity. When truddhi " are specially well constructed, the slope on the " sides, instead of being uniform, exhibits three suc-" cessive and slightly retreating gradations." † To this M. Perrot adds: "It will be seen that beyond "this relative size, the outward aspect, and posi-

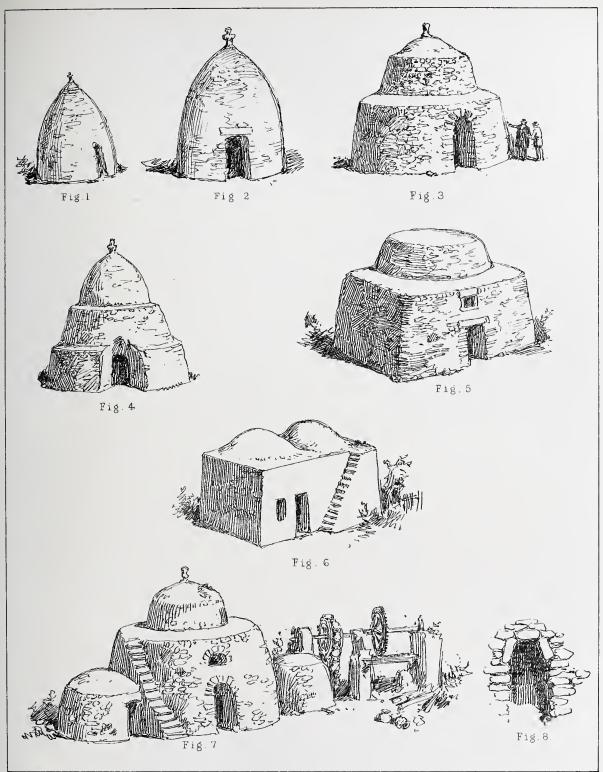
^{*} History of Art in Sardinia and Judæa, pp. 48, 49.

^{*} *Ibid.* vol. i. p. 47.

^{† &}quot;Notes Archéologiques, sur la terre d'Otrante," Gazette Archéologique, 7^{me} année, pp. 32, 39, specchie et truddhi.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

INCORPORATED SEVENTH OF WILLIAM IV. AND FIFTIETH OF VICTORIA.



Wm Simpson, R.I. del

C T KELL, PHOTO-LITHO, G. FURNIVAL ST HOLBORN, E.



"tion of the stairs, there is no difference between "núraghs and truddhi." * I must again quote from him: "Truddhi are used by the peasantry "as shelter and places to sleep in at sowing and " harvest time; their fields, being sometimes miles " away from their homes, induce absences of seve-" ral days, and even weeks, during which they can "hope for no better accommodation than what "they will find in their truddhi. Hence the " development of agglomerated núraghs is not to " be expected here, since they are but copies, on a " reduced scale, of an older and larger type exist-"ing in the same district, and called 'specchie,' "from the Latin 'specula,' watch-towers. Specchie " are in such a sad state of dilapidation that their " base lies buried under accumulated detritus, but "what remains shows that they were stone-built " structures, with truncated tops and outer facing " of more careful make than the interior, albeit irre-" gularly formed, similar in fact to modern truddhi, " save that their stones were on a much larger " pattern. Local opinion is divided as to the end "for which specchie were erected—whether as " monumental tombs, houses, strong signal towers, " or alarm posts, against inroads by land and "notably by sea. Their name, and their being "often met on the sea-shore, lend colouring to "the latter hypothesis, which is further strength-"ened by the area they sometimes occupy, the "Colona specchie, between Lecce and Otranto, "measuring 257 metres at the base, whilst the "best preserved side is still 17 metres, e.g. the " exact dimensions of agglomerated núraghs." †
It is only lately that I have had the chance of

It is only lately that I have had the chance of reading M. Perrot's book, which deals with this subject, and caused me to return to my old sketches and notes. The references given add many details with which I had no opportunity of becoming acquainted while passing in a railway train. The references show the various purposes to which these buildings were applied, and they assume that they are descended from the ancient núraghs. M. Perrot considers that, as the heel of the boot of Italy was an outlying district, the type was persisted in, and has come down to our own days "with no appreciative change;" while, in the towns and villages, the architecture and mode of building underwent the usual influences which time produces.—William Simpson.

"London and its Council" [p. 271].

From ARTHUR CAWSTON [A.]—

"London reformers were laughed at five years "ago, they were hated and abused three years "ago, but to-day they are so powerful over the "mass of London voters that there is hardly a "Metropolitan Tory in the House of Commons

"who does not feel compelled to disclaim any "intention to oppose them." So wrote *The Speaker* on February 24th. It is doubtful, however, if even the progressist writer of that paper realised that during the same month the son of the late great individualist—George Edmund Street—had penned such a paragraph as the following:—"It would be better, even, that the "liberty of the subject should be interfered with, "than that new Regent Street should be another

"Shaftesbury Avenue" [p. 273].

Up to the present time the bugbear to the progress of municipal government has doubtless been our boasted and over-rated individualism. Now, if so influential and talented a writer as Mr. A. E. Street, M.A., advises that London—that happy land for architectural freedom and freakswould be the better for adequate municipal control, London reformers have indeed found a powerful supporter where they may least have expected it. But was Mr. Street judicious even to imply that Regent Street is superior to Shaftesbury Avenue? Knowing, as he must know so well, the jealousy that still exists among Londoners for their freedom from control, and the suspicion with which anything like "soulless, "slavish regularity" or "feeble imitations of "early Parisian Boulevards" is regarded, surely it would have been more politic to have named one of the picturesque new streets on the Westminster or Cadogan estates, instead of the socalled monotonous Regent Street.

The transformations on the noblemen's estates referred to have proved to us that it is possible to so control the rebuilding of London as to make it healthy, convenient, and, at the same time, more picturesque than ever it was before. I even go so far as to assert that the general appearance of these estates far excels that found in any Conti-

nental city that I know.

These few words as an introduction to the following serious question:—What should be the attitude of the Institute towards the London Building Act, 1894? Should the Institute consider the Bill solely from the lofty standpoint of would-be reformers of London's architecture, or from the lower standpoint, and in the interests of our individual clients, the London freeholder and leaseholder?

Delighted that London at last possesses a representative body anxious to press forward the aims of the Institute, I am unhesitatingly of opinion that we should adopt the attitude of London reformers, and for this simple reason: The Institute exists for the sole purpose of advancing the art of architecture, and it is the recognised body of experts interested in the architectural improvement of London.

I submit, therefore, that the Institute should consider this Bill mainly from the point of view of the architectural improvement of London, and,

^{*} History of Art in Sardinia and Judæa, vol. i. p. 48. † Ibid. vol. i. pp. 48, 49.

if it is necessary for such improvement that our authorities should make owners set back their houses (as has been done on the noblemen's estates above referred to), the Institute should advise accordingly, and not qualify such setting back by the question of payment or non-payment of compensation for the land surrendered to public uses. Monetary questions such as these are sure to form sufficient impediments to progress, and to be fully considered by the House of Lords, the House of Commons, and the Surveyors' Institution, neither of which bodies seems to care in the least for the grand art it is our privilege to represent.

If, therefore, we wish to render that assistance to this herculean task which will prove the most valuable at the present moment, we must pass over monetary questions to surveyors. We must stick to our last, and, after studying the transformations that have taken place on certain London estates and in other cities, submit to the L.C.C. such alterations to their proposed Bill as we consider essential to effect the adequate improvement of our neglected metropolis within a reason-

able limit of time.

The following considerations occur to me as being worthy of bearing in mind when discussing certain clauses of the proposed Bill:—

Is it essential for health, convenience, or beauty that the same laws should apply to the City proper, and other commercial centres, as apply to our residential suburbs?

Is it reasonable that a certain proportion of each site for dwelling-houses should be left uncovered? In Berlin two-thirds only of sites recently acquired may be covered with buildings; whilst on old sites three-fourths of the surface may be covered. In Vienna 85 per cent. of sites may be covered.*

Is it reasonable to attempt to so curtail building sites in London as to obtain adequately wide thoroughfares, and the same amount of light and air to back and side windows as to front windows? In Paris, where the roadways are none too wide, one-third of the whole area of the city is devoted to boulevards and other public open spaces. We all know that the back windows of the Parisian flats are not so airy as those in front. If, therefore, we in London attempt to provide the same amount of light and air to our back windows as to the front, and to provide in addition streets for our heavy traffic as spacious as those of Paris, the amount of our building land would soon be reduced to one-third of the whole area, whilst two-thirds would become open space!

Party-wall Parapets.

From W. D. Caröe, M.A. Cantab. [F.]—
In the consideration of any revision of the Metropolitan Building Acts, it is obviously desir-

able for Londoners to study the regulations and practices of the great provincial towns, and to glean hints for their own advantage from usages which have proved themselves efficient, although differing from those to which they have been accustomed. The fact that the corporate authorities of the North of England, with remarkable consensus of opinion, find themselves able to do without party-wall parapets in dwelling-houses may well make us pause before granting a new lease to a custom which has been the cause of much expense and bad construction to Londoners, to say nothing of its inherent unsightliness. This is not a question in which arguments based upon theory alone—or upon prejudice—should have any weight whatever. It is sufficient to know that many years of practical experience in great cities have proved party-wall parapets on domestic buildings to be altogether unnecessary. With the alternative method adopted in the North, which dispenses with such parapets, the fire risks are proved to be no greater; while the gain, both in construction and economy, is apparent.

I am able to publish in his own words the views of one of the leading experts and authorities of the great cities of the North. I would also draw attention to his concluding remarks upon "separate side walls"—a most workable provision in regard to the separation of adjoining properties in towns, which encourages owners to build entirely upon their own site, with obvious gain in the saving of differences, disputes, discomforts, and litigation. Here follows the communication

from the authority referred to:

_____, 15th February 1894.

My reasons for preferring that party-walls should be carried only up to the roof covering and not through the roof are;—

(1) That as a matter of construction, better work is more usually done in the former case, so that the roof is more perfectly weathertight than

when the wall is carried above the roof.

(2) That the object of carrying the wall as a parapet—namely, the prevention of the spread of fire—is sufficiently accomplished by lining the party-wall close up to the slates, except, of course, in the special cases of warehouses or other buildings where great fires are liable to occur.

(3) The building of a parapet wall, together with the necessary flashing and coping, and in many cases corbelling, at the foot of the parapet, involves considerable additional expense, which in the case of ordinary houses causes an increase of rent without, in my opinion, any corresponding

advantage in any way.

With regard to the view which the Fire Brigade authorities take of these questions, I send you herewith two printed lists, prepared by the Salvage Committee, showing the number of fires which have taken place in the city and neighbour-

^{*} See A Treatise on Public Health. By A. Palmberg. (Swan Sonnenschein & Co.)—A. C.

hood during the two years 1891-92, and showing also the causes of the fires.

Since receiving your letter I have seen the chiefs of the Fire Brigade and the Salvage Corps on the subject, and they tell me that in their experience they have never known any harm to result from the want of a party-wall carried up through the roof in ordinary buildings other than those of the warehouse class, and that they see no necessity whatever for a provision requiring such a wall in those cases.

My own personal opinion quite coincides with that of the fire officers. One chief reason for saying this is, that in the case of every fire within this city I have sent to me an official report, at some length, from the Head Constable, who is also the head of the Fire Brigade, stating full particulars of the fire, its origin, its extent and progress, and during my nineteen years' experience in this respect I have never received any impression that the want of a party-wall carried up as a parapet above the roof had contributed to

the spread of a fire. With regard to "separate side walls," so called in —, I am of opinion that our regulation which requires that where adjoining owners do not agree to build one party-wall separating two buildings they must each build an independent "sepa-"rate side" wall on their own ground is a very good one, and works beneficially to the owners of property, and also acts as a preventive against the spread of fire. It is obvious that where there are two separate side walls alongside each other the risk of fire passing through one building to another is less than when there is but one wall (a partywall) to receive the timbers of the two buildings. It is equally obvious, I think, that many causes of dispute and litigation with regard to the rights of adjoining owners are avoided where two walls are thus built instead of one.

You are aware that in this city a "separate "side wall" is allowed to be built of a thickness equal to only two-thirds of the thickness required for a party-wall or external wall. This slight concession as to thickness (compared with the metropolitan requirement) has the effect of inducing architects and owners of property to erect separate side walls in many cases where they would not do so if the full thickness required for a party-wall were insisted on in such cases, and it is found that the thickness of two-thirds is usually sufficient for strength and stability, considering that the thickness must be continuous without break or recess, and that the separate side wall has to carry the weight of floors and roof on one side only. Of course, if in any special case the thickness of two-thirds allowed by the regulations should appear likely to prove insufficient for extra strains from heavily-loaded floors or otherwise, the architect or builder would provide internal piers at intervals so as to increase the thickness

of the wall, in places, beyond what is required by the regulations.

You may take it from me that there is no desire or intention in this city to alter the regulations with regard to the points above referred to.

Betterment, Worsement, and Recoupment.

From WILLIAM WOODWARD [A.]—

At the time the subject of "Betterment" was before the House of Commons no speaker evinced a sounder acquaintance with the practical working results of the L.C.C. scheme than Mr. Arthur Baumann, then member for Peckham. Baumann has followed up his spirited attack on the unfair proposals which issued from Spring Gardens by equally spirited letters addressed to *The Times*, and in a little book which he has just put forth the whole case of "Betterment"—and its probable companion "Worsement" (which the L.C.Ĉ., somehow, have never been able to see)—is clearly dealt with by one who really is entitled to speak upon the subject. Mr. Baumann shows that opposition to the scheme is not because there is a desire on the part of anyone that a man whose property is increased in value by improvements carried out at the public cost should not contribute to such cost —that contribution is already levied by increased assessment; but what is further asked by the L.C.C. is that, in addition to that increased assessment, there shall be a special rate levied on those "owners" whose property fronts some improved thoroughfare, or is within what the L.C.C. are pleased to designate a "Betterment Area." But even to this latter proposition there can be no real objection so long as it is undisputed that the property so specially rated has unquestionably directly benefited because of the public improvement. Then comes the pertinent question, which I have never yet heard candidly answered by the L.C.C.: Who is the "owner" who is to be called upon in the first instance to pay this general rate? Take the case of a freeholder in receipt of a ground rent for seventy years to come at £25 per annum, a building leaseholder with the seventy years unexpired at £25 per annum, and a sub-lessee and occupier with thirty years unexpired at £150 per annum. From which of those three persons is it proposed that the first contribution towards the admitted "Betterment" be demanded, and for what period is the contribution to be continued? If these questions were fairly answered I venture to think that the whole structure of "Betterment," as erected by the L.C.C., would totter to the ground.

Mr. Baumann's remarks on "Worsement" are to the point, and he quotes Mr. Charles Harrison, who shows that the "Recoupment" principle in

^{*} Betterment, Worsement, and Recoupment. By Arthur A. Baumann, B.A., Barrister-at-Law. 80. Lond. 1894: Stanford, Cockspur Street, S.W.

street improvements proper has been not only not profitable, but in many cases a positive loss. But Mr. Baumann points out that this "Recoupment" would have been different had a part of it not been "intercepted" on its way to the public pocket by individuals in the employ of the late Metropolitan Board of Works, and he urges, with much reason, that "Recoupment" is a fair and business-like method of dealing with public improvements.

Mr. Baumann concludes his book by a "Note "on Betterment in America;" and I recommend all who desire to obtain a grasp of the principles underlying proposed "Betterment" in London to study his handy and terse little volume.

Ambrose Poynter on Iron Construction.

The subject of iron construction, and the possibilities which exist for the more extensive utilisation of the metal in place of stone and marble in the adornment of our buildings, touched upon by Professor Aitchison in his first Academy lecture, was dealt with at considerable length in the lecture of the 5th ult., a few extracts from which are given on another page, but which may be read in its entirety in the columns of The Builder. Very noteworthy in their bearing on his subject are the passages quoted by the Professor from the Essay "On the Effects which should result to " Architectural Taste with regard to Arrangement " and Design from the General Introduction of "Iron in the Construction of Buildings," which gained the Silver Medal of the Institute as long ago as 1842. The author was the late Ambrose Poynter, the architect. The Essay in question was published in The Civil Engineers' and Architects' Journal, long since defunct, but the pages containing it are bound up with other Essays in a volume in the Institute Library. The following are the passages quoted by the lecturer:

Whether we contemplate the architecture of the Egyptians or the Greeks, the stupendous piles of the Eternal City, the gorgeous monuments of the Gothic style, the mazy intricacy of the Alhambra, or the finished productions of modern Italy, the mind perceives in each and all the adaptation of the means to the end, and the development of the spirit of the age and country in which, and for which, they were created, and these form the essential principle of the relative beauty of architecture. Now, where shall we turn to find the beauty born from the spirit of our age and country in the architecture of the nineteenth century? The very proposition at the head of this paper is an answer. In the nineteenth century we are in possession of a material in extensive operation, offering us new modes of construction, new proportions, the power of creating new forms and combinations, differing from everything that has preceded them in art.

It is now sixty-two years since the erection of the bridge at Colebrook-dale first revealed the capabilities of cast iron in construction on a large scale; and during that period science and cast iron have marched, hand in hand, with strides it is amazing to contemplate. But what has art effected with this new power? The Institute of British

Architects are still at the enquiry "what effect should "result to architectural tasts from its general intro- "duction?"

In the real adaptation of east iron to architecture as an art, we are much where the Dorians were when they had placed four trunks of trees in a row with a tile upon each. There the Doric order might have remained had the Dorians been of our stamp, and there it would have remained had trunks of trees instead of cast iron been first used in construction in our time. Or perhaps the parallel will run closer if we compare ourselves with the ancients, when they first adopted the principle of the arch, since they combined it with architectural forms already established; as we shall probably seek to do with cast iron whenever we begin to bestow our attention upon it. After sixty-two years' experience, under circumstances through which a new and original style of architecture might have been developed, we are still where the Romans may have been when they built their Cloaca Maxima.

To what are we to attribute this stagnation in all our ideas as regards art in this point of view? Doubtless to the blind spirit of imitation and obstinate adherence to precedent (whether applicable or not seems of little importance) which characterises the architecture of the present day. Where cast iron is to be used, the first requisite seems to be to keep it out of sight, or to make it look as much as possible like something else. To impress upon it the character of a style would be more in the spirit of the ancients, whom we profess to adorc.

Not that it is in the power of any man to stand forth and say, "I will invent a style." A style, like a language, must be the growth of time and circumstances; and who is to make the first essay in an age when precedent is "the be-all and the end-all," and when he who cannot command success cares not for the higher distinction of deserving it?

The fatal effect of this spirit on our architecture might be evidenced in various ways. What has been advanced on the subject of cast iron is very far from being the strongest point in which it might be shown, but the argument must be limited to the question under immediate consideration. It may, perhaps, be further illustrated by a reductio ad absurdum. Let us suppose that the Greeks had possessed no marble, but had known the art of casting large weights of iron, and had thought proper to use it "with regard to arrangement and design," as it might have been used in their hands; we will further suppose that the art had been lost; we should, perhaps, still have looked upon the monuments of antiquity so designed and constructed in the same vulgar spirit with which it has been the fashion to contemplate the Parthenon-as something to be imitated. How would our "genius have been "cramped!" as the phrase is. How should we have lamented at finding ourselves restricted to the use of stone or marble, in which we should have sought in vain to reproduce the light forms of antiquity!

Instead of striking out original proportions and combinations adapted to our means, we should sit down perfectly convinced that neither beauty nor character could be created under the disadvantage of such materials, and abandon ourselves in despair to the construction of bare walls, the monotony of which might now and then be relieved by the crash of a public building, through the laudable attempt of some classical genius to support it on Bath stone columns five-and-thirty diameters high.

One cannot but agree with Professor Aitchison that this question of iron construction is a very important one, and merits the earnest consideration of architects; and members are invited to discuss the pros and cons of the subject in the columns of the Journal.



9, CONDUIT STREET, LONDON, W., 1 March 1894.

MINUTES. IX.

At the Ninth General Meeting (Ordinary) of the Session, held on Monday, 26th February 1894, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the chair, with 22 Fellows (including 2 members of the Council), 18 f ssociates (including 1 member of the Council), 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 12th February 1894 [p. 277] were taken as read and signed as correct.

Pursuant to notice duly given, and in accordance with the provisions of By-law 40, it was, on the motion of Mr. Wm. Woodward [A.], seconded by Mr. H. W. Burrows [A.],

Resolved, that Mr. F. W. Marks [A.] be elected Associate-Auditor in place of Mr. G. A. T. Middleton [A.], who had resigned the office.

The President announced the results of the Intermediate Examination held on the 20th, 21st, and 22nd February 1894, and read the names and addresses of 21 Probationers [p. 308] who had passed, and were registered as Students.

Papers on The New Engineering and Physical Laboratories at University College, London, by Professor T. Roger Smith [F.], Professor J. A. Fleming, M.A., D.Sc., F.R.S., Professor G. Carey Foster, F.R.S., and Professor T. Hudson Beare, B.Sc., M.Inst.C.E., having been read by the first named, and discussed, a vote of thanks to the authors was passed by acclamation. Professor T. Roger Smith responded, and the Institute adjourned at 10.15 p.m.

PROCEEDINGS OF ALLIED SOCIETIES.

GLASGOW SCHOOL OF ART.

The Architecture of the Italian Renaissance.

The sixth lecture of the series by Mr. William J. Anderson [A.] was delivered on Wednesday, the 14th ult., in the Corporation Galleries, in connection with the Glasgow School of Art. In continuation of the subject of the last lecture, "The Culmination of the Renaissance," its effects in Venice and the North were discussed, and were shown to be directly the result of Roman education and bias on the part of its architects. The Lombardic school preceded this central Roman period of Sanmieheli and Sansovino, which is represented best by the gateways and palaces of Verona, the Pal. Grimani, and the library of St. Mark at Venice. Sketches of the lives and works of three of the leading architects of the culminating period-Peruzzi, Sanmicheli, and Jacopo Sansovino-were given. The most numerous works of the first named are at Rome, and best exemplify what the Roman influence amounted to; and at Siena, Bologna, and Ferrara excellent examples exist. Most of these were fully illustrated, as were also the works of his equally able contemporary, the Veronese.

LEICESTER AND LEICESTERSHIRE: PRIZE DISTRIBUTION.

On the 22nd ult. the prizes recently awarded in the Students' Competition were distributed at the Wyggeston Boys' School by the invitation of the Rev. James Went, M.A., the Head Master. All the drawings submitted to the Committee were exhibited on the walls. Mr. A. H. Paget [F.], the President, was in the chair, and,

having opened the proceedings, called upon Mr. S. Perkins Pick [A.], the Honorary Secretary of the Society, to read a Paper upon the work submitted by the students. This address contained most instructive criticism of the drawings of each competitor, in which the strong points were praised, and the shorteomings, resulting from misdirected industry and want of knowledge of the best methods, were pointed out. The President then gave prizes of books on architecture and building, selected by each recipient, to the following students:-First prize for measured work, to Mr. Albert Herbert, for drawings of the great south aisle of St. Martin's Church, Leicester; second prize to Mr. J. Clark, for drawings of local work of the last century, including a fine pair of wrought-iron gates at Belgrave, Leicester; extra prize to Mr. J. F. J. Goodacre, for drawings of St. Nicholas' Church, Leicester. A prize for architectural sketching was presented to Mr. J. S. Harrison for pencil sketches of Rievaulx Abbey. A vote of thanks to Mr. Pick for his judicious and sympathetic criticism was moved by Mr. H. W. Roberts and seconded by Mr. J. Goodacre [F]. Thanks were also accorded to the Rev. J. Went, on the motion of Mr. H. L. Goddard, M.A. [A.], seconded by Mr. W. A. Catlow, and to the President, proposed by Mr. Councillor Wakerley, seconded by Mr. A. H. Hind [A.]. A number of mounted drawings and sketch-books lent by the President, Mr. Fletcher, Mr. Pick, Mr. Hind, and Mr. H. L. Goddard were exhibited at the meeting, and it was announced that these would remain on view during the two succeeding days.

YORK: SESSIONAL MEETING.

On Thursday 22nd ult. the York Architectural Society held the Third Ordinary Meeting of the Winter Session, by special permission of the York Corporation, at the Courts of Justice, Mr. W. Hepper, the President of the Society, in the chair. A lecture was delivered by Mr. J. T. Pegge, P.A.S.I., on "The Lighting of Dwelling Houses "by Electricity, and its Uses for Domestic Purposes." The lecturer described electricity, giving the synonymous terms applied to a "current of electricity" and a "flow in "water," a description of the parts constituting the most elementary form of dynamo, all the production of electricity by dynamos and batteries, and the storage by accumulators.

The advantages of this light over other artificial lights were held to consist in—

The adaptability to any position for temporary or permanent use, and, from a commercial point of view, the impetus given to the art metal-working industry in producing highly artistic fittings in almost endless variety.

The comparative immunity from risk with a properly controlled and *fused* system.

The ease with which the system can be efficiently laid in and tested.

The almost automatic character of most of the fittings. The non-consumption of oxygen, with its corresponding vitiated atmosphere.

The use of portable lights or temporary installations of low voltage for "at homes," conversaziones, bazaars, &c., &c.

The convenient attachment of lamps, and their long life

The convenient attachment of lamps, and their long life (averaging two or three years on a circuit running at a potential of little variation).

The production of a steady and uniform light, unaffected by draughts, &c.

The next question dealt with—that of cost—was illustrated by taking the case of a supply for a whole town served in a similar manner, light for light, by gas. On the basis of Mr. Preece's figures, viz., gas at three shillings per thousand cubic feet is equal to sixpence per unit, the lecturer argued that, with gas even less than three shillings per thousand feet, sixpence per unit for electricity is by no means excessive, considering—

The saving on account of improved health and eyesight.

The lessened depreciation in house and shop furniture and decorations,

The convenience of control and the beauty of the light. The lecturer drew attention to the use of the current for motive power—the great economy and portability of motors are such as to render their use for household purposes certain to develop in course of time—also the marvellous extension in the use of electricity in telephony, bells. &c.

The advantages of cooking with electric cookers were held to be such as would commend their use even in lieu of fires, particularly for four or five months in the year; it is a boon to the housewife to be able to "turn" on the electric cooker and be able, within fifteen minutes, to have a heat of four hundred degrees Fahrenheit, when the current may be shut off, and in a couple of hours' time there is still a good margin above boiling point to work with. Contrast this with the immediate dead loss in smoke and vapour of at least tifty degrees of the heat-giving properties of coal-or, in the case of a gas stove, the burners must be kept alight up to the last quarter of an hour, with the probability of an offensive product of combustion into the room, and the vitiation of the air due to the fouling of the burners and the stove pipe - and you have only rendered more plain the advantages of electrical cooking it even at slightly additional cost. In the case of heating: - Stoves, &c., may be carried from room to room and connected up to wall plugs, and used with such ease, cleanliness, and certainty of action as to leave no doubts on the score of their merit or economy.

The lecturer terminated with a general outline specification, covering an installation for a large building. The paper was practically illustrated by switching "the light" in and out of various fittings, and by the use of electrical cooking apparatus.

THE ROYAL ACADEMY OF ARTS. The Advancement of Architecture.

Professor Aitchison's course of lectures on the Advancement of Architecture terminated on the 15th ult. A few extracts from the third, fourth, and fifth archere given:—

When an architectural student has made himself familiar with the forms of some past style, or styles, it seems delightful to him, if he has invention and skill in portrayal, to sketch out the view of a church, a palace, or what not.

. . . What, however, can be more opposed to these aërial visions of beauty than the arrangements for meeting wants, propriety in the use of materials, geometrical proportions that are dry matters of calculation, and the mathematical formulæ of statics?

Sta. Sophia and St. Peter's may be cited as examples of imperfectly-designed work, causing continued outlay and anxiety from their first building, owing to the incomplete knowledge of the architects. . . One of the great causes of our admiration of Gothic structures is their novel daring in construction, and this was gained by a practical acquaintance with the strength of stone, and the thrusts of vaults, and a desire to surpass former achievements; if we want to rival them, we must have at least the preliminary knowledge. The exact strength of most materials has been ascertained, and the engineers have applied, to utilitarian purposes, this knowledge of iron in the most marvellous way, and when the architects have acquired the knowledge they will also have to apply it for emotional purposes as well. . . . It is mere pedantry, if not incompetence, that makes us use old forms of construction that we should never think of using in a building for purely utilitarian purposes. Our business is to learn how to make our commonplace construction also answer for the effects we want to produce; this end is to be achieved by study and by effort. You may go to an engineer, and get him to make your hidden ironwork strong enough for its purpose; but directly you have to make your ironwork sightly or beautiful, and are ignorant of the laws of construction and of the qualities of the material, you must either be guilty of immense waste or give it up. . . . The modern student has an instinct that no living is to be made out of ornamental cast-iron work, so he utterly refuses to make any attempt in that direction. This is a pity, for though architects may never gain a living by designing ornamental ironwork, it is a fine opportunity for the exercise of invention, as it is untrammelled by precedent, and if the capacities of the material are not infringed, there is nothing to prevent beauty being bestowed on it, except want of ability in the designer. . . . A considerable field for the exercise of his profession is taken from the architect and handed over to the engineer; all iron and most stone and brick bridges have been so transferred, for the simple reason that architects decline to study construction, so that in the eyes of the public the architect and engineer carry on the same profession, but the engineer is a man of larger mind. . . . There is one point that is generally overlooked in speaking of the necessity of studying statics: Vitruvius says (Lib. iii. cap. 1): "Symmetry arises from proportion, which the Greeks " call avalogía. Proportion is a due adjustment of the size "of the different parts to each other and to the whole; "on this proper adjustment symmetry depends. Hence "no building can be said to be well-designed which wants "symmetry and proportion." Hitherto this proportioning of the parts to the whole has had to be got by arbitrary methods, that is to say, we have to study the proportions of the grand antique buildings which have charmed us to get it, and certain rules have been given us by Vitruvius; but, as our buildings are for such varied uses, and in some respects so different from the antique examples, the precedent of time-honoured proportions has failed us, particularly in those parts which perform some important structural function. Now statics will give us this necessary symmetry, using the word in the Vitruvian sense and not in the modern one, as far as the structural parts are concerned; and nothing else will do it properly; for, if the buildings to be erected are of a different size from those that have furnished us with the proportions, the parts of a smaller new building will be as much too massive as those of a larger one will be dangerously slight. Even if we are most concerned about the appearance of our building, we could not make its parts slighter than safety admits, however light we wish our building to look; and if we wish our building to be more massive than necessary, nothing could give us the relative sizes better than to add a uniform percentage to each part. One of the commonest faults we meet with in modern buildings is a gross disproportion between what is to be carried and the carrying part. To speak of one feature only. We constantly see balconies with cantilevers big enough to carry the house. . . It seems ridiculous to have to insist on the importance of statics when civil architecture is a constructive art whose productions, buildings, are wanted to stand securely, without extraneous help. The science of statics is defined as "the effects of forces on so'id bodies at rest," and a building is always wauted to be at rest. The main forces that are brought to bear on a building are the gravity of the materials used in its construction; and these materials, when in the form of inclined beams, as in roofs, or of the wedgeshaped pieces in arches, vaults, and domes, tend to overset the parts they abut against. There are also the extraneous loads put into them, which sometimes have a thrust of their own as well. The pressure of the wind, and the vibration caused by it, and the weight of snow are external forces that act in the same way, and occasionally, though ravely, the mechanical forces of water, ice, and fire.

One must never forget that, among the many causes that produce the requisite effects in architectural buildings, those caused by statical considerations are important factors,

and in a few cases by far the most important. One can hardly deny that raking shores to a wooden building, when the roof is not tied, form an important feature; and so does the system of stone shoring, which is composed of buttresses and flying buttresses. The devices resorted to for the abutment of domed structures also give a marked character to such edifices.

Although construction is the master art in architecture, it brings to the architect neither fame nor reputation, not even recognition. . . Yet if the smallest defect be found in the construction of a building, to speak at present of nothing else, the owner will then be awake to the fact that the building was not self-created, and woe betide the architect who has committed so unpardonable a sin! So I must strenuously urge you to learn as much of the science of construction as you can. . . . Every architect should know how to calculate the strength of a column, a girder, and a truss, the conditions of stability of a steeple and a wall against the wind, if not of the latter against earth and water, the thrusts of an arch, a vault, and a dome, and the pressure of water in large cisterns, or he may have a most serious disaster. Nor need you be ashamed of some tincture of science, for in the "Arabian Nights" the architects are always called geometers or mathematicians. It is because architecture requires such vast and conflicting attainments that it is one of the master arts, and that great architects are much rarer than the black swan.

EXTRACTS FROM THE FOURTH LECTURE.

We cannot study Greek work too deeply to refine our perceptions, to see how common things can be shaped into beauty, to learn to love simplicity, to learn how to take the same endless pains the Greeks took in adapting our buildings, and every part of them, to this climate, to learn due proportioning, which gives undying beauty, and to see that each part is proportioned, not only to harmonise with every other part, but also to secure the due proportioning of the whole. The Gothic architects, like Vitruvius, and probably from him, took the human figure as their scale; when we have thoroughly studied Greek work we should then try and apply the lessons learnt, even if we only try to make a cast-iron girder and a stanchion as beautiful as a Greek architect would have made them. I do not even object to direct appropriation of a piece, for, if we can use it properly, it becomes a quotation. The poets have no qualms of conscience in this respect. Keats' "A thing of "beauty is a joy for ever" is from Euripides, and almost every great poet borrows from the antique, and from his predecessors. We are, however, not Greeks of the fifth century B.C., and cannot have their identical tastes and desires. We could not be Greeks if we would, and I would not be a Greek if I could, supposing De Quincey's verdict to be true—that they were a nation of swindlers. The Greeks were pre-eminently artists, and from them the civilisation of Christendom has come. The Romans, on the contrary, were not only inartistic, but almost to the last deeried, if they did not despise, all the fine arts but eloquence and poetry. In other respects they were a greater people than the Greeks. They were a hardheaded, practical, straightforward, honest people, who knew how to obey as well as to command, until they were eorrupted by power, wealth, and luxury. They had, too, a natural gift for construction, which the remains of their buildings in every part of the world amply show. Directly they became acquainted with Greek architecture they not only felt they were in the presence of their masters in æsthetics, but saw no better way of rivalling them in architecture than by taking their work bodily. You must remember that the living Greek architecture of Roman days was not that of the time of Pericles and Phidias, but the debased architecture of the Macedonian barbarians and of Sicily. The Romans are supposed to have got the

arch from the Etruscans at an early period of their history, and they were much too practical a people to overlook so useful and economical an invention; it was a new advance in statics, and did not æsthetically harmonise with the Greek post and lintel. To the Romans the post and lintel was art, so they used it where they could for temples and for their grand public buildings, while for all practical work the arch was used, the column and pilaster being looked upon as signs of art, whether they were wanted or not. The Romans tried to amalgamate these two methods of building as much as possible. No better illustration of this can be offered than their triumphal arches. At some period after Vitruvius's book was written the Roman method of building with rubble, faced with triangular bricks, was introduced, as well as the making of a light framework, with rectangular bricks, for the rubble of arches, vaults, and domes, so that there was no sort of building the Romans could not execute. Their requirements were such that much more elaborate plans were wanted than those we find in Greek remains, and their buildings were of much greater altitude, the Greek public buildings being mostly of one storey, or, if of more, the storeys were comprised in the height of the one external order. To attain altitude the Romans piled a series of buildings one on the other, each making a storey, and each storey having a complete order of columns or pilasters and their entab ature, but with arched openings between the columns. The column, except for porticoes and peristyles and for decorative purposes, gradually became confined to one use -i.e., to support groined vaults—but, as if to show its former use, they left a slice of entablature over it until the days of Diocletian (A.D. 284-305), when the slice was left out and arches sprang direct from the capitals of the columns; so that we may say that Roman architecture, as a style, was the struggle between the arch and the lintel as to which should get the mastery, and it was not until Byzantine days that the arch finally got the upper hand.

EXTRACTS FROM THE FIFTH LECTURE.

Italy from the thirteenth century seems to have been singularly wanting in architectural schools. The Gothic, brought by French and German architects, was used in Italy mainly as decoration, except at Milan, which seems to have been wholly in artistic dependence on Germany. No really organic Gothic is to be found in the upper part of the peninsula, some form of Byzantine, Romanesque, or decorative Gothic being mostly used to the end of the fourteenth century. . . . After the invasion of the savages, and during the dark ages, besides having to nominally convert the conquerors, the clergy had to try and infuse into these ferocious, bloodthirsty, and brutal savages some respect for law, order, and industry. The liturgy and the Bible being in Latin, the grammar could not be properly taught without examples from the poets, orators, and historians; and these, as well as the works of the Roman lawyers and the classic philosophers, were necessary for the teaching and mental enforcement of law and order, so that we find Dante speaking of most of the Latin authors and of the principal Greek poets and philosophers. The works of such Greek authors as were known were translations into Latin of the Arabic versions. . . . Dante had seen how superior the Latin classics were in style to the works of mediæval writers, and adopted Virgil as his guide in poetry. Niccola Pisano, the architect and sculptor, who died when Dante was a boy, had made the same discovery in regard to sculpture, i.e. that Roman sculpture was very superior to mediæval carving, and had adapted the figures from a Roman sarcophagus and vase for his pulpits. . . . It is necessary to say something about Vitruvius, as his work had great influence; every scholar thought Vitruvius contained the recipes for this fine Roman architecture, that all were bound to admire. Professor Cockerell

believed that Vitruvius was known and studied during the whole of the middle ages. He says: "The church in the "castle of Nuremberg, built by Barbarossa in 1158, and "the Fraumkirk in the centre of that great city, probably " of later date, are exact illustrations of the Temple in "'Antis' of Vitruvius, as given by Casariano" (Lib. 3, fol. 52).* We see from Casariano's cuts and annotations that the mediavals had applied Vitruvius's classification of the temples from the outside to the inside, so that a decastyle temple was a church with ten pillars to the nave, a dipteral temple had two aisles, and a pseudo-dipteral an aisle of double the usual width. I believe the codices of Vitruvius now known are of the ninth, tenth, eleventh, and twelfth centuries. An unbound MS, volume of Vitruvius is mentioned by Beccadelli as belonging to him, and when Alphonso "the Wise," who was going to trust entirely to Vitruvius for the additions he was about making at Naples, received the leaves, he made the celebrated remark, "It is not becoming that this important book, which "teaches us so well how to cover in ourselves, should go "about uncovered." Beccadelli lived from 1394 to 1471. The Editio Princeps of Vitruvius is without title, place, or date, but is believed to have been printed by G. Herolt, and published in Rome about 1486; it was edited by Sulpitius from a codex found by Poggio Bracciolini at St. Gall about 1414. The concurrent circumstances of a passion for style, beauty, and delight, for intellectual freedom, and for the study of the classic authors turned the thoughts of Italians towards Rome.

Architecture got into the hands of scholars, antiquaries, goldsmiths, painters, and sculptors, and became, as Michelangelo called it, a branch of the art of draughtsmanship. The belief that the architecture of Rome was perfect certainly held full sway in the civilised world until 1768, when Milizia published The Lives of Celebrated Architects.

Florence, which has been called the modern Athens, and was said by Boniface VHI. to be the fifth element, was the natural place for new views on everything to spring up, including the fine arts. The probability is that Brunellesco, having gone to Rome to pick up something about domes, was so much struck by the style and dignity of the Roman remains as to induce him and his companion, Donatello, to measure them. On Brunellesco's return to Florence henatura'ly advocated a return to Roman architecture, but had this accident not happened it could only have retarded the movement by a few years. . . .

The fame of the discovery of an ancient codex of Vitruvius by the Papal Secretary must have awakened a new interest in the work, though there were possibly a few MS. copies about. Vitruvius being printed at Rome must not only have made it more accessible, but more talked about, and have thus drawn attention to the fact that in it were to be found the recipes for the manufacture of that architecture so much admired by all men of taste. We must recollect that, as there were no schools of architecture, painters or sculptors who had been employed on buildings were thought fit to be architects. . . .

Rabelais' book of Gargantua and Pantagruel is a ribald one; but, as far as I know, it alone gives some notion of the feelings of mankind at the Renaissauce, and that, too, without the darker traits of Italy. You must read the "Murderous Machiavel" for that; however, J. A. Symonds' work on the Renaissance is enough for most of us; and for the graver side of learning, Milton's poems give us some idea of the variety and vastness of the attainments at the Renaissance. The idea was this, that there were to be great intellectual cultivation and curiosity, great splendour, great personal achievements, and great enjoyment, but the only law was to do what one best liked,

which was to result in perfect happiness. What it did result in, in too many cases, was a return to the worst vices of paganism, in which distinguished men too often indulged, almost without a reproach. . . .

Antique Roman work was considered by the Italians of the early Renaissance as perfect, and to be imitated; for you must recollect that the Renaissance architects were not architects according to our view; but were sculptors, painters, or goldsmiths, who wanted to make the exterior of their buildings agreeable, and were, therefore, not shocked by any kind of structural absurdity. With them columns did not represent a purely constructive feature made beautiful, but were looked upon as beautiful and convenient things for cutting up a surface. This view is even now hardly extinct, and was in full vigour up to a comparatively recent period. Many of our public buildings, and perhaps even more of our grand corporate and private buildings, have the appearance of being built within the colonnades of ruined temples; and it is fortunate when the temple stands on the ground, and is not raised on a lofty basement, which takes away the very semblance of reality, and shows the pure folly of the proceeding. There are excuses to be made for these vagaries among nations and in times when sculpture was unknown, or was in such a debased state that it could produce no emotion, and was like rude early sculpture, really used as picture writing to tell a story. But we now have admirable sculptors who could tell us all the emotional stories of the past, and convey to us every perfect form of human beauty. They cannot, of course, express any stirring jucident of the present day, because our clothes not only blur all form in repose or action, but are in themselves too ignoble to raise anything but laughter or contempt. I consider it a most despicable attempt at ornamenting a building in the present day to cover it with useless columns, blind areades, or common geometrical forms, when it had much better be left plain if fine sculpture cannot be afforded to enrich it. There was something to be said for the geometrical patterns of the Saracens, for they not only appear to be insoluble, but the Moslems were discouraged from using figure sculpture.

John Addington Symonds, after stating that the Renaissance are hitecture created a new common style for Europe, makes the following prophecy:—

"With all its defects, it is not likely that the neo-Rcman "architecture, so profoundly studied by the Italians, and "so anxiously refined by their chief masters, will ever "wholly cease to be employed. In all cases where a grand "and massive edifice, no less suited to purposes of practical utility than imposing by its splendour, is required, "this style of building will be found the best. Changes of "taste and fashion, local circumstances, and the personal "proclivities of modern architects may determine the "choice of one type rather than another among the "numerous examples furnished by Italian masters. But "it is not possible that either Greek or Gothic should "permanently take the place assigned to neo-Roman "architecture in the public buildings of European "capitals."

Grauting his assumption that architects must copy something, I agree with him; but I do not grant his assumption; if I did, both this and the last course of lectures would have been time wasted, both for the speaker and for his hearers. I say that architecture is an organic art that must change with our knowledge and skill in construction, more particularly when we have materials of vast power scarcely known to the ancients. I say, too, that we have new tastes and different emotions to express. We must learn from the past the language of architecture and the methods by which emotion has been produced, and when this language and these methods have been learnt, we must all try to express the emotions of our day. If emotions be but feeble now, the time may come when they

^{*} The Architectural Works of W. of Wykcham. C. R. Cockerell. Svo. 1846. Pamphlet.

will be stronger, and when they will be more earnestly desired. There have been some great movements, even in my time, that I hope promise well; one certainly does—the pursuit of truth. Speaking of the intellect, the pursuit of truth is now getting to be looked on as man's highest duty, and we shall eventually have temples to it. We are also coming to believe that the investigation of the laws that govern the world and those parts of the universe that are within our ken are the most valuable parts of knowledge; few will dissent from this opinion, for the slight glimpses we have gained have not only made us like the fabled magicians of old, and cut us adrift from the past world, but have added enormously to our power, our comfort, and our wealth.

The putting the keys to knowledge in the hands of the rising generation must have striking results, and the passing of every child through the Board School sieve, and making what openings we can for those specially gifted to use their gifts, must, if not mismanaged, greatly add to the effective power of the country. Democracy, again, is a vast power, which we hope the sagacity of the nation will direct in the right way. One cannot help thinking that workmen will learn that they cannot raise their wages by being idle, nor by destroying the wealth of the country, and may therefore use the wealth they now squander in strikes for building themselves magnificent halls which will throw the halls of the Confraternities (Scuole) of Venice into the shade. We may also hope that moral philosophy will be greatly extended on a new basis, and that the multitudes who go to learn its lessons may desire to be housed conformably with the importance of the subject; and lastly that our legislators may learn that the most striking lessons can be given to the bulk of men by the fine arts alone.

PARLIAMENTARY.

Light and Air.

The Science Committee have, in accordance with the resolution passed at the General Meeting held 13th March 1893,* reconsidered their Report with regard to the amendment of existing legislation as to light and air, and recommend to the Council of the Institute that they should ask the London County Council to include in the "Bill to Con" solidate and Amend the enactments relating to Streets "and Buildings in London" clauses similar in effect to the following:—

- I.—That any person proposing to erect, or to alter, or re-erect a building of a greater height than the existing or previously existing building shall serve a notice of his intention upon the owner or owners of adjacent properties, this notice to be accompanied by so much of his plans, sections, and elevations as will show the proposed alterations or increased dimensions of his building; and in the same notice he shall nominate a surveyor to act on his behalf, as under the Metropolitan Building Act 1855, Section 85.
- II.—That, in the event of a difference arising, the neighbouring owner and the building owner shall proceed in accordance with the provisions of the Metropolitan Building Act 1855, Section 85, Subsections 6, 7 (except the last paragraph), 8, 9, and 10.
- III.—That all subsequent proceedings up to the award shall be in accordance with the proceedings under the before-named sections of the Metropolitan Building Act.
- IV.—That, in the event of either party refusing to accept the award, he shall have power, within one month from the publication of the said award, to

appeal to one of the official referees, who shall sit with a professional assessor, to be appointed by the President of the Local Government Board or the Home Secretary, unless the parties agree on an assessor within seven days after giving such notice of appeal.

V.—That the decision of the official referee shall be final, and the costs shall be in his discretion.

VI.—That after the passing of the Act, in which the foregoing clauses shall be incorporated, the owner of any tenement not at the time servient to some neighbouring tenement, but over which such neighbouring tenement would in course of time acquire dominant rights of light, shall serve upon the owner of such neighbouring tenement a formal notice, in form and manner to be prescribed in the Act, and shall advertise the same in the daily papers, and put a notice in a conspicuous position adjacent or opposite to the lights in question, and such notice shall have the same effect as though an interruption had been submitted to for one year immediately previous to the date of the service of such notice.

LEGAL.

Building used for purposes of Trade-New Building.

WALLEN V. HOLLAND AND HANNEN.

HOLLAND AND HANNEN (appellants) v. WALLEN (respondent).

The reports of the above-named cases, which appeared in *The Times* of the 18th of April 1893 and 22nd of February 1894, and are hereunder printed, give a fair idea of this prolonged case, and will show how desirable it is that such differences should be settled before the work is completed.

The case of Wallen v. Holland and Hannen [heard on the 14th April 1893] raised a question of great importance to the owners of large business premises in the metropolis as to the way in which the premises may be constructed, enlarged, and extended with reference to the rules under the Building Act requiring such buildings to be divided by internal walls. It was an appeal by Holland and Hannen, the eminent builders, against an order of a police magistrate directing them to comply in this respect with the requirements of the Building Act in the building now going on for the extension of Messrs. Shoolbred's extensive premises in Tottenham Court Road. Under the Act of 1855 (18 and 19 Vict., c. 122, section 27), the following rules are to be observed (as to new buildings) as to the separation of buildings and limitations of their areas :-Section 4 requires that every warehouse or other building used either wholly or in part for the purposes of trade and manufacture containing more than 216,000 cubic feet shall be divided by party-walls, so that the contents of each division shall not exceed that number of cubic feet; and when any building has been taken down to an extent exceeding half, the rebuilding is to be deemed a "new "building," but the point that it was not so was not taken before the magistrate. The block of buildings now being erected between Tottenham Court Road and Grafton Street is to be 87 feet high, and to contain eight floors, separated by means of iron filled in with concrete, but not divided by party-walls according to the above rule, and the external walls were to contain 289,000 cubic feet, but by the floors would be separated into much smaller areas. The ground floor is to be used for the ordinary purposes of a shop, the floors above to be used for dining and refreshment rooms, and the uppermost floor for a kitchen, scullery, &c. The magistrate considered that the building was not divided by party-walls, as required by the rule, and made an order that the provisions of the Act in that respect should be complied with, but stated a case, on which the builders appealed.

^{*} See "Minutes" in The R.I.B.A. Journal, N.S. Vol. IX. p. 243.

Mr. Finlay, Q.C. (with Mr. Bullen), appeared for them, and argued the case on their behalt, contending that the building did not come within the rule at all, not being a "warehouse or other building used wholly or in part for "the purposes of trade or manufacture." [Mr. Justice Kennedy.—What do you conceive to be the object of the rule?] To provide against fire. [Mr. Baron Pollock,—You may have a shop of enormous area, the roof being supported by pillars, and not party wal!s.] There are fire-proof floors. The case is not within the rule, for it is not a "new building;" it is an extension only, and more than halt is old. Then, even if it is within the rule, the space is subdivided by the fire-proof floors. The question whether it is a new building was not argued before the magistrate. [Mr. Baron Pollock.—Is it conceded?]

Mr. Cripps, Q.C., who with Mr. Daldy appeared for the surveyor, said it was not. On the contrary, he contended

that it was a new building.

Mr. Finlay said it was a case of great hardship if this order was to be upheld, for it would involve an enormous expense, probably £20,000, as it would involve taking off two floors and rebuilding. To have to divide the shop by a party wall would also be an immense inconvenience and expense.

The Court said it was very material to have it found as a fact whether or not it was a new building, and sent it back to the magistrate to be restated on that point.

The case came on again before the Divisional Court (Mr. Justice Mathewand Mr. Justice Cave), and is reported

in The Times of the 22nd ult. as follows: -

The questions in this ease had arisen out of the extension by Messrs. Shoolbred of their large business premises in Grafton Street, Tottenham Court Road, by taking down two old houses and including their site. In March 1892 their builders, Holland & Hannen, gave notice to the district surveyor that the intended use of the building is a "shop and dwelling-house" and under the head of "additions" for the erection of a building. The buildings were commenced, and in August 1892 the surveyor, in accordance with section 45 of the Act, gave a notice in writing to the builders, setting forth, "as contrary to the "Act," "that the additional building exceeds 216,000 "cubic feet, and is not divided by party walls in such "manner that the contents of each division thereof shall " not exceed that area, the premises to which the addition "is made being used, wholly or in part, for purposes of "trade." This was under section 27, rule 4, of the Building Act. "Every warehouse or other building used either "wholly or in part for the purposes of trade or manufac-"ture containing more than 216,000 cubic feet shall be " divided by a party wall in such manner that the contents "of each division thereof shall not exceed the above "number of cubic feet." The building consisted of eight floors and was 87 feet in height, and was being erected as, and was intended to form, an extension of the premises of Shoolbred & Co., and when completed was to be used thus -the basement for the purpose of packing goods, the ground floor as an ordinary retail shop for the sale of goods, and the floors above as dining-rooms, seulleries, and kitchens. It was not, however, intended to be inhabited as a dwelling-house. The floor which supports the kitchen had iron beams 6 inches deep and 4 feet apart, with steel cross beams 2 feet apart, the space between being filled in with concrete composed of coal breeze and Portland coment, and of the thickness of 7 inches, increased by a tile pavement at top and plaster eeiling, altogether 93 inches in thickness. There were four openings intended for lifts running through the concrete formation, the size of which varied, but one of them was 14 feet long and 12 feet wide. A staircase led from Grafton Street to the top of the building, and on each floor was a fire-proof landing, from which there was an entrance to the several floors,

closed by two iron doors. The cubical contents of th whole building were 289,456 feet, inclusive of the staircase. which was 16,656 feet. The cubical contents above the concrete floor were 62,000 feet. The building being continued notwithstanding the surveyor's notice, he took out a summons against the builders under the Act, which led to an order against them. On their part it was contended that the building was not a "warehouse or other building "used wholly or in part for the purposes of trade" within section 27, and that the latter words referred to other buildings ejusdem generis with warehouses; and that even if the building was within the enactment, the concrete floor was a "party wall" within the Act, and satisfied the enactment, and that the divisions of the building above and below it did not separately contain more than 216,000 cubic feet, and that therefore the rule in section 27 had been complied with. But the magistrate, the eubical contents of the building within the external walls being in all 289,456 feet, was of opinion that the building was within the enactment as a building used in part for the purposes of trade, and was not divided by a party wall, so as to bring each division within the prescribed limit of 216,000 cubic feet, the concrete floor not being in accordance with the statutory requirements of a party wall, and having openings forbidden in a party wall, and he made an order against the builders—subject to a case, on the questions (1) Is the building "a warehouse" or other building used wholly or in part for the purposes of trade? (2) Is the concrete floor which separates the the two upper from the lower floors a "party-wall"? The case had come on and had been partly argued on a former oceasion [see above], when a further point was raised as to whether the building was a new building under the Act, on which the case was sent back to the magistrate, who, however, did not alter his statement of the case, coneeiving it virtually sufficient on that point.

Mr. Finlay, Q.C., and Mr. Grain argued the ease for the builders. Mr. Cripps, Q.C., and Mr. Daldy argued for the County Council in support of the magistrate's decision.

Mr. Justice Mathew, in giving judgmert on the 21st ult., said Messrs. Shoolbred & Co. had desired to remove some old buildings and throw the site into their premises, thus forming an extension of the adjoining buildings. It was contended that the building was not a new building within the Act, but that view would lead to the astonishing result that the provisions intended for the protection of the public against the danger of fire would be applicable if the buildings belonged to different owners, but not if the whole belonged to one. That could not have been intended by the Legislature. He had no doubt that, the new buildings being intended to be occupied with the old, the whole building eame within section 10; and, besides, section 9 would elearly be applicable, what was done being to add to or alter the former building. The building clearly came within rule 4 of section 27. The "building" there mentioned was not to be construed as "warehouse building." The language of the enactment was elear and distinct, and the case was clearly within the language of the enactment. The order, therefore, was right, and the appeal must be dismissed.

Mr. Justice Cave was of the same opinion. The case, he said as originally stated raised two questions under section 27—(1) that the building was not a warehouse or other building used for purposes of trane; and (2) that the concrete floor was a "party wall-" within the enactment. But as to the first, the construction suggested for the defendants gave no effect to the words "used for purposes of trade;" and as to the second point, it overlooked the distinction between "floors" and "party" walls, the latter being vertical and the others horizontal, and the enactment clearly meaning party walls in the ordinary sense. Then another point was sought to be raised, but it

was as little tenable as the others.



THE TREATMENT OF SCULPTURE IN RELATION TO ARCHITECTURE. Prize Essay. By John Begg [A.], The Royal Institute Silver Medallist 1894.

GENERAL CONSIDERATIONS.

SUPPOSE we very seldom consider that the term "Architectural Sculpture" is one of modern growth entirely. If asked what it exactly means, we should find it, I think, a little hard to say why one sort of sculpture should be styled "Architectural" and not another—and still harder to say where the line should be drawn between the two. In order to arrive at any solution of this question—in order, moreover, to define exactly the limits of our subject, and so clear the ground for its consideration—let us look for a moment at the history of a kindred art, that of Painting.

There can be no doubt that Painting was first practised only as a decoration to surfaces, and that when the making of pictures was introduced, the manner of painting these long retained its decorative qualities. So we find it in the fourteenth century, reaching its perfection in the fifteenth—the century of Sandro Botticelli, Filippo, Lippi, and Fra Angelico. These early masters never seemed to forget that they were making something that should be a thing of beauty certainly, but, moreover, which should take its place amongst the other fitting decorations of the hall, church, refectory, cell, which it might be destined to adorn—never unduly assertive, never theatrical in its appeal to the emotions, nor in its striking effects of light and shade and colour—never so large as to be out of scale with its surroundings, but always harmonious, always reposeful, telling its story in a sweet, simple, imaginative, and poetical way—a thing to beautify life, a thing to be lived with and loved.

Then came the change. Raphael and Michael Angelo, with sweeping brush and strong chiaroscuro, with dramatic, or rather melodramatic instincts, seeking to excite the imagination—to powerfully impress the emotions and the senses—found the laws of architectural scale and keeping too great a limitation to the self-assertiveness of their overgrown method. Disregarding the scale of their surroundings, and that ever-present meter, the unalterable stature of man, or sweeping away utterly the architectural details and translating them into paint, they instituted the more modern school of painting. They divorced Painting from Architecture. The great pictures of that time—great, I admit, in other senses than that of size only—require a gallery to themselves. They need a frame to separate them from the world, and men, and common things; they need a theatre, and a proscenium, just as much as a stage play; they are out of place in a room to be lived in. For these pictures have no decorative value; and, unless they are looked at, they convey no more a message of beauty than does a play to which we are not paying attention. For beauty is a thing of which we feel the effect, like the sun, even while we are not thinking of it. They are "Gallery Pictures."

In the domain of Sculpture the same is found—but with a difference. Beginning with the notched paddle or club of the savage, the rude scratch on the wall, and passing through countless phases in its development, Sculpture reached in the time of the Greeks a measure of perfection that was not afterwards greatly surpassed; but of "Gallery Sculpture" we can hardly be said to find any till we come to quite modern times. It is true that we find many statues and groups amongst the relics of antiquity—many like the Laocoon, the Apollo Belvedere, the Venus of Milo; but these, doubtless, were all executed to occupy some definite place in a temple or such building, and are, therefore, still architectural sculpture. But more than all is this due to the fact that the sculptors themselves never thought of dividing into two camps. The sculptor who exercised the best of his energies to produce a worthy statue of the goddess, deemed it no dishonour to fashion alike the temple's frieze, the groups in the tympana, or even the lions' heads along the gutters. So, in the Middle Ages, the sculptors worked always with the definite object in view of adorning some one edifice, and their work shows the same singleness of purpose which is seen in the paintings of that time, namely, to aid the building in impressing the minds of priest and people with the great mysteries of Religion, by illustrating the events of Bible history and the teachings of the Church. Considering this, and the fact that they were by turns masons and constructors themselves, these sculptors could never be other than architectural.

It was not till Architecture seems to have attained its zenith, and men narrowed their minds to details, that technical skill was allowed to bear away sculpture from the jurisdiction of the architecture which had kept it in check, as the parental discipline does a too precocious child, to the region of the independent studio, where fitness and scale presented no longer a hindrance to the full indulgence of the display of technique. Thus we have from the same hand which gave us the ceiling of the Sistine Chapel (where technical skill in painting has assumed such assured confidence that it not only ignores the claims of architecture, but substitutes, as something better, an imitation of it) the colossal statue of David in the Academy at Florence. This is an example of what I wish to call "Gallery Sculpture"—a work which cannot, and was never intended, to harmonise with anything else, but simply to be looked at by itself. And it is this branch of art that sculptors since Michael Angelo's day have in an increasing measure practised, this branch of the art of sculpture which Viollet-Le-Due happily describes as having been "born in the bosom of the Academies."

Of all the arts, sculpture is the one least adapted to this treatment. A gallery picture is surrounded by a frame to show that it is not to be regarded in relation to anything else, and to confine the attention to it alone; but it is impossible to do this with a group of sculpture. Then the latter is so much more than the former a definite, tangible object, just as we are ourselves, and the furniture and other articles among which we live and move. It is assertive. It occupies floor-space. It is surrounded by the air we inhabit, of which it usurps a definite cubical quantity. How cold, and hard, and uninviting is the effect of a gallery containing many pieces of sculpture! How much more out of scale can a sculpture appear than even a scaleless painting! We cannot always house our statues as, say, in the Vatican, where the Laocoon and the Apollo have each little sanctuaries almost to themselves. Why is it that in our Academies the sculpture-rocms are so much less attractive than those for painting—to judge by the numbers of visitors they draw? Indeed, in this respect I question if those rooms are in a much happier position than those devoted to architectural drawings! If sculptors and the public would but recognise what a noble gallery they have in our streets, how much better it would be for art!

The day may perhaps never come when Architecture will be able to gather again under her wing, in quite as full a measure as of old, all the various arts, which are, after all, but her own fledgelings. Perhaps they have grown too much, and are too fond of the spreading of their own pinions in the free air to ever live again harmoniously in the parental nest. But why not let us indulge in a hope that they will visit it from time to time to assist the mother-art in her great undertakings? She needs them all, she has room for them all; and she is a kind mother, and a wise, who knows how best to direct the efforts of each to the greatest advantage, alike to itself and to the family at large. She will welcome all her prodigals, and will sympathise with them, and lend an attentive ear to the account of their adventures in their wanderings; nor will she forbid their wandering forth again, when they are of the mood, if only they do not forget the way back; for each time they go, and each time they return, she knows they will bring back something that they have gained—something that they have learned—something which, if they will only listen, she can tell them how to apply so as to further beautify the home of their birth. And it is Sculpture who is her favourite son—her firstborn. It is Sculpture who is likest to herself—almost part of herself—who is really least fitted for wandering, but who can help her most, who is best at home.

Therefore it comes that the term Architectural Sculpture is a very wide one, and one which may embrace every form of sculpture whatsoever. For surely no statue, no group, no sculptor's composition—nay indeed, no work of art of any kind—can lose aught of its power by being in scale and keeping with its surroundings; but rather it gains by it, certainly in its power over all but the least cultivated minds. The broadest definition of the mission of the architect I take to be that he should study how all the things beside which we live shall be in keeping one with another; and therefore anything which has been studied with this object in view may be called architectural.

It is hard to draw any line of demarcation between ornament as commonly described, or carring and sculpture; nor do I wish to do so. It will scarcely do to say that carring becomes sculpture when it deals with the human figure. True, the human figure is the great glory of sculpture—its strongest characteristic; but have we not seen the forms of beasts executed with the most consummate art, and vegetable forms displaying no less skill? while in the domain of the grotesque we find all three in combination. Still, with all its goodness, this is but ornament and nothing more. Sculpture of the higher order excels it in this, that it has something besides mere decorative qualities—something more even than symbolism; for symbolism may be conveyed by the rudest forms and the representation of the commonest objects. But the sculpture of which I wish to speak particularly has, moreover, a story to tell, a lesson to teach, or a moral to point—a memory to recall. It is an art worthy of the greatest souls, for it is capable of expressing the grandest passions, the holiest emotions, the most subtile feelings. Symbolism may have this power too, it is true; but the art is not of him who uses the symbols, but is the product of the history, or legend, or tradition that has weven a meaning round these symbols. Ornament in all its forms must be decorative, it may be symbolic; but sculpture of the highest order, while it may be symbolic and decorative too, has something more—it has that of which the later sculptors became so enamoured that they devoted their art to that alone, at the expense of all decorative qualities—namely, the power of individual expression.

So then, Sculpture with relation to Architecture must be regarded as the highest, the noblest form of architectural ornament. I wish to make this clear as the standpoint from which I shall regard the subject—assuming that those rules which apply to the use of ornament generally, apply also in a greater or less degree to the use of sculpture. Now the rule which is most commonly insisted on with regard to ornament is that we must "ornament construction, but never construct ornament." This is true in the main, but not absolutely true, for it ought to be modified according to the quality of the ornament. The nobler the ornament,

the more may we stretch a point of principle for its sake. Ornament, as indeed any feature of design as a feature, should be regarded as the embodiment of the right seizing of an opportunity, but summa are est celare artem—so we may make for ourselves as many opportunities as we like, if we only have the supreme art of keeping the effort from becoming apparent. Let all our effects seem natural; but to do this with our best effects we must often be consummately artificial.

COURSE AND CURRENT.

It will be readily understood that sculpture can be applied to buildings in two ways: in the form of statues, and in that of reliefs; the one used as a finial or terminal, on pedestals belonging to a balustrade, or to fill niches. The latter, perhaps the most beautiful form which sculpture can take, is used in various places, always as a decoration to a surface. There is, besides, that modification of the latter-or rather that blend of the two-seen in Classic and later Renaissance architecture, when the figures are in full relief, and each is in effect a statue, but where the general composition is that of the bas-relief, an enrichment of a surface, a design to be looked at from one side only. I refer to such examples as the tympana of the Greek and Roman temples—of the Parthenon, for instance, and that of the temple at Ægina. This is really, after all, only the same as a "relievo," but the relief is greater, as necessitated by the greater severity and boldness of the surrounding architecture, than would be required by the delicate mouldings and smaller detail of, say, the Italian Renaissance of the fifteenth century. It is still a species of surface decoration. Thus, in the Parthenon we have the tympana of the pediments filled with full-relief sculptures—the "birth of Athena" to the east, and the "strife of Neptune and Minerva" to the west; while the frieze under the eolonnade is in low relief, that famous frieze representing the Panathenaic procession. These works of Phidias exhibit, to my mind, the sum-total of all that is most excellent in Architectural Sculpture. No man who has studied them and mastered their principles has much to learn of either the application or the execution of sculpture. Where can a more beautiful example be found of bas-relief than this glorious frieze? The lines of the figures, the beautiful folds of the drapery, the action, strong and full of character yet quiet and quite innocent of any disturbing effect, all are thoroughly architectural, thoroughly decorative.

In following the history of sculpture through different periods and in different countries, one tendency strikes us always as we wander from Egyptian to Greek, from Greek to Roman, through Gothic to Renaissance, and thence down to the present day—namely, that growing tendency of sculpture to detach itself from architecture, to which I have already referred. In the works of the Egyptians nothing of the kind is to be seen. These appear to be governed by a rigid conventionalism, which prescribes alike the forms and the attitudes of the figures, and precludes any attempt at individuality. Viollet-Le-Duc, over-generously it may be, attributes this not to a want of knowledge of the beauties and subtilities of form, or to any lack of individuality on the part of the artists, but rather to humility, to their sinking their personality in the struggle after harmony—an artistic reticence, which forbade a tooslavish copying of Nature, a hatred of realism. All this is very good in theory, if not carried to excess, and Egyptian sculpture is certainly in absolute keeping with the solemn architecture of the country, and therefore extremely impressive; but it is also extremely uninteresting, and somewhat lacking in beauty, thus violating two principles, those of interest and beauty, which constitute the main reason for the existence of sculpture at all. How well the Greeks understood this, and yet how perfectly in keeping with the architecture is their work!

Though we find many Roman examples of great beauty, and many characterised by much vigour, we look in vain for an approach to the delicacy of Greek work. Roman sculpture is marked by a certain coarseness of conception, and by a want of skill in composition. This

is largely due to the fact that so much of the work was done with the object in view of impressing the people with the magnificence of some emperor, or the valour of some general—motives too nearly akin to those of the advertising art-patrons of our own day to be productive of much real progress. A good example of this type of composition is seen in the Arch of Titus, with its well-known reliefs—the best of which is that showing the bearing away of the sacred candlestick from the Temple at Jerusalem. The figures are well-proportioned, both in size and in relief, to the architecture, and the treatment is sufficiently decorative; but there their merit ends, for neither in the choice of subject, nor in the working out of it, is there any sign of the soul of an artist. In Rome, in statues of the emperors, and the general growth of portraiture, we observe a distinct trace of a sculpture that is more or less independent of architecture.

And now come, under Christian influence, the birth and growth of Gothic art. Technical skill is but small at first—indeed, it appears to be little sought after. But art has acquired a new purity of motive, an earnestness and singleness of purpose that rise superior to technical skill. Faith, and hope, and the sweetness of a religion that has dispelled the clouds of pagan superstition, give, in place of the mere worldly eleverness and the vanity, pomp, and boastfulness of later paganism, a life to all branches of art—a deeper meaning—a soul. As mediæval architecture advanced, so also did sculpture. Simple and restrained, to a degree of severity, as the ornamentation of the earlier epochs was, the Gothic artists soon acquired greater freedom; and as their architecture became more and more capable of ornament, the ornament devised to fit it grew also in richness and in power of execution.

There is in the sculpture of the best periods of Gothic in all countries an admirable feeling for scale, and a truly architectural treatment, that has never been surpassed. The artists of that period seem to have arrived at a very true conception of the principles for the right application of sculpture. Later generations improved in technique, and in a thousand ways developed the execution of sculpture; but in everything else, and in the spirit of the work, the artists of the Middle Ages left little that was capable of improvement. I need not quote many instances, but I should like to mention the north porch of Chartres Cathedral, and the south doorway to the choir of Lincoln Cathedral—two examples, from different countries, and each widely differing from the other in treatment, of all that is best, alike in application and execution, in the sculpture of the Middle Ages. In the French example we have an instance of the use of statues for a decorative purpose—a practice peculiarly Gothic, and peculiarly French. Statues fill the niches: great statues stand on corbels in the jambs; small statues, like a string of beads, run up the mouldings of the jambs and meet overhead at the apex of the arch.

The Lincoln doorway has much in its design that is akin to the French, but yet it is English, and has still a character that is quite its own. On the jambs are the remains of statues, as in the foregoing example, and in the mouldings of the arch the same bead-like string of little statues; but it is to the beautiful tympanum that I would draw special attention, for it is a type. The subject is the "Last Judgment," and the treatment is unusually conventional, being governed by the large quatrefoil which occupies the centre of the field of the tympanum. Filling this quatrefoil, and therefore of a commanding size when compared with all the other figures, is that of the Saviour sitting in judgment, flanked on either side by an adoring angel, each of which nestles within the lobe of the quatrefoil. Over and around the quatrefoil come more figures of angels, while beneath is Hell, peopled by devils absorbed in the pleasing occupation of administering torture to the bodies of the condemned, while the arch-fiend himself sits enthroned in gruesome state. To the left are the dead rising from their graves and coming forward for judgment. A somewhat gloomy picture this, and

one that seems intended to speak but of the glory and terror of the Last Day, and the horrors of Hell. True it is that Heaven is represented, but there is no indication of any of the judged being taken there, save only for one thing: an angel on the left, a very beautiful angel, with head turned towards the mortals, seems to encourage them by look and gesture. But look at the figures and see how well they follow the lines of construction. The joints of the masonry



mark out the spaces to be filled by them, no joint in any case cutting through a figure. This shows that the designer of the tympanum must have been thoroughly in sympathy with the construction, even if he may not have been the constructor himself.

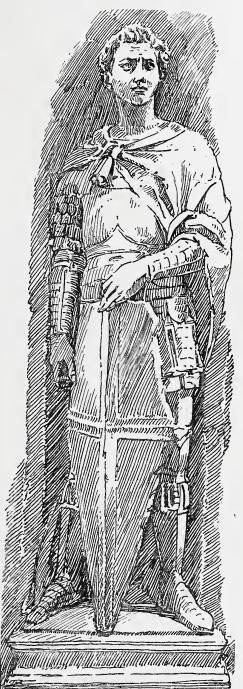
It is interesting to compare with this tympanum the pediment over the north doorway of Santa Maria del Fiore at Florence, the work of Giovanni d' Ambrogio and Nanni d' Antonio di Baaco, as showing the same feeling in the Gothic of a different country, and half a century later. The subject is the "Glorified Madonna," seated enthroned in a vesica which occupies a position in the centre of the tympanum similar to that of the quatrefoil of the Lincoln doorway. All around are adoring angels, supporting the vesica, and filling easily and naturally the remaining space. These are types of a class of work that happily we find pervading the whole Gothic period, and extending, too, to that of the Renaissance which followed.

Now we come to the Renaissance, which, originating in Italy, attained in that country a measure of perfection never reached elsewhere (certainly in the domain of all the more delicate

arts), and not the least in the domain of sculpture. In their foliated ornament the Italians recurred to principles of classic conventionalism, yet using the forms at their disposal with a freedom and variety born of centuries of a study of Nature during the Gothic period; while the Classic influence, especially the Greek, told on their figure-sculpture in inducing greater exactness of drawing, and in the observation of the laws of anatomy. In short, an improved technique. Giotto and Arnolfo, in the fourteenth century, had freed art from the fetters of Gothic stiffness; and had been inspired by somewhat of the science of composition. Where they had left sculpture, Ghiberti took it up in the fifteenth century and added something more pictorial, while Donatello still further carried it on and gave us those splendid examples of what the greatest art can achieve which are happily spread over Italy with no sparing hand. I would instance the splendid bronze reliefs on the Pulpit in San Lorenzo at Florence, notably that one of the Deposition from the Cross; the singers' gallery in the Cathedral museum at Florence; the reliefs on the altars of the Church of Sant' Antonio at Padua; the splendid bronze signs of the Evangelists in the choir of the same church; and the reliefs on the font in the Baptistery at Siena. Donatello did more than merely develop the art of Ghiberti: he corrected much that in the latter's work is undesirable. Ghiberti carried the pictorial element of sculpture to a degree of excess—representing perspective and distance, landscape, trees, rocks, sky and clouds. Donatello banished all that was beyond the domain of sculpture from his art, and his work thereby gained in strength and in the just balance of parts; while he may be said to have made bas-relief. Where Giotto had given life to sculpture, and Ghiberti added grouping and composition, Donatello, by his sensitive conscientiousness and unflinching determination to admit only legitimate effect, defined clearly the limitations of the art. He understood exactly just how much action should be put into his figures—just how much pictorial effect into his reliefs.

less, perhaps, by Verrocchio). What could be finer

As a statuary, too, Donatello is unrivalled (un-ST. GEORGE, BY DONATELLO. than his manly, dignified St. George on the Church of San Michele at Florence, or rather, now in the Bargello? I quote this as an example of what it seems to me a statue to be



attached to a building should be. It is lifelike, without being imitative: just sufficiently idealised to acquit it from any accusation of undue realism. Then, in all the details of the accessories—hair, dress, armour—there is shown so thoroughly the spirit of the decorative artist, that the building would be indeed an extraordinary one which was not both helped and graced by such a statue. This decorative spirit is apparent in Donatello in all his works, both in bas-relief and in his statues. In the equestrian statue of Gattamelata at Padua, witness such details as the flow of the horse's tail, the enrichments on the harness and trappings.

The work of this glorious age, the fifteenth century, was carried on by Jacopo della Quercia, and further by Verrocchio, Mino da Fiesole, and Rossellino. In the hands of the two latter sculpture attained a degree of refined finish that the works of Donatello scarce reached, though they have not the power of Donatello. On the work of the Della Robbia family too much praise cannot be bestowed. Although revelling in the discovery of a unique material, and the added charm of colour, their work never lost the restraint so necessary to maintain its architectural character, while certain instances of its application to buildings (to which I shall refer later) give some of the most delightful results. It was perhaps Della Quercia who, more than any other, prepared the way for Michael Angelo, in whose hands sculpture entered upon a new phase, which was the beginning of the end.

To Sculpture Michael Angelo added action. He was ever fond of representing the human form in violent, tumultuous motion - of studying the play of the various muscles of the body, in the portrayal of which he was an unrivalled master. His work is altogether admirable; but it had this fatal effect on art—that, having shown an example of the closest study of Nature, he left art to men less inspired than himself, in whose hands it could only move by imperceptible but steady degrees towards degenerate realism. The first indications of this decadence are seen in the work of Michael Angelo's contemporary, Baccio Bandinelli, of Florence, when, notably in the reliefs on the choir screen of the Duomo, coarseness, ungracefulness of drapery, exaggerated attitude, and poverty of idea seem to form a caricature of the great master's work. Sculpture did not long survive his day, though it lingered in the hands of a few good men. Benyenuto Cellini, that most combative of men, though not entirely a sculptor, has left a work of rare beauty in the "Perseus," for whose decorative and craftsmanlike qualities I have the profoundest respect. Sansovino the Younger, and greater, has still some trace of true feeling in his work; but yet how ill his "Giants" in the Doge's palace at Venice compare with work by Michael Angelo or with Cellini's "Perseus." Sansovino, however, was a better architect than sculptor; but, being both, he understood the application of sculpture to his buildings, as I hope to point out later.

It is much to be deplored, I sincerely think, that modern practice has to so large an extent banished the chisel from the domain of sculpture, and substituted modelling tools and clay—that so many good men do not practise the *craft* of carving their own work; but, having made a model, leave its translation into stone or marble to another hand, even though directly supervising the process. I suppose it could hardly be otherwise in these commercial times; but surely it is fatal to the progress of art, and the cause of so much of the lack of interest seen in some modern work when compared with that of, say, the Renaissance, where the living touch of the master's own hand gives the point and flavour. Having once experienced the craftsman's joy. I should have expected them to feel as Michael Angelo did when he took to fresco painting. "Fresco," we are told he said, "is the only kind of painting for Men." So our sculptors might feel that to be modellers alone were to practise but half their art. It was *craft* (which is but another name for architecture) which gave birth to all the arts. Let them not forget their parentage and their family name.

We can never hope for any great advance in Art till we find men who are willing to make sacrifices for its sake. This must be not only on the part of artists—to them sacrifice is life, as life too often is sacrifice—but also on the part of those who are their patrons. The man who buys a picture for the love of it (not he who does so from vulgar ostentation) is in part an artist, and art demands sacrifices from all her votaries. The education of our artists is at fault. They are not sufficiently taught to follow art from root, through trunk and branch, till they reach sculpture and painting, which are the leaves and flowers. We water our cut flowers and plucked leaves; we place them in our rooms and look at them, and wonder why they will not live for ever. I would not have them all educated as architects, but would have



TYMPANUM BY LUCA DELLA ROBBIA, FLORENCE.

them know enough of architecture to realise the relative place which their own work ought to occupy in the great system. Then we should not see the arts so much at variance, so little in sympathy one with another. "It is true," says Viollet-Le-Duc, "that I never saw the "Greeks at work, but I am persuaded that they did not proceed in this way; indeed, every—"thing leads me to believe that Ictinus and Phidias worked in combination."

OF SUBJECT, SCALE, MATERIAL, AND COLOUR.

I have alluded to sculpture as the highest kind of ornament. It is so on account of the forms which it brings into use, of the labour required to execute it, and the skill which its execution displays; but more than all, it is so because of the meaning which it conveys. Thus, chief of all considerations to be entertained when contemplating the use of sculpture will always be the choice of subject. Of this we can only speak in general terms. The subject will be suggested by the nature of the building, be it religious or secular. In the former we have the whole range of Bible and Church history and teaching to choose from; while the thousand-and-one subdivisions of which the class secular is capable open a thousand-and-one

avenues of thought when selecting a subject in the case of a building which is one of that class. It is a question which, so far as this Essay is concerned, must be left to individual taste in each particular case; and in no circumstances will the opportunity for the display of good taste be better. It must only be borne in mind that on a building for a more or less ignoble purpose sculpture would be more or less out of place, though even here in some cases it might be used in a humorous way. I might quote the panels between the doors of the west front of Orvieto Cathedral as an instance of appropriate subject in a sacred building (they represent the "Creation of Eve," "Cain and Abel," and various episodes from sacred history); while in a secular one I can think of no better example than the frieze of the hospital at Pistoja, representing the seven works of mercy [see headpiece, p. 325]. There is a terra-cotta frieze over a hatter's shop in Oxford Street which is in every way to be commended, both for appropriateness of subject and the unaffected, direct simplicity with which it is carried out. The theme is no nobler than the manufacture of hats: but the purpose of the building is no nobler than for the sale of hats: hence we have a work of art in every way suited to its position, and an effective, as well as a legitimate, advertisement to boot.

Much has been said and written about the desirability of present-day work looking modern. We have demands for "nineteenth-century art," while sculpture is deprecated which represents idealised costume, or no costume at all. "Why not," one hears, "let "sculpture portray modern customs and modern dress? We admit the ugliness of modern "dress, and the difficulty of treating it properly in stone, but the difficulty is one which "artists ought to cope with and overcome." Yes, and many have wrestled with it, but never with a full measure of success; whoever does succeed will be welcomed as a benefactor to art. The rough clothes of peasants and artisans, with but little added picturesqueness, may be made sufficiently decorative; but no one has ever shown us how to treat the clothes of a gentleman. Your pleughman, your fisherman, your labourer, even your crossing-sweeper and beggar, each presents a figure which has something, from picturesqueness to manly beauty, to commend it to the sculptor. Female dress of all ranks can be made really beautiful, for even that which does not show the form has, as drapery, an ancient claim to the sculptor's regard. But your nineteenth-century gentleman!—his dress is never picturesque, and must neither show his form nor be like drapery, or it loses all its essential character of "gentlemanliness."

To me it seems as if we could not do better than take a hint from the art of some of the best periods, and idealise either the dress or the treatment sufficiently to allow of the omission of dress. Neither the Greeks, nor the Romans, nor the artists of the Italian Renaissance, cared to adhere too closely in their works to the costume of their own or any other age. I wonder if it would be regarded as an unpardonable anachronism to clothe our sculptures, where clothe them we must, in the more graceful garb of some bygone age! I think that the question would be one that need little distress us were we careful, as we always should be, to avoid realism—a hard matter, sometimes, in these days of cultivated technique. It is quite a mistake to suppose that by being realistic we are representing in the most faithful manner the truths of Nature. We are not. Can anyone call Turner's pictures realistic? Yet no man has ever seen and painted so many natural truths. Whenever we become realistic we put ourselves into competition with Nature, and how can we hope but to suffer by the comparison? What charm, what mystery, what wealth of expression is seen in much of the work of German sculptors of the Middle Ages! The sculpture between the buttresses of the apse of St. Sebald's Church at Nuremberg is an instance, the treatment being conventional to a degree. What utter lack of any such charm, what vulgarity do we find in the series of reliefs by Sansovino, the Lombardi and others, in the chapel of Sant' Antonio, in the "Santo" at Padua, though far excelling the former in drawing, in anatomy, in mere

technique! For an example of the degradation to which realism can drag sculpture I might instance the interior of the church of St. John at Malta—though, of course, I do not refer to Michael Angelo's beautiful group of the Baptism.

Before leaving the consideration of *subject*, I should like to say something about those forms of sculpture to which belong caryatides and the like. Though their use is sanctioned by high authority, yet I cannot like them, not even those of the Erechtheum itself. They take the place of a definite factor in the construction, the need of which is seen and felt; they are not constructed ornament exactly, but ornament used for the purposes of construction. They are realistic in that they are figures doing work—conventional, in that no figure but one of stone could do the work—and here is a mixture of principles too conflicting to be manageable. Moreover, they always look uncomfortable, and are far too apt to suggest to the spectator pains in the head and an aching back!

That factor in sculpture which chiefly affects its application to buildings is scale; closely allied to which, as they are interdependent the one on the other, is position. Could we always be sure of dealing properly with the question of scale, we should never fail to produce a sufficiently decorative effect. So accustomed has the eye become to the size of the human figure, that it at once and unconsciously seizes upon figures on a building (as it does to a less degree with all details) as a key to that building's dimensions. The theory of scale is this—that we ought thereby to be able to form at once a true conception of a building's size. We do this, not so much by an intellectual observation of its relation to details of known dimensions, as by an involuntary consciousness of the fitness of both details and ourselves to the whole mass. Now, as a direct result of the fact that the juxtaposition of a large and a small object has the effect of challenging comparison, and inducing a tendency to magnify the greater and minify the less, it follows that the same holds good with regard to a part and the whole—to a detail such as a sculptured figure, and the building of which it is a part; and that, if we increase the size of the whole, we must correct the thereby increased tendency to make the part look smaller by enlarging the latter. This enlargement of the part also has the effect of correcting the increased tendency (by reason of the increased difference) of the whole to look larger than it So it follows further that there is a ratio between whole and part—the greater the former, the greater also must be the latter—but that the part must not increase in direct ratio to the whole, otherwise scale would be no indication of size. Exactly how it should increase is prescribed by laws which only experience can enable us to read.

The size of our figures must therefore be proportionate to the size of our buildings; and further (for the eye seems to expect some compensation for the diminishing effect of distance), position has this effect upon scale—that our figures, as also all our details, must be larger or smaller in proportion as they are near the eye or far from it. This, again, is a point on which only experience and close observation can give us any help.

Amongst so much theory I can offer but one practical hint—namely, that it is better to have our figures too small than too large, for thus will the fabric look only the larger. So long as human vanity is a ruling passion will that be counted no error of scale which only makes a building appear greater than it is. Let us keep our figures, whether as statues or in reliefs, under life-size, at any rate when near the eye; and even when removed from it, it is safer to have them rather under than over life-size. More errors of scale have been due to a non-recognition of this than to any other cause. The architects of the later centuries of the Renaissance have been the worst transgressors. I know of no more flagrant example than St. Peter's at Rome, especially in Maderna's West Front. Here the effect of the size of the details, particularly of the statues which rise from the balustrade above, aided by those of St. Peter and St. Paul on the steps, is one of complete bewilderment to the beholder, an utter

inability to realise how big this façade is. Sansovino's "Giants" dwarf the whole staircase and the surrounding architecture of the Dcge's Palace at Venice. Landseer's lions in Trafalgar Square (though one is less familiar with the size of lions than human figures) must needs have been conventionalised to the extent of the Sphinx of Gizeh before their size could have been prevented from dwarfing everything in the neighbourhood. Indeed, the Nelson Monument is as stupendous an example of outrage to scale as can readily be found. Besides the lions, and the column magnified almost beyond recognition as a column, there is the statue on the top. Now, leaving out of account the size of the whole conception in relation to its surroundings, what law of scale could be found to sanction the proportion between this figure and the lions below? The former is colossal, as its lofty position might allow; but the latter are enormous, even though near the level of the eye!

It is pleasant to turn to instances of good scale, of which I could quote scores. In the frieze round the Hospital at Pistoja, the figures, though some twenty-four feet from the ground, are only about 3 feet 9 inches high, and the effect is magnificent [see headpiece, p. 325]. All the sculptures of the fifteenth century in Italy are small; though in some cases, notably in the Certosa at Pavia, this is carried to excess. It would be hard to find a work better proportioned in this respect than Sansovino's Library at Venice. The sculptures in the spandrils are well under life-size, while the statues on the parapet are just a little larger than life; and this building holds its own though surrounded by others of much greater height, and flanked by the lofty campanile of St. Mark. For a modern instance I might quote St. Augustine's Church at Pendlebury, where the figures are of moderate size, and the result beautiful both in proportion and detail.

After all, the only guide to scale is the individual taste of the designer and sculptor; and the only way in which the taste can be given a fair chance is by the use of full-size models, and by insisting that all sculpture should be done in situ. Too common is the practice of preparing a small model from which the actual work is "scale-pointed." Good results can never be ensured in this way, for it is only when the full-size work (or model) is viewed in relation to the actual building that the effect can be judged. I lay more stress on this question than even on that of the execution of the actual work on the spot. This latter will depend upon the nature of the work—whether it is "built" work, or such as can be fixed in position afterwards—and though I personally prefer the in situ method, I confess that the question of its employment is in no way so important as that of the use of the full-size model.

Of the material for sculpture much might be said, but this essay has now spread itself out to so great a length that I must content myself with touching but briefly on the subject. If the material of the rest of the building be not employed, then the change should be always in favour of a more precious material. This is obvious if we think how bad would be the effect of stucco ornament on a brick building (indeed it has been done), or of terra-cotta on a stone building. Marble is, of course, the sculptor's material par excellence; then we have sand and limestone of all sorts; bronze; terra-cotta, unglazed, as on the tomb in the cloisters of the Certosa at Pavia, and glazed, like the work of the Della Robbia family; plaster, and gesso. It is a characteristic of good sculpture that its workmanship should be such as to suit the material. A bronze statue, being a casting, should show a technique different from that of a marble one. The workmanship of terra-cotta will have much in common with that of bronze, but the nature of the latter will allow of the use of more delicate detail. our modern work in stone and marble shows the technique of its plaster original; it is not sculptured stone, but a copy of a cast from a clay model. This remark applies especially to the French school, and to some modern German work. Such details as hair and drapery are rendered in the clay in a clever, sketchy, impressionist way, very charming in plaster, and

admissible even in bronze, but fatal in true sculpture, and unworthy of solid lasting stone or costly marble.

In selecting a marble, one should, I think, set aside as unsuitable all showing to any degree a vein or figure. Accidental effects of colour and marking got by the use of a figured material are entirely at variance with the principles of sculpture. Therefore I would instance, and condemn, the practice of carving alabaster—of which we have seen examples too recent to need mention. The material is a beautiful one; but, carved, neither as a material nor as sculpture can it ever have its due effect. If colour is what is desired, that can be applied in another way; but of the colouring of sculpture, though a practice as old as sculpture itself, I would only speak in guarded terms. I admit the rightness of the principle, sanctioned as it is by the artists of all ages -of Greece, of the Middle Ages, of the Renaissance-and I admit the desirability of colour wherever we can get it; but to form a positive opinion one would have to see the work of a good sculptor coloured by a good painter—and see it, too, with the paint fresh and bright and new, not toned and worn by time. Much can be done, however, in the way of using a material of an even colour, to obviate the cold look of so much sculpture as witness the charming effect of bronze figures and reliefs against stone or marble. Or, in stone buildings, more use might be made of a warmer material for the sculpture, to secure some contrast with the rest of the wall-surface.

The warm red sandstone of the "Corsehill" type is capable of the highest finish, and its texture under the chisel is almost as homogeneous as that of marble itself. We have in gesso a material capable, with the aid of colour, of much good effect, which at present shows signs of development in the near future. The coloured and glazed terra-cotta work of the Della Robbia family is altogether charming. The secret of its success as a vehicle of colour (may modern practisers of gesso lay this to heart!) is the breadth and simplicity of the colouring, as should always be wherever form and colour are used in combination. Nothing could be more delightful than the earlier work of Luca della Robbia, where blue and white only are used. Of unglazed terra-cotta I would only say that it is a material in every way suited to sculpture, though not, perhaps, of the highest order. One cannot help feeling with the advocates of terra-cotta, that we should not have had to mourn the present measure of ill-repute which its use in the hands of the less able among them has earned for the material, had they been content to use it for modelled work alone.

Now, though I have written so much, yet I seem to have merely touched on my subject, a subject as vast as it is engrossing. I have said little of the developments of sculpture in the different countries of Europe, of the work of modern sculptors but little, and I have avoided the multiplication of instances. Still, I have endeavoured to seize and illustrate some general principles in a field of art too little thought about as being part and parcel with architecture itself. This is a utilitarian age to which sculpture and painting are apt to be regarded as not rightly belonging—an age in which pictures are painted and sculptures are fashioned in sad disproportion to the demand for them. Perhaps a time may be coming when men will learn to love the arts for what they are, not for what adversity (or shall I say prosperity?) makes them. Indeed, I think this modern renaissance has already begun; for there are many hopeful signs of it, and artists of all kinds are again drawing more closely around the architecture it is their mission to adorn. To lift art from the mire may be an herculean task, but time and strength can accomplish it. The time is before us; and if union be strength, then let us hope for a better union of the arts—and "a union of the arts" means architecture. JOHN BEGG.

^{**} The illustrations to this Essay are reproduced from the author's sketches.



CHRONICLE.

THE PRELIMINARY EXAMINATION.

The President reported to the Business General Meeting of the 12th inst. that 91 gentlemen, of whom 82 attended, had been admitted to the Spring Preliminary Examination of pupils and others desirous of qualifying as Probationers, which was held on the 20th and 21st ult. Of these, 56 were examined in London, 16 in Manchester, 10 in Bristol, and 4 did not attend. Of the 82 examined, 8 were relegated to their studies in all subjects of the examination, and 11 in part. The remaining 63 passed; and they have been registered in alphabetical order as Probationers, namely:

ALLINGHAM: Percy James; Cleveland, Beech Road,

Reigate [Master: Mr. T. Rowland Hooper*].

ANSELL: William Henry; 44, Wilson Street, Perby [Masters: Messrs. Naylor* & Sale].

BALL: Theophilus Bradford; Weston super-Mare [Master:

Mr. S. J. Wilde]. BANFIELD: Ernest William; 33, Herne Hill Road, S.E. [Masters: Messrs. Truefitt & Watson*]

BATES: Ernest; Oak Lodge, London Road, Thornton Heath [Masters: Messrs. Gordon,* Lowther, * & Gunton?.

BATES: Jonathan Harold Medhurst; 65, Ferme Park Road, Hornsey, N. [Masters: Messrs. Romaine Walker* & Tanner*]

BATES: William Stanley; Wyaston, Chaueer Road, Bedford [Master: Mr. Henry Young].

BATTLEY: Henry Arthur (Auckland, New Zealand); 33, Hanover Street, Peckham, S.E. [Masters: Messrs. A. & C. Harston*]

BRIERLEY: Charles Leonard; The Oakenrod, Roehdale [Haileybury College]

BULLEY: Horace William; 9, East Southernhay, Exeter [Master: Mr. James Jerman*].

CATOR: Arthur Charles Albemarle; 27, Dairy House Road, Derby [Masters: Messrs. Naylor* & Sa'e].

CLARKE: Harold Forbes; Albert Villa, Albert Road, Alexandra Park, Manchester [Master: Mr. John Ely*].

CLAYTON: Joseph William Edward; Thornfield, Chesterfield, Derbyshire [Masters: Messrs. Rollinson & Sons]. CLIFFORD: Herbert E.; Tusmore Lodge, Alexandra

Road, Watford [Master: Mr. W. H. Syme*] COLLINS: Frnest Stone; 145, Fulham Road, S.W. Masters: Messrs. Ludford & Tulloch*

CORAM: James Henry; 95, Elspeth Road, Clapham Common, S.W. [Master: Mr. W. H. Gibbs].

DAVIDSON: John; 4, Lawrence Road, Bow, E. [Master: Professor Banister Fletcher*].
DAVIES: Owen Walter; Bryn Awel, Llanthewy Road,

Clytha Park, Newport, Mon. [Master: Mr. W. L. Griffiths].

DIXON: Thomas; Broomhaugh, Riding Mill-on-Tyne Master: Mr. Jas. T. Cackett*]

DWYER: Bernard Patrick Joseph; 5, Egerton Road, West Greenwich, S.E. [Master: Mr. Frank T. Verity*].

EDWARDS: Sydney James; 24, Windsor Terrace, Penarth, South Wales [Masters: Messrs. Jones, Richards & Budgen*].

ELCE: Walter Harry; 5, Heathfield, Lloyd Street, Moss Side, Manchester [Masters: Messrs. Horton* &

Bridgford*].
ELDRIDGE: Harold Douglas; Sandyeoombe, East Twiekenham [Master: Mr. A. S. Flower, M.A.*].

ELLIS: Henry Augustus, B.A. Cantab.; 3, Park Terraee, Cambridge [Master: Mr. W. M. Faweett, M.A.*].

FARTHING: William Walter; 13, Tressillian Crescent, St. John's, S.E. [Master: Mr. T. W. Aldwinckle*]. FEATHERSTONE: Henry Whitehead; Heaton Hall Road, Heaton, Newcastle-on-Tyne [Masters: Messrs.

Plummer* & Burrell].

FRY: Peter George; West Bank, Arundell Road, Westonsuper-Mare [Master: Mr. S. J. Wilde]

GAGE: Charles Henry; Halwyn House, 8, Richmond Hill,

Clifton, Bristol Master: Mr. F. Bligh Bond].
GAYER: Alfred Edward; 18, Chesterfield Road, Montpelier, Bristol [Merehant Venturers' School, Bristol].

GROTE: Arthur Lloyd; 44, Hedley Street, Maidstone (Masters: Messrs. Seward* & Thomas]. HAYWARD: George Whitehead; 217, Upper Brook

Street, C.-on-M., Manchester [Masters: Messrs. W. T. Gunson & Son'.

HEALEY: Alan James; 18, Lansdowne Place, Bradford [Masters: Messrs. T. H. & F. Healey].

HICK: Edwin Morcombe; 7, Pulteney Gardens, Bath

| Master: Mr. A. S. Goodridge*].
| HUGHES: Augustus Edward; 28, Mortimer Street,
| Regent Street, W. [Master: Mr. Augustus E. Hughes*].

JENKINS: Gilbert Henry; 56, Lower Union Street, Torquay [Master: Mr. J. Watson].

LACEY: Arthur Ernest; 6, Upper King Street, Norwieh. Master : Mr. Arthur J. Lacey .

LOADER: Ernest; Raleigh House, Brixton Hill, S.W. Master: Mr. T. W. Aldwinekle*].

MACNIVEN: George Donaldson; 9, Cluny Drive, Edinburgh [Master: Mr. G. Washington Browne, A.R.S.A.].

MAGER: Ernest Jesse; 28, Carleton Road, Tufnell Park, N. Masters: Messrs. T. Chatfeild Clarke* & Son]. NICHOLLS: Reginald; 4, Gloucester Square, Soutl ampton

Master: Mr. Ingalton Sanders PALMER, Charles Samuel Frederick; 50, Victoria Road, Kilburn, N.W. | Master: Mr. B. Elson].

PERKINS: Sydney; Grasmere, 1, Sharderoft Avenue, Herne Hill, S.E. [Allcyn's Sehool, Dulwich].

PILLING: Joseph Smedley: 13, Park Street, Bolton Bolton and Manchester Grammar Schools].

PILLING: Randolph Smith; 28, Market Street, Colne, Lancs. [Master: Mr. H. Holgate].

PIPPETTE: Robert Ingram Howe; 51, Upper Tulse Hill, S.W. [Master: Mr. R. Cruwys]. PONTON: Harold Frederick; Bryn-Glas, Littleover Hill,

Derby [Masters: Messrs. Naylor* & Sale]. REYNOLDS: Edwin Francis: 35, Trinity Road, Birch-

field, Birmingham [Masters: Messrs. Cossins & Peaeock

RIGG: Pereival Birkett; 5, St. Oswald Street, Bowheram, Lancaster [Master: Mr. Stephen Shaw*].

SETTLE: William Moss: Woodgarth, Ulverston, Lancs. [Masters: Messrs. Settle & Farmer]. SHARPE: Harry Perey: 13, Castle Terrace, Catheart,

Glasgow [Masters: Messrs. James Salmon & Son*]. SINCLAIR: Thomas Ferguson, 2, Alva Street, Edinburgh.

Master: Mr. Thomas Leadbetter].

SMITH: Francis Danby; Suffolk Lodge, Park Road, West Dulwieh [Master: Mr. F. J. Smith*].

SPIVEY: Ernest Austin; 44, Duke Street, Colne, Lancs. [Master: Mr. H. Holgate].

SUTCLIFFE: James Henry; Hazlewood, Hebden Bridge, near Manchester [Halifax New School].

TRAQUAIR: Ramsay; 8, Dean Park Crescent, Edinburgh [Master: Mr. S. Henbest Capper, M.A.*].

TYRWHITT: Thomas; St. Michael's Vicarage, South Bromley, Poplar [Master: Mr. Aston Webb*

VENN: Jabez Hayward; Padstow House, 118, Coronation

Road, Bristol [Master: Mr. W. L. Bernard*]. WALFORD: William John; Roseville, 130, Croydon Road, Anerley, S.E. [Masters: Messrs. Elkington* & Son*1

WALKER: John George; 13, College Grove, Wakefield [Master: Mr. F. Simpson].

WEATHERALL: Thomas Craig; 28, Allergate, Durham [Master: Mr. Jas. T. Cackett*].
WILLIAMS: Allen Gardiner; Maesnewydd, Pencaira,

Neath, S. Wales [Alderman Davies' Schools, Neath]. WINTERBURN: Archibald Herbert; 15, Silver Street, Whitby [Master: Mr. E. H. Smales*].

WOOD: Lindsay Ingleby; Bramerton Lodge, Batcherley, near Carlisle [Master: Mr. G. D. Oliver*].

The asterisk * denotes members of the Institute.

Tour of the Soane Medallist 1893.

Those familiar with the ground trodden by Mr. Arthur J. Bolton [A.] in his tour as Soane Medallist 1893, will read with interest the account of his travels now contained in manuscript in the Institute Library. It forms an admirable itinerary of the route traversed, and the young student would do well to consult its pages when mapping out his arrangements for a contemplated excursion abroad. It will be remembered that the sum of money which accompanies the Soane Medallion is conditional upon the recipient, within two years of the award, making arrangements satisfactory to the Council for going abroad for a period of at least six months to pursue his architectural studies, one moiety of £50 being paid before he leaves England for the Continent, and a second of a like sum upon his submitting satisfactory evidence of his studies abroad in the form of measured drawings and sketches.

The programme sketched out for himself by Mr. Bolton was to travel through France by the Valley of the Loire and the Charente, and by the cities of Périgueux and Toulouse, thence along the Pyrenees so as to enter Spain by the Bayonne-Burgos route, to visit the principal places of interest in Spain, and leave that country by the Barcelona-Marseilles route, returning home through Lyons and Paris. This programme, as the drawings submitted afford good evidence, Mr. Bolton was able to carry out almost to the letter. The large proportion of measured work submitted is due, he explains, to the fact that so much of value and interest was found to measure, especially in France and Italy, Spain offering more oppor-

tunity in the way of sketching.

Leaving London on the 27th April, Mr. Bolton's first stay was made at Amiens, and work began at the Church of Saint-Germain. Thence, excur-

sions were made to Abbeville, Beauvais—a place which must be visited by those who desire to see the Gothic idea carried out to its logical extremity—and Saint-Germer. pause was made at Chartres for the cathedral, and Châteaudun was reached on the 26th May. A long stay at Blois was varied by excursions to Orléans, Bourges, and Beaugency, and the prin-

cipal châteaux of the Loire.

Leaving the Loire district, Poitiers was next visited, and its Romanesque Churches were found very instructive. With Angoulême as headquarters, and Sharpe's Domed Churches in the Charente as a guide, an agreeable week was spent in walking expeditions to the numerous villages along the banks of the Charente, whose churches are a special phase of Byzantine and Romanesque. A stay of three weeks was made at La Rochefoucauld, of the castle of which a capital description is given, its picturesqueness of disposition, with less of the château and more of the country house, appealing to the sympathies of an English student in a greater degree than the châteaux of the Loire. Five days were spent at Périgueux, which was left on the 20th July for the delightful little town of Rodez, where a sojourn of sixteen days was made, and quitted with regret for Albi. A short halt was made at Toulouse, and an excursion taken to the well-known Carcassonne, still surrounded with the fortifications (restored and repaired under Viollet-Le-Duc's direction) of the Middle Ages, executed in rough masonry blocks with drafted edges. Lourdes, Bayonne, and Biarritz were next visited, and Burgos, in Spain, reached on the 15th August. Mr. Bolton's graphic description of his entry into Burgos, and first impressions of the architecture of Spain, may here be given in his own words:-

The town was lying in a dead stillness under the burning sun, and the unexpected train was met by none of the usual crowd of conveyances. A moyo with my luggage slung across his shoulders led the way through a wilderness of planted trees and across the dried-up river to the ancient city gate, above which appeared the golden-tinted lantern of the famous cathedral, with its airy tracery spires filled in with the blue enamel of a Spanish sky. Only a few persons were moving along the covered side-walks of the deserted streets, lined with tall façades of glazed framework, an outer guard against the violence of the heat. There was little character of antiquity, and the hotel was of the usual Spanish type soon to become familiar.

A visit that afternoon to the cathedral produced a bewildered state of mind, owing to the accumulations of work, of elaborate detail, of widely differing epochs and styles contained within; but criticism, though stunned, retained a sense that quality was not the strongest element, and threatened, on further examination, to reduce by analysis the mass into not many objects worthy of admiration.

Burgos may be taken as an index city of Spanish architecture, for though all the epochs are not represented, still there are so many buildings and objects specially Spanish in character that the qualities of the styles may be estimated by those familiar with Italian and French work. Moreover, it forms an introduction to not the best side of the art, and on arriving at Leon, the refinement,

not too evident at Burgos, will gratify the student. He will have tasted of both good and evil, and may adjust his standards for the rest of his tour.

The situation and surroundings and the various features of the Cathedral of Burgos are dealt with at some length by the author, and readers will recall his sketch of a reja at the cathedral exhibited among the prize drawings of the year, which called forth commendation in the Review of the students' work at the prize distribution in

January last [p. 182].

Burgos was left on the 1st September for Valladolid, the Cathedral and the Church of Saint-Benoît forming the principal objects of interest. The wretched train service generally, and the paucity of railroads and hotels, interfere considerably with the plans of the traveller in Spain, and it is necessary to take to horse or mule, and sometimes camp in the open, if the visitor wishes to explore the country in detail. At Oviedo, which is rich in archæological interest, a stay was made of eight days, and Leon, a square-built Roman city, reached on the 12th September by retraversing the mountains. A night was spent at Palencia, and the journey continued, viá Valladolid, to Medina del Campo and Salamanca—the Oxford of Spain, as the author describes it. Here the wealth of material for study rendered a prolonged stay inevitable. The principal features of interest of the old cathedral, the Church of San Domingo, the Jesuit church and college, the Casa Conchas, the Casa Monterez, are described more or less minutely, and one is in complete agreement with Mr. Bolton when he says that no student of architecture should leave Spain without paying a visit to Salamanca.

Madrid, which proved the most uninteresting capital the author ever visited, was reached on the 28th September, and left on the 4th October for Toledo, where a halt of seven days was made. To quote Mr. Bolton again:

Toledo could hardly be matched for romantic situation—three parts surrounded by a river flowing through a rocky ravine, the town is piled up on a hill, accessible by magnificent old bridges spanning from cliff to cliff in one great semicircular arch, and defended at each end by tall towers. The streets are tortuous, narrow, and blank, decorated only by wide doorways of stone or granite, through which a glimpse may be had of the inner patio. The doorways form a succession of all styles, worked out on certain main lines, and of a size and importance that suggest the Eastern idea of the dignity of the gateway.

Proceeding to Cordova on the 11th October, after a stay of three days, the whole of which might well be devoted to a study of the Moorish work in the marvellous mosque, Seville was entered on the 14th October. Of the churches in Seville the cathedral only will attract attention, but it is at present so blocked up by scaffolding that an adequate impression of its interior cannot be formed. The glaring bad taste, he says, of the numerous other churches would surprise even the

most travelled. Leaving Seville on the 27th October, three weeks were spent at Granada, and the numerous objects of interest there are well described in the report. Saragossa, by way of Cordova and Madrid, was reached on the 20th November, and Barcelona on the 23rd. architectural interest of Barcelona is mainly centred in the fine Gothic of the district, differing from that in the rest of Spain, and strongly French in character. A short stay was made at Marseilles, where the author arrived on the 25th November. Saint-Gilles, with its fine Romanesque portals; Arles, with the noble church of Saint-Trophime; Nîmes, with its Roman remains, were all visited; and a few days were spent at Avignon and Orange. With a glimpse of Lyons and two days at Paris, Mr. Bolton arrived home on the 7th December, after a tour of between seven and eight months.

Tour of the Owen-Jones Student 1893.

The conditions attaching to the Owen-Jones Studentship (Certificate and £50) require the successful candidate to make a tour of not less than eight weeks' duration, for the purpose of "the improve-"ment and cultivation of his knowledge of the "successful application of colour as a means of "architectural expression," and within a specified time he must furnish the Council with a memoir of his tour, illustrated by sketches and measured drawings. Half the sum mentioned is paid before he begins his prescribed tour, and the other half when his memoir, sketches, and drawings are submitted. The Studentship is open to any person under the age of thirty-five years.

Perhaps no country affords so many beautiful object-lessons to the student of polychromy as Italy, which was the field of operations selected by the Owen-Jones Student 1893, Mr. A. H. Powell. Travelling thither by the Ostend route afforded opportunity for a short stay at Ghent, and visits to its cathedral and the churches of St. Nicholas and St. Joseph. A few hours were spent at Basle, where the forms of buildings begin to show traces of the South in their broad surfaces for paintings and dark, projecting eaves. At Lucerne much interesting work was found, the wooden bridges over the Reuss containing the famous paintings of the Dance of Death, and various representations of battles, sieges, fires, &c.

Arrived at Milan, work was begun at Sant' Ambrogio, now fully restored, and by the kindness of Signor Beltrami [Hon. Corr. M.] permission was obtained to make a drawing of the Golden Altar, the work of Wolvinius, and presented to the church by Archbishop Angilbertus in the middle of the ninth century. This beautiful work is minutely described in the memoir, as are also the fine mosaics in the main apse and in the chapel of San Satyro. The interior of the church of San Maurizio, in the same city, is a unique example

of colour decoration, being painted throughout in frescoes by Luini. The walls and chapels are covered with large bordered subjects from the Old and New Testaments. The church is divided by a stone screen from floor to ceiling, entirely covered with frescoes, many of them of great beauty. At Santa Maria delle Grazie, with its picturesque dome by Bramante, is the celebrated Cenacolo of Lionardo da Vinci; the arabesque wall-cornice of the sacristy was also painted by the same artist. Santa Maria in Organis at Verona is another good instance of colour decoration, and here are wonderful examples of intarsia work by a celebrated Veronese. The church of Sant' Anastasia, which contains some remarkably good coloured vaulting, the whole roof of the nave and transepts being covered with fresco-work, and other churches and buildings in Verona were visited, and various notes and drawings made. At Venice the marble work of St. Mark's and of the Casa Dorio, and the gesso and wood painted ceilings in the Accademia, afforded material for much work and study. A week was spent at Padua, chiefly in Giotto's arena chapel, where the fresco is of the finest possible material, having an absolutely smooth and even surface and finished with the most wonderful pains. Among sketches sent in were several of fine frescoed house-fronts in Padua. At Ravenna and Bologna, through the weather and ill-health, a few hours only were spent, but sufficient was seen of their treasures to mark points to aim at in future. A three-weeks' stay was made at Florence, and much time spent in the church of Santa Maria, with its magnificent frescoes by Ghirlandajo and others. The west rose window, says Mr. Powell, was far and away the finest piece of coloured glass he had ever seen; tradition assigns it to Michael Angelo, but the design looks more like Botticelli. Santa Croce, another church in Florence, has been terribly spoiled by the removal of its old glass, and by the substitution of a new brick pavement in place of the old marble one; it contains, however, some very beautiful decoration. Many other churches were visited, and notes and sketches made of the more notable frescoes of Florence. Mr. Powell, in conclusion, states that as a general rule his day's work began at eight, and finished about half-past five, and that altogether he was able to stay in Italy some fourteen or fifteen weeks. Drawings and sketches were submitted of the chief features of interest in the places visited during the tour. As to the quality of his work in this respect the opinion of a competent authority has already been recorded in these pages [p. 183].

Architects' Benevolent Society.

The forty-fourth Annual General Meeting of the Architects' Benevolent Society was held yesterday afternoon in the rooms of the Royal Institute, Mr. W. Hilton Nash taking the Chair in the unavoidable absence of the President. The Report and Balance Sheet for 1893–94 were read, and adopted [see pages 363, 364]. The Council for the year of office 1893–94 were elected as follows:—Messrs. W. Hilton Nash, J. G. Finch Noyes, Andrew Oliver, Charles J. Shoppee, Arthur Ashbridge, Thomas Blashill, J. Henry Christian, Sydney Smirke, Wm. Grellier, E. B. I'Anson, E. H. Martineau, T. M. Rickman, R. St. Aubyn Roumieu, and J. T. Wimperis. Mr. Percivall Currey was elected Honorary Secretary, and Mr. Arthur Cates re-elected Honorary Treasurer.

REVIEWS OF NEW BOOKS. VIII.

(23.

BUDDHIST INSCRIPTIONS.

A Preliminary Study of the Kalyani Inscriptions of Dhammacheti, 1476 A.D. By Taw Sein-Ko. Large 40. Bombay 1893.

The Kalyani inscriptions of Dhammacheti are in Pâli, with a translation in Talaing, and cover both sides of ten large flat slabs, seven feet in height. They are situated at the town of Zaingganaing, a western suburb of Pegu; the Portuguese in the seventeenth century, or Alompra's soldiery, have broken them into many fragments, but all the pieces that could be found have been lately put together again by Major R. C. Temple. There are no references to architecture in the inscriptions, but they are full of interest in relation to the Buddhist priesthood of the period to which they refer. There is an interesting account of a mission of twenty-two théras, or priests, that were sent to Ceylon to be re-ordained and to bring back what was considered to be the true Apostolic Succession, which could be traced back to Mahinda, who first carried Buddhism to Ceylon. The tooth of Buddha was uncovered for these monks to venerate and offer presents to it which they had brought. They ascended Adam's Peak, called in the inscriptions "Samantakûta Hill," and adored the mark of Buddha's foot. Anurâdapura was also visited, and the dagobas and other shrines of that place, which Mr. Bell is at present exploring, were seen by them. Even at that date (1476) the city must have been partly deserted, for these monks are described as "removing grass, "creepers, and shrubbery found growing in the "courtyards of the various Chétiyas, and cleaned "their walls." The main object of the inscriptions was to record this mission, and its results, which were the securing of the Apostolic Succession of the priesthood, and the consecrating of the Kalyânî-Sima in due form for the performance of the uposatha, upasampadâ, and other ceremonies. A "Sima" is not explained, but it appears to have been the ground on which a monastery was erected, and the ceremony of consecrating the boundary, which had to be

previously unconsecrated, has some curious details connected with it. The ships of Burmah in the fifteenth century must have been small, for it required two vessels to take the twenty-two théras to Ceylon—eleven men in each. The translation and preliminary remarks on this long inscription are by Taw Sein-Ko, whose study of the Po-u-Daung inscription was noticed in these pages in September last.—William Simpson.

(24.)A SURVEYING TEXT-BOOK.

Surveyors and Surveying Instruments. By G. A. T. Middleton, A.R.I.B.A., Author of "Strains in Struc-"tures" and "House Drainage." 80. Lond. 1894. [Whittaker & Co., 2 White Hart Street, Paternoster

This is a neat little text-book, and very suitable for students preparing to pass the Institute examinations. The designation "architect and sur-"veyor" may, and it would appear does, include many things; but the architect pure and simple should, if he does not lean on the unstable reed of vicarious assistance, be able to make an accurate survey and ascertain the exact levels of any irregular, sloping, or broken ground upon or in which he may be commissioned to place a building or buildings; and the use of a datum line for the various sections of a large and dispersed building has more than once been found absolutely necessarv to eliminate errors which had crept in for want of reference to some common measure. The governing body of the Institute have therefore done well to make a knowledge of surveying and levelling one of the necessary qualifications of the future architect; but one may take this opportunity of disagreeing with the character of the test examinations. These should, if they are to be considered as giving credentials to the individuals who pass them, be conducted by experts-who should be paid out of examination fees—and not by honorary examiners, whose time is too engrossed and whose occupations are somewhat foreign to the task of examination. Indeed, some of the papers set for the Intermediate Examination, as printed in the Kalendar, may impress one with the extent of the learning and the great originality of the examiners, but are hardly, if one may venture to say so, such as to test accurately the knowledge of the examinees.

Modern instructors may be superior, but I incline rather to the type personified in the Clerk of Oxenforde, of whom Chaucer says, "Gladly " wolde he lerne, and gladly teche." Instead of accepting standard works on a subject and gladly teaching upon the lines indicated in them, the preceptors of to-day all seem anxious to prepare and set up a text-book of their own, as if they had each discovered a royal road to learning. Not that they are unwise in so doing; the talent of to-day is nothing if not put in evidence, and a

text-book on a given subject seems to be generally accepted as a good advertisement of a man's ability to teach it. Mr. Middleton has a further excuse in the production of the work under notice, that is, in providing descriptions of some modern surveying instruments such as were unknown in the days of Sopwith and Nesbit. With regard to some of these, however, they may be viewed as providing very clever means of approximately fixing extreme distances and levels, and not such as would be necessary for the exact measurements required by an architect, and for whose purposes the old-fashioned level and theodolite are quite sufficient. The use of three adjusting screws, instead of four, seems to be coming into vogue with instruments by modern makers; but possessors of well-preserved tools by such makers as Troughton & Sims are not likely to be envious

of this improvement.

In all ordinary surveys the great essentials are good common-sense in the selection of the lines to be run and to be connected; and painstaking, deliberate, and not hurried, observing and registering the measures and angles by which all the material objects are to be fixed. These, combined with careful plotting, comprise the entire business, and I think that in his demonstrations of the principles underlying the art of surveying Mr. Middleton is sometimes unnecessarily prolix. At the same time one can hardly consider the chapter on the uses of angle-measuring instruments an efficient substitute for a good course of plane trigono. metry, which it is desirable should precede the study of surveying; neither can one agree with some of the minor changes introduced by the author. For instance, the use of a centre-line instead of a column in the pages of the field-book may commend itself to some surveyors, but the chainage of the survey line is more clear when kept distinct from the other observations, and the student soon becomes accustomed to the breaks in the lines crossing that line. In the level-book there is nothing new in form, and one need not cavil at the words "Height above Datum" taking the place of "Reduced Level," though there may occur instances when a depth below datum has to be ascertained, and in that case the older term is more correct; but the double entry of the reduced level at the change-points is hardly necessary.

A disused stone quarry, with its deep and irregular driftways and big rubbish mounds, is a grand place to break in a youth to surveying and levelling; but one misses such opportunities near London, and cockney students must be content with Wandsworth Common or Hampstead Heath. Personal field experience, under an able instructor like Mr. Middleton, is of at least as much value as book knowledge; and, in addition to the desk examination at Conduit Street, students of the Institute might be subjected to some such proof of their ability.—WILLIAM CHARLES STREET.



REVIEW OF THE LONDON STREETS AND BUILDINGS CONSOLIDATION AND AMENDMENT BILL 1894. By ARTHUR CATES, Past Vice-President.*

Mr. President and Gentlemen, -

It is not by my own desire, but in compliance with a particular request of your Council, that I have undertaken to introduce for your consideration "The Bill to Consolidate and Amend the "Enactments relating to Streets and Buildings in "London" now being promoted in Parliament by the London County Council. The time allowed me has been short, and has been curtailed by the attention I have been compelled to give to the Qualifying Examination held in these rooms during the past week, the oral examination of seventy-eight candidates having only been completed late on Saturday. I will, however, place before you a review of some of the leading proposals of the Bill, which may usefully introduce a more detailed discussion of its merits and otherwise.

The Institute has taken great interest in the amendment of Building Law, and in its Trans-ACTIONS and PROCEEDINGS much valuable matter will be found relating thereto. In 1874 it materially assisted in the opposition to the ill-conceived Metropolitan Buildings and Management Bill of the Metropolitan Board of Works, and in 1876 Papers were read on the subject of General Building Regulations for the United Kingdom, and the Report of a Committee appointed to consider them was in 1877 forwarded to the Local Government Board. At the General Conference of Architects held in 1878 Papers were read on General Building Acts and General Building Regulations. In subsequent years the Practice Standing Committee devoted a great deal of time to collecting information and preparing a Draft of a Bill for Consolidating and Amending the Building Laws, a work on which considerable labour and pains were expended; and

to Mr. E. T. Hall and Mr. T. M. Rickman we are under great obligations for the admirable manner in which they arranged the collected material in a Draft Bill which was printed and circulated, copies being sent to the London Council, the Local Government Board, and other public bodies. In February 1890 Mr. John Slater read before you an admirable Paper on Building Legislation,* which may now be studied with advantage; and later on in that year the Institute successfully opposed before a Select Committee of the House of Lords certain provisions as to control of corner sites introduced by the London Council in their General Powers Bill of 1890. In February 1892 Mr. E. T. Hall read before you an important Paper on London Building Legislation, with which the Draft Bill above referred to was printed and has been widely circulated. I need not specifically refer to the numerous communications of recent years which your Council has made to Public Departments, the Home Office, the Local Government Board, and the London Council, with regard to By-laws framed, and to be framed, under the powers of various Acts. It is to be regretted that the draughtsman engaged on the Bill had not availed himself to a greater extent of the material thus ready to his hand, but its influence may be found hereafter when the Bill assumes an improved form.

In considering the Bill and endeavouring to discover the bearing and influence of the several clauses, great difficulty arises from the fact that this "Bill for the Consolidation and Amendment "of the Enactments relating to Streets and "Buildings in London" does not contain on the face of it the slightest indication of what is "consolidation," what "amendment," and what "new." Had the London Council, before launching the Bill in Parliament, adopted the course which under like circumstances has been taken by other Public Departments, and circulated a Draft Bill with all necessary references and explanations, the new parts being printed in different type from the old, there would have been ample time and opportunity for calm discussion on a reasonable basis, and the mutual bearing of the amendments and novelties on the whole Bill would have been more readily appreciated than is at present possible, and the faults of drafting which embarrass the consideration of the present Bill would have been avoided.

Although the framers of the Bill may not have appreciated and adopted so much as we could have hoped of the results of the labours of your Practice Committee, the London Council have recently expressed a desire that the Sub-Committee in charge of the Bill should have the benefit of the advice of two or three representatives of the

^{*} Read by the author at the Business General Meeting of the 12th inst., Mr. J. Macvicar Anderson, *President*, in the Chair.

^{*} Transactions, Vol. VI. N.S. p. 115. † *Ibid.* Vol. VIII. N.S. p. 105.

Institute, and in compliance with this desire your Council have appointed three of its number as delegates to meet the Sub-Committee, and on behalf of the Institute give every assistance in their power

towards improving the Bill.

I cannot this evening pretend to go through the measure clause by clause, or in any great detail, or to enter upon the consideration of any but very few of the many amendments which have as yet been ascertained to be essential; but those more important points which I may indicate generally will no doubt be supplemented by the observations of those who will take part in the discussion, who will all, I hope, be actuated by the common desire to aid and assist in making the Bill as complete and perfect as the manner in which it has been put forward will permit.

Part I.—Formation and Widening of Streets.

Although this Part is to a considerable extent only a paraphrased re-enactment of existing laws, there are proposed extensions of the law which will give rise to some opposition from those who appreciate the possible effect which might result from its provisions, as now proposed, coming into force; while others, whose desire it is to assist the development of the metropolis as paramount to other considerations of personal interest, may consider that the promoters have not gone far enough, and might well have sought to obtain powers to more effectually control the laying-out of new building estates—to secure conformity with admitted public requirements; the appropriation of some proportionate part of the area of the estate to open space and recreation-grounds; the more direct regulation and control of the direction of new streets and their connection with existing thoroughfares; and generally to enforce more consideration for the interests of the common weal and of the future occupants of the houses to be erected, than is obtained by the mere requirement of 40-feet roads, and leaving the building speculator to cram on the land as many houses as possible, with but little regard to the provision of those amenities now considered to be essential for the well-being of an urban population.

The general powers sought in this Part apparently affect not only new streets but the widening of old ones, and in this latter respect especially demand the most careful scrutiny, or powers of a destructive nature may be obtained under the

operation of very simple words.

Clause 7,* by which the London Council may require a greater width of street than 40 feet, is especially important as directly applying to not only new but to old streets, so that if it should be desired to widen an old street to 40 feet, the London Council may insist on its being made wider up to 60 feet. Some modification of this clause may be found possible, which may in some degree remove the objections as regards old streets, by providing for payment for the injury done by the exercise of the powers given by the clause.

Clause 9,† which regulates the position of new buildings with reference to streets, is as it stands objectionable, and should be amended and then limited to new streets. The expression "new "building" occurs in this clause for the first time, and on referring to Clause 185, sub-clause 18, eleven distinct definitions are found to be there given of these words, one being even "the con-"version of any part of a dwelling-house into a "shop;" and these are made more stringent by the further definition that "the expression 'erect "' a new building' includes the doing of any of "the acts defined as 'new building." Among other definitions of the term "new building" are: "The conversion into one dwelling-house of two " or more dwelling-houses," "the conversion into "or using as two or more dwelling-houses of any " building constructed originally as one dwelling-"house," "the conversion into or using as part of "a dwelling-room of any room or part of a room "used as a shop," "the conversion of a dwelling-"house or any part of a dwelling-house into a "shop." In all these cases the effect of this and many other clauses would be so absurd that there must be some mistake or neglect in drafting which, as in other like instances, requires correction, and should have received attention before the Bill was launched. Applying these interpretations to this clause and to many others throughout the Bill where like expressions occur, the necessity of a radical amendment throughout the whole measure is at once apparent.

Although there is much in this Part which demands thorough amendment, I cannot but say a word in favour of Clause 14, which in new streets enables the London Council to require as a condition of consent that beyond the full width of the roadway a space not exceeding five feet shall

be of a greater width than forty feet clear they may make it a condition of their sanction that the street shall be throughout or in such part as they may direct of a greater width than forty feet but nothing in this section shall authorise the Council to require a greater width than sixty feet. And before requiring that any street shall be wider than forty feet the Council shall give notice of their intention to the Local Authority in order that the Local Authority if they think fit may make a representation on the subject to the Council.

⁺ Clause 9 regulates the position of new buildings with reference to streets, and prohibits the erection of buildings at less than the prescribed distance from the centre of the road, except with the written consent of the Council, who may, after consulting the local authority, give such consent on such conditions as the Council see fit to determine.

^{*} Clause 7. Provided that when it is intended to form lay out widen alter or adapt any street or way for carriage traffic and the Council shall deem it expedient in the public interest that the street or way should by reason of its length or importance or in consequence of its forming or being so situate as to be likely to form part of an important line of communication or for other sufficient reason

be left between the footway and the external wall of the houses; * with some little amendment, that will be an admirable provision, and will prevent the miserable practice of building houses close up to the edge of the footway. It would be well, indeed, if such a regulation could be made of general application throughout the country.

Generally the whole of the new provisions in this Part will require very careful examination, and if much friction is to be avoided, extensive and thorough amendments should be at once proposed by the promoters. These would probably affect the new principles which underlie the proposals of other parts of the Bill, and result in amendments therein which might tend to reduce the opposition with which they will otherwise certainly be met.

Part II.—Lines of Building Frontage.

The mischief which has arisen in the past from the want of such legislation as is here provided is irredeemable. The reckless and uncontrolled greed of grasping speculation has, by building over fore-courts and open spaces, absolutely destroyed the amenities of the great main roads of the metropolis which the wisdom of those who laid them out had provided; while in the case of the New Road from Lisson Grove to the City, actually once protected by a special Act prohibiting any erection within 50 feet of the road, the present condition of the Marylebone Road, Euston Road, and Pentonville Road may well give cause for regret that what might have been a magnificent boulevard is for its greater part a miserable aggregate of squalid shops. Every reasonable enactment which would prevent the recurrence of such mischief should receive our hearty support.

Clause 15.†—This innocent and simple clause of ten lines is understood to be only a re-enactment of Section 75 of the Metropolis Management Amendment Act 1862, "boiled down" and freed from all superfluous matter. But in 1890 the London Council were not sure as to their powers under this Section, and in their General Powers

Bill endeavoured to obtain direct power over corner sites. Happily, the petition of the Institute and its subsequent action before the Select Committee of the House of Lords on the Bill were on this point effective, and the Act of 1890 contained in Section 33 limitations which confined these powers to new sites. This Act of 1890 is to be repealed, and the law will stand simply as set out in Clause 15, with the result that, if a building projecting at a corner beyond the line of buildings in the street is pulled down, the superintending architect may be called upon to define the general line of buildings in both streets, and on appeal the tribunal would probably be compelled to confirm his certificate, with the result that the corner building site might be cut down to a mere strip or vanish altogether under the operation of this clause. It is, therefore, imperative that some saving amendment should be made, and I understand that one is under consideration; but the London Council very properly desire to avoid the possibility of such amendment authorising the raising of new buildings to a greater height than the present shops in those cases where the forecourts have been built over, endeavours to do which—and thus greatly aggravate the lamentable evils which now exist—having been frequently made, and hitherto, I hope, without success.

This clause alone may be taken as a fair example of the difficulties which exist in considering the Bill, and as justifying the statement that even after the Bill has been amended and passed through the Committee of one House, it will be necessary for it to be again most closely considered in its passage through the Upper House of Parliament, or there will be the almost certainty that, when it comes to be interpreted in the Courts, some startling instances of oppression and injustice will occur.

Part III.—Naming and Numbering of Streets.

This Part needs no comment further than that in Clause 38 the numbers as well as the names should be registered.

Part IV.—Open Spaces about Buildings and Height of Buildings.

The novel and restrictive conditions so fully elaborated in this Part have evidently been framed with great care and pains—with the desire to apply to the whole of London, old and new, present and future, legislative control which shall in the end make it what in the eyes of the framers would be a model of sanitary perfection. The framers of the Bill have probably had before them examples of those lamentable circumstances which are dwelt on by Mr. Robert Williams in his little book on London Rookeries, and they have desired the legislative powers which they seek in order to prevent the continuance and the recurrence of those great evils in the poorer districts

" be dedicated to or left open for public use."

^{*} Clause 14 also provides that "where the building is "intended for or used as a dwelling-house only and not "for any purpose of retail trade the space so left may be "wholly or in part enclosed and kept enclosed. But when "the building is intended to be used or is used wholly or "in part for any purpose of retail trade such space shall

[†] Clause 15. No building or structure shall without the consent in writing of the Council be erected beyond the general line of buildings in any street or part of a street place or row of houses in which the same is situate in case the distance of such line of buildings from the highway does not exceed fifty feet or within fifty feet of the highway when the distance of the line of buildings therefrom amounts to or exceeds fifty feet notwithstanding there being gardens or vacant spaces between the line of buildings and the highway. Such general line of buildings shall if required be defined by the Superintending Architect by a certificate.

of London which the powers at present available are not sufficient to control and abate.

With this endeavour so to control and abate these admitted evils, every member of the Institute, as both architect and citizen, and every one whose sympathies are with the well-being of his fellow-creatures should heartily concur, and be prepared to aid and encourage every reasonable attempt, to eradicate the wretched slums which years of neglect and absence of adequate municipal control have allowed to grow up in so many districts of the metropolis, and to prevent a fresh growth of new buildings hardly better in many respects than those they replace.

The new legislative proposal aims theoretically at attaining an ideal condition of things, with the advantages of which, however, many will not on all points concur; while, when brought to the test of actual application, the restrictions are found to be so oppressive and destructive that they cannot receive any support from those who can appreciate their far-reaching and crippling effect on the vast interests of occupation and business in other districts than the slums they are supposed to be

intended primarily to benefit.

In observing on Part II. Clause 7, I have commented on the definition given of the expression "erect a new building," and a mere reference to such definition will make clear the far-reaching and destructive effect of this Part, which even in the ordinary interpretation of the expression would

be oppressive in the extreme.

The enforcing of an open space on the groundfloor level at the rear of every new building, not being a public building or of the warehouse class, as provided by Clause 30 is unnecessary and undesirable. The present conditions, under which the entire ground-floor may be covered in and the open space provided above its roof, should not be so altered.

The restriction of height, in Clause 30, subclause 3 (d), by a limiting angle of 45° from the rear of the site would be destructive, oppressive, and without adequate beneficial results. It has been suggested that, if any such limit should be found to be desirable, an angle of, say, 63° 20′, which would give the perpendicular equal to twice the base, might be substituted; some such angle would certainly be preferable to that set out in the Bill, but it should start from a point not less than 12 feet above the level of the street, to admit of the whole of the ground surface being utilised by building, and even then the London Council should have power to relax the condition in special cases.

The provisions for compelling setting back in narrow streets cannot have been seriously considered: these, like so much of the novel parts of the Bill, are excellent in theory, but would be found oppressive, destructive, and undesirable in practice.

The limitation of height of new buildings, or the raising of old buildings, to the width of the street, which now applies only to new streets, would by this Part be made applicable to all, old or new. Far preferable would it have been to alter the existing law and permit buildings in new streets to exceed in height the limit of width, and to adopt regulations similar to those in force in Paris * and other capitals, where the height of buildings is indeed regulated by the width of the streets, but in a far more liberal manner, a height of 39 feet being permitted in streets up to 25 feet in width, of nearly 49 feet in streets beyond 25 feet and under 32 feet in width. In streets beyond that width and up to 65 feet 6 inches the limit of height being 59 feet, and in streets beyond the last-named width, and in squares, quays, and boulevards 65 feet 6 inches with a roof above included, with certain limitations within an arc the radius of which should be one-half the width of the street. I do not cite these figures as worthy of adoption as limits, but they are certainly much to be preferred to the present limit, which in a 40-feet street only permits a building 40 feet high, and would in the end produce a mean and miserable result, while the condition of things during the gradual setting back aimed at by the Bill would be unsightly in the extreme, an insufferable nuisance, and create something like chaos throughout London, and especially in the City, the great commercial districts, and such fashionable and important quarters as Mayfair and St. James's; while in like manner as the rigid regulations of the Sanitary By-laws recently made under the Public Health Act (London) 1891 have prevented, and will prevent, the carrying out of desirable sanitary improvements, and thus tend to perpetuate evils which but for the stringent conditions imposed would be gladly remedied, so certainly any such legislation as is contemplated by this Part of the Bill, and also influences other Parts, would repress the desire for improvement, and compel the owners of houses which would be subject thereto to make every endeavour, by patching up and repair, to keep them out of the purview of the enactment.

The grave objections to the greater portion of this Part are here only generally indicated, as it may be hoped—not without some expectation of such hope being realised—that the promoters may appreciate the importance of the comments made on its provisions in so many influential quarters, and either withdraw it, or remodel the greater part to be in accordance with the reasonable necessities of this metropolis, finding, as we may all hope, some other and not less efficient means of obtaining the control they desire over the

^{*} See Middle-class Houses in Paris, &c. (Laws and Restrictions). Transactions, 1877-78, p. 32; and Building Control, &c. in France, Transactions, N.S. (1889), Vol. V. pp. 20-22.

existence and reconstruction of the dwellings of

The limit, by Clause 36,* of the height of buildings to 75 feet, except with the consent of the Council, is not unreasonable; but if the other provisions of this Part become law the restrictions contemplated will render the cases in which the limit can be taken advantage of few indeed, since most new buildings will of necessity be kept down to the modest maximum of 40 feet or even less. The two storeys in the roof permitted by Clause 36 should, as also the whole roof, be required to be of fire-resisting construction, and the height of the storeys be limited.

Part V.—Construction of Buildings.

The clauses from 39 to 68 are occupied with details and regulations affecting the construction of buildings, which in many particulars require technical amendment: these will probably receive careful attention, and cannot be here considered, but there are some points of great importance

which may be mentioned.

I have every reason to hope that the difficulties in dealing with the front and back walls of business premises under the existing law will be entirely removed by the insertion in Clause 40, sub-clause 1 (b),† p. 21, of the words "above the "ground storey," thus leaving the basement and ground storey in external walls, if need be, quite open. In the observations on Clause 185‡ I have noted further verbal alterations in article 14 of that clause, and also in the first Schedule, which are required to make this most desirable amendment complete.

The introduction of scantlings for joists, in Clause 43, is undesirable; the whole should be eliminated, and if any minimum is to be fixed it should be done by By-law, and even then spans of 18 feet and 20 feet for single floors should not

be recognised.

As regards the construction of roofs (Clause 48), it has been suggested as desirable that where there are any storeys in a roof the floor of which shall exceed 60 feet above the street level, such roof and storeys shall be of fire-resisting construction—a very proper provision, which I trust will be incorporated in the Bill. The rendering of the outer

The requirement under Clause 55 that every habitable room shall be at least 8 feet 6 inches in height is excessive; 8 feet, or less, would be amply sufficient; and other conditions of the clause may be classed in the same category as Part IV., and

be redrafted on a reasonable basis.

The care with which the smallest provisions of the Bill must be studied to appreciate their ultimate effect when as law they may come to be interpreted by the Courts may be illustrated by sub-clause 2 of Clause 55, p. 31, which would enact that any person who knowingly suffered a habitable room less than 8 feet 6 inches in height to be inhabited may be liable to a penalty for every day such room is inhabited. This would apply not only to rooms to be built, but to those now existing! An amendment to set this right will be introduced.

It is desirable that in this Part provision should be made for regulating the construction of buildings built or altered to provide shops and showrooms on the lower storeys, and living and sleeping apartments for shop attendants on the upper storeys, such arrangements of many large establishments being attended with enormous risk, and likely to some day lead to a grave catastrophe.

Part VI.—Special Buildings and Temporary Buildings.

Except to note the suggestion that the limit of dimensions in Clause 69, sub-section 2, should be increased to "two hundred and fifty thousand "cubic feet," this Part may be passed over.

Part VII.—Rights of Building and Adjoining Owners.

Clauses 72 to 86 are intended to embody the law affecting party walls, with certain modifications and amendments, all of which are not improvements. Apart from minor questions and technical and verbal amendments, the chief points for consideration appear to be: The giving (under Clause 72, sub-clause 6, p. 41) a right to the building owner to place on the ground of an adjoining owner the projecting footings and concrete or other solid substructure of his external wall, making compensation for any damage occasioned thereby. It would seem that the interests of the adjoining

1st day of January 1894.

† Clause 40. (1) Recesses and openings may be made in external walls provided—

side of flues, when less than $8\frac{1}{2}$ inches thick, when passing through any floor or roof, or behind or against any woodwork, is another omitted provision which should be inserted (Clause 50). There is not any provision for a continuous backbone to a party wall or which would affect the common practice of so arranging flues in party walls that what professes to be a two-brick wall, 18 inches thick, is really a hollow wall of two outer faces, each 4½ inches thick, tied at intervals with crosswithes also $4\frac{1}{2}$ inches thick, the rest of the wall being air or smoke space.

^{*} Clause 36. A building (not being a church or chapel) shall not be erected of or be subsequently increased to a greater height than seventy-five feet (exclusive of two storeys in the roof and of ornamental towers turrets or other architectural features or decorations) without the consent of the Council. Provided that this section shall not apply to a building contracted to be erected before the

⁽b) That the width of such recesses and openings do not taken together exceed one half of the whole length of the wall in which they are made.

¹ See page 344.

owner to be compensated should be represented by some word or words of wider significance than

"damage."

In Clause 73, and generally in the Bill, the sufficiency of work executed in conformity with previous Acts must be recognised, and the words "or of previous Acts" added after "in conformity "with that Act," and in other similar places. At the end of Clause 73 a sub-clause similar to Section 83 of the Metropolitan Building Act 1855, providing that any building erected previous to this Act shall be deemed conformable with the provisions thereof if conformable to the provisions of former Acts, will probably be added.

Clause 75 shortens the statutory period of notice from "three" months to "two" months—a change the desirability of which is doubtful. The difficulties and complications involved in serving notices on all the owners interested and settling with the different surveyors might be reduced if the owner immediately interested could be placed under obligation to pass on the notice to those above or below him, and for them in like manner to pass it on to others interested above or below them; and, further, if all parties could join together in appointing one individual to act as third surveyor in every case arising out of

the same wall. In Sub-clause (2) of the same clause, obligation on the building owner to shore up the adjoining ground and building should be expressly stated. The provision in Sub-clause (4) for limiting the period for exercising any rights under notice is a decided improvement, but some power for renewal or revival should be provided under conditions. It is very doubtful whether it is desirable that the adjoining owner should be allowed to himself build on any party structure works which he may require the building owner to build. This part of Subclause (5) appears likely to lead to something worse than mere controversy, and, in the absence of any explanation, had better, and will probably, be omitted.

The change made by Sub-clause (8) in the manner of settling differences appears to be objectionable. The present system of three surveyors has worked admirably for nearly forty years, and the proposed alteration to two surveyors and an umpire should be abandoned, and the present system retained. Power should, however, be given to the surveyors to make their awards "from "time to time and as occasion may require."

Clause 78, which provides for the underpinning by a building owner of the foundations of an adjoining owner's building, within ten feet of which he intends to erect a building, is new, and is desirable, as meeting a necessity often occurring.

Party fence walls and intermixed buildings appear to have received scant attention. The framers of the Bill may well refer to and adapt

the sections of the Act of 1844 relating to these matters, modifying them to meet present circumstances.

Part VIII., Dangerous and Neglected Struetures; Part IX., Dangerous and Noxious Brinesses; Part X., Dwelling-houses on low-lying Land; Part XI., Sky Signs; Part XII., Superintending Architects and District Surveyors, do not appear to demand special notice.

Part XIII.—By-Laws.

By Clause 136 the London Council will be empowered to make By-laws on many matters, some of which are the subject of direct legislation in the preceding parts of the Bill, such as:

Open spaces about buildings, Setting back of buildings, Height of buildings.

These powers are very wide, and in view of the evident intentions and aims of the framers of the Bill should be carefully guarded, so as to secure that objects which have not been attained by direct legislation may not be carried through under cover of the powers to make By-laws; in fact, the three subjects specified above are not suitable subjects to be dealt with in By-laws, and should be eliminated.

To the matters stated there may be added:

The regulation of the scantling of timber joists, and other constructions in timber or metal;

The protection of iron or metal constructions from injury by fire.

In Sub-clause (4), pp. 73–74, there is a provision that not less than two months before applying to the Secretary of State for the confirmation of any By-laws the Council shall send a copy of the proposed By-laws to the Royal Institute of British Architects and to the Surveyors' Institution, and to such other societies and persons as the Secretary of State may direct. And by Sub-clause (5) all By-laws, when made and confirmed, shall be printed and hung up in the principal office of the Council and be open to public inspection without payment.

This is all very well so far as it goes; but there is no provision for these bodies making representations to the Secretary of State, nor for such representations being duly heard and considered by him, nor for any discussion of objections. In view of the importance of the subjects dealt with, it appears to be imperative that the fullest opportunity of objection and discussion should be afforded, and that it should be made incumbent on the Secretary of State, by himself or some authority appointed by him, to hear, consider, and decide upon such objections.

Recent experience also shows the absolute necessity of such provision being made, and it

cannot reasonably be objected to by the London Council, who should facilitate in every way the perfecting of their By-laws; and I have reason to hope that representations which have been made

on the subject will receive attention.

The consideration of this proposed method of obtaining the confirmation of By-laws affords a good opportunity to appreciate the spirit in which the "consolidation and amendment" have been carried out. All existing legislation relating to By-laws is to be repealed, and the inefficient and undesirable method above mentioned substituted. Now the existing legislation was the result of much discussion, and is nearly satisfactory; it is expressed in the Metropolis Management and Building Acts Amendment Act 1878 (41 & 42 Vict. cap. 32), sec. 16, which, so far as concerns this point, runs thus:—

"Any Bye-law made in pursuance of this sec-"tion and any alteration variation and amend-"ment made therein and any repeal of a Bye-law "shall not be of any validity until it has been "confirmed by one of Her Majesty's Principal

"Secretaries of State."

"A Bye-law made under this Section shall not "nor shall any alteration or amendment therein "or repeal thereof be confirmed by one of Her "Majesty's Principal Secretaries of State until the "expiration of two months after a copy of the "Bye-laws together with notice of the intention "to apply for confirmation of the same has been "published by the Board once at least in each of "two consecutive weeks in two or more news-"papers circulating in the Metropolis and copies "of such Bye-laws and notice have been delivered "at the office of the Royal Institute of British "Architects and of the Institution of Surveyors "and to such other societies and persons as such "Principal Secretary of State may direct. And "any person affected by any such proposed Bye-"law or alteration variation or amendment in or "repeal of any Bye-law may forward notice of his "objection to such Secretary of State who shall "take the same into consideration."

There was one thing wanting in this legislation -the publication of the confirmed By-laws in the public press so that they might become known to all men—and it would have been reasonable to suppose that an Amending Bill would have made good this defect, and provided for full publicity being given to the By-laws by which the great interests of the Metropolis of the Empire are to be governed: But no! Every safeguard of publicity has been carefully expunged, and the submission to the Royal Institute of British Architects and the Surveyors' Institution rendered practically futile. The publication of regulations which may intimately affect the interests of the inhabitants of this city is to be effected by the hanging up of a printed copy of such regulations "in the principal office of "the Council;" and the London Council are to

be placed practically in a position of absolute power to make pretty well what By-laws they please, and leave those who will be subject to them to discover, as best they may, the nature of the restrictions to which they are amenable.

Part XIV.—Legal Proceedings.

Clause 150, relating to the Tribunal of Appeal, cannot be passed without notice. However captious and hypercritical it may seem to comment on what is evidently an earnest endeavour to constitute as perfectly as may be attainable such a tribunal, I cannot but suggest that the number of members proposed—five—is too great; that with five members, of whom three would form a quorum, there might not be that continuity of view which a smaller number would insure, and that the expense of the remuneration of the members would be greatly increased.

The member to be appointed by the Secretary of State would probably be a barrister of seven years' standing, but the questions to be decided by the tribunal are not such as to demand a highly trained legal mind for their consideration, while if there should not be a legal member, the tribunal constituted without one would be able, under Clause 155, to obtain, should the necessity arise,

the assistance of a legal assessor.

The member to be appointed by the Council of the Institution of Civil Engineers appears to be required only in the case of appeal against the certificate of the Engineer of the Council under Part X., "Dwelling-houses on low-lying Land." In most if not all of these cases the practical knowledge and experience of the architect and the surveyor members of the tribunal should suffice; but should they need external professional advice they are under Clause 155 authorised to obtain it.

I would, therefore, with the utmost respect for the excellent intention with which the proposed constitution has been framed, suggest for consideration the expediency of reducing the number of members of the tribunal to three—representatives respectively of the London Council, the architects, and the surveyors.

It would be better that the appointments should be annual, and not for three years, as provided in Clause 151. It will also be necessary to provide for filling up vacancies, temporary or permanent, and the manner in which decisions of the tribunal are to be enforced should also be considered.

Part XV.—-Miscellaneous.

On this Part I need only invite your particular attention to Clause 185, "definitions," which require more careful study and investigation than I am able here to bestow.

I have already referred to (8), p. 93, "new building," and anticipate that some modifica-

tions may be made in the definition and applica-

tion of this expression.

On (14),* p. 94, "base," I think it to be almost certain that the words "or girder or bressummer" will be added, thus making the base of the wall on a bressummer the top of the bressummer, which with the addition of "to include bressummers," in Art. 1 of the First Schedule, p. 101, and the application of "base" as defined above by Art. 6 of the First Schedule, p. 102, defining the manner of measuring the height of a wall, will remove the great difficulties which exist at present in dealing with the front and back walls of business premises, as mentioned in my comment on Part V. Clause 40, Sub-clause 1 (b), p. 21.

There are various definitions which might well be amended, and in some cases those set out in the Draft Bill prepared by the Institute are preferable. And all require careful consideration be-

fore they can be admitted to be correct.

In thus commenting on the Bill, I have been actuated by a desire to assist the London Council by eliciting frank expressions of opinion on some of the lealing principles and details of the measure, so that they may have the opportunity of considering the opinions of the members of this Institute in common with those of the other bodies before which the Bill has been openly discussed, and of so amending the Bill at the earliest possible stage as to reduce the grounds of opposition to the narrowest which may be practicable.

It is hardly possible that even at an adjourned discussion the opinion of any large number of members qualified to express them could be obtained; I would therefore suggest that it would be a great assistance to the Practice Standing Committee if members would send to the Secretary of the Institute any suggestions and criticisms they may desire to offer on foolscap written on one side only; and I am sure the Chairman of the Building Act Committee of the London Council, who is so anxiously desirous that the Bill should be made as perfect as possible in all technical detail, would be happy to receive suggestions at any time.

In thus bringing the Bill before you for free discussion, I feel that to ask you to handle it tenderly would be to defeat the object in view; but I do ask you to treat it with care—with very watchful care—and in criticising its principles and details to bear in mind that the object of this Institute, no less than that of the London Council, is to aim at obtaining such amendment of the existing building laws as will conduce to the more perfect development of the metropolis of this Empire, and promote the health and safety of its inhabitants; and that to attain this common end it is incumbent on us to render to the London

Council that hearty co-operation which their aims when within reasonable limits should deserve.

ARTHUR CATES.

Discussion.

Dr. LONGSTAFF (Chairman of the Building Act Committee of the London County Council) said that Mr. Cates had been in a position of peculiar difficulty in reading his Paper—in fact, both he and Mr. Cates had found themselves in that position at the Conference which had been held. Mr. Cates had said to him: "I cannot say "that anything that I say to you binds the Coun-"cil of the Institute of British Architects;" and he (Dr. Longstaff) had to reply: "Mr. Cates, "anything that I say to you must not be taken as "binding upon the London County Council;" and so they had been going on a hypothetical basis for some time; it would be seen, indeed, that a good deal of Mr. Cates's Paper was written in a form, if he might say so, of very polite hypothesis. Now, he was happy to be able to say, a good many of those hypotheses had become substantial facts, and the ground had been a good deal cleared. With very few exceptions, if they omitted for the moment Parts I. and IV., and one or two minor points, the London Council had accepted all the amendments suggested by Mr. Cates. When it came to questions which were based on sanitary principles, the agreement perhaps was not quite so cordial as might be wished; but he might say that the Committee which had charge of the Bill, when they debated in camerá after the departure of Mr. Cates and his colleagues, agreed to accept such modifications of Part I. of the Bill as he thought would, or should, satisfy the Institute. As regarded Part IV., which was the most difficult of all, he was not then in a position to speak definitely, because, during the Conferences, methods of approaching the matter were suggested and were sketched out, and those suggestions had to be considered very carefully by the Committee; and the Committee had given certain instructions to the draughtsman, and until they saw the result of those instructions in print, and deliberated upon them once more, he was not able to say how far they would meet the wishes of the Institute; but whether they met such wishes or not, they would very materially indeed modify the drastic and bald expressions that were found in the Bill before. Mr. Cates, he thought, had spoken with a little severity as to the form in which the Bill had appeared and its imperfections. Now that was due to many causes. The prime cause was owing to the imperfection of the modern ideal of doing everything by a Committee. He could not conceive of any worse instrument that could be devised to draft an Act of Parliament than a Committee. For instance, to begin with, the Committee were not always there. Again, when the Committee were there they were not always the

^{*} Clause 185, Article (14): "The expression 'base' applied to a wall means the underside of the course immediately above the footings."

same Committee as before. And, further, a Committee had the habit of losing patience, not to say temper. And the Committee were not always consistent one day with what they were on a previous day. Those were difficulties which were inherent in all Committees that he, at any rate, had had anything to do with. But when the Committee which had to do that impossible task was a Committee which had to meet once a week to discharge an agenda paper consisting on an average of from about 85 to 95 items, which had to be got through in addition to all the legislative work, the difficulties were not diminished. For close upon five years the Building Act Committee had been grappling with the subject in all the odds and ends of time that they could squeeze in anywhere, and the difficulties he had mentioned were one cause of the imperfections of the Bill. Another cause was that when they (the Committee) had made up their own minds, the matter had been placed in the hands of the Parliamentary draughtsman. Now a Parliamentary draughtsman was neither architect, nor surveyor, nor builder, and did not understand three-fourths of the technicalities of the Bill, and he wrote things which he thought were all right, and which from his point of view were all right, but when he found that words meant something quite different from what he thought they meant, the re-sult was not exactly what he had anticipated. Moreover, the draughtsman had had but a very little time to do his work; and there was the question of Notices to be taken into consideration. Then they were compelled to bring in the Bill in the present year because next year there would be another election to the Council and another breach of continuity. It was very difficult to carry on the Bill from the first Council to the second; and to carry it on to a third might be still more difficult; so that they were very anxious to get it finished during the lifetime of the present Committee. Then there was another difficulty, and a very real one, which he thought ought to be appreciated, and that was that they desired to consolidate—and he thought everybody would agree with them. It was only a question of how much they should consolidate. Some people thought that they should have consolidated all the sanitary laws. He knew that his friend Mr. Hall wished them to do so; but they had to draw the line somewhere. It was found when they were going through the different provisions, and specially those relating to streets, that they had various dates running over thirty years, and they had all been drafted by different draughtsmen, so that the phraseology of the different Acts was inconsistent; and when they came to attempt consolidation it was found that a great deal of re-writing was necessary, and when that was done all sorts of consequential inconsistencies arose, and thus a great many of those provisions were known to be wrong as they stood. But having now got a much simpler form of words, and, he thought, a much more harmonious and symmetrical form than was ever before obtained, they hoped, with the kind assistance of the Institute, to make the thing practical. So far on general principles. As to the By-laws he did not think Mr. Cates had been quite fair to the London Council. It was certainly not the intention to ask for power to do anything they liked anyhow; and he confessed that he differed from Mr. Cates as to the peculiar virtue of publishing By-laws in the London Gazette, The Times, the Standard, or the Daily News; nobody would look at them there, and they would be illegible in the type of the newspaper, and he thought it would be very much the same as sticking them on the door. The London County Council's publications could be obtained very near to Spring Gardens, as Mr. Cates knew. Then Mr. Cates thought they did not go far enough—that they should compel an owner, so long as he might be out of Mayfair or St. James's, to set apart a certain portion of the building estate for a park or open square. He was very glad to find that Mr. Cates was more progressive than the County Council in that matter. If he could compel every owner who built in the suburbs to devote a certain amount to open space, he should not say nay to him; but in that respect he was more progressive even than the Council. But the great point, of course, upon which there was a difference of opinion in the Bill was as to how far they were to be influenced, in the broad sense of the term, by sanitary considerations; and the whole point arose, in the first place, on the importance of the question, and, in the next place, whether the particular things that they considered essentials to health were essentials to health, and, if they were essentials to health, how they were to be obtained with the least friction and with the least interference with the rights of individuals. Although he attached great importance to those clauses of the Bill, he felt that the result of the conferences that they had had would be eminently practical, and for this reason. He thought that the gentlemen representing the Institute, and the Surveyors, having shown that there were certain cases in which the principles that the Committee had laid down were clearly not acceptable, and having shown the chief objections that were to be made, the Committee, by now yielding on some of the points that were most strongly objected to, would be more likely to carry other points which they regarded as important. But the Institute must not imagine that the County Council for one moment supposed that Part IV. could have been carried in the form in which it stood. Purposely the former savings in old Acts were omitted—notably, the exemption of the City of London-because, after having considered the question, the conclusion had been come to that it was not right to exempt the City of London and to include, say, the Strand. The thing to exempt was a certain class of property, or a certain condition of affairs, and no limit of area that could be drawn would meet the case; the exemption must depend upon something else than geographical or Local Government limits. Therefore all those old exemptions were withdrawn, and it came to be considered what the exemptions must be. It was felt by all that there must be large exemptions, but the County Council could not see how to get at them, and he thought that in the course of the conferences the clue had come, and it was to deal more rigorously with those dwellings that were likely to be tenanted by the poorer classes—the more defenceless portion of the community; and it was therefore proposed to accept that suggestion, and to let other buildings off comparatively easily. He thought the London County Council was quite aware, as everybody must be aware, of one inherent difficulty in the question, namely, that any restriction that could be made upon building in regard to space or quality or anything else would inevitably displace large numbers of people who now lived in London, and would send them out into the suburbs. There were members of the County Council, and there were many philanthropists, who looked upon that as a serious matter. Personally, he did not. Personally, he thought it inevitable that people must cease to live in the centre, and must live in the periphery. The gain to health would be enormous, although it was true that the worry of travelling backwards and forwards was something to set in the other scale; but, having been born in the suburbs and lived there since, and being altogether a suburban, he was able to say, with something like confidence, that the stimulating effect of arriving at the end of the day in the better air of the suburbs was well worth the expense and the trouble of getting there. He should like to say that he was extremely grateful to the Institute, and more especially to its representatives who had given the Council so much assistance; he knew from a too bitter experience what labour such work as that of Messrs, Hall and Rickman involved. All the intercourse the London Council had had with those gentlemen at the conferences and on other occasions had been always of a most agreeable character, and he hoped they should not be worse friends than they were before; if somewhat of a spirit of hostility had been to some extent removed, he should be very glad. The Council wished that the Bill should be carried forward with something like the unanimity of the various people interested in all the professions that concerned building as well as of the municipal controlling authority. It was inevitable in a question of that kind that

they could not all agree. He would even go so far as to say that he wondered whether the members of the Institute Practice Committee had ever been quite unanimous on any one of the draft clauses of their Bill. If that were the case —he did not say that it was—was it likely that the Royal Institute of British Architects would exactly agree with the County Council, or that either of them would agree with the Surveyors' Institution, or with any other body they could name, or even with Parliament, who might differ from them all? But he must take the opportunity of venturing to express his regret upon one point on which he personally, as a member of the Building Act Committee—and he thought he spoke for the County Council, for some members of it at all events-had suffered a grievous disappointment at the hands of the Institute and of architects generally. The practical sides of architecture—the structural side and the sanitary side were of course of paramount importance; but in his humble opinion-he might be wrong-there was yet another side of architecture which was of scarcely less importance; he alluded to the side Now the Committee had received no communications whatever from the Institute of Architects, or from any other architects, as to any clauses in the Bill which bore upon the question of art. He should be the last person to suggest anything in the least degree in the sense of a censorship or control of art by any municipal body, and, if there were such a control of art, he was not at all certain that the County Council would be the most suitable body to exercise such control; it might be-he would not say. It was very evident, however, to members of the Institute, as practical men, that a set of building regulations might or might not have a tendency to influence art one way or another; they might be adverse to the interests of art, or they might be in favour of the interests of art. It might be thought by some present that the County Council did not care in the least about art. If so, a great mistake was made. He did not suppose that there ever was any body of men who liad, in their own ignorant lay way, a stronger desire to see London beautiful than the London County Council, and he knew that that feeling extended into strata where it might not be supposed that it was very active—namely, the extreme Labour wing. They were very keen about it. So the Council asked for guidance at the hands of the Institute, and hitherto they had not had it. He thought he could show the Institute that the Council had had some interest in the matter in clauses of the Bill which had not been alluded to, in which the Council had exercised a self-denying The only momentary relief in the ordinance. dull labours of the Building Committee had been in the contemplation of beautiful drawings, by distinguished Fellows of the Institute, of oriel

windows, where they required to have a portion of their building overhanging another portion. The Building Committee had been so interested in the art question that they had allowed architects to have their oriel windows without coming to the Committee, and those beautiful drawings would come to them no more. Then the Committee had also modified the old restrictions about woodwork, in which they were even supported by the district surveyors, one of whom, among many carefullythought-out suggestions, had stated that it was a hardship that people could not have wooden bargeboards and certain mouldings and decorations to dormer windows; and the Committee had inserted a special clause to allow them to be put up within certain limits. Again, the Committee had tried control advertisements, which were, he should say, of all the enemies of architecture by far the greatest, because a single row of letters would spoil the finest building in the world. To give an instance. After contemplating with Mr. Powell the other day the beautiful mosaics in St. Paul's, he took a cab and drove along Ludgate Hill. He did not know whether any distinguished Fellows of the Institute had designed the buildings at the bottom of Ludgate Hill, but they were mostly new buildings and mostly of substantial construction, and they must have cost a great deal of money. He supposed that that open Circus, with Fleet Street leading up the hill, might have been, and ought to have been, beautiful; but if the buildings in question did not possess beauty of a high order still there might have been some picturesqueness and some dignity. But the whole thing was one blaze of letters, of every colour that could be conceived, a state of things that was simply hideous; and there was no relief whatever to the eye going along Fleet Street till one came to the building of the Bank of England on the right hand and the Law Courts following it, and Messrs. Childs' Bank on the left, which buildings, being of a public character, had no advertisements upon them, and there, of course, one could see at once what a building might look like. Now the Building Act Committee of the London Council had tried to control such a state of things, but had received no help from the Art Committee of the Institute. There was one thing only in which the Building Committee had made a provision which might possibly interfere with architects—the projection of cornices had been limited to two feet. But that, he thought, was a fairly liberal proposal, because such cornices really were dangerous, and obstructed a great deal of light. Then another thing was that there were a great many things which could only be done with the consent of the London Council, which, as the Institute knew, practically meant the consent of the Building Act Committee; and there had been many occasions when the thing asked for had not been objectionable in itself, but had

been so extremely ugly that the Committee had objected to pass it, and in some cases had got the thing very much improved before it had been passed. For instance, in a case in which the Council had happened to be in the position of a landlord, they had objected to a building on the Thames Embankment, which, he ventured to say, would have done its best to spoil the Houses of Parliament, St. Stephen's Club, and the new Police Station—they had objected to the design as being wholly incapable. The Institute, he knew, had a committee called the Practice Committee, and he believed it had one called the Art Committee. Now A in the alphabet preceded P, but the County Council had suggestions from the Practice Committee while it had had none from the Art Committee. He was glad, at all events, to find that the Institute was one of those bodies—unlike another distinguished profession—which considered that practice came before preaching; but he wished that the Institute would give the Council a little of the preaching. It had appeared to him that there were many points in which the Bill might or might not have a deleterious effect. For instance, the clause in the Bill which was to compel advertisements to be in fire-resisting materials. It had been stated that that was likely to drive the old signboard out of existence, and replace it by enamelled iron. Now enamelled iron was of all materials perhaps the most ugly, whereas the old signboard, painted in soft colours, was, comparatively speaking, an inoffensive object. But that suggestion did not come from the Art Committee of the Institute. He had a newspaper cutting sent to him from, he thought, the Licensed Victuallers' Gazette. Again, Mr. Cates had objected to streets 40 feet wide with buildings 40 feet high on either side. Now gentlemen of the architectural profession were supposed to study the mysterious science of the art of proportion, but the Building Act Committee had heard no suggestion that building in the ratio of 5 to 4 or 5 to 3 would be more consonant with the idea of beauty. If the Institute had such an idea, the Building Act Committee should have the benefit of it. There was one other point to which the attention of the Committee had been called, but not by the Art Committee of the Institute; it was as to the desirability of having the parapet of the party-wall carried above the slates. Now he himself had for a long time thought that that was an undesirable and unnecessary provision in the case of small houses; but his attention was called to it, not by the Art Committee at all, but by the Architect of the Local Government Board, who had had a good deal to do with model bylaws, and who said that whenever he could he got that struck out of local by-laws. He (Dr. Longstaffe) held the opinion that it was one of the most difficult joints to make between the slates and the brickwork. Having been born in the

suburbs, and lived there all his life, and coming along the picturesque route from Putney to Waterloo, he had had a grand opportunity of observing party-walls, especially in Battersea; and he noticed that they were bordered along the edge with mortar and cement of all colours, sorts, and thicknesses, with all sorts of flashings and arrangements, the technical names of which he did not know, of slates and tiles, and other contrivances, which, judging from the colours, he should say were renewed every six months to keep the water out; and it was evident that those contrivances were unsatisfactory, and everyone knew that those houses were not water-tight, were more costly to make, and, lastly, as a matter of practical experience, were never burnt down, and therefore the risk of fire extending seemed to him to come to nil. He should have thought then that that was a thing about which the Art Committee of the Institute might have had something to say.

Mr. JOHN SLATER, B.A. [F], said that he had been asked to take an early part in the discussion as having taken a great deal of interest in legislation upon the subject. Some years ago he had strongly advocated before the Institute the consolidation and amalgamation of the various Building Acts relating to London and the enactment of new provisions which would lead to more stable and solid and sanitary building; and therefore he welcomed the present Bill most cordially, because it had evidently been drawn with a sincere desire on the part of the framers to do away with a great many most flagrant abuses which existed in the metropolis. For a great many of the clauses and regulations of the Bill he had nothing but commendation, and he would even go further, and fully admit that if they were dealing with new districts only there were very few provisions indeed in the Bill which he should care to see taken out. But the experience he had gained during the last few years in erecting new buildings in parts of London which had previously been covered with buildings had forced him to the conclusion that if the Bill were carried without modification it would prevent what it aimed at accomplishing, and would retard very materially the improvement of many parts of London, of which they might take as a sample an area of about a mile radius from where they were now assembled. And it was because he felt that so strongly that he would urge upon the County Council what, from the remarks of Dr. Longstaff, he felt sure they were inclined to do, that they should consider very seriously the objections to some parts of the Bill which had been made by Mr. Cates, and which would doubtless be enlarged upon by subsequent speakers. He was exceedingly glad to hear from Dr. Longstaff that the Building Committee of the County Council were taking the view that the Bill was too stringent to be applied in its entirety over all parts of London,

because he was quite sure that that admission would facilitate matters materially, and would enable them all to work together, as he hoped to get a really good Bill passed. He entirely agreed with Mr. Cates that there were some additions to the Bill which it would be very desirable to supply. He could not help thinking that the County Council ought to take power to ensure that in the laying out of new districts certain parts were perpetually to be retained as open spaces. Mr. Cates had not perhaps the reputation of being a Progressive Radical, but he was evidently in advance of the Council in what he had said, and he entirely took Mr. Cates's view. When and where was this huge London of theirs going to stop? Every single old building in the suburbs with a fine garden attached to it was being pulled down and absorbed by the maw of the speculative builder. The County Council made regulations with regard to the width of roads, but the buildings were being crowded together in the most undesirable manner, and he felt sure that the support of everybody who had the interest of the metropolis at heart would be given to the Council if they would try to secure some amount of open space being left in such districts. With regard to public buildings, again, the definition of a public building had been very much improved in the present Bill; in fact, he thought it was taken almost verbatim from the words of a clause in the Manchester Act, to which he alluded four years ago; but, so far as he was able to see, he could find no regulations which would enable the Conncil to forbid the erection of a public building or the conversion of an existing private building into a public building on an improper site. He held most strongly that no public building ought to be erected with a frontage to one street only unless they insisted that certain areas should be left on the sides for the purposes of exit. He admitted that that was referred to in certain by-laws or regulations of the Council; but, unless he was mistaken, these only applied to where there was more than one storey in a public building—that if there was an upper gallery they must provide for separate side exits. But he could imagine a public building being erected with no upper storey where, in case of a panic, there would be immense danger to life if the whole of the audience had to go from one end of the building to the other in order to get out; and it was most desirable that they should have exits on both sides of every public building of whatever kind. Clause 4 of the Bill, which had been alluded to by Mr. Cates, was of course the crux of the whole matter, and, with regard to several points to which he had intended to allude, he thought that what had fallen from Dr. Longstaff made it unnecessary that he should do so. He only wished that he could show to him and to many of the other members of the County Council some buildings, not very

far distant, that they might see and appreciate the immense difficulties which were met with when new buildings had to be put down on old sites, and that they might appreciate also the improvements made in those buildings when that had to be done. It was all very well to say, as Clause 30 did, that every person who should erect a new building, &c., should leave a space at the back where the enclosing walls, or anything else put there, should not exceed 9 feet in height, or, in the case of other than a domestic building, 12 feet. It frequently happened that they had to put a building down on an old site which was surrounded for its whole area by walls of 18 and 20 feet and more in height, and it was impossible to carry out those regulations. It was most important that in the rear of any building, whether erected for business purposes or not, there should be an open area above the ceiling of the ground floor; but if the ground floor and such basement as was used for business purposes had an open sky-light in the rear, and proper means of ventilation, he maintained that it was even more healthy than if the open area were put down to the ground and the back windows looked into a court enclosed with high walls containing stagnant air, and which in itself would become a receptacle for refuse and rubbish of all sorts. He maintained that the conditions were quite healthy as they were at present, because, with regard to business premises, people did not live on the ground floor and in the basement, but upstairs; and it must be remembered, too, that the open area which was given to a house on the ground floor did not affect that house only. It had occurred to him that the County Council thought that the open area only applied to the one building; but if an open area was secured for two or three buildings each building got the benefit of the aggregate, and the consequence was that even now buildings could be put up where there would be a clear space in front of the back windows of 150 feet or more, and that was what should be ensured. There was an almost unanimous consensus of opinion among architects, he thought, as to the impossibility and impracticability of some of the regulations in the Bill, and he claimed for architects that they were practical men; and not only that, but that they were actuated by as keen a desire as any member of the County Council to ensure healthy conditions for the people in the buildings that they put up; and he would ask the Council to consider seriously the objections that had been raised to those points of the Bill, and to endeavour either to cut them out, or, at any rate, to put in an enabling clause, so that, in cases where the conditions could not be carried out in their entirety, the Council might allow something which would undoubtedly immensely improve the property as it then existed, and make it far more healthy for those who live in it. With regard to the question of construc-

tion, it was impossible to go into all the points mentioned in the Bill, but he would plead for fewer hard-and-fast rules and more discrimination to be allowed to persons who had to carry out the regulations. It must be remembered that no literal enactments that could be put down on any points would cover all the cases; they could only get what he would call a minimum—they could say that at least such and such a thing should be so and so; but it might frequently happen that such minimum was not all that was required for the purpose, and then they were really playing into the hands of the dishonest man or the speculative builder if strict literal definitions were put down of what was to be done in the matter of construction, because, as soon as he carried them out, he could snap his fingers at the surveyor; he had complied with the conditions of the Bill, and nothing more could be said to him. Take the question of foundations. No architect would think of deciding upon the depth and width of the concrete under-footing of a building unless he had seen the ground; and, do what they would, they could not meet all the cases that had to be dealt with. He could point to a street not far distant where 150 years ago all the gravel was taken out, and a good foundation could not be got under the roadway under 20 feet. But they could not legislate for that by literal prescriptions with regard to foundations. He held strongly that the best regulations that could be made, and the best orders that could be given, would be that no footings were to be placed for any new buildings until the district surveyor has inspected and approved of the foundation. That was exactly on all fours with what was done by the vestries with regard to drains. No doubt district surveyors would not like to have that responsibility; but if they were able men they ought not to refuse it. With regard to laying drains, the vestries said that the drainage-pipes should not be covered up until they had been inspected, and he saw no reason why a competent district surveyor should not inspect the foundation, and say that he would not have the footings put down until he had seen the foundation. Then, with regard to walls, he believed that, strictly speaking, if the conditions in the Bill were read literally, a wall could not be put to a bressummer at all; but Mr. Cates had alluded to that, and had said that there was no doubt some modifications would be made on that point. And of course there were a host of matters of the kind that he could not possibly take up the time by alluding to at that Meeting. With regard to the Tribunal of Appeal, he advocated very strongly such a tribunal in the Paper he had referred to, and he could not help thinking that the suggestions of an abortive Bill of 1851 seemed to be a very good plan indeed. Lord Seymour, as First Commissioner of Works, brought in a Bill in

which he proposed that one legal assessor and one architect or surveyor should form the Court. But if that could not be agreed to, he would urge that the Court of Appeal should not be made too cumbrous. He agreed with Mr. Cates that better decisions would be come to, and decisions which would be more relied upon, if they had three members instead of five, and he hoped that some such alterations would be made in the Bill. A Tribunal of Appeal was a most important thing, and he was very glad to see it recognised; but he hoped it would be slightly modified, and that they should have a better tribunal than those five members would constitute. In conclusion, he would say that they had a chance now, he thought, of a thoroughly good Bill, and it believed them all to try and do what they could to make it better. At the same time, with regard to the remarks that fell from Dr. Longstaff as to the reason why the County Council were pushing the Bill forward rather hurriedly, he would venture to ask him to reconsider it. It was far better that they should wait for one or two years, and have a really good Act, than that a Bill of such immense importance should be hurried through Parliament, and that it should be then found necessary, as had been often found before, to be constantly having amending Acts because something important had been omitted. It would be infinitely better to wait a little longer and have a better Bill, and if the County Council thoroughly appreciated that, and if they made up their minds—as he hoped they would not to jeopardise the Bill by putting in conditions which it was practically impossible to carry ont, and would put off for a generation, at least, the improvement of many districts, he hoped that in a few years they might have an Act which all could approve, and which would go a long way towards making London more sanitary and healthy, and, he believed, more beautiful. He concluded by proposing a vote of thanks to Mr. Cates for having brought the matter before the Institute so succinctly and so ably.

MR. W. WALLACE BRUCE said that, as Chairman of the Housing Sub-Committee of the County Council, he thought it might be convenient if he stated to the Meeting what were the considerations and what were the experiences which had led his Committee to press upon the Building Act Committee Part IV. of the Bill, to which he should entirely confine his attention. Mr. Cates had said that they had tried for a model of sanitary perfection, and had intimated in one or two places that possibly they were visionary people. He was afraid they would be very much disappointed if they expected to find in him a dreamer of dreams or anything of the kind. It was purely from practical considerations, and as a matter simply of common-sense, that it struck them on the Housing

Sub-Committee that the old Building Acts failed so absolutely when read in connection with the legislation which had taken place since those Acts were passed. Now these Acts which had been recently passed, and which touched the matter very much indeed, had not been referred to. Mr. Cates had not once mentioned them; and yet, to the Housing Sub-Committee sitting every Wednesday for three or four hours, and having all these matters before them, they were all-important. In his remarks on Part IV. Mr. Cates did not appear to be quite up to date. If they had been written in 1889 they would have been right enough; but since 1889 two very important Acts of Parliament had been passed by Lord Salisbury's Government — The Housing of the Working Classes Act 1890 and the Public Health Act 1891; and all that his Committee asked for was that the Building Acts might be brought up into line with those two very important Acts. As a matter of every-day practice it was found that they clashed continually; that under the Building Acts a building could be put up which they might be called upon the next day to destroy at the public expense because under those two other Acts it was an insanitary building. Mr. Slater had said that the architects were of all bodies a common-sense body; but he thought they would agree that it was hardly common-sense that that state of things should exist—that one law should actually allow buildings to be put up, and that they might a few days afterwards be called upon, at the expense of the whole of London, to destroy them because they were insanitary. That was just the main point to which he wished the Institute to kindly give their attention, because it was really at the bottom of Part IV. Until they understood that, they could not understand what influenced the Committee in pressing forward that Part so much. He would like to give a little illustration of what had been going on. Under the Housing of the Working Classes Act, as they were aware, when the Sanitary Authority declared that through the narrowness, closeness, bad arrangement or bad condition of streets, houses, or groups of houses, within a certain area, or the want of light, air, ventilation, or proper conveniences, or from any other sanitary defect, or one or more such causes, they were dangerous or injurious to the health of the inhabitants, either of the buildings in the said area or adjacent buildings, then the London County Council could be called upon to buy up the whole of that area, to clear the buildings off the whole of it, to reduce it to bare land, to reorganise new streets, and either themselves to build houses again on those new streets, or to get somebody else to build them for them. Surely that was at the bottom of the whole question. When it was said that the Council were trying for ideal perfection, it was rather too late for such criticism; the Council had

only to carry out the Acts of 1890 and 1891, and surely the Building Act should be framed with consideration to those Acts. So much for the Housing of the Working Classes Act 1890. Then the Public Health Act 1891 enacts that when a dwelling-house is dangerous or injurious to health so as to be unfit for human habitation, the local authority shall get a closing order for it, and close it. But then in steps the old Building Act and says that the owner of that house can build it up again and make it a more insanitary house than it was before. The houses in question are probably two-storey houses. You have got an alley of twelve feet wide and two-storey houses on either side; they are getting rotten; the local authority says they are unfit for human habitation, and must be closed. The owner comes in and rebuilds them five high instead of two, and there is nothing in the Building Acts to prevent it. Was that common-sense? That was what they wanted to alter. It was not for him to say whether the rules laid down in the Bill were correct or not; there was present at that Meeting the Public Health authority for London, and he could tell them his views. He (the speaker) simply wanted to point out what was in the minds of the Committee—how they were looking at it from day to day in the light of experience. Just take one experience of the Housing of the Working Classes Act 1890. There was notified to the last Council an area of fifteen acres just east of Shoreditch, south-east of Bethnal Green Church. The Council had under that Act to buy up the whole of the interests on those fifteen acres of ground. The original claims for compensation were £457,000, which, after much haggling, were settled for £266,000; but, to cut a long story short, the net loss to the people of London for clearing that area, after allowing for the value of the land as it stood bare, and dedicated to the building of artisans' dwellings, was £265,000. But then, under the present Building Acts, such areas were growing up all over London; and his Committee could be called upon, as soon as they got ripe, to take over those areas and destroy them at the cost of the people of London. That was the difficulty they were in; the result would be a burden upon London which would be simply unbearable. To give an idea of what was going on, at the present time there was an area they were called upon to clear in Poplar, at the extreme east of London, close to the East India Docks; there was an area that they were called upon to clear owned by two noble lords in St. Pancras in the north-west of London; there was an area in Lambeth in the south-west. Taking those three extreme points, they would see that they covered fully two-thirds of the whole of London. This question affected the whole of that area. He would give them also a list of what had

been before the Committee during the year—it would give them an idea of what they might be called upon to clear under that Act if they carried it out without trying other means to satisfy the sanitary considerations. The list of places which had been notified to the Council as unhealthy consisted of large and small areas in Bermondsey, Bethnal Green, Clerkenwell, Greenwich, Holborn, Kensington, Islington, Lambeth, Limehouse, Mile End, Newington, Poplar, Rotherhithe, Shoreditch, St. George's-in-the-East, St. Luke's, St. Margaret's and St. John's (Westminster), St. Martin's-in-the-Fields, St. Olave's (Southwark), St. Pancras, Strand, Whitechapel, and Woolwich. He wanted them just to consider that the old Building Acts were actually producing that state of things all over London; and that, under those two Acts, the Council could be called upon to spend the money of London over that whole area under the conditions that were growing up. There were several of those areas which were actually being cleared at a cost of many tens of thousands of pounds each to London. It was a terrible loss, and he would ask the members of the Institute to seriously consider whether some regulations could not be drawn up to prevent the recurrence of that evil, and the absurd cost, if only they would take it seriously in hand. The difficulties were very great; but the Council appreciated them perfectly well. To mention a few examples. Beyond London Bridge Station there were five or six long alleys running out of one road, each of them twelve feet wide, with little houses two storeys high; they were all rotten, and the area was represented to the Council as being unfit for Luman habitation. Now if the Council simply closed them, under the Housing of the Working Classes Act, there was no reason under the Building Acts why they should not be built up again five storeys instead of two, which would make the area far more unhealthy than it was at present. Surely, regulations must be framed which would prevent that. To take another area. There was a range of warehouses five and a half storeys high, and lofty storeys too, running to a very considerable height. Twelve paces behind these buildings there had just been rebuilt a row of houses of three storeys, and that street was entirely blocked up at the end by the huge wall of a music-hall going far above the top of the warehouse. That was a place that people could not possibly exist in under healthy conditions; and the area round about the Council were called upon to destroy; and if they did, they would have to pay much more highly for those buildings which had just been put up, because they were new buildings and had been put up in accordance with the present Building Acts. The Housing Sub-Committee, consisting of men of experience in business affairs and of professional men and others who were giving up a great deal of time to the matter, were trying to carry out

those Acts in a sensible way for the good of the community at large, and he would ask the Institute to give all the help they could. He would not go into details—his object was to point out where the shoe pinched, and it was for them to find out the remedy. If any questions of angles and matters of that kind were disputed there was the Medical Officer, who had studied all the questions of light and air and ventilation, and he no doubt would tell them what his experience was; but he would ask them to give his Committee all the help they could to bring these different laws into some reasonable relation to each other, and to save London from the terrible cost which was being yearly imposed upon it by the working of the present Building Acts, taken in connection

with more recent legislation. MR. CAMPBELL DOUGLAS [F.] said that, coming as he did all the way from Glasgow, it was very interesting to him to hear them in all the throes of a controversy that had been gone t'rrough in Glasgow, with a population of about a seventh part of that of London. A great many of such difficulties had cropped up in Glasgow, and, of course, in London they were just seven times increased in quantity, if not in degree. There was one thing which struck him. He should apologise for making the remark, for they might say that he did not know anything about it, and it did not concern him. True, it did not concern him as an individual, but he did not see that there was any power, clear and distinct, about money compensation to proprietors for the improvements that were proposed to be carried out, and that, he thought, should stand in the very forefront of the undertaking. A Provisional Order which was proposed to be got in Glasgow some years ago, and against which he gave evidence on account of the absurdity of their views with regard to heights and one thing and another, was finally haid aside by the Sheriff of Lanarkshire, and refused to be placed before Her Majesty's Secretary upon the ground that it was tantamount to confiscation to take ground from the proprietors without compensation. Even if they should not ever have had it, they have come to have it now, and one could not go back upon old scores. The most intense Radical that he knew—and he was a disciple of that body himself-would not take any ground from a man now without paying him him for it; and, if that was to be done, the London County Council would be shipwrecked by proposing it—upon that alone. That must be looked after. Then, again, the Art Committee should give the County Council the benefit of their suggestions. He thought it absurd, for instance, to say that there should be no cornice over twenty-four inches in projection. How many people who had been in Rome, or Venice, or Florence would ever dream of trying to limit the thing in

that way? It was a question with regard to the

particular building in hand, and they could no more legislate for it than they could about the depths of foundations where the gravel had been taken out.

Mr. J. Tavenor Perry [A.] having risen, the President assured him that he would have an opportunity of speaking at an adjourned Meeting; and Mr. E. T. Hall moved the adjournment of the

debate till Monday, the 19th inst.

THE PRESIDENT said, before the Meeting separated, he wished to express his own gratification and the pleasure they had all experienced in listening to the interesting addresses that had been delivered by members of the London County Council, and still further to express his gratification that, if he correctly understood the very able and exhaustive address of Dr. Longstaff, he intimated very material concessions on the part of the County Council in deference to the views which had been put before them by the Institute.

NOTES, QUERIES, AND REPLIES.

The Needs of a Great Capital.

Some of the gentlemen who, at the General Meeting of Monday, 12th inst., heard Mr. Arthur Cates's observations on the London Streets and Buildings Bill, and the discussion which followed, may be interested in what a great genius has nrged respecting the metropolis of his native country. Here are some extracts:-

We possess the wherewithal to purchase kingdoms; we see every day what is wanting to our Capital, and we content ourselves with murmuring.

We blush, rightly, to behold public markets established in narrow streets, spreading dirt and infection.

We have only two fountains in good taste, and they are far from being advantageously situated; all the others are worthy of a

Immense districts require open spaces, and the centre of the town—obscure, confined, hideous—represents a period of the most

shameful barbarism.

Meanness of ideas and the fear, still more mean, of a necessary expenditure rise up to contend with those projects of grandeur which every good citizen has conceived a hundred times.

What! Shall it be only at the last extremity that we do anything great? If half the Capital were burnt down we should rebuild it, rendering it superb and commodious; and we are not willing to give it to-day, at a thousand times less cost, the accommodation and magnificence it needs! Yet a similar enterprise would redound to the glory of the nation, would be an immortal honour to the municipality, would encourage all the arts, and, far from impoverishing, would enrich the State. It would, moreover, accustom to work a thousand worthless loafers, who sustain a miserable existence on the infamous trade of begging, and who still contribute to dishonour our Capital.

These stirring words were not uttered by the Prime Minister who but recently kissed hands, nor, indeed, by any member of the London County Council. They were expressed by a man who was born exactly 200 years ago—one François-Marie Arouet, whom people call Voltaire, and who thus treated of Paris, as he knew it, in the year of grace 1749. And he added, "May Heaven send "some man, some Statesman, sufficiently zealous" to promote an improvement scheme, with a "mind sufficiently enlightened to carry it through, and that he may have trust enough reposed in him to make it a success!"

University College New Buildings.

From H. H. STATHAM [F.]—

As the report of the discussion at the last meeting would leave many readers under the impression that I had made an error in my statement in regard to the axis of the old buildings of University College and the relation of the new buildings

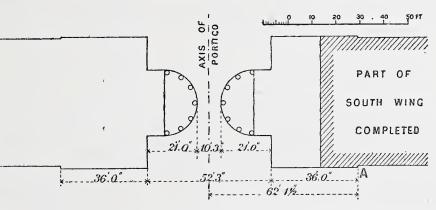
to it, I must ask for space to give the proof and the more accurate statement of what I knew at the time was correct in the main.

I requested Professor Henry Adams, who is well known as a very competent surveyor, to fix for me, with the theodolite, the point at which the axis of the portico cuts the Gower Street frontage-line, and the distance from the axis-line to the first

break in the wall of the new building. He reports that the axis cuts the gateway $6\frac{\pi}{3}$ inches (which we will call 7 inches) north of the centreline of the gateway, thus making it evident that the gateway was at least intended to be central with the old building. The axis-line cuts the lowest step of the Hospital 1 foot 9 inches from its southern end; and the step being 10 feet long, the Hospital gateway, which Professor Roger Smith assumed to be central with the portico of University College, is more than 3 feet out of centre.

In a letter to me Professor Roger Smith admits that Professor Adams's result is correct (consequently that all the statements so positively opposed to me at the last meeting were incorrect), but says that he does not admit that it follows that his opening between the new buildings must be so absurdly small as I make out.

What else can it be, unless the new gateway is to be put off the axis of the portico (which would be a perfectly barbaric thing to do)? Let me ask members to look at the block plan below and the measurements on it. The break at A on the new wing is a fixed point, as that part of the building is erected. The distance from the axisline to that break is 62 feet $1\frac{1}{2}$ inch (Professor Adams's measurement). The width of the end pavilion, when completed, will be 36 feet by scale from the plan given in the last number of the Journal. The projection of the semicircular portico (by scale from the same plan) is 21 feet further, making in all 57 feet, leaving 5 feet $1\frac{1}{2}$ inch between it and the axis-line of the College portico, or 10 feet 3 inches for the opening between the two intended semicircular porticoes. The result is a little more favourable than the block plan I produced at the Meeting on the 26th ult., first, because Professor Adams's survey brings the axis line a little north of the centre of the gateway, and I have given Professor Roger Smith the benefit of that addition; secondly, because (as will be seen on reference to page 282 of the Journal) the 50-feet mark of the scale to the plan had not printed, and on dividing



out the scale to get it precisely, I found I had given a foot too much for the projection of the new buildings, owing to the imperfect printing of the scale. But the block plan as here given represents precisely the way the design for the new building must work out if the opening is to be central with the portico of University College; and I invite members to compare this block plan with the perspective view facing page 288 of the last number of the Journal, and draw their own conclusions.

From J. Tavenor Perry [A.]—

In the Paper read recently by Professor Roger Smith, and in the discussion which followed, a scheme which I prepared in 1881, at the suggestion of the Council of the College, for the completion of the whole building was lost

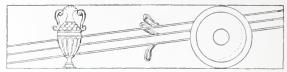
sight of.

This scheme was published in a pamphlet written by Professor Henry Morley, which I find is not in the Institute Library, and have therefore presented it. This was issued on the occasion of the completion and opening by the Earl of Kimberley of the north wing and the large chemical laboratories which were carried out by my firm in succession to Professor T. Hayter Lewis, who had then retired from practice. The design was prepared, having due regard to the exigencies of the Council, as nearly as could be ascertained according to the wishes of Professor Wilkins, from the somewhat varying designs he left; and this, with perhaps one exception, agrees with the views expressed by Mr. Statham as to the proper manner of completing the work. This exception, which was, however, submitted to Mr. James Fergusson, and received his cordial approval, was the addition of an attic storey round the quadrangle, carrying the line of the great portico, which would have hidden the skylights over the original building and the still uglier roof-line of the more modern wings, and would have added so considerably to the accommodation of the College as to have avoided the necessity, which seems to have arisen, of destroying the effect of the great architectural feature of the work by the buildings which are now to be thrust in front of it.

With Mr. C. Forster Hayward I quite agree in regretting that some other and more suitable site could not have been found for the new engineering laboratories, particularly when it seems to have been thought necessary to place the machinery on the street level for the sake of solidity of foundation—difficult at that level to obtain, as the whole of the College area was a rubbish-bed—and thus sacrifice a basement storey, which in the north wing contains the well-lighted rooms of the chemical department, and which would be equally well lighted when, as is proposed in this case,

another storey was built over it.

Doubtless Professor Smith has done his best to mitigate the evils of a departure from the designs of the original architect; and only those who have had to erect buildings to house different departments of a college can appreciate the difficulty of dealing with the rival claims of exigeant professors. At the same time, it cannot but be a matter for grave regret that a building of such grace and proportions should have to be defaced or destroyed on some doubtful utilitarian plea. Our Greek architecture of the beginning of the century is falling on bad times at the end of it. The Post Office and the National Gallery would scarcely be recognised by their designers, and now the graceful building of Gower Street, known to Londoners of three generations, is to be blotted out.



9, Conduit Street, London, W., 15 March 1894.

MINUTES. X.

At a Special General Meeting, held Monday, 12th March 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the Chair, with 40 Fellows (including 11 members of the Council), 38 Associates, and 1 Hon. Associate, the President moved that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented to Sir Frederic Leighton. The motion having been seconded by Professor Kerr [F.], it was

Resolved that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Sir Frederic Leighton, Bart., President of the Royal Academy of Arts, Associé Etranger de l'Institut de France [H.A.].

The Meeting then terminated [Appendix A.].

At the Tenth General Meeting (Business) of the Session, held Monday, 12th March 1894, at the close of the Special General Meeting above mentioned, Mr. J. Macvicar Anderson, President, in the Chair, with 44 Fellows (including 12 members of the Council), 38 Associates, and 1 Hon. Associate, the Minutes of the Meeting held 26th February 1894 were taken as read and signed as correct. reference to these Minutes, Mr. Woolward [A.] asked, prior to the signing thereof, whether the question he had put to the Chair respecting the delegates that were sent, or were to be sent, by the Institute to the London County Council on the subject of the Streets and Buildings Bill had been entered on such Minutes; to which the Secretary replied that Mr. Woodward's question had been asked after the proceedings were terminated and the Institute had adjourned.

The Secretary announced the dccease of the following Fellows—namely, Alexander H. Edmonds, Andrew Heiton (Perth), and J. B. Mitchell-Withers (Sheffield).

The receipt of donations to the Library was announced, and an expression of thanks to the several donors was ordered to be entered on the Minutes.

The President announced that, by a Resolution of the Council, the following Fellows and Associates had ceased to be members of the Royal Institute, namely—Edwin Clare, Henry Petit (Paris), H. A. Wooster-Reeves (New York), and A. W. Mardon Mowbray, Fellows; and T. Lennox Canning (Johannesburg), T. B. Ellison (New York), and T. W. Parkes (California), Associates.

The President announced the results of the Preliminary Examination held 20th and 21st February 1894, in London, Bristol, and Manchester, and real the names of 63 persons who had been registered as Probationers [see pp. 338-9].

The President having read the report of the Scrutineers appointed by the Council to conduct the election of ten candidates for admission as Fellows, pursuant to a requisition duly received that the votes for such candidates should be taken by voting-papers [Appendix B], it was found that the following had been elected:—

As Fellows (4).

JOHN PERRINS OSPORNE [A.] (Birmingham).

THOMAS BATTERBURY [A.].

WALTER TALBOT BROWN [A.] (Wellingborough).

DAVID JENKINS [A.] (Llandilo).

An expression of thanks to the Scrutineers, Messrs. Kidner, Martineau, and Todd, Fellows, and Messrs. Bur-

rows, Sayer, and Wonnacott, Associates, was ordered to be entered on the Minutes.

The following candidates for admission as Associates were elected by show of hands, namely: --

As Associates (28).

CHARLES KEMPSON (Leicester). HARRY BARNES (Sunderland). JOHN ERNEST MOWLEM (Swanage). HENRY DEARDEN (Batley). EDWARD BOX WETENHALL. ERNEST ROBERT BARROW. WILLIAM HENRY ASHFORD (Rhayader). ARTHUR WILLIAM SHEPPARD. HAROLD CLAPHAM LANDER. DAVID FORBES SMITH (Salisbury). WILLIAM TILLOTT BARLOW. FRANCIS PETER HALSALL (Southport). GEORGE ERNEST NIELD. JOHN ROBERT EARNSHAW (Manchester). FRANKLIN KAYE KENDALL. ROGER FRANCIS BACON (Reading). HARRY EVAN JONES. JOHN RENNISON LITTLE (Bolton). ARTHUR JAMES FORGE. FRANK LISHMAN. ARTHUR HILL MORGAN (Chester). DOUGLAS GEORGE SALIÈR (Tasmania). JOHN LLOYD HOUSTON. GEORGE HARRY MAEL TREW. JOHN HUMPHREYS JONES, B.A. Lond. JOHN NEWNHAM. WILLIAM JOHN CHILDS (New Zealand). ALFRED KIRK BROWN (Hull).

The Business part of the General Meeting having been brought to a close about 8.30 p.m., 15 visitors were admitted, and the matter of the London Streets and Buildings was at once taken, the President having intimated that, should the remainder of the evening be insufficient to conclude the debate, he would ask Mr. Edwin T. Hall [F.] to move its adjournment until that day week.

A REVIEW OF THE LONDON STREETS AND BUILDINGS Consolidation and Amendment Bill 1894, by Mr. Arthur Cates, Past Vice-President, having been read by the author, and discussed, the debate was adjourned until Monday, 19th March 1894; and the Meeting separated at 10.30 p.m.

** The death of Mr. Philip Currey [A.], of Lewes, news of which has been received since the Meeting, occurred on the 9th inst.

APPENDICES.

A. The Royal Gold Medal 1894.

THE PRESIDENT, having reminded the Members that the Meeting was a Special one for the purpose of electing a Royal Gold Medallist, said that it was just four weeks since he had the gratification and honour of proposing, on behalf of the Council, the name of the President of the Royal Academy, Sir Frederic Leighton, as a fit recipient of the Royal Gold Medal. Were he to enlarge on the subject he would but repeat himself. He would, however, quote the words which he used when referring to Sir Frederic in the Address delivered to Students early in the year. He then said: - "For many years we have been accustomed to "regard Sir Frederic Leighton as a man of great parts "and exceptional culture. To refer to his works as a " painter would be superfluous; his claim to be a sculptor " of no mean order is indisputable; and, as if this were " not sufficient, the subject of his more recent addresses " to the students of the Royal Academy has led him, as it " were inadvertently, to demonstrate that in regard to the " art of architecture he possesses an intelligent and a " critical grasp of the subject second to no modern author. " To few indeed is it given to combine with wide historical "research and keen critical acumen the indescribable "literary charm of composing poetry in prose. Let me " commend to your thoughtful attention the study of these "singularly learned and graceful discourses." He had, therefore, the greatest possible pleasure in proposing formally from the Chair that, subject to Her Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented to Sir Frederic Leighton, and he hoped that some member of the Institute would second the proposal.

PROFESSOR KERR [F.] said that he had the greatest pleasure in the world in seconding the President's proposal. It would be idle to conceal the fact that there had been some little discussion as to the propriety of departing quite out of the line of architects, but he thought that they would confer honour upon the Medal were it bestowed upon Sir Frederic Leighton, and even if a new departure

it was, he thought, a very good one.

Mr. STATHAM [F.] asked what were the exact terms of the rule under which the Medal was given. There was an impression that the Medal ought to have been given to some one directly connected with architecture, either by

his works or by his writings.

THE PRESIDENT replied that the exact words of the Charter were "a Royal Gold Medal for the promotion of "Architecture;" and the Council considered that Sir Frederic Leighton's addresses of late years, especially on the subject of Architecture, thoroughly met the qualification.

B. The First Election by Voting Papers.

THE PRESIDENT said that the names of ten gentlemen having been duly submitted by the Council for admission as Fellows, a requisition signed by seven members of the Institute, the majority of whom were Fellows, was received; and, in conformity with the procedure laid down by the By-laws, voting papers were issued to every member of the Institute in the United Kingdom. These voting papers had been examined by scrutineers appointed for the purpose, and he had only to read their report, which was addressed by them to the Chairman of the Meeting.

Mr. LEONARD STOKES asked leave, before the result was announced, to call attention to the form of the voting paper, especially to a paragraph near the top which was marked with three stars, and worded, "Members are "earnestly requested to insert a mark against every can-"didate, either in the affirmative or the negative column." Now, three stars were usually supposed to direct attention to a paragraph, and they naturally assumed that the paragraph with three stars at the top referred to a paragraph at the bottom, which was also marked with three stars, and which stated, "If the foregoing directions be not complied "with by any voter his paper will be rejected and his votes "will be lost." Now, although he knew that in the paper there were other things to qualify it, it seemed to him that taking the three stars at the top to refer to that bottom paragraph (and many did so), it would appear that members were obliged to vote for everybody or not at all. Three or four of his friends had spoken to him about it; and, believing that they were obliged to vote for all or none, they voted for none, because they did not know half of the men whose names were there. Now, he would be inclined to think that the voting paper was so much waste paper; but even if it were not-if the President ruled that it was not-he (the speaker) would venture to ask most earnestly that the whole matter might be carefully reco sidered before another paper of the kind was sent out, because he was certain that a considerable number of the members of the Institute had been misled by the voting paper.

The PRESIDENT replied that it was unfortunate if such was the case, because the election by voting papers was a first departure under a new system, and very possibly not perfect. The Council, he thought, would be happy to consider the remarks that Mr. Stokes had made, and, if necessary, before the issue of a subsequent paper, to give it reconsideration; but in the present instance he thought they must accept the paper as in order and abide by the issue. He therefore ruled that it was in order; and having opened the Sealed Report of the Scrutineers, handed to him by the Secretary, read as follows:—

To the Chairman of the General Meeting of the Royal Institute of British Architects, 12th March 1894.

9th March 1894.

SIR. We have the honour to report that we have this day opened and examined 528 voting papers for the election of ten candidates for Fellowship. Of this number of papers one was rejected as invalid.

We find that the four following gentlemen are duly elected, viz.: - John Perkins Oseorne. Thomas Batterbury, Walter Talbot Brown, David Jenkins.

Scrutineers Edwb. H. Martineau, Chas. E. Sayer, appointed by the Chairman, W. Wonnacott, Www. Kidner, Henry Wm. Burrows. Fredk. Todd.

Mr. II. H. COLLINS [F,] asked to be informed of the names of those who signed the requisition for an election

by voting papers.

Mr. WILLIAM KIDNER [F.] wished to be allowed, as one of the scrutineers, to make a few remarks on the first ballot that had taken place under the new By-laws. It was a lamentable circumstance that six out of the ten candidates should have been rejected. The Council had requested that a vote should be put for or against any candidate, and, as a matter of fact, that was done by very few. A great many people thought that the request of the Council was somewhat contrary to the By-law, and he believed that a great many abstained from putting a mark against every name simply because they were asked to do so by the Council and the By-law did not require it. He thought, moreover, that those people who called for a poll should have had the pluck to state particularly the names of those to whom they objected, for in the present instance one or two men who were objected to had been the means of ousting five or six to whom there was no objection whatever. In his opinion, the Council should, in future, give more precise instructions, and should let members understand that the Council had scrutinised the names and applications of the candidates whom they have recommended. If the list had been put before that Meeting in the ordinary way, and the election of the candidates taken by a show of hands, they would, he thought, have all been elected.

Mr. BERNARD DICKSEE [A.] asked whether it was possible, under the existing By-laws, to insist that a requisition, signed by at least seven members, should name the particular candidate or candidates for whom they required a poll.

At the reiterated request of Mr. Collins, the President read the Requisition and the names of the four Fellows and three Associates who had signed it; and some observations as to the undesirability of canvassing for votes having been made by Mr. Arthur Baker [F]—

THE PRESIDENT added that, whatever might be the cause, they would all concur in thinking that the result of the first issue of voting papers for an election of candidates for membership was extremely unfortunate; it had resulted in the non-election of gentlemen who were in every way qualified to be Fellows of the Institute, and who

were passed by the Council for eandidature after most severe scrutiny.

Mr. Woodward [A.] having inquired whether they could have the election over again; Mr. Ridge [F.] having expressed his opinion that the requisition should have been printed and issued with the voting papers; and Mr. Stokes [F.] having offered to suggest a means of improving any future voting papers that might be issued, and stated his opinion that the members should be consulted thereon,—the President said that the whole subject would be reconsidered, but that there was no time to do so then.

PROCEEDINGS OF ALLIED SOCIETIES.

LIVERPOOL: SESSIONAL MEETING.

On the 5th inst., at a Meeting of the Liverpool Architectural Society, a Paper was read by Mr. James H. Cook, giving an account of his "Three Years' Architectural "Experience in America," from April 1890. Space admits of but brief notice of this interesting Paper, which began with a description of the Sketch Club of New York—an institution of draughtsmen and young architects, active and earnest in the art of their profession, and full of enthusiasm for its advancement and progress—workers in every sense of the word, bristling with academic knowledge, able to discover any dereliction in style, impossible or weak construction, and fearless and outspoken in their criticisms. To this Club Mr. Cook was fortunate in securing an introduction and becoming a member. Classes are held in the winter, and sketching excursions arranged in the summer. After a few months in a small office Mr. Cook entered the office of Mr. R. M. Hunt (Royal Gold Medallist 1893). His experience there he describes as a strong probationary course, where the altogether imaginative was held at a discount, and where only that which was pure in its style and academie in treatment would meet with approval- everything must be either French, or else Greek or Roman. Here he learned that it was quite within the bounds of possibility to have originality that sheet anchor and haven of refuge to the fancifully ignorant - and still design in true sympathy with the inspiring motifs of an acknowledged style, leaving the fanciful mind sufficiently untrammelled and equally able to produce original work. After eighteen months with Mr. Hunt in New York a move was made to Philadelphia, where he (Mr. Cook) had been offered the post of manager to the Messrs. Day, architects of that city, and men of high education and culture. Speaking of the improvers here, over whom he had supervision, Mr. Cook bears testimony to the quality of the work turned out by them, which was far ahead of anything he had seen done by pupils of five years' standing in Liverpool. This superiority he attributes to their College course of training: they had been instructed in the various branches of the art, thoroughly grounded in the elassical orders, and taught how to incorporate their knowledge in designs for modern buildings - how to plan, to detail, modelling in clay, perspective, together with the literary side of their art.

An appreciative criticism of the aims and work of leading American architects, illustrated by photographs of the principal works executed by them, was followed by a detailed account of professional practice and office routine in New York and Philadelphia. Great importance is attached to foreign travel, without which the American architect has small prospect of success. Nearly every city, through its Architectural Society, sends a student at regular intervals to Europe to pursue his studies, and the École des Beaux-Arts is thronged with American students. This must eventuate in the advancement of the country's architecture, and its influence is already strongly felt. Students, again, are being taught, instead of, as is so

frequently the case in England, merely receiving opportunities to learn for themselves.

GLASGOW: SCHOOL OF ART.

On the 7th inst. the concluding lecture of the series by Mr. William J. Anderson [A.] on Italian Renaissance Architecture was delivered in the Corporation Galleries. "Palladian Architecture and the Decline" formed the special subject of the lecture, the chief part of which was devoted to an analysis and criticism of Palladio's work at Vicenza and Venice. It was to the influence of Palladio that the great superiority of the late Venetian is due. At the close of the lecture Mr. W. Forrest Salmon [F.], President of the Glasgow Architectural Society, in moving a vote of thanks to the lecturer on behalf of the School of Art, expressed the satisfaction the governors felt at the success of Mr. Anderson's work, and intimated that a similar course on Gothic architecture by Mr. A. McGibbon [A.] was projected for next winter, as well as another course dealing with the more advanced problems of architectural construction.

THE ROYAL ACADEMY OF ARTS.

The Advancement of Architecture.

The sixth and concluding lecture of the series on the Advancement of Architecture, delivered by Professor Aitchison, A.R.A. [F], on the 15th ult., is published in full in The Builder of the 10th inst. In view of the great research shown in these lectures, which are interesting and instructive alike to the lay and professional student, one would urge upon the Professor the desirability of issuing them in a handy book form. lecturer's concluding words may fitly be recorded here:-"When you have a building to design, be animated by the "thought that, however small it may be, it is capable of "enshrining the highest and noblest aspirations, the "greatest skill, and the most perfect workmanship, and "that, if it does contain all these qualities, it will at least "give delight to the cultivated, and that it may be the " means of conferring some meed of immortality, not only " on the place where it is built, but on England itself."

LEGAL.

London Buildings.

The following notes of the Law Journal on a few recent decisions are instructive at the present juncture:—

The protracted litigation with reference to the building line in Kensington Court, begun in Worley v. The Kensington Vestry, L. R. (1892) 2 Chanc. 404, and continued in The London County Council v. Lawrance, L. R. (1893) 2 Q. B. 228, has ended in the defeat of the County Council, so far as the builders are concerned. After the latter decision a summons was taken out in December 1893 to recover penalties from the builders of 40s. a day from 15 October, 1892. It was proved that the builders gave up possession in February 1893. Consequently, the magistrate held that no offence had been committed by the builders within six months before the summons was taken out; and that the builders, therefore, could not be made responsible. The same result might have been reached by reference to the recent decisions of Smith v. Legg and Wallen v. Lister; but if the builder had remained in possession he would clearly have been liable as for a continuing offence throughout the whole period.

A photographer of Hackney has been summoned for erecting a structure in contravention of section 13 of the Metropolitan Building Act 1882 (45 Vict. c. 14)—viz. a kind of show case or show shop on the forecourt of his house, standing twelve feet from his dwelling-house, with

walls of wood, floor of concrete, and roof of zinc. A somewhat similar structure was in The Mayor, &c., of Leicester v. Brown, 9 Times Rep. 8; 56 J. P. 708, held to be a building within section 3 of the Public Health Act 1888 (52 & 53 Vict. c. 52). But owing to the special terms of the London Building Acts this decision is not conclusive, and it is likely that the case will ultimately turn on Lord Auckland v. The Westminster Local Board, 41 Law J. Rep. Chanc. 723; L. R. 7 Chanc. App. 723.

The construction put by that case upon section 75 of the Building Act of 1862 has just been adopted and approved by the Court of Appeal in Wendon v. The London County Council (decided on 2 March), where it was held that a flank wall twelve feet high erected before the building line on a street was made manifest could not be built on after that line was determined. The Council has now taken proceedings against the owner for not altering the building in accordance with the building laws; but it remains to be seen whether this proceeding has been taken in good time.

ARCHITECTS' BENEVOLENT SOCIETY.

Report to the 44th Annual General Meeting.

GENTLEMEN,-

The Council of the Architects' Benevolent Society have much pleasure in submitting their Annual Report of the progress of the Society during the past year, as both with respect to Capital and Income a considerable advance has been made towards that position of stability which it is desirable should be attained.

Advantage was taken of the necessity for reprinting the Red Book to bring the Society more prominently under the notice of those who had not as yet given it support.

The Red Book, accompanied by a special appeal from the Honorary Treasurer, was accordingly sent to every member of the Royal Institute of British Architects, and to the profession generally throughout the country, in the hope that by thus making the Society better known the funds at its disposal would be largely increased by the contrioutions of the more successful members of the profession, who might realise the great benefit which the possession of ample funds would enable the Society to confer on their less fortunate brethren who might become by affliction or misfortune fitting recipients of its aid.

It must be frankly confessed that the direct result of the labour and expense incurred in making this appeal did not realise the anticipations which had been formed, but there is reason to believe that much indirect effect has been produced which will in future benefit the Society. The financial result has been the receipt of £353. 18s. 0d. in donations, and of new annual subscriptions to the amount of £62. 19s.

As an instance of the possible result of individual exertion, the Council have pleasure in mentioning that one of their members obtained £50. 8s. in donations and £8. 8s. from new annual subscriptions. Apart from wishing to give expression to the Society's obligation to him, this is mentioned with the hope that other members of the profession may be induced to exert in like manner their personal influence to increase the funds of the Society.

With reference to the financial position of the Society the statement of accounts shows that, including the payment of three pensions (£70), a total amount of £467 has been distributed among thirty applicants for relief (as against £410 in 1892), while £170 has been transferred from cash account income to capital account (as against £100 in 1892). The income derived from investments was £279. 6s. 9d., and from subscriptions £377. 17s., the entire available receipts during the year 1893 being £779. 1s. 7d.

By the investment of the legacy of Mr. John Gibson

(£500), together with donations and the amount transferred from the income account, the Council have been enabled to increase the Society's holding of £700 Four per Cent. Caledonian Railway Debenture Stock to £1,450; so that the entire investments now represent £8,050 in Consols and Railway Debenture Stock, which have been purchased at a cost of £9,363. 2s. 10d. and which are estimated at current market value at $\pm 10,375$.

It should be mentioned that it has recently come to the knowledge of the Council that the late Mr. J. H. Good bequeathed a sum of £100 to the Society, subject to a life interest in his estate. In this connection the attention of intending benefactors may be directed to the form of bequest printed at the end of the List of Subscribers.

The Council, with great regret, announce the resignation of Mr. William H. White as Honorary Secretary, in consequence of his greatly increased duties in connection with his position as Secretary of the Royal Institute of British Architects. While making this announcement, the Council desire to place on record their high appreciation of the services which Mr. White has rendered to the Society, and their conviction that the progress made during his thirteen years' tenure of the office has been largely due to his active influence and energy.

As Mr. White's resignation took effect subsequent to the last Annual General Meeting, Mr. Percivall Currey kindly consented to undertake the duties of Honorary Secretary until the present Meeting. He having expressed his willingness to devote his time and energy to the advancement of the interests of the Society, the Council have much pleasure in recommending his election to the vacant office.

Mr. R. Dircks, Assistant Librarian of the Royal Institute, has been appointed Assistant Secretary of the

Society, in place of Mr. Verity.

The following gentlemen, being the five senior members, retire, under the provisions of By-law 43, from the Council:—Mr. Fred. Chancellor, Mr. Rowland Plumbe, Mr. Augustus W. Tanner, Mr. H. H. Collins, and Mr. Thomas Harris. To fill the vacancies caused by these retirements and that caused by Mr. Percivall Currey's acceptance of the post of Honorary Secretary, the Council have the pleasure to nominate Mr. William Grellier, Mr. E. B. I'Anson, Mr. E. H. Martineau, Mr. T. M. Rickman, Mr. R. St. Aubyn Roumieu, and Mr. J. T. Wimperis, all of whom have consented to serve if elected.

The Balance Sheet and Jucome Account for the year ended 31 December 1893, audited by Mr. W. Kidner and

Mr. W. Grellier, are herewith submitted.

Dr. Income Account	for the Ye	ar ended 31st December 1893.	Cr.
DISBURSEMENTS. £ s. d. To Three Pensions 70 0 0 To Grants paid to Applicauts 397 0 0	£ s. d.	By Balance from last Account (1892) By Dividends on Stock:— # s.	
To Expenses:— AssistSecretary's Salary, &c. 36 5 0 Stationery, Printing, and Advertisements, &c		£2,100 2\frac{3}{4} per Cent. Consols 56 4 £1,300 Caledouian Railway 4 per Cent. Debenture Stock 47 16 By Arrears of Subscriptions 11 11 By Subscriptions, 1893 377 17	0 279 6 9
	2779 1 7	By Subscriptions paid in advance (1894)	<u>409</u> 7 0
		31st December 1893.	Cr.
### ### ##############################	£' s. d	By Property:— £ 4,500 Lond. and N. W. Railway 4 per Cent. Debenture Stock*	2 2 6 8
£	0432 12 3		£9432 12 3
Examined with the books and vouchers and for	ind correct,	19th February 1894. Wm. Kidner	Auditors

WILLIAM GRELLIER \ Auditors.

The Council cannot close this report without expressing the obligations of the Society to the Royal Institute of British Architects for the hospitality afforded in allowing the Society the use of their rooms for the meetings, and

for continuous acts of courtesy and kindness on the part of the Institute and its officers, which have materially assisted the business of the Society.

[See report of Meeting, page,341.]



THE COUNCIL CHAMBER AND ITS ACCESSORIES: BY THOMAS BLASHILL $\lceil F \rceil$.

Read at the General Meeting, Monday, 9th April 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

MR. PRESIDENT AND GENTLEMEN,-

HE expansion in recent years of our municipal institutions has a special interest for the architect. His habits and his opportunities place him in contact and in sympathy with most of the greater objects of municipal government. The convenient arrangement of towns, the control of public and private buildings, the provision of healthy dwellings, of pleasure places, of bridges, sewers, and embankments, are matters in which he must always be interested, because they are more or less closely allied to the daily work of his life. The place where the threads of this government are brought together and from which its energies are directed is the Council Chamber, the centre of the municipal organisation.

There is no need to magnify the importance of this subject. Many of us have found the design of municipal buildings interesting and attractive—and perhaps also profitable. If I refer almost exclusively to the particular instance in which I have been engaged, it is because that seems the most practical way of approaching the subject. It may serve as a warning if it is not worthy to be an example.

The offices in Spring Gardens now occupied by the London County Council were designed for the Metropolitan Board of Works by the late Mr. Marrable, who was the first Superintending Architect of Metropolitan Buildings and the Architect to the Board. They were opened in 1861. The number of members of the Board was at that time forty-eight; in the year 1885 that number was increased to sixty-one, and the Board Room was of ample capacity for the accommodation of the larger number. It was a rectangle on plan, measuring 50 feet by 30 feet, and about 30 feet in height. The style of architecture was such as I think would be considered at that time highly suitable for such a building; and I should like to say, as regards the work of my predecessor, that in my opinion it lent itself admirably to the increase in size and the modifications in arrangement which twenty-eight years afterwards were found to be necessary. I could therefore have no hesitation in working as closely as possible to his original ideas; and if there are merits in the general architectural design of the Council Chamber as it at present exists, they are largely due to his original suggestions.

I must, however, say that, in respect of ventilation and acoustics, the Board Room as it existed down to 1889 was felt by the majority of the members to be extremely unsatisfactory. The heating-chamber, formed under the centre of the room, was fitted with hot-water pipes; fresh air was conducted into the chamber, and was supposed to find its way into the room through pedestals and upright tubes fixed against the walls. I think the tubes were generally

kept shut. In warm and cold weather alike draughts were generated, of which several members complained, perhaps more bitterly than the occasion justified. It must be remembered that there are people who call the slightest movement in the air, such as we know to be necessary for preserving its freshness, a draught. If one of these detects the slightest opening in door or window, although it may be the whole length and breadth of the room away from him, he will insist that he is sitting in a draught, and demand that the opening be instantly stopped. On the other hand, there are people who cannot bear the stuffiness of a room containing a dozen persons unless the windows are kept half open. Such diversities of view are irreconcilable. But as to the acoustics of the Board Room there was no difference of opinion. It was not so much that speakers could not be heard, although bad speakers placed at the end of one side of the room were not well heard by members at the other end of the same side. So placed, they could not be well seen; and in order to comprehend a speaker properly he should be seen as well as heard. The general acoustics were in certain respects too good. You could hear nearly everything all over the room—the hum of conversation, noises made by persons moving about, the rustle of agenda papers when the leaves were being turned. I had, in fact, to suggest the use of paper less highly glazed as being likely to make less noise. Conversation that was not intended to be heard was audible yards away. It mingled with the voice of the speaker so as to confuse the sound, and it disturbed the current of his thoughts. We are all too familiar with the habits of certain people in this particular. When the subject, however interesting and important, does not specially interest them, they get up little discussions among themselves, and even form small sub-committees of three or four, quite oblivious of the fact that all they say adds to the general buzz of conversation. They may hope that a whisper will not be noticed, but there is a large proportion of persons physically incapable of whispering; they simply speak in a low tone, and speech of that kind is distinctly heard all over a room. Besides this, the five doors of the Board Room and its galleries were constantly being opened or shut, as was perhaps necessary, owing to the rapid progress of business, and ordinary locks are so constructed as to produce the greatest amount of noise with the smallest application of force. In this confusion of sound the determined speaker raises his voice so as to awake the echoes, while the nervous speaker becomes confused, so as not to be understood. It may be said that some of these annoyances are the result of fancy, but for the architect they are mostly as solid as facts, and, unless he can get over all the real causes of complaint and nearly the whole of the others, he will have a bad time when his work comes to be tested by use. I had had ample experience of both kinds of complaint before being charged with the work which has suggested this Paper.

When, in 1889, the London County Council was elected, its first meeting held in the old Board Room showed the necessity for an enlarged chamber for the accommodation of its 137 members—nearly three times the number for which the room had been designed. I was instructed to undertake the task, and in the meantime the weekly meetings were held in the Council Chamber at Guildhall. With all regard for the merits of this important work of our Past President, the late Sir Horace Jones, it must be said that, owing, as I think, chiefly to its great height, its acoustic properties were the subject of general criticism.

The site of the Council's offices in Spring Gardens being much too limited, the only practicable way of obtaining more space for the Council Chamber was to extend the old Board Room on the northern side; and the first question was as to the shape which it should take. This must indeed always be the question of prime importance, and it is the one to which I now invite special attention. I have no doubt that in halls used for the meetings of legislative assemblies and of large municipal bodies, particularly on the Continent, the favourite form is the semicircular, or some modification of it—the lines of seats being generally struck

from the same centre as that used for the back wall of the hall. Sometimes the hall is rectangular, but nevertheless the seats are arranged on a segmental or a semicircular plan. In such cases the floor is filled with seating. This arrangement is no doubt excellent in assemblies where the speaker leaves his seat and addresses his colleagues from a tribune close to the position of the Chairman. But if, in a room so arranged, a member were to speak from his seat, it would depend very much on his position whether he could be seen or clearly heard by any considerable number of his colleagues. Where a member speaks from his seat, every seat must be so placed that the great bulk of the hearers shall not only hear him but see him; and if he is at any considerable distance from the wall behind him there will be more or less of echo to interfere with his voice.

I was, in the first instance, rather strongly urged to make the new Chamber something of a rectangular shape, the seats and the back wall being laid out in a rather flat curve, as is usual in the pit of a theatre. But it is clear that, in a Chamber so arranged, a member in one of the front rows would have his audience behind him, unless he should turn round and face them, as some of us do in this room. Moreover, a speaker in any of the back rows would be unseen by his colleagues unless they should assume the uncomfortable position which some of us take up here. Upon full consideration it seemed clear that the best form would be a Chamber with a semicircular end and a semicircular arrangement of the seats, the whole of the seats being placed as near the walls as possible. This would leave a clear space in the centre of the Chamber—the place from which no one could speak with comfort. Such an arrangement could be brought about by simply taking down the north wall of the old Board Room and making the new wall semicircular. This was made practicable by the use of a wrought-iron lattice girder of 50-feet span to carry the heavy roof from which the supporting wall was to be removed.

The only variety in the symmetrical shape of the Chamber was necessitated by the requirement of a public gallery, and this was made to extend round and outside a portion of the new semicircular wall. The architectural details of the building, as it now exists, grew, as I have admitted, entirely out of the original design of Mr. Marrable's Board Room. The additional pilasters upon the walls, the columns carrying the roof at the public gallery, with all the architectural enrichments on walls and ceiling, are simple reproductions, or were so arranged as to correspond with the old work. The columns and pilasters are of scagliola, covering cast-iron stanchions where necessary, and the old pilasters were painted to look like the new. The press gallery at the back of the Chair seemed to require some special treatment, and in that case the Ionic Order was used in the columns instead of the Corinthian which had been adopted in the larger features of the Chamber. I was rather anxious about the height of the room, for 30 feet did not seem too much for the old Board Room, which was going to be so greatly enlarged. By dropping the central portion of the floor, and placing the seats upon a rising slope, an additional height of 15 inches was gained in the centre; and I think that as regards appearance, and more particularly as regards sound, the height and general proportions are satisfactory.

I will now deal with the general arrangement of the Chamber and the parts accessory thereto. Such matters as these must largely depend upon the routine of business. In the first place provision had to be made for members of the Council to the number of 137, of whom the Chairman, the Vice-Chairman, and the Deputy-Chairman must be upon the platform. It is the practice of the Council to refer almost every item of its business to one or other of its committees. The committee considers the reports of the officers and makes its own report, which is printed in the agenda of the next Council meeting. The meetings of the Council take place on Tuesdays in each week, beginning at three o'clock and ending about

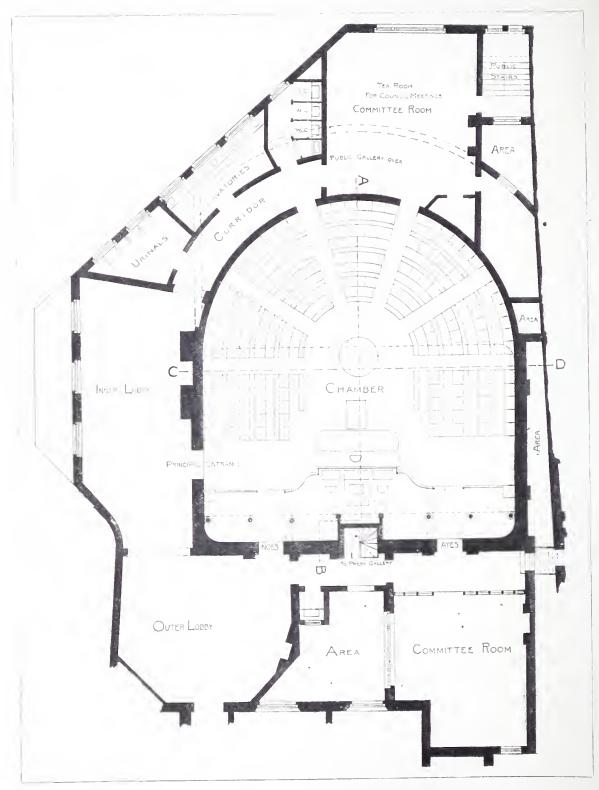


FIG. 1.—GENERAL PLAN. Scale of about 16 feet to one inch.

seven. The front row of seats is almost entirely used by chairmen of committees. These seats are made specially conspicuous, and bear the names of the respective committees. It is considered essential that, when the report of a committee comes up for consideration, the

chairman, or some other member representing the committee, should be in his seat, and the Chairman of the Council should know where to look for him. The other seats are occupied by members without special appropriation. It is natural that those who are in general sympathy with each other should desire to sit together, but there is no strict division into parties.

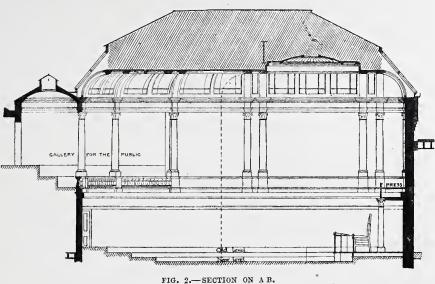


FIG. 2.—SECTION ON AB.
Scale of about 15 feet to one inch.

I think one of the advantages of the semicircular plan is that it does not lend itself too easily to that arrangement. The ordinary routine of business meetings of the Council is for the Chairman to put the report of each committee in succession, first en bloc and then item

by item. Voting is taken in the first place by show of hands. If a division is demanded, it is taken after the bell has rung two minutes. Then all doors are locked, except the division doors, which are at the back of the platform, to right and left of the Chair. These are the original entrance doors of the old Board Room, but they are not inconveniently placed for the purpose.

In the arrangements of such a chamber everything must be directed to secure the quick despatch of business. Every member must be well able to catch the Chairman's eye and ear, and all that he says must be clearly heard by other members. Speeches are in general limited to a

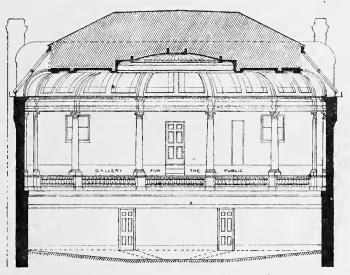


FIG. 3.—SECTION ON CD. Seale of about 15 feet to one inch.

quarter of an hour, but that is an enormously long time. Few people listen to a sermon of more than that length willingly. In general, an ordinary speaker uninterrupted by noise can say more than is likely to help his case in five minutes. He had better be content with three, as he most frequently is. A long explanatory statement has been made from the platform,

which has all the advantage of the tribune in a Continental Chamber, but all members now speak from their seats. The greatest difficulties arise when sharp questions are being put, where members rise on points of order, and you must be all attention to catch what is going on. From every consideration the utmost pains should be taken to prevent unnecessary noise, and echo which is the ghost of noise.

In this Chamber every door has a check-spring fixed in the floor so that it cannot be slammed. It is, of course, most important that floors, furniture, and wall-surfaces should, where possible, be of some soft material. The parts of the floor most subject to wear are laid with Napier matting of a dead green colour made from jute, of which we have considerable experience. The floors between the seats are laid with a dull green drugget upon common grey felt—an admirable idea which I got from the Union Society's Rooms in Cambridge. Besides being comfortable, it is impossible to get any noise out of it. The woodwork of the seats likely to be struck by the feet is covered with ribbed vulcanised indiarubber. The stuffed leather-work is brought right over the backs of the seats to avoid hard surfaces. The lower parts of walls of the old Board Room were covered for a height of about 8 feet with heavy woollen hangings in the hope of deadening the sound. I intended to hang the lower parts of the walls of the Council Chamber with a heavy flock paper which I thought would prevent echo; but the new work was rather slow in drying, and woollen hangings were put up. As everybody seemed satisfied with them they have remained.

With regard to the details of the seating, the long benches are divided by elbows which measure 2 feet from centre to centre, a space which is sufficient. The measurement from back to back is 4 feet. The backs are rather too upright. Had the size of the Chamber permitted, I should have made them slope one or two inches more. The long benches are so arranged as to contain at least three, and at most six, scats. I think six should be the maximum. It allows every member to find his seat without passing in any case more than two other persons. The provision of separate desks or tables and seats for individual members is much too wasteful of space: it increases the size of the room, and, so far as I have observed, rooms so arranged are bad for sound. The ledges in front of the members are only $9\frac{3}{4}$ inches wide. They should have been $13\frac{1}{2}$ inches, so that the agenda papers could lie easily upon them. Places for pen and ink are sunk in these ledges. Beneath them runs a ledge or shelf, somewhat narrower, on which are placed small portfolios filled with forms for resolutions and amendments, letter-paper and envelopes. Attention to these small matters greatly facilitates business.

The Clerk sits at the table immediately in front of the Chairman's desk. The Solicitor is there also. There are other officers at the table engaged in taking minutes and assisting in divisions. With regard to the platform, the only point which seems worthy of notice is the accommodation for the Chairman, who has to sit for four hours, except when he stands to put questions. His desk is made to slide backwards and forwards for a few inches so as to be suitable for both positions. As regards comfort, every Chairman will have his own notions, and seat, desk, and footstool must be made to conform to them. It often happens that the Chairman wishes to confer with the Clerk, or to call one of the attendants to him. For this purpose there is a little electric call-apparatus, from which the bell has been omitted. When touched this gives a sufficient signal close to the chairs of those officers.

I now come to the important question of the suitability of the Chamber for hearing, and, having been so strictly bound in the matters of shape and height, one may speak freely upon this point. I think that in a room which is only 54 feet by 50 feet there ought to be no difficulty in hearing a person in any position who is speaking in a natural tone of voice—as a matter of fact, ordinary conversation can be heard in this Chamber over its whole extent

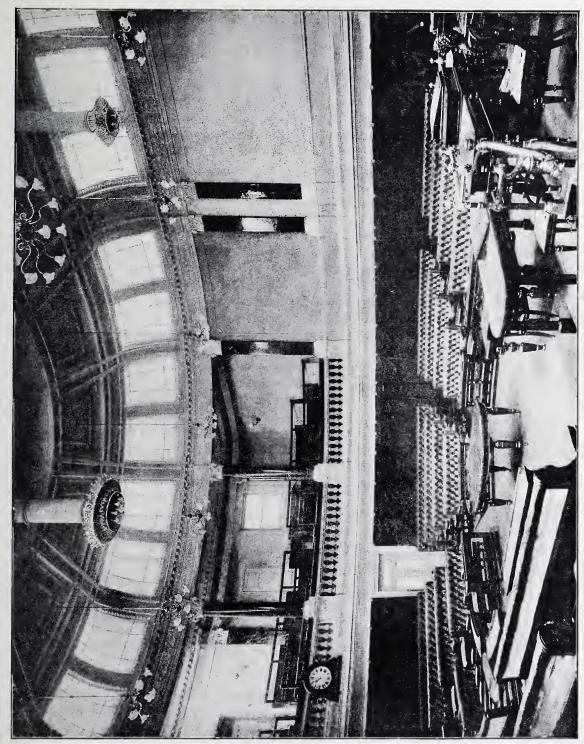


FIG. 4.—THE COUNCIL CHAMBER OF THE LONDON COUNTY COUNCIL, (From a Photograph.)

in every direction. There have been very few complaints about it, and I think those have generally been occasioned by attempts to obtain a hearing by raising the voice too much—possibly when there may have been a good deal of conversation going on. But Lord Rosebery and his successors have been very particular in checking conversation, and the progress of business is usually so rapid that members have to pay very strict attention to the agenda.

I wish I could speak quite as favourably about the ventilation. The old system of passing fresh air over a coil of pipes in a heating-chamber in the floor has been continued. There is a grating in the floor which can be kept open or shut, and there are upright tubes by the walls. I am not sure that these are of any use. Over the ceiling is an exhaust fan driven by hydraulic power that can be regulated. When going at its full speed the air enters the Chamber too quickly, and therefore insufficiently warmed. As a rule, the draught caused by one of the sunlights is sufficient to draw the air from the heating-chamber at a proper temperature. In cold weather the heating-apparatus is kept going during the greater part of the week, so that the Chamber ought never to be quite cold, and I do not think there is much complaint on that score. In very warm weather it is sometimes necessary to open doors, windows, and cove-lights. But in warm weather, as in cold, there are certain members who complain of draughts. I think these are generally caused by currents of air falling down the cold walls. The surfaces of such walls should be plastered with coarse material and finished with a rough surface. All finishings of smooth hard cement are objectionable, as causing condensation and chilling the air that comes in contact with them. The Chamber is lighted by three sunlights, which assist in warming the air. There is, in addition, a complete system of electric lighting, which is the one most generally in use.

If I had to design a conncil chamber with a free hand I should probably try some modification of this one. If for a small number of members, the size should be proportionately reduced on the score of sound. If for a larger number, two or three outer rows of seats might be added, and the chamber might be somewhat lengthened also. Every gangway should have its extra door leading into a corridor, lobby, or room, so as to reduce the amount of traffic across the floor of the chamber. All the doors should be glazed with embossed glass, a very small portion in each being left clear so that a member can see whether business in which he is interested is going on without opening the door. A large table in the centre is useful for displaying drawings of moderate size; but it should be used as little as possible, for all traffic across the central space disturbs both speakers and listeners. Large maps must be hung by cords with pulleys from the walls. The division doors might be right and left of the chamber, clear of the platform, and would be used as ordinary entrance doors. The clock should be conspicuously placed behind the chair, a chronometer for the chairman's guidance being placed on his desk.

I should not be averse to trying a circular or polygonal plan if a greater number of members could be accommodated in that way, and I do not think the acoustics of such a chamber need necessarily be bad. The position of the Press Gallery immediately behind the Chair is good, for the speakers will generally be well seen; but it might with advantage be made two or three feet lower. At the same time, it is important to keep the Press as well as the public apart from the members during debates. The access to this gallery should also be apart from the members' entrance and lobbies. A private room for reporters immediately at the rear of the Press Gallery should be provided. The main entrance to the Public Gallery should be quite distinct from entrances used by members and officers, but there should be some means of access to the gallery from the parts used by the members. It is probably desirable to have the Public Gallery immediately facing the Chair, but that is not the best place

for sight and hearing. Lavatories should be provided here. The Gallery at Spring Gardens accommodates about eighty persons. It is rarely full, except upon some great occasion and upon wet days, when a proportion of those persons who habitually seek such places of shelter selects this particular accommodation.

A tea-room and a smoking-room are essential. They can easily be obtained by using committee-rooms which have direct access from the chamber, or are as near to it as possible. The tea-room at Spring Gardens is so placed.

The lavatory arrangements actually provided for members at Spring Gardens might be reduced in each section by one-third. Hat-hooks are conveniently fixed upon the walls of the lobbies and corridors as near as possible to the doors through which the members enter and depart. They should be marked with the names of the districts represented. A good allowance of space for these hooks is 12 inches; but we have had to place them in two rows alternately, allowing only 6 inches, which is too close. Brass rings, 5 inches wide, for umbrellas are fixed under the hooks, and a narrow zinc-lined trough runs under them against the wall. Every member has an ordinary locker, but not very many are used.

If it can be avoided, a council chamber should never be designed with a view to any other use, though it may be used as a meeting-room for committees. If it is made part of a suite of rooms used for ceremonial or social gatherings it will probably be unsuitable for its purpose both in size and in arrangement. The handsome chamber at Guildhall is an exceedingly valuable addition to the rooms there, but in respect of sound it might with advantage be reduced in height by about one-third. The height of the floor of the Public Gallery, the position of which was probably determined by considerations of architectural effect, is also inconvenient.

The number of committee-rooms and their sizes must be determined by the requirements of each case. In addition to the twenty standing committees of the County Council there are at times several special committees to be provided for. The total number of committee-rooms available in addition to the Council Chamber is five; but double that number would not be too many. There are frequently a dozen committees in one afternoon, and great difficulty is experienced in accommodating them.

It is very convenient to have the Council Chamber, the committee-rooms, and the principal offices occupied by the Clerk and his staff upon the same floor. All the papers relating to every case before a committee or the Council should be in the room or close at hand when the case is under consideration. The committee-rooms should generally be sufficiently large to accommodate as many members out of a committee of fifteen as are likely to be present at the same time. One or two officers from the Clerk's department, and one or two from other departments will also require to be present; and it is often necessary to receive a deputation of about a dozen persons. Two or three larger rooms to accommodate a committee of thirty may be required, and smaller rooms will be sufficient for sub-committees. The largest committee-room at Spring Gardens measures 28 feet by 28 feet; the smallest measures 17 feet 6 inches by 14 feet 6 inches. This last is the worst room for sound, probably because it is of the same height as the larger committee-rooms. The acoustics of a committee-room are generally bad, if indeed it is a question of acoustics, for there is necessarily more temptation to private conversation between members in committee, where a subject comes up for the first time, than in the Council meetings.

The Committee Clerk usually sits on the left of the Chairman. The officer whose reports are under consideration should almost invariably sit close to his right hand. There are many different shapes of tables and modes of arranging them in use in different public buildings. I think the table should always be wide. For the most part a rectangular shape is sufficient, the Chairman sitting at one end. At a circular table there are too many members who cannot

see the Chairman. Very long oval tables are sometimes used, but among fancy shapes the pear-shape is perhaps the best, the Chairman sitting at the broad end. In a large committee-room the horse-shoe table is useful, particularly when deputations are received, for they can occupy the central space.

Quite near to the committee-rooms should be a room for the Chairman of the Council, and for the Deputy-Chairman if he is actively engaged in superintending the routine. A common room, at least, should be provided for chairmen of committees, and private rooms may be necessary for some of them.

The provision for the official staff in the several departments is too great a subject to add on to this Paper. I had an opinion from an important Government official, that small rooms for the chiefs and large rooms for their officers is the correct principle; but there can be no general rule. My own room measures 20 feet by 17 feet, which is a good size. Very important work has to be done by ordinary members of the staff, which would be interrupted by the noise of a large general office. Interviews with members of the public should generally be held in rooms where but little business is going on. Every department should be in communication by speaking-tube with the lobby of the Council Chamber, and many other communications by tube and bell will be suggested by the circumstances of each case.

THOMAS BLASHILL.

DISCUSSION OF MR. BLASHILL'S PAPER.

MR. ASTON WEBB [F.] moved a vote of thanks to Mr. Blashill for what he ventured to think was one of the most practical and useful Papers that could possibly have been read to practising architects in that room. Lord Rosebery, he believed, had said that the private individual in the future would not be the great builder, but that the municipality would take his place; he thought the kind of building they would probably require was the building with the details of which Mr. Blashill had so fully dealt. With regard to the acoustics of such a building his own experience had been that plaster was not a good acoustic material with which to cover the walls. Mr. Blashill, he thought, was of the same opinion, as he had hung his chamber with some woollen material. He himself had tried wood panelling, which looked well, and was an admirable material with which to cover the walls of a room in which speaking was to take place. It seemed to act as a violin case acted on the strings; without giving any echo it seemed to carry the voice to the extreme points. It was, he supposed, admitted by every one that the requirements for a perfect acoustical room were not yet formulated, and that they could only, as it were, go by rule of thumb and follow their own experience. His experience was that panelling was an admirable thing, but that the smooth plaster wall was a resonant noisy material to use, and he thought the noise which Mr. Blashill had mentioned was most difficult to overcome. When the Courts at Birmingham were being built, Mr. Bell and himself had conferences with the Judges as to that point, and they all said that what annoyed them more than anything else

was the doors, which Mr. Blashill had also mentioned. One Judge especially remarked that no one could imagine the annoyance it was to a man whose whole mind was fixed upon the intricate details of a case to hear the jar, jar of a door, and the click, click of some spring when the barristers and the public went in and out of Court. Some ten or twelve different doors had been hung temporarily in these Courts in order to obtain the quietest that could be procured. It would sound too much like an advertisement if he were to mention which door was chosen, but one was found quieter than the others, and, although it turned out to have the weakest spring, the one that was least likely to last, it was adopted for the actual Courts themselves, and a stronger and perhaps more roughlymade spring used for the outer doors. Another point was the position of the Press. Mr. Blashill had put the Press into a gallery behind the Chairman, and from what he said he gathered that he was not quite sure that that was altogether satisfactory. In Birmingham, and in one or two other cases, the Press had been consulted about the position in which they liked to be placed, and he had never heard the Press express any other opinion but that a gallery was the most unpleasant place for them to sit in. The Press sat in a gallery in the House of Commons, but they did not like it. The expert opinion amongst reporters, so far as he had been able to gather, was that the right place for reporters was between the speaker and the Chairman, really very much as the Press were placed at the Institute, where every one addressed the Chairman, and the voice, therefore, was bound to pass over the reporters. In

all the Courts in Birmingham the Press had been so placed, and he was glad to say that they were satisfied with the arrangement. To go back to the question of noise for a moment, with regard to the covering of the floor he had used very much the same material as Mr. Blashill had—a dark green material, which he thought had generally been called a cork carpet. It was an admirable thing; it wore extremely well, was very pleasant to the eye, and absolutely quiet for the footstep. As to ventilation, Mr. Blashill, he gathered, seemed rather in favour of the extract system of ventilationthat the power should be placed above, and the fresh air be drawn in from below. His own experience had been more with that system of ventilation, and he had found it answer; but under the advice of the late Mr. Phipson, whom he looked upon as a genius in that particular branch of work, he had endeavoured to heat the room independently of the warmed fresh air which was brought in by the extraction from above, because it was impossible to properly warm or regulate a chamber by merely admitting warm air from the floor below and extracting it from above; and he had endeavoured to get direct radiation in the chamber itself, by hot water or steam. This was turned on till the room was occupied; and the air was brought up to the temperature required with the windows open. As soon as the chamber came to be used, the windows were closed, the radiators turned off, and the same temperature kept up by admitting the warm fresh air from below. By that double combination the air could be kept to the temperature required; but to try and heat it only from the hot air below was bound to lead to draughts, to hot blasts in one place and cold draughts in another.

Mr. J. M. BRYDON [F.], who seconded the vote of thanks, thought that the subject Mr. Blashill had brought forward was eminently practical. There were a great many useful buildings being built all over the country, and whether the new Local Government Act had anything to do with it, or whether it was owing to an increase in the wealth of the country, he did not know; but they had all had, or might have, an experience in the problem of building a council chamber in which people should hear and see quite distinctly from nearly all parts of the room. He had come to the Meeting with great interest to hear of the building of the London County Council Chamber; but they were not confined, he apprehended, in the discussion, to that particular chamber, in which Mr. Blashill, no doubt, was hampered to a great extent by the fact that he had to make an alteration, and not a new chamber. Now, the ordinary council of a provincial town was not so large as the London County Council; it usually averaged from fifty to eighty members, and the great point which was essential for the chamber in which they sat was

that they should hear each other almost when they were speaking in ordinary conversational tones, and the difficulty was to keep down the size of the chamber so that everyone could hear and see quite distinctly, and yet that it should have some sort of architectural effect, because it represented in a concrete form an idea of the municipality of the town for which it was built. One point which Mr. Blashill had brought forward was the size of the room. In one or two chambers he (the speaker) was building, he had found that the height must be kept as low as possible for acoustical effects; the difficulty all along was to keep down the echo. Then there was another point in the seating of the chamber. He found, certainly in provincial towns, that there was a good deal of coming and going, and to bring the seats right up to the walls, as in the London Council Chamber, would be considered rather a mistake, because all the traffic of coming and going to the seats went on outside the seats, and not across the central portion, which was reserved for officials. It was essential, therefore, that a passage should be kept round the seats so that the members could come and go to their seats and through the gangways without crossing the room at all. In the London Council Chamber, where division lobbies were called into play, the members went into the particular division lobbies and flocked out again, so that the traffic was between the Council Chamber and the doors of the division lobbies. But the ordinary practice in a provincial town was to take count of heads, or to call over the names, and each member answered Ay or No, and was jotted down in a list; the division was then counted out and the numbers were announced, so that there was not the flocking through the lobbies as in the London Council Chamber; and that was probably due to the fact that the numbers were much more moderate in a provincial Council than in the London County Council. Everything that tended to deaden sound in the way of panelling, which he himself had adopted with some success, or in the way of hangings, which Mr. Blashill had found useful in the Council Chamber, helped to keep down the reverberation of sound during the debate. There were one or two points connected with the provincial Council Chamber that did not count in the case of the London Council Chamber. First of all there was the point deprecated by Mr. Blashill, that the Council Chamber was sometimes used for other purposes than for meetings of the Council. It was one of a suite of rooms, and when the municipality gave a great entertainment it often happened that the Chamber was used as a reception room, or for a conversazione, or even as a coffee-room after a banquet; and one had to think sometimes of other purposes besides the mere fact that it was to be a room for speaking in. Then there was this to be consideredthat the room itself was part and parcel of a suite, and must, to a certain extent, be treated architecturally. In the matter of acoustics, speaking from his own experience, he had found that by cutting the walls up with columns, or by projections into the room, the echo was prevented and the acoustics were very much helped. regard to the places reserved for the public and the Press, again speaking merely of an ordinary provincial Council, it was true that the meetings of the Council were public, and it was necessary to provide a public gallery; but in his opinion the fewer allowed the better, though he by no means advocated that the debates should be conducted in camerá. Allowing the public two rows of seats across the Chamber, these would only be filled on special occasions, when there was some motion or subject before the Chamber in which the whole town was interested. With regard to the Press Gallery, a table (not a gallery) placed at the side, say, of the Mayor and Aldermen, between them and the speaker—to the right or the left as the case might be-had been found by experience to be extremely convenient. he had been interested to hear Mr. Blashill's description of the routine of the work and as to the places where the Chairman and the officials should sit. In an ordinary provincial Council the seat for the Mayor was placed pretty much the same as their own President's was, and he was usually supported on either side by, probably, the senior aldermen of the town. But the great official in an ordinary provincial Town Council was the Town Clerk. He usually sat in front of the Mayor's chair, and to him were referred all matters of routine. He should, therefore, be within easy reach of the Chairman—in fact, within speaking distance, that the Mayor could even whisper to him without disturbing the debate. Then on one side of the Town Clerk was his Deputy; and it was expedient that there should be a table and chairs in the centre for deputations that often came to a provincial Town Council. While one member of the deputation was speaking the others should be seated, and a certain area should be reserved for them to make notes. On the matter of seating he agreed with Mr. Blashill that the separate seat system, every man having his own desk, was an unnecessary waste of space, and that a bench holding from two to six people, with a desk in front large enough to hold foolscap paper, would be found the best.

Mr. WILLIAM WHITE, F.S.A. [F.], said that the only really practical place for the Press was immediately in front of the Chairman—between the Chairman and the audience. Reporters would hear quite as well there, whatever might be the sound in the general body of the room. He could not help thinking, however, that the question of acoustics depended very much more upon the proportions of the room than upon the material

with which the walls were covered, or the flooring. He had no doubt that, for hearing, when there were very large plain surfaces to be covered, plaster was objectionable; but he was still more convinced that the room which Mr. Blashill mentioned in the first instance was very badly proportioned for sound; and he believed that the similarity of height and width was the very greatest obstruction by way of echo to the sound of a building. In the Institute Meeting Room, the height was very much under the proportion, and therefore there was no danger of echoing sound. He had made several observations upon that point in various places, and he was most struck with the sound of two public rooms at Stockholm. One was exceedingly good for sound, and the other exceedingly bad. The one that was bad was in height nearly in proportion to its breadth. To deaden sound, of course, a carpet or anything of that nature upon the floor was good; but for a room where the proportions were good for sound there was nothing better than a hard paved floor—wood pavement, or even concrete. Many organ-builders held that such a floor was very much better for placing an organ upon, as it emitted a greater amount of sound.

MR. CHARLES FOWLER [F.] said he had had the advantage of learning something practical the other day in the country upon the matter of sound, and he felt anxious to give his colleagues the benefit of it. An old country church, seating from about three to four hundred, had been restored, and among other improvements they had paved the whole of the floor where the seats were placed with wood blocks. It was astonishing, the rector said, how much greater difficulty he found in preaching since that was done than he had with the old boarded floor—that the new wood blocks deadened the sound, so that he did not feel that he could make himself thoroughly heard.

MR. H. W. BURROWS [4.] said there was one point in connection with the subject which had not been touched upon very clearly either in the Paper or by previous speakers, and that was the question of lighting. The London Council Chamber, he understood, was lit from a cove, and therefore practically from the top. It was, of course, a very much larger Chamber than provincial Town Council Chambers, many of which were lighted in the same way, while many were lighted from the side. Without expressing an opinion upon it, he would ask Mr. Blashill what he considered the best mode of lighting such a chamber—whether it was better to light it entirely from the top, so as to deaden the sound and to distribute the light more evenly over the surface of the room, or whether it was better to maintain a side lighting in addition. He should also be glad if Mr. Blashill would give some suggestion as to the amount of floor-space per speaker. He had given the total area of the Chamber and the number of those in

the room, but he had not mentioned any area that he thought would be about right or sufficient for

the members serving in it.

MR. WILLIAM WOODWARD [A.] said that Mr. Brydon in his speech had referred to columns for architectural effect. He (Mr. Woodward) apprehended that those columns would be close to the wall, as nothing could be more fatal, either in a council chamber or in a hall for large assemblies, than columns. [Mr. BRYDON remarked that he meant close to the wall.] Then might he be allowed to refer to a Fellow of the Institute, Mr. Knightley, who had built in Langham Place certainly one of the finest concert halls in London, and perhaps in England? That hall was certainly the finest they had for acoustical properties, and in the minds of musicians even beat St. James's Hall—itself a very fine hall—for sound. If they could succeed in getting Mr. Knightley to give them a description of it, with technical details, it would add much to the usefulness of their proceedings.

Mr. JOHN HUTTON (Chairman of the London County Council) said that his opinion, of course, was not a professional opinion, but it was connected and associated very intimately with the hall around which the discussion had centred, and upon which Mr. Blashill had addressed them. He (Mr. Hutton) stood somewhat in the position of the man—no doubt the client of a great many professional men present—who had been bothered by a smoky chimney, and the client, unadvised, might consider that the cure for that smoky chimney was sure to be found by following the recommendation of the advertisement with the largest number of testimonials. If among those testimonials he found those of eminent friends who, he was sure, would tell the truth upon that as upon other subjects, he felt sure that by taking that advice his chimney would be cured of smoke. Well, they knew how frequently failure followed an effort of that kind, and he thought that the London Council's predecessors, the Metropolitan Board of Works, were suffering in a sense from that smoky chimney in the noisy, ill-conditioned Council Chamber, where, although it was very much smaller than the present Chamber, it was impossible to hear with the same facility they could now. There was no doubt that, by the condition of attaching a new and increased portion to the building upon the old lines, Mr. Blashill was limited to a very large extent in the exercise of that ingenuity which they knew that he possessed in such a singular degree; and a very graceful compliment was paid to the architecture of the building he had so excellently enlarged by his assurance that its lines were lines which he was able to follow in their integrity and artistic taste. The result had been that the Council were blessed with a chamber where, if members were moderately quiet, there was no difficulty at all in hearing what they had to say. Further, Mr. Blashill incidentally noted that reconstruction of the Chairman's desk was required for men of varying Physically, he was a taller man than the present Prime Minister, his predecessor in the Chair, and Mr. Blashill had been good enough to accommodate the desk precisely to his liking by some of those mysterious arrangements by which the desk could either be brought forward or receded, either raised or lowered, at the will of the Chairman. Those were details; but in the business of the Council, where time was of the greatest importance, and where an extent of business had to be proceeded with generally within four hours, any little loss of convenience and any distracting sound or noise certainly tended to retard the progress of that business. He did not know of any more tangible compliment that could have been paid to Mr. Blashill than that which was expressed by a very large number of members of the Council upon their return to Spring Gardens from the Guildhall where they had been accommodated during the rebuilding of the Council Chamber. Every one said what an immense improvement it was upon the Guildhall to return to a building where they could hear with the greatest facility, and where such attention had been paid to appar-

ently trifling details.

Professor KERR [F.] said he should like to ask Mr. Blashill how a deputation was received in that Chamber. [MR. BLASHILL said deputations were not received there at all. The practice was to receive deputations in committee and not in the Council.] Then that emphasised what had been passing in his mind, that the Council Chamber of London was a peculiar one, and admirably planned for the particular purpose Mr. Blashill had de-For that purpose he thought the plan was perfect, with the exception of one point—that, as someone had already said, it was very advisable to have a passage-way round the outside. That, of course, in the instance before them, could not be had. One thing, however, had struck him: when a division took place, were the Ayes confined to the small space shown in the plan outside the committee room? [Mr. BLASHILL said they were counted as they came out; it was not a lobby.] One would naturally have supposed from the plan that the votes were all in the negative, whereas they knew from the public reports that there was a dangerous unanimity the other way in the London Council. But in the old Chamber of the Metropolitan Board of Works there was a passage, as there was in the House of Commons, from the end which led up towards the Chairman—there was a door and a sort of bar. In council chambers where deputations were received it would be important, he thought, that the model of the House of Commons should be in some degree imitated, so that the public should have a free right of access to one end of the chamber in full view of the chairman at the other end. As regarded the cutting

up of the wall by architectural decoration, he thought it was quite well understood that that was an excellent way of rendering the chamber better for hearing. As regarded the lighting, of course ordinary windows in the walls were not to be thought of in a large chamber of that kind. The cove windows were the best. A lantern in the middle was a very bad plan of lighting a large chamber. He had in his mind a Police Court where no one could hear anything that was going on except by special instinct. The magistrate was continually reprimanding everybody for the slightest sound that was made. The reason was that it was lighted by a long square lantern which was glazed all round. There should be a velarium underneath, as there was in the Albert Hall, as a means of keeping the sound down within hearing distance. If he might say so without disrespect, the Law Courts were very unsatisfactory as regarded both lighting and hearing. As regarded hearing, the reason was, he

thought, the extreme height.

THE PRESIDENT said that County Councils which a equired homes were springing up all over the country, and it was of great advantage to them to hear the result of Mr. Blashill's experience. So far as could be judged from the description, the hall of the London Council appeared to be a success in many, if not in all respects. It was satisfactory to gather that opinion from what Mr. Blashill had himself said, and it was still more satisfactory to be assured that it was the case on the authority of the Chairman of the London Conneil, who had done them the honour of being present that evening. The question of acoustics was a very important one. In his experience the worst room in London to speak in was the Egyptian Hall, the home of the Lord Mayor; so much so that, if he were honoured by being asked to speak there again, he should respectfully decline. The best hall, he understood, for acoustic purposes was the Queen's Hall in Langham Place. He had occasion to gather some experience of the construction of that hall from the fact that a difference of opinion between the professional gentlemen by whom it was designed had been referred to him, and he then learned the principles on which, acoustically, it had been built. President, by the aid of diagrams, explained the principles adopted, which consisted of the reversal of the curve in the usual form of the orchestra as well as of the ceiling, which was made convex instead of concave; a very simple but apparently a successful expedient.

Mr. THOMAS BLASHILL [F.], in reply, said that in the photograph on page 371 the seating which he had described was shown as not quite finished, therefore they must not take it as precisely illustrating it. From what had been said about putting the Press in the middle of the Chamber, he would offer no opinion as to the

smaller provincial Chambers where two or three might be the extent of the members of the Press who required to be present officially; but at Spring Gardens they had three dozen, and that required a different arrangement. Deputations had ample opportunity of appearing before all Committees, and no deputation or private person was ever received at the full Council. It might be worth noting that at the Guildhall private persons and small deputations were brought out along the passage just opposite the grand entrance and the brass doors; they came up to a rod placed there, so that in case of any Council Chamber requiring that accommodation, that appeared to be the best place for them, similar to the accommodation in the House of Commons. Something had been said about proportion; but much as he had heard about proportion, he had never met with anyone who could tell him in feet, and, if necessary, in inches, what that proportion ought to be. Everybody thought it ought to be some measure, but what the proper measure was no one had ever said. He admitted they had the case of certain successful chambers, but when the size of these was doubled, and they were altered in any way, could the same proportions be followed with safety? It was a matter that required to be more thought over. With regard to sound, if they had complete silence and a well-arranged room, there should be no difficulty in making oneself heard without any effort. He was satisfied of that, whatever the proportion might be. There were all kinds of fancies about sound. For instance, take the Opera House at Vienna. Upon the first night of the opening performance the Press were unanimous in saying that it was a very fine building; but they spoke so badly of it on account of the difficulty of hearing that one of the architects of the building committed suicide—so he was told—but after a few more performances every one came to the opinion, and retained it, that it was one, in fact, of the best-sounding places in Europe. to lighting, the cove light, he thought, was the best. For many reasons they could not light by windows in the walls; they must have openings for galleries in the walls; and a great many diagrams were required to be hung. The cove light was therefore the best. A large lantern light was a great mistake, and spoiled sound altogether. As to a passage-way round, he confessed he was jealous about the 6 feet, at least, extra which it required, and that was his only objection to it. He should like upon every other ground to have a space where people could go round, and in that case fewer doors would be required. As to the doors, there was no trouble; they might have any number, and they would not make the least noise. The spring they had used was fixed in the floor, and allowed the door to close within a couple of inches, and then gradually shut.



CHRONICLE.

EXAMINATION FOR CANDIDATURE AS ASSOCIATE R.I.B.A.

The President announced to the General Meeting of the 19th ult. that 106 persons, of whom 45 were relegated from previous occasions, had applied for admission to the Examination qualifying for candidature as Associate; 98 of these had been admitted, five of whom did not attend. The examination was conducted simultaneously in London, Glasgow, Manchester, and Bristol, with the following results:—

	London	Glasgow	Manchester	Bristol	Total
Passed	. 24	4	3	1	32
Relegated in part	. 40	1	3	3	47
Relegated in all	. 9	-	2	_	11
Not passed .	. 3	-	-	-	3
	-				
Examined	. 76	5	8	4	93

Cordial votes of thanks have been entered on the Minutes of the Council and the Board of Examiners, to the Glasgow Institute, the Manchester Society, and the Bristol Society, for conducting the recent examinations in their respective localities.

The names and addresses of the thirty-two passed candidates are as follow:

ABSOLOM: Charles Cyril; 25, Queen Anne's Gate, Westminster, S.W.

ANDERSON: John; 41, Desswood Place, Aberdeen, N.B. BARKER: Walter Hugh; Central Arcade, Wrexham.

BEDINGFIELD: Ralph Waldo; 6, Market Street, Leicester [Probationer 1890; Student 1891].

BEWES: Anstis George; (Plymouth) 67, Ladbroke Grove, Notting Hill.

BIRD: Eustace Godfrey; (Toronto, Canada), c/o T. E.

Colleutt, Esq., 36, Bloomsbury Square, W.C. BISHOP: Thomas Handy, jun.; Grove Road, Leighton

COATES: Frederick Ernest; Belford House, Sunderland. COLLINS: Lewis Eric George; 14, Esmond Road, Bedford Park, W.

COUSSENS: Henry Walter; 6, Nelson Road, Hastings [Probationer 1891; Student 1892].

DUTCH: Leonard Harris; 97, Dickenson Road, Rusholme,

EASDALE: Robert Andrew; Heald Field Terrace, Castleford, Yorks.

FAIRWEATHER: John; 41, Buccleuch Street, Glasgow. FOGERTY: John Frederick, B.E.; 2, St. Peter's Terrace, Bournemouth.

FORD: Solomon; Stanley House, Clapton, N.E.

GLASSON: Arthur Henry Wharton; 1, Sandringham Gardens, Ealing, W.

GRIFFITH: Arthur Troyte, B.A. Oxon; College Road,

HARRINGTON: Harry; 29, Royal Avenue, Sloane Square,

HILL: George Smith; 77, Queen Street, Glasgow. HORSBURGH: Victor Daniel; (Edinburgh) 12, Hill

Street, S.W. JACOB: Louis; 29, Pepys Road, New Cross Gate, S.E.

KERSHAW: Thomas; 15, Queen's Road, Halifax. LOCHHEAD: James; 426, Crown Street, Glasgow. MACKINNON: Arthur Hay Livingstone; 75, Union Street, Aberdeen.

MAXWELL: Joseph Charlton; 15, Stanley Street West, North Shields.

PHILLIPS: James St. John; 24, College Green, Belfast

[Probationer 1889; Student 1892].
PICTOR: Arthur John; Kilbirnie, Ashleigh Road, Barnstaple.

PRATT: George Percy; Cambridge House, South Acton, W. STEDMAN: Arthur; Towcester, Northamptonshire. SUTHERLAND: George; 51, High Street, Elgin, N.B.

THICKPENNY: Thomas Edward, jun.; Breydon House, Lansdowne Road, Bournemouth.

TYLEE: Edward; 29, Oxford Square, Hyde Park, W. [Probationer 1891; Student 1893].

Of the remaining sixty-one who were examined (three of whom did not pass) nine were relegated to their studies for one year in all subjects of the Examination; and forty-seven in some subjects, a summary of which follows:—

	London	Glasgow	Manchester	Bristol	Total
History	. 8	_	1	1	10
Mouldings .	. 20	1	2	2	25
Sanitary Science	. 12	_	1	1	14
Strength of materia	ls 7		_	-	7
Plan, elevation, &c.	. 35	1	1	2	39
Materials	. 3	_	_	1	4
Construction .	. 17	_	2	3	22
Specification .	. 22	1	3	2	28
Prof. Practice .	. 7	_	2	_	9

The last of these Examinations under the present conditions will be held in the Autumn, after which applicants generally will be required to pass the several stages of the Progressive Examinations before being admitted to candidature as Associate. For a time, however, architects of not less than twenty-five years of age who have not entered for the Preliminary and Intermediate stages will be admitted to the Final stage on submitting, as probationary work prescribed by the present regulations, satisfactory evidence of works designed and executed by them; such concession will also include exemption from submitting the Testimonies of Study required from Students for the Final stage. Chief assistants in architects' offices over thirty years of age will be admitted to the Final Examination under similar conditions.

The Value of Intellectual Training.

No little weight attaches to the utterances of Lord Playfair, and his recent address to the Society for the Extension of University Teaching must not be allowed to pass without an apprecia-

tive note in the Journal. Speaking of the good results which have so far attended the efforts of the promoters of the University Extension scheme, it was important, he said, neither to exaggerate those results nor to depreciate the value of the system. The main purpose was not to educate, but to permeate the untaught with the desire for intellectual improvement, and to show them methods by which they could attain that desire. "Every man who acquires a taste for learning, "and is imbued with the desire to acquire more " of it, becomes more valuable as a citizen because " he is more intelligent and perceptive." Yet there are objectors to this principle—those who will cite cases where men of the people, like Faraday, Watt, Stephenson, educated themselves without aid from others and became great discoverers. But how much trouble and suffering would have been saved to them had they been able when young to enjoy the advantages now offered to the youth of this country by giving them the materials and methods of education. True, men of genius will cut out steps for themselves in the toilsome ascent of knowledge; but all the dwellers in a plain do not surmount the mountain which frowns upon them at the end of the valley. A few daring spirits may reach the summit unaided, and pass into the world beyond, but the great mass of men remain in the lowlands where they were born. "We can " induce many of these to make excursions which "will brighten their existence, by making roads "and showing them how to use the roads. Per-"chance in doing so we may come upon a genius " and put him on his way, and wish him Godspeed. "The case should not be argued by contrasting a "heaven-born talent with ordinary ability. All " systems of education try to draw out the mental " abilities of the scholar, but they do not profess "to give the gifts of God, or to create especial "abilities in man."

The Royal Gold Medal 1894.

By a letter received from General the Rt. Hon. Sir H. F. Ponsonby, G.C.B., on the 27th ult., the Secretaries were informed that their letter of the 19th ult., announcing the award by the Institute, subject to Her Majesty's gracious sanction, of the Royal Gold Medal to Sir Frederic Leighton, Bart., P.R.A., had been laid before The Queen and that Her Majesty had approved the award; and they immediately communicated with Sir Frederic, whose reply, dated 29th ult., is as follows:-GENTLEMEN, I have to thank you for the letter in which you are good enough to inform me that Her Majesty has been graciously pleased to confirm the great honour bestowed on me by the Royal Institute of British Architects, and in which you further bring to my knowledge the very gratifying expressions with which your President has been kind enough to describe my poor and inadequate

claims to that honour—my high appreciation of which I have already expressed to him in writing. Believe me to remain, Gentlemen, very faithfully yours, Fred. Leighton.

The Prizes and Studentships 1894-5.

Full information as to the subjects set and conditions of competition for the various studentships and prizes offered in the present year by the Institute may be obtained from the pamplilet recently "The Influence of Literature on published. "Architectural Development" is the subject set for the Essay Prize—the Institute Silver Medal and Twenty-five Guineas—open to British subjects under the age of forty years. The Measured Drawings Medal and Ten Guineas will be awarded to any British subject under the age of thirty years who produces the best measured drawings made by himself of any important building, Classical or Mediæval, in the United Kingdom or abroad. Various subjects are suggested as worthy of illustration, particularly one of the Colleges of Oxford or Cambridge.

The principal Travelling Studentship—the Soane Medallion and £100—is open to British subjects under the age of thirty years, and will be awarded to the author of the best "Design for a Gallery "for the Exhibition of Pictures and Sculpture, who, within two years of the award, must make satisfactory arrangements for going abroad for a period of not less than six months. The Pugin Studentship, founded for the promotion of the study of the Mediæval Architecture of Great Britain and Ireland, consisting of a Silver Medal and £40, may be competed for by members of the architectural profession of any country, between the ages of eighteen and twenty-five years. The successful candidate is required to make a tour of not less than eight weeks in some part of the United Kingdom. The Godwin Bursary—a Silver Medal and £40—open to members of the profession without limitation as to age, and founded for the promotion of the study of works of Modern Architecture abroad, will be awarded to the candidate who submits the best selection of practical working drawings, or other evidence of special practical knowledge, and testimonials. The holder of the Godwin Bursary is required to spend not less than five weeks in some part of Europe (other than the United Kingdom) or America, to study and report on modern planning and modes of construction, drainage, water-supply, ventilation, and other sanitary arrangements. The Owen Jones Studentship—a Certificate and £50—founded for the encouragement of the study of Architecture, particularly in respect to Ornament and Coloured Decoration, is open to members of the profession under the age of thirty-five years. Candidates must submit testimonials, with specimens of their drawings showing knowledge of colour; and the winner is required to make a tour of not less than

eight weeks, for the purpose of improving and cultivating his knowledge of the successful application of colour as a means of architectural expression. The Tite Prize—a Certificate and £30—will be awarded to any British subject under the age of thirty who produces the best design for a Garden Pavilion overlooking a lake, the style to be in accordance with the principles laid down by Palladio, Vignola, Wren, or Chambers. The successful competitor, within two years of the award, must spend at least four weeks in Italy.

The Grissell Prize for design and construction a Gold Medal and Ten Guineas—will be awarded to any British subject not in practice longer than ten years, who produces the best Design for an Independent Wooden Spiral Stair entirely of wood,

including handrail or balustrade.

The Ashpitel Prize, consisting either of books, a medal, or money, and founded by the late Arthur Ashpitel for the encouragement of the study of Architecture, is open to the candidate who has most highly distinguished himself in the Examinations qualifying for candidature as Associate during the current year.

All work sent in for the Studentships and Prizes must be delivered on or before Monday, 24th of December 1894, at the office of the Institute,

addressed to the Secretary.

The late Andrew Heiton [F.].

The following memoir of Mr. Heiton, whose death occurred on the 3rd ult., and who had been a Fellow of the Institute since 1879, has been furnished by Mr. Campbell Douglas, *Vice-President*.

By the death of Mr. Andrew Heiton of Perth, on the 3rd ult., the Institute has lost a member who was an accomplished man, and the profession in Scotland one of its best-known and outstanding architects. He was born at Rossie Priory near Perth on the 3rd April 1823, so that he was within one month of completing his seventy-first year.

He served his apprenticeship with his father, who had an extensive practice in his native county, and for many years held the appointment of City Architect of Perth. After completing his indentures he entered the office of the late David Bryce of Edinburgh, to do which has been the ambition of many young men who afterwards became successful architects. He remained there for some time; but it was possibly owing to the strain of work that his health then gave way to some extent, and it was considered necessary that he should have some more active occupation with fresh air. He consequently took an engagement as an engineer in the employment of the Scottish Central Railway Company, which was then in process of being surveyed, but which has long been absorbed in the Caledonian Company.

Three years of this open country life restored him to his former vigour. He then returned to Perth, and, again entering his father's office, in 1849 became his partner. He continued thus till 1858, when, on his father's death, he took over and continued the entire business; and the young man of thirty-five was then appointed to succeed his father as City Architect. He remained in Perth till his death, busily engaged with a large and growing practice in his native county as well as the surrounding counties, where he was widely known and much esteemed.

In 1870, on the death of his cousin, John Heiton, author of the "Castes of Edinburgh," &c., he succeeded to the charming small property of Darnick, in the immediate neighbourhood of Melrose, where, in a former generation, Sir Walter Scott was not an infrequent visitor, and where doubtless the old Border Peel Tower of Darnick attracted his antiquarian tastes. Its last rebuilding was in 1569, as the inscription on the lintel of the entrance door testifies; but the date of the

earlier building is not known.

It was to this pleasant retreat, not far from the famous Abbey of which he knew every stone, that he was in the habit of going as often as he could escape from his business engagements. his hand the interior of the Tower gradually assumed an air of greater comfort and luxury than would have contented his forbears, for many generations known as the Heitons of Darnick; but all this was done judiciously, and the hand of the restorer did not alter and injure the exterior. He also added largely to the collection of the old Scots arms and furniture which had been bequeathed to him, and thus formed one of the most unique and interesting museums of antiquarian and artistic objects that could be found in Scotland.

As I have said, his business was a large one; but I may select a few of his principal works, viz., Findlater Church, Dublin; St. Mary's, Kinnoull, Redemptorists; Atholl Hydropathic, Pitlochrie; Castle Roy, Broughty Ferry; Hallyburton House, Forfarshire; Station Hotel and Caledonian Road School, Perth; Kinbrae, Newport, Fife; Tower of Lethendy, Perthshire. Three years ago, feeling less able for sustained work, he assumed as partner his nephew, Mr. A. Grainger Heiton, and since that time he was principally occupied, amongst other works, with the restoration of St. John's Church, Perth, and Fonab House, Pitlochrie, the former work being an admirable illustration of what legitimate restoration should be; and he was in harness and going about till within little more than a week of his death, which was proximately caused by heart disease.

In giving the rapid sketch of my late friend's life, I recall the last excursion of any extent which he took; it was with me in September 1892, when we spent a week at Kirkwall, visiting the Cathedral, the Bishop's Palace, and the Earl's Castle, and also the most interesting local museum of prehistoric antiquities. He was a delightful

companion at all times, overflowing with both humour and wit, a man of great practical sagacity, and largely endowed with the somewhat rare faculty of common-sense; of cultivated literary taste, and one of the most genial and hospitable of those with whom it has been my good fortune to be intimately acquainted.

The late John Brightmore Mitchell-Withers [F.].

John Brightmore Mitchell-Withers, who died suddenly on the 9th ult. at the age of fifty-six, was elected a Fellow of the Institute in 1873. He was a native of Sheffield, and was educated at the Collegiate School of that city. After serving his articles with Mr. Samuel Worth, he became assistant to Mr. Robert Blackmoor of Rotherham, whom he subsequently joined in partnership. In 1862 he severed his connection with Mr. Blackmoor, and started practice in Sheffield. He was a Fellow of the Surveyors' Institution, and was one of the founders, and Treasurer and Vice-President, of the Sheffield Society. On another page [p. 405] will be found a memoir of Mr. Mitchell-Withers, from the pen of Mr. Charles Hadfield, Hon. Secretary of the Sheffield Society; and the esteem in which he was held by his professional brethren may be gathered from the terms of the resolution, quoted by Mr. Hadfield, passed at the last meeting of that Society.

The late Lord Hannen [H.A.].

The Right Hon. Lord Hannen, who died at his residence in Lancaster Gate on Thursday, 29th ult., had been an Honorary Associate of the Institute since 1877. He was born in 1821, was educated at St. Paul's School, and subsequently studied at Heidelberg, then in high repute as a school of law. Called to the Bar at the Middle Temple in 1848, he became junior Counsel to the Treasury in 1863, and a Judge of the Court of Queen's Bench in 1868. In 1872 he was appointed Judge of the Probate and Divorce Court, becoming President of the Probate, Divorce, and Admiralty Division of the High Court in 1875. He presided at the long inquiry in the Parnell Special Commission, which lasted over 129 days, and shortly after was appointed a Lord of Appeal and created a life peer. Lord Hannen's last public service was in the Behring Sea inquiry, in which he acted as one of the British arbitrators.

Additions to the Library.

Recent additions may be mostly comprised under the head of pamphlets, apart from contributions of *Transactions*, &c., received from kindred societies. Lately there seems to have been a dearth of publications of architectural interest. Of the pamphlets, one received from Mr. Barr Ferree, its author, on *The High Building and its Art*, which formed a contribution to the March issue of Scribner's Magazine, deals with the enormous structures which have become so notable a feature of later American architecture. Mr. Barr Ferree seems to be a sort of Devil's advocate for these "skyscrapers," to use an expressive Americanism of his own. Through this form of building "the "thoughts of our architects," he says, "are being "turned to new principles of design; through it "our real-estate men and investors are finding a "fresh source of wealth and investment; through "it our cities are being transformed, and the "typical modern city is becoming an assemblage of gigantic commercial buildings which overtop the loftiest church spire, and render insignificant (sie) the most ambitious and ornamental structures of an earlier time."

The first part of Volume XIV. of the Proceedings of the Royal Institution contains, among numerous Papers, one read before the Institution by Mr. George Simonds on "Sculpture considered "apart from Archæology," in which the author incidentally expresses regret that English architects are so seldom able to induce their clients to expend sufficient money on high-class decorative sculpture, and "that even our public buildings " are left so unbecomingly bare." Mr. Simonds ascribes this shortcoming to the fact that few, even of so-called "cultured" people, know anything of sculpture. The Yorkshire Archæological Journal (Vol. XIII., Part i.) contains Notes on Yorkshire Churches, by the late Sir Stephen Glynne, Bart., and a Paper on Sandal Castle, by Mr. John W. Walker, the latter being accompanied by illustrations. The Society of Antiquaries has forwarded Vol. LIII., Part ii., of Archæologia, containing Papers on "The Ancient "Settlements, Cemeteries, and Earthworks of "Furness," "An Archæological Survey of Cum-"berland and Westmorland," "Excavations on "the Site of the Roman City of Silchester "in 1892," &c., and has also forwarded an Index to Archæological Papers published in Reports and Papers of the Associated Architectural Societies (Vol. XXI., Part xi.) have been received; the Massachusetts Institute of Technology has forwarded its Annual Catalogue for 1893-94, and the Technology Quarterly (Vol. VI., No. 3); and the Smithsonian Institution its Annual Report to July 1891.

A party of the advanced students of the Bombay School of Art are taken every year, for about a fortnight, in charge of the principal or vice-principal, to some place noted for its architecture, for the purpose of study. Sketches and measurements of the buildings are made on the spot, and afterwards worked out on the return of the party. Some of these drawings, which are the result of an excursion at the beginning of last year to Ahmedabad, a place famous for its sculpture both in stone and wood, are published in the Journal of Indian Art (Vol. VI., No. 46), recently received from Mr. W. Griggs. Zcitschrift für christliche

Kunst, a monthly periodical, will henceforward be presented to the Library by the publisher, for which the Institute is indebted to Dr. Reichensperger [Hon. Corr. M.], who, in Part xii., Vol. VI., recently received, gives a detailed account of the Institute Journal.

REVIEWS OF NEW BOOKS. IX. (25.)

JAMES FERGUSSON.

A History of Architecture in all Countries, from the Earliest Times to the Present Day. By James Fergusson, D.C.L., F.R.S., M.R.A.S., F.R.I.B.A. Third Edition. Edited by R. Phené Spiers, F.S.A., F.R.I.B.A. 80. Lond. 1893. Price £3. 3s. [Mr. John Murray, Albemarle Street, London.

To attempt a complete review of the book before us, a third edition of which Mr. R. Phené Spiers has revised and rearranged with admirable skill and most commendable modesty, seems at the present time superfluous. Every architect among the English-speaking race knows the several volumes of History which Fergusson has written and the great house of Murray published; and no Associate has entered the Institute during the last decade without a previous study of them, of a more or less comprehensive character. The following extracts from Mr. Spiers's Preface will give the best idea of the alterations made by him in the new edition. He says:

In the present edition (1893) the editor has endeavoured to the best of his ability to follow the course which Mr. Fergusson himself adopted in publishing new editionsviz., to re-write those portions which subsequent discoveries had proved to be either incorrect or doubtful. For instance, in Egyptian Architecture, the accurate measurements of the pyramids made by Mr. Flinders Petrie, and his correction of Lepsius's theories as regards the Labyrinth, have placed information at the editor's disposal which was unknown to Mr. Fergusson. Corrections of this kind are inserted in the text. . . . In Persian work, the accuracy of Mr. Fergusson's views respecting the arrangement of the plans of the Persian palaces, which were first promulgated in 1855, has been confirmed by later explorations at Persepolis, Susa, and Pasargadae, and footnotes giving the records of the same are appended. The results of recent discoveries in Greece and Italy have been recorded, sometimes in the text, sometimes in footnotes; and changes have been made in the chapter on Parthian and Sassanian Architecture, M. Dieulafoy's photographs having enabled the editor to correct some of the woodcuts copied from Coste's illustrations. Important changes have been made in the Second Part, devoted to Christian Architecture; the Byzantine style has been placed first. The Romanesque, or Early Christian, style in Italy has been included in Book II., together with the later developments of style in that country.... The Italian Byzantine chapter has been omitted, and the two or three buildings described under it transferred to the Byzantine-Romanesque chapter. By the new arrangement it is possible now to follow almost chronologically the various phases of style in Italy. In the Book on the Byzantine style, some of the examples in Jerusalem ascribed to Constantine have been transferred to Justinian's time; but this has naturally followed another very important change—the description of the so-called Mosque of Omar, the Dome of the Rock,

has been transferred to the Saracenic style. Various corrections have been made in the dates ascribed to the Mosques in Cairo, and the French expedition in Tunis has enabled the editor to add a plan and view of the great Mosque of Kerouan. . . . About forty woodcuts have been specially prepared for this new edition, half of which are of subjects not before illustrated.

Fergusson's name is probably best known for his criticisms, and he was unquestionably the earliest scientific critic of general architecture (among Englishmen, at least, if any Continental names can be mentioned against his claim), and one of the chief founders of the modern method of treating architectural questions from a philosophical standpoint. Before his time criticism meant only a mechanical scrutiny into degree of conformity with precedent, affording less occupation for the intellect than for the scale and compasses; Fergusson raised it to a science on which the most cultivated and ablest minds might worthily

be occupied.

That he advanced so boldly, so far beyond the old time-honoured grooves, was mainly due to the fortunate accident which gave him, early in life, an intimate acquaintance with so much larger a proportion of the world than had previously been enjoyed by anyone with architectural tastes. Travel really made him what he was, more especially as regards his strongest points. His prededecessors, whether trained architects or amateurs, were versed alone in some few of the recognised European styles, and were unaccustomed to think much of the mutual relations even of those they were acquainted with. Fergusson, however, with a complete topsyturvydom of ordinary methods and experience, acquired his first interest of architecture, and first whetted his innate critical faculties, in a country altogether outside the accepted architectural circle, and on a manner of building generally accounted too strange and fantastic for serious attention. Yet, as in time he fully proved, there was much to admire, and much also to be learnt, in a land where the old is still so new, the new so old, where every custom of to-day is inseparably linked with an immemorial past. This peculiarity, of environment probably developed both the freshness and the breadth which specially characterised his views; he started on the quest of truth without incumbrance, free alike from the trammels of academic law and from the bias of sentimental associations.

The knowledge, exceptional and thorough as it was, which rendered him the first authority in an immense and quite unexplored province of architecture, was by no means enough to satisfy Fergusson's inquiring mind; he used it but as a stepping-stone, whence he set forth, with a determination like that of Alexander, to conquer the entire world; and this he practically accomplished, by gathered knowledge if not by actual sight. With an interest as comprehensive as it was minute, he made himself master of the architectural achievements of every corner of the globe, in every epoch of its history; nothing escaped his ken; everything that mankind, from before the dawn of history to the moment at which he wrote, from the most barbarous aborigin to the most cultivated artist of a European capital, had ever erected, every form of structure, from a reed-hut to a railway terminus, from Stonehenge to the Crystal Palace, was investigated, weighed, and assigned its relative position in his all-embracing survey; nor did he stop at the boundaries of the visible and concrete, but extended his researches and speculations into the domains of the vanished past and the possible future. Few men, if any, have excelled him in the elaboration of ingenious and plausible theories for the restoration of the lost portions of a ruined edifice, or even for the re-construction of buildings, known only, it may be, from literary allusions the most scanty and Most fortunately for all succeeding students he did not keep to himself the immense stores of information, which he accumulated in the first instance for his own use, as the raw material for his comparisons and inductions; in his various "Histories" he made a gift of it to the world, for which it is almost impossible to be over-grateful. Comparisons of isolated portions of his writings with those of specialists in some particular subject may very easily be made to Fergusson's disadvantage; but taking him as a general historian he has no equal; although the moderate compass of his collected works, and the simplicity and apparent ease with which the largest and most difficult subjects are handled, makes it hard to realise the labour and discrimination involved, and therefore to appreciate the success achieved.

Of the great requisites for an historian, twoaccuracy and method—were possessed by Fergusson in ample measure; with the other two-impartiality and eloquence—he was less copiously endowed. As to the first, even if later and more leisurely investigations may show him to be sometimes incorrect, the intention to be as precise as the occasion seemed to need, or as the best attainable information would allow, is always evident, and he can never be accused of lack of pains or care; while as to the second, in his systematic classification and philosophical manner of treatment, he is a model to all other writers on the subject. The consideration of his impartiality is very difficult; so much depends upon the individual sympathies or antipathies of his reader. It is impossible for anyone to take an intelligent interest in architecture without acquiring strong preferences, and those who happen to share Fergusson's own predilections, which went in favour of any form of Classic architecture as opposed to Gothic, will probably affirm that he was strictly impartial. On the other hand, though acknowledging that Fergusson always

tried his best to be fair and judicial, no one with a leaning towards Gothic can fail to detect the opposing weight that lay ready in the scales whenever the arbitrament chanced to lie between the Gothic and almost any other style. causes of this state of feeling are probably susceptible of explanation, but it would occupy too much space to enter upon them here; some other aspects of his writings have also still to be considered.

In his literary manner Fergusson was in general remarkably clear, incisive, and correct, and to the form in which his views were expressed little exception can, as a rule, be taken; but we are sometimes confronted by a bluntness, reaching even to roughness, which tends rather to repel than to attract. A stern, cold demeanour in the presence of any object, however beautiful in the eyes of others, which his own judgment could not consistently approve, is one of Fergusson's most marked characteristics. One is forcibly reminded of his honest but unamiable fellow-countryman, John Knox, with whose temperament that of Fergusson had much in common; and occasionally the undercurrent of scorn overflows into fierce invective. Just as he despised a form of beauty which he could not mathematically explain, so, taking "the dry light of reason" as his only standard, he probably despised rather than cultivated those graces of language which, though they add nothing to the logic of an exposition, nevertheless fascinate and captivate us in the writings of men of more poetic mind.

Regarded as a real leader or teacher, the influence exercised by Fergusson was but small; he gathered no disciples, he founded no school, for he had nothing to offer to the imagination. A lack of genuine warmth pervades everything he wrote; his criticism was often cynical and always destructive; he bequeathed to the future no fount of encouragement, but only a reasoned justification of tame despair. Whether we compare it with the fiery summons to a romantic architectural crusade sounded by Pugin and by Ruskin, or with the thoroughly logical but vigorous and stimulating impulse towards higher developments given by Viollet-Le-Duc or Daly, not only the actual, but even the possible effect of Fergusson's teaching appears to be but negative. Putting forward no grander theme for high aspirations, pointing out no more worthy goal to strive for, he confined himself to depreciating or combating the efforts of more enthusiastic spirits. Not only did he do his utmost to kill the Gothic Revival (thereby sharing with Lord Palmerston in the distinction of having given a decided check to the most hopeful architectural movement of modern times), but he even declared a Neo-Hellenic style, with which he might have been expected to have had much more sympathy, to be impossi-Yet he never found anything to propose instead, which can in merit be compared with

either, as a foundation for future progress. Too fastidious himself to be able to advocate unreservedly any existing style, too unimaginative to propound even the elements of a new one, he ended by taking refuge in the colourless, spiritless via media of a vulgar fashion; this, the modern Anglo-Italian manner of building, he dignified by the name of "The Commonsense Style," though it is hard to say which part of the appellation is the more inappropriate. Thus, after all, he did very little towards the real advancement of architecture; instead of striving to elevate, he practically fell in with and endorsed the callous and utilitarian opinions of "the average English-"man," finding great favour with a Philistine public by blessing with the weight of his approval and quasi-official sanction the dismal bathos of an architecture (if it can be called one) without either soul or principles.

If this were the whole result achieved by a lifelong devotion to the service of architecture, it would seem a legacy affording little cause for gratitude. But there is another side to the medal; it is pleasant indeed to turn back again from Fergusson the prophet of the Commonplace to Fergusson the antiquary and historian. In this latter sphere lay his true vocation; in it he must always hold an honoured place among the great writers of his century; as a patient and withal a shrewd investigator, as a chronicler both lucid and trustworthy, and, moreover, as an author preeminently skilful in bringing to a focus, to illuminate his particular object, every scattered ray, however faint or distant, which the world could furnish, he accomplished a colossal and a most useful work—a work such as no other man has done, and a work of which any man might most justifiably be proud. ARTHUR S. FLOWER.

No one who has known the architects of this country and their works during the last quarter of a century, no one who has read the writings of James Fergusson, can suppose for a moment that he was a persona grata with his contemporaries. The Hardwicks and the Smirkes, Scott, Street, Burges, and a host of others, each and all had more than one bone to pick with their merciless, devouring critic; and he himself, though he possessed strong and often generous feelings, could not share theirs nor feel as they did, for he had never drawn the five Orders, or measured an old building, or listened to a Royal Academy lecture, or worked in an office, nor indeed ever known the necessity of catering for the favour of others. He had passed many of the best years of his life up-country in India, alone, and had travelled over India on a camel alone—to use his words, he had wandered over most of the Old World alone. So patent was this loneliness to him that when he came to print the results of his experience, after

returning to England in 1845, he modestly expressed regret that his early education had been neither intellectual nor artistic—pray let us note the distinction—and that he had had no opportunity of submitting his views upon "Architecture "and the arts" to any friend capable of understanding them, though he ultimately acknowledged the great assistance he received from a member of the Royal Asiatic Society when preparing the ethnographical section of his subject. All said, he was not an easy or agreeable master to follow, for he had a rough-and-ready fashion of expressing himself; and as he had wandered over the world in search of experience, so he wandered through the description of what he had seen and gathered. He used the faculty he possessed of analytical division and subdivision to such an extent as to confuse those in search of what he really meant. Indeed, his "Introduction" to the History of Architecture, which is mainly a repetition but slightly abridged of the Preface and Introduction to the Principles of Beauty in Art—his first book, published, at his own expense, in 1849 appears to be not devoid of inconsistencies.

The cause of the degradation of Architecture as a progressive science and the highest of the arts, which many cultivated men are unable to perceive, lay, he said, in the fundamental error that it is a similar fine art to painting and sculpture—an error which dates from the sixteenth century, when painters and sculptors undertook the practice of architecture and builders ceased to be architects. He insisted that no essential connection exists between painting and sculpture on the one hand and architecture on the other. instanced two factors in modern civilisation, engineering and shipbuilding, both of which artscall them sciences or trades if the reader please -are full of progressive vitality; and both are now happily proceeding under exactly the same conditions as architecture proceeded in the Middle Ages. Whatever, in early days, the engineer with a mistaken idea of "architectural effect" may have done in this country and in India, he does not now paint a plate of cast-iron stone colour with imitation joints; he does not curve bars of wroughtiron to give the appearance of an arch. He uses wrought or cast iron as the material itself dictates to reasoning minds. If ordered to build a bridge in stone he does not adapt to his purpose the picturesque remnant in the Rhône at Avignon, or the bridge over the Medway at Farleigh. He takes instructions literally and covers a given space with an arch at a given height from high-water mark to keystone, and maintains it with abutments of a size and weight, after careful calculations, neither more nor less than is absolutely necessary. A change comes, the requirements of the river are altered, and larger vessels demand a larger opening. Another engineer takes down the centre arches, demolishes their piers and the

abutments, and an arch twice or thrice the size of the earlier arches is erected; or, mayhap, the central arches are replaced by a girder bridge supported at each end upon towers fitted into the original piers and carried down to the river-bed upon increased foundations. A viaduct of arches, always beautiful even when done by an engineer, has to be treated in the same fashion, or pulled down altogether and replaced by girders: no archeologist in this country objects because such things are not considered to be "art." But were old London Bridge with its street of houses still in existence, no man would now insist on its removal, or even its adaptation to everyday wants. It would be preserved, and probably copied almost literally at the Autipodes or in America by architects in pursuit of the picturesque.

Again, the shipbuilder of to-day when he sets about constructing a line-of-battle ship does not give it the appearance of a three-decker or adorn it with masts, rigging, and sails in the style of an earlier period. Masts, rigging, and sails have been customary adjuncts to a ship since the time of the Phænicians, but if the engineer wants them now he suits them to modern requirements. The fleets that went to Cronstadt and Sebastopol were totally different, as works of uaval architecture, from the huge barges of William the Conqueror or the huge tubs of the Spanish Armada; and the fleets that now try to protect the shores of the British Empire are almost equally diverse in shape and character from those of forty years ago. Yet, withal, the marked affinity between each and every one of these vessels during centuries is indisputable. Naval architecture from the earliest time represents a series of successive developments: from age to age it has enjoyed a perpetual triumph

of progressive vitality.

In his effort to show that architecture which is not progressive must inevitably lose touch with living men, that copying and repetition is not progress, that stagnation means death, Fergusson instanced the art of government in this country as the best model for the cultivation of other arts; because in none had progress been so steadily pursued for so long a period, and always with a distinct The French, on the contrary, treat their Laws, he said, as we English treat our Fine Arts: they employ one or more individuals to design them Constitutions; and now that forty-five years have elapsed since this was written it is fair to use the plural number. In the Middle Ages, he continued, our forefathers followed the identical course with regard to their arts which we now follow with regard to our laws, with the same definite aim; while we treat our arts as the French treat their constitutions, with the result that progress becomes impossible. He pointed to the changes in architectural fashion which had occurred since the great Revolution of 1789, and it is needless to recapitulate them before a constituency of architects. Let us in like manner pass over the French Eras of red caps and constitutional ruin, of aimless wars and disciplined decimation, of Legitimacy restored and revived, of a middleclass Mouarchy with a citizen king, of the Empire that was Peace and the Man of December who at least earned a right to be Emperor of the architects, of the Catastrophe; and the dire awakening to an annuity of political disorder and public discontent.

On the other hand, let us bow down before the splendid and consistent progression of French art. A hundred years ago France had enjoyed for at least two centuries the possession of a modern, national architecture, which, if one except the Græco-French edifices of the Consulate and succeeding Empire, has continued to the present day. The Louis-Treize, which arose out of the embers of Italian influence and example, and the study of Roman precedents, was succeeded naturally by the Louis-Quatorze. As that distinctive style or phase of style spread over the whole of France, beyond her frontiers into Holland, Germany, and even Spain, and further on to the banks of the Hooghly and to Lucknow, it degenerated into what is known as the Louis-Quinze. But it rose again, with more refinement than it had ever before exhibited, in the Louis-Scize, so-called, though its best works were erected before that king ascended the throne. Between then and the rebuilding of Paris a wide gulf of time exists; but much that was carried out by the Second Empire had been planned under Louis-Philippe—such, for instance, as the junction of the Louvre and Tuileries, the new portions of which were not mere imitations, but—like M. Garnier's Opera House of a later period were notably progressive works, distinctly French in their evolution and development, and neither Neo-Greek nor Neo-Roman, nor even Neo-Palladian.

But what happened, even in the home of the arts—Paris—in the fifties and sixties, when there existed a legitimate progressive style Napoléon-Trois? Though Visconti had rebuilt parts of the Louvre with the newest materials, in accordance with actual wants and uses, it was insufficient for the new ideas of the time, which required a perfect palace, not a patched one. So the refined, logical Parisians ordered a hose to be brought, and acids to be pumped upon the brand-new façades, in order that they might harmonise in appearance with the old! Among individuals a similar desire not to be thought modern was general. Architects were ordered to design châteaux and villas in the style Louis-Seize, and their clients said to them: "Entendons-nous bien, le Louis-Seize pur! pur!! "tout pur!!!" Others, of a more robust nature, ordered the Louis-Quatorze. On this side of the Channel the triumph of archæology was not only more pronounced, its pretensions were more extended, and the power it wielded far more

radically opposed to all advancement, than Frenchmen dreamt of. Called in to render an old building habitable, the architect's practice was to "restore" it to a condition in which it had never been at any given time; * and, with the artistic few, in the style of the thirteenth century. For this purpose additions made to it in the fifteenth and sixteenth centuries, and even in the eighteenth century, were often altered and sometimes demolished. If a new church or a new cathedral was built, little effort was made to plan it and put it together to suit the Protestant services; the wants of men, women, and children who were prepared to read, though their ancestors could only kneel or listen, were disregarded; and these, with many other things which go to make up modern requirements, it was the fashion to studiously ignore on the plea that they might destroy the mediæval appearance of the new building. As this practice developed, churches were built with such perfection that if a genuine inhabitant of mediæval England could revisit the glimpses of the moon he might hesitate to believe that they were of modern construction. Indeed, counterfeit presentment has been brought to such perfection in this country that more than one comparatively new church in the "Pointed" style may be found in which portions have been artistically designed in the "Perpendicular" and the "Tudor" and even the "Jacobean," while fittings have been rendered with a Louis-Quinze taint, to complete the illusion.

I have thus described what Fergusson saw, or thought he saw, in the fifties, sixties, and seventies. Upon what he knew of the Classical Revival in the thirties and forties he has not failed to dilate, and to condemn with an earnestness almost equal to that displayed by the Gothic revivalists, from A. W. Pugin to Viollet-Le-Duc and Burges. Nor would he tolerate the Gothic Revival, the works of whose leaders appeared to him so many forgeries. He had admired and studied the great monuments of the Middle Ages and had even doubted whether art could be learned if true art existed. He said, in 1849, in reference to the wealthy connoisseur who took to art as a relaxation, that "the most exhausted and senile "intellect is capable of comprehending and "busying itself with that archæology which now stands for architecture." Treating, further, of the paintings on the walls and glass of mediæval cathedrals, he then described the drawing as often so infamous that it was difficult to tell whether a man, a woman, or a monkey was intended, that the houses depicted were sometimes half the size

So far, Fergusson's philosophy is seen to be destructive, but he was prepared to rebuild, or at least point out the way in which the arts might regain their position as useful, progressive, and absolutely necessary adjuncts to the well-being of a community or a State. That he put literature above art goes without saying, and that of two out of the four great building races in which he divided mankind he preferred the Aryan to the Celtic is certain. A painting—and, to be quite up to date, say a photograph—might represent vividly one view of what took place at one moment of time, but a written narrative could deal with all the circumstances and link it to its antecedents and effects. A statue of a man could not, as part of his argument, tell one-tenth of what a short biography might make plain; * and, in his opinion, an ideal statue or ideal painting was only a pretty Celtic plaything which the Aryan would throw aside. He regarded the case as even worse in the matter of architecture. "Convenience is the "first thing which the practical common sense of "the Aryan seeks, and then to gain what he "desires by the readiest and the easiest means." It was evident to him that to erect houses with Grecian porticos and pediments under the grey sky of Britain, and to imitate the symbolism of the Middle Ages when everybody could read and write, was not what an Aryan in his right senses would aspire to do. Fergusson had learnt the rudiments of his subject in countries, he said, where Art, though old and decrepit, still followed the same path that led it towards perfection in the days of its youth and vigour; and, though it might be "effete," it was not "insane." How, then, did he propose to improve and rescue it from its degraded state? First, he would restore to Art its progressive vitality—in other words, give up mere imitation of past styles; secondly, he would enlist a higher order of minds in its practice; thirdly, he would fit those minds with some higher aim than merely to please the dilettante or attract the connoisseur.

The successive improvements or modifications which he saw in naval architecture were not effected by individuals each ready with an original

of the inhabitants who were supposed to live in them, and that the colour and perspective were worse than the drawing. Nevertheless attempts, he said, are made to imitate these ancient productions, to do which the artist tries to draw as badly as his medieval forefathers, to colour as crudely; and, without attempting any phonetic utterance, he fancies he has reproduced their style and imitated their methods.

^{*} Viollet-Le-Duc, in the article "Restauration" (Dict. Rais. de l'Arch. Franç., Vol. VIII. p. 14), written before 1866, says: "Le mot et la chose sont modernes. Restaurer "un édifice, ce n'est pas l'entretenir, le réparer ou le refaire; "e'est le rétablir dans un état complet qui peut n'avoir "jamais existé à un moment donné."

^{*} In illustration of what literary men have thought of "art" it is only necessary to quote the great lexicographer, Dr. Johnson, who said to Gwyn, an architect, in 1776—"A "fellow will hack half a year at a block of marble, to make "something in stone that hardly resembles a man."—Boswell's Life.

design, but by "owners, sailors, shipwrights, and "men of science, all working together through "centuries, each lending the aid of his experience "or his reasoning." The most suitable materials only were employed in the several parts, and each material in like manner was suitable to each part; there was not a timber, nor spar, nor rope, that was superfluous either below or aloft. But, replies the art-critic—an offshoot of the painting-modellingarchitecturesque period to which architecture has drifted—How hideous is a modern man-of-war! How merely utilitarian in its monstrous parts! True, it may appear so to contemporary eyes, which, by means of paintings and prints, literary descriptions, and sentimental tradition, have been taught to see beauty in the three-decker of Nelson's day. But be sure that the opinion of posterity, which, by the same method, may learn to see beauty in a fleet of gunboats, in the "Royal "Sovereign," or the "Royal Arthur," will, in due course, repeat itself, as it always does in cases where utility has sanctioned the adoption of new forms and the development of new details.

The Frenchman who ordered a brand-new château in the "style Louis-Seize tout pur," the Englishman who ordered one in the style of the thirteenth century—or even in that of the Tudors, which was fashionable in the forties—would not have walked down the Champs-Elysées or up Bond Street in any dress except that of his own day; and the English gentleman—whom Europe regards as the best-dressed man of the century would not tolerate on any part of his personal attire an atom of the meaningless miscalled ornament with which he blandly acquiesces, in the shape of plaster, terra-cotta, or even stone, on his house or a public building. One of the best characteristics of his dress is that it is never "loud," that it attracts by its simplicity, and is emphasised by the manner in which it is carried. Let us apply that test to the English gentleman's house as Fergusson knew it for a couple of generations, and draw our own conclusions.

One of Fergusson's contentions which is capable of much misconception was that architecture began where engineering left off, and that the latter could be refined into architecture. But the fact, as he showed it throughout his writings, and as the intellectual part of mankind recognises it, is that engineering is really the practical two-thirds of architecture as Vitruvius taught it, and as the Romans and Mediævals practised it. If the engineers of to-day only knew their strength, in the midst of an Aryan race as positive and progressive as the English, they would take as much pains to master the other third of architecture as many architects have taken to ignore the engineering parts of their profession; and if that were done engineers, in course of years. would crowd out every designer of the picturesque too proud or too well off to become a subordinate draughtsman.

Modern methods of training are, I think, not opposed to such a consummation. Given a young man of ordinary education, with inborn feelings, aspirations, powers, of a pronounced artistic character: the first and sole thought of his advisers is to develop those powers from an artistic point of view alone—and in spite of the fact that genius always makes itself felt, no matter in what form or by what means it is brought into practical use. The slightest experience shows that the young man eminently fitted to be an architect is usually treated during his probation with, say, some art-history, a perfect plethora of mouldings and ornaments, a little "plan and section"so apportioned as not to impair his afflatus—and with a very surfeit of "elevation;" and he may not have his mind soiled with drainage problems, or ruffled by materials and mechanical formulas, or even modes of construction. But take the same young man, and ab initio teach him engineering; and, having thoroughly grounded him in that, let him then give full scope to his innate artistic powers. Apologists may urge that those very powers will be destroyed, or at least blunted, by such procedure. Perhaps they will be a little modified, and tant. mieux or tant pis, as bystanders may please; but, in any case, the young naturally gifted artist, trained as an engineer, will, at the worst, be much more like the architect-inventor of Vitravius's time or of that of Villard de Honnecourt than the delicately nurtured "art-architect" of to-day can ever hope to become.

Such is the crude brief I have ventured to hold for James Fergusson's opinions. Whether I agree with them or not will interest no one, and is solely my own affair. But, from the observations which are, and for some time have been, current in England, and which are supported by practice, one thing is certain: some of Fergusson's opinions, printed more than forty years ago, are now innocently expressed as trite and obvious reflections, the truth of which no one can deny. The Gothic Revival has been a "chaos of copying and con-"fusion," though the principles of mediæval art, which were not really respected, are, to translate Viollet-Le-Duc, "eternally true." Nor is this all. The century—at least, as far as the architecture of the British Empire goes—has been a masquerade "in the costume of every nation of the earth, "ancient and modern," and we now tell each other, with a fin-de-siècle complacency, that "these dresses " in which we have decked ourselves were once " realities." Men who are still young enough to see the turn of events fifty or forty years or even a generation hence may, in like manner, repeat other words of Fergusson, and bless their stars that architecture in their time is again moving on progressive lines such as he thought still possible. But before such results can be achieved, an architect or engineer, or any man of that calling, by whatever name he may be known in the

twentieth century, must be the worthy master of artists, not their colleague or, worse, their humble plagiarist. Then perhaps, even before the next century is in its prime, it may be said of James Fergusson that, as a critic of Architecture and the arts, and an exponent of their true practice, he was wiser and saw farther than the men of his time.

WILLIAM H. WHITE.

(26.)

MR. LETHABY ON LEADWORK.

Leadwork, Old and Ornamental, and for the most part English. By W. R. Lethaby. With Illustrations. 80. Lond. 1893. Price 4s. 6d. net. [Messrs. Macmillan & Co., 29–30, Bedford Street, Covent Garden.]

During the last few years there have been published many excellent little handbooks on special arts and handicrafts closely connected with architecture; and there would seem to be room for many more, for these crafts are very numerous, and the book under consideration shows how much of interest and suggestion may be said of almost any one of them, if only the writer has given real study to his subject. Should not such matters as Ornamental Plasterwork, Moulded and Cut Brickwork, Panelled Doors and Wainscoting, and a score of others, if treated with that full knowledge that can condense without loss of interest, lend themselves to similar handling?

There is much to be said for the concentration of attention for a time on a single branch of a handicraft. Its capabilities and ingenuities are borne in on the mind and imagination far more forcibly than is the case when it is only one incident among a crowd of others; and nothing is more stimulating to the artistic faculties than a thorough awakening to the artistic ingenuity of others in some field not thoroughly explored before.

Mr. Lethaby has brought to bear on his subject not only a very wide range of observation and of reading, but a pleasant and sometimes epigrammatic pen. In his prefatory chapter he aptly says that History "makes the experience of the past "available to us, but it does not relieve us of the "necessity of ourselves having experiences." No sentence could better express a truth which should be graven on the memory of every young artist; and many a one who has now only grasped one or other half of it had far better take Mr. Lethaby's advice and stick to a craft, when the other half can hardly fail to make itself felt. For a man, however, who spends his life in designing for the various crafts, it does seem a little inconsistent to be quite contemptuous of that method of working. "Piecrust," says Mr. Lethaby incidentally, "is " the subject of nearly the only spontaneous deco-" rative art now remaining to us." He has other equally caustic remarks on that subject; and one is tempted to ask how the independently artistic craftsman is to behave in the presence of the "art-architect" who has to design every ornamental detail himself.

It is astonishing what an extensive field such an apparently limited subject as "Leadwork" opens up in this little book of less than 150 small Under the skilled guidance of the author we touch the most interesting points in its history through all time. Expressive examples are adduced, and in many cases very pleasantly illustrated. The mere bringing together so closely illustrations of so many forms and phases of the ornamental use of lead is in itself instructive. From the covering of a roof to a jewelled cup; from a pipe-head to the gilt and coloured flèche of a cathedral, the half-despised material is here shown constantly ennobled. Many of the decorative processes applied to it in the examples quoted are by no means generally known, and lend themselves perfectly to modern use. Among such are the "tinned" patterns, and the effects produced by patterns in black. Mr. Lethaby does well to remind his readers how much may be done by making ornament of the lead lines in simple glazing; whilst probably not a few will never before have known of lead statues, or suspected the old Northumberland House lion to have been of so soft a material. Yet those who have known, and will call to mind the lead statues and vases in such old gardens as that of Chiswick House, will fully endorse what Mr. Lethaby says in their favour. Whether the very large figures which surmounted some French church roofs -such as the 20-foot St. Michael—were of lead, may, I think, fairly be doubted. I should have thought the list of lead fonts far from complete, were it not for the author's evident pains in obtaining information.

Mr. Lethaby's theory that the thirteenth-century roofs were steep only because they were pleasant to the eye is not very convincing, and it may probably be allowed that to avoid thrust and sagging of the rafters were objects in view.

In praising the cast lead the author passes by some of the drawbacks to its use. Besides the great weight and the tendency to air-holes, there is the liability to be cut through by tricklings of water from lime surfaces.

Mr. Lethaby speaks of the beautiful Calais Belfry as "very English in character." Is it not rather very Flemish? There are a few misprints. The bronze equestrian statue at Charing Cross is described as of Charles II., instead of the first Charles; and the sculptor is twice called "Le "Sieur"; whereas he is known as Hubert Le Soeur, or Le Sueur—which would be very differently pronounced. But small blemishes of this kind may easily be corrected in another edition; and one may fairly predict that so good and interesting an account of a craft with such varied ramifications is likely to run to more than one edition.

J. D. Crace.



RESUMED DISCUSSION ON THE STREETS AND BUILDINGS BILL.*

Adjourned General Meeting 19 March 1894.

Mr. J. Macvicar Anderson, President, in the Chair. Mr. EDWIN T. HALL [F.] reminded the Meeting that on the last occasion the Bill had been discussed they had been favoured with the views of Dr. Longstaff, Chairman of the Building Act Committee and of the Sub-Committee in charge of the Bill, and of Mr. Wallace Bruce, Chairman of the Housing Committee. The Institute had some little difficulty in discussing the Bill, because Dr. Longstaff had opened his speech by telling them that the London Council would probably give way and take the views of the Institute in regard to the vast number of detailed amendments it had suggested, but that the two bodies had not yet reached the happy stage of agreement on certain principles which were new in building legislation. Since that speech the Bill as printed had been read a first time in the House of Commons, and still held the field, seeing that none of the suggested amendments which the Sub-Committee had discussed with the Institute delegates had yet been approved by the London Council; and it was, of course, possible they might disapprove of any amendments at all. The fact that the measure had been introduced as a private Bill in itself involved a grave question of principle. The Bill proposed to repeal no fewer than eight public Acts of Parliament; and how far it was politic and right that a private Act should repeal public Acts of Parliament was a matter that would perhaps receive consideration in another Dr. Longstaff had referred to the view that he (Mr. Hall) had put forward, that sanitary matters should be codified, as well as matters relating to building; but he should like to draw a distinction between those matters of sanitation which were engineering and those which were medical. It had never been their intention, and he himself had never suggested, that there should be anything like codification of all the sanitary laws in the broadest sense, nor did they propose that all sanitary matters which related to the engineering branch of the subject should be brought into the Bill; but the Institute took the broad principle that it was wise that there should be a Bill dealing with everything within a building and the curtilage thereof, so that they could go to one Bill, and to one Bill only, to see what might and what might not be done within a building. It was impossible in the time at his disposal to deal with all the details of so complex a measure, but he would refer to one or two points which, although not points of detail, were not of the grave weight of the principles he would consider later. Taking the case of district surveyors, it was proposed in the Bill that the Council should be empowered, in fulfilment of what had been understood to be their policy, to make the district surveyors simply paid officials in the strict sense of the word. It had always, however, been held by the Institute—and its opinion had been expressed in reply to an invitation from the London Council —that district surveyors should be architects in practice, for the simple reason that in that way, and in that way alone, could they be kept in touch with the complex troubles with which all architects had to deal. If they merely became ordinary officials, in the sense that a sanitary inspector was an official, their status would be very considerably lowered; and the London Council desired that the status of district surveyors should be raised. In this connection it was a notable fact that at the last Statutory Examination for District Surveyors not a single candidate presented himself. Therefore he hoped that before that detail was dealt with in Parliament the London Council would reconsider it. Another important point was the matter of definitions; for unless they were agreed on these, it was almost useless to discuss the Bill. As a matter of fact, there were many definitions still wanting—a great many points had not been considered at all. To instance one or two: there was no definition of a shop in the Act, which was a grave omission considering the vast interests involved in shop-building in London. Then, again, the method of measuring cubic contents was not defined. With regard to the matters which had been defined, it was very desirable that in Acts of Parliament dealing with buildings the same definitions should run through them all; but the definition in the Bill of habitable and inhabited rooms differed from the definition of "habitable rooms" in the Public Health Act 1891, and he submitted that it should not. Further, rooms were defined as habitable rooms which were not so in the Public Health Act; and he was sure that that would lead to confusion, because people had something else to do than to consider every word of the definitions in an Act of Parliament. Coming, then, to graver principles involved, he would, in the first place, direct attention to Clause 5, Part I., which said

^{*} See Review of the Bill, by Mr. Arthur Cates, p. 343; and previous discussion, p. 350.

in effect that if any one attempted to widen a street which was less than 40 feet in width, it must be made 40 feet wide or more. if any person or any public body proposed to widen a street of 20 feet, they were doing a public good if they made it even 30 feet! But under that clause this could not be done, and the effect would be to retard the sensible and useful widening of very narrow streets. Clause 7 empowered the London Council to insist on streets being not only 40 feet in width as under the present law, but to order in their discretion a width up to 60 feet. Now that width was perfectly reasonable under the circumstances described in the Bill where there was a possibility of streets becoming the continuation of a very important thoroughfare. But the Council might take power to make the streets much wider than 60 feet they might reasonably be 80 feet or even 100 feet, on one condition-that they compensate the owner of the land for the increased width. It was perfectly right to have power to make wide streets, but a distinction should be drawn between the width of a street which was necessary for the development of a property and the width of a street which was necessary in the public interests; and the difference between those two widths should be paid for as a public improvement. Clause 9, again, which was practically a re-enactment of section 6 of the Act of 1878, omitted the very vital part of that section contained in the proviso at the end—that part, he meant, which secured to a man his present rights in the property. Clause 9 did nothing of the kind; the rights of the owner were taken away, and he had no compensation whatever for them. The Bill said that no house should be built within a minimum of 20 feet from the centre of the road, or in the case of widened streets 30 feet from the centre of the road. In speaking of the definitions, he had omitted to mention that of the term "new building." A "new building" was not only what was popularly understood as such, but it was a building re-erected after a fire or from any other cause; and worse than that, if one house was altered into two, it was a new building, or if two houses were altered into one, it was a new building; if a private residence was converted into a shop, it was a new building; and under the clause as drawn, a man, in order to make any of these alterations, must set back his building to 20 feet from the centre of the road, and was to receive no compensation whatever for it. That surely could not by any body of men be considered right! No one doubted the bona fides of the Committee who had had the Bill in hand, but they could not have given sufficient consideration to the Bill, or they would never have proposed that under such circumstances as the conversion of a private house into a shop, a man was to be mulcted of a great deal of his property. There was nothing like concrete cases when dealing with such a subject. At the present moment there was rebuilding a corner

house in Holborn which had about 15 feet frontage. In order to comply with the clause, if the house were rebuilt, the owner would have 2 feet 6 inches frontage left by about 60 feet depth, and he was to receive no compensation whatever in that case. Coming to Part II., Clause 15, dealing with corner buildings, it would be remembered that corner sites were dealt with in the London Council General Powers Act of 1890. The Institute on that occasion opposed the Bill, because, as it conceived, the London Council had introduced a very confiscatory clause; and in consequence of such opposition the clause was largely modified. Now it was proposed to repeal that clause in the 1890 Act, and fall back upon what was, as it had since been understood by the London Council, the law which enabled them to do the following, for instance: Supposing there was a large field at the back of a row of houses that faced the main street, and it was proposed to develop the field into building-land. In order to comply with the law the man who owned the field must acquire land to make a road 40 feet in width from the main road to develop the property. He might set back the frontage-line of the buildings on the new road to 50 feet. Under the clause in the new Bill the houses with a frontage of 50 feet on to the main road, right and left of the new road, if pulled down, would not be allowed to be rebuilt, because the superintending architect had power to define the frontage lines of the side street as running through to the main road; so that the owners who had previously 100 feet of main frontage covered with buildings would absolutely lose it, and get no compensation whatever. In considering this question it was fair to look at Clause 13, because that clause said that in case any building which should in any part thereof project beyond the general line of building in a street was set back, compensation should be given. He believed, however, that it was a matter of law that the London Council might proceed under any given section to the exclusion of another. Such a conflict of provisions was, he conceived, a very grave fault in the Bill. To show how the setting-back question would affect London-and he had made it the subject of investigation—there were within the small area of the City of London no fewer than thirtytwo miles of streets under 40 feet in width, and the total length of the streets was only forty-eight miles; so that three-fourths of the streets of the City of London would be affected. They all knew the narrowness of many of the streets, and he thought it would not be an unfair calculation to say that if the clause were carried into effect an average of about 5 feet on each side of those thirty-two miles of road would be sacrificed; and the calculation would show that the sacrifice would amount to 1,689,600 feet of land in the City. Those acquainted with City values could not say that he overstated the value of the land in computing it at a minimum of £5 a foot. There

would thus be sacrificed by private owners—and private owners did not mean only the owners of the land, but the lessees, i.e. the ratepayers, who nearly always had to build and rebuild in case of need—£8,500,000 under the operation of the clause. That would be the loss to the land value; but the loss on floor space to the owner of the buildings would be greater; for the sake of argument he would put it at £11,500,000; which would show that under the operation of the clause there were to be public improvements effected at a loss of £20,000,000, not to the public, but to private individuals. With Part IV., which dealt with what was commonly known as the "angle of 45 degrees," they came to the most serious part of the Bill. Clause 30 provided that if a place were rebuilt no part of it should be carried higher than a line measured from the pavement level at an angle of 45 degrees from the rear fence towards the front; this would bring about an enormous reduction in building, and that was a principle involved in the Bill. Mr. Wallace Bruce had told them that what had prompted the Clause was the Housing of the Working Classes Act of 1890, and Dr. Longstaff had said that he never expected the Clause in its present crude form would ever be passed, but that a light was dawning upon them, and they thought they should see their way to confine Part IV. to houses for the working classes. That light which Dr. Longstaff said had just dawned upon them was pointed out by him (Mr. Hall) in a Paper read before the Institute two years ago,* in which, speaking of the same proposal, he said: "In the suburbs of London, which are primarily "residential, the rule is more than complied with "now in common practice, but where the great "congestion is, the buildings are primarily non-"residential. Even where they are residential "there is no compulsion on people to reside in "them unless it be in the case of workmen, for "whose dwellings special legislation has been and "may again be made, because they are not always "free agents." That was pointed out two years ago, and Dr. Longstaff and his colleagues had had it before them and read it, and it was a great pity that that point was not considered before they drafted their Bill and read it a first time in the House of Commons, because they now were proposing to return to that principle. Mr. Wallace Bruce had told them at the last meeting that the Housing of the Working Classes Act was the origin of Part IV., and he said, with great force and the Meeting must have accepted the argument as a very sound one—that the difficulty he experienced under that Act was that when the Council condemned a district as unsanitary, the owner was able to rebuild under the Building Acts in a way that gave even less open space than the building formerly had. He (Mr. Hall) had no authority to

speak for the Institute, but if Mr. Wallace Bruce wished to confine that Act to the people in whom he was so greatly interested, that could be done in this way: "This part of the Act shall apply only "to the re-erection for similar purposes of build-"ings demolished under Part II. of the Housing "of the Working Classes Act 1890, or to the "land compulsorily taken under the said part "of that Act." He thought that probably the Institute would not object to that, because no one desired that the working classes should live in unsanitary dwellings; no one wished to assist the jerry-builder to evade the Housing of the Working Classes Act on sites which probably were the only ones available in a given district on which those people could reside. But the Bill, as it had been read in the House of Commons, dealt with every building in London, and he would just cite a few examples, because a gentleman who had criticised his former Paper had complained that instances were not given—which was not quite accurate, because, although he did not give instances at the time, he sent many to the proper quarter at the London Council. Grosvenor Hotel, attached to Victoria Station, covered the whole of the site between Buckingham Palace Road and Victoria Station; there were no backyards, and the building was some eight or nine storeys high. What would be the effect of an angle of 45 degrees drawn from the ground-level at the back of the Grosvenor Hotel? It would take off about two-thirds of the whole building. That alone, he thought, would condemn any legislation of the sort. Then take Praed Street. They were aware on the side opposite the Great Western Hotel there was a strip of land between Praed Street and the Underground Railway; its depth was probably 15 feet, and there were erected on the whole length of it some four-storeyed houses. Under the operation of this clause they could build nothing on that strip, because they must have, in the first place, a clear width of 10 feet from the back fence before they could build at all; and then, in the second place, the buildings immediately above it must be within the 45 degrees angle. That, therefore, destroyed the whole of that property. With what justification? It could not be said that it was unsanitary; it was a strip with ventilation on both sides, and with the possibility of the whole of it being lighted from the front. Take another case: Queen Anne's Gate. The houses just within the gates of St. James's Park were old houses, and would shortly be rebuilt. They consisted of two parallel blocks of buildings with a wide footway between them, one block facing the Park and one facing Little Queen Street. If Clause 30 were brought into play, the effect would be that one of the finest sites in London could never be relieved from its present squahid condition, because from its internal court or footway an angle of 45 degrees must be set up, and the whole place cut to pieces at once. And the extraordinary thing was that,

^{* &}quot;London Building Legislation," Transactions, Vol. VIII. N.S. p. 105.

if in the development of that site they did away with that internal court, and threw the blocks into one, they might have a solid block of building all over the court, and the angle of 45 degrees would be measured from Little Queen Street at the back Why? The superintending architect had to define what was the rear of the building, and he would probably say that the front was the Park. Again, he might take the contrary view, and say that the front was to Little Queen Street, in which case they would have the absurd result that the angle of 45 degrees would be measured from the Park side, and the frontage from the Park cut away. Take, again, the City of London-Southsea House, in Threadneedle Street, a building that was well lighted and well ventilated, and which had probably 143 feet of frontage to Threadneedle Street, and was probably 60 feet deep. The effect of the clause would be that that building would be cut to pieces, and about half the value taken off. There was the block of buildings called Great Winchester Street Buildings, facing four streets. Which was the back of it? When it was built, Great Winchester Street was by far the more important street; now, he supposed, London Wall was the more important street. Had the superintending architect then had to define the back he would probably have taken London Wall, and that fine building would have been cut to pieces. There were dozens of such illustrations. Then he would call attention to a condition in one of the clauses of the Bill that no buildings should be built higher than an angle of 45 degrees from the opposite side of the street. Under the present law, any new street made was subject to that condition; but this was to apply to all streets throughout London. The result would be simply disastrous. But the odd thing about it was that the Bill provided that where a building had a frontage to one street which was wide and to one which was narrow they might have the height appropriate to the wide street returned down the side street; but under another clause the benefit was taken away again, because it said that no room should be inhabited which was below 45 degrees measured from the top of the building opposite. So that if the return building were 60 feet high, and the side street happened to be narrow—say 30 feet it followed that the lower 30 feet of the opposite house could not be inhabited at all in the sense of the definition. Was not that an absurdity? Leave was given to go up with the building, but the value of the opposite bottom half was thereby destroyed! Another odd result followed. They had been told that this part of the Bill was necessary for the sanitation of London; but the peculiar feature was that every one could get out of it; by paying a fine for having drawings made of all buildings by the district surveyor, they could rebuild any building of the same height as before. In the City of London alone there were some

11,000 buildings, and assuming that he was right in saying that the district surveyors would charge, say, ten guineas for making a survey of each, the owners would have to pay a fine in the City of 110,000 guineas to retain what was their own. And what became of the principle which said that the new proposal was essential for the sanitation of London? Before concluding that part of his subject he might summarise the effect of Parts I. and IV. by saying that, in his opinion, the net reduction in the size of buildings in the Cities of London and Westminster alone would average not less than one-third of the whole. That meant a corresponding reduction in rateable value, and, as a consequence, an increase over that area of 50 per cent. in the rates, in order to produce the sum at present collected by the local authorities. He thought it not unlikely that the reduction would be one-half, necessitating doubling the rates. One other point. Dr. Longstaff had said that he regretted that the Institute had not given the Building Act Committee advice and suggestions in regard to Art. No such suggestions were offered because architects wished to be unrestricted, and if regulations were suggested in regard to the art of their buildings, they would find themselves under restrictions that would destroy the artistic value of London. One suggestion Dr. Longstaff had made on this question: he said that it would be desirable if the unsightly party-wall going through the roof were got rid of; as an artistic embellishment Dr. Longstaff thought it was of a negative character; and he said that many towns in the north of England had the power of dispensing with it. That seemed a matter deserving of consideration, and he (Mr. Hall) had made it his business to learn the feeling of the Fire Insurance Companies of London, and through the kindness of Mr. Cozens-Smith he had informally got the opinion of nearly all the principal offices in London, and they said most emphatically that they were unanimously against any such proposal, that it would vastly increase the risks of fire, and also increase the premiums very largely. That, he thought, would settle the whole question. If people had to pay an extra premium of 66 per cent. he thought they would say: "Please spend "£100 and take my party-wall above the roof." Respecting that matter the Institute had suggested that in the case of warehouses the party-wall should be carried up 3 feet instead of 15 inches. The London Council proposed 2 feet, which the Institute said was inadequate, and the Fire Insurance Companies probably agreed with them. Lastly, as to the By-laws. Mr. Cates, in his opening Paper, had laid stress on the fact that under the Draft Bill the London Council had power to make By-laws on all kinds of questions, without using the machinery already existing under Section 16 of the Act of 1878. That machinery he would shortly describe. When By-laws were to be made

under the Act, they must be sent for confirmation to the Local Government Board, or to one of the Secretaries of State—at any rate to the Government; they must be published for two months, and a copy sent to the Institute, and also, he thought, to the Surveyors' Institution; and those bodies were expected to make—and did, as a fact, make—representations by way of making the Bylaws practical, and assisting the London Council in getting workable legislation. It was desirable in the interests of all that the By-laws should be practical, and it was a feature of the Institute that it had no private interests whatever to serve; it was concerned only in these matters with the interests of the public. They thought the London Council should not have the power they were asking for in their Bill to make by-laws without any controlling authority. There should be machinery similar to that adopted by the Board of Trade, which was to hold an inquiry to consider suggestions and objections, if any, and then the matter should be dealt with by the Department. In conclusion, he would say that private rights should of course always give way to public wants, but with the essential condition that the public should pay for the private property that was taken away. This was so equitable on the face of it that no one could object to it. Voltaire prayed that a statesman might come to rebuild and beautify his Paris; but he asked for a statesman —for a man who had at the back of him the power of the State and the wealth of the State to do it; and that aspiration of his was fulfilled. That was the only way in which London should be beautified, altered, and improved; not that a private individual should be deprived of that which was perhaps his only property. In reading the Bill, the feeling of all must be, that it was drawn up almost as if it were a specification for a hospital. It might be sanitary, but it would reduce the height of houses in London to about the same as in the pre-Elizabethan era. As they knew, Stow, the Elizabethan historian, spoke of the great improvement made by raising houses to a greater height. London was not a sanatorium; it was the centre of energetic life, at the head of the arts, at the head of the sciences, at the head of all the colonising and all the progressive force in the kingdom; and it was on lines that should realise London as it is, that any legislation should be proposed for amending the building laws.

Mr. J. TAVENOR PERRY [A.] said that Mr. Cates's lucid description of the Bill, and the course he suggested the Council of the Institute should take in opposing it, left little to be desired or added to; nevertheless, one or two of his objections required to be made much more emphatic, and one provision with which he agreed ought to be strongly protested against by every member of the profession, as it would most certainly be by all who had an interest in the value of property in

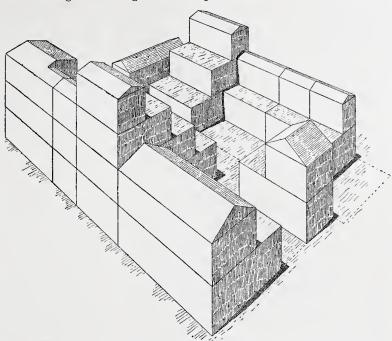
London. Architects in the metropolis frequently had to do with that vaguely described class of property "used wholly or in part for the purposes " of trade or manufacture," as well as with buildings of a more or less exceptional character, and the difficulties and uncertainties of their position were considerably enhanced by the differences of opinion existing between magistrates, district surveyors, and others, as to the meaning of the present Act; but what were these troubles compared with the fresh ones looming before them, when they might have to face some unexpected reading of the definition "new building," or have to argue before an unsympathetic magistrate the application of the angle of 45 degrees to their back fronts, or as to where the "base" of a wall should be looked for? It would be well, therefore, that those who had to do with any particular class of building should at once see how far their clients' interests were likely to be affected by the Bill, and suggest such alterations to Mr. Cates's outline as might be considered desirable. The monstrous "Shaving Clause" might fairly be left to the great ground landlords to fight, but the provisions relating to heights and cubical contents they must themselves look to. For the purposes of illustration he would mention particularly two classes of buildings seriously affected by those clauses which he happened to be then acquainted with. These buildings were neither exceptional in character nor few as a class; yet he ventured to say were this Bill to pass intact they would become almost impossible. He referred to large retail drapery establishments and to hotels. In the first class he would mention a building which already covered over 18,000 square feet, where the basement, ground, and first-floor storeys, for their full height and over the whole extent of the area, formed the shops, with no walls, party or otherwise, anywhere dividing the premises; whilst the main building rose to a height much exceeding the proposed new limit. What would have been the effect on that building had the Bill before them been the Act in force; and what might yet be its fate should some application of the "Shaving "Clause" convert it once more into a "new "building"? As it stood facing into two streets, each frontage held under a separate lease, the buildings would have to be divided into two distinct blocks, and then, the ruthless 45-degree angle line being drawn, at once one half of the cubical contents would be cut out, and the property, for all the purposes for which it was erected, reduced in value by a great deal more than one half. Again, there was the limitation in height of shop fronts, which would seriously interfere with some businesses, and would make such magnificent shops as those seen in Leipsigerstrasse in Berlin impossible in London. Indeed, so unreasonable and arbitrary did some of those limitation clauses appear that one could only assume that they were intended to meet some difficulty with the Metropolitan Fire Brigade, with a view to regulate

their buildings to suit the power of its pumps or the length of its hose. In the second class of buildings he would instance an hotel covering more than two acres and abutting on three thoroughfares, with a height very much exceeding the new ideal limit. What would have happened to that building under either of the limitations of height or back angle? First would have come the attempt to adapt it to the necessities of the Fire Brigade or a water company in its height; and next, a "rear of the site" having been discovered, the line at an angle of 45 degrees would have been applied, to the entire destruction of the property. Those who were unfortunately acquainted with the working " of light and air" cases knew pretty well that the law of easements was sufficient to keep down the height of most build-

ings too anxious to soar sky-

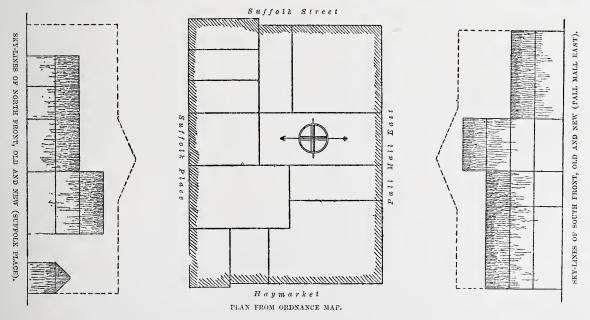
wards, and architects should take care that by no consent of theirs should London buildings be reduced by statute to a height which, compared to

tural effects made impossible, he had prepared a diagram showing the manner in which a block of



EFFECT OF 45° ANGLE ON BLOCK OF BUILDINGS FACING PALL MALL EAST.

buildings would be affected should it have to be rebuilt under the rules of the new Bill. The block, which stood at the bottom of the Haymarket, was



those of great Continental cities, could only be regarded as squalid. As an example of the serious way in which property would be destroyed and architec-

of very moderate height and of varied occupancy, containing, as it did, a bank, clubs, insurance offices, shops, and residential chambers, and it was therefore of a fairly representative character. Yet the havor the rules played with its accommodation and simple façades the diagram would Only one house remained its original height, three retained three storeys, five were reduced to two, the two shops were but a room apiece, and one corner building disappeared altogether. The deterioration in the value of the property could scarcely be computed, and the terraced flats, where presenting themselves in profile, could neither be decorated nor disguised; no yearnings by the Building Act Committee after art, and no offers of oriel windows, could atone for such mischief. They were all agreed in wishing for a consolidation of the Building Acts, and he should be glad if Mr. Cates's proposals were adopted, with a few variations on the lines suggested. He would therefore mention, for the consideration of the Council, first, that not only should the proposal for approval in the limitation in height of a building be withdrawn, but that a strong protest against it should be made; and that the question of the height of a building be left to be dealt with by the precedents under which, unfortunately, they were only too frequently "restrained." Secondly, that instead of limiting the cubical contents of a building which was used for retail trade, or where they "break goods in "bulk," it should be sufficient to require that the portion of the premises used for residential purposes should be divided from the business portion by fire-resisting floors in such cases where the ordinary cubical contents were exceeded. The fire insurance offices, through their risk-surveyors, look too carefully after the business part of large premises to admit of much danger, and by more or less prohibitive premiums secured results that even a magistrate and a district surveyor together might fail to obtain. In the recent great fire in St. Mary Axe, in the block of buildings destroyed, there was, perhaps, not one whose cubical contents exceeded 250,000 feet, but a large number, through stress of "light and air" questions, had been built on the "terraced" principle. Those terraces were to a great extent merely skylights, and where such construction was adopted in business premises that would mainly be the case; and it was through those skylights that the fire spread so rapidly. Had those buildings been of much greater capacity, but square and self-contained, not one tithe of the mischief would have been done. The sanitary plea for terraced buildings was surely worthless. Roofs and flats were the parts of a building least often or systematically cleansed, and the multiplication of leads and gutters and pipes under all their back windows was likely to be much more harmful to health than the absence of a draught or two in their courtyards. The modes of construction which would soon be adopted for the flats must also be a distinct source of danger. There would be no room under the back windowsills for the raised roof which would preserve an average temperature, but porous concrete and cracking asphalte would take the place of good slate and lead, and cold and mildewed in winter and roasting in summer would be the state of the rooms under the terraces. This third question of the angle of 45 degrees, or indeed of any angle, seemed too foolish to discuss; and even were it fixed at 90 degrees he should not care to argue the question in Court, for fear of the consequences. The object of preserving an open space in the rear of a building was undoubtedly good; but that might surely be gained in a more reasonable way by adopting the course pursued in Berlin in the rebuilding of the portions of the city between the Linden and the Belleallianzplatz, where a sufficiently large courtyard, abutting on another in the adjoining premises, being left, the whole building might be carried its full height. In conclusion, he would endeavour to impress on the Council of the Institute, who were their leaders at that important juncture, that in supporting the Bill generally they should get such reasonable amendments made that large schemes for the improvement of the metropolis, some of which were now approaching fruition, should not be destroyed, and to take care that the fast-increasing members of the Institute should not have to discover, when too late, that the last place in which an architectural practice was possible was London.

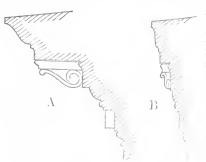
Mr. J. J. STEVENSON, F.S.A. [F.], said they had learned from Dr. Longstaff how the Bill was framed, how the subject was grappled with in odds and ends of time by a committee not always there, not always the same committee as before, which lost patience, not to say temper. Then, when they had made up their minds somehow, it was drawn by a Parliamentary draughtsman, who had very little time to do his work, who did not understand three-fourths of the technicalities of the Bill, and wrote words which meant something quite different from what he thought they meant. Such a method of drafting the Bill no doubt accounted for the result being in so many points unsatisfactory, not to say absurd. The difficulties of Building Acts were well known, but architects were as anxious as the London Council for good building and sanitation, with more knowledge from their daily experience of the provisions necessary to secure them without hampering architecthral design and incurring useless waste. Why should there not be frank association with the Institute on the part of the London Council to attain the results both desired, instead of assuming that architects wanted bad building, and fighting through lawyers before a Parliamentary Committee, with results probably unsatisfactory to both, at enormous cost? In some respects the Bill was an improvement on the old Acts, but it would make impossible in many situations the

building of the best London houses. There was, again, a quite royal indifference as to cost and waste of property, a certain levity even of treatment of important matters in some of the enactments. Take, for instance, the "diagonal line" of Clause 30, which made the backs of houses pyramidal in form. The object of the restriction was not apparent, but, presuming it to be for the sake of air and light, if the open space at the back were sufficient for air at the ground level, where the air was more stagnant and its passage obstructed by walls, it must be more than enough in the free air and wind above. Keeping the higher space narrow would rather tend to force the wind down and clear out the stagnant air below. Nor would light be secured, and architects knew well the difficulty of getting light into every part of a deep London house. In every case there must be a different expedient, and the idea of one rule to govern all cases was preposterous, while the cost and waste in enforcing it would be incalculable. Then why should the houses in a street be no higher than its width? It was not necessary for health; it certainly did not add to the beauty and architectural interest of streets. These were attained in old streets like those of Nuremberg, which, if they were unhealthy, was not because of their height. Inordinate height in buildings was an evil which it was justifiable to redress. Hankey Mansions at Westminster spoiled the view of St. James's Park, but such inordinately high buildings were even a greater evil there than among other houses, for they were more seen. What was ruining the architectural interest of towns was the universal dead pressure of Building Acts reducing all the houses to a dreary, monotonous uniformity. He sympathised with Dr. Longstaff's plea for art in their streets; but art could not be produced by law. By law and restriction, however, its development might be prevented, as in the case of party-walls, which had to be carried above the roof; and windows, which had to be kept 4 inches back from the wallface. Such restrictions had spoiled the development of Queen Anne architecture, and he regretted to see them retained in the new Bill. In some respects he was glad to see more freedom was allowed; but restrictions should be as few as possible, the tendency being for the minimum requirement to become the universal rule. This was true also as to sanitation. It was an advancing science, and law stopped its advance. But sanitary experts inherited the old persecuting spirit of the theologians; whatever they believed for the time (and they were always changing their views) they wanted to compel their neighbours by fine and imprisonment to adopt, and treat them as the old Churchmen treated heretics if they did not. Mr. Wallace Bruce at their last meeting had pointed out the inconvenience of the discrepancy between the requirements of the Work-

men's Dwellings Acts 1890 and 1891, and of the present Building Acts. But if the Council chose to adopt costly and objectionable requirements for their own buildings, that was not a good reason for forcing them on other people in cases where they did not properly apply. He was glad to see they were disposed to consider further the advisability of different requirements for varying conditions and different kinds of buildings. The interests were so enormous for cost, for health, and for art, that he was sure the London Council would not allow their own power and dignity, or even their desire to pass the Bill at once, to stand in the way of its being not only efficient, but

reasonable and just.

Mr. H. H. STATHAM [F.] said he had been much struck with the great respect for private property which had been evinced in most of the speeches made on the Bill. As he listened to some of them, he could not help thinking of Tennyson's "Northern Farmer, New Style" who heard the sound of his horse's hoofs going to the words "Proputty, proputty, proputty!" If they were to have a Bill which was to assist in the improvement of London from a public point of view, it could not be expected that private interests were to stand in the way to the extent contemplated by some of the speakers. It appeared to him that Mr. Campbell Douglas, in his remarks at the last Meeting, had hit the nail on the head when he said that compensation clauses were mainly what they wanted in the Bill; that a great many of the provisions in the Bill involved the taking of private property, but that there was nothing unjust in that, provided the owners were compensated. As to the specified width of streets, 40 feet was the general thing, and if the London Council saw reason to think that a street might become a very important main avenue, they should have the right to require 60 feet. The average contemplated width, therefore, was represented by Chancery Lane, which was 40 feet. Was that to be considered a sufficient average width of London streets, even for those which were not main thoroughfares? Long Acre was 50 feet; Gower Street was 60 feet—and that could hardly be defined as a first-class street. Oxford Street was 60 feet. Those represented the widest streets which the Council apparently contemplated to allow in future. In his opinion that was a miserable width. One of the great differences which struck one between London and Paris was the superior width of the Paris streets. The only street in London comparable to the best Paris streets was Portland Place, and that owed its width to the owner of the land where the Langham Hotel now stood getting a condition inserted in his lease or deed of sale, that no houses should ever be built to the north of it, so that the street had to be made the width of his property. Holborn in its widest part was 115 feet, and was not too wide for the traffic. That was one point he thought the Council should be recommended to revise: either they should not tie themselves to widths, or they should say 60 feet for an average street and 100 feet for an extra wide street. Dr. Longstaff had complained that no suggestions were made from the Art Committee on art. He (Mr. Statham) would offer him one. Dr. Longstaff had spoken with great approval of the limitation of the cornice—that no cornice should project more than 2 feet 6 inches. Now, there had been lately a great revival of interest in Classical and Renaissance architecture, and he had been looking at the projection of various cornices of Renaissance palaces. The Riccardi Palace had a cornice of 9 feet projection; the Strozzi Palace nearly 8 feet, and the Guadagni one of 7 feet. The Pitti Palace had one of 2 feet 6 inches, and Fergusson expressed his regret that they had spoiled the building by such a wretched comice. He had put



on paper a section of the Strozzi Palace cornice. marked A, and the section marked showed what it would come to when reduced to the limitations of the Bill. They should not, of

course, underrate as a practical point the objection to great cornices, but still a great cornice was a very fine thing; and a 2 feet 6 inch cornice for a grand monumental building was a mere nothing. He would suggest that either that limitation should be very much widened, or a saving clause inserted, "except where the Council see good reason for "departing from it"—at all events that they should not tie themselves too strictly.

Mr. RICHARD ROBERTS said that he was anxious, as a member of the L.C.C. Building Act Committee, to express his appreciation of Mr. Cates's Paper. As Chairman of the L.C.C. Appeal Tribunal, Mr. Cates had done much service to London. That Tribunal had won dignity by the position it had taken, and had done much good with regard to frontages. He (Mr. Roberts) had been glad to hear the remarks of Mr. Statham, and he could not resist quoting from a previous speech of his: "Are you an architectural society?" The word "property" had been frequently mentioned in the debate; and "confiscatory," "mon-"strous spoliation," and other terms which were not usually associated with the discussions of professional and architectural societies. That there was something to be said on the question of property he should be the last to deny; but that was not a matter for discussion there. The Building

Act Committee expected architects and surveyors to offer suggestions as to the merits of the Bill itself. Mr. Cates, he understood, approved of some clauses of the Bill, of the famous clauses in Part 1. with regard to the width of streets in new districts. But he understood there were objections with regard to old districts simply and solely on the ground of vested interests. That was all, or mainly, the objection he had heard. Therefore they were to put forward an ideal Bill with regard to new buildings, but with regard to old buildings they should consider vested interests. Let them look for a moment at that question of vested interests. When a man set out his new building estate he had to provide certain roads and thoroughfares of a certain specified width in return for the right of building upon the estate. He should go further, and say that when in course of time what he should call the building rights on the land were exhausted, and it reverted to the owner, the roads and thoroughfares should be widened in accordance with the condition of the time, and at the expense of the owner of the property. That principle was carried out with regard to sanitary questions. A man would not be allowed to rebuild a house in London at the present day and put in the sanitary appliances and methods he would have been allowed to do sixty or eighty years ago—so far, vested rights had been interfered with. It was simply and solely a question of degree. If the owners of building properties had so far pursued their building rights, had so far taken advantage of their building rights as to render certain parts of London uninhabitable and unsanitary, he thought that those owners should be made to return what they had no right to take. That was the opinion, at any rate, of many with regard to the future of building in London. He did not consider the narrow thoroughfares in London which had been referred to were sanitary-perfect by any means, and this the Institute admitted when it said that the proposals of the London County Council were good for the future but not for the past. It had been suggested that they should confine their actions with regard to height to dwellings for the working classes. That suggestion had been put forward as a kind of via media.— [Mr. E. T. HALL remarked that it was he who made the suggestion with regard to Part IV.]—That applied exactly on the lines that with regard to Part 1V. the Council should confine those restrictions to buildings that were meant for the working classes. It was very doubtful how far they should legislate in London for one class alone. The inhabitants of Mayfair had no more right to live in unsanitary dwellings than the inhabitants of the East End.-[Mr. E. T. HALL: Not different classes of people, but different classes of buildings.]—He would take it in that sense, and say that the flats which were being built in the West Central district of London

generally were quite as unsanitary as the workingclass dwellings in the neighbourhood of Whitechapel, and those flats should be legislated for on exactly the same lines as they would legislate for people in Bethnal Green. It must be admitted that it was a very difficult question. It might lead to that enormous appropriation of property which the architects and surveyors so much dreaded; but, on the other hand, it would lead to a great improvement in London dwellings; it might lead to a revival in building, and to a higher standard generally of building than there had been in the past. As bearing on this point he would quote a passage from an exceedingly able Paper read by Mr. Slater before the Institute a few years ago: "In some of the wealthiest and "most fashionable suburbs of London we have "street after street containing large and highly-"rented houses which are simply an abomina-"tion of dreariness and dullness because of the "narrowness of the road." Now we want to prevent that sort of thing in future, and we want, when London is rebuilt, to prevent such a condition of affairs from coming forward again. Some gentlemen present had spoken as if those streets already existing should be preserved, cost what they would. ["No, no."] It certainly was impossible to pay for them at the rate they had been valued at by one of the speakers. The London ratepayer had a limit as to the amount of compensation, and would hardly compensate the past builders of London at the rate put But he hoped the architects and forward. surveyors of London would help the Council in the matter. He believed a strong public feeling existed on the subject, and that London was waking up to the fact that it was a great city, that it was a very badly built city, that it was by no means a desirable city to dwell in, and that it was high time some reform was brought about. Provincial towns had taken the matter up, and Birmingham in particular had done much; but London had remained almost stationary during the present century. The reason why the matter was coming forward so pressingly was partly because, as Mr. Wallace Bruce had pointed out, of the action of the Public Health Act and of the way London was becoming more and more crowded; and this was extending to the better-class districts, especially about Oxford Street and the West End of London: every inch of land was being monopolised, the backyards were being covered with shops, flats were being put over the shops, and architects and builders were doing their best to get as much rental-producing property as possible. He would venture to say there was scarcely a building that had been pulled down and rebuilt in London for architectural purposes alone; old buildings with large and well-lighted rooms were pulled down in order to convert them into immense

blocks of chambers to produce more rent. And the same thing was going on in the suburbs of the city as well. London, in fact, was being appropriated by the builders, and being so built upon that it had ceased to be a pleasant place of residence. The London Council had striven for a higher standard in their Bill, and they hoped and trusted architects would sympathise with their views, and aid them as far as they could, and not look upon them as opponents. The Building Act Committee wished the architects and surveyors to be their allies; but if it came to the question they were certainly prepared to appeal to the people of London as against any class, and to stand upon the broad ground that it was for the benefit of the whole people. The Building Act Committee would readily and willingly adopt any technical criticisms. Mr. Statham's criticisms with regard to cornices he thought very forcible, and he was sure the London Council would be the last to put any hindrance in the way of the development of architecture as an art; but they were anxious that London buildings should be habitable, and many buildings which had been erected under the Building Acts were not habitable according to

modern sanitary notions.

PROFESSOR BANISTER FLETCHER [F.] thought it fair to remind the last speaker, when comparing the present state of London with what it was twenty or thirty years ago, that London to-day had advanced enormously in the width of its streets and thoroughfares. Mr. Roberts had spoken of the crowding of houses; but St. Giles's had almost disappeared through the action of the recent Metropolitan Board of Works, and it was only fair to that body to mention many other such improvements—for example, the Thames Embankment, Cannon Street, and Queen Victoria Let them take Grosvenor Place again, and see the enormous improvement brought about by private individuals. If London was as unhealthy as it was said to be, it must have been far more unhealthy a few years ago. Unquestionably the builder was entitled to make the most of the land. They ought to recognise that the builder, when he took a plot of land, was justified in putting upon it as much as he fairly could. Let them be honest. Every trader in London pursued his trade for profit, and why were they always to be running at the builder because he was legitimately With regard to what following his trade? Mr. Hall had said about the width of streets, and the difficulty the new Act would impose in getting into a field at the back, he thought his logic was hardly correct. Surely it was a question merely as to whether it would pay. Would the destruction of the front property enable him to get such a large area in the rear as would justify him in doing that? He (the Professor) could see nothing wrong in that. The sacrifice was made in order to get to the field and develop for building that which before was vacant land. Generally speaking, he agreed with Mr. Hall, but in that he thought he was beside the mark. He entirely agreed with what the last speaker had said about exceptional legislation for the working-classes. Any legislation which dealt with classes, whether as regards building or the people themselves, must be manifestly wrong. All that could be done was to limit the number of inhabitants, whether in the East or in the West. He therefore urged strongly against separate legislation for the working-classes. As to the question of party-walls through roofs, the suggestion made was not really understood or he himself misunderstood it. It was only said, and, as he thought, rightly, that in the small class of buildings the party-wall going through the roof was a detriment to the property and increased its unsanitariness. With his experience of insurance offices he ventured to say that no increase of premiums need be looked for. Dr. Longstaff was dealing with the smaller class of property from Putney to Wandsworth, and through Wandsworth to London. There had been a great deal said about the value of a wide street—and no doubt, as Mr. Statham had said, a 100 or 120 feet road lent a certain grandeur to a city—but the late Metropolitan Board of Works, he thought it was, after much inquiry, decided that 60 feet was the best width for traffic, and that it was better to have two 60-feet roads than one very wide one—that with 60 feet the traffic could be better managed. Mr. Tavenor Perry, he thought, was not quite right in his view as to the limitation to be gained by actions in light and air. Such actions, he thought, might sometimes be settled by monetary payments, and then the owner might build to almost any height. He certainly should not like to rest on so frail a reed as the opponent of the building owner. With regard to that matter he would suggest that a clause might be inserted in the Bill that actions for light and air should be incorporated in the Building Act. He believed that the Institute had made that suggestion to the London Council, and also as to the method of arbitration with regard to it. To architects there was undoubtedly a great delay, and it was very hard to have one's building stopped all through the best months of the summer pending an action which could not be tried probably till the following January. With regard to lifts he thought that those situated by the open staircase might be exempted from the clause, which required all lifts to be enclosed. Lifts by the staircase were very valuable accessories, but they could not be so placed if they had to be enclosed. Indeed, he could see little advantage in enclosing lifts; they were but funnels through which the fire in the enclosure rushed up to the outlet on the next floor. As to the line of angle, the objection to the angle proposed, or to any angle, was that it must of

necessity make a building worse internally—it was impossible to get square rooms. Any angle should cease when it touched the back wall. He was totally opposed to the clause because he believed no angle would be found satisfactory, and the one proposed would make back rooms most objectionable from a sanitary point of view. Then he would ask the London Council—and they had been doing very good work in the matter of drainage and the examination of ventilation to test the air in some of the narrow courts at the East End, and to test the air in the West End and in other places, to see whether the air was as bad as was said—whether the cutting off at the angle proposed would have the slightest advantage in the lower portion of the building. With regard to the site in Bethnal Green which the Council had cleared, he ventured to think that when they had spent the large sum of money which the ratepayers had to provide, and erected their new buildings, they would find that there was less sunlight to those buildings, and that they were less pleasurable residences, than the old buildings. The Council were desirous of improving London, and he would suggest they should begin by doing away with many of the courts and alleys and throwing the land acquired into the rest of the property. It was a new suggestion, and therefore would probably fall on barren soil; but he ventured to press it on the London Council in the hope that they might see their way to add a clause with that object in view. London would be greatly benefited, ratepayers saved the expense of lighting and paving, the streets denuded of a portion of the population, and consequently purer air secured to the remainder. In conclusion, he would call attention to a most objectionable phrase in the Bill: "The Council may permit." The whole Bill bristled with permissions to avoid every clause in it. There was no Act of Parliament in existence which so utterly depended upon the sweet will and pleasure of the London County Council. In saying that, he desired to guard them against all those temptations which must arise if the Bill became an Act of Parliament. He could conceive of no more miserable position for a public body to be in than to have the power to relax nearly every section in their Act. It showed want of thought in a Bill if it was not so framed that it should fairly meet every case. The Metropolitan Building Act 1855, which had existed to the present day, had answered all its purposes; and there was no reason why the Bill before them should not be so framed as to require no permission on any account. Let the Council itself be governed by the Act. and not have so much power to grant exemptions.

Mr. ROBERT WILLIAMS [A.] said that the "sweet will and pleasure" of the London Council was the sweet will and pleasure of the people of London, seeing that the County Council were elected

directly by that people. Mr. Statham had said that by the Bill a cornice could not project more than 2 feet or 2 feet 6 inches, and had spoken of a cornice of 8 feet. The upper cornices of St. Paul's were 8 feet high, and projected between 4 and 5 feet. If Mr. Statham wished to have a cornice projecting 9 feet on one side of a narrow street and a cornice of the same width on the opposite side, they would nearly meet in the middle. If there was a large monumental building, and the cornice projected 9 feet, there should be plenty of room to set the building back that they might enjoy the design. Professor Banister Fletcher had referred to St. Giles's as a fairly salubrious spot. For the last ten years, however, the sub-district of South St. Giles's had had a death-rate of 35 per 1,000 nearly double what it ought to be. He had been able to anticipate Professor Banister Fletcher on another point, by taking specimens of the air in certain courts and streets, and he found that the air in a crowded thoroughfare contained 0.2 carbonic acid more than the normal air of London; it was 0.6 per 1,000 by volume, which was a point considered by all doctors and sanitarians at which the air was thoroughly vitiated. That was the outer air. Inside he found the air to contain 0.9 of carbonic acid per 1,000 by volume. That was a good deal more than the chemist of the London Council found the air in the sewers to contain. So that some of those crowded dwellings were less salubrious than the London sewers. Hall had said that the Grosvenor Hotel would be destroyed by the Bill because it had no backyard or court. What an unsanitary place it must be! It was monstrous that an architect should design such a place without even a backyard or a court! The Bill was acknowledged by its authors to be defective, and they required the assistance of architects and surveyors to improve it; but the principle of the Bill was good. What was a building law? Should a building law primarily protect the interests of the landowners and professional men, or should the first consideration be for the dwellers in and users of the buildings? Unquestionably for the latter. Mr. Cates had said that the Institute should sympathise with the attempt to remedy the defects of the Building Acts. What were those defects? One great defect was over-building; the other, the blocking out of light and air. Take, for example, a block of old houses, with gardens and backyards of fairly good size. The speculating builder got hold of it, and under the present Acts he might nearly fill the ground with buildings. He would contrive to make a little passage about 2 feet 6 inches wide, but of the length required to make the 100 feet open area, and would fill his site with three times the number of people that were on it before. They must not forget that, though they might build beautifully, though they might build of marble, if they put more than a certain number of people on the ground they were at war with nature, and the good of their building would be gone. As far back as 1854, Dr. Southwood Smith, speaking of the malady of typhus fever, said that "its true "source was not want, but filth—not insufficiency "of food, but impurity of air, particularly such "impurity as is produced by overcrowding." They were perpetuating that state of things. Some one had said that the builder had a right to put as much as he could upon the land. But the builder had no right to block other people out of the land altogether. [An extract from the 1892 report of the medical officer for Southwark showing the evils attendant on overcrowding was then read by the speaker.] He would like to say a word on the setting-back question. The law, he thought, was very nearly the same at present as set forth in the Bill. He had a building to design in a little lane in South London. He sent the plan showing what he intended doing to the London Council, and they referred him to clause 34 of the London Council General Powers Act 1890, which required that the building must be set back 10 or 20 feet, for a foot or carriage way as the case may be. He was quite willing to set back as required, or to give up his commission. With regard to basements, Mr. Slater had said that the air space formed by giving 10 feet would be a filthy place full of foul air. Basements were sometimes very deep, and in some cases the building owner had gone to the whole depth, completely blocking out the air. It was impossible, upon hygienic grounds, to object to the proposals in the Bill. It was well known that the physique of London people was deteriorating, and were it not for the constant influx of people from the country, the population of the metropolis would die out altogether. One of the ways to test the salubrity of a place was by its death-rate. For a sub-district in Southwark it was 32 per 1,000. The death-rate, when the present Act was passed, in the Potteries, Kensington—an aristocratic part—was 40 per 1,000. In some of the block dwellings in London the death-rate averaged 41 per 1,000. What was the remedy for all this? No doubt the widening of streets and sloping the houses back at an angle of 45 degrees would be the thing to be done, despite the cry of compensation and confiscation.

Professor KERR [F.] said the discussion seemed to have turned almost entirely on the sanitary question in Parts I. and IV. of the Bill. Upon that he was in full accord with what was said by Mr. Roberts and others as regarded the improvement of London if only it could be effected. The difficulty must necessarily be very great, particularly in the old parts of the town. As regarded new parts, he felt no mercy for the landowners; they were creating ground rents out of nothing, and they could well afford to give up a portion of their land for the public benefit. But as a district surveyor of experience he would make a few remarks upon what he regarded as the practical

oversights of the Bill. In the first place, the Building Act Committee had overloaded themselves most tremendously with work; it was impossible for them to do all that they had set out in the Bill as their duty. He would just read a few of the tasks they were personally to undertake. They were everywhere to control all new streets and alterations; all frontage lines; all questions of setting back and surrenders of land, all exemptions, and all compensations. They were to decide on the measurement of irregular sites, and the ventilation of yards and courts. They were to deal with rebuilding after fire; with houses back to back; and even to decide sometimes which is the front of a house and which the back. They were to control all buildings over 75 feet high, and those that were higher than the width of the street. They were to deal with all extra recesses and openings; with fire-escape, engine chimneys, and external fluepipes; and also with projections, special shop fronts, bays, oriels, and "architectural decorations." They were to relax the rule of 216,000 feet; to adjust disputes about public buildings and conversions into such; to control iron buildings, and wooden, and all special construction. They were to deal with all dangerous structures, all neglected structures, all noxious businesses, all buildings on low lands; timber yards, sky signs, and projecting lamps and boards. They were to make and enforce by-laws for streets, yards, frontages, setting back, exemptions, foundations, sites, walls, bressummers, plastering, excavations, fire-escape, lamps, and signs. They were to deal with twenty-seven specified "offences," and impose penalties up to £50 and £5 per day. Throughout all this they had to deal with conditions of their own making; with appeals innumerable; and with recovery of money claims; and there was the enforcement of all this against the active and passive resistance of the public all over London. It was impossible for them to do it. They must, moreover, go to the courts of law, and the courts would resist their demands instinctively. Those who knew anything about building contests in courts of law knew that the judges would not support such authority if they could possibly help it. Then, on the lowest computation, the settlement of the mere meaning of the new law would take fifteen or twenty years to accomplish. The amount of contentious matter and the amount of dragooning that had inadvertently been incorporated with the provisions of the Bill were greater than anything he had ever experienced before in a similar production. He had made a great many notes on the Bill, and he would just refer to a few as they occurred page by page. On page 3 he had made a note with regard to the delay in obtaining any decision from the London Council upon a question of building; one had to wait six weeks to get an answer to an application; it took a month under the Metropolitan Board of Works, and they had nowincreased it 50 per cent. Dr. Longstaff had been

good enough to explain to him that the fault did not lie at Spring Gardens but at the Vestry Halls; that they made a rule of submitting everything to the Vestries, and that it was the vestries that took the time to give their answers. That was nothing to the building public. They want a prompt answer, and the London Council must find a way to deliver it. On page 6, as regarded the question of compensation which had been so much discussed, it must be borne in mind that when on new ground a frontage line was set back the loss of land was the loss of back land only, because the whole structure was shifted back, and the compensation therefore must go upon the value of back land; and per contra there must be set off the advantage of the wider street to the property; so that he was very much mistaken if in most cases the one would not cover the other. On page 9 it was a pity that some rule could not be given for the measurement of half-pulled-down houses, which was always a very difficult thing to deal with. He would respectfully venture the suggestion, that perhaps it might be fair to provide that an imaginary flat roof should be taken into account, room by room, at the top of the lowest safely-left wall, and an imaginary wall at the limits of any safely-left roof. Something of that sort might certainly facilitate matters with regard to the measurement of the cubical contents. On page 11 he would suggest that the judicial proceedings of the L.C.C. Building Act Committee, which sat in private and was not unfrequently called a Star Chamber, should be authorised specifically by law. Constant complaints were made by the public and builders in his district with respect to the Building Act Committee. "For goodness' sake," they said, "do not send us to the Building Act "Committee. Tell us what you want—anything "that you order we will do-but do not send us "to Spring Gardens." Would it not be well to delegate a great deal of the work done by the Committee to the district surveyors? The district surveyors were qualified, experienced, and upright men, and they might relieve the County Council of a very large proportion of the work which they themselves would never be able to do. On page 15, the angle of 45 degrees behind the house, and sometimes in front of the house, which had been discussed so warmly, was described in most unscientific phraseology. What they meant, he assumed, was that an absolutely horizontal plane should be imagined on the ground level, or whatever level it might happen to be, and that at a certain distance at the back or front an inclined plane should be set up at an angle of 45 degrees. But they did not express it so at all. A schoolboy looking at those two or three pages would see that the "line" mentioned, and the "diagonal line" set back from it, had no value whatever in accomplishing what the County Council meant. The draughtsman who drew the Bill simply did not observe the difference between a line and a plane. On

page 21 it seemed to him, as a district surveyor, that to have a 9-inch wall 30 feet long and 25 feet high, and half cut out into recesses and openings, was not good building; not only was it not good building, but it was building altogether so weak and bad that he did not think any exposed 9-inch walls ought to be allowed at all, except sometimes at the top storey and above the roof. Structural ironwork, he maintained, ought to be brought under special supervision. At the present moment there were being put up, after the American manner to a certain extent, skeletons of iron, filled in with walls of brickwork, and no one had any control over those skeletons of iron in any shape or form; they were not buildings of special construction which could be sent to Spring Gardens. If the district surveyor interfered he was told to mind his own business, he had nothing to do with them, they were not mentioned in the Act at all. Some time or other they should have one of these skeletons tumbling into the street. On page 25 there was no attempt to correct the absurd confusion in the various meanings of the word "chimneys" in the Act of 1855; it meant chimney openings, chimney breasts, chimney flues, chimney stacks, chimney shafts and chimney pots. On page 29 the term "low pressure" applied to heating pipes ought to be defined. The Metropolitan Board of Works had been privately approached by some hot-water engineers, who did not choose to be interfered with by the district surveyors, and they introduced a clause into the 1878 Act, that low-pressure pipes should be exempted; and he for one had never been able to discover what a low-pressure pipe was. That might surely On page 48, as to expenses in be remedied. respect of party structures, could anything be done to throw the expense of rebuilding party-walls upon the owners of the property instead of the unfortunate tenants? The "surrendering clause," which they all knew the meaning of in a lease, compelled tenants, often poor people, to rebuild, if they were defective, the very walls that they paid rent for, but which, he contended, ought to be kept fit for use by the rent-receiver. Again, the change of tribunal from three surveyors, in partywall cases, into a tribunal of two surveyors and an umpire, would, he hoped, be abandoned; because he knew of no form of arbitration which was so well worked as that of three equal surveyors; any two of them can deliver an award. On page 52 he had also to say that some provision should be introduced to exempt the tenant from rebuilding dangerous structures. Nothing could be more monstrously unjust than that a structure should be condemned and taken down by a public officer, and that the freeholder should then be able to compel the tenant to rebuild it. On page 65 he had made a note that the present practice of appointing district surveyors, subject to certain conditions which were not in the Act, ought to be

frankly submitted to Parliament in this Bill. Some district surveyors had been appointed upon conditions which he did not believe the courts would consider to hold water; and Parliament should be asked to say whether those conditions were right. Clause 135, which required the district surveyor to give notice to the Council of "any actual or probable contravention of the Act with which it was not within his competency to deal," was a very extraordinary clause, and placed the district surveyor in the position of a common informer. As a district surveyor himself he would here appeal to the Institute as a protecting power. With regard next to the tribunal of appeal, with which the Institute was directly connected, he had to suggest that with five highly-paid members it would be an exceedingly costly tribunal—so costly, in fact, as to be generally prohibitive. Then as to the definition of the term "new building," was it advisable or safe in law to depart from obvious ordinary meaning of words? On page 96 he should suggest that a definition ought certainly to be agreed upon for a building "used for trade or manufacture." Nobody knew what that meant, and it ran through the Bill just On page 107 the way of measuring the thickness of walls for warehouse buildings was fantastic and awkward. Given the thickness at the top and at the bottom; two sloping lines were drawn, and the wall had to be kept somehow beyond those lines. Nothing could be more indicative of intellectual and practical friction. Why not devise some means of taking it storey by storey, or height by height? On page 109, with regard to fireproofing, if buildings could be made fire-proof at an extra cost, as he had been told, of 5 per cent., now was the time to improve upon the buildings of London in that respect. Lastly, the subject of district surveyors was a delicate one, upon which it was undesirable that he should say much; he could not, however, but regard the new fees as a twopenny-halfpenny system which was unknown in the professions with which they were connected. They were paid at present by attendances, not by sixpences and half-crowns by measurement. How the London Council could say that they desired to raise the status of district surveyors by paying them in that way he could not understand. District surveyors, moreover, were to be charged with an immense deal of extra work for which no remuneration at all was to be received. Surely the district surveyors were public officers under a contract; and that contract ought to be honourably fulfilled. He submitted these matters to the judgment of the Institute as the examining body and the certifying body, and claimed its protection as a matter of professional morals.*

^{*} The following new and responsible duties are to be imposed upon the district surveyors without remuneration: To compel open spaces in front of certain buildings;

Mr. H. H. COLLINS [F] said that he had already had an opportunity of expressing his views to a kindred institution, and those who desired could easily ascertain them; but he rose more particularly for two reasons. First, he did not think that they had expressed sufficient gratitude to Mr. Cates for the trouble he had taken in enlightening the Institute upon the special clauses of the Bill; and secondly, he could not help seeing that there was a great deal of justice in the observations of Mr. Wallace Bruce, in which he pointed out the anomalies between the Housing of the Working Classes Act and the Act of 1855. He could not quite go with Mr. Hall, but he agreed with Mr. Roberts that there should be no distinction of class; it must be quite as right for a dweller in Bethnal Green to have sanitary conditions laid down for him as for one who lived in Mayfair. Something of the following kind, he thought, would meet the case. He would suggest that "no site, whether new or old, should be used " for the purpose of erecting a dwelling-house or "dwelling-houses, or for any purpose of human "habitation, where the same is situated in any "street, lane, court, or alley of less width than' (here they might insert any width they chose to fill in) "of a less width measured at the ground " level and a line of frontage to be determined by "the superintending architect, without the per-" mission of the London County Council first had "and obtained; provided, nevertheless, that such "site may be used for stabling, warehouses, or "any other building purposes which the owner or owners may desire." In that case he thought there would be no question of confiscation. He thought it was not fair to say that a builder or an architect had the right to pollute a site by putting upon it a building calculated to create unsanitary surroundings; therefore, they should have some provision to prevent that. When Mr. Hall mentioned those narrow sites in the City he must have been aware that they would be too expensive to apply to the purposes of artisans, or even domestic dwellings. He (Mr. Collins) alluded to streets in such neighbourhoods as Bethnal Green and St. Luke's, where such sites were possible, and where it would be wrong to allow domestic dwellings to be erected. At the same time, they had no right to confiscate the property of the owner. If he chose to widen a street and build domestic dwel-

to deal with questions of light and air and the height of buildings by means of diagrams; to grant certificates for rebuilding: also to consider external ventilation; scantlings for floors and strutting for ditto; escape from fire; outlining flues; fire-proof roofs; internal ventilation for large buildings, and staircases and windows of habitable rooms, with diagrams; air bricks; rooms and floors over stables; the construction of all underground rooms; lifts; the construction of bay windows; staircases in churches; with timber stacks, advertisement hoardings. &c. The district surveyor is also to certify responsibly for the occupation of all public buildings.—R. K.

lings upon it well and good; but if he required to use it for other purposes he thought a clause of that kind would meet the case. At all events, he humbly and sincerely presented it to the notice of the London Council, and hoped that it might be a means of meeting the difficulty which Mr. Wallace Bruce so well, so sensibly, and so acutely brought before them.

MR. WILLIAM WOODWARD [A.] did not hope to be able to say all he had to say on the subject in the ten minutes allotted. He desired to ask the circumstances under which the delegates went to the London Council prior to the present discussion, when it had been determined at a Meeting of the Institute that the discussion should take place first. They knew nothing of what had taken place between the delegates and the London Council, and they were quite in the dark as to the amendments which the Building Act Committee may have decided to make. Bearing in mind the report which the Practice Standing Committee made upon the proposed additions to the Bill in December last, it was considered proper that the Institute should have an opportunity of instructing the delegates as to the points to be brought before the London Council, and it appeared to him a subject of regret that the determination of the Meeting referred to had not been carried out.

THE PRESIDENT said he was quite ignorant of any undertaking that the delegates should not visit the London Council until the discussion had taken place. The delegates went at the invitation of the L.C.C. Building Act Committee, and their visit had been productive of the greatest good, as he understood, and as Dr. Longstaff himself informed them at the last meeting. He could not conceive why Mr. Woodward should take exception to the visit of the delegates in any sense. The Council of the Institute had the clearest right to regulate their own proceedings, and it was in the best interests of the Institute that they had done so in the present instance.

MR. JOHN MARSLAND (Vice-Chairman of the Building Act Committee, L.C.C.) thanked the various speakers for the remarks they had made, but he should like it to be known that up to the present time the Committee had not come to any determination as to the debateable points between themselves and the delegates from the various bodies. They hoped in the course of the next week or two to come to a decision in the matter, and they would then have great pleasure in circulating among the members of the Institute and other associations with whom they had been in communication the result of their deliberations. They hoped extremely that the Bill would be for the benefit of London generally. The London Council did not wish to be pragmatical, and to say that their ideas were to be the only ones to be realised. Their object was to obtain a good system of building for London generally, both with regard

to sanitary arrangements and fire-resisting properties, and also for the proper arrangement of streets and roads; and the Council were only too pleased to have the assistance of such bodies as the Institute.

 M_{R} . EDMUND WOODTHORPE, M.A. [F.], who seconded the vote of thanks to Mr. Cates, believed that every one recognised that the angle of 45 degrees would be an excellent angle in every case if it were possible, but there was so much opposition to it, particularly in the City and other business centres, that if it was pressed it would probably be defeated; and the London Council would lose the opportunity of doing an immense amount of good. In the City and other parts if the 45 degrees angle were insisted upon it would fail for three reasons: if it were acted on when buildings were burnt down and had to be set back, if they were not allowed to be built above a height equal to the width of the street, and had to be built within an angle of 45 degrees, unless they were built at exactly the same height and in exactly the same manner as previously they could not be built again. 1. If they were burnt down they would be constructed in exactly the same manner as previously, without any improvements to meet their increased requirements. 2. Old buildings would be patched up, and never pulled down and rebuilt; hence, building would be stopped. 3. It would encourage basements and storeys below ground. There was nothing whatever in the Bill to prevent a man having two or more storeys below ground, and using them, as so many basements in the City were used at the present time, as cafés and restaurants. That class of building was most objectionable and very detrimental to health. As to protection of life from fire, buildings were springing up which had not been considered in the Bill—he referred to those used for purposes of trade in the lower storeys and for dwelling rooms for the employés in the upper. There were many buildings of that description about Wood Street, Fore Street, and other business parts, in which there was only one staircase to the upper part, used both for the dwelling rooms as well as for the warehouse parts. In the Bill brought forward by the Practice Committee a few years ago there was a clause providing that where the lower part of a building was used for purposes of trade, and the upper part as dwelling rooms for the employés, the upper portion should be separated entirely by a fire-proof floor, and should have a separate fire-proof staircase and separate entrance, and should be cut off entirely from the other part of the building. Another class of buildings that had not been considered was the separate sets of offices which were springing up all over the central district of London. The people who erected them did not know how they would be occupied; and consequently they could not divide them by party walls. As the building might be let as one big office building, they would not always put in fire-proof floors, and when it was completed and subsequently divided into separate sets of offices, there was no power to compel them to conform to the Act. Such buildings, he suggested, might be legislated for by a clause to the following effect: that buildings over a certain size, say 3,600 square feet in area, intended for use as separate sets of offices should have fireproof floors throughout and fire-proof staircases, and should be limited to, say, 216,000 cubic feet by party walls, and any openings in same fitted with double iron doors, each block to have a separate staircase. That would be no great hardship, and would form very efficient protection in case of fire.

Mr. W. D. CARÖE, M.A. [F], had already expressed his views on the subject of party-wall parapets in the Journal [page 316]. He regretted greatly that Mr. Hall had approached the insurance companies in the manner he had, and accepted their ex parte statement on the subject; for, of course, whatever imaginary preventive of fire there might be, they would naturally desire to make the most of it. Mr. Hall ought to have asked the insurance companies whether there was any instance of a fire spreading in towns where the party-wall parapet was not carried through the roof, and attributable directly to that cause, and whether they charged increased premiums in those towns. It was a great point in building legislation to judge by the results of experience, and study similar legislation of other towns—and some of them had exceedingly good Building Acts, framed to work out the best possible result that all were striving to secure. In Leeds, Bradford, Huddersfield, Sheffield, Liverpool, Manchester, Belfast, and other towns, party-wall parapets had been dispensed with in dwelling houses, and the working of the system, which had undoubted advantages, should be carefully studied when a new Act was being framed for the metropolis. Dr. Longstaff had twitted the Art Committee with having made no suggestion to the London Council on the question of art. He wished to inform Dr. Longstaff and the Meeting that the Art Committee had taken great interest in the Bill in its bearing on architectural matters. He had brought this question before the Art Committee, where it was duly considered and thought well of, and passed on to the Practice Committee. The Practice Committee replied practically with a non possumus; they referred him to a no doubt admirable Bill which they themselves had drafted, and virtually said that any suggestion in conformity with their own they would be ready to entertain, but that any suggestions coming from outside they could not consider. Now Mr. Hall had delivered his verdict on the matter of party-wall parapets, in which he (Mr. Caröe) had taken, perhaps, a foolish interest. What line would Mr. Cates take? He had learnt what the views of the third delegate were. He feared there was little prospect of following up the excellent lead given them by Dr. Longstaff, if they had to depend upon the three delegates who seemed to have prejudged the question. He hoped, however, those gentlemen would be good enough to reconsider their prejudices, and, if only for the sake of those classes who were compelled to live in poorer houses, the London Council might possibly be induced to accept the principle that was adopted in Hull, where the party-wall parapet was not required in buildings under a certain height. For his own part he hoped the new Bill would go further than this, as in the other towns mentioned. He had already made some suggestions as to how to deal with all classes and characters of buildings, but the hour was too late to discuss them in detail.

Mr. BERNARD DICKSEE [A.] said that the By-laws under the Acts proposed to be repealed would be annulled at the same time; therefore they would be left without By-laws until new ones were made under the new Act, which would be at least three months; no doubt the speculatorbuilder would make good use of his opportunities during that time. Then there was no mention of penalties in the Act at all, except as a subject for By-laws, and they would be left without help in that direction for three months. They were all agreed that any restriction tending to lessen window space would be a disadvantage; and yet that would be the tendency of Clause 40, which only allowed such openings to be half the length of the wall, whereas, under the existing Act, they were allowed openings of half the area. In the case, for instance, of some of the dwellings with 15 feet frontage, of which there were many in his district, if they had a door 3 feet wide they could only have a window 3 feet wide in the front wall, although the room might be 11 feet wide. And it would be even worse at the back. Then he would call attention to the anomaly that though two small adjacent cottages have to be divided by a party wall, yet large blocks of flats, so long as they do not exceed in area 3,600 square feet, may be carried up as high as they pleased, without fireproof floors being compulsory. It was desirable that flats of more than two storeys above ground, no matter what area they covered, should be divided by fire-proof floors and walls. Another anomaly was that, though they were restricted as to the materials with which the outsides of buildings were constructed so as to be fire-resisting, not a word was said as to the insides either in the old Act or in the present Bill. He could mention two or three streets in a fashionable district where the houses, which were let at £125 a year, had certainly four brick walls outside, but the whole of the insides were constructed of timber partitions and floors. If those places caught fire they would burn up like matchboxes. There was no reason

why half-brick partitions for the lowest storey at least should not be insisted on; and now that metal lathing was almost, if not quite, as cheap as wooden lathing—the ceiling at least should be lathed with metal—it was desirable that some provision of the kind should be inserted in the Bill. He had himself drafted a clause to that effect, and would send it on to Mr. Hall.

THE PRESIDENT said they all concurred in thinking that the London Council were actuated by the best possible motives in bringing forward the Bill; but it did not follow that the best possible motives conduced to the best possible results, and he had no doubt that the very exhaustive debate now concluded would have the effect of throwing considerable light upon a very complicated subject.

NOTES, QUERIES, AND REPLIES. The London Streets and Buildings Bill.

From S. Flint Clarkson (F_{\cdot}) —

It may be well to briefly call attention to some changes in Building Regulations, suggested by the Institute, not inserted in the original Draft of the Bill. Suggestions were made for advances beyond existing legislation to ensure escape from fire and security against fire. (1) The separation of shops on lower storeys from living and sleeping rooms on upper storeys, and the provision of fire-resisting staircases and exits, well separated from the rest of the building, have been alluded to by Mr. Cates and Mr. Woodthorpe. The Institute Draft dealt with the case of caretakers and their families, or others, living at the tops of large buildings of the warehouse class. The greatest risk of the kind occurs where rows of dwellings are converted into shops, and the dwelling-rooms are only connected on an upper storey, the only stair down being a combustible one at the end of the row. In such buildings a considerable number of people sleep high up. (2) Another suggestion by the Institute was that for ordinary dwellings and other buildings of moderate height there should be easy access to the outsides of the roofs. This has been modified in the Draft Bill of the London County Council, so that only buildings having parapets are to have such means of escape. Might not a railing be sufficient? (3) With reference to modes of exit from large and tall buildings, the Institute went further, and more into detail, than clause 49 of the Draft Bill, by suggesting exact limits of horizontal distance from (4) In clause 36 of the Draft Bill two storeys will be allowed in the roof, in addition to seventy-five feet of height, but the height of the storeys in the roofs is not limited. The Institute proposed twenty feet as a limit (Sec. LVII.), and proposed also (Sec. XLIII.) to limit the number of storeys in the roofs of buildings of less height than seventy-five feet. Without such a limitation it would apparently be possible to have five storeys in the roof of a building seventy-four feet high; of course an extreme supposition. Schedule K of the 1844 Act provided that "there must not be "more than one floor of rooms in the roof of any "building." The Institute suggestion of two storeys in buildings of the domestic class and one in warehouses is thus a kind of reversion with modifications.

As to the carrying of party-walls through roofs, it is, of course, not really a matter of other people's policy, but it may be mentioned that Sec. 7, Sch. IV., of the 1892 Act for Towns and Populous Places in Scotland stipulates that "party-walls shall be carried through and above "the roof to form a parapet." Part of the north country is thus to have this protection, and more English localities, when packing becomes severe, will probably have it also. As much space is not available, I will merely name that subject, and make a list of a few others bearing upon security against fire:—(1) Flues and backs of fireplace openings in party-walls; "the continuous "backbone of brickwork, the thickness of which "neither owner shall diminish," as proposed by the Institute. As the principle is in FitzElwyne's "Assize of Buildings" of 1189 and in the 1774 Act, this would be another instance of reversion to old law. (2) "Danger" in the Dangerous Structure clauses might include imminent danger from fire. (3) The proper relation of the tops of chimney-stacks to all roof surfaces near them was dealt with by the Institute under Sec. XLV. (9). (4) The blocking up of openings made in external walls close to a neighbour at the expense of the man who made them, &c., &c.

All the foregoing deal only with Fire; other subjects treated by the Institute would furnish

similar lists.

From Arthur Cawston [A.]—

The first question appears to be this—What provisions are desirable, so that the numerous present-day styles of architecture, with their gables, broken and irregular sky-lines, breaks forward and backward, columniated and rusticated windows, balconies, and other projections, may flourish all over London-in such restricted areas as Chancery Lane and Lombard Street, as well as in spacious Collingham Gardens and Mount Street? Although freedom such as this is sure to be demanded by the majority of architects at the present time, such freedom will gradually become of less and less value to us as the area of floor-space becomes restricted by the widening of roadways, the curtailment of the maximum height of buildings, and by the enforcement of more air-space around them. For does it not stand to reason that when the fourth floor commands as much rent for offices or flats as the first or second floor our clients will insist upon these

floors being designed with windows as cheerful and as large as those on the lower floors, which is impossible if we want to introduce Belgian or Old English gables? This has already been proved in Paris, in Queen Victoria Street, and other City streets, and also at Earl's Court. Here blocks of flats run up as high as the new Building Acts will allow them, each floor being lighted by windows the same height and width as those below. Admitting that at present it is advisable to allow all the freedom possible, what provisions shall we suggest to meet the case?

Height of Ground-floor Storey.—As the height of buildings is now limited, speculators may soon wish to increase the number of storeys by curtailing their height. The ground-floor storey may then become as insignificantly low as the laws of health will admit. Probably, therefore, it would be well to provide that the height of the ground-floor storey should not be less than ten feet.

Level of Ground-floor Storey.—Remembering the uselessness and danger of a step to a retail shop—especially to ladies—and the constant accidents that result from a step in such a position; remembering, too, the repugnance with which clever tradesmen regard any impediment whatever in such a position, and the invitedness imparted to a broad entrance when level with the pavement, the ground-floor of all buildings which border on the public highway, and which are open to the public, should be, by Act, on the same level as the pavement.

Chimney Stacks.—Should a chimney stack, with its inevitable cowl, be invited to a prominent position in our best streets? I think not. So let no chimney stack be nearer than five feet back

from the exterior face of the front wall.

Party Walls.—Was Dr. Longstaff quite correct when he stated that the junction between slates and a (brick) party wall presents any difficulty to the proper mechanic? The expense of a plumber is involved, but surely no other drawback (pardon me! Mr. Plumber), and assuredly the opinion of the present chief of the Fire Brigade must be very different from that of the last, if he advises that fires are not stopped from spreading by the upstanding party walls. If in London we built our party walls in rubble stone (as in the North of England) the difficulties and expense of the junction between party wall and slates would doubtless be greater. Besides, the curved party walls in Mount Street are sometimes exceedingly effective.

Projections.—It appears just that projections should be measured from the authorised line of street frontage, and not from the face of a building set back behind that frontage. In this way any building owner who is willing to give relief to the architecture of his street can give as much as he pleases by setting back his house behind the authorised frontage line. This is the law in Paris, so we need not fear that a similar

law here would produce too much irregularity. As to the amount of projection, the view down the street from the windows of the adjoining owner must be considered. No projection should therefore be so near the extremities of the frontage line as to project beyond a line drawn on plan from those points at an angle of 40 degrees, except in the case of balconies, cornice, and open porticoes (ground-floor only), these latter of necessity being placed at the extremity of the frontage. membering, too, the differences in the widths of the various streets to which these by-laws must apply, and that the appearance of projections entirely depends upon the width of the street, possibly the rules suggested in 1882 [Trans-ACTIONS, 1881-82, p. 153] by Mr. Joseph Boult, of Liverpool, would be found satisfactory. These were as follow:

(1) Strings, cornices, pilasters, &c., not less than 12 feet above the pavement may project one-thirtieth of the width opposite the building in any street.

(2) Oriel windows, balconies, verandalis, &c., may pro-

ject one-twentieth of the same width.

(3) At any height less than 12 feet above the pavement, the projection shall not exceed one-sixtieth of the same width.

The total surface projection must, of course, be limited. This should be to the extent of one-quarter of the whole frontage.

Committee of Taste.—Beside these details of construction is the far greater question of general approval of designs. How are we to prevent the creation of another Shaftesbury Avenue? How can we guarantee streets such as Mount Street instead?

This is indeed a serious question, demanding a revolution in our present mode of procedure. Possibly under present circumstances, the first step towards success would be the election of the Presidents for the time being of the Royal Academy of Arts and of the Institute to the post of Aldermen of the London County Council, together with the appointment by the London County Council of a Committee of Taste, to whom designs of all buildings facing public streets should be approved before they were submitted for approval to the London County Council. Such a committee might consist of, say, twenty-one architects elected, as Aldermen are elected, from amongst Royal Academiciaus, and from Fellows of the Institute.

At first one feels inclined to pity the labours of these gentlemen, but it would soon result in building-owners asking a committee of such high standing what architects were worthy of their employment. This in itself would go far towards improving the architecture of our streets, and saving money and tempers. As technical schools became installed throughout London, and architecture was properly taught therein (as in other cities), the labours of such a committee would become less irksome. Indeed, if advised by such talent, and with technical colleges, practical work-

shops, and street improvements carried out by their own workmen, the London County Council would possess the finest opportunity ever offered in this country for thoroughly teaching architecture and its allied arts and sciences both theoretically and practically.

In Paris the appointment of a committee of experts to advise the municipality on questions of taste has not been found an expensive affair, as the appointments are sought for on account of the

status they afford.

From W. H. HAYNES [A.]—

On the question of materials in the Bill, I should like to say a word about the employment of iron cisterns in poor neighbourhoods. Where these are permitted, an officer should be appointed to test the water for drinking purposes at stated intervals. I think it my duty to put on record my experience of iron cisterns, that after electrical disturbances the water had an acid taste in two instances, although the cisterns were otherwise clean.

University College New Buildings [pp. 281-308]. From Professor T. Roger Smith [F.]—

I must ask permission to state that I do not admit that the plan which accompanies Mr. Statham's communication in the last issue of the JOURNAL [p. 359] correctly represents the way in which the design for the new building would work out, any more than the earlier and somewhat different one he first produced did.

I well remember Mr. J. T. Perry's powerful drawing, and should have been glad had it been possible to carry out a design resembling his own plan; but it has always seemed to me that adding an attic [p. 360] would destroy, or at least impair, the most powerful element of effect which Wilkins's design possesses—namely, the very bold contrast between the height of the lofty portico and that of the much lower buildings right and left of it. Accommodation obtained in that way would, moreover, have been of no use for the purposes to which the present enlargement is devoted.

The Pugin Travelling Studentship.

From Alex. Graham, F.S.A., Vice-President—
The growing preference shown by candidates for the Pugin Travelling Studentship, in recent years, for examples of medieval architecture in foreign countries indicates a gradual departure from the intentions of the distinguished founder of this prize, which was established for the promotion of the study of the medieval architecture of Great Britain and Ireland. Some competitors have even ventured to cross the border into that debatable land which owns no master, and where the spirit of medievalism, as Pugin understood it, has no place and but little recognition. Nothing can testify in a greater degree to the wishes of the founder than the fact that the successful student

—the Pugin Student—has to sign an undertaking to study for a given period in some part of the United Kingdom. Foreign studies are then precluded altogether. Some few years ago the Council thought it desirable to relax the rule which had hitherto precluded candidates from sending drawings and sketches of foreign examples, and resolved to accept any work of the Middle Ages, whether English or foreign. Such relaxation was made in the interests of candidates who had facilities for travelling in most countries of Europe which were quite unknown in the days of the elder Pugin. But it must be admitted that the wishes and intentions of the founder have a high claim on our regard, and that those forms of medieval architecture which are essentially of English growth should be of paramount consideration. It might happen, in future years, that two or more candidates for this much-coveted Studentship exhibited, in the opinion of an adjudicating committee, drawings and sketches of equal merit. such circumstances there is little doubt that preference would be given to the best examples of the mediæval architecture of Great Britain and Ireland.

Ancient Monuments in British Honduras.

From John Hebb [F.]—

An ordinance has been promulgated by the Governor of British Honduras, with the advice and consent of the Legislative Council, for the protection of ancient monuments in that colony. By this ordinance any person who shall injure any ancient monument, or who shall injure or remove any relic, or who shall wilfully disturb any mound on any land belonging to the Government, shall be liable to a penalty not exceeding one hundred dollars, and, in default of payment, to imprisonment for any term not exceeding three months, with or without hard labour.

The Governor-in-Council may make Regulations for the preservation of ancient monuments and relics, and for the removal of the latter to a place

of safety.

The owners of ancient monuments may make a gift of them to the Colony, and the Colonial Secretary is empowered to accept such gift. All ancient monuments, relics, and mounds belonging to, or which may hereafter become the property of, the Colony are to be vested in the Governor as trustee, and are to be kept in the Colony, with the proviso that duplicates (it is to be presumed of relics only) may be sold or presented to the British Museum.

The expression "ancient monument" used in the ordinance means any building, tomb, obelisk, or construction of a like kind which existed in 1700 within the Colony. The expression "relic" means any carved stone, any jewel, and any manufactured thing of stone, pottery, metal, or other substance which may be hereafter found in the Colony, which existed so far back as 1700.



9, CONDUIT STREET, LONDON, W., 12 April 1894.

MINUTES. X. (continued).

At an Adjourned General Meeting, held Monday, 19th March 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the Chair, with 39 Fellows (including 10 members of the Council), 31 Associates, and 17 visitors, the Minutes of the Meeting held 12th March 1894 were taken as read and signed as correct.

The Secretary announced the decease of the following Associates, viz., Francis Markham Risbee and Samuel Hill.

The President announced the results of the Examination held during the week commencing 5th March 1894, and read the names and addresses of 32 persons who had qualified for candidature as Associate [p. 377].

The debate on the London Streets and Buildings Consolidation and Amendment Bill 1894, adjourned from the previous Meeting, was then resumed, and the Meeting

separated at 10.30 p.m.

MINUTES. XI.

At the Eleventh General Meeting (Ordinary) of the Session, held on Monday, 9th April 1894, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the Chair, with 27 Fellows (including 8 members of the Council), 24 Associates (including 1 member of the Council), and 7 visitors, the Minutes of the Meeting held 19th March 1894 were read and signed as correct.

The following members, attending for the first time since their election, were formally admitted, and signed the Registers of Fellows and Associates respectively—namely, John Perrins Osborne and Charles Steward Smith, Fellows; and John Newnham, Douglas George Salier, and Arthur William Sheppard, Associates.

A Paper, by Thomas Blashill [F.], entitled THE COUNCIL CHAMBER AND ITS ACCESSORIES, was read by the author, and, having been discussed, a Vote of Thanks to Mr. Blashill was passed by acclamation, and the Meeting separated at 10 p.m.

PROCEEDINGS OF ALLIED SOCIETIES. SHEFFIELD.

The late John Brightmore Mitchell-Withers [F.].

Mr. Charles Hadfield [F.], Hon. Secretary of the Sheffield Society, has forwarded the following interesting memoir, written by himself, of its late Vice-President:—

To the writer, the duty of paying a last tribute to the memory of the genial, kindly colleague and friend of well nigh thirty years, who on Friday 9th ult. joined the great majority, is a sad one. John Brightmore Mitchell-Withers has passed away at the comparatively early age of fifty-six, in the full tide of a successful career, dying literally in harness, as those who knew him best might have expected. Latterly he had been suffering from the effects of overwork, and had by the advice of his medical attendant passed a short interval of rest from active duty. A few days ago he went back to work. On the day of his death he attended at his office, lunched at his club with the writer and other friends, and returned home in the afternoon. To his family he seemed to be in his usual health and spirits, but at the close of dinner he was seized with a heart affection, and passed away before medical aid, which was at once summoned, could arrive.

His remains were laid to rest on the 13th ult. in the

picturesque cemetery of Ecclesall Church, hard by the Derbyshire moorland scenery which he had loved in life, in the presence of sympathising friends, amongst whom were the Council of the Sheffield Allied Society. At the monthly meeting held the same night, Mr. E. M. Gibbs, the President, alluded feelingly to the deceased, and it was :-"RESOLVED, that the President, Council, and Members of " the Sheffield Society of Architects and Surveyors desire "to express their sincere sympathy with Mrs. Mitchell-"Withers, Mr. J. B. Mitchell-Withers, and the family, in "the sore bereavement they have sustained by the death " of the late John Brightmore Mitchell-Withers, F.R.I.B.A., "F.S.I., whose relations to members of the profession " generally were always so kindly as to have not infre-"quently ripened into personal friendships. His able and "honourable practice commanded the respect alike of the " public and of the profession, and maintained its highest "traditions. His devoted and successful performance of " public duties reflected credit on his profession; and his "services in the formation of the Society and in its "management as a Member of the Council, and as "Treasurer and Vice-President, with his lectures, are re-"corded and gratefully remembered, and the Society "desire to express their deep sense of the great loss they " have sustained."

Our late colleague was a native of Sheffield, a member of the old family of Mitchell, and the son of W. Brightmore-Mitchell. Educated at the Sheffield Collegiate School, he was eventually articled to Samuel Worth, architect and surveyor, whose memory is yet green to the older generation. At the close of his pupilage he was for some time in the office of the late William Blackmoor, of Rotherham, and afterwards joined that gentleman in partnership. By the will of his aunt, Sarah Withers, he became in 1862 possessed of an ample fortune, and, in accordance with a provision of her will, took the name of Withers. It was about this time that Mr. Mitchell-Withers severed his connection with Mr. Blackmoor and began practice in Sheffield. He was a man of cultivated talent, a diligent student, possessed skill as a draughtsman, and indomitable industry and perseverance. Of him it can truly be said "Nulla dies sine linea," and water colour sketching was a favourite pastime with him during holiday or other excursions. His manners were genial and his disposition kindly. Prosperity did not spoil him, and he was happily spared the trials of adversity.

Mr. Mitchell-Withers erected the churches of St. Silas, Hanover Street, St. Andrew's Sharrow and St. John's Owleston in Sheffield and neighbourhood, and carried out important restoration works at Dronfield Church, Derbyshire, and Handsworth and Ecclesfield churches, Yorkshire. Among his public buildings may be mentioned the Licensed Victuallers' Almshouses at Dore, the recent enlargement of the Cutlers' Hall, Sheffield, the Board Schools at Neepsend and Firs Hill, and last, but not least. the important and still incomplete enlargement of the Central Schools in Bow Street for the Sheffield School Board. This work he secured in limited competition. Mr. Mitchell-Withers was also successful in his domestic architecture. Early in his career he built for himself a handsome residence at Parkhead Ecclesall, and afterwards the mansions of his neighbours Mr. D. Davy and Mr. D. Hague, the latter being only recently completed. He enlarged the residence of Mr Taylor Whitehead of Burton Closes in Bakewell, now High Sheriff of Derbyshire, and at an earlier period built Thornbridge Hall, near Buxton. Some years ago the late Duke of Devonshire entrusted to him the re-roofing of the State apartments at Chatsworth House—a delicate operation, as the work had to be done without injuring the famous painted ceilings. Mr. Mitchell-Withers entirely succeeded in this important task. The recently completed Sheffield Union Banking Company's Branch Bank in Ecclesall Road, the Conservative Club, and the new buildings of Mr. John Walsh in High Street were also designed by him.

He filled the important post of Diocesan Surveyor for South Yorkshire. He was largely consulted on difficult points, and often appointed arbitrator, reliance being placed on his fairness and sound judgment. He also managed Lady Burgoyne's Shefteld estates.

Mr. Mitchell-Withers was an earnest student of the older architecture, giving his special attention to good local types. He read valuable Papers on the church of Rotherham in 1875, on Conisbrough Castle, on Selby Abbey Church, and others before the local archæological and other Societies. These Papers were well illustrated by carefullyprepared drawings made with his own hand, and from actual survey. He also wrote articles for local and other papers on architectural subjects, including the churches of Youlgreave and Bakewell; his services were frequently asked and given in writing reviews and criticism of books and exhibitions where artistic knowledge was required. Glancing back through past years to the now far off sixties, the writer calls to mind many an excursion and pleasant hours of enthusiastic work spent in measuring and sketching the churches at Rotherham, Chesterfield, Dronfield, Tideswell, and elsewhere, not to mention Haddon and Carbrook Halls, the old chapel at Padley Wood, and other remains of old days and men. Mitchell-Withers on those occasions was the life and soul of the party, and a dragon for work.

He was Treasurer to the Sheffield Society of Artists, of which he had for some years been a prominent member; and of his long and valuable services to the local School of Art the writer- who served with him on the Councilcannot speak adequately. He filled the office of President and Treasurer, was an assiduous attendant at the Council and Committee Meetings, and took the deepest interest in the work of the School. In all questions, whether architectural or artistic, his wide experience was placed at the service of his colleagues, and his valuable library and collection of prints and water-colours were always available at conversaziones and other gatherings of his brother architects. For many years he had been a member of the Sheffield Library and of the Council of the Literary and Philosophical Society, and would, had he lived, have been elected President. He was also Chairman of the Local Council for the Registration of Plumbers, and devoted much time to promoting this movement.

He leaves a widow, five sons, and two daughters. He had the pleasure of seeing his eldest son, Mr. John B. Mitchell-Withers, elected an Associate of the Royal Institute, after passing its qualifying examination in 1890, being the first of the rising generation of Sheffield architects to fall in with the Institute requirements on this important point.

THE PRIZE DRAWINGS AT DUNDEE.

The "Lady Contributor" of Art Jottings in the Dundee Evening Telegraph, referring to the exhibition of the Royal Institute Prize Drawings on the 5th inst. at a Conversazione of the Dundee Institute of Architecture, says:-"I was much interested in the prize drawings "exhibited, lent by the R.I.B.A., and especially in the two "sheets shown by women students. The profession of " architect is one on which women have been casting "covetous eyes for some time; and though there are "duties involved which would be beyond the powers of " the average woman, yet there is no reason why girls who "draw well and go through the requisite course of study "should not find employment as draughtswomen. The "drawings by the Misses Charles showed a high level of " technical skill, and were cordially admired on their own "merits by the gentlemen present. It will not be for-gotten that the Woman's Buildings of the World's Fair "were designed by a woman architect. They do these "things better in America, although it is but fair to state, as an architect reminded me last night, with a twinkle

"in his eye, that the said buildings were about the worst

" constructed that could be imagined!"

PARLIAMENTARY.

The London Streets and Buildings Bill.

In the House of Commons on the 5th inst., Mr. Howell (Member for North-East Bethnal Green) moved that the order for the committal of this Bill should be discharged, and that the Bill should be committed to a Select Committee of eleven members, six to be nominated by the House and five by the Committee of Selection. He complained of the comparative secrecy with which Bills of this kind were dealt with, and stated that had he not taken the present course of moving to refer it to a large Committee very few of those affected by the Bill would have known anything of its existence. He wished to make known a fact that might surprise the House. The Bill was read a second time on the 22nd March, the day before Good Friday. The vestry of Chelsea had made application for a copy of the Bill, and were told that it was under revision, and that a copy would not serve their purpose at that particular time. A second application having been made, the Clerk of the London County Council, in a reply dated on the very day on which the second reading was taken, stated that the revision of the Bill was not sufficiently advanced to enable a copy to be furnished to the vestry. That he held to be a very serious statement. The importance of the measure might be estimated by the fact that it repealed ten public Acts. It was a consolidation Bill of a very peculiar character. That being so, and looking to its wide-reaching nature, he wished to see it referred to a large Committee.

The Attorney-General, in supporting the motion, stated that he had had communications from different parts of the metropolis pointing out the objections urged by his hon. friend, and he hoped the House would see fit to treat it in

the manner proposed.

Mr. Cohen (Member for East Islington), while sympathising with the general objections against attempts to alter public law by means of private Bills, submitted that in this case it was not only right but almost the duty of the County Council to proceed in this matter by private Bill. The Bill would not have had the remotest chance of being passed if left to struggle in the crowd of public measures. However, so far from resisting, he welcomed the motion of his hon. friend.

Mr. Stuart (Member for Hoxton) defended the action of the London County Council in their procedure in this matter, it being a difficult question to decide whether this ought to be a public or a private Bill. In making the present motion his hon. friend had only anticipated a step which the Council themselves were prepared to take.

The motion was agreed to, and it was

Ordered that the Order for Committal be read and dis-

charged.

Ordered that the Bill be committed to a Select Committee of eleven Members, six to be nominated by the House and five by the Committee of Selection.

Ordered that all petitions against the Bill presented six clear days before the meeting of the Committee be referred to the Committee; and that such of the petitioners as pray to be heard by themselves, their counsel, agents, or witnesses, be heard on their petitions against the Bill, if they think fit, and counsel heard in support of the Bill against such petitioners.

Ordered that the Committee have power to send for persons, papers, and records.

Ordered that seven be the quorum.

The petitions against the Bill praying to be heard by counsel which have been lodged by the Institute and the Architectural Association (London) form two of the fortytwo already presented against the Bill. The other petitioners are the Commissioners of Sewers of the City of London, the London and North-Western Railway Company, the Honourable Society of the Middle Temple, the Great Eastern Railway Company, the Poplar District Board of Works, the London and India Docks Joint Committee, the London Brighton and South Coast Railway Company, the Vestry of St. Marylebone, the Corporation of London, the Honourable Society of the Inner Temple, the Honourable Society of Lincoln's Inn, the Great Northern Railway Company, the London Tilbury and Southend Railway Company, the Gas Light and Coke Company, Wickens, Pease & Co., the District Surveyors' Association (London), the Duke of Westminster, the Surrey Commercial Dock Company, the Incorporated Law Society, the Great Western Railway Company, the Metropolitan District Railway Company, the North London Railway Company, the South-Eastern Railway Company, the Honourable Society of Gray's Inn, the South Metropolitan Gas Company, the Wandsworth and Putney Gas Light and Coke Company, the Commercial Gas Company, the Metropolitan Railway Company, the Midland Railway Company, the Surveyors' Institution, the Owners Lessees and Occupiers of Lands and Buildings in London, the Ecclesiastical Commissioners for England, the Crystal Palace District Gas Company, the London Chamber of Commerce and others, the London and South-Western Railway Company, the Strand District Board of Works, the London Chatham and Dover Railway Company, the Institute of Builders, the Associated Landowners and others, and the School Board for London.

The Sign-Painters' Protest.

Clause 176 of the Bill has spread consternation among members of "the ancient craft of sign-painting," who have addressed a circular letter to the Institute, praying its aid to prevent the obnoxious clause passing into law. The clause provides that "boards, frames, plates, or other "like structures," attached to walls of buildings for advertising purposes, "shall be constructed of fire-resisting "materials throughout." The only alternative, the letter states, to wooden mural signs is the general adoption of enamelled iron ones, whereon the lettering is done by a mechanical process. "Thus, while an ancient craft and "fairly healthy industry is to be paralysed by the dictum of a few unpractical persons, a stimulant, if not an "absolute monopoly, is to be given to a trade recently "scheduled by the Home Office as exceptionally unhealthy "and dangerous."

LEGAL.

District Surveyor's Requisition—Non-compliance.

WALLEN v. LISTER.

Pending opportunity of giving a fuller report, the decision in this case, which was delivered by Mr. Justice Hawkins on the 20th January last, was briefly noted on page 244 of the Journal. Its great importance to builders and the clear exposition of the law contained therein sufficiently warrant the verbatim report given below. The case, it will be remembered, came originally before a Metropolitan Police Magistrate, who dismissed certain summonses taken out by Mr. Wallen, district surveyor for the district of West St. Pancras, against Mr. Lister, a builder, but stated a case for the opinion of the Court. The building in question was situate on the west side of a yard entered from No. 11, Ferdinand Street, St. Pancras, and on the east side of a building at the rear of that house, both buildings being within the same district. The facts are fully stated in the judgment.

Mr. Avory and Mr. Daldy appeared for the appellant;

and Mr. Marshall Hall for the respondent. The following written judgment was delivered by Mr. Justice Hawkins:-

This appeal was argued before my brother Lawranee and myself on the 18th of December last. The questions involved are whether a magistrate has jurisdiction under section 46 of the Metropolitan Building Act, 1855, to make an order upon a builder who has been, but who before the making of such order has ceased to be, engaged in erecting a building, to comply with a requisition duly made by a district surveyor within section 45; and whether, if such order be inadvertently made, the magistrate may, in the exercise of his discretion, refuse to impose the penalties mentioned in section 47 for non-compliance with it.

In September 1892 the respondent, a builder, was engaged in erecting a building in the parish of St. Pancras, within the district of which the appellant was, and is, district surveyor. On the 15th September, whilst the respondent was so engaged, the appellant duly gave him a notice in writing under section 45 requiring him within forty-eight hours to do eertain work therein specified. The respondent made default in complying with that requisition, whereupon the appellant on the 18th October, and whilst the respondent was still so engaged, made complaint to a magistrate of such non-compliance, and procured a summons to be issued requiring the respondent to appear before such magistrate on the 9th November. The hearing thereof was, however, adjourned until the 29th of that month, and on the last-mentioned day the magistrate made the order in question, directing the respondent within six weeks to comply with the requisition of the appellant. When this order was made the respondent had for some time ceased to be engaged in erecting the building, having completed and left it. This fact was not brought to the attention of the magistrate. Had it been so, he would have declined to make the order.

The order was not complied with, and thereupon on the 5th of April 1893 the appellant caused the respondent to be summoned (under section 47) for the recovery of eightysix penalties in respect of eighty-six days of the continuance of such non-compliance. This summons came on for hearing on the 19th April 1893 before the same magistrate who made the order. He refused to make the order asked for, and dismissed the summons, relying upon the authority of Smith v. Legg.* We think the magistrate was right in refusing to impose and enforce the penalties. Having carefully considered the object of the Legislature in giving a magistrate jurisdiction to make the order authorised by section 46, and the language of that and the preceding section, we are of opinion that, in fact, the order was made without jurisdiction. It is very certain that the district surveyor has no power to make any such requisition as is mentioned in section 45, unless it be made whilst the builder is actually engaged in erecting the building. It stands to reason that such limitation of time should be imposed, for it is only during such time that the builder ean legally comply with the requirements of the district surveyor, unless by the assent of the owner who employs him. After his employment as builder has eeased, and he has left the premises, he could only reenter by the permission of the owner. To re-enter without such permission would be a trespass, which could not be justified by a plea that such re-entry was made in order to fulfil the requirements of the district surveyor's notice. If the Legislature had intended to give power to the builder to enter against the will of the owner, surely it would have conferred such power in express language.

Before proceeding to discuss the provisions of section 46, we desire to point attention to the fact that, although no doubt the requisition mentioned in section 45 and noncompliance with it are essential to form the basis of an application to the magistrate under section 46, there is no exist when his order is made.

No limit of time would be reasonable if during all that time compliance with his order would be practically impossible. It is difficult to imagine that the Legislature intended to confer jurisdiction upon a magistrate to make an order which it was impossible for the builder to comply with. The object of the Legislature was to enable the magistrate to enforce the rectification of that which he had adjudged to have been done, or omitted, contrary to the provisions of the Building Aet; but this object could not be attained by making an order upon a builder whose power to obey it had ceased before it was made. The 47th section, authorising the infliction of a penalty of £20 during every day of the continuance of the non-compliance, could only have been intended to apply to non-compliance by a person who had the power to obey, but had intentionally ignored the order. The case of Smith v. Legg was relied on for the respondent as an authority in point in his favour. For the appellant it was said, and truly said, that there was this difference between that ease and the present namely, that in Smith v. Legg the builder had completed his building before the district surveyor served his fortyeight hours' requisition under section 45, whereas in this case both the forty-eight hours' requisition and the summons to appear before the magistrate with a view to obtaining his order were served whilst the builder was actually engaged. Although this distinction between the facts of the two cases undoubtedly exists, we are nevertheless of opinion that the eonsiderations upon which Smith v. Legg was determined apply equally to the ease before us. It is true that the 46th section in words refers to "the "builder to whom such notice is given" as the person who may be summoned; but we think the words "engaged "in erecting such building" in the 45th section govern and must be read after the word "builder" wherever that word is used in the 46th section. See the interpretation clause - section 3 of the Building Act.

We think, for the reasons we have given, that the order of the 29th of November was in fact made without jurisdiction, and the magistrate was right in refusing to enforce it. Assuming, however, for the sake of argument, that there was jurisdiction to make the order, we think the magistrate, when he had it brought to his attention that it was made at a time when the builder had ceased to have power to obey it, acted within his jurisdiction and exercised a sound discretion in refusing to inflict penalties upon the builder, who neither wilfully nor negligently omitted to do that which he was commanded to do by such order. . . . We cannot help feeling that if, by what has occurred, the district surveyor feels in a position of embarrassment this is a great deal due to his own laches. For if, instead of delaying the issue of his summons till the 18th October, he had issued and served it immediately after the expiration of his forty-eight hours' notice under section 45, he would in all probability have obtained a magistrate's order, and the time allowed for compliance would have expired before the respondent ceased to be employed in his building operations. This, however, has not influenced us in forming the opinion we

have expressed. Appeal dismissed.

binding obligation in the requisition itself. It cannot be enforced by any process, and no penalty is incurred by disobedience to it. The order of a magistrate under section 46 is the first and only order which is imperative upon the builder, and such order is not a mandate to obey the district surveyor's requisition, but is an independent order in itself, requiring judicial consideration before it is made, first as to the legality of the district surveyor's requisition, and next as to the time within which the things ordered to be done by him shall be done. In fixing that time, of course, he must have regard to that which is reasonable under the circumstances of the case as they

^{*} R.I.B.A. Journal, Vol. IX. N.S., pp. 193, 228.



FURNITURE: DOMESTIC AND ECCLESIASTICAL. By John Belcher [F.], Mr. C. F. A. Voysey, Mr. Aldam Heaton, and W. D. Caröe, M.A. Cantab. [F.]

Read at the General Meeting, Monday, 23rd April 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

INTRODUCTORY.

MR. PRESIDENT AND GENTLEMEN,-

MONG subjects which should occupy the attention of the architect, there are few which concern him more closely than the subject which the Art Committee have selected for our consideration this evening. The proverb that "fine feathers make fine birds" may be applied to buildings. And if "dress" is any indication of the position and character of the individual, then "Furniture" has an important function to fulfil in relation to buildings, and the architect should be concerned in the clothing of his offspring.

Furniture may be said, primarily, to have had an independent existence, and was probably first designed for a migratory condition. Great chests which contained all the possessions of their owners were carried about from place to place, and formed the table, seat, or wardrobe of the dwellers in tents. The chest was the progenitor of the press, the cabinet, the dresser or sideboard, with the addition of legs, which, in contradistinction to the animal creation, only became necessary when they ceased to travel. With the fixed and permanent abode came the interlacing of the furniture with the building, such adjuncts being recognised under the term "fittings." They are the connecting link between the building and its furniture, whether of church or mansion.

It may be urged that with the prevalence of short leases, and the precarious holdings of modern dwellings, furniture, which is important "personal estate," must naturally be considered apart from its position or surroundings. It is this condition of things which has suggested those modern anomalies known as "over-mantels," "over-doors," and such like accessories—a kind of "applied furniture" intended to supply an architectural deficiency or a so-called "long-felt want"—and contrived for the display of spurious heirlooms or demoralising caricatures of art objects.

For transitory purposes there can be no doubt that furniture should be selected for general utility; it should be simple and serviceable, and of average size, and such as can be readily adapted to existing conditions. In the ideal state, however, when an Englishman's castle is really his own, we may be reminded that furniture has a place among the arts, and that, with the arts, its highest and best existence is in conjunction with architecture. When the structure is properly blended with its contents, when screens and panellings, cupboards, window-seats, chimney-pieces, and things half room and half furniture are side by side, then the movable

objects should bear some relation to such fittings; it is in the midst of these homogeneous surroundings that repose and comfort may be secured.

For this pleasant consummation the architect should direct and influence the craftsman in the important matter of scale in the movable furniture intended for general use in his building; for it is of the utmost importance that it should be in due proportion to the room it is to occupy. True, there are certain things fixed by the requirements of the human body, but there is a proportion in the relation of spaces in the room to its furniture which must be secured. The apparent size of a room can be reduced and spoilt by some disproportioned cabinet or bookcase, which may itself be out of scale with other furniture in the same room.

The selection of disproportionate furniture is one of the commonest errors into which the inexperienced fall who purchase ready-made furniture exhibited in lofty show-rooms or warehouses. As with a ready-made suit of clothes, the result is decidedly "sloppy," however fine the "figure" it covers. With furniture, as with clothes, there may be certain articles which may be purchased ready-made, but the larger articles should be specially designed, and it will be found that the additional cost is only in proportion to the comfort gained.

The question of cost invariably meets us sooner or later, generally sooner; but in the matter of furniture, like many another, it is better to have a little which is good and serviceable, than to crowd the room with what may be termed "display furniture." The collection of articles, or "museum of incongruous accumulation," which too frequently crowds the modern drawing-room is apt to be unpleasantly aggressive. In an old mansion, provision may rightly be made from time to time for the display of heirlooms, or choice and valuable historical treasures which have been handed down from generation to generation; but the process of first purchasing fussy cabinets with numerous shelves, brackets, and bevelled glass cupboards, and subsequently filling them with articles bought specially to occupy the voids, is pretentious and foolish.

In an introductory Paper my remarks need only be few and general in character. I must leave to the specialist the task of describing the qualities, methods, and limitations of his art; but there are, however, a few observations which, as an architect, I may be permitted to contribute. The archæological side of the subject is valuable in studying methods and examining results. It will be found that some of the best work was done between 1600 and 1660. Italy and the Netherlands teach us much during the Renaissance; after which French influence makes itself apparent. Again, in the latter half of the eighteenth century the familiar names of Chippendale, Heppelwhite, and Sheraton meet us, and their works are so familiar, and so modern in fashion, that their special characteristics need not be touched upon. I have always admired the clever way in which the maximum of strength with the minimum of material secure apparent lightness and beauty of form. A careful study of the sections of the several parts of their chairs, tables, &c., will amply repay the student.

There are in all periods certain recognised formulas which characterise good work. Mouldings, for instance, must be small and delicate, the carving soft and in low relief, with no high projections in parts or coarse bulbous forms. Indeed, in cabinet decoration, where marquetry or intarsia, inlays of ivory, mother-of-pearl, and other materials are so appropriately and extensively employed, there is much that is suggestive of the right lines of development. Tone, colour, and variety of surface are all obtained by such means. In old work the inlays were worked in the solid wood, which was cut away to the required pattern; but the modern method is to insert the pattern into veneer prepared to receive it; and it is this increased facility which probably has given rise to its abuse as vulgarity, loudness of colour, and violent contrasts followed in its wake.

In all good work both form and construction are the result of long tradition, and one of

the great charms is directness and evident fitness of purpose. A friend of mine has remarked, with some truth, that the kitchen deal table is a survival and example of unvulgarised furniture, and he holds up for admiration the frank simplicity of the fitting up of St. Jerome's study, as seen in the picture by Giovanni Bellini in the National Gallery. There is much which is suggestive in old pictures; among other examples may be noted the admirable furniture which Carpaccio has placed in the bedroom of the sleeping St. Ursula.

Undoubtedly furniture is, or should be, decorative; but it is an abuse of its purpose when employed as a means of decoration. When it was originally found necessary to cover the internal walls of a mansion, and shut out openings, a heavy, pliable material was used, and this furnished at once a decoration which we recognise as tapestry. This is a legitimate development, and Mr. Heaton will tell us how hangings generally can be ornamental as well as useful. The pleasant folds and soft rounded forms in which they hang contrast well with the sterner architectural lines of the room, to the advantage of each. Drapery should not be regarded as a provision for shutting out objectionable architectural features from view, but should have its proper place assigned to it by the architect, and be the means in his hand for easing and softening the uses of a building to human requirements.

In addition to furniture suitable for ordinary occasions, there are many and appropriate opportunities for the use of highly-decorated furniture, particularly in ecclesiastical work, and where the arts of the painter and sculptor can be pressed into service. In reredos, screen, and stalls, each artist can have a part, and all combine to beautify objects devoted to sacred purposes. Again, the treatment of an organ-case affords an excellent opportunity to the artist. I have on a former occasion referred to what I consider the right treatment of this large piece of furniture. There has been no general advance in the design of ecclesiastical furniture, but a strong tendency to slavishly copy mediæval examples. I think they should rather be regarded in the light of finger-posts to direct us in the right way, so that everything we touch may be, if possible, a living work, fresh and interesting, while evincing relationship to an ancient lineage. The whole subject of Ecclesiastical Furniture is so prolific and important that I am glad we shall have the benefit of some remarks from Mr. Caröe upon this particular branch.

The notable modern examples of decorated domestic furniture I must refrain from particularising; but we may take note that in all such examples, as in all successful work, there has been no hurry—undue haste is fatal to good work. The skilled artist may be quick in manipulation, but he cannot dispense with time for thought and the expenditure of brain-power if his work is to live. Mere smoothness or high polish of surface will not make up for the absence of that thought which should have been bestowed beneath it. In this hurrying and impetuous age the artist and craftsman must not be caught in the whirl, but must be content to produce slowly and deliberately, leaving to Tottenham Court Road and machinery the business of producing work in every known and unknown style as rapidly as it will pall or fashion change.

John Belcher.

DOMESTIC.

MR. PRESIDENT AND GENTLEMEN,-

HE subject of "Furniture" is a most depressing one; there exists so little artistic reasoning. Rich and poor alike are content to order their furniture from the upholsterer, as they do their funerals from the undertaker. The result is very similar, the bill being the most lasting impression made on their minds. What they have paid is the measure of their greatness.

The intemperate indulgence in display and elaboration, in gilding and veneer, and the feverish thirst for artificial excitement are all part and parcel of our proverbial restlessness. Too much luxury is death to the artistic soul. So there is no desire for simplicity, repose, harmony, dignity, or breadth. The result of all this is that the poor architect, who labours to attain these virtues in his interiors, is exposed to the insult and indignity of having all his work spoiled by the upholsterer. The client never dreams that his architect's province is beyond drain-pipes and drawings, and has often himself received an excellent education in decoration and furnishing from periodicals and handbooks. Therefore he feels any interference on the architect's part, in the choice of furniture and fittings, is rather an impertinence. For this state of things, in a great measure, we have to thank the spirit of revivalism.

Mankind is still very much in the monkey stage. We mock and mimic old and new work, good and bad. Styles, fashion, eccentricity, are immortalised—admired one season, detested another. The public taste is wafted to and fro by the breezes of reactionary thought. From one extreme to another we rock, without any sign of regaining an equilibrium. Suppose some lunatic, in an age of sickly elaboration, starts the notion of leaving out all ornament. Immediately the idea is caught up by many of the monkey tribe; and the amusement, if it be made a commercial success, lasts for a while, until so many are playing the same game that it becomes time for another reaction, and so on.

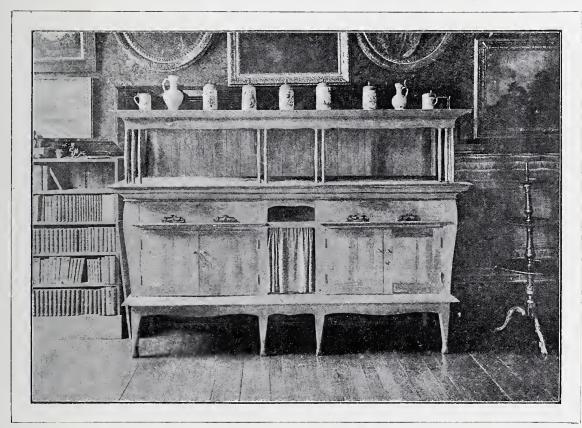
Precedent, the sanctifying weight of a great name, museums and libraries, sketch-books and foreign travel, all these things, good in themselves when wisely used, are now being abused and misused to a very great extent. The god of Commercialism is offering rewards all round to the best mimics. I must say here that this very condition, this imitative power which I deplore, has produced most exquisite executional skill, and, as a preparatory stage of man's existence, no doubt is as it should be. But, it is clear, Art must be built up on a firmer basis. We must ever depend more and more on the human faculties of reason, conscience, and love. Let us apply these faculties to all that is done in the name of Art. Let every man judge furniture from the point of view of reason. Let us ask, Is it fit and thoroughly suited to the purpose for which it is intended? Is it as strong as, and no stronger than, it should be? And from the point of view of conscience ask, Is it true—is it all it pretends to be? Does it express qualities and feelings consistent with its owner and its surroundings? Is it faithful work? And for love's sake ask, Is it proportioned, coloured, and disposed as the natural beauties in creation? Are its lines and masses graceful and pleasing? Do any of its parts quarrel? Does it express sobriety, restraint, and purity? From the emotional point of view there are countless questions to ask: What are the associations which attract or repel me from this thing? Surely association is often the strongest force in governing the taste, because reason and conscience are not cultivated and equally applied.

Until works of art are judged on their own merits, examined and tested as to their intrinsic worth, taste will be fickle, and subject to endless vacillation and corruption. The cultivation of individual judgment and taste, apart from authority, will inevitably lead to a more genuine appreciation of the past. Instead of accepting any period of great work on the strength of its name, we shall be able to sift the good from the bad, and appreciate the difference between reasoning admiration and blind flattery. Happily, there are many who, though not artistically trained, have the honesty of soul to revolt from the tawdry pretentiousness of the bulk of modern furniture, and, in consequence, have encouraged the reproduction of some of the old simple furniture; which furniture, I venture to say, was originally the direct outcome of human intelligence brought to bear on human needs, and not born of any spirit of revivalism.

It is clear, then, that we must have a logical basis for our design in furniture; as in all else, laws must be discovered and obeyed. Then the best work will result from well-understood

requirements, provided always our motives are noble and not degraded by exhibitions. How can Art survive the effort to create an impression, to gain public applause, to cut out one's neighbour by some flaring colour-scheme or eccentric form? Indeed, for exhibition work, the questions to be considered by the designer are of a totally different order from those before mentioned.

I fear I am expected to say something much more practical about the design of furniture. I wish I could say something helpful; but I am myself groping in the dark, struggling to find out the true laws which govern fitness and beauty. We must all be impressed by the utter want of harmony between the furniture and the architecture of to-day, except perhaps in



SIDEBOARD IN AMERICAN WALNUT, MADE FOR THE LADY LOVELACE. (From a photograph by H. J. L. J. Massé.)

jerry-built villas—there is a kind of harmony there. If artistic feeling always accompanied the architect's knowledge of materials and construction, he would in time, no doubt, be recognised as a fit person to design furniture. Then some sort of harmony might once more be seen. But, since the furniture has been taken out of the architect's hands and put into the upholsterer's, the tendency has been to make the architecture to fit the furniture.

Still, there is hope; things must change, and are changing. There is a widespread feeling that greater simplicity would lead to truer richness. We must restrain the carver, the inlayer, the polisher, and the metal-worker, and be careful that the thought in their design is as good as its execution. Also encourage them to concentrate ornament, and cease to use it as a means of hiding cheap construction and bad workmanship and material. It is one of the grand virtues of simplicity that, unless the design and workmanship are good, the faults are more

readily felt. Elaboration covers a multitude of sins, and, I might add, virtues also; for the habit of inlaying in beautifully-figured wood, like moulding and carving figured marble, is a sacrilege not to be tolerated. The bulk of modern inlay is so deadly dull in design that one resents the destruction of the natural beauty of the wood into which it is put. Our carvers, too, are dull as ditch-water. They have no joyful tales to tell, no sign of belief in anything but revivalism. For my own part I would rather see one healthy thought badly cut than all the ornament of Italy skilfully imitated by a human ape. Of the metal-work for furniture, saving the work of a few worthy men, to be numbered on the fingers of one hand, there is nothing done in this line that is not a disgrace. Depraved coarseness, brutality, and sickly elaboration characterise the metal-work on nearly all modern furniture.

It is true that the less Art we intrude into these matters the more regularly will work the capitalist's treadmill; and men will not admit that the use of their own brains is better for them than making money out of other people's; so mechanical reproduction will go on. There will always be a large number of persons, with tastes governed by association, ready to foster and encourage the present condition of things. To such persons, doubtless, these principles must appear stupid and tiresome. But there are others who will recognise the great importance of cultivating the creative faculty, and who will be prepared to endure countless blunders, and much ugliness, when designers begin to use their own faculties more, and lean less on tradition. Certain it will be that, however gruesome their work be, if it is only conscientious it will be interesting and full of life and promise—not, as now, the funeral procession of dead styles.

C. F. A. Voysey.

THE THEORY OF HANGINGS.

MR. PRESIDENT AND GENTLEMEN,-

E get the word "hangings," I imagine, from the mediæval house, where the tapestry hung loose from rings and hooks. The present age has curiously transferred the word to the process of pasting paper upon the wall, where it does not hang. The word "drapery" probably expresses what we are going to talk about more clearly to many minds: certainly we buy the materials from the draper.

I suppose the use of hangings or drapery may be broadly divided under two heads:—

1. An arrangement for obtaining warmth, or the appearance of warmth. Our mental instincts upon such a subject are quite as strong as our bodily sensations; and if we see a curtain put to a window, we feel that it goes so far towards protecting us from draughts. This must have been especially the case in the old houses hung with tapestry, where even the door was frequently entirely covered. For the most part we distinguish the places we live in by draping them, and we produce thereby sensations of comfort and repose.

2. To break and veil the angular and hard lines of architecture, so increasing the æsthetic effect of an interior, and obtaining, at one and the same time, advantages both of form and colour.

Considering the time at my disposal, I think I must exclude anything like a full consideration of tapestry. Manifestly it is only for a privileged class, and it will be more useful to discuss our subject broadly, from the average citizen's point of view. I think we may also clear the ground by dismissing muslins, plain or figured, Swiss lenos, and other such fabrics, as not drapery at all in the true sense, but a mere useless and doubtfully ornamental tag of no moment whatever.

Now fabrics, to conform to the two branches of our theory, must (1) be fairly dense in texture, and in their nature suggestive of warmth and protection, and (2) they must be firm,

not flaceid, and must go into good folds—the character of the folds being a matter of primary importance. The competition of the day, with its frantic haste to produce cheap and novel fabrics for the million, leads to the excessive use of cotton, on account of its cheapness. A cotton fabric does not well conform to the necessities of either branch of our theory; cotton deteriorates most fabrics utterly, and makes one suspicious of the rest. It will be well, therefore, to start at the fountain head, and consider the fibres from which our yarns are made.

- I. Wool is, of course, the most important. But what ordinarily comes under that name must be broadly divided into two classes:—
- (a) Goats' hair, camels' hair, and the long wools of Iceland, Russia, England north of the Trent, and, generally, from the colder parts of Europe. This has much the nature of our own hair, is rather straight, and is kept straight during all the manufacturing processes. We then call it "worsted"—and it is interesting to remember that the little town of Worsted in Norfolk obtained its name through the immigrant Flemish spinners and weavers who used these very wools. Goats' hair is quite the most beautiful of all these, and ought really to be in a category to itself. The finest is that of the Syrian goat, which Mr. Holman Hunt has delineated in "The Scapegoat." It is known in trade as "Mohair."
- (b) Southdown, Saxony, Australian, and other wools from warm climates, which are comparatively short, fine in fibre, and full of wave, and are, for the most part, allowed to wriggle up and felt together, and are spun so; and are then called "woollen."

The "worsted" process produces firmness, crispness, springiness. The "woollen" process produces softness, sense of warmth, flannelliness.

- II. Silk.—This has, of itself, so little substance, and is so flaccid and springless that, used alone, it must either make a confessedly light and thin fabric, or an exceedingly costly one; but its lustre and texture are so beautiful that it has for long been used as the face of a fabric only, the backing being formed of long-haired wool or linen; and so used there is nothing against it but its cost. Silk, however, must be vigorously divided into two classes:—
- (a) "Net" silk; being the very threads produced by the silkworm, wound off the cocoons by hand, and afterwards manipulated under the term "thrown." It may give some idea of the fineness of this filament when I tell you that a length of it from London to Edinburgh would go by letterpost for 2d.
- (b) "Spun" silk; threads artificially spun by machinery from imperfect cocoons, where the worm has either died inside, or has eaten its way out. In neither case can the silkworm's thread be wound, and the whole mass—the dead body of the worm included—must be softened and boiled in water, and then pulled out anyhow into a spun thread, from which is produced filoselle, plush, low quality velvet, and other third-rate fabrics. Roughly speaking, such thread is not worth per pound weight more than a fourth part of the silkworm's thread.
- III. Cotton is treated like long wool, the fibres being kept straight; but from its very nature it is flaccid and lustreless, and though it has certain advantageous qualities, it must always, as a fabric for hangings, hold an exceedingly inferior position. Its chief utility is that of forming a cheap and useful warp (the length-way threads of a fabric), and when kept entirely buried, or at most forming only the backing, it may make good work. Unfortunately, its cheapness tempts the competing manufacturer to use it for weft also (the cross-way threads), when its flaccidity and tendency to crumple and fade quickly come in to ruin the fabric entirely—ruin which has, in my own experience, overwhelmed many beautiful fabrics altogether.
- IV. Linen and Jute.—From their hard stiffness and entire want of spring, and inevitable tendency to crumple, these hold the same inferior position, though jute has been found competent to produce a fairly respectable velvet.

I must here give a word or two to weaving. Plain weaving of worsted yarns—that is to say, where the threads are over one and under one—produces, in fabrics heavy enough for hangings, stiffness and boardiness. Consequently, anything above the weight of a dress fabric must be twilled or satined or figured; but the more this is kept within proper bounds, the finer the fabric. The temptation of the Jacquard weaver is to gain effect by excessive use of figuring, regardless of the length of the threads which he leaves loose, so that many modern figured fabrics are mere rags. Woollen cloth, on the other hand—a most excellent fabric—is nearly always woven plain, but is afterwards put through a variety of processes which remove

increase its firmness—by felting.

Considerations of Utility.—Cotton, except in three or four shades, and these dyed in a hard and positive way—such as Turkey red and indigo blue-fades much more quickly than wool or silk. Wool receives dye far better, and though many soft tertiary tints fade, the fibre of wool re-dyes advantageously, and any dyeing of wool holds its colour much longer than cotton. Printed surfaces are usually less open to fading from the more genuine manner of proceeding, the mordant required by the printer being a source of security which the dyer mostly escapes. Serges and other soft flannelly fabrics gather dirt much more quickly, and get to look shabby much sooner, than either worsted or wool. I should think jute more likely to be a useful fibre for the purpose we are considering than cotton; but its use for fabrics of good quality is so recent that we scarcely know its capabilities. Most people will only think of it as the material of packing canvas.

its stiffness, and, paradoxical as it may seem,

Decorative Considerations.—I should place any fabric high up in the list of what is desirable if it goes into good folds, this being a consideration of the first importance; colour



NO. 1. COTTON.*

A fine twill, such as is used as a groundwork for embroidery, and about the weight of a good bed-sheet. The poor folds it has assumed would inevitably become much smaller and leaner in a few months. Value, 1½d. per square foot.

and pictorial effect, though valuable, standing distinctly second. Here, of course, I cannot omit to say that good Mediæval tapestry must stand immeasurably above all other fabrics; but its costliness alone, not to mention our apparent inability to reproduce it, places it quite out of the reach of all but the very rich. Embroidery, even in crewel, stands much in the same category.

Tapestry and embroidery being beyond our reach, damask weaving, of course, comes to the rescue for the multitude; but the tendency of the day to desire cheap showiness exposes the damask weaver to temptations which are beyond the power of human nature to resist, and

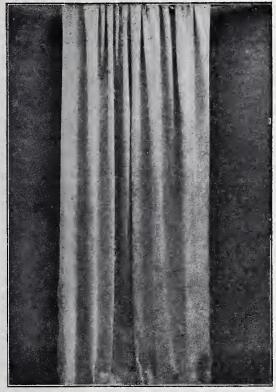
and all new material, simply thrown over a rod and allowed to assume such folds as the character of the fibre employed prescribed; a good medium quality in each case.—A. H.

^{*} The illustrations are reduced from photographs of cotton twill, woollen cloth, and goats'-hair "satin," all three of the natural colour, all homogeneous as to warp and weft.

the larger proportion of such fabrics now made at a price to be within the reach of all, are rendered worthless by having only atoms of silk and wool, swamped in a sea of cotton.

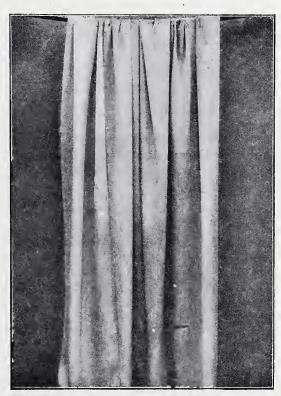
Velvet, of course, must take a high place. When one thinks of the velvets of mediæval Genoa or Venice, one is lost in admiration. When one touches some stuff now fashionable in the city, called plushette, one is filled with disgust; still, we cannot help admitting that a French or German worsted velvet, containing a fair proportion of goats' hair, is really a most excellent and most useful, if not a very beautiful, fabric.

As to silk plush, one feels that small quantities of it, used with care and judgment, might



NO. 2. WOOLLEN CLOTH.*

The right weight for hangings, without being lined. This has been put through all the processes usual in the case of "finished" Yorkshire cloth, involving a great deal of felting-up of the fibres. The folds would alter very little, possibly becoming only a trifle flatter, in the course of years. Value, 5d. per square foot.



NO. 3. MOHAIR SATIN.*

Made from Syrian goats' hair, a fabric from Bradford. About heavy enough for curtains without lining. The folds here would remain unaltered for a lifetime, and have a brilliant lustre equally permanent. Value, 4.2. per square foot.

be enjoyable; but that the wholesale use of it in all violent colours, during the last few years, has made it nothing but an eyesore.

Chintzes.—The great facility with which patterns can be printed on cotton and the ease with which a showy result can be obtained at a low price have resulted in chintzes being relegated to the bedroom, at sixpence a yard and upwards, usually on a transparent rag; but there is no reason whatever why chintz printing should not be on close and weighty worsted fabrics (it is done to a very small extent), and then the result would rank in the same list with worsted damasks. Here, again, the modern demand for low-priced and showy stuff, even if it be known to be rubbish, has swept a good fabric out of the field. I have before me an old English worsted chintz of about ninety years ago, and by its side a specimen of the stuff sold in fashionable Regent Street shops. The contrast is ludicrous. It is, however, well to remember that the

partly hand-painted chintzes of Lahore of a century ago, though on rather thin cotton, must have been very beautiful; and even now we can occasionally obtain "palampores" from India on a coarse and characteristic native fabric, highly picturesque and full of beautiful colour.

Lining Fabrics, though manifestly of quite subsidiary importance, should follow in texture the rules I have laid down; all the more since a crisp and springy lining may make up for the want of these qualities in a soft silk fabric, which, owing to the importance of the occasion, it may be necessary now and again to accept. Yorkshire tammy and merino, made entirely from long wools, are excellent. French merino, generally used for this purpose, is as bad as possible.

To sum up, I have made here a list of the most available drapery materials, in order of merit and demerit, with patterns laid upon the table, marked with corresponding tickets:—

Good.

- 1. Old tapestry.
- 2. Twills, satins, etc., made from long wool, or from goats' hair.
- 3. Woollen cloth.
- 4. Silk, damask or plain, if firmly woven, or backed with cross-threads of worsted.
- 5. Oriental kelims and other tent coverings.
- 6. Velvet of mohair and wool,
- 7. Camlet and moreen; and woollen serge, if on a worsted warp.

Bad.

- 1. Cotton velvet, plain or printed.
- 2. Low "art" serge on a cotton warp.
- 3. Soft cotton fabrics generally, whether plain or printed.
- 4. Silk plush.

I cannot at this point avoid reference to the late Mr. II. H. Mott, who had a true instinct as to the character of fabrics, and of his own ingenuity produced many of great beauty and utility. I also wish to call your attention to the red cloth in which a portion of the French army is dressed—not the superior qualities made for the officers, but the ordinary habillement des troupes. Both in colour and fabric it seems to me most excellent.

Next to tapestry, I should almost be inclined to place certain Oriental fabrics, coming to this country under the general name of "kelim," and one from Khiva; these, however, cannot be procured in any quantity. Of course, we might copy them. What we do, unfortunately, is to write out to the East, ordering such things lower and lower in quality, until we arrive at a worthless gauze.

No doubt it will occur to many of you that I have not yet mentioned the important question of what we may call the "character" of a fabric; I mean in respect of a due exhibition of its construction. Any one who gives attention to the subject soon perceives that there is an element of deception and humbug about a fabric whose threads are invisible, where the whole construction is hidden beneath an artificially raised nap, as in cloth for our clothes, or all in a mere fuzzle like a felt. One feels the want of "character." But we have of late years demanded so much *fineness* about our fabrics that "character" has almost of necessity disappeared.

If the application of this view only goes to exclude flannels, felts, fine satins of cotton or silk, and other such featureless and characteriess fabrics, one would be glad to see it applied sweepingly all round; but we cannot afford to exclude woollen cloth, which, even for centuries past, has always had a more or less raised or dressed surface, and still, in spite of it, remains in many respects a most excellent fabric. I cannot stop to discuss this; but if we, as con-

sumers, set ourselves to demand cloth which, as they say in Leeds, "shows its bones," we shall get it. In Italy the usual covering of the horse who brings a light cart to market is a pale scarlet cloth, almost entirely without nap; and as facilities for communication improve, no doubt the Italians will bring it to our markets.

Use.—As to the fitting use of these fabrics, there is no need to recommend people to buy curtains; that is a foregone conclusion; but a word may be said respecting what is termed a "vallance," which in the hands of most people is simply a snare. No doubt two curtains to a window, when drawn back during the day, without any connecting feature, do often look excessively severe and bare; but good taste will, I think, always come to the rescue in making this otherwise useless and solely æsthetic feature, a vallance, moderate, both in style and dimensions. But curtains, however ornamental in adding to the pleasing form and colour of a room, too often all come at one end or one side; and if they are in contrast of colour to the wall, care should be taken to carry their form and colour to the other sides if possible. And here the portière, which has also the advantage of appearing to be a shield from draughts, comes in most usefully. A drapery to an overmantel might, I think, be equally comely and advantageous. But the housewife's horror of dust seems generally a complete bar to the use of wall draperies hanging in folds. When I have seen them so used, I think they have been always picturesque and comfortable-looking; and I am satisfied that such draperies do not gather dust in anything approaching the degree in which window-curtains do. Draughts come through window-sashes, bringing dust with them, but no draught comes through a wall. In rooms where bareness and a mechanical hardness have been a prominent feature, I have seen a dado of mohair velvet, about three feet high, used with most excellent result. This, hung loose by rings on studs, from a moulded dado-rail, and divided up into shortish lengths, answering to the breaks in the wall, is easy to remove and shake; and the housewife's watchfulness about dust has been cajoled for the moment.

But it is for the sanctuaries of churches that I would mainly plead for more hangings. The objection generally taken is that such work is not permanent, would be a care, would require replacement, &c., all which, it may be remarked, applies in even a still greater degree to altar-cloths and vestments, which are not thereby prohibited. The cloth sanctuary-hangings of St. Alban's Church, Holborn, have been above twenty years in use, and were still quite good when last I saw them; and if architects would specify such hangings with as much care, as to the quality and material to be employed, as they take with regard to the brick, stone, or slate of the fabric, there is no reason why they should not last fifty years, by which time even wooden benches, hot-water pipes, and lead lattices usually want a good overhauling.

A large proportion of the lower part of a sanctuary is nearly always hard, bare, and featureless; and not only will hangings bring in colour and softness and variety of form, which are, beyond anything, desirable, but they add a sense of the Presence Chamber being furnished and cared for, which I firmly believe no carving and painting at ten times the cost can ever do half so well.

ALDAM HEATON.

CHURCH FURNITURE.

Mr. President and Gentlemen,—

HE Art Committee had hoped to afford you the opportunity of listening to a Paper from an expert designer in this important branch of a very important Art, allied to Architecture; but we have been disappointed in that hope. It has thus fallen to me—rather than leave the subject altogether untouched—to suggest it to you as one worthy of discussion and attention, though I cannot pretend to offer you more than a few cursory ideas upon it.

Recipes for design are never to be encouraged—I, at least, could never claim to prescribe them. What follows will have a general rather than specific bearing; frankly negative, perhaps, rather than positive. The object, as I understand it, of the Papers read before these Meetings is to encourage free discussion and the consideration of our selected subjects from every point of view, not excluding those the most divergent. As artists in conclave for our mutual benefit, we shall surely never lose by being frank in laying bare our views before one another for criticism or endorsement; just as we, in the exercise of our livelihood, take down—with wondrous fearlessness sometimes—the hoardings from our constructed works, and expose these to our brethren and to the world at large.

The history of ancient ecclesiastical art in all its branches has become one of the commonplaces of an architect's acquirements, and I pass it by at once to consider the demand upon
us—a very right and proper demand—to be constructive workers and designers, to supply the
needs of the time, just as the ancient craftsmen did in their respective generations. Yet a
glance at the history of our own time, in this branch of art, is well worthy our earnest attention, because it can teach us more adequately than any other means how not to design or
procure Church Furniture. If we have brought ourselves to know thoroughly how not to do a
thing, we may, I think, be said to have advanced no small distance in the direction of doing it
aright, and at least of putting some of the right spirit into it. In all matters of constructive
design, no one questions that it is only given to a few fortunately endowed artists to succeed
perfectly; those, however, who have by patience and study acquired good taste and appreciations need never fail—even when the celestial fire is absent—in doing good, sound, and sometimes fine work. This is the consolation of most of us.

To our great happiness, the fierce battle of the styles has ceased to rage; the fighting spirits are assuaged—some of them have even transferred their allegiance. Far be it from me to venture, in these more than ever eclectic days, to assert a preference for any style. Indeed, I am firmly convinced that style is but a clothing, immaterial as compared with the essential idea the artist has to express. Yet it has been decreed for us, by powers beyond our control—no matter what we architects may wish or say—that, as regards new constructions, Victorian England is, in the main, to worship in buildings whose argot consists of pointed arches, some trefoils or quatrefoils, or, maybe, a galaxy of lacquered brasswork and an emphasis of stopped chamfers. Such are not unfrequently known as Gothic architecture.

Let me not for a moment be understood to breathe a word of calumny or reflection against the vast amount of very beautiful work which the Gothic revival has produced in the hands of its best exponents. Nor would I detract in the slightest degree from the singular and searching effect which the enthusiastic study of our glorious ancient examples—by those who have understood them—has had upon modern architectural design. Yet the architectural history of our own times informs us that apart from the few brilliant spirits whose natures have been fanned by the flame, who have produced work which will live for the future, just as the old work which we reverence lives now for us—despite these instances, the seed has, in most cases, fallen upon cold and barren ground. Our country, more especially in its cities, is weighted with numerous edifices, dedicated, indeed, to worship, but wholly unworthy of that service, which have ignorance and ill-taste written upon every line of them—the worst buildings, as a class, I believe, which have ever, in the world's history, been reared in the name of the first of the arts.

It is a curious fact, but sad matter for contemplation—philosophically explicable, no doubt—that bad design, attached to Gothic forms, invariably results in what only one word, and that a slang one, adequately expresses—"shoddy." In nothing is this more apparent than in designs for Church Furniture. Now I should say that those—be they men or men's

wives and daughters—who have the control of taste in our churches and chapels are as much or more to blame than the architects for the state of things we find too often in the equipment of these sanctuaries. Romanticism and the revival of Ecclesiology created a great demand, and, not unnaturally, in these commercial days a lucrative trade sprang up to meet it—that which calls itself the Ecclesiastical "Art "-furniture Manufacture. What a tradesman's Lorelei is this new adjective "Art"! How simple and convenient, whether to parson or donor or architect! Art altar rails at so much a foot, as per catalogue! Art pulpits in any style in stone or wood, ready for the choosing! Art stop-chamfers galore, so "Gothic" and seductive, so simple, and withal so cheap! Far and wide do we find these wares: the "Gothic" font, the "Gothic" credence, the "Gothic" lectern, the "Gothic" embroideries, saddest of all—speckled daisies, Maltese crosses, garish orphreys, fleur-de-lys powderings, and lilies growing in gigantic cross-stitch! Who has not beheld these, incipient on canvas, complete on pulpit, altar, floor, and window? Who has not often had occasion to grieve over the wasted devotion—wasted for lack of guidance—upon poor and ignorant designs, called "Ecclesiastical," and accepted by the faithful, through this trade passport?

I am not attaching blame to these manufacturers—far from it. It is the duty of every commercial man or company to make money out of legitimate business. I do call in question the good taste, as well as the wisdom, of those—be they architect or priest or minister—who accept these things without protest, and who recommend or use them habitually in the service of the sanctuary; emblems, no doubt, of the faith, but as works of devotional art, compared with the great works of our forefathers, to whom these very workers look, or pretend to look, for example, as a barrel-organ to the King of instruments.

Now I would in no sense wish to undervalue that spirit of devotion which has spent itself so laudably upon the furnishing of our places of worship. What we most desire is that it should have the right inspiration and direction; and who better to supply this influence than the master-designer of the whole edifice? Let it be borne in mind that articles of church furniture are not to be dealt with just as the ordinary furniture of our houses. In most instances they are essentials of the structure, often large enough—as in the cases of the organ, the reredos, or the screen—to do much to make or mar it. It seems to me, therefore, to be the bounden duty of every architect who undertakes the building of a new, or repairing of an old, church to master every detail of its requirements, and, so far as he can, to direct the choice of every accessory, even if he does not himself do all the designing; and when there are reasons why he does not make every design, he should see that a better artist than himself in any particular branch assists him in realising a complete conception. We have before us noble examples of success, where, as at Truro, every accessory, down to the altar plate, came from the same hand; and at Holy Trinity, Sloane Square, where another master mind guided his own work and that of other artists and craftsmen, and brought the whole result into harmony. It may be well for us to remember, in this connection, that there are already among us genuine craftsmen, whom we may with great advantage call to our aid in dealing with the arts called "applied," though the supervision should never pass from the architect himself.

It may be said—and I admit its full significance—that the architect often has no chance, and is not consulted in what are considered the minor matters of Furniture, as, for instance, hangings, brass-work, or embroideries; worst hap of all, when an organ is introduced, either into an old church without a competent designer being consulted, or into a new one with the same omission, as often occurs some time after its completion. But, whatever may be said about the old church, an architect need have no false modesty in endeavouring to secure unity of design throughout his new creation. Tact will help him much in gaining so good an end. This I say, though deprecating most strongly any undue forwardness or appearance

of pushing his art into a trade. Let us be confident of this, that if we make all our designs, for old or new, beautiful, and show ourselves efficient, both clergy and laity will, in the long run, give us due recognition; and in this sense the matter is largely in our own hands.

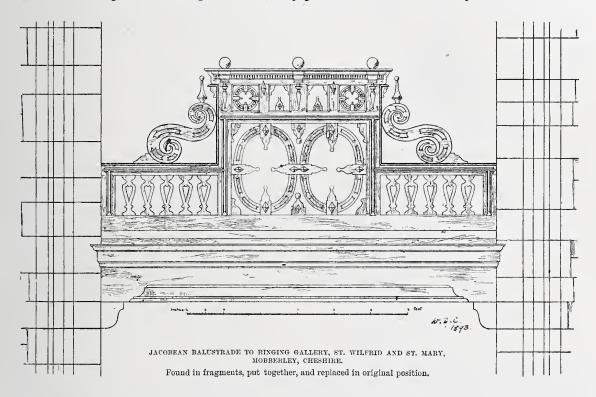
So far, I have dealt generally with the architect's position and obligations. A few words as to the object of his work. In dealing with woodwork, let me express my unqualified horror of that typical speciality of the pseudo-Gothic I have characterised—pitch pine, which meets us in all its varnished vulgarity in so many a "Gothic" railway-station, and ruined, because "restored," church (restored in its inverted comma sense, of course). If economy and the size of scantlings demand its use in roofs, then let us leave it untouched, unvarnished; for thus is its grossness of grain lost in a tender tone which a few years' exposure gives it. If the same considerations demand its use in seats and fittings, and the prejudices of the local doctor ery aloud for varnish, I can only offer my sympathy and the suggestion of stain. Considering the attempted slavish reproduction of old work which marked the early days of the Gothic revival, this prevalence of pitch pine, a wood entirely unknown to our forefathers, presents a curious problem. So wellnigh invariable has it become that I have even heard a high dignitary of the Church doubting the claim of a Gothic edifice, which discarded it, to the title. But finally, in this connection, I venture to commend my own rule. If pitch pine must be used, do not varnish it; if it must be varnished, stain it; but, best of all, have nothing to do with it.

Purity of style has been much written and spoken about, and I, for one, thoroughly believe in it as an education for the student who has yet to develop his individuality. There is no art in which scholarship has greater claims upon us than architecture. We have, indeed, the centuries to range over, and lessons to learn from each and all of them. Wherever his inspiration is gleaned the scholarly artist will produce a harmony; his insight will grasp the same harmonies in the apparently most divergent forms or styles. Nothing is more remarkable than the unity produced by the architecture of widely different dates when founded upon the same dominating principles. It is with this broader view before us that we are every day more and more convinced of the mistaken purism practised by many of the early revivalists and restorers, who too often narrowed their own new buildings to hardness and insipidity, and robbed the old ones entrusted to them of so much of their varied charm, all in search of a fancied period and a studied correctness.

Early English and Geometrical woodwork, as handed down to us, has never seemed to me much worth our study except from the archæological standpoint. Modern wood design in these styles must be confessed, in the majority of instances, to be a total failure. For appropriateness and fitness to the material, even Winchester stalls, fine as they are, must give way to those glorious examples of a later period, some of which are to be found in Langton's chantry and the Lady-chapel of the same cathedral. It is a special quality of this later work that, with all its richness and wealth of ornament, it is yet in perfect harmony with the severest mediæval surroundings, because the same inherent principles are to be discovered in both, widely differing though they may be in form and expression.

Nothing, to my mind, can be more harmonious or beautiful than much of the woodwork, whether of Germany, France, or England, in which one finds the Renascence detail grafted upon the Gothic idea, work agreeably characterised as "debased" by the revivalists. The stalls of Saint-Denis, of Cartmel, of King's College Cambridge, and of Henry VII.'s Chapel at Westminster; the woodwork of Leeds; innumerable German and Flemish examples—what a charm they possess! Sir Frederic Leighton has very justly animadverted upon the lack of restraint we find in so much of the later German woodwork. Yet he has acknowledged its exuberant and ever fresh fancy. It is well, in learning from it, to

note that even when over-extravagant and over-elaborate, as it so often is, it is always, essentially of wood—wooden; expressive of the capabilities, and recognising the limitations, of the material. As we pass on to the more definite work of the Renascence, the Cinque Cento and even later woodwork of the Italian churches has much to tell us that is in perfect harmony with Gothic forms as expressed in modern design. What a field we have for study in French and Flemish design of the sixteenth and seventeenth centuries! I am not advocating a pot pourri of selected bits from indiscriminate sources, but a wider tolerance and more extended scholarship, which, basing itself, as all successful architecture has ever done, upon what has gone before, may produce a whole at once expressive of the best



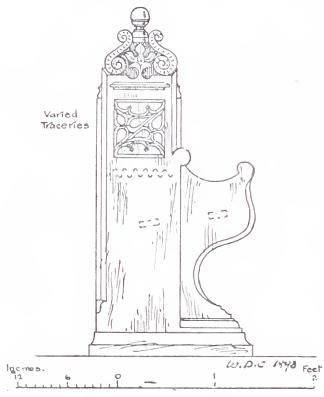
taste and needs of the day, in sympathy with the modern demand made upon us for Gothic architecture in Church uses.

I show you a few English examples of "debased" work, not because they possess any conspicuous merit, or are other than the simple and somewhat rough productions of the provincial craftsman. But they illustrate a period which seems to me deserving of consideration, as possessing both spirit and appropriateness, but which nevertheless fared ill at the hands of our early purists, to our assured loss. Whatever just criticisms you may pass upon its detail, the effect of the Mobberley balustrade, with its open work framed in a pointed arch, and with a fine perpendicular west window of the Tower shining through it, adds no little to the charm of that remarkable church of many centuries, with which it is in perfect harmony.

Time does not permit me to discuss in separate detail the various items of church furniture, which will constantly demand the attention of the conscientious architect. I will only briefly deal with the one that is ever recurring, the largest and most difficult, too often our white elephant—the one, withal, which is peculiarly full of great opportunities for the exercise

of skill in planning and arrangement, proportion in design, and beauty and intricacy in detail.

It is remarkable that the modern builders of Organs, with one or two notable exceptions, have failed so completely to recognise their responsibilities and opportunities in respect to the external appearance and fitness of their work. It is no exaggeration to say that, when let loose in a church, the organ builder, speaking generically, is the veritable bull in a china shop. For no antiquity, for no beauty, has he any reverence or respect. They are reserved for his 16- or 32-foot pipes. If he adds a case to his instrument, he drags out a stock pattern, stop-chamfered Gothic, "very Early," of the first quality. This, perhaps, he ornaments with



BENCH ENDS, ST. WILFRID AND ST. MARY, MOBBLELEY, CHESHIRE.

some gilt-tipped ironwork, bedizened red and blue, which seems to have had its origin in Coventry; metaphorically, perhaps, its most appropriate destination. At stencilling in varied coloured designs of the fleur-de-lys order, he has no rival. He contemplates his organ only as a huge square or oblong windbox, and this, although he has numerous modern mechanical inventions at his disposal which make it pliable and manageable in an extraordinary degree-methods unknown to our predecessors who turned out those grand combinations and designs, so instructive for our study. Here, indeed, is a field for the architect who enjoys openings for endless possibilities, a field which has been strangely neglected. There is none more seductive or more charming. True that it is full of technicalities and limitations which cross our path frequently; but the genial and accommodating organ-builder-when we are fortunate enough to find him-can help us to a remarkable degree. At its worst, the subject is one which common

sense, application, and tactful insistence can easily master. There is no attribute of the service demanding more earnest attention from all who have to deal with churches. The organs which have been permitted to disfigure some of the finest monuments in the country are, and will remain until remodelled, a disgrace, so far as their appearance is concerned, to the revival of church activity.

It is not only a question of the organ case to which I am referring. I know that funds often fail us to provide this. Sometimes it can never be added for this want. But the position, arrangement, and massing of the parts of the instrument itself are of first importance. If well done, the organ left only in skeleton can be made a fine object, and need never be an unsightly one while its grouped towers of pipes are awaiting their clothing. In designing a new church, not only should the position and magnitude of the instrument be determined at the outset, but in all cases should its grouping and case appear upon the original drawings, being fully as important in effect as any other portion of the structure.

I must leave untouched the tempting themes of the reredos, the altar and its accessories, the pavement, the stalls and seats, the pulpit, the faldstool, the lectern, the font, the ewer, the alms-box, the screens, the lamps and metal-work in all its variety, the hangings and embroideries, the books, and the many accessories of the vestry. Each and all demand our careful study and attention, and the Art Committee have brought together for our inspection a few varied examples.

In conclusion, I would only say I have confined myself to the consideration, mainly, of things Gothic, or allied to it, for the reasons stated at the beginning of this Paper. A wider scope had suggested itself, but, delighting as I do in Gothic design, I have no intention of wantenly combating the widespread ecclesiastical doctrine that it alone is fitted to modern needs in church use. Those who are prepared to assert or accept this doctrine should fix in their minds the off-proved truth, that the reproduction of forms, called Gothic, does not necessarily lead to the production of Gothic architecture or furniture. On the other hand, whatever form our work may take, it can only gain by the beneficent influence of genuine and well-mastered Gothic principles. And however we clothe it, let us at least see that our architecture is always progressive. The mere imitative faculty can never produce living, successful, or characteristic design.

W. D. Caröe.

DISCUSSION OF THE FOREGOING PAPERS.

Mr. L. ALMA TADEMA, R.A., F.S.A. [H.A.], said it was his good fortune to have been asked to propose a vote of thanks to the authors of the admirable Papers they had listened to. He remembered that, years ago, in a biographic sketch of which he was the subject, a learned art-critic lamented that he bestowed so much trouble on cabbages and furniture in his pictures. He had borne that in mind; but he had not changed his style. He was still fond of furniture, and was very proud that he should have been asked to say a word on that very important subject. Beautiful as architecture was, to live in houses perfectly bare would not suit anyone. They required something to sit upon; something to eat from, to read from, to study from—something to put their things away in. In listening to the Papers he had been struck with one notion, which had raised in his mind a doubt as to how far they were entitled to underrate the value of the efforts of their own day. He was, above all, though a lover of antiquity, a child of the nineteenth century; and one could not but admit that art was principally tradition. Byzantine architecture existed, it was because Roman architecture preceded it; when the monks of the eleventh, twelfth, and thirteenth centuries built their churches and monasteries, they built in sincerity according to Roman principles. So it was in the sixteenth century, when there was a revival in architecture-men believed that they were imitating Roman principles, and built accordingly. Therefore they must not be hard upon those who preferred one style of days-gone-by to another. The Gothic building of 1825 -well, it had the stamp of 1825 upon it, and so it would be for all time. They must apply to

their wants a feeling of the art which had gone before. No style could be invented; a style could only be developed from what they had seen. The present was a period of civilisation which embraced periods long past. They were no longer one-sided, as in the Middle Ages, when one sentiment alone prevailed. Now, everybody was free to think as he liked, and that accounted for the great diversity of expression in the work of the day. Archæology, a learned professor of history had remarked to him thirty years ago, was the handmaiden of Science; she was also, if he might say so, the handmaiden, or even the teacher, of Art. In the development of the history of furniture, the most primitive seat, the oldest seat, was the Egyptian, and that was hollow-very comfortable to sit upon, but specially so because it was a low seat. The Oriental squatted on his heels; he (the speaker) knew by experience that no European could so seat himself, because in painting an Egyptian picture he had been unable to find a European model to squat as the Orientals did. Later on, the Greeks and Babylonians sat higher; they used a square seat. Then came the Romans, who kept to the square seat, which had come down to modern times, until the Americans invented the rocking-chair; and since then they had arrived at the comfortable slanting seat of the present day. So it went on from one to another, and new forms would ever be invented; but they must be rational. As Mr. Belcher had rightly said, there must be no ornamentation in the wrong place. This he knew by experience. His friends had brought him from Germany a beautifully carved chair, with a very finely carved head of a knight right in the very centre of the back, and if one unfortunately dropped into it, one had occasion to remember it for hours. That kind of thing was of no use; it was not original, it was simply absurd. Certainly the period of the finest furniture was that of Chippendale and Sheraton. One armchair he knew of—one he was always loth to leave—a typical last-century production that fitted every part of the body. He was a clever architect who designed that chair; he might have gone under the name of upholsterer, but he must have been an architect who constructed it in that fashion. Architects must supply us with housesbut with comfortable houses; with churches if he might venture to say so, with comfortable churches. He meant churches in which they could feel at home, in which they could feel what they were there for—not naked walls and roofs. It was perhaps the highest expression of the need of

furniture where it was most felt. LORD EGERTON OF TATTON, who seconded the vote of thanks, said he had had the opportunity of seeing furniture in most parts of Europe and the East, and he could confirm what had been so well said by Mr. Alma Tadema, that some of the oldest seats in the world were the most comfortable. He lately had had the opportunity of sitting in the marble seats of the ancient theatre at Athens, where the name of the high priest might still be seen affixed to the seat; and it struck him that many of the seats in their own churches were not half so comfortable. Therefore they might learn a good deal from the ancients, and from all parts of the world, with regard to comfort in turniture. In the present day, every sort of furniture was imitated; one of the last crazes was to imitate everything Japanese. The Japanese were wonderfully clever people, and especially clever in decoration, and we owed a great deal to them in the latter respect. We should, however, at the same time, imitate some of the fine specimens of furniture in different parts of Europe, and especially in Italy. The carvings in the stalls of some of the churches, and work of the kind in other buildings in Italy, were worthy of the greatest attention; and the Italian Government recently had done wisely in issuing a publication at a cheap rate, which gave full-size working drawings of the most celebrated specimens of architectural furniture, and everything connected with architecture—whether tile or wall, decoration or furniture—so that they could be accurately copied. The title of the work was L'Arte Italiana, and it was issued monthy at the price of three shillings a copy, he believed. He thought it was a work which would be very useful to architects and to decorators in England. The Papers traversed such a wide field, it would be difficult to sum up in a few words anything with regard to them. The remarks about good hangings and bad hangings struck him as very valuable and accurate criticism. They could hardly go back to a better and more cheerful type of decoration than might still be found in many old country houses—fine ornamental work of the last century, such as the author of the Paper had exhibited—the old-fashioned Chimese or Indian chintzes. There was nothing more striking than some of the rude materials in carpets and hangings to be found all over the East, containing patterns and designs and colours which had been handed down from remote ages, among people who were not highly cultivated or highly educated, but who, under a warm and bright sky, seemed to be susceptible of taking in forms pleasant to the eye, and grouping them with a sort of intuitive skill which some of the greatest decorators of modern days could not surpass.

MR. LEES KNOWLES, M.P. (West Salford), said there was one point in the second Paper which interested him very much, the allusion made by the author to Rhea grass. He believed there was a great future for that material. The difficulty, however, seemed to be to find some cheap method of separating the fibres, because of the gum which stuck them together. Then there was a difficulty in the length of the staple, which was too long for spinning in ordinary Lancashire mills. He had seen the material before and after it was spun and woven, and it struck him as exceedingly nice and serviceable, and it possessed a toughness which would satisfy, he thought, the author of the Paper, who had alluded to this grass. With respect to Mr. Caröe's Paper, he thought that the clergy at the present day had almost too much power, if he might use that expression, with regard to their churches. In the restoration of a church, it often happened that not merely the rectorial taste, but the tastes of the rector's sisters and cousins and aunts had to be consulted. It seemed to him that one man ought not to have the power of "restoring"—using the word, as Mr. Caröe had used it, in its invertedcomma sense—a church and perhaps destroying features which had accumulated for centuries. That was the point to which he particularly wished to call the attention of the Institute-namely, the "one man one vote" principle with regard to churches and chapels. He thought it was a subject that was well worth their consideration. As a member of the outside public, he wished to express his appreciation of the work which was being done by the Institute.

Mr. WILLIAM WOODWARD [A.] feared that what he had to say might probably be distasteful to some present, because his words would be confined to matters purely architectural. He yielded to no one in that room for intense admiration of the perfect finish of a building in every particular. One must, however, distinguish between architectural finishing of the house and the furniture. He sat in an easy-chair—a very easy chair—and spent a great many hours in it; but that chair was not designed by an architect. It was designed by

an artistic craftsman, if he might call him so. His opinion was that if—and he wished to emphasise the word "if"—if the architect carried out his duty to his client and his duty to himself, it would be utterly impossible for him to devote any time to designing chairs, wall-papers, or wall-hangings. Furniture, in the nature of a chair or a table, was not within the proper sphere of an architect's duties. He would conclude his remarks by saying that, with his mind filled with the productions of Belgium and Italy, he came there to look at the drawings of their modern architects. If gentlemen present would look at the work, both in design and execution, from Sainte-Croix, and then turn their attention to the paltry, weak, and effeminate designs upon the screens, they would be enabled to distinguish between the works of men who executed those works, who were not architects, but who were artist-craftsmen; and would appreciate the difference between an architect who wasted his time and his client's money designing furniture, and the craftsmen who had produced the great works that they saw, for example, at Sainte-Croix. If the young gentlemen who interrupted wished for a lesson in drawing, he would invite their attention to the magnificent sketches by Augustus Welby Pugin on the wall.

MR. JOHN BELCHER [F], as the introducer of the subject, thanked the Meeting for the way the Papers had been received. As far as possible the Art Committee had endeavoured to choose subjects for the Meeting which should be helpful to architects in their work, and they had endeavoured, as far as possible, to broaden and widen the views of the architect, and to keep his nose a little bit out of drains, and traps, and sanitary matters—that he might, as far as possible, exercise himself in those things which had an intimate relation to his own work, even if he did not design them. He was afraid he, for one, must plead guilty to having designed furniture, wall-papers, curtains, and materials. He did not know that he had sat in his easy-chair quite so long as Mr. Woodward, but if the Papers had been of any value they felt that the subject was so large that they were unable to particularise as much as they might; and probably, on some future occasion, they would be able to take up the subject separately, and deal with ecclesiastical furniture and fittings and stuffs at separate meetings. If they had done nothing else, they had elicited some valuable remarks from Mr. Alma Tadema, and he should like also to say that their thanks were specially due to Mr. Caröe, who had taken a large amount of trouble in the matter, and had collected the various drawings, many of which, he was sure, if they closely inspected them, they would find exceedingly interesting and valuable.

MR. JOHN CLAYTON said he had come to the Meeting not to speak, but to listen and learn. He was, however, tempted, on the mention of

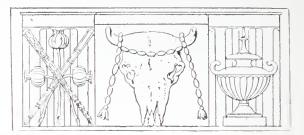
the name of Augustus W. Pugin, in connection with the designing of furniture, to refer, from personal knowledge of him, to his facility in designing such work. He delighted to deal with fabrics, decoration, carvings, all kinds of metal-work-every item, in fact, that a building needed. Pugin's architecture was, he thought, none the worse for his practice in such direction. Speaking as one who had been engaged in architecture as well as painting and sculpture, he would venture—from behind the scenes, as it were—to express his regret, not that architects did so much in this way, but that they did so little. It would be better for all the arts if they were less divorced than they now are. If architects would not so exclusively confine themselves to the T-square and compass, they would have deeper and wider sympathy with the other arts, and better know how to apply them to the enhancement of their own work than is now generally the case.

Mr. J. D. CRACE [H.A.] said at that late hour it would be hardly fitting to take up the time of the Meeting by saying anything on the subject of furniture in general; but, inasmuch as the Committee who had had to do with the Papers had succeeded in bringing together a large number of extremely interesting drawings by many men of ability, it would be, he thought, a great pity that they should be immediately dispersed, and he would venture to appeal to the Council and to the gentlemen who had lent their drawings to permit them to remain on the walls for at least another day, so that those who were interested in the subject might have some opportunity of examining them with a little more care than was possible at a crowded Meeting. He should like to call attention to a little contribution that he himself had been able to make from the drawings of Pugin. As a boy he had seen him design frequently, and was familiar with his personality and with the extraordinary rapidity and practical aptitude with which he designed whatever he turned his hand to. The care with which he made himself acquainted with all the structural requirements of what he attempted to design would be apparent in the little sheets of paper on the screen, each of which contained an almost complete design for a piece of furniture, and some for two. Among the ten sheets of drawings exhibited, none of them bigger than a half-sheet of cartridge-paper, there were only two or three which were together concerned with one piece of furniture. All the rest contained a complete thing in one sheet; not only the complete thing in point of ornament or design, but all the structural portions were explained and set out in such a way that an intelligent person, accustomed to work of the character portrayed, would have no difficulty in carrying it out—in fact, they had all been executed.

M. AUMONIER said there was one thing in the Paper read by Mr. Voysey which he should like to say something about. He had understood Mr. Voysey to say that they should discard tradition. Now, he would ask them, as architects, men of culture and refinement, whether all great Art had not been carried on on the lines of tradition. Then why go back to crude work of the kind exhibited in the Arts and Crafts Exhibition last summer. If they looked at the matter from a common-sense point of view there was no particular reason to go back to the very beginning of art, when a carpenter only knew how to make a rabbit-hutch, or a kitchen chair with rockers, which were the kind of things glorified at the Arts and Crafts Exhibition. He wanted to know whether it was not better to work on the grand old traditions of Art, and he thought, as Mr. Alma Tadema had said, it would take modern designers some time before they could design a chair better than Chippendale, or design any kind of furniture more fitting to its use than Chippendale did. Was it better to discard tradition altogether? He

thought not. THE PRESIDENT thought there was an undue tendency on the part of some of those who occupied the position of clients to put down the members of their profession as a sort of superior bricklayer or carpenter, whose competency to advise on such subjects as decoration or of furniture, far less to design them, was a thing out of the question. He thought it extremely desirable that the mind which had educed the forms and proportions of a building should have something to do with the decoration, and even with the furnishing, of that building. Nothing was so discordant to one's feelings as to enter a house one had taken some trouble to design, and to find it utterly ruined by the decorations and the furniture. Those architects who had found time not merely to design architecture, but subjects cognate to architecture, such as decoration and furniture, had properly given their attention to designing whatever might be found to have direct or indirect relation to their buildings. A vote of thanks had been proposed and seconded to the gentlemen who had been kind enough to contribute the Papers which had been read, and he thought they would wish to couple with that a vote of thanks to the various private individuals and public authorities who had contributed the many beautiful illustrations and drawings which hung upon the walls.

** The Institute is specially indebted to the authorities of the South Kensington Museum for the large number of framed drawings and photographs of tapestries lent by them for the occasion; and to Mr. J. L. Pearson, R.A., Mr. R. Norman Shaw, R.A., Mr. J. D. Crace, Mr. Aldam Heaton, Mr. W. Romaine-Walker, Mr. J. Brooks, Mr. C. Krall, Mr. Walter K. Shirley, Mr. C. F. A. Voysey, and Mr. G. F. Bodley, A.R.A. A description of some of the drawings and other exhibits will be found on page 438.



CHRONICLE.

LONDON STREETS AND BUILDINGS BILL.

Amendments made by the London County Council.

The London County Council having at a recent meeting decided on the amendments they would adopt in the draft Bill, and sent to the Institute a copy of the Bill with such amendments, they have been considered by Mr. Arthur Cates, Mr. Edwin T. Hall, and Mr. Rickman, the Delegates of the Institute Council, who attended at Spring Gardens; and they report that about sixty in number of the technical amendments which they submitted to the L.C.C. Building Act Committee at that conference have been adopted, though not those touching the new principles raised in Parts I. and IV., nor are definitions, &c., satisfactorily dealt with.

Among the more important items accepted the Delegates mention the following:

Those which remove all questions as to openings in walls for shops, the walls in which they occur being treated as starting from the top of the bressummer as the base.

Clause 43, relating to scantlings for joists of floor, has been struck out.

In clause 48 the storeys in roof are limited to two, any of which more than 60 feet above the street shall be constructed of fire-resisting materials.

In Clause 52 a definition of low pressure has been introduced.

In Clause 55 the retrospective action of subclause 2 has been removed, but the excessive minimum height of 8 feet 6 inches for habitable rooms is maintained.

Clause 57: Enclosure of lift, has been entirely struck out, although the Delegates' objections applied only to cases when lifts are formed in the wells of staircases.

In Clause 75 the new proposal for settlement of differences as to party walls by two surveyors or their umpire has been struck out, and the present system of three surveyors restored, and extended to "enable them to deal with differences from time "to time."

In Part VIII., Dangerous Structures, the power of the District Surveyor to certify the actual condition of the building has been extended.

In Part XIV., Clause 139, power is given to the Magistrate to call in technical assessors to assist him. In Clause 185 (27a) "cubical extent," which is

now used in place of "cubical content," is defined to mean "the space contained within the external "surface of its walls and roof and the upper "surface of the floor of its lowest storey"; consequent on this change the cubical content of 216,000 feet is altered to cubical extent of 250,000 feet; otherwise, the definitions in Clause 185 remain generally unaltered, and it is understood that they are still under consideration.

As regards Parts I. and IV. the principles on which they were founded, and to which objection

is taken, are maintained unchanged.

Some slight variations have been made in Part I., and clauses have been introduced professing to be saving for buildings on old sites and domestic buildings re-erected in a narrow street, which appear practically to result in the restriction that a re-erected building shall, under certain circumstances, "be in no part of a greater height "than the previously existing building or structure," or be set back 20 feet from the centre of the roadway, or if over 40 feet high be set back half its height from the centre of the roadway.

In Part II. Clause 15 has been so far modified as not to apply to any building erected on land previously to the Act wholly occupied by a building, provided that no part of such new building shall be of greater height than the previously existing building. This word "wholly" appears to take away the value of the apparent concession.

In Part IV. new clauses have been substituted for Clauses 29, 30, 31, 32 and 33, by which the limiting angle of 45 degrees is professedly restricted to new domestic buildings in new streets; but the words would be applicable to any re-formation of streets on old sites in London, which would be objectionable, and for such buildings in old streets the height is limited to twice the distance across the open space in the rear. The requirement of the open space on the ground floor in the rear is maintained, and even with the modification in favour of buildings in old streets these new clauses appear hardly less objectionable than those for which they are substituted, and are evidently drawn with the view to keep new buildings down to heights limited by that of the former buildings, and considerations of air space assumed to be necessary.

Thus the Bill, even as amended, remains in a crude and unsatisfactory form; and only after it has been dealt with before the Committee of the House of Commons, which will meet on Monday next, 30th inst., to consider it, and after the Bill has been reprinted as a whole, will its full

scope be appreciated.

Mr. Edwin T. Hall has prepared an elaborate analysis of the Bill as now amended, which will be available in any further action.

The Appellate Tribunal.

Mr. Arthur Cates, as representative of the Institute on the Tribunal of Appeal constituted

under the provisions of the London Council General Powers Act 1890, reports that during the year 1893-94 eleven appeals have been heard and decided by the Tribunal, of which he is the elected Chairman. Some of these have been cases of great public importance, and argued before the Tribunal by counsel of eminence. In the result the certificate of the Superintending Architect was confirmed in eight cases and varied in three. In June 1893 a question affecting the constitution of the Tribunal was raised by an application to the Queen's Bench Division by a Mr. Ellis, who had appealed against the Superintending Architect's certificate, asking that the decision of the Tribunal on his appeal should be quashed, on the ground that the member of the Tribunal appointed by the London Council was disqualified from adjudicating in the matter. The case was heard before Mr. Justice Charles and Mr. Justice Wright, who decided that it was against the principles of the administration of justice that Dr. Longstaff, Chairman of the L.C.C. Building Act Committee, who had ordered the prosecution, should also sit as a member of the Tribunal of Appeal, and that the decision was invalid.* Thereupon Dr. Longstaff ceased to be a member of the Tribunal, and the London Council appointed as their representative Mr. Eccleston Gibb, as an independent person not connected with the London Council. Thus reconstituted, Mr. Cates was again elected Chairman.

The late César Daly.

The President, after the General Meeting of the 15th January—when he alluded to the decease of César Daly [Hon. Corr. M.], the Royal Gold Medallist of 1892 [p. 183],—wrote a letter to Madame Daly expressive of the regret with which the Institute had received the news of her husband's death, and offering in the name of the Council a tribute of condolence with her and her family under the sad loss they had sustained; and Monsieur Marcel Daly, who accompanied his father during the last two visits he made to this country, has replied as follows:—

Paris, le 15 Avril 1894.

Monsieur le Président,—Je viens remplir, au nom de ma famille et au mien, un devoir dont les circonstances seules—une grave maladie qui m'a immobilisé pendant près de trois mois—m'ont obligé de remettre l'accomplissement jusqu'à ce jour, à mon bien vif regret.

Je viens vous prier de recevoir personnellement, monsieur le Président, et de faire agréer aux membres du Conseil de l'Institut, l'expression de notre vive gratitude pour les témoignages de haute considération et de sympathie avec lesquels vous avez accueilli la nouvelle de la mort de mon

père, M. César Daly.

Aucun hommage ne pouvait nous être ni plus précieux ni plus sensible que celui de l'Institut royal des Architectes britanniques; aussi tenons-nous à lui en adresser, par votre intermédiaire, l'expression de notre profonde reconnaissance. Veuillez agréer, monsieur le Président, et prier

^{*} For report of this case, see p. 27.

messieurs les membres du Conseil de l'Institut d'agréer également, l'expression de notre très haute considération. Marcel Daly.

Communications of a like character have been received in England by personal friends and confrères of the late César Daly from the same writer on behalf of the family and himself.

The late William Haywood [F.].

Colonel Haywood, who had been a Fellow of the Institute since 1857, was born in 1821, and received his professional education under the architect and resident surveyor to the St. Katharine's Dock Company, the late George Aitchison, father of Professor Aitchison, A.R.A. [F.]. In 1845 he entered the service of the Commission of Sewers of the City of London as Assistant Surveyor, and in the following year was appointed Surveyor, to which the title of Engineer was added in 1853. It is almost impossible to enumerate all the works Colonel Haywood carried out for the Commission; they were not confined only to the City, but were far-reaching and extended all over the metropolis. In 1851, in conjunction with the late Frank Forster, he designed a plan of main drainage and interception of the sewage on the Middlesex side of the Thames; and in 1854 was employed with Sir Joseph (then Mr.) Bazalgette in developing that larger scheme in regard to the High-Level and Middle-Level Sewers which was subsequently carried ont by the Metro-politan Board of Works. In 1857 he laid out the City of London Cemetery at Little Ilford, one of the largest in the kingdom. In 1861 he built the Court-house for the Commissioners of Sewers at Guildhall.

While superintending all the arrangements connected with the drainage, paving, and cleansing of the City, Colonel Haywood gradually developed his gigantic scheme for the improvement of the Holborn Valley. This vast undertaking was begun in 1863, and by it an improvement was effected which not only changed two steep hills that had long formed a sore impediment to traffic into a handsome level thoroughfare, but, in combination with a new system of streets, made a large district in the heart of the metropolis for the first time available for important business purposes. The subway system in the work was most completely carried out, effective arrangements being made for the pneumatic tube, for sewers, gas-pipes, waterpipes, and telegraphic wires beneath the roadway. The work was completed in 1869, and opened by the Queen in person in November of that year.

Thirty years ago, it is stated. Colonel Haywood prepared a design for the making of a new thoroughfare from Oxford Street to the Minories. To carry out the scheme at that time it was estimated the work would cost a million of money, and objection was made to the expenditure of so large a sum. Consequently it fell through. To carry out the

work at the present time would involve an expenditure of between four and five millions. The abolition of the Coal Dues was deeply regretted by him, for out of these the cost of such great undertakings could be defrayed.

He was the first to lay down asphalte pavements in the carriage-ways of the metropolis. He planned and carried out a complete system of fire hydrants for the City, where it was first established in 1873, and took a conspicuous part in the interminable negotiations with regard to the lighting of the City by electricity. In the construction of underground conveniences, Colonel Haywood showed how sanitation could be promoted at little cost, while the question as to the disposal of refuse was fully overcome by his efforts in the direction of Letts's Wharf. It is stated that during his period of service he carried out improvements in something like half the streets of the City at a cost of several millions, among the more important of these being the construction of Queen Victoria Street and the widening of Ludgate Hill.

Colonel Haywood's reputation was not confined to this country; his name was well known in engineering circles all over Europe, and it is said that few works of importance were carried out in France or Austria without his being consulted. His reports upon matters affecting the health and improvement of the City constitute a small library in themselves, and form valuable records of metropolitan improvements, the removal of snow, questions affecting asphalte and wood pavements, sewage operations, water-supply, railway projects, traffic arrangements, cleansing, lighting, and numerous other matters bound up with the health, comfort, and convenience of the citizens.

He passed through all the grades of the London Rifle Brigade, of which regiment he became lieutenant-colonel in 1876, retiring in 1881. He was a Member of the Institution of Civil Engineers and of the Surveyors' Institution, one of Her Majesty's Lieutenants for the City, a Chevalier of the Legion of Honour, a Knight of the Ernestine House Order, a Commander of the Portuguese Royal Military Order of Christ, and an Officer of the Order of Leopold of Belgium. Eloquent tribute was paid to his great services by the Chairman of the Commissioners in announcing his decease at a recent meeting of the Commission.

Congress of Protestant Church Architecture, Berlin.

Writing from Berlin on the 5th inst. on behalf of the Association of Berlin Architects, Herr v. d. Hude. Government Surveyor of Buildings, invites the Institute to send representatives to attend the Congress of Protestant Church Architecture, organised by the Association, to be held in Berlin on the 24th and 25th May next. The Association, he says, will esteem it a great pleasure and honour to welcome any of their professional brethren in England interested in the subject who

may attend as such representatives. He forwards a copy of a work published by the Association, entitled *Der Kirchenbau des Protestantismus von der Reformation bis zur Gegenwart*, which is intended as a preparation for the work of the Congress.

The French Archæological Congress.

The sixty-first session of the Congrès Archéologique de France, under the direction of the Société Française d'Archéologie, is to be held this year at Saintes from 29th May to 2nd June, and at La Rochelle from the 3rd to the 6th June inclusive. The Comte de Marsy, President of the Congress, in forwarding to the Institute the programme of events, sends a cordial invitation to members to attend the meetings and take part in the proceedings. The programme is too long to be quoted here, but No. 14 on the list, "Etudier "l'influence exercée sur les Arts en Aunis et " en Saintonge par les Anglais, aux différentes "époques de la domination Anglaise," appeals specially to us on this side the Channel. The subscription is ten francs, which, besides other privileges, entitles the subscriber to participate in the various excursions to places of interest in the neighbourhood.

Flemish Art.

Monsieur Van Ysendyck [Hon. Corr. M.], of Brussels, has presented to the Library a largepaper copy (édition de luxe) of his great work, entitled Documents classés de l'Art dans les Pays-Bas. It would be impossible to overestimate the value of the gift he has made to his British confrères; composed of all that concerns Flemish Art in Belgium and Holland, it comprises three series, the 750 plates of which are classified in alphabetical order. The first series consists of three volumes: (1) Plates from A to E; (2) Plates from F to O; and (3) Plates from P to V. This first series consists half of photographic views of old buildings and half of reproductions of drawings and prints, the author's object in publishing the latter half being to make known all the works relating to Flemish Art extant in Belgium and Holland. In fact, if one could collect all the books from which these reproductions of drawings and prints are made, one would possess the literature of Architecture and the Arts in the two countries of Holland and Belgium. The second and third series—one volume each—are composed entirely of photographs of executed works such as fireplaces, cathedral-stalls and church-fittings and furniture generally, and a host of other similar architectural details; and the author, when sending these five magnificent folios, expresses the hope that his "ouvrage intéressera beaucoup de "membres de l'Institut, où l'on a tant de goût et de "respect pour les productions de nos ancêtres." A review of this collection will appear in due course in the Journal, but meanwhile it is pleasant to be able to assure M. Van Ysendyck, who is a Member of the Commission Royale des Monuments de Belgique, that his kind present will be thoroughly appreciated in this country.

Australian Artists.

Mr. Claud H. Simson, North Adelaide, South Australia, sends details of a "Scheme for the "Initial Proceedings necessary to regulate and "nationalise Australian Art." It is proposed that the leading Art Societies of the Australian provinces should form a united fraternal body, to be called "The Australian Artists' Association." Each province is to govern its local affairs, the local Society to take the name "Australian "Artists' Association." Three delegates from each province constitute the "Premier Council," which is to regulate all affairs appertaining to Australian art and affecting Australian artists, and adjudicate upon any matters referred to them by the provinces. It is proposed to hold an annual exhibition of Australian works of art in each province in succession, the societies being pledged to send the best selection of pictures, sculpture, or other art work from their own local exhibitions. As the scheme is purely national, the Australian Governments are to be asked to defray the carriage expenses of exhibits to and from the exhibitions. Medals are to be awarded to the producers of the most artistic work. Fellows, Associates, and Hon. Members form the three classes of the Association. It is proposed to start a monthly magazine, to be called the Australian Artist, divided into province sections, each section to be edited by its own province, and a general editor and critics to be elected by the Premier Council. Australian architects are invited to join the federation, and exhibit their best work in conjunction with the Association.

Architecture in Sydney.

Sir J. Salomons, Chief Justice of New South Wales, has presented through Sir Arthur Blomfield a series of thirty-three photographs, finely executed and handsomely mounted, illustrating the architecture of numerous public and private buildings in Sydney. The views, which include the General Post Office, Town Hall, Exchange, Government Offices, various banks and colleges, and principal streets, are specially representative of the progress of architecture in Sydney, and form a valuable addition to the collection of photographs of Australian buildings in the Institute Library.

House Drainage, &c.

The Borough Surveyor of Stockport, Mr. John Atkinson, has forwarded a compilation which he has recently made of information obtained by him respecting the practice followed in different places with regard to the system of drainage adopted in the erection of new houses, and on some matters connected with sewage. Mr. Atkinson put a series of thirteen questions to the City or Borough Sur-

veyor or Engineer of thirty-one towns, including Birmingham, Brighton, Liverpool, Manchester, &c., and the replies forwarded to him have been published by the Borough of Stockport in the compilation under notice. The replies show that the practice usually followed is based on the Public Health Acts and By-laws made thereunder, though this is by no means invariably the case.

NOTES, QUERIES, AND REPLIES.

The Temples of Kashmir in the Sixteenth Century.

From Mr. Ney Elias, H.M.'s Consul-General in Khorasán and Sistan—

Attention has been attracted lately to the subject of the ancient temples in Northern India, Kashmir, &c., on account of its having been discussed by experts in this Journal. I have no intention of joining in any controversy regarding the origin or style of architecture of these buildings, but may perhaps be permitted to note some remarks that were made upon them, about three and a half centuries ago, by a Moghul author named Mirza Haidar Doghlat, of the house of Jaghatai, a cousin of the Sultan Baber, and for some years ruler of Kashmir during the reign, in India, of Baber's son and successor, Humáyun. The account this author gives is not an accurate one, as will be seen, and indeed it contains nothing to show to which particular temple it refers. It seems to be intended for a general description of all the ruined temples in Kashmir, though these are not all so much alike in style as the author implies, while their dimensions differ greatly. It cannot, therefore, be in any sense instructive to antiquarians, but merely curious, as one of the oldest accounts that have come down to us-perhaps the oldest from the pen of any Mussulman, or foreign, writer. The following is a translation, kindly made for me by Mr. E. D. Ross, from Mirza Haidar's book — the Tarikh-i-Rashidi — written about the year 1515:—

"First and foremost among the wonders of "Kashmir stand her idol temples. In and around "Kashmir there are more than 150 temples "which are built of blocks of hewn stone fitted so "accurately one upon the other that there is "absolutely no cement used. These stones have been so carefully placed in position, without plaster or mortar that a sheet of paper could not be passed between the joints. The blocks are from 3 to 20 gaz* in length, 1 gaz in depth, and "1 to 5 gaz in breadth. The marvel is how these stones were conveyed and erected. The temples are nearly all built on the same plan. There is a square enclosure which in some places

"reaches the height of 30 gaz, while each side is "about 300 gaz long. Inside this enclosure there "are pillars, and on the top of the pillars are square "capitals. On the top of these, again, are placed "supports * and most of these separate parts are "made out of one block of stone. On the pillars "are fixed the supports of the arches, and each "arch is 3 gaz or 4 gaz wide. Under the arch are "a hall and a doorway. On the outside and "inside of the arch are pillars, 40 to 50 gaz in "height, having supports and capitals of one "block of stone. On the top of this are placed "four pillars of one or two pieces of stone. The "inside and the outside of the halls have the "appearance of two porticos, and these are covered "with one or two stones. The capitals, the "ornamentation in relief, the cornices, the 'dog-"'tooth' work, the inside covering and the out-" side, are all crowded with pictures and paintings, "which I am incapable of describing. Some "represent laughing and weeping figures, which "astound the beholder. In the middle is a lofty "throne, of hewn stone, and over that a dome made "entirely of stone which I cannot describe. In "the rest of the world there is not to be seen, or "heard of, one building like this. How wonder-"ful that there should be 150 of them!"

"There is a lake in Kashmir, Ulur by name, "about seven farsakhs in circumference.† In the "middle of this lake Sultan Zain-ul-Abádin, one of the Sultans of Kashmir, built a palace. First of all he emptied a quantity of stones into the place and on these erected a foundation [or "floor], of closely-fitting stones, measuring 200 "square gaz in extent, and 10 gaz in height." On this he built a charming palace and planted pleasant groves of trees, so that there can be but few more agreeable places in the world."

The largest of the ruined temples in Kashmir is the beautiful pile at Martand, said to have been built by a Hindu king about the end of the eighth century; but even if we assume Mirza Haidar to intend his description for this one, we cannot hold him guiltless of exaggeration. The greatest length (that of the side walls) of this temple is, in reality, only about 90 yards, and that of the front about 56 yards, as reported by Mr. G. T. Vigne in his Travels in Kashmir, published in 1842. The height of the pillars, including foot and capital, is barely 10 feet instead of over 100; while the huge blocks of limestone, of which the temple is built, were found by Mr. Vigne to measure from six to nine feet in length, "of proportionate " solidity and cemented with an excellent mortar." The Brobdingnagian proportions of Mirza Haidar have, therefore, to be considerably pared down in

* Literally "small arm-pits."—E. D. R.

^{*} The gaz is usually taken to be an ell, and cousequently about 24 inches; but according to Sultan Baber, who states its length accurately (in his Memoirs), as it was used in Central Asia and India in the fifteenth and sixteenth centuries, it should measure about 28 inches.—N. E.

[†] The Wular Lake. The farsakh may be taken at four miles. The author usually exaggerates measurements, but in giving twenty-eight miles as the circumference of the Wular he seems to have understated the fact.—N. E.

every instance, as is usually the case with state-

ments of Asiatics made in figures.

As regards the palace on the island of Lanka in the Wular Lake, its ruins are to be found still, and have often been explored by travellers since the days of Mirza Haidar. The island lies near the entrance of the river Jhelum into the lake, and measures some 300 yards in circumference. The French traveller, Bernier, visited Lanka in 1665, and speaks of the palace as "an hermitage "... which it is pretended floats miraculously "upon the water;" though he also explains that, according to tradition, "one of the ancient kings " of Kachemire, out of mere fancy, built it upon "a number of thick beams fastened together." In 1821 Mr. Moorcroft landed on the island, and found two ruined buildings: one of stone, at its eastern extremity, around which were strewed several massive polygonal columns; the other merely an oblong house, with pitched roof and plastered walls bearing fragments of blue enamel. The first of these he regarded as of undoubted Hindu construction; but he makes no mention of the origin of the other. The foundations of both, however, according to his native informants, had been made up of the stones derived from the ancient Hindu temples in other parts of Kashmir, which had been destroyed by the Mussulman king, Zain-ul-Abádin, previous to his building the mosque, or palace, on Lanka. If this is the case, it is possible that, in constructing the palace itself, stones, columns, &c., from the ancient temples may have been used; and this may have led Mr. Moorcroft to believe the ruin to be of Hindu origin; although he records having seen an inscription to the effect that the building had been erected by Zain-ul-Abádin, who reigned from 827 to 878 A.H. (1424 to 1473 A.D.). There are many traditions connected with this ruin, but all seem to point to an artificial foundation for the buildings that were erected there. In all probability, there was originally a shoal rather than an island; or perhaps a shoal that appeared as an island above the surface of the lake only during the low-water season. If this is the case, the spot would no doubt have been soft and muddy, and a foundation for any palace or temple put up there would have had to be laid. However this may be, Mirza Haidar rightly ascribes the building to Sultan Zain-ul-Abádin, who reigned in Kashmir only about a hundred years previous to his own time, for in 1874 Mr. A. Constable (Bernier's Editor) found, like Mr. Moorcroft, a slab of black slate bearing a Persian inscription, dated 1443-44, which had been carved to commemorate the erection of the edifice by that Sultan—Bernier's "ancient king of Kachemire." *

A few words about this strange Moghul author

may not be out of place here. Though a soldier of fortune, he was no mere Dugald Dalgetty, but a man of taste and intelligence, who wrote the history of his house and times, and included his own remarkable adventures. He was the grandson of a ruling prince of Kashgar, and his father having been killed in the Usbeg wars, he had found a refuge, during his early years, in Sultan Baber's court and camp. After Baber's reverse near Bokhara, by the confederated Usbeg chiefs in 1514, he left the Sultan's army to take service under another near relative, then the ruling Khan of Kashgar, and soon became the Khan's most trusted minister and general. The times were stormy-wars and forays were on foot in every direction, and our author seems either to have led, or to have accompanied one expedition after another into the States surrounding his master's country, until, in 1528, he was sent to conquer Ladak and Kashmir. How easily this wanton task was accomplished he tells us in his book, and he is also candid enough to recount how, immediately afterwards, he undertook the conquest of Tibet and sustained a crushing defeat—or perhaps, rather, an overwhelming disaster—for the Tibetans, being an unwarlike nation, unable to oppose even the Moghuls of Kashgar, relied on the sterile nature of their mountain-land and the severity of their climate, to fight their battles and defend for them their religion and holy places. The invaders, when within a few days' march of Lassa, were led into impracticable uplands lying (as we know now) 13,000 to 15,000 feet above the sea, where they and their horses perished in large numbers from hunger, cold, and the rarefied air, and whence a remnant only, under the energetic Mirza, found their way back, some to Ladak, some to Kashgar, in straggling discomfited parties. Mirza Haidar himself, not venturing to return to Kashgar, made his way by a difficult route to Badakhshan, and thence, by Kabul, to Delhi, where he found service under his relative Humáyun, then at war with the Afghans of Bengal under Shir Shah. He was present at the ruinous defeat suffered by Humáyun at the battle of Kanauj, the retreat to Delhi, and the subsequent flight to Lahore; and when the fugitive Moghul princes took different routes to find a refuge, each for himself, our author, remembering what he had learned of the secure position of Kashmir when he invaded it from the north, betook himself, with a small following, to the borders of that country, and, forming an alliance with some local chiefs in rebellion against the Kashmiri Raja of the day, invaded the State and conquered it. Being too good a politician to set himself up as king, he assumed the government in the name of his master, Humáyun, and ruled as the Sultan's deputy for some ten or eleven years, when he was killed during a night attack of some petty chiefs who had risen against him. His book was

3 P

^{*} See Constable's "Bernier," pp. 416-17; and Moorcroft's Travels, vol. ii. pp. 223-5.—N. E.

written, in Persian, while enjoying the leisure of the last few years of his life in Kashmir. No European translation of it has appeared, although it is one of the best records of the history of Central Asia from the fourteenth to the sixteenth century, and was written by one who was himself an actor in most of the scenes he describes.

James Fergusson.

From James Burgess, LL.D., C.I.E. [H.A.], formerly Director-General of the Archæological

Survey of India—

I read with much interest the two Papers on Fergusson [pp. 383-89]; but he has not been fairly represented in the first. I corresponded regularly with him for upwards of twenty years, and during the last fifteen of his life almost weekly. I have often dissented from his conclusions, when he would first flatly contradict, and then, when I stated my reasons, he would open his eyes, stare, listen, ask questions, turn up photos, look at the evidence, show me the evidence for his views, and finally either accept my view as based on new evidence, or convince me that his grounds were the stronger. Many a forenoon have I spent in his study, and never without astonishment at the minuteness and accuracy of the observations on which he had based his conclusions—stated often in a general and abrupt sentence. Had he possessed the undercurrent of scorn Mr. Flower speaks of, we never could have got on. But while he was not to be easily blown out of conclusions based on all the knowledge available and thought out with the most cautious logic—and he scorned all would-be "authority"—put new evidence before him and you felt it was welcomed, weighed honestly; and, if sufficient, he would thank you in the finest way for the change he had to accept. Nor did he despise the graces of language. He was not gifted as a writer, and knew it; his aim was simply to express himself clearly without verbiage, and perhaps he overlooked the fascination those graces might have given to his works.

Early Brick Architecture in Great Britain.

From Mr. C. H. Peters, Government Architect,

at The Hague—

Being engaged in the study of ancient brick architecture in Europe, may I venture to ask my British confrères for information thereon?—

1. Which are the oldest buildings, constructed either wholly or partly of brick, still existing in Great Britain, and where are they situated?

2. Which are the oldest existing examples of brick vaulting in Great Britain, and of what form and construction?

3. What is the early history of brick in Great Britain, and what influence has that material had upon the architecture of the country?

4. Which is the best historical account of old wood roofs and wood vaulting in Great Britain?



9, CONDUIT STREET, LONDON, W., 26 April 1894.

MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session, held on Monday, 23rd April 1894, at 8 p.m., Mr. J. Macvicar Anderson, *President*, in the Chair, with 34 Fellows (including 10 members of the Council), 38 Associates, 2 Hon. Associates, and 34 Visitors, the Minutes of the Meeting held 9th April 1894 were read and signed as correct.

The Secretary announced the decease of the following

Fellow-namely, William Haywood, M.Inst.C.E.

The following members, attending for the first time since their election, were formally admitted, and signed the Registers of Fellows and Associates respectively—namely, Thomas Batterbury, Fellow; R. Shekleton Balfour, Harold Clapham Lander, and George Ernest Nicld, Associates.

Papers on Furnture: Domestic and Ecclesiastical, by John Belcher [F.], Mr. C. F. A. Voysey, Mr. Aldam Heaton, and W. D. Caröe, M.A. Cantab. [F.], having been read and discussed, a vote of thanks was passed to the authors, and to the several owners who lent drawings, fabrics, altar furniture, plate, and other articles in illustration of the subject treated; and the Meeting separated at 10 p.m.

The Illustrations to the Papers on Furniture.

Mr. J. L. Pearson, R.A., lent twelve sheets illustrating varieties of Church Furniture, the principal of which were original drawings by himself of work at Peterborough and Truro. Also a very charming triptych from Wantage, and the large triptych from St. John's, Red Lion Square.

Several photographs of the late W. Burges's designs, mainly of Worcester College, Oxford, and a reliquary for the Marquis of Bute, were lent by Mr. A. Robinson. The very fine Lichfield Cope and Chasuble, a bookcase, and mantelpicce, were interesting examples of the work of Mr. G. F. Bodley, A.R.A., and Mr. Garner; an album of photographs of designs for furniture (chiefly classical) from the same hands was very interesting.

An original drawing of the Holy Trinity Church at Bingley by Mr. Norman Shaw, R.A., was noticeable, as were also two original drawings by the late Sir G. G. Scott, R.A., for the Chalice of St. Mary Abbott's, Kensington, with a

photograph of the executed work.

Some characteristic specimens of Mr. James Brooks's church fittings were shown in drawings and details.

Photographs and details, chiefly from Rhinefield, Hants, a fine design for an organ from Blenheim Palace, also the rood screen from Holy Trinity, Hastings, were sent by Messrs. Romaine-Walker and Tanner.

One of the screens was hung with designs for furniture and inlay by Mr. Voysey, an excellent illustration of his Paper and methods of workmanship: great reserve, good proportion, and delicacy of parts forming the chief characteristics. Two photographs of Sideboards, one by the late W. Eden Nesfield, and another by Mr. J. M. Bry-

don, were exhibited.

Several ancient examples of metal and other decorative work were lent by Mr. Krall. The most interesting specimens were—a Ciborium, German, fourteenth century; another of the fifteenth century; a Keybox, German, seventeenth century; several Chalices, French and German, thirteenth to sixteenth century; a wood Altar Cross, with mother-of-pearl inlays, exceedingly fine, Italian, sixteenth century; also three brass Salvers, probably sixteenth century.

Mr. Caröe lent drawings and photographs of eight organ cases, of very varied designs and sizes, stalls, lecterns, and

other fittings and furniture.

A photograph of the Mayor's Chair in the centre of the Corporation Pew at St. George's Church, Deal, was lent

by Mr. Burke Downing.

Not the least interesting contribution was from Mr. J. D. Crace. This consisted of ten drawings for furniture by A. W. Pugin, dated 1849-50; also nine sheets of drawings by the late J. G. Crace, mainly from examples at the British Museum, which served to illustrate a Paper read by him on Furniture at the Institute in 1857.

PROCEEDINGS OF ALLIED SOCIETIES.

LEEDS AND YORKSHIRE: SESSIONAL MEETING. Hospitals.

On the 16th inst. the following Paper on the subject of Hospitals was read before the Leeds and Yorkshire Society by William Henman [A.], Inst. Medallist 1866, Pugin

Student 1868, of Birmingham:

Although many excellent buildings have been erected, and much valuable information published thereon, the art of hospital planning is of comparatively recent growth, and has been one of rapid development; hence there is reason to believe it has not yet attained maturity, and there is a probability that further scientific investigation may, in the near future, demand the relinquishment of opinions now held to be established, and the adoption of others not yet entertained. If, then, I do not place before you clearly a method for designing an ideal hospital, it is because I know of no such method; all I can do is to offer a few suggestions as a guide in the investigation of what will best meet the requirements of any special case or time. It is necessary to become thoroughly acquainted with what has already been done, and is believed to be in the right direction; but, in addition thereto, I would urge anyone entrusted with the design of a hospital, whether great or small, to ascertain what failures there have been, to note defects in existing buildings, and thoroughly probe their causes and effects. Such will be positive knowledge acquired, which may be turned to account by the avoidance of what has previously led to disaster. I desire to emphasise this; because, to know that patients do reasonably well in a particular hospital is, after all, comparatively negative information; for it is possible that a similar building upon a different site, or for a different class of patients, or, perchance, under other management, might show different results. As an example, practical experience has proved that in military tent-hospitals cases have been treated with much success, and some people, in consequence, urge that hospitals should be of that temporary character, without considering the vast difference there is between the surroundings of a camp hospital in the open country, intended only to be used for a short period, and the more permanent requirements of a populous city or town; or the difference between the constitution of the soldier, well trained and inured to exposure, and of that of the town artisan, dwelling and working in a close, and

often impure, atmosphere. On this point, at least, those who have a right to be considered authorities on the subject are agreed that hospitals should, as a rule, be permanent in character and erected with sound and substantial materials. It eertainly behoves all who undertake the design of such buildings that they fully realise the important bearing which their knowledge and care may have upon the comfort and health of many during a long series

Much has been written on the subject of hospitals, and we are highly indebted to Sir Douglas Galton for his excellent publications; also to Mr. Saxon Snell and Dr. Mouat for their joint work on Hospital Construction and Management, and to Mr. Henry C. Burdett for the valuable mass of information which he has collected and issued under the title Hospitals and Asylums of the World. In these works are brought together a history of hospital development and the views of almost all who have spoken with authority on the subject. If they have a fault it is, in my opinion, that on a few, but important, points they incline to dogmatise in a manner which may retard progress; therefore I strongly advise personal examination of existing buildings, and inquiry of those who have the management, i.e. of surgeons, doctors, house governors, matrons, and nurses, who can give information on matters of detail, be they never so trivial. Of course you must be prepared to find that "doctors differ," and other officials named much more so; a right eonclusion can therefore only be arrived at by careful sifting of views expressed.

The designer of a hospital must, as it were, be prepared to serve two masters—the one being the medical and surgical requirements, the other those of domestic and general supervision and management. In consequence, hospital plans show three distinct types: First, those in which administrative facilities predominate; secondly, those in which medical and surgical requirements have received the greater consideration; thirdly, those in which the known laws of health have been duly considered in conjunction with ease of general management. Should you visit a building of the first type, and question those responsible for the administration, they will probably express a favourable opinion; but doctors and surgeons might condemn it. As regards the second, doctors and surgeons might extol, yet the lay administrators would find fault with it. And, unfortunately for architects, with the third type it is probable neither doctors, surgeons, committee, matron, house governor, nor nurse would be satisfied on all points; but such are the exigencies of human existence that perfection seems to be unattainable in complex undertakings. Hence the necessity for compromise; and therefore the architect must, after having collected opinions from all quarters, use his judgment as to what should be adopted, relinquished, or modified, so that the buildings may in all important particulars reasonably fulfil the purposes for which they are designed.

Notwithstanding the numerous classes of hospitals demanded by the many ills and ailments of mankind, all have a primary and common object, viz., the cure or alleviation of suffering caused by disease, or the repair of bodily hurt; and there are a few well-assured essentials, universally recognised, which must be secured in and about such buildings, the chief of which are light and pure air, next in importance being convenience of supervision and administration. In addition, we, as architects, must hold ourselves responsible for the proper proportioning of every part and for the structural stability of the whole. We are also expected to treat such buildings appropriately, and, I may say, artistically, for although some sanitarians and writers on hospital construction inveigh not only against expenditure on external effect, but also against any attempt to give architectural expression to hospital design, it fortunately happens that hospitals are locally classed among the principal buildings, and the public who support them demand that they shall, in external appearance, demonstrate the importance which must ever attach to the work carried on within. What we must aim at, then, is to secure all that is essential for the treatment and comfort of both patients and staff by careful arrangement of plan, and give suitable external expression thereto in as artistic a manner as possible. This latter is not only possible but right; for there can be no reason why a useful thing should be unsightly, or why those who suffer and those who have suffering constantly before them should not look out on that which is pleasing to the eye. Yet, how often do we find unsightly buildings classed as useful—generally, no doubt, by those devoid of artistic instinct; for, on close examination, it will be discovered that such unsightliness is but the evidence of want of knowledge, thought, or care on the part of the designer, and it does not in the least follow that unsightliness is more economical or less adapted to requirements than artistic expression; which, however, has many phases, and is as impossible to limit or define as either space or eternity.

I have already hinted that, with our present knowledge, it is unwise to lay down absolute rules for future guidance in hospital planning, or to require that such and such a site must be seeured, that the number of beds must not execed so many upon a given site, that they must be divided among so many wards of defined dimensions, that there must be a proportionate number of each sex, or what should be the general classification as regards surgical, medical, and other cases. The demands of a district and other local circumstances must determine such; and, moreover, they are points on which the architect is seldom consulted. The Committee of Management or medical men, rightly or wrongly, alone determine these matters; it being assumed that the business of an architect is limited to devising the best arrangements and means for carrying into effect stated requirements, however unsuited and sometimes impossible they may be.

Broadly speaking, there are two main divisions in hospital buildings to be recognised, namely, for infectious cases and for general surgical and medical cases. Then a distinction must be drawn between large town hospitals and hospitals for special diseases or smaller country ones, in each of the above classes. Those required in country districts are usually for a limited number of patients, the majority of whom suffer from ordinary ailments. Simplicity in plan and design should, therefore, be the leading characteristies. For them an ample area of land is generally secured, and when such is the ease the wards are most convenient if only of one storey; but there is little objection to their being of two storeys-by which the sexes ean be divided - if thereby a better aspect or some other advantage can be obtained. They should be arranged so as to secure, in the best manner, the essentials of light, pure air, and easy supervision. As far as practicable there should be windows on two sides of the wards, so as to catch the health-giving rays of the sun.

The administrative department should be proportionate to the number of beds; and, as annual expenditure is usually limited in amount, the greatest care should be taken to plan the building so that labour necessary to keep it clean and in proper working order may be reduced to a minimum. At the same time, all necessary adjuncts, such as an operating-room, kitchen department, rooms for the residential staff, mortuary, laundry, &c., should be provided; for it is false economy to attempt to make any part serve for various purposes, and, for one and all, a suitable aspect should be secured. This I mention because in some instances I have noticed that, even when the wards have been properly placed, the sitting-rooms and bedrooms for matron, house-surgeon, and nurses have had to put up with a north aspect only.

In small country hospitals provided with properly constructed open fire-places, to the back of which an ample amount of fresh air is conducted and warmed for admission to the wards, and with windows which can be easily opened, no special additional system of heating or ventilation may be called for; unless it is some simple form of hot-water heating in the corridors. Much that has been said applies equally to small town hospitals and hospitals for special diseases, although the smaller area of site and of open space around often leads to difficulties in planning, and necessitates further compromise in some direction or other. In large town hospitals such difficulties greatly increase. The high price of land generally restricts the open area available; so that, to provide the large number of beds required, wards have to be of several storeys. Ingenuity must therefore be exercised in arranging these loftier buildings, so that one portion shall not deprive other parts of the essential of light, nor impede free circulation of air around.

If we examine the plans of hospitals erected during the last hundred years or so, many varieties will present themselves. We will limit the subdivision, however, to—(1) Plans on the corridor arrangement; (2) those on the pavilion principle; (3) those with circular or octagonal wards; (4) those with entirely detached wards.

When we consider that, in modern times, the hospital plan is derived from that of dwelling-houses made use of for nursing purposes, it is not surprising that the earlier examples consist of a series of rooms, of greater or less size, on one or both sides of a corridor, and generally forming a compact block of building. So long as the number of patients therein accommodated was not great, they would probably do fairly well; but, with the rooms or wards large and closely packed, the corridors would be dark and badly ventilated, so that infection would be readily conveyed from one portion of the building to another; hence, by degrees, what is known as the "pavilion "principle" was developed—i.e. a series of rectangular wards, placed some distance apart connected by a corridor. A further development is the circular or octagonal ward, and then entirely detached wards.

Other varieties of plan there undoubtedly are; but I believe it will be found they are, without exception, the result of special requirements of the institution or site, or simply a transition between the more definite classes. For instance, the double ward is a transition between the corridor and single pavilion plan; being arrived at by first piercing the corridor walls on both sides and then omitting the corridor and one series of arches and supports. The employment of circular and octagonal wards no doubt arose from a desire to secure the essentials of light and pure air about the buildings; the forms are certainly fascinating, but a careful analysis of their capabilities will show they can be employed only under very definite and limited circumstances. Unless such wards are entered from the north and have the conveniences and accessories on that side, the full benefits of the forms are not secured; then, if the number of beds to be provided is below, say, eighteen, they are either too close together at the feet for the requirements of nursing, or space is wasted, and if the number of beds exceeds twenty there is more lost space; and even at that number the area per bed is excessive, and the distance across the ward prevents the penetration of the sun's rays throughout.

The absence of corners wherein dirt can accumulate and air stagnate is certainly an important consideration in a circular ward; but in a rectangular ward the corners can, and should, be rounded, or, better still, the angles canted and rounded off.

The latest development in plan is the entirely detached ward, either of one storey or even two storeys, provided there is no intercommunication. Theoretically, the best isolation is thereby secured, but the practical difficulties in

administration are, in this country at least, too great for anything like its general or even frequent adoption; and I am convinced that by the intelligent employment of suitable precautions the inconvenience of having to pass out of doors in all weathers can, and should, be obviated. Yet, if the theory of development shown to have taken place were pushed to its legitimate extreme, it would require that each patient should be treated in a detached building, well lighted and surrounded with fresh air-the inference being that disease is a source, if not the source, of disease. Whether that be true or not, or to what extent it is a fact, we must leave those who are studying the subject to determine; but it is evident that such a system of isolation is quite impracticable, although it is incumbent upon us architects to clearly impress upon our memories and realise in hospital planning that each separate ward must be isolated, as far as practicable, from any other, if the views of the medical profession, as at present expressed, are entertained.

As so much importance is attached to this question of isolation, let us clearly ascertain what is implied thereby. Not simply distance apart in the same building; for when I visited Netley Hospital some time since the Medical Superintendent informed me it had been observed in that institution that odours, known to have had their origin at one end of the building, quickly became perceptible at the other end, wellnigh a quarter of a mile away. Such conveyance could only have been by movement of the air within the building, which consists of a series of ward pavilions, connected by wide and lofty corridors on each side, with staircases at intervals. As a further illustration, all of you must be familiar with certain houses in which rooms are pervaded by the smell of cooking, although the kitchen may be at a distance and appear to be well cut off. This points to the fact that air has a tendency to circulate within a building, and if each portion is to be properly isolated from the rest, means must be devised to prevent air from one apartment travelling to any other.

The influences which principally cause this circulation of air within a building are—(1) Variation of temperature within; (2) variation of temperature without; (3) movement of the outer atmosphere; (4) the law of diffusion of gases.

As a rule the wards of a hospital are maintained at a higher temperature than the corridors, the sanitary conveniences and other adjuncts; and they are provided with large open fireplaces with insufficient inlets for admission of air from the outside, so that the additional quantity required to replace that which ascends the flues is drawn in from the adjoining corridor, and, perchance, from the water-closets or other available, and maybe equally impure, sources. And if from the corridor, then to replace that, it will be more than likely to be drawn from another ward at a lower temperature or level, up stairways which, but too frequently, assist in the circulation of air within a building.

While visiting existing hospitals, particularly some of those most recently erected, I have been impressed by the large expenditure which has been incurred and the daily labour which must be involved by having excessively long corridors disconnecting pavilions which contain, respectively, male and female patients. It cannot be supposed this distance apart of the sexes is required on moral grounds alone; and, if necessary, can only be to prevent the conveyance of infected air from one set of pavilions to the other; yet, as in some cases, there are at the extreme ends of a corridor over 300 feet in length four large wards and their accessories in air communication with one another by means of a central staircase. I have been tempted to ask if it is supposed that germs of infection from the opposite sexes have an affinity the one for the other, or that their conjunction is essential to

the propagation of another crop of disease. As I have found no one bold enough to assert that there is the least foundation for such a theory, does it not appear ridiculous that such an enormous length of corridor should intervene between the wards for males and those for females, if for the same sex they can reasonably be placed so near to one another and open on to a common staircase? I submit it would be more sensible to place the pavilions equidistant along the corridor, and to detach and enclose the staircases, particularly when the wards are heated by open fires, and the opening of windows and other inlets are depended upon for admitting fresh air; for in cold weather and at night such are sure to be, in great part, closed, and air is certain to circulate from one ward to another.

The other causes mentioned as influencing circulation of air within a building—viz., variation of temperature outside, external movement of the atmosphere (or, in a word, wind)—and the law of diffusion of gases cannot easily be controlled, but they must be kept in mind and reckoned with in arranging any definite system of ventilation and heating.

It has become a common practice to speak of ventilation as "natural" or "artificial." With a pure outer atmosphere, steady in movement and of uniform temperature, what is called "natural ventilation" might be possible; that is, free admission of the outer air to a building, trusting to movement of the atmosphere without for securing the necessary change within. But in our constantly varying climate, with the smoke-laden, and often impure, atmosphere of our cities and towns, such a natural system is impracticable; therefore "artificial" or "special" means must be adopted, particularly for hospitals, because in them an unnatural state of the air is produced by the massing together of a number of sick people. Two systems only of "artificial ventilation" are known, viz., one by which air is extracted by suction, the other by which air is forced in by propulsion; and after most careful examination of various buildings in which schemes of artificial ventilation have been set up I have decidedly come to the conclusion that, wherever an attempt is made to combine the two systems, the chances of failure are great. Then comes the question, Which of the two systems is likely to give the better results? Before this can be determined, a clear definition must be arrived at as to what is to be understood by the term "ventila-"tion."

Is it not the continuous removal of air vitiated by respiration, exhalation, putrefaction, combustion, or any other process, and, at the same time, the provision of an equal and continuous supply of pure air of suitable temperature and humidity without causing unpleasand draughts? And for hospitals, as I have previously stated, this must be effected in such a way that there shall be no circulation of air from one to any other apartment.

If this definition be accepted, we have next to consider whether by extraction or by propulsion it is possible to fulfil its requirements. We have already seen that "natural ventilation" cannot be relied on; and let me point out that wherever an open fire is employed you no longer rely upon "natural ventilation," but at once set up an "artificial" system, viz., that of extraction; for as the air in the flue becomes heated it expands, and then, being lighter than the ordinary atmosphere, it ascends and sucks up with it a portion of the air of the apartment. And whether heat or a mechanical appliance, such as a revolving fan, is employed for extraction, it should be recognised that a system of "artificial ventilation" is set up. And what is the result? Air is certainly being extracted, but where is the air coming in, which must enter, to replace that which is drawn off? Special inlets, it may be said, are provided. Yes; but what kind of air will they admit? Perchance it is frosty or foggy outside, dry or surcharged with moisture, and certainly more or less laden with dust, dirt, and insect life, as well as those minute organisms now recognised as playing so important a part in connection with disease; and, further, with such a system, how is it possible to regulate the supply? By opening or closing the inlets? Yes. But, with the same power of extraction, what again is the result? Simply that the velocity through the remaining inlets is increased in a more direct line to the outlets, causing draughts; in addition to which, as each inlet is exposed to the action of the outer air, a dual system is set up; for, whenever the wind is blowing against an inlet opening, a power of propulsion, constantly varying in force, is exercised, which has a further tendency to create draughts.

Under such varying and adverse conditions our ideal definition of ventilation is surely impossible; let me therefore endeavour to show how, by the alternative system of "propulsion," can be secured more definite and therefore better results. For this purpose I will refer to the means to be adopted in the New General Hospital, Birmingham, which is now in course of erection from my designs. They provide an installation for heating and ventilating the buildings, the cubical capacity of which equals about two million feet; so that, as the air may be changed ten times per hour without opening any windows, twenty million feet of air every hour has to be propelled, cleansed, and warmed; for which purpose there will be eight "fans," from 6 to 8 feet diameter, to be turned by electric motors, 2,000 superficial feet of cleansing screen and about 35,000 feet of steam tubing.

It is only right that I should state that the scheme has been worked out in conjunction with Mr. William Key, of Glasgow, who has proved its efficacy during the last four years in the Victoria Infirmary in that City, as well as in several schools and other buildings.

A selection is first made of a position, uncontaminated by surroundings (or of more than one such position if the buildings are extensive), where air can be drawn in towards an extended sereen, kept moistened with water, and periodically flushed, to free it from the large amount of dirt which it intercepts. The screen, I may mention, is formed of a series of cocoa-nut fibre cords stretched vertically and interlaced with copper-wire to keep them in position. On the outer side a coil of steam or hot water pipes is placed to prevent freezing in the winter, and on the inside are other heating coils, arranged so that by means of doors or louvres the air passing through or under them may be regulated. It is then forced onward by means of a rotary fan or air-propeller, set in motion by steam, water, gas, or other power-preferably an electric motor-and finds its way to the several rooms, wards, or corridors, by means of a wide and lofty horizontal duct and up flues, all calculated to the required areas, at the base of which are more heating coils, together with a simple contrivance by which both the volume and temperature of the air-supply to any separate part of the buildings can be adjusted to a nicety.

The air enters where required by means of trumpetmouthed openings, at about two-thirds the height of the storey, so as to disperse evenly throughout the apartment; and at the same time it expels an equal amount of air, principally through openings provided on the same side of the room as the inlets, up flues of the proper sectional area, into ducts in the roof, and thence to the open, through valved and louvred turrets, four-sided, so that outer movement of the atmosphere shall exert no adverse influence upon the outflow.

The principal advantages of this system of ventilation by "propulsion" are: 1. The source of the air-supply is known. 2. The air is not only cleansed of ordinary dust and dirt, but also freed from flies, moths, and other insect life, in addition to which carefully conducted scientific experiments have proved that micro-organisms are en-

trapped by the moistened screens. 3. Another important function of the screens is to maintain the air-supply in a proper state of humidity, for, paradoxical as it may seem, they moisten the air when too dry, and dry it when it is over-saturated with moisture. 4. Any suitable temperature can be maintained for an indefinite time in any apartment, and for each it can be regulated, and that without any open fires, with their attendant dirt, labour, and noise, in keeping up and in conveying coal about the buildings, and without a single steam or hot-water pipe in any habitable part of the same. 5. Complete change of the air throughout the buildings up to ten, twelve, or even more times an hour without draughts. I may here remind you that by no system of ventilation by "extraction" can a change of air more than from three to five times per hour be accomplished without a certainty of causing unpleasant draughts. 6. General cleanliness about the buildings, all incoming air being relieved of its impurities, and all repairs to apparatus executed without the necessity of even entering any habitable parts. 7. By carefully regulating the positions and areas of the incoming and outgoing flues respectively, each department has its air changed without reference to any other part of the building.

It is this last advantage of the system which, in my estimation, makes its adoption for hospital use of such paramount importance, and if it becomes generally realised and adopted, as I firmly believe it ought, I venture to predict it will exercise an all important influence upon the future of hospital planning.

There is much more I could say on the subject, but will content myself with a note of warning. So far as the principle of the system is concerned it is by no means new; it has from time to time been employed, but, either from want of full knowledge of the requirements or the application of imperfect appliances, failure has but too often resulted, unfortunately to such an extent that men of acknowledged scientific attainment have said in their haste, It is of no good. Nevertheless, in the face of ridicule and the interested misrepresentations of cowlmongers, steady progress has been made by a few who have the courage of their opinions, so that the system has now passed the experimental stage, and experience has proved it is capable of giving most excellent results in the hands of those who thoroughly understand the details of its requirements; and although I do not consider it is expensive when compared with other less perfect systems of heating and ventilation, it is undoubtedly false economy to stint expenditure which is necessary to give ample power and to supply all appliances for a suitable installa-

tion, for by doing so failure is courted.

Internal Wall Surfaces.—The employment of glazed bricks has of late been advocated and adopted in hospital wards, but I am far from being convinced that they are desirable. Not only are they cold in appearance, but, being actually bad conductors of heat, moisture in the atmosphere, which carries with it deleterious organic matter, is condensed on their surface, and trickles down until it is absorbed by the numerous mortar joints, the rough surfaces of which also form ledges on which dust will lodge. Glazed tiles form a better wall surface, and are far more convenient for use, because the rough walls can be more readily built, and then the tile lining can be neatly applied after the building is roofed in. However, I see no reason for a glazed surface above dado height, particularly if the system of ventilation which I have described is employed; for with such the air in the upper portions of the wards is always perfectly fresh and pure. Adamant plaster appears to be better adapted for hospital wall surfaces than Parian cement, which is liable to crack, and is less absorbent than ordinary

Floorings.—Great importance should be attached to their construction. I know a hospital which has only been occupied some two or three years, yet its insanitary con-

dition is already causing trouble. An examination of the building disclosed the fact that the oak boarding to floors laid on ordinary joisting was not even tongued. The oak boarding having shrunk, there are cracks at least one-eighth of an inch wide. It is a hospital specially devoted to skin diseases. I leave you to imagine what an amount of organic matter has found its way down those cracks to

putrefy between the joists.

A solid floor without air-spaces having been required for the New General Hospital, Birmingham, I at first thought of using steel joisting, simply filled in between with cement concrete, and bedding teak flooring solidly upon a layer of bitumen; but having noticed how unpleasantly noise is conveyed by so resonant a material as cement concrete, I induced the manager of the Birmingham Adamant Company to carry out some experiments with a view to overcoming this objection, and believe it can be accomplished by the use of Adamant and breeze concrete blocks. The idea is based on the well-known fact that materials of different densities in juxtaposition more or less neutralise sound vibrations. The concrete employed for the under side of the flooring is of a spongy nature; it is cast into blocks of suitable lengths to fit between the joists-say from 3 to 4 feet by 12 inches wide, and an average depth of 3 inches. Each block is so light that a man can with ease place it in position. The material can be cut or sawn; it is strengthened by means of wood, iron, or steel laths, so as to be capable of sustaining the wet cement concrete, filled in above, until it has set. The under side of the blocks forms an excellent key for the plaster ceiling below.

In addition to securing by these means a solid floor, lighter than one of cement concrete only, and less resonant, no scaffolding or strutting is required for its construction; and there is good reason to believe it will be more fire-resisting than any other method hitherto employed, because the joisting is thoroughly encased with a material which will resist heat, and is but slightly affected by the application of water after it has been exposed to a high

temperature.

I may mention that it has been carefully tested, and has been used in moderate quantities with excellent results. The cost compares very favourably with other methods of

fire-resisting construction.

Elevators. - In buildings of more than one storey, elevators of sufficient size to conveniently take stretchers mounted on wheels are a necessity, particularly where surgical cases are treated. If wards are at different levels off the same corridor, steps should be avoided, and the levels overcome by inclined corridor flooring, in order that trolleys may be readily conveyed from one part to another, the elevator, centrally placed, being employed from storey to storey; and instead of opening directly upon the corridor-a dangerous arrangement-it is better to have the elevator within a service-room on each floor; and if the hospital be of sufficient size, two may with advantage be supplied, so that one at least may be always available, and a porter can be constantly in charge to work the apparatus. By enclosing the elevators as suggested there is less risk of their acting as shafts by which air can circulate from one floor to another.

The Kitchen Department should be placed so that stores can be readily transferred thereto, and the meals easily distributed; yet care has to be taken to prevent the noise, heat, and odour of cooking permeating the building. In town hospitals the top of the buildings is to be preferred if centrally situate, so that the elevator may be employed both for raising stores and distributing meals, which are packed in hot-water jacketed trollies, one for each ward. All processes of cooking can now be economically performed by means of gas and steam; consequently the necessity for raising coal and providing means for lowering dust and ashes is avoided.

Accommodation for Nurses.—In the treatment and care of the sick much depends upon the ability of nurses to perform their duties. Considerable attention has of late been devoted to their training, as well as to their own health and comfort. To this end it is now considered advisable in large hospitals to provide a lecture theatre, in which they may receive instruction other than they gain in the wards; and instead of their sleeping-rooms being in close proximity to the wards, a practically detached building, or nurses' home, as it is usually termed, is provided, wherein each nurse has a separate bedroom, and there are general sitting-rooms.

A conservatory, wherein plants can be brought forward for the embellishment of wards and corridors, may with advantage be utilised as a connecting covered-way between the nurses' home and the hospital, for it is an unnecessary hardship to compel nurses to go out of doors in all weathers when going on or off duty, or when assembling for meals. It is true that in some cases a separate kitchen and messroom is provided in the nurses' home, but that is neither a satisfactory nor an economical arrangement from an ad-

ministrative point of view.

Operating-rooms must be well lighted from the north by side and top lights, and should be constructed and fitted so that every portion may be kept scrupulously clean and

free from air contamination.

Mortuary.-In the arrangement of the mortuary better attention should, I hold, be paid to decency and the feelings of those who only occasionally visit such places. Death is so common a sight in most large hospitals that the sensitiveness of officials becomes blunted; yet there is no reason why such sights as I have seen should be possible if the arrangement of mortuary buildings received the care which ought to be bestowed upon them. At one hospital I was shown into a narrow apartment in the basement, only dimly lighted by an end window. Some half-dozen bodies were ranged on shelves along the side. Undertakers were at work screwing down a coffin, and bereaved parents, accompanied by two comparatively young children, were taking a last sad look at one that had passed away. All this in what was little better than a cellar! Is it a wonder that hysterical scenes are enacted by sorrowladen women, taken suddenly into such places to look for the last time upon the mortal remains of those they have loved? The mortuary should be well lighted, of suitable dimensions to allow of biers mounted on wheels being ranged along the sides. Adjoining should be a smaller room fitted up as a mortuary chapel, into which the body to be viewed should be conveyed ere friends are admitted, a waiting-room being provided for their convenience while the necessary transference of the body takes place. The post-mortem room should adjoin or be near to the mortuary, and a pathologist's laboratory should be included in the group of buildings, which should, wherever possible, be detached from the hospital.

Isolation wards are generally required in connection with general hospitals, for, although small-pox and fever cases are now usually treated in special buildings, it frequently happens that patients admitted for some other ailment or hurt develop infectious disease; it is then advisable, for the safety of other patients, that they be removed to an

isolated ward.

What I have just said about the treatment of infectious diseases in special hospitals may remind you that I have scarcely referred to that class of building. It is a division of our subject to which I have devoted particular attention, and for that reason dare not at this hour enter upon for fear of wearying you, as it opens up a very wide subject, viz., the conveyance of disease through the outer atmosphere. This is recognised as an assured fact in the case of small-pox, and is more than probable as regards scarlet fever and other disorders.

A quotation from the evidence of Dr. Burdon Sanderson,

given in the report of the Royal Commission which was appointed in 1892 to inquire into the provision of smallpox and fever hospitals for London, to the effect that " hospital wards might be so constructed as to enable the " air, after it has passed through the hospital, to be sub-"jected to high temperature, or some other means of " destroying whatever dangerous properties it may possess, " before it is discharged," so impressed me that, on learning that, although some three or four buildings had been erected with apparatus for subjecting the air thereof to a high temperature, the results were far from satisfactory, I turned my attention to "other means," and have devised a simple method, based on the system of ventilation already described, by which it is believed that air emitted from hospitals, for the treatment of infectious diseases, may be easily and efficiently purified erc it is discharged from each separate ward.

PARLIAMENTARY.

LONDON STREETS AND BUILDINGS BILL.

The Report of the Parliamentary Committee of the London County Council, recommending the adoption of certain amendments in the Bill submitted by the sub-Committee, was brought up for consideration on the 6th inst., and the various recommendations contained therein adopted by the Council [see p. 432]. The following passages

are extracted from the report :-

The sub-Committee are of opinion, in which we concur, that, while the proposed amendments will minimise interference with the many classes of property which it is not desired to disturb, they will effect those sanitary improvements (more particularly as regards free access of light and air) which the Council are so desirous to obtain. Interalia the Bill amended by us would effectually prevent the present glaring evil whereby an owner is allowed in rebuilding upon old sites to make matters much worse than they were before. Moreover—and this is a point of great importance—the Bill as amended would be far easier to administer than in its original form. Legislation under which exemptions tend to become the rule rather than the exception is bad legislation.

For these reasons it will be vastly easier to support the Bill as amended by us in Committee. The concessions which have been made to opponents (whose opposition was to a great extent quite justifiable and reasonable) will greatly diminish the cost of promotion, and, what is searcely less important with a view to a successful issue,

materially shorten the procedure in Committee.

Conference at Paddington Vestry Hall.

A Conference was held at the Paddington Vestry Hall on the 16th inst., attended by about fifty representatives of Mctropolitan Vestries and District Boards, and representatives of the Royal Institute of British Architects, the Surveyors' Institution, the Institute of Builders, the District Surveyors' Association, and other bodies. Mr. Arthur Cates and Mr. T. M. Rickman were appointed by the Council of the Institute to represent them at the Conference, when the following resolutions were passed unanimously:—

1. That this Conference of members of Metropolitan Vestries and District Boards, whilst fully admitting the expediency and justice of dealing with land, and regulating the construction or reconstruction of buildings thereon in such a manner as may be conducive to the public interest, considers that many of the regulations set forth in the above-mentioned Bill, should they become law, are neither just, wise, nor expedient, inasmuch as they would tend to eheck rebuilding, and injuriously retard the development of freehold and leasehold estate.

2. That this Conference considers that a fair amount of compensation should be given where property is taken

under compulsion, in the same way as has hitherto been done under existing Acts of Parliament.

3. That the proposed tribunal of appeal is not such a body as to commend itself to public favour, either by reason of its constitution or on the score of economy.

4. That Clause 174 of the Bill, dealing in an arbitrary way with all buildings in course of erection, is a gross injustice.

4a. Against Clause 175, stacking of wood and timber.

5. That the various Vestries and District Boards in the Metropolis be urged to ask their representatives in Parliament to offer strenuous opposition to the passing of the Bill in its present form.

6. That this Conference is further of opinion that the special attention of the Metropolitan Members of Parliament should be called to the public character of the Bill, the complication and difficulty of the subject treated therein, and also to the important interests involved.

7. That a letter be forwarded to the Members of the House of Commons containing copies of the resolutions passed this day, and expressing a hope that they will see their way to oppose the measure on the grounds set forth in such resolutions.

8. That copies of the resolutions be also forwarded to the London press, and attention particularly drawn to the arbitrary and despotic character of certain clauses in the Bill

The Select Committee.

The following are the members of the Select Committee to which the Bill has been referred by the House of Commons, the first six nominated by the House, the remaining five by the Committee of Selection:—1. Mr. Kimber (Wandsworth); 2. Dr. Hunter (North Aberdeen); 3. Mr. Lough (West Islington); 4. Captain Sinclair (Dumbartonshire); 5. Mr. Whitmore (Chelsea); 6. Mr. Stuart-Wortley (Hallam, Sheffield); 7. Mr. de Tatton Egerton (Knutsford, Cheshire); 8. Sir George Chesney (Oxford); 9. Mr. F. S. Stevenson (Eye, Suffolk); 10. Mr. G. W. Palmer (Reading); 11. Sir Francis Evans (Southampton).

The Committee have chosen as Chairman Mr. Stuart Wortley, and have arranged to meet on Mondays and Thursdays of every week for proceeding with the consideration of the Bill, commencing their sittings on Monday,

30th inst.

LEGAL.

Metropolitan Building Act 1855-Exemptions.

LOVEGROVE V. KIRK AND RANDALL.

This case came before a Metropolitan Police Magistrate on the 11th December 1893. The real defendants were the Directors of the London and North-Western Railway, who instructed the contractors not to give notice to the plaintiff, the District Surveyor of South Islington, Shore-ditch, and Norton Folgate. The building was erected in Maria Street, Shoreditch, adjoining the North London Railway, to be used as a fodder and harness store, and the summons was taken out to recover the fee under the Building Act. The District Surveyor conducted his own case, and Mr. Lankester was counsel for the railway eompany, who claimed that the building in question was built by the railway, and could be used for their own purposes; also that the beer was conveyed to the adjoining stores by the railway.

The magistrate decided that the District Surveyor was right, as the building was used by tenants, and not by the defendant company, and allowed one guinea eosts. A similar case of an adjacent building in Harwar Street was treated in the same way. The defendants asked for a case, but eventually gave notice to the plaintiff that they would not proceed. The decision that buildings erected by railway companies for the purpose of letting are not

exempt therefore stands.



REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1893-94.

Approved and adopted by the Annual General Meeting, 7th May 1894.

The President, J. Macvicar Anderson, in the Chair.

INCE the issue of the last Annual Report, 4th May 1893, 29 Meetings of Council have been held—2 by the Council of the year of office expiring 5th June 1893, and 27 by the Council elected on that date. Committees of the Council have also sat for the consideration of matters connected with Professional Practice, Finance, Alliance with non-Metropolitan Societies, and the award of the Royal Gold Medal.

During the same period 19 Fellows (of whom 10 were previously Associates) and 68 Associates have been elected, as against 40 Fellows and 57 Associates in 1892-93. The class of Fellows now numbers 621, as against 623 at the date of the last report; and the class of Associates 846, as against 814. Three Hon. Associates—namely, Alexander Wood, M.A., J. O. Surtees Elmore, M.Inst.C.E. (Kapurthala, Punjab), and J. R. Bramble, F.S.A. (Somerset)—have been elected; and 1 Hon. Corresponding Member, the Commendatore Rodolfo Lanciani (Rome).

The losses to the Institute by death have been as follows:—A. H. Edmonds, W. H. Ellerker (Melbourne), William Haywood, Andrew Heiton (Perth), James Maxwell (Manchester), and J. B. Mitchell-Withers (Sheffield), Fellows; C. W. Chapman, Philip Currey (Lewes), Samuel Hill, Alfred Lovejoy, W. John Mettam (Leeds), F. M. Risbee, and Caleb Stanger, Associates; C. B. Birch, A.R.A., Lord Crewe, Lord Hannen, Thomas Hawksley, F.R.S., and H. Clifford Saunders, Q.C., Hon. Associates; Francis Austen, Hon. Fellow; Henry Clutton, Retired Fellow; and César Daly (Paris), Carl von Hasenauer (Vienna), and Heinrich Lang (Baden), Hon. Corr. Members.

Preliminary Examinations were conducted simultaneously in London, Bristol, and Manchester in November 1893 and in February 1894; and the 136 successful candidates have been registered as Probationers. Intermediate Examinations were held in London on the same dates; and, of the 55 Probationers who presented themselves, 36 passed and have been registered as Students. The total number of Probationers now on the Register is 559, and the total number of Students 105. Examinations to qualify for candidature as Associate were held in London and Manchester during the week commencing 27th November 1893, and in London, Glasgow, Bristol, and Manchester from the 5th to the 10th March 1894, with the result that of the 150 candidates who attended 63 passed.

The Ashpitel Prize was awarded to Mr. Ernest Robert Barrow as having most highly distinguished himself among the 73 gentlemen who (out of 142) passed the Examination qualifying for candidature as Associate in the Kalendar year 1893; and two others, Mr. E. E. Fetch (Cambridge) and Mr. Inglis (Edinburgh), received subsidiary prizes.

The Council again desire, in the name of the Institute, to record their indebtedness to Third Series. Vol. I. No. 13.

the officers and other members of those Allied Societies under whose charge examinations have been conducted during the official year; and their great sense of obligation for the services rendered by the Chairman and Members of the Board of Examiners. No Statutory Examinations have been held during the official year, only one application to be examined under the provisions of the Metropolitan Building Act 1855 having been received.

Statistics of the Examinations held during the official year 1893-94 here follow:

	THE PR	ELIMINARY 1	EXAMINATION	,			
Date,	Attended.	Not Passed. Relegated for Periods.			Passed and Registered as Probationers,		
November 1893	83 Exempted, 43 Examined, 40 Exempted, 28 Examined, 54	1		9	73 63		
Totals	165	1		23	136		
	THE INT	ERMEDIATE	EXAMINATIO:	٧.			
DATE.	Probationer Attended.	Not Pas	cl. Releg	ated for Periods.	Passed and Registered as Students.		
November 1893 March 1894	20 35	_		5 14	15 21		
Totals	55	 		19	36		
EXAM	HINATION QUALIFY	YING FOR C.	ANDIDATURE	AS ASSOCIA	re.		
DATE.	Applied.	Attended.	Not Passed.	Relegated for Periods.	or Passed.		
November 1893 March 1894	70 106	57 93	3	26 58	31 32		
Totals	176	150	3	81	63		

^{**} For purposes of comparison the figures for the official year 1892-93 are given: Preliminary: 192 admitted, 169 passed. Intermediate: 54 admitted, 34 passed. Qualifying: 136 attended, 54 passed.

The Royal Gold Medal (1893) for the promotion of architecture was presented on the 19th June 1893 to Mr. Richard Morris Hunt [Hon. Corr. M.], of New York, for his executed works as an architect. The proposal of the Council to present the Royal Gold Medal for the current year to the President of the Royal Academy, Sir Frederic Leighton, Bart. [H.A.], confirmed by resolution of the Institute on the 12th March 1894, has been graciously approved by Her Majesty the Queen.

The standard of work sent in for the various Prizes and Studentships 1893-94 compares not unfavourably with that of former years. The annual Deed of Award was laid before the General Meeting of the 8th January last, and on the occasion of the distribution of prizes on the 15th of that month an Address to Students on "Some Aspects of the Mutual Relationship "of Architects" was delivered by the President, and a "Review of Work of the Travelling "Students 1893, and of that submitted for Prizes and Studentships 1894," by Mr. Alexander Graham, Vice-President.

Selections from the Prize Drawings, and specimens of work sent in by applicants for

admission to the Preliminary Examination and of Testimonies of Study submitted by candidates for the Intermediate Examination, were forwarded for exhibition to the Allied Societies. Among these were measured drawings of the North Transept of Lincoln Cathedral by Mr. James R. Wigfull, Silver Medallist; the design for a College in a University Town by Mr. J. H. Tonge, to whom the Soane Medallion was awarded; drawings of the Pugin Student, Mr. R. S. Balfour; and the Design for a Mausoleum by the Tite Prizeman, Mr. A. R. Hennell. These were accompanied by selections from the drawings of Mr. R. S. Dods, Mr. G. S. Hill, and Mr. Corlette, to whom subsidiary prizes were awarded, and by specimens of work submitted by the Misses Charles, Messrs. W. R. Davidson, P. G. Groome, and A. G. Marshall, Probationers; and from the Testimonies of Study of Messrs. F. Chatterton, F. S. Hammond, G. O. Scorer, E. Tylee, and H. J. Wonnacott, Students. These drawings have been on view at Leicester, Manchester, Sheffield, Nottingham, York, Leeds, Newcastle, Glasgow, Dundee, and Liverpool, under the charge of the Allied Societies of those centres, a period of about a week having been allowed to each.

As a sequel to the Paper on "The Grecian House as described by Vitruvius," by Mr. Falkener, a collection of the author's exquisite water-colour drawings and oil-paintings was courteously lent by him for exhibition in the rooms of the Institute. His interesting and instructive description of these drawings will be found printed on pp. 86-88 of the Journal.

The launching, under the title of Journal of the Royal Institute of British Architects, of a Third Series of the Proceedings and Transactions combined appears to have given general satisfaction, and the publication of Sessional Papers with the Discussion has been attended with substantial advantage in the contribution of valuable articles on the subjects treated. Mr. Falkener's "Grecian House" [p. 29], for instance, gave rise to the translation of the learned disquisition on "Hypethral Temples" by Professor Curtius [pp. 80-83], and notes on the subject from various members [pp. 57, 83, 147]. Mr. Simpson's Paper on "The Classical "Influence in the Architecture of the Indus Region and Afghanistan" [p. 93] led to several communications [pp. 112, 147, 150, 191], in which much light was thrown on the matter, and to an exceedingly interesting article contributed by Mr. J. L. Kipling [p. 134]. Among other illustrated contributions of sterling interest should be mentioned the Report on "The World's "Fair Buildings, Chicago" [p. 65], by Mr. Wm. Emerson, Hon. Secretary, the accredited Judge in Architecture on behalf of the United Kingdom at the Chicago Exhibition; Mr. William Jackson's monograph on Leicester Abbey [pp. 129, 166], and the Essay by Mr. John Begg on "Sculp-"ture in Relation to Architecture" [p. 325], which was awarded the Silver Medal in January. Articles have appeared on "Progressive Examination" by Mr. Alfred Waterhouse, R.A. [p. 20]; on "Sir Frederic Leighton's Address" [p. 120]; on "The Public Health Act 1891," by Mr. Edwin T. Hall [p. 121]; on "London and its Council," by Mr. A. E. Street, M.A. [p. 271]; some posthumous notes by John W. Papworth on the "Ownership of Architects' Drawings" [p. 187], and a "Review of the London Streets and Buildings Consolidation and Amendment "Bill 1894," by Mr. Arthur Cates, introducing the discussion on the Bill at the Meeting of the 12th March [p. 343]. In the section devoted to "Notes, Queries, and Replies," contributions on matters of general interest have been received from Messrs. E. P. Loftus Brock, F.S.A., W. D. Caröe, M.A., Arthur Cawston, S. Flint Clarkson, J. W. Cockrill, A. O. Collard. J. D. Crace, J. Gethin, E. M. Gibbs, Alex. Graham, F.S.A., W. Hilton Nash, J. Tavenor Perry, Lacy W. Ridge, Prof. T. Roger Smith, R. Phené Spiers, F.S.A., H. H. Statham, Paul Waterhouse, M.A., Wm. White, F.S.A., Robert Williams, and Wm. Woodward. Among the more noteworthy Reviews should be mentioned those on Diderot's Thoughts on Art and Style [p. 18], Allen's Practical Building Construction [p. 140], Sir Douglas Galton's Hospital Construction [p. 235], and Fergusson's History of Architecture [p. 383]. Under "Proceedings of Allied

"Societies" have appeared the various Presidential Addresses, and abstracts of Papers and lectures; and a Paper by Mr. W. H. Bidlake on "Imagination in Planning," read before the Liverpool Society [p. 240], and one on "Hospitals" read before the Leeds and Yorkshire Society by Mr. William Henman [p. 439], have been published in full in this section of the Journal. In the Legal column, cases containing recent interpretations of the Courts on the law as affecting the profession, directly or indirectly, have been carefully reported.

By-laws 7, 8, and 9, as modified by a Resolution of the Royal Institute on the 27th March 1893 and confirmed on the 17th April following, were duly submitted to the Privy Council, were approved by their Lordships as amended on the 7th August 1893, and the same have since been incorporated in the By-laws and published in The R.I.B.A. KALENDAR issued last October. In respect to the late election by voting papers, under By-law 9, the Council regret the result, and cannot avoid the expression of their opinion that grave injustice was done to some of the candidates for Fellowship.

A proposal by the Conneil to so modify By-law 25 as to permit every Allied Society to be represented thereon, having been submitted to a Special General Meeting of the Royal Institute, was considered and referred back for further consideration. The Council consequently appointed a Committee, consisting of the President, Mr. Arthur Cates, Mr. Edwin T. Hall, and Mr. Wyatt Papworth, and received from them a Report which was approved and adopted, and by the terms of which the representation in London of such Allied Societies will be regulated by the Council as follows:—

A. The Presidents of the largest Societies most identified with the R.I.B.A. should annually be nominated to the

B. The Presidents of all the others less identified with the R.I.B.A. should be nominated in rotation.

C. On special grounds any of these other Societies should be enabled to render their representative entitled to more frequent nomination than that of his normal rotation.

The adoption of such a scheme will, it is believed, tend to strengthen the Societies themselves, to create among the smaller of them a spirit of emulation, and to lead all to closer identity in aims and membership with the Royal Institute. The Committee are of opinion that to give effect to the principles enumerated no alteration need be made in the By-laws, but that the end can be attained by the adoption which they recommend to the Council of the following

STANDING ORDER OF COUNCIL.

1. That for the class C (By-law No. 25) of Presidents of Allied Societies in the United Kingdom, the Council shall annually make the following nominations:

As to 1 place.—The President for the time being of the Royal Institute of the Architects of Ireland.

As to 6 places. - The Presidents for the time being of those 6 of the Allied Societies which then contain the greatest

number of subscribing Members of the R.I.B.A.

As to 2 places. - In rotation the Presidents of 2 of the remaining Allie I Societies, priority in order of rotation being given to those Societies which at the institution of the rota contain the greatest number of subscribing Members of the R.I.B.A.

2. When all the said remaining Societies have been represented in such rotation, the Council may, if they think fit,

then make a new order of rotation based on the same priority, and so on in cycles.

3. Should it at any time appear to the Council desirable that the President of any Society not on the rota for the year should be included in the nomination list of the Council, either on the ground of (a) the eminence of any such President, or (b) the activity in the advancement of architecture of any such Society, or (c) other causes which in the opinion of the Council shall be sufficient, then the Council shall include the name of such President in the Class A. of "18 Members of Council," and shall not in such class nominate any other Fellow of the R.I.B.A. resident, or practising, within the district or sphere of influence recognised by the Council as appertaining to such Society.

The Committee have of course contined their attention to the representation of Allied Societies. They have not considered that of future branches of the R.I.B.A., as it would be premature to do so, and that subject will of necessity come up when the scheme for the branches per se is considered.

The Council are of opinion that, under present circumstances, and for a time at least, this mode of procedure will be acceptable to the Allied Societies, and beneficial to the Institute.

The York Architectural Society and the Cardiff, South Wales, and Monmouthshire Architects' Society were admitted to alliance with the Royal Institute at the First General Meeting of the current Session held 6th November 1893. At the same Meeting the President, in his inaugural Address, described the development of the scheme referred to in the last Report of the Council, whereby it is sought to bring into harmonious and united action the scattered and unorganised members of the profession, to strengthen the position of local practitioners,

and enable arrangements to be made for extending throughout the United Kingdom the advantages of the Institute Examinations. A map published in the new Journal [p. 6] shows the districts allocated to the Royal Institute and Allied non-Metropolitan Societies in furtherance of the fusion into one system of the various architectural organisations scattered throughout the country.

The observations made by the President in the Address delivered at the opening of the Session, on the disadvantages of non-Metropolitan members in respect to the ignorance prevalent in some provincial towns as to the professional position and obligations of a Fellow and an Associate, were embodied in a circular containing the map above referred to, and particulars of the division of the United Kingdom shown thereon; and this circular was issued towards the close of last year to the principal newspapers published beyond a certain radius of the Metropolis.

The Council, having received communications from more than one quarter respecting the non-acceptance by promoters of competitions of awards made by duly appointed and qualified Assessors, have supported the general principle that such awards should be strictly adhered to.

The Royal Commission to consider and report upon the subject of a Teaching University for London have, in response to the Memorial addressed to them by the Council, assigned "a "definite and distinct place to Architecture" in the proposed University. A representative of the Royal Institute is to form one of the 65 members of its supreme governing body, the Senate, which, in addition to its legislative functions, is to have power to confer degrees, appoint professors and readers, and to decide such questions as the admission of "New Schools of the "University." The members of the Council who attended before the Royal Commission and gave evidence were the President, the Hon. Secretary, Mr. Arthur Cates, and Mr. John Slater.

The attention of the Council having been invited to the present condition of historical monuments in every part of the Indian Empire, a memorial on the subject was forwarded to the India Office as follows:-

To the Right Hon. the Earl of Kimberley, K.G., Her Majesty's Secretary of State for India in Council.

My LORD, -The Council of the Royal Institute of British Architects have the honour to invite your Lordship's

consideration of the following memorandum:-

The attention of the Royal Institute has for some time been directed to the very important work initiated and carried on by the Government during the last twenty years in the matter of the systematic classification and preservation of the ancient monuments of India. The Council-fully aware of the difficulties of carrying out such work in a country like India-desire to express, on behalf of the architectural profession, their sense of gratitude and obligation for the valuable and efficient work done, and their appreciation of its unrivalled importance from an artistic, antiquarian, and historic point of view.

While sensible, however, of the value of the work already accomplished, and the labour and cost necessarily

entailed, they nevertheless beg respectfully to draw attention to the following defects:

(i) That the classified lists of ancient monuments of Bengal and Madras and the Punjab need revision, and that systematic and exhaustive lists have yet to be made of the monuments of Mysore, Hyderabad, and Rajputana, and of the Central Provinces and Berar.

(ii) That while there are certain archæological officers in various parts of India, they would appear to be hardly numerous enough to exercise an efficient supervision over works necessary for the preservation or reparation of outlying monuments, the importance of which, from an historic and antiquarian standpoint, renders such supervision imperative, the natives themselves either doing more than is necessary or inventing too much.

The Council of the Royal Institute beg permission, therefore, to offer the following suggestions:—

A. It would be very advantageous if no restoration works at all were permitted to be undertaken, on estimates sanctioned, without the approval of the Archæological Survey officers having been previously reported.

B. That a greater number of skilled independent archeologists might advantageously be employed to advise how far restoration should go, and to superintend the same, the work being carried out by natives, whose guilds have usually very correct traditional knowledge. Such European supervision is advisable to prevent the limits of proper conservation being exceeded.

C. That if the Government could see their way to making further yearly grants for the purposes of completing the classification of the monuments of the whole of India, and of undertaking such repairs and restorations as are absolutely necessary in many instances to prevent the disappearance and damage by neglect of important relics,

they would earn the gratitude of all lovers of art, archæology, and history.

The immense importance of this subject, and the unequalled interest of the architecture and history of this portion of the British Empire, is the sole excuse the Council of the Royal Institute of British Architects feel it necessary to put forward for troubling your Lordship with this memorial. WILLIAM EMERSON, Hon. Sec.

The following reply was received from the India Office on the 25th April:-

Sir,—I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 19th ult., enclosing a Memorial from the Council of the Royal Institute of British Architects regarding the classification

and preservation of the Historical Monuments of India.

In reply, I am to state for the information of your Council that the subject of their Memorial has for nearly fifty years engaged the earnest attention of the Government of India. The archæological survey of Upper India, by the late General Sir Alexander Cunningham, K.C.I.E, was sanctioned by them in 1861–62; and in 1870 they organised a department for the archæological survey of the whole of British India, under the direction of General Cunningham, who remained at its head until his retirement in 1885, when it was reorganised on a plan submitted by General Cunningham himself to the Government of India.

Again, in 1880 they sanctioned a special classificatory survey, to better provide for the protection, first of the monuments of Lahore, Delhi, and Agra, and afterwards of the whole of British India, appointing Captain (now Colonel) Henry Cole, R.E., to this duty, under the title of Curator of the Ancient Monuments of India; and when his survey was completed in 1883, the work of the conservation of these buildings was handed over to their natural guardians, the local

authorities of the Provinces and Districts in which they are to be found.

These arrangements are every year proving more and more satisfactory. The sum spent on the archæological survey of India now amounts to about Rx 6,000 a year; and an equal sum is spent on conservation, exclusive of the expenditure on the annual repair of historical buildings used for Government offices and other public purposes. In these circumstances the Secretary of State cannot undertake to suggest to the Government of India any modification of the existing arrangements—I am, however, to add that Mr. Fowler warmly appreciates the interest taken by your Council in the Historical Monuments of India, as evinced by their present Memorial, a copy of which he will forward to the Government of India.—I am, Sir, your obedient Servant,

A. Godley.

W. Emerson, Esq.

At the request of the Local Government Board, that the Council would send a representative or representatives to attend a conference of delegates from other bodies respecting the constitution of a Joint Board for the purpose of holding examinations of Sanitary Inspectors and the granting of Certificates of Competency under the Public Health (London) Act 1891, they appointed Mr. Thomas W. Cutler, who attended on the 20th February, when it was decided to refer the whole matter to a Committee. Mr. Cutler is therefore acting on the Committee as the representative of the Council.

The Tribunal of Appeal appointed under the London Council General Powers Act 1890 has continued the important work entrusted to it, and the representative of the Royal Institute, Mr. Arthur Cates, has been again elected its Chairman. During the year 1893–94 eleven appeals, most of them argued before the Tribunal by eminent counsel, have been heard and decided, with the result that the certificate of the Superintending Architect has been confirmed in eight and varied in three cases.

A Private Bill, promoted by the London County Council, for the purpose of consolidating and amending the enactments which relate to buildings in London—known as the London Streets and Buildings Bill [pp. 50, 232, 265, 343]—having been examined and reported on by the Practice Standing Committee, it was thought desirable that the Institute should at once secure a locus standi to be heard on the principles and details of the measure before any Parliamentary Committee that might be appointed for the purpose. The Council, therefore, having been authorised by the Institute in General Meeting on the 12th February 1894 to petition the House of Commons against the Bill, prepared the necessary document, which was duly lodged by Messrs. Loch & Co., Parliamentary Agents. Meanwhile, at the invitation of the London County Council, the Council of the Institute appointed Mr. Arthur Cates, Mr. Edwin T. Hall, and Mr. Rickman to confer with a Committee of that Body on certain details of the Bill of which the Council could not approve; and it is satisfactory to know that a considerable number of the amendments submitted at that Conference have been accepted. In the reply made to the invitation to attend it, the Council reserved to themselves entire liberty to take any action they might be advised to take respecting points in the Bill on which that Conference might not arrive at an agreement. The importance of the subject was recognised by the Institute in the holding of a General Meeting on the 12th March, when Mr. Cates reviewed the London Streets and Buildings Bill in an able Paper, to which Dr. Longstaff and other members of the London Council replied at some length, and the discussion of which

was resumed on the 19th March at an adjourned General Meeting. Another Conference on the provisions of the Bill was recently held at the Paddington Vestry Hall between representatives of the Metropolitan Vestries and District Boards, and also of the Royal Institute of British Architects, the Surveyors' Institution, the District Surveyors' Association, the Institute of Builders, and other bodies; and at this Conference Mr. Cates and Mr. Rickman, at the request of the Council and in response to an invitation, attended as delegates.

The Art Standing Committee report that ten meetings have been held since the publication of the last Annual Report, and nine since the election of the present Committee. The Committee record their regret at the loss sustained during the Session by the decease of Mr. R. Herbert Carpenter, F.S.A., Vice-Chairman, and of Mr. C. B. Birch, A.R.A. Both gentlemen were assiduous in their attendance, and took an active interest in the work of the Committee.

A report upon the recent restoration of St. John's Gate, Clerkenwell, was furnished by the Committee to the Council, and forwarded by them to Sir Edmund Lechmere, Bart., M.P.

The Committee conferred with Mr. Edwin T. Hall upon his proposals for the granting of medals or other rewards of merit to craftsmen, and for an Annual Exhibition of the Crafts of Architecture in connection therewith, with a view to stimulating craftsmanship and extending the scope and influence of the Institute. The Committee, however, were not agreed as to the advantages likely to accrue therefrom, and reported to the Council in that sense.

The Committee have had sections of the London Streets and Buildings Bill under consideration.

The Committee arranged the subjects and Papers read at two of the Ordinary General Meetings—that of the 12th February, on "Mosaic and Fresco," by Mr. C. Harrison Townsend, Mr. G. Salviati, Mr. James C. Powell, and Mr. N. H. J. Westlake [p. 245]; and that of the 23rd April, on "Furniture: Domestic and Ecclesiastical," by Mr. John Belcher, Mr. C. F. A. Voysey, Mr. Aldam Heaton, and Mr. W. D. Caröe [p. 413]. At the first-named Meeting a most interesting collection of specimens of mosaics, drawings, and photographs was brought together and exhibited in the Meeting Room; and through the kind exertions of Mr. Powell members were afforded the privilege of a private view of the new mosaics at St. Paul's. At the second Meeting were exhibited a large collection of very beautiful drawings by the late Augustus W. Pugin, the late J. G. Crace, the late Sir G. G. Scott, R.A., the late W. Burges, A.R.A., Mr. J. L. Pearson, R.A., Mr. Norman Shaw, R.A., Mr. James Brooks, Mr. Voysey, and Mr. Caröe, lent by their owners; a number of photographs of works by eminent artists, and some rare examples of old metal decoration, altar plate, &c., lent by Mr. Krall; with drawings, photographs, and chromolithographs lent by the authorities of South Kensington Museum.

The Committee appointed Mr. Alfred Waterhouse, R.A., Chairman, and Mr. Ernest George Vice-Chairman; and Mr. W. D. Caröe, M.A., and Mr. E. W. Mountford Hon. Secretaries.

The Literature Standing Committee report that since their election on the 5th June 1893 they have held 10 meetings, making 11 meetings altogether since the issue of the last Report. The Sessional Papers obtained by the Committee and read under their management during the official year are:—"How to Use Vitruvius," by Professor Baldwin Brown, M.A.; "The "Grecian House as described by Vitruvius," by Mr. Falkener [p. 29]; "The Classical Influence "in the Architecture of the Indus Region and Afghanistan," by Mr. William Simpson, R.I. [p. 93]; "Observations on the Plan of Dwelling-Houses in Towns," by Professor Kerr [p. 201]; and "The Council Chamber and its Accessories," by Mr. Thomas Blashill [p. 365].

The scheme, referred by the Council to the Committee, for the amalgamation of the Transactions with the Proceedings has been carried into effect.

In accordance with a suggestion made by Mr. Arthur Cates in a letter to the Committee, it has been decided that all new books and other contributions to the Library should in future be laid on the table, accompanied by a list of additions, for the space of one month after their acquisition; also that the notices of additions to the Library should be made a prominent feature of the Journal.

The Prize Essays and Reports of the Travelling Students were brought before the Committee and examined, the Committee expressing the hope that pure literary merit would in future be allowed more weight in the awarding of the Essay Prize.

The Librarian's Report to the Committee is as follows:—

During the twelve months clapsed from 1st April 1893 to 31st March of the present year, the total additions to the Library amounted to 132 volumes and 63 pamphlets, and to the Loan Collection 18 volumes and 1 pamphlet, exclusive of periodicals, Reports and Transactions of Societies, and parts of works issued in a serial form now in progress.

The number of volumes presented to the Library was 97, and to the Loan Collection 9. Of pamphlets, 62 were presented to the Library and 1 to the Loan Collection.

Of drawings, engravings, and photographs, 143 sheets and 1 volume were presented, exclusive of the "Sketch Book" of the Architectural Association. There were also presented a medal struck for the Arthur Cates Prize for architecture, an impression of the seal of the Manchester Society of Architects, and a bust of the late Sir Horace Jones.

The works purchased comprise 35 volumes and 1 pamphlet for the Library, and 9 volumes for the Loan Collection,

together with several parliamentary papers.

The attendances of readers in the Library numbered 2,411. The number of tickets (exclusive of renewals) issued for admission to the use of the Library and Loan Collection was 93 (last year 98). The number of volumes issued on loan was 976 (last year 917).

The attendances of members of the Architectural Association as readers in the Library were 79 (last year 79), and the number of issues on loan (both these items being included in the gross returns above given) was 47 (last year 61).

The power conferred by the Council (as reported to the Committee at their first Meeting) to eliminate from the Library such books as the Committee should think it undesirable to retain has, after due consideration in each instance, been exercised, and much extra space has thereby been gained for additions to the Library.

A gratifying feature of the past year is the number of interesting and valuable books which have been presented to the Library by their respective publishers, and the thanks of the Institute are especially due to Mr. Batsford, Messrs. Chapman & Hall, Messrs. Crosby Lockwood & Son, Mr. Henry Frowde, Messrs. Kegan Paul, Trench, Trübner & Co., Mr. John Murray, Mr. W. Reeves, Messrs. Remington & Co., Messrs. Rivington, Percival & Co., Messrs. Swan Sonnenschein & Co., Messrs. Whittaker & Co., Mr. J. E. Cornish (Manchester), and several others.

It is similarly gratifying to report the acquisition of the great work, Documents classés de l'Art dans les Pays-Bas, by M. Van Ysendyck [Hon. Corr. M.], a large-paper copy of which has been presented by the author; also of three folios of sketches and scraps collected by the late Sir Charles Barry, R.A., with sixteen books of diaries kept by his friend the late J. L. Wolfe, all of which have been presented by Mr. Wolfe Barry [H.4.]; and, further, of a fine collection of photographs of many public and private buildings at Sydney, presented by Sir Julian Salomons, Chief Justice of New South Wales, through Sir Arthur Blomfield, A.R.A.

The Committee appointed Professor Aitchison, A.R.A., Chairman, and Mr. Alexander Graham, F.S.A., Vice-Chairman; and Mr. R. Elsey Smith and Mr. Arthur S. Flower, F.S.A., Hon. Secretaries.

The Practice Standing Committee have held nine meetings since their last report, and in addition to a variety of matters referred from the Council have also had under consideration several important subjects.

A Sub-committee, consisting of Messrs. Boyes, Clarkson, Hall, Hansom, Rickman, and Ridge, was reappointed in October 1893 to further consider the consolidation and amendment of the Metropolitan Building Acts. In November attention was drawn to the Resolutions embodied in the Report of the Building Act Committee of the London County Council to that body, and the Practice Standing Committee reported on them to the Council. In December a copy was obtained of the London Streets and Buildings Bill, and much attention has been given to obtaining suggestions for its amendment. These suggestions have been placed in the hands of the delegates who were appointed by the Council to meet a Committee of the London Council in conference thereon. They have also been placed in the hands of those who prepared the Petition of the Institute which has been lodged against the Bill now before the House of Commons.

The Committee have continued their efforts to arrange a set of Conditions of Contract with the Institute of Builders. On the 22nd February 1894 a third conference was held with the Builders, at which the solicitors on each side were present, and an arrangement was come to by which it is hoped that an approved draft may be obtained and reported to the Council. The draft, however, is still under discussion by the solicitors.

The Committee appointed Mr. Henry Currey Chairman, Mr. Arthur Cates Vice-Chairman; and Mr. Rickman, F.S.A., and Mr. H. Cowell Boyes Hon. Secretaries.

The Science Standing Committee during the official year have held 8 Meetings, with an average attendance of twelve Members.

In accordance with the request of the General Meeting held on the 13th March 1893, the Committee reconsidered and revised their Report upon the existing laws in relation to Light and Air, and presented it to the Council in January last, recommending that it be brought before the Members at a General Meeting of the Institute for consideration. A copy of the Report [p. 323] was forwarded on the 27th March to the London County Council.

The London Streets and Buildings Bill 1894 has engaged the attention of a Sub-Committee, and a Report was submitted to the Council upon the important changes proposed by the measure.

The Sanitary Registration Bill 1893 was considered by the Committee, and formed the subject of a Report, which was printed in the Journal 23rd November 1893 [p. 63].

The Committee have had under their management two Meetings of the Institute—one on the 8th January last, at which Mr. Maurice B. Adams read a Paper on "Blickling Hall, "Norfolk: its Drainage, Water Supply, and other Works" [p. 157]; another on the 26th February, when Professor Roger Smith and three of his colleagues read Papers on "The New "Science Laboratories at University College, London" [p. 281].

In order that accurate information may be obtained as to the strength of brickwork a series of experimental tests has been proposed, and a Report by a Sub-Committee descriptive of what is considered necessary was printed in the Journal of the 23rd November 1893 [p. 55]. In relation thereto the Committee suggested the establishment of a Fund for Experimental Research in connection with Building Construction, the first application of such fund to be towards the expenses to be incurred in prosecuting the tests described.

The recent treatment of sewage with electrolysed sea-water has attracted the attention of the Committee, and a Sub-Committee has been appointed to inquire into and report upon the process invented by M. Hermitte.

The Committee appointed Mr. P. Gordon Smith Chairman and Mr. Thomas W. Cutler Vice-Chairman; and Mr. H. D. Searles-Wood and Mr. William C. Street Hon. Secretaries.

The accounts of Ordinary Funds for 1893,* prepared by Messrs. Saffery, Son & Co., Chartered Accountants, consist of a Statement of Income and Expenditure and a Balance Sheet,

which have been examined with the vouchers and found correct by Mr. James Neale, F.S.A. [F.] and Mr. F. W. Marks [A.], Auditors appointed by the Institute. They are here given:—

_	re Ac	ссог	int	of O	rdir	ıary	Funds for the Year ended 31st De	ecemb	er:	1895	3.		
Dr. EXPENDITUE							INCOME.					Ct	*
To Ordinary Expenditure:— Rent	£ 760	S. ()	d,	£	3,	d.	By Ordinary Income:— Subscriptions—	£	s.	d.	£	8.	d_*
Gas and Electric Lighting	124	14	- ()				Fellows	2444	8	0			
Coals	25	16	0	910	10	()	Ditto, Arrears Associates	1657	12 19	0			
Salaries and Extra Assistance				1222	7	11	Ditto, Arrears Ditto, formerly cancelled, since re-	81	18	0			
Postage Stamps, and Petty Expenses				478	5	11	ceived	(5	7	7			
Expenses of General Meetings and Exhibitions				188	9	8	Hon, Associates Ditto, Arrears	134	8	0			
Housekeeping Expenses Advertisements in Newspapers				169 54	5	1	Dividends on Stock and Shares				4402 183	16	7
Examination Expenses—				0.1	,	Α	Advertisements in The R.I.B.A. Journal	200	0	0	100	U	0
Metropolitan Building Act and Local Acts		9	G				Sale of Papers, &c.	103	11	9	303	11	9
Examinations (Architecture)		13	8	250	3	2	Use of Rooms—	0."	0	0			Ü
General Repairs				139	16	7	District Surveyors' Association	25 7	0	0			
Fire Insurance. Medals and other Prizes				19 145		0	Examination Fees—				32	()	0
Crant to Library				100	U	0	Metropolitan Building Act and Local	10	1.0	0			
Grant to Architectural Association Edu- cational Scheme				100	()	0	Acts Preliminary Examination	195	18 6	0			
The R.I.B.A. Journal (20 numbers)— Reporting		8	0				Intermediate Examination	75	12	0	289	16	0
Printing, Binding, &c	593	2	2				By Balance (Deficit) carried to Accumu-						-
Illustrations Stamps and Addressing	. 197	19 16	$\frac{2}{7}$				lated Fund (see Balance Sheet)				129	4	4
Printing and Postage of Kalendar for		-		1001	õ	11							
1893-94				118	15	5 6							
Contributions to Allied Societies Miscellaneous Expenses				183	71	0							
Liverpool Congress	. 18	11	2										
Legal Expenses Professional Accountant's Charges	33	12	()										
Special Exhibition of Drawings, &c		()	T()	88	[()	2							
Interest on Banker's Loan Estimated Amount of Law Costs in				-1	()	6							
curred in connection with Revision o	Ĭ.												
Heads of Conditions of Builders' Contracts				100	()	()							
Depreciation written off Furniture				65	-8	6							
				£5340	9	5				-	£5340	9_	5
Dr. Ba		SI	ieet		rdi		Funds, 31st December 1893.					Cı	
To Sundry Creditors outstanding	£	S_*	d.	381	8. 8	d, fi	By Cash at Banker's	£	.2.	d.	£ 114	s. 14	$\frac{d}{2}$
To estimated Solicitors' Costs				100	()	U	By Investments:		q	G			
To Examination (Architecture): Fee anticipatory of election				223	13	0	£1,000 23 per Cent. Consols 202 Shares Architectural Union Compy.	2828	Ü	Ü			
To Subscriptions received in advance for 1894				5	12	()	By Property:				3750	9	6
To Accumulated Fund—		1.0					Furniture, Fittings, and Fixtures, as	9500	0	0			
Ealance as per last Balance Sheet Less value of Lease or-	. 13040	1:	- 6				per last Balance Sheet Additions during 1893	117	0	9			
dered to be written off £1364 1 6 Arrears of 1892 included								2617	0	9			
in this Account since							Less Depreciation	65	8	G			
received or cancelled 298 0 0 Excess of Expenditure							1	2551	12	3			
over Income for year, as per Revenue Acct. 129 4 7							Printed Books and Manuscripts Oil Paintings	1800	0	0			
as per nevenue .vect. 125 4 /	- 1701	. (1				Lithographs, Prints, and Photos	400	0	0			
	12269	1:) i)				Water-colonr, Sepia, & Pencil Drawings Models, Plaster Busts and Casts	141)	0	0			
Add Arrears for 1893, as per contra							Marble Busts	150	0	0	9341	12	3
Entrance Fees for year							By Subscriptions in Arrear—	86	9	0			
1893 263 11 0	- 466	;	1 (1				1892 1893, contra		-	0			
				12735	17	5					288	15	0
SAFFERY, SON & CO.,			4	13498	10	11				£	13498	10	11
Chartered Accountants.			-			_	A. C.			_			

A reference to the Finance portion of the Annual Report of last year [Journal, Vol. IX. N.S. p. 322] will show that a sum of about £2,600 had been expended during the four years 1890-93 on the purchase of Architectural Union Company's shares, in building-additions, fittings, furniture, &c., over and above the amount acquired from the sale of £1,000 Consols authorised by the Institute in 1890. Of that sum of £2,600 about £1,000 had been paid

from entrance fees and ordinary income, and the balance remained unprovided for. The Institute consequently authorised, at the last Annual General Meeting, the sale of £1,310. 2s. 9d. Consols, which was effected in December 1893, and realised £1,281. 8s. 6d., thereby leaving a balance of exceptional expenditure of about £320 unprovided for, to be paid out of the entrance fees received in 1894. As a matter of fact, accounts outstanding on the 31st December 1892, amounting to £658. 14s. 7d., as may be seen in the balance-sheet of 1892 [Journal, Vol. IX. N.S. p. 325], with other sums for expenditure incurred in 1892, reaching a total of £986. 13s. 4d., have been paid in 1893; and the following statement shows the Receipts and Disbursements during the twelve months of that year:—

 $Secretary 's \ Statement \ of \ Receipts \ and \ Disbursements \ of \ Ordinary \ Funds, from \ 1st \ January \ to \ 31st \ December \ 1893.$

Balance at Banker's, 1st January 1893 (less £144, 18s. £ s. d. subscriptions received in advance) 222 4 7 Rent, Lighting, and Coals 941 4 7 Rent, Lighting, and Exhibitions 941 4 7 Rent, Lighting, and Coals 941 4 7 Rent, Lighting, and Exhibitions 941 4 7 Rent, Lighting
Subscriptions received in advance 222 4 7 Subscriptions and Arrears 4,457 8 7 General Meetings and Exhibitions 196 18 6
Subscriptions and Arrears
Noursal Advertisements and Sale of Publications, &c. 303 11 9 Fire Insurance 19 15 0
Use of Rooms 32 0 0 Examination Fees— £ s. d. 4 *Official Expenditure— Statutory 18 18 0 Preliminary 195 6 0 Intermediate 75 12 0 Cash 496 18 4
Examination Fees— £ s, d. *Official Expenditure— Statutory 18 18 0 Sa'aries and Special Assistance
Statutory 18 18 0 Sa'aries and Special Assistance 1,229 14 3 Preliminary 195 6 0 Printing, Stationery, Stamps, and Petty Total 75 12 0 Cash 496 18 4
Preliminary 195 6 0 Printing, Stationery, Stamps, and Petty Intermediate 75 12 0 Cash 496 18 4
Intermediate 75 12 0 Cash 496 18 4
Associate)
437 17 0 Solicitor
Entrance Fees— Accountant
Fellows (17 at £5. 5s., and 8 at £2. 2s.) 106 1 0
Associates (50) 157 10 0 Fittings, Furniture, and Repairs—
263 11 0 Library Bookcases, Electric Light, &c. 217 0 9
†Sale of £1,310. 2s. 9d. Consols
Painting Exterior of House
Geueral
= 346 2 3 Examinations 217 4 5
Prizes and Studentships
Library Grant
Architectural Association (Frant 100 0 0 2)
*Journal
TWO KALENDARS, 1892 and 1893 272 3 2
Allied Societies 183 9 6
†Repayment of Bauker's Loan (1892) 1,404 0 6
Balance at Bauker's, 31st December 1893 (including
£54, 12s., subscriptions in advance for 1894)
201 224, 00007 p. 000 201 200 201 200 201 200 201 200 201 201
£7,181 1 11 £7,181 1 11
The items to which an asterisk is profixed include the antstanding accounts mentioned in the Accountant's Ralance Sheet 31st December

* The items to which an asterisk is prefixed include the outstanding accounts mentioned in the Accountant's Balance Sheet, 31st December 1892 [Journal, N.S. Vol. IX. p. 325], amounting to £658, 14s. 7d.; and an additional sum of £205, 6s. 9d. for Library bookcases executed in 1892.
† The sale of Consols, realising £1,281, 8s. 6d., was insufficient to repay the Banker's loan (£1,404, 0s. 6d.), and the required addition of £122, 12s. had to be paid out of the receipts for 1893.

The accounts outstanding on the 31st December 1893 amounted to £384. 8s. 6d., and their details are given in the estimate for 1894 which follows:—

Secretary's Estimate of Receipts and Disbursements of Ordinary Funds for the twelve months of 1894.

, , , , , , , , , , , , , , , , , , ,		
ESTIMATED RECEIPTS.	ESTIMATED DISBURSEMENTS.	
Balance at Banker's, 31st December 1893 (including £ s. d. £54. 12s., subscriptions) 114 14 2 Subscriptions and Arrears 4,400 0 0 Dividends on Stock and Shares 148 0 0 JOURNAL and Sales £ s. d. 2	Accounts outstanding 31st December 1893— £ s, d, £ s, d	
JOURNAL and Sales— £ s. d. Advertisements (nett)	Examinations 67 13 3 JOURNAL 148 17 4	
Sale of Publications, &c. 100 0 0	384 8 6	3
350 0 0	Rent, Lighting, and Coals)
Use of Rooms	Salaries and Special Assistance)
Examination Fees—	Printing, Stationery, Stamps, and Petty Cash 500 0)
Statutory 10 0 0	General Meetings and Exhibitions)
Preliminary 175 0 0	Housekeeping 170 0 0)
Intermediate 85 0 0	Advertisements 40 0)
Qualifying (anticipatory of election as	Examinations)
Associate)	Fittings, Furniture and Repairs 80 0	,
——————————————————————————————————————	Fire Insurance 20 0 0	
Entrance Fees of Fellows	Medals and other Prizes	!
	Grant to Library 50 0 0 Grant to Architectural Association 100 0	-
	Grant to Architectural Association 100 0 0	
	Kalendar 125 0 0	′
	Allied Societies 190 0 0	,
£5,642 14 2	Solicitors,* Accountant, and Parliameutary Agent. 200 0	í
Estimated cash deficit, 31st December 1894	Miscellaneous)
£5,799 8 6	£ 5,799 8 6	
30,100	30,100	

^{*} The item of £100 described in the Accountant's Balance Sheet [p. 454] as "Estimated Solicitors' Costs" is included under this head.

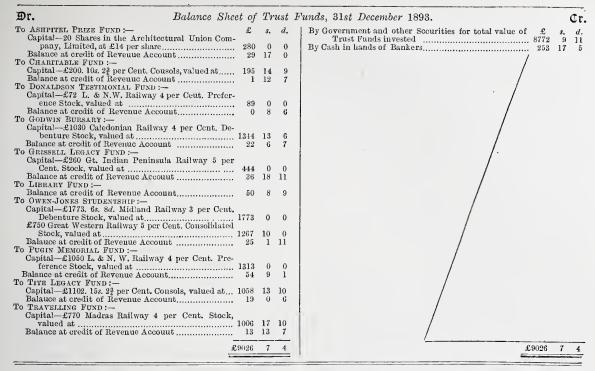
The Revenue Account of Trust Funds for the year ended 31st December 1893, examined with the vouchers and found correct by the Auditors, Mr. James Neale, F.S.A. [F.], and Mr. F. W. Marks [A.], is as follows:—

Revenue Account of Trust Funds for the Year ended 31st December 1893.

Dr. ASHFITEL PRIZE FCND:— To Cost of Books, Ashpitel Prize [A. C. Houston (£10. 10s.); and extra Prize, II. Brakspear (£5. 5s.)]	15	s. 15		By Balance from last Account	€ s. d. 33 12 0
To Balance carried forward CHARITABLE FUND: To Grant to Architects' Benevolent Society	45 12	12 12	0	per share By Balance from last Account	12 0 0 45 12 0 8 17 1
To Balance carried forward Donaldson Testimenial Fund:— To Cost of Medals To Balance carried forward	14	15	7	By Balance from last Account	5 7 6 14 4 7 0 7 8
Godwin Bursary:-		3		By Dividends on £72 L. & N.W. Railway 4 per Cent. Preference Stock	2 15 10 3 3 6
To Cash paid to Holder of Bursary, 1892, 2nd instalment, [T. L. Worthington] To Cash paid to Holder of Bursary, 1893, 1st moiety [Banister F. Fletcher] To Cost of Medal To Balance carried forward	20 1 22	0 19 6	0 6 7	By Balance from last Account By Dividends on £1030 Caledonian Railway 4 per Cent. Debenture Stock	24 4 9 40 1 4
GRISSELL LEGACY FUND:— To Cash paid W. T. Conner To Balance carried forward	- 5	5 18	0 11	By Balance from last Account By Dividends on £200 Gt. Indian Peninsula Railway 5 per Cent. Stock	26 14 0 15 9 11 42 3 11
Lubrary Fund: To Purchase of Books, Binding, &c. To Printing, Stationery, &c. To Sundries, Petty Expenses, &c. To Balance carried forward	66 9 8 50	0	9	By Balance from last Account By Annual Donation from a Member By Entrance Donation of one Hon, Associate By Grant from Ordinary Funds By Amount received in Fines (Loan Collection).	20 9 3 5 0 0 2 2 0 100 0 0 6 9 0 134 0 3
OWFN-JONES STUDENTSHIP:— To Balance of Grant paid Student 1892 [F. W. Bedford] To 1st Moiety of Grant paid Student 1893 [A. H. Powelf] To Balance carried forward	25 25 25	0 0 1	0 0 11	By Balance from last Account By Dividends on £1773. 6s. 8d. Midland Railway 3 per Cent. Debentare Stock By Dividend on £750 Gt. Western Railway 5 per Cent. Stock	5 6 9 51 16 4 18 4 10 75 1 11
Pugin Memorial, Fund;— To Cost of Medal To Balance carried forward	1 51 55	9	1	By Balance from last Account By Dividends on £1050 L. & N.W. Railway 4 per Cent. Preference Stock	15 0 4 40 18 3 55 18 7
Tite Legacy Fund: To Cash paid Prizeman for 1892, 2nd instalment [T. R. Kitsell]. To extra Prize [R. S. Dods] To Cash paid Prizeman for 1893, 1st instalment [C. A. Nicholson]. To Balance carried forward	5 20	(1 5 (1	()	By Balance from last Account By Dividends on £1102, 15s. 24 per Cent, Consols	29 15 8 29 9 10
TRAVELLING FUND: — To Cost of £70 Madras Railway 4½ per Cent. Stock To Balance carried forward	59 54 13 108	17 13	1d 7 5	By Balance from last Account	59 5 6 76 7 11 32 3 6 108 11 5
KAPURTHALA PALACE COMPETITION FUND: To Cash refunded to H.H. the Maharajah of Kapurthala	88 £88	15	()	By Balance as per last Balance Sheet	88 15 0 £88 15 0

Since the issue of last year's Report the Executors of the late Miss Hannah Jane Jones, sister of the late Owen Jones, have paid over an amount of £750 Great Western Railway Five per Cent. Consolidated Stock, whereby the annual income of the Owen Jones Fund has been increased from about £50 to about £85; and a further amount of £250 of the same Stock will be paid over on the death of an annuitant.

A Balance Sheet of Trust Funds, examined with the vouchers and found correct by the above-named auditors, is given on the opposite page.



CHRONICLE.

EDUCATION AT THE ANTIPODES. Curriculum at Canterbury, New Zealand.

Mr. Hurst Seager [A.], who has been appointed Lecturer and Instructor in Architecture at Canterbury College, Christchurch, N.Z., recently delivered his Inaugural Address to students of the College. He has also drawn up a syllabus of lectures in connection with the subjects under his charge, and for which a special department has been instituted. The object of the new departure is to establish a complete course of training in Architecture and Decorative Design, leading in both branches to the granting of diplomas to those students who successfully pass the examinations laid down. Though classes in these subjects have been previously held, this is the first time in the history of the College, and in fact in the history of New Zealand, that a definite course of study in these branches of work has been arranged, and students afforded an opportunity of winning for themselves a recognised position as masters of the arts they profess.

The courses are designed to meet the requirements of those intending to follow the profession of architecture, building, or any form of decorative work—e.g. colour decoration, stained glass, mosaic, tiles, &c.; modelling, carving in stone, metal-work, joinery and cabinet-making, &c. Before taking up the work of this department, students are required to give evidence of skill in freehand drawing and shading from the round,

plane and solid geometry, model drawing and perspective, and to have passed the Art Students' Examination.

Three courses of lectures are to be delivered—namely, (1) on the Principles and Practice of Architectural Design; (2) on the Principles and Practice of Decorative Design; (3) on the History of Architecture and Decorative Design. The lectures in the first and second courses will be delivered weekly throughout each term, each course being completed in two sessions. The third course will not be delivered in its entirety till it is needed to complete the course of studies laid down.

The course in Architectural Design Mr. Seager claims to have arranged in accordance with the great need of modern times—i.e. the attainment by the student of a thorough grasp of the principles of science and of art upon which the work of the architect depends, rather than the forms which have resulted from such study in the past. He purposes, therefore, to deal in this course with the principles which govern all the main problems likely to be met with in the practice of the art of to-day. A diploma in this branch can be gained only by four years of diligent study, and the standard of work required to win it will be equal to that demanded for the examination qualifying for candidature as Associate of the Institute.

Broadly speaking, the first two years are to be devoted to the acquirement of knowledge of principles, and learning how they have been applied in the past; the third and fourth to the gaining

of power to make use of the knowledge and skill acquired in original compositions. In the third year students will be required to prepare a perspective drawing of a building previously measured, and to design a building based on the examples given in the course of lectures; and in the fourth year to prepare a complete set of drawings for an original design, with specification, bills of quantities, estimate of cost, with a clear, concise description of the whole scheme, and the methods proposed to be adopted in carrying it out. In the fourth year also students will attend the course of lectures on the History of Architecture and Decorative Design, and a course on the Practice of Architecture, embracing all legal questions an architect should be acquainted with, such as laws of contract, arbitrations, rights of adjoining owners, rights of light, specification writing, domestic sanitation, &c.

Before entering on the Second Course, the student must have gained a Second Grade drawing certificate, and shown his capabilities as a draughtsman. This course deals with the principles underlying all forms of ornamental art, and the application of those principles to the various kinds of art work. As in the First Course, students will be required to sketch from memory, design, and write essays. Throughout the course examples of ancient and modern art of different countries will be shown, to illustrate the laws which govern the production of all ornamental forms; but the teachings of surrounding nature, the flora and fauna of New Zealand, will be placed before the students as the source whence all good original design should spring. The whole course will be complete in four years, the first half being devoted, as in architecture, to the attainment of knowledge and power, and the second half to the exercise of power by the preparation of original designs. Every means is to be used to aid the development of that faculty of invention so necessary to the designer. "It matters not," says Mr. Seager, "for "what material or for what purpose we design, "whether it be for woodwork, for metal-work, for "surface decoration, pottery, or fabrics, the same "faculties are made use of; develop these, and "we at once create the power to design anything-"without them nothing." In each year in both courses modelling in clay is required as being the best means of learning to produce form. In the fourth year students will be required to attend the third course of lectures, on the History of Architecture and Decorative Design, and to pass an examination upon them; for although a slavish adherence to antique forms is deprecated, yet a clear knowledge of what the past has produced is deemed absolutely essential.

The Third Course is intended to convey a general knowledge of the various styles of art practised by the different nations from the earliest times to the present day. The course will be

complete in forty lectures, each lecture to be illustrated as far as possible by examples of art work, and by lantern views of the finest and most typical examples of architecture and the contemporary decorative arts.

Courses of instruction in the different branches of artistic work, dealing in detail with the special application of the principles of design dwelt upon in the lectures, and the technical methods of production and manufacture, will be given in the following classes: Stone-carving, wood-carving, metal-work, cabinet-making, joinery, modelling and moulding for works in plaster, &c., colour decoration, stained glass, &c.

Mr. Seager's Address and the Prospectus containing the Syllabus may be seen in the Library, the former having been published in the Australasian Builder of the 3rd and 10th March last.

The London Streets and Buildings Bill.

Under the chairmanship of Mr. Stuart Wortley, the Select Committee appointed by the House of Commons to consider the Streets and Buildings Bill promoted by the London Council commenced their sittings on the 30th ult., when Mr. Cripps, Q.C., opened the case for the Bill. Two sittings have since been held, on the 3rd and 7th inst., but so far the only witness examined, and that merely on Part I. of the Bill, has been Dr. Longstaff. At the close of the proceedings last Monday the Committee decided that all petitioners should lodge with the County Council the amendments they propose on the whole Bill on or before the 18th inst.; and thereupon the sittings were adjourned till Thursday, the 24th inst.

The Sanitary Institute Congress.

The next Autumn Congress and Exhibition of the Sanitary Institute will be held at Liverpool on 24th September 1894 and four following days, and the Royal Institute has been invited to appoint two delegates to attend. The Lord Mayor of Liverpool is the chairman of the committee charged with the arrangements of the Congress, the work of which will be taken in three sections: (1) sanitary science and preventive medicine; (2) engineering and architecture; (3) chemistry, meteorology, and geology. Special conferences have been arranged for medical officers of health, municipal and county engineers, sanitary inspectors, and others. The Exhibition will embrace all matters relating to public health and the prevention of disease, including sanitary appliances and subjects connected with municipal work.

A Defence Fund for Architects in France.

It is perhaps not generally known that there exists in Paris a Professional Association of Architects having for its object the defence of professional interests involved in actions at law for or against members of the Association, and

entitled "Caisse de Défense mutuelle des Archi-"tectes." This Association helps or reimburses those of its members who may be forced to go to law or against whom an action is brought, when the interests at stake affect Responsibility, a Public Competition, Professional Charges, artistic Property, &c.; but the Association has nothing whatever to do with purely personal questions which have little or no bearing on the interests of the Profession at large. Founded in 1884, the new Caisse de Défense mutuelle at once received the support of the Société Centrale des Architectes Français in Paris, and of numerous non-metropolitan Societies of Architects. The following year the Association had 150 members and nine Allied Societies, and its headquarters were established in Paris at the offices of the Société There are now 400 members of the Centrale. Association all told, and the number of law cases in which it has taken part already reaches a hundred, at a cost of some thirteen thousand francs (£520)—another sum of £600 having been spent in the course of nine years on administrations, publications, and advertisements-and it should be borne in mind that law costs, like professional incomes, are uniformly less in Paris than in London. A "Memorandum Judiciaire," giving full particulars of the legal means of obtaining redress for interests injured or attacked, or of defending the same, has been presented to the Library by M. Ch. Lucas [Hon. Corr. M.], together with the Articles of Association and list of members, which are worthy of careful attention from all those in this country who, often in spite of themselves, are compelled to defend an action or bring one. The first President of this Caisse de Défense mutuelle was the late Ch. Questel, and the present one is M. Daumet [Hon. Corr. M.], President of the Société Centrale. There are three Vice-Presidents, one of whom is M. Hermant [Hon. Corr. M.], and the Secretary is M. Lucas.

Additions to the Library.

Der Kirchenbau des Protestantismus, published by the Berlin Society of Architects and presented by Herr H. v. d. Hude, is devoted to the consideration of Protestant ecclesiastical buildings from the Reformation to the present time, and contains over a thousand illustrations in the text. Separate articles deal with the Mediæval Parish Church, the erection of Mediæval churches for the purpose of an Evangelical form of service, Evangelical churches in Germany from the sixteenth and subsequent centuries down to date, and to the Protestant churches of Denmark, Norway, Sweden, Russia, the Netherlands, France, Switzerland, England, and North America. The concluding part of the work is devoted to the general essentials to be considered in the erection of Protestant places of worship, the object of the whole being the perfecting of this type of building. The Hospital of St. Wulstan, founded in the city of Worcester towards the end of the eleventh century by Bishop Wulstan, was an important institution. The Rev. Frederick Thomas Marsh has gathered into a quarto volume, with numerous illustrations, including two capital etchings, considerable information respecting this ancient edifice, "because its history is obscure, its "endowments seized, and its buildings fast falling "into decay." The book also contains a chartulary of the hospital and a short biography of its founder, the former of which should be of interest to the genealogist and antiquary.

Mr. Roland W. Paul has presented his Vanishing London, of which he is both the author and publisher. The work consists of a series of drawings illustrating some of the old houses in London. Some of these have recently been pulled down, and possibly a like fate is reserved for many of the remainder. Special importance will therefore be attached to the possession of Mr. Paul's book

by those interested in older London.

Copies have been presented of Mr. Ellis Marsland's handy compilation of Existing Rules and Regulations respecting building for the information of architects and others engaged in building operations in the county of London, published by Batsford; and Mr. Alfred A. Hudson has presented his Law of Building and Engineering Contracts, and his Concise and Practical Legal Advice to Engineers, Architects, &c. (London: Waterlow & Sons, Ltd., and Stevens & Haynes).

The Report of the holder of the Godwin Bursary for 1893, Mr. Banister F. Fletcher [A.], takes the form of a folio volume of considerable bulk, consisting altogether of some 260 pp., including text in manuscript, and illustrations. Mr. Fletcher's Report is based on a visit to the Chicago Exhibition, and in its clear and convenient arrangement is a model of its kind. It is an example of spirited industry, and a notable contribution to the history of the architecture of the Exhibition. It is divided into the following sections: (1) Introductory; (2) The Greater Buildings; (3) The States Buildings; (4) The Constructive Exhibits; (5) The Sanitary Exhibits; (6) Heating and Ventilation; (7) Institute of Building Arts; (8) Specifications of various buildings. Sections 9 and 10, which are bound together, give copies of contract drawings and drawings of ironwork roofs.

Mr. Barr Ferree, a frequent contributor to the Library, has forwarded his pamphlet, entitled The Chronology of the Cathedral Churches of France, being a reprint from the author's contributions on French Cathedrals to The Architectural Record, a New York periodical, which may be referred to on the reading-table in the front Library. Mr. Ferree begins his record with the eleventh century, and he thus defines the scope of his chronology: "It not only undertakes to tell what part of each "edifice was built in each century, but it also shows

"the more important structural events connected "with each building."

Parts 3 and 4 are received of Der Formen Schatz (G. Hirth, Munich and Leipzig), containing reproductions of works by Titian, Perugino, Albert Dürer, Giorgione, Rembrandt, &c. Mr. Howard Martin's Paper on The Report of the Local Government and Taxation Committee of the London County Council on the Subject of Rating of Ground Values, read before the Surveyors' Institution, and the discussion thereon, may be found in Parts 9, 10, and 11, vol. xxvi. of the Transactions of that Lody, which have recently been received.

NOTES, QUERIES, AND REPLIES. THE METROPOLIS.

Westminster: March of Imperial Improvement.

Three generations ago our grandfathers and great-grandfathers were moved to compassion for hardworking officials engaged in the administration of public business under distressing circumstances due to overcrowding; and a great deal of Imperial attention was given, especially after the re-establishment of peace in Europe, to the subject of housing Departments of State in a manner worthy of the nation and its servants. Indeed, at that time two of these Departments were lodged in eight private houses in Downing Street, and their forlorn condition, the Foreign Office being one of them, so attracted the eyes and ears of Parliament that, from time to time, Select Committees were appointed to consider the question of rebuilding. One Committee, in 1839, reported upon the expediency of substituting for the eight private houses a monumental structure which shoull "form part of a comprehensive scheme of "public improvement"—a scheme that had already been put on paper by the late Decimus Burton. Fifteen years afterwards an excellent First Commissioner, the late Sir W. Molesworth, referred to the eight private houses in a Minute which was printed, together with plans and estimates for a scheme of "Public Offices Extension," dated 15th January 1855; and to these were added, six months later, other plans prepared by the late Sir James Pennethorne. In 1856 a Select Committee considered the same subject, and in 1858 another Select Committee delivered a report thereon. In 1866 a "Commission" was appointed to inquire into the question of "accom-"modating" the public departments. In 1877 a Select Committee took evidence, spending a large amount of time and money on this work; and in the course of forty years four Departments of State have been lodged, two of them a little scantily, in one block of public buildings.

Meanwhile, in 1856-57, the architects of all countries were invited by the British Government to prepare a block plan for laying out Imperial Westminster anew; and, in this artistic lottery, a Frenchman drew the first prize. Invited also to submit designs for a War Office and a Foreign Office, they sent in 218 sets (consisting of nearly 2,000 drawings) for the concentration of these offices at Westminster; and two Englishmen, who submitted separate and distinct designs for a War Office and a Foreign Office respectively, drew the two first prizes. At length, after a decent interval, a Foreign Office was built, but no War Office; and about ten years ago-some twentyseven years after the great competition above described came to a bad end—a Select Committee considered proposals for a combined War Office and Admiralty at Whitehall. Sketch designs, to the number of 128, were then presented to the nation by a patriotic profession, with the result that the War Department is still maintained in private houses in Pall Mall and St. James's Square; and additions are being made in the rear of the old building long occupied by a portion of

the staff of the Admiralty.

The "approaches to Westminster" have afforded the Imperial Government much thoughtful contemplation for the space of nearly two centuries; and only twenty-six years ago the Duke of Rutland (then Lord John Manners) advocated improvement-from the point of view of "magnificence" —in the noble street which connects the finest site in Europe with the Palace and Cathedral of Westminster: in prosaic language, the progressive expansion of the broad thoroughfare connecting Trafalgar Square and Abingdon Street. About the years 1700-1750 King's Gate, which used to block the highway as effectually as Temple Bar once did, was removed, and this without any promise from the authorities that they would erect it elsewhere or deposit its fragments on Thames side for future use; and 107 years later the Imperial Government gave further proof of their desire to render the passage of Whitehall and Parliament Street stately, if not magnificent, by paying M. Crépinet and others several hundreds of pounds for laying out on paper the site of an improved Westminster, as before described. Yet there are busybodies, in Parliament and in the Press, who insist that delay has been allowed to frustrate the grand idea, not only of approaching the Legislative Palace of the British Empire through a magnificent avenue, but even of concentrating in its immediate vicinity the great Departments of State, with a view to economy of public money and official time. True, on the west side of Charing Cross there are Banks of comparatively recent erection, and bankers who require solid and substantial persuasion to leave their present positions: true, the statue of Charles I. is still a little out of the centre; true, the entrance to St. James's Mall remains a compromise between a footpath and a cul-de-sac; true, a row of private houses blocks the view of Parliament Square from Whitehall. But recrimination of the kind is unworthy of ratepayers who ought to know that the approaches to Westminster-

Imperial works and worthy kings-

are not matters of mere municipal concern. At the bottom of all such progressive improvement is the steady though slow system of procedure which makes British administration the envy of citizens in a neighbouring country and the pride of our own. Three generations hence, our grandsons and great-grandsons, under an improved Shaw Lefevre, may add to the "finest site" the "most "magnificent avenue in Europe." To inquire as to the number of Select Committees that may sit upon the subject between this and then, or as to what they may hatch, would be eminently puerile, for not even Imperial Parliaments can tell.

The Regeneration of London. I.

From Arthur Cawston [A.]—

The improvement of the city in which any architect lives is a subject which is bound to appeal to him both as a duty and a pleasure. London architects should therefore be the happiest of mortals, for doubtless the majority of Londoners are fast admitting that there is no great city which wants, and which must soon undergo, more radical improvement than their own. Whilst I was preparing my book on London Improvements* it was my duty to search out and carefully study the latest information on the regeneration of towns, and it has occurred to me that a list of the principal pamphlets and books on the subject would be useful to many members of the Institute at the present moment. My list is doubtless incomplete, but I can vouch that each one mentioned is thoroughly "on the spot," and, as such, I strongly recommend their purchase and perusal by all architects and reformers.

The list might be divided as follows:-

(1) What intelligent visitors think of London as it exists; (2) what reformers and architects have been doing in other great cities; (3) what the ablest amongst London reformers are endeavouring to do for London at the present moment. I naturally put the pleasantest reading last, and as my anxiety for improvements was thoroughly roused by the books first on the list, so I trust my professional brethren will be similarly influenced.

Mr. Albert Shaw's writing is so energetic and powerful that in his hands the meanest details of city government become quite fascinating. Between 1890 and 1892 a series of articles† on European cities and their governments appeared from his pen in this leading American magazine. The following extract from the opening page of his article on London is peculiarly applicable at

* A Comprehensive Scheme for Street Improvements in

the moment, when Londoners are asking Parliament for permission to manage their own affairs.

How London has been governed in the past, how it is governed at present, how it is meeting the various social and economic problems of modern metropolitan lifethese are questions eminently worthy of consideration by all who would study municipal matters. For London is the capital not only of the British Empire, but in some sense also of the whole world. In it the new forces of urban life are at work in most significant ways. It is slowly but surely evolving central municipal institutions that shall meet its peculiar needs. Its population is waking up with a sense of unity and with an appreciation of great things to be done through united municipal action for the common welfare. It is only lately that the people of advanced industrial nations have learned to accept the fact that life in cities under artificial conditions must be the permanent lot of the great majority, and that it is the business of society to adapt the urban environment to the needs of the population. Life in the modern city should not be an evil or a misfortune for any class. There should be such sanitary arrangements and administration as to make the death-rate of the great city smaller than that of the nation as a whole. There should be such educational facilities as to ensure to all the young people of a city the most suitable physical, intellectual, and industrial training. The masses of people in London are rising to some faint perception of these truths, and they are beginning to clamour for social and governmental reforms. The immediate future of London is fraught with magnificent possibilities. From the extreme of chaos, disorganisation, and uncontrolled freedom of individual action, it is not impossible that the great metropolis may, a generation hence, lead all the large cities of the world in the closeness and unity of its organisation and in the range of its municipal activities.

And this is the warning that Mr. Shaw gives his countrymen at the conclusion of his article a warning of equal value to British authorities in charge of the development of the suburbs of all growing towns :-

There is much that is instructive and admirable in the governmental arrangements of London, and still more that is commendable in the spirit of reform and progress that is now awake and active there. But perhaps the chief lessons for us in America are lessons of warning. If London, within the lifetime of men still in their prime, had taken due precautions, what errors might have been averted! London is now creating a park system, and acquiring land that has quadrupled in value within thirty years. London is widening and straightening streets, and incurring thereby the expense of appropriating frontage that costs twice as much now as it would have cost a few years ago. The people of London have been compelled to pay hundreds of millions as a penalty for the neglect to provide an adequate public water supply. They suffer an inestimable loss in convenience and in actual money through the haphazard nature of passenger transportation facilities. An intelligent system might have been devised if the matter had received due attention thirty years ago. If London had provided suitable building regulations forty or fifty years ago, and forbidden faulty and unsanitary construction, enormous subsequent expenses of demolition would have been averted. If the ground-rent system had not been allowed to grow insidiously through the past generations, the general character of London, architecturally and in other respects, would have been enormously improved. Our American cities, studying the experience of centres like London, cannot exercise too great forethought in preparing for the greatness that awaits them.

London. [Stanford.]
† How London is Governed. By Albert Shaw. [Century Magazine, March 1890. 1s. 4d.]

The majority of London architects doubtless had their attention called to the article by Mr. Grant Allen entitled "A Squalid Village," which appeared last year in a number of the Westminster Gazette. The ignorant protest which his article received drew from this powerful writer a sarcastic article* which has doubtless materially assisted in impressing upon Londoners the state of squalor and neglect into which they (and their architects) have allowed their city to drift. The more this fact is impressed upon the London voter, the more adequate will be our future improvements. The article commenced thus—

A short time since I ventured humbly in a London journal to describe London itself as "a squalid village.' The phrase appeared to me at the time so purely a platitude that I was quite surprised at the chorus of dissent with which it was greeted by the press and the public. In spite, as it seemed to me, of the patent fact that London is squalid, a vast number of its inhabitants, I am now forced to believe, have never so much as discovered, or even suspected, its extraordinary squalor. And in spite of the other equally obvious fact that it is even now no more than a village, or rather a haphazard congeries of villages not in any organic sense a town or city, but at best a county or scratch collection of separate parishes-very few of its inhabitants seem ever to have noticed the vast gulf which separates it from real corporate cities like Rome or Florence or Paris or Brussels. For, of course, when I speak of London I mean the great actual composite London of the present day, not the still surviving mediaval anachronism which a few rich and vulgar-souled people in the City are permitted to invest with the time-honoured name of the British capital. In short, when I say London I mean London, not the farce of the Guildhall and the opprobrium of the Mansion House.

Mr. Grant Allen then puts himself in the position of a stranger approaching for the first time the British capital.

Hc (the stranger) is aware, let us suppose, that England is now the richest and in some ways the most powerful kingdom on the face of our planet. He is aware that London, its capital, has for its great water highway the river Thames. He decides, accordingly, to enter the metropolis of the greatest naval and commercial power on earth from the sea, by the mouth of its teeming navigable river. A few weeks ago, let us suppose, he was loitering in Venice. Now Venice was at its best but a small mercantile town, as we count mercantile greatness in our own age; and it possessed, in its most flourishing period, a population, I believe, of some two hundred thousand souls, or, say, about a quarter as many again as Brighton. Our traveller had entered Venice similarly from the sea, which forms, so to speak, its front door, and as he ran up from the Lido towards the Dogana di Mare he saw gradually the glorious façade of the Doge's Palace, the five domes of St. Mark's, the campanile of San Giorgio, the pillars of the Piazzetta, unfolding themselves one after another before him. As he landed at the steps of the Molo, arcades and mosaics, sculpture and painting, seemed to force themselves upon his eyes from every nook and corner. He stood astonished, as we have all stood so often in our time, at the magnificent barbaric confusion of the great church, at the riotous wealth of artistic impulse, at the gathered relics of the past from Ptolemais or Byzantium. But this, after all, was only Venice—only a town of some two hundred thousand people, which held, indeed, the gorgeous East in fee, but not the West as well, and the North and the South to boot, like England. "If this is what I find in the lard which owned Cyprus and the Morea," he said to himself at the time, "what may I not expect from the land which "owns India and Australia, Jamaica and Canada, Hong-"kong and Singapore, New Zealand and Cape Town?" And thinking these things he went on his way, inquiring, and sailed up the Thames from Gravesend to London.

How every true Englishman's heart must swell with the pride of world-wide empire as he contrasts in memory the way up from Greenwich to the Tower with the way up from the Lido to the Doge's Palace! What luxury of ornament! What excess of splendour! The exquisite front of the Victualling Yard at Deptford, the storeyed beauties of Bugsby's Reach, the charming façades of the Isle of Dogs, the noble and swect-scented tanneries of Bermondsey! At each bend of the river new and beautiful groups of buildings rise gradually into view, as far surpassing the Piazza and St. Mark's as London surpasses mediæval Venice in wealth, in population, and in artistic spirit. The traveller feels the apologists were indeed quite right, and that a great commercial city is here worthily housed beneath the graceful and appropriate shadow of an iron bridge many dozen times bigger than the boasted Rialto. So he sails on rejoicing, past mud-bank and tavern, till he comes to anchor at last by the British Molo, at the songinspiring steps of magnificent Wapping.

Or does he arrive by land? Chance haply delivers him at Paddington Station, where a shilling drive down Praed Street in the gondola of London reveals at once to his astonished and dazzled eyes the architectural glories of our modern metropolis. Or it leads his wandering steps and portmanteaus to Waterloo, whose very name proclaims it a fitting memorial of past military greatness, whence it draws him on through the commodious boulevards of the Surrey Side till it delivers him at last at the impressive rond-point of Ludgate Circus. Other capitals take care to place their railway-stations at important centres of the town, where great arteries radiate in every direction, and to house them as they are housed in Milan, in Munich, in Brussels, in Antwerp. But London, all beautiful alike (to borrow from the advertisement of a famous tea) has no need thus to choose special sites for her stations, or to arrange that they should occupy radial centres for the main arterial streams of commerce and circulation. She knows that wherever she puts them they will alike be surrounded by groups of noble and appropriate edifices; and so she can afford to let the foreigner gain his first conception of her glories at London Bridge Terminus, or among the palaces of commerce that tower above Liverpool Street. Too great to be self-conscious, she never tries to deck herself out for the admiration of visitors; she admits them at once into the privacy of her domestic life in Stamford Street, and exhibits to them with lordly disdain her garnered wealth at King's Cross and St. Pancras.

The careful reader of a third article* on London as it exists is forced to the conclusion that, in the opinion of its author—a well-known Conservative and Indian official—the state of the metropolis is well-nigh as bad as depicted by Mr. Grant Allen. Sir Lepel Griffin, however, with his accustomed diplomacy, so conceals his opinion that the ordinary cockney imagines, when he has completed the article, that if only the waste-paper were removed from the London streets, London would far excel Paris, Vienna, Brussels, or Antwerp.

^{*} Beautiful London. By Grant Allen. [Fortnightly Review, July 1893. 2s, 6d.]

^{*} An Imperial City. By Sir Lepel Griffin. [The Pall Mall Magazine, September 1893. 1s.]

An architect, however—and especially an architect greedy for specifications and bills of quantities (as a distinguished newspaper described me when criticising my book)—finds more serious matters in this famous article.

Very little of the improvement of the metropolis (writes Sir Lepel Griffin) is due to the initiative of the Government. No public building, however urgently needed, is granted without years of persistent worry. Like a sloth in a South American forest, the official screams and resists if he is urged to move onward. It is upon the Government directly that the blame for the worst of the blots and blemishes of London must directly fall. No matter which party is in office-whether the witty Mr. Plunket directs affairs, or the amiable Mr. Shaw Lefevre-there is the same record of apathy, waste, incompetence, and indifference to the public interests. . . . The metropolis is covered with the marks of the carelessness and blunders of the Department of Works; and little improvement can be hoped for until the First Commissionership ceases to be a political appointment, given to any partisan who may understand architecture no more than shoemaking, and is entrusted, for a term of years, to the most competent person who can be found. The present arrangement is worthy of Laputa. If we were fortunate enough to secure a First Commissioner of both energy and genius, the beautifying of London would be soon ensured. Take, as an example, Piccadilly, which is one of the famous streets of the world, and even now far more beautiful than the monotonous and ugly Rue de Rivoli in Paris, with which alone it can be fairly compared. How easily and cheaply might its attractiveness be doubled! Sweep away the hideous iron railings, which suggest a county jail; widen the roadway thirty feet from the Isthmian Club to Hyde Park Corner, and throw out a broad and handsome terrace, with suitable balustrades and wide steps into the Park, on which people might walk or sit in the full shade of the trees. In accomplishing this there are no difficulties, and only eight half-grown plane trees would require to be removed. Nothing would be taken from the Park which was not restored to it many times over in usefulness and beauty.

Let us look for a moment at Whitehall, the most interesting street, historically, in the British Empire, and which should form a worthy approach to the Abbey and Palace of Westminster. For thirty years the Government have been vainly trying to pull down the mean row of houses between King Street and Parliament Street, and, to my personal knowledge, the project was further advanced twenty years ago than it is to-day. An energetic Board of Works would sweep them away in a month, and not only these houses, but the whole nest of shabby dwellings between the India Office and the Abbey, creating, what would be, for London, the only possible rival to the magnificent Place de la Concorde in Paris. . . .

Proposed Systematic Testing of Bricks & Brickwork.

The Science Standing Committee have represented to the Council the necessity for opening a fund which would enable the Committee to carry out experiments to test the relative strength of bricks and brickwork suggested in their recent Report [p. 55]. The Committee estimate that such experiments would involve an expenditure of some £200, and they are prepared to furnish an initial list of subscriptions, which has already been headed by the President with a donation of ten guineas. They now ask members of the Institute to contribute to the fund, the objects of which

were fully described in this section of the JOURNAL on the 23rd November last. The Committee have further to acknowledge the receipt of communications bearing on the subject of brickwork, among others an account of important tests recently made in Liverpool, from the pen of Mr. J. A. Berrington [A.], which will, in due course, be published.

Architects and Master-Workmen. I.

From R. Phené Spiers, F.S.A. [F.]—

Mr. Gotch, in the "Historical and Critical Text " on the Architecture of the Renaissance in Eng-"land," published with Part VI., devotes a chapter to "The Growth of the New Style," in which (p. xix.) he thus sums up:-"The state of the case " seems, therefore, to have been this. There were the "surveyors, such as John Thorpe, who gave the "general designs for the buildings; and there were "the workmen—the masons, the carpenters, the "plasterers, and the plumbers—who supplied all "the details." He has, however, omitted one important personage, viz. the noble owner, who instructed the surveyor, and who, if he had travelled much, probably dictated the principles to be carried out in the arrangement of the plan and in the style he wished to impart (generally vague recollections of some buildings he had seen abroad), and who, when he found his ideas carried out, conceived he had been the designer, and, as in the case of Sir Francis Willoughby and Wollaton Hall, had the fact inscribed on a panel over a door on the garden front. In this particular case, however, he is not the only one who disputes the surveyor's (John Thorpe) claim to be the designer. Robert Smythson, Gent., who was probably the master-mason or foreman of the masons, claims in his epitaph to be architect and surveyor unto the most worthy house of Wollaton, so that, between the two, John Thorpe makes a poor show; and if he had not, like Villard de Honnecourt, left behind him a series of careful drawings, including many works not his own, we should probably never have heard of him. Even as it is, Mr. Gotch (who up to now has been his chief champion) almost deprives him of all his chief functions, in his assumption that the workmen—masons, carpenters, plasterers, and plumbers—supplied all the details. Is this, however, really the case, and on what evidence has Mr. Gotch come to this conclusion? It is quite certain that the architects in Italy of the same century, and those in England in the following century, went a great deal further than " supplying "a general design." The Burlington-Devonshire drawings, which were on view in the Institute rooms in January last, and which under certain conditions have been presented to the Institute, show even a greater elaboration of design than is usually given by the architect of the present day; and although these drawings are scarcely sufficiently clear to serve as contract drawings, they would form an excellent guide to the mason or carpenter who set them out full size in the workshops, there to be supervised and corrected by the surveyor himself. Five-and-twenty years ago, when I first visited Cologne Cathedral, there still existed, on the south side of the cathedral, the original floor on which all the stone details of this structure had been set out. If I recollect rightly, we were told that under successive coats of whitewash might be found the traces of the earlier settings-out, and that, when all the details of one section of the design had been copied, the floor was lime-whited again for further work. There may be other instances known, and as I am writing under Notes and Queries, further information might be obtained. The only reason I have for mentioning these facts is to show that, very much as in the present day, all the work was set out full size in the shops, the only difference being that, owing to the paucity of drawings, far more importance was attached to the setting-out, which was done, probably, by the mason or carpenter, but designed and supervised on the spot by the surveyor.

If this be the case, what are we to make out of another statement of Mr. Gotch's (p. xvi.)? "But "if the mason was instructed only as to the gene-"ral masses of the building, the carpenter and "joiner received even less guidance. There were "no sections of the buildings supplied showing "them the internal treatment: the plan was "their only guide. From this they could see "where the screen was to be, and how many doors "it was to have; the staircases, too, were shown, "and the number of steps carefully figured. But "as to the detail of the newels and balusters, "and handrail, these things must have been left to "the joiner himself. The roof, if it was to be visible "and ornamental, he would have to design him-"self; not a hint was to be got from the surveyor's "drawings. Nor was the joiner better off in respect " of the panelling and the doors: such things he "must have worked out for himself. It was the

"same with the plasterer,"

Now it is true that Mr. Gotch (p. xviii.) calls attention to absence of section and details in John Thorpe's drawings, and points out that in certain cases no central source is mentioned whence designs were to be supplied; he goes further, and states that in building agreements no mention is made of the architect whose designs were to be followed, and this "accounts for the differences in the quality of "the design observable in buildings planned by the "same man." But the description is so entirely at variance with all one's previous conceptions, and, in a sense (in the face of the evidence which Mr. Gotch has himself placed before us in the admirable illustrations of his work), is so improbable that one would like to know on what ground he ascribes so inadequate a service to the surveyor. What perhaps strikes one more than anything else in Wollaton Hall, for instance, is the unity of the whole design, showing that it is the work of one mind.

Mr. Gotch would have us believe that each artificer worked according to his own conception. carried everything off his own bat; and this theory, when he had to work it out, has landed him in another difficulty. "How did all these men," he says (viz. the workmen—masons, carpenters, plasterers, and plumbers), "become so imbued with "foreign ideas as to give those new forms to their "work which are the distinctive marks of the change "of style? We can see with tolerable ease," he says, "how the surveyors acquired their style. "They either went to Italy like Shute, or to "France like Thorpe, or they studied the foreign "books which were then being published and "translated into English. It is quite easy to see "how they acquired the foreign trick." "But "with regard to the workmen it is impossible to "lay the finger on any specific place and say, Here "the mason got this idea, there the joiner that. "We can only see that they must all have been in-"feeted with the 'spirit of the age,' a very vague "affair at best, and extremely difficult to mate-"rialise." Exactly so, but the difficulty has been raised by Mr. Gotch's own theory.

That the workmen of those times were sometimes superior to those of the present day is possible: they were not trammelled by undue competition; they worked in a vernacular style far less subject to changes than at the present day; and they were bound to their employers by ties of a more intimate nature, from the fact that they were brought up in the village or town near to the work, and were not imported from a distance to do a piece of contract work. But it is too much to suppose that they possessed the inventive faculties which would enable them not only to carry out such works as Mr. Gotch has supposed, but to execute them with the spirit and feeling of the original designer. It is the custom now in France and Scotland to engage contractors for the different trades; in most cases these contractors are working-men whose intelligence has enabled them to rise and take the lead in their own trade. But the instances are remarkably few in which such men have ever designed the work entrusted to them, except in features of ordinary construction, such as the framing of a floor or roof. But if Mr. Gotch's account is to be accepted, because John Thorpe does not happen to have left any section or details, the screen and roof of Wollaton Hall were designed by the carpenter. It is much more reasonable to suppose that, not being able to draw an interior perspective, or to set up a section which would realise his intention of the roof, he waited till the walls were built, and he could then, on the spot, work out a fitting covering to his hall. Again, with reference to the screen, although it is possible that an architect might plan a screen showing the position of its doors, it is quite unlikely he would hand it over to a carpenter or joiner to carry it out without an elevation, and quite impossible for the latter to have had the same conception of the design as the designer had when he planned it. The same reasoning will apply to all the other details; a free hand may occasionally have been given to an intelligent workman, and the same would possibly happen at the present day if the architect set more of his work out on the spot. On this particular subject, however, it would be of great advantage if Mr. Gotch, with his intimate knowledge of the principal buildings of the English Renaissance, could point out those in which the discrepancies between the quality of the design carried out at the same time are so evident as to warrant his theory.

On page xix. Mr. Gotch refers to "John Shute, "Paynter and Archytecte," as he called himself, who was sent by the Duke of Northumberland in 1550 to Italy. "Upon his return he published " in 1563 a book, The Chief Groundes of Archi-"tecture." * This would suggest that he spent twelve years in Italy. Is there any reason for supposing this to have been the case? The epitaph, copied in Stow's work, on his tombstone in St. Edmund's Church, Lombard Street, refers to At one time it was thought these might refer to his publications, but, so far as we know, the only book he ever published was the one above referred to. It is only fair to suppose that between 1555, let us say, and 1563, he must have done something more for the Duke than prepare his work on the orders. Are there any records of his work at Alnwick? Mr. Gotch evidently looks upon him as an impractical dreamer, although in a subsequent paragraph he suggests that "he professed to be a designer of "architecture," whatever that may be.

Mr. Papworth has suggested that the drawings and descriptions given in John Thorpe's album of designs would seem to be the work of two persons (father and son, he thinks), so that we have now two John Thorpes to deal with. It is quite certain, however, that the drawings thus collected can only be looked upon as a portion of John Thorpe's work; and as by some accident a number of full-size sections of window mullions happened to be included, it is possible that we have here only a small proportion thereof, and that other drawings, such as those of the sections, details of roofs, balustrades, &c., are missing from the collection.

The American Uniform Contract.

The following Form of Contract adopted and recommended for general use by the American Institute of Architects and the National Association of Builders is issued from the Master-Builders' Exchange of Philadelphia:—

Witnesseth that the Contractor, in consideration of the fulfilment of the agreements herein made by the Owner, agrees with the said Owner, as follows:

ART. II. The Architects shall furnish to the Contractor such further drawings or explanations as may be necessary to detail and illustrate the work to be done, and the Contractor shall conform to the same as part of this contract so far as they may be consistent with the original drawings and specifications referred to and identified, as provided in Art. I.

It is mutually understood and agreed that all drawings and specifications are and remain the

property of the Architects.

ART. III. No alterations shall be made in the work shown or described by the drawings and specifications except upon a written order of the Architects, and when so made the value of the work added or omitted shall be computed by the Architects, and the amount so ascertained shall be added to or deducted from the contract price. In the case of dissent from such award by either party hereto, the valuation of the work added or omitted shall be referred to three (3) disinterested Arbitrators, one to be appointed by each of the parties to this contract, and the third by the two thus chosen, the decision of any two of whom shall be final and binding, and each of the parties hereto shall pay one-half of the expenses of such reference.

ART. IV. The Contractor shall provide sufficient, safe, and proper facilities at all times for the inspection of the work by the Architects or their authorised representatives. He shall, within twenty-four hours after receiving written notice from the Architects to that effect, proceed to remove from the grounds or buildings all materials condemned by them, whether worked or unworked, and to take down all portions of the work which the Architects shall by like written notice condemn as unsound or improper, or as in any way failing to conform to the drawings and specifications.

ART. V. Should the Contractor at any time refuse or neglect to supply a sufficiency of properly skilled workmen, or of materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the agreements herein con-

^{*} Two copies only of this work are extant: one in the Institute Library, and one in the Bodleian.

tained, such refusal, neglect, or failure being certified by the Architects, the Owner shall be at liberty, after......days' written notice to the Contractor, to provide any such labour or materials, and to deduct the cost thereof from any money then due or thereafter to become due to the Contractor under this contract; and if the Architects shall certify that such refusal, neglect, or failure is sufficient ground for such action, the Owner shall also be at liberty to terminate the employment of the Contractor for the said work and to enter upon the premises and take possession, for the purpose of completing the work comprehended under this contract, of all materials, tools, and appliances thereon, and to employ any other person or persons to finish the work, and to provide the materials therefor; and in case of such discontinuance of the employment of the Contractor he shall not be entitled to receive any further payment under this contract until the said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this contract shall exceed the expense incurred by the Owner in finishing the work, such excess shall be paid by the Owner to the Contractor, but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, either for furnishing materials or for finishing the work, and any damage incurred through such default, shall be audited and certified by the Architects, whose certificate thereof shall be conclusive upon the parties.

ART. VI. The Contractor shall complete the several portions, and the whole of the work comprehended in this Agreement by and at the time or times hereinafter stated....... provided that......

ART. VII. Should the Contractor be obstructed or delayed in the prosecution or completion of his work by the act, neglect, delay or default of the Owner, or the Architects, or of any other contractor employed by the Owner upon the work, or by any damage which may happen by fire, lightning, earthquake or cyclone, or by the abandonment of the work by the employees through no default of the Contractor, then the time herein fixed for the completion of the work shall be extended for a period equivalent to the time lost by reason of any or all of the causes aforesaid; but no such allowance shall be made unless a claim therefor is presented in writing to the Architects within twenty-four hours of the occurrence of such delay. The duration of such extension shall be certified to by the Architects, but appeal from their decision may be made to arbitration, as provided in Art. III. of this contract.

ART. VIII. The Owner agrees to provide all labour and materials not included in this contract in such manner as not to delay the material progress of the work, and in the event of failure so

to do, thereby causing loss to the Contractor, agrees that he will reimburse the Contractor for such loss; and the Contractor agrees that if he shall delay the material progress of the work so as to cause any damage for which the Owner shall become liable (as above stated), then he shall make good to the Owner any such damage. The amount of such loss or damage to either party hereto shall, in every case, be fixed and determined by the Architects or by arbitration, as provided in Art. III. of this contract.

ART. IX. It is hereby mutually agreed between the parties hereto that the sum to be paid by the Owner to the Contractor for said work and materials shall be S......, subject to additions and deductions as hereinbefore provided, and that such sum shall be paid in current funds by the Owner to the Contractor in instalments, as fol-

lows: [blanks to fill in].

The final payment shall be made withindays after this contract is fulfilled.

All payments shall be made upon written certificates of the Architects to the effect that such

payments have become due.

If at any time there shall be evidence of any lien or claim for which, if established, the Owner or the said premises might become liable, and which is chargeable to the Contractor, the Owner shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify him against such lien or claim. Should there prove to be any such claim after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging any lien on said premises made obligatory in consequence of the Contractor's default.

ART. X. It is further mutually agreed between the parties hereto that no certificate given or payment made under this contract, except the final certificate or final payment, shall be conclusive evidence of the performance of this contract, either wholly or in part, and that no payment shall be construed to be an acceptance of

defective work or improper materials.

ART. XI. The Owner shall during the progress of the work maintain full insurance on said work, in his own name and in the name of the Contractor, against loss or damage by fire. The policies shall cover all work incorporated in the building, and all materials for the same in or about the premises, and shall be made payable to the parties hereto, as their interest may appear.

ART. XII. The said parties for themselves, their heirs, executors, administrators and assigns, do hereby agree to the full performance of the

covenants herein contained.

In Witness whereof, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

In presence of

[Seals]



9, CONDUIT STREET, LONDON, W., 10 May 1894.

MINUTES. XIII.

At the Fifty ninth Annual General Meeting (the Thirteenth General Meeting of the Session), held on Monday, 7th May 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the chair, with 24 Fellows (including 12 members of the Council) and 22 Associates, the Minutes of the Meeting held 23rd April 1894 [p. 438] were taken as read and signed as correct.

The following Associates, whose applications for admission to candidature as FELLOWS had been approved by the Council, were recommended for election—namely, John Reginald Naylor (Derby) and Arnold Bidlake Mitchell.

The following gentlemen, who had passed the qualifying examination, and whose applications for admission to candidature as ASSOCIATES had been approved by the Council, were recommended for election, namely:-Charles Spencer Haywood (Accrington), William Arthur Lewis, Lionel Sargant, Thomas Handy Bishop, jun., Lewis Eric George Collins, John Frederick Fogerty, B E. (Bournemouth), Arthur Stedman (Towcester), Thomas Edward Thickpenny, jun. (Bournemouth), Charles Cyril Absolom, George Smith Hill (Glasgow), Arthur John Pictor (Barnstaple), Ralph Waldo Bedingfield, Probationer 1890, Student 1891 (Leicester); Frederick E. Coates (Sunderland), Louis Jacob, James Lochhead (Glasgow), Arthur Henry Wharton Glasson, George Percy Pratt, Anstis George Bewes, Lecnard Harris Dutch (Bolton), Joseph Charlton Maxwell (North Shields), Edward Tylee, Probationer 1891, Student 1893; John Fairweather (Glasgow), Solomon Ford, Arthur Hay Livingstone Mackinnon (Aberdeen), John Anderson (Aberdeen), George Sutherland (Elgin, N.B.), Robert Andrew Easdale (Castleford), James St John Phillips, B.E., *Probationer* 1889, *Student* 1892 (Belfast); Henry Walter Coussens, Probationer 1891, Student 1892 (Hastings).

The Report of the Council for the official year 1893-94, the draft of which had been issued on the 26th ult. to members within the United Kingdom [Supplement No. 12], having been formally submitted, was taken as read; and the President having stated that since the issue of the draft a reply had been received from the India Office to the Memorial addressed to the Secretary of State for India in Council published therein, the same was read by the Hon. Secretary, and the President moved the adoption of the Report with the addition of the letter referred to.

Mr. James Neale [F.], one of the auditors appointed at the last Annual General Meeting, having reported on the several accounts examined by him and the other auditor Mr. F. W. Marks [A.], expressed regret that the Income and Expenditure Account of Ordinary Funds for 1893, which they had audited, and which with the Balance Sheet had been prepared by Messrs. Saffery, Son & Co., Chartered Accountants, had been omitted from the draft submitted to the General Meeting. The President, having explained the views of the Council thereon, stated that the account in question could be inserted in the Report if the Meeting so wished. Whereupon, after a discussion [see Appendix], it was resolved that the Report of the Council for the official year 1893-94, with the suggested insertion therein of Sir Arthur Godley's letter [see p. 450], and the Income and Expenditure Account [see p. 454] mentioned by Mr. Neale, be approved and adopted.

The list of attendances of members at the several meetings of the Council and Standing Committees during the past official year having been submitted and taken as read [see Supplement No. 13], Scrutineers were appointed to direct the election of the Council and Committees for the ensuing year of office, and report the result thereof to the Business General Meeting of 11th June—namely, Fellows: Messrs. Oct. Hansard, Thomas Harris, George Judge, W. A. Longmire, James Neale, Finch Noyes, and F. Todd; Associates: Messrs. B. Dicksee, H. H. Langston, F. W. Marks, H. Porter, and E. W. M. Wonnacott.

The following members were appointed Auditors for the ensuing year of office, namely:—Messrs. F. Todd [F.]

and Wm. Woodward [A.].

No meetings of the Statutory Board of Examiners having been held during the official year, it was impossible to submit the usual record of members' attendances, and the Board were re-appointed as follows:—Messrs. George Aitchison, Lewis Angell, Francis Chambers, G. Elkington, Banister Fletcher, Charles Fowler, E. Gregg, F. W. H. Hunt, E. B. I'Anson, Robert Kerr, J. Douglass Mathews, Lacy W. Ridge, T. Roger Smith, B. Tabberer, and T. H. Watson.

The President having alluded to the intention of giving a Dinner in the Whitehall Rooms on the sixtieth anniversary of the First General Meeting of the Institute—Monday, 2nd July 1894—the proceedings came to a close, and the Meeting separated at 9.45 p.m.

APPENDIX.

MR. H. H. LANGSTON [A.] said that in a previous year, when the Annual Report was under discussion, he had asked whether there should not be an expression of regret when recording in the Report the losses the Institute had sustained by death. He noticed on page 7 of the draft the Art Standing Committee had shown their regret at the loss of two eminent members, and he thought the Council might at least say that they were sorry for having lost them. He would move that an expression of regret precede the list of names, and he hoped someone would second it. On page 4 there was rather a singular remark about the recent election by voting papers. It said: "In respect to the late election "by voting papers, under By-law 9, the Council regret the "result, and cannot avoid the expression of their opinion "that grave injustice was done to some of the candidates "for Fellowship." He thought that if the Council expressed regret, and their opinion that an injustice had been done to some of the candidates, surely it was to all alike, and not only to a few. He would submit the point that the Council had before them the names of candidates for Fellowship, and they had recommended certain gentlemen to be elected Fellows, so that they all at least had passed, but the passage he had quoted left it in doubt as to whom the Council referred. It was no doubt an excellent remark, but it left the others unincluded, and he thought it could have been expressed better. Another matter he wished to refer to. The Literature Standing Committee had very properly expressed a hope that pure literary merit would in future be allowed more weight in the award of the Essay Prizes. He would ask then to be allowed to refer to page 2, at the bottom, which was expressed in rather a peculiar way: "The Royal Gold Medal for the promotion of architecture "was awarded to Mr. Richard Morris Hunt, for his "executed works as an architect, on the 19th June 1893." He thought the cart was before the horse. It read that the Royal Gold Medal was awarded for Mr. Hunt's executed works as an architect on the 19th June 1893. Of course, a comma was inserted after the word "architect," but the medal was not awarded for his works as an architect at that date. He submitted that that might be recast as follows: "The Royal Gold Medal 1893 for the promotion " of architecture was awarded to Mr. Richard Morris Hunt "on the 19th June 1893 for his works as an architect." That would be more "pure literary merit." Then on

page 9, the Science Standing Committee reported that they had sent a copy of the Report in relation to Light and Air to the London County Council. Was that Report in print in the JOURNAL? He had not found it, though he had looked for it, but if it was not be supposed it was accessible to members. Then, again, about the London Streets and Buildings Bill. The Committee stated that "A Report "was submitted to the Council." No information was given as to what that Report contained; whether the Council approved of it or not; and members were not informed as to whether they could see it. It was better stated lower down, where it was said that the Report on the Sanitary Registration Bill was printed in the JOURNAL; and in another case further on, where it was stated that the Report of the Sub-Committee was printed in the JOURNAL. That was satisfactory; but he would point out, as to the other matters he had mentioned, that there might have been a statement of their contents or what the gist of the matter was, or members might have been told at all events where they could see a copy of the same.

MR. WILLIAM WOODWARD [A.] said that he should like to be permitted to occupy a few moments in making a personal explanation with reference to the proceedings at the previous Meeting of the Institute. the strength of his convictions-and he asked members present to believe he was in earnest he had been led into making observations which might fairly be considered discourteous or improper, apart from the subject-matter of the discussion, he would ask the Meeting to accept his unqualified regret. But he felt bound to add that so long as he remained a member of the Institute he claimed the privilege and the right to criticise adversely, and even to oppose the proceedings and affairs of the Institute so long as he remained in order; and he thought that in so opposing, or so adversely criticising, the affairs of the Institute, he was entitled to that silence during his observations which was accorded, he thought, to speakers, however different their opinions might be from those of the rest of the Meeting. His experience of other societies to which he belonged was that a little adverse criticism, and indeed opposition, was far more beneficial to the vitality of those institutions than that spirit of laisser faire which dis-tinguished not only their own assembly but other similar assemblies. With regard to the Annual Report, he would endorse the satisfaction which the Report expressed at the result of the examinations of the Institute; and that brought him to page 3, where the Royal Gold Medal was referred to. With regard to that matter, there nearly happened in the present year what he expected night some day happen, as a result of the method adopted by the Council in the selection of the candidate for the Royal Gold Medal. The custom, not only during the time of the present President, but previous to that, had been first to communicate with the proposed recipient of the Royal Gold Medal, and then to submit the name to the Institute for confirmation. He believed he was right in saying that this year the Institute had nearly fallen into that unpleasantness which he expected it might some day fall into. He believed he was right in saying that there was opposition, not only on the part of some of the members of the Institute, but also on the part of some of the members of the Council, to the distinguished gentleman who had been nominated for the honour. When the President announced to the Meeting the name of Sir Frederic Leighton, he was one of the first to applaud, because he felt there was not a man in London who would confer so much honour upon the Institute as Sir Frederic Leighton; and if his magnificent address to the Royal Academy students on German Art only existed, that would be quite sufficient to warrant the Institute in asking his acceptance of the Medal. But he would repeat what he had said on other occasions, that the proper procedure—the procedure contemplated by the by-law was, first, for the Council to

submit to the Institute the name of the proposed recipient. and after that, if the Meeting confirmed that nomination, to communicate with the gentleman nominated. It had been said that that would lead perhaps to some mortification if the proposed recipient rejected the honour, but that was a contingency, he thought, very unlikely to arise, and therefore he would suggest that the proceedings should be as he had intimated, unless, of course, the Council said that it was within their power to nominate and the Institute had merely to confirm-unless they said that, the proper course was first to get the approval of the Institute to the proposed nomination. He was sure that everybody in the room-everybody who read their Journal must feel gratified at the great improvement which had taken place, not only in the matter itself, but in the amalgamation of the Transactions with the old Journal of Proceedings. That brought him to page 6 of the draft, where reference was made to the delegates who went to the London County Council after the Meeting of the 12th February. He did not think that anyone present would dispute that the delegates who went to that body were the best who could have been selected from this Institute. He was not referring to those gentlemen at all. He was referring, as a matter of order, to this. He had read the report made from the Institute shorthand-writer's notes and the report in the Builder journal, and they both confirmed his impression that the decision of the Meeting was that a discussion should take place on the Bill prior to the delegates going to the London County Council. He had left the Meeting of the Institute with that impression, and he was astonished to find that, instead of that, the procedure had been reversed, and the delegates went to the London County Council before the discussion took place. He did not know that anything could have been suggested which did not occur to the minds of the delegates, but, as a matter of order, he believed he was right in saying that the decision of that Meeting had been reversed. With regard to the report of the Art Standing Committee, there was a reference in it to the Papers on the subject of "Furniture, Domestic and Ecclesiastical," and with respect to that subject he had been not only misunderstood; but he believed he was correct in saving that he had been grossly misrepresented. He had said and the report in the Journal confirmed it that he yielded to none in his desire to see a building completed and finished in every detail at the hands of the architect. He simply drew the line at chairs and tables as not coming within the proper scope of the architect; and he would repeat - feeling convinced that he was right-that if the architect, if he had any practice at all, devoted himself to the duties which were properly involved under the term "architect," it was impossible for him to find time to design chairs and tables, which were so much better designed by those who had devoted themselves entirely to that work. If he might give an instance of the folly of meddling in matters outside the proper sphere of the professional man, he would quote the case of the Jubilee coin, where Mr. Boehm unfortunately undertook that which he did not quite understand, with the result that the design was execrable, and he (the speaker) knew from expert evidence that the coin, as regards its projections and sinkings, was so made that it would not have lasted nearly as long as medals made by men who were experts, and who thoroughly understood their business. He had never ventured to say that the duty of an architect was that of a clerk of works. He had distinctly said that in every detail an architect should supervise the work-as, in fact, every architec, did. He had been grossly misunderstood; and not only so, but he had been subjectedhe did not know that he cared very much about it, but he had been subjected to gross insult. The Literature Standing Committee had done excellent work, and the only criticism he had to offer was that during the last few months the reports of their proceedings, particularly the Minutes, had been very meagre. They did not convey adequately the sense of the discussions even to those who were present, and therefore they could but inadequately convey the sense to those who were absent. He had been very glad to find that Mr. Cates had made the excellent suggestion that all new books and other contributions to the Library should in future be laid on the table. He was quite sure that most of the members were absolutely ignorant of the donations to the Library; and, if they were placed upon the table, he was quite sure that it would be an excellent arrangement. Then there was a reference made to a bust of Sir Horace Jones. Now, here was a case where the Art Standing Committee could have done good work. He had mentioned the matter to the Secretary some time ago, but he did not know whether action was taken. In The Times of 27th March a long report appeared on the Tower Bridge, and the design of that bridge was attributed solely to Mr. Wolfe Barry, and not one word was said with regard to the work of their late President, Sir Horace Jones. Now, it was perfectly well known, and the Institute should know it, that Sir Horace Jones designed the architectural part of the bridge. The Tower Bridge was an instance of the amalgamation of the science of the engineer with the art of Architecture, and it was the duty of the Institute, in memory of Sir Horace Jones and for its own credit, to make it perfectly clear to the public that Sir Horace Jones was as much entitled to the credit of that design-except, of course, for the carrying of it out in detail—as Mr. Wolfe-Barry, and he hoped that the Art Standing Committee would make it clear to the public and to The Times that Sir Horace Jones had a great deal to do with the Bridge. The Practice Standing Committee had had several meetings, and had had under consideration several important subjects. He regretted with Mr. Langston that members had not been favoured with the list of those subjects, or some information which would have been useful to them. With regard to the Conditions of Contract referred to on page 9, the Institute had been five years revising them, and now the Practice Committee report: "The Committee have continued their "efforts to arrange a set of Conditions of Contract with "the Institute of Builders. On the 22nd February 1894 " a third conference was held with the builders, at which " the solicitors on each side were present, and an arrange-" ment was come to by which it is hoped that an approved "draft may be obtained and reported to the Council. "The draft, however, is still under discussion by the "solicitors." He would say that the combination of skill He would say that the combination of skill and alacrity shown by that report entitled the Practice Standing Committee to their earnest commendations. The Science Standing Committee had done some work, and to show the universality and comprehensiveness of architecture the Committee's report contained the following paragraph: "The recent treatment of sewage " with electrolysed sea-water has attracted the attention " of the Committee, and a Sub-Committee has been "appointed to inquire into and report upon the process "invented by M. Hermitte." If the Institute extended its architectural researches into the treatment of sewage with electrolysed sea-water, he did not think there should be any complaint if he asked it not to devote too much time to chairs and tables. With regard to the Finance Report, he had only one observation to make. They need not trouble themselves about the Revenue Account of the Trust Funds, or with the Balance Sheet of Trust Funds. He was quite sure they had been properly and accurately audited. But he had one observation to make on the Secretary's statement of Receipts and Disbursements of Ordinary Funds from 1st January to 31st December 1893, which appeared on page 12. Under the head of Receipts he found the item "Qualifying (anticipatory of election as Asso-"ciates) £148. 1s. 0d." as a receipt. He thought, as a matter of business, and in order that members might be put in possession of a clear statement of receipts and disbursements for the year, that that anticipatory £148. 1s. 0d. should not be inserted in the list of receipts. It should be carried over. It might be mentioned at the bottom of the Report, or in the Auditors' Report, but it should be carried over to the receipts for next year. Then, under the head of "Disbursements," on the same page, the last item read: "Balance at banker's 31st December 1893 (including "£54. 12s. 0d. subscriptions in advance for 1894)." In his opinion that did not properly come under the disbursements of 1893, and therefore if those figures were altered, as he suggested they might be, the result would be that the receipts would be £7,033, and the disbursements £7,127or ±94, so far as that statement was concerned, on the wrong side. He begged leave to thank the Institute for listening to him, and to ask the Council to accept his

cordial approval of their Report.

Mr. E. W. MOUNTFORD [F.] said that he was glad to hear Mr. Woodward had sufficient grace to begin with an apology for his conduct there a fortnight ago. That it badly required an apology no one, he thought, would deny, and he should like to point out to him that, although he claimed the right to criticise any Paper that was read there, what he did then was very different from mere criticism. He had interrupted a gentleman, an invited guest of the Institute, in the middle of his Paper-a thing, he believed, without precedent in that room. If such procedure became common, it would be absolutely impossible to get anyone of any standing whatever to come there, to be interrupted in that extremely rude manner. The Paper was not only read by an invited guest of the Institute, but it had previously been submitted for the approval of the Council, and had received their sanction, so that in acting as he had done Mr. Woodward not only insulted the reader of the Paper and the Art Committee, but also the whole of the Council of the Institute. He (the speaker) wished to point out to Mr. Woodward that if it took time, as he said, to design furniture and other fittings of a house, which time might be better laid out to the advantage of one's clients, that remark applied equally to quantity surveying. If an architect could not find time to design furniture, he could not find time to take out quantities. [Mr. WOODWARD remarked that he never did take out his own quantities.] He did not think he had any more to say. He was not possessed of that universal genius which enabled him to criticise everything which came before the Institute; but he thought that, having regard to Mr. Woodward's behaviour at the last meeting, and his apology, which he afterwards qualified to such an extent, some remarks were necessary from him (the speaker) as one of the Hon. Secretaries of the Art Committee.

Mr. JAMES NEALE, F.S.A. [F.], referring to the accounts, said he did not think he need say anything as to the Trust funds, the Revenue Account and balancesheet of which he, with Mr. Marks, his fellow auditor, went through, audited, and found quite correct. Then they had an account of Income and Expenditure, which was audited and signed, but in the Report which had been issued that account had been omitted. Then there was the balance-sheet of the ordinary funds for the 31st December, with the item: " Excess of Expenditure over Income "for year as per Revenue Account, £129. 4s. 7d." That puzzled him. He could not make out where it came from until he referred back to the omitted account of Expenditure and Income, and there, of course, it appeared properly. He had no doubt the Council had good reason for not printing it, but he thought that it would have been better to have printed that at the same time, especially as it was audited. Then there was an item, "Less value of lease "ordered to be written off." That he approved of. He

thought there was no value in the lease. Then there were the words, "(Signed) Saffery, Son & Co." He confessed that was a difficult thing for him to understand. He had the pleasure of a conversation with the President about it, but he was afraid he was too obstinate or awkward to quite agree with the President's view of it. The accounts were kept in the office; and they seemed to be thoroughly in order in every way. He was told: "The accounts are prepared under the "direction of Messrs. Saffery: that is the reason they sign "them." That, he gathered, was not quite the ease. He believed they were, as a fact, prepared by Messrs. Saffery, which was a different thing in his idea from being prepared under the direction of Messrs. Saffery. Then he thought—and he would be corrected if he were wrong -Messrs. Saffery were of opinion that the account to which he referred, "Expenditure and Income," ought to be printed. He should like to say that if those accounts were made out by a chartered accountant, it would be better to state that the books had been examined and found correct, or some such words. He believed they were quite competent to keep accounts in the office; and it was quite evident that if they were competent to keep accounts they were competent to make a balance-sheet from them. He thought that if the Council would consider it in a future year, and allow Messrs. Saffery to go through the books and check the accounts -- check all the income and expenditure, and append a note duly signed that they had examined and found those accounts correct it would be more in accordance with the usual practice. It was very well to have auditors. They attend when they are bidden, and they lunch which is all very nice; and they look through the accounts, and they cheek them, and sign their names. That, however, they would do with very much more confidence if they knew the accounts had been examined by an eminent firm of accountants. In his opinion the annual work of an auditor was not only superfluous in the Institute, but in many other societies and companies. The work of an auditor, after the accounts had been prepared by Messrs. Saffery, was simply to see that the proper amounts were charged that the proper receipts and disbursements were put in, in the way that they do in a Vestry or a Board of Works, where, after the accounts were made out by chartered accountants, the auditors simply went through them to see if the proper payments were made. Then there was the item "Furniture, Fittings, "and Fixtures, ±2,500." He did not know who valued these. Then they came to "Less depreciation, £65, 8s, 6d." That appeared to him to be a very small amount. It was not 5 per cent., which he thought was a very small amount for depreciation of furniture. Then there were accounts by the Secretary. He presumed that the Secretary thought that the accounts prepared by the Accountants were difficult to understand, and he tried to explain them; but why were they to have the Accountants' accounts, and then to have a separate account of the Secretary? He thought that the Secretary should allow the accountant to do all the accounts.

Professor KERR [F] said that in looking over the accounts very hastily it struck him that Messrs. Saffery's balance-sheet, which appeared on page 11, was, like all Chartered Accountants' balance-sheets, absolutely unintelligible; and he did not see why they should pay, as the last speaker said, twenty guineas to Messrs. Saffery for producing an account that they could not understand, when, on the other page, they had an account from the Sceretary which they could all understand perfectly clearly. He did not see that Messrs. Saffery's assistance was any aid at all. However, he did not for a moment wish to disparage Messrs. Saffery, but the whole class of Chartered Accountants were, to his mind, unnecessary at the Institute. He regarded the

Report as a very successful one, and he thought a little more praise might have been bestowed upon the admirable way in which the Proceedings and Transactions were now issued. Really, whoever deserved the credit of that publication ought to receive it, and ought to receive very special commendation. It was a serial which ought to take a high standing in professional literature, and he was speaking advisedly in saying so. The matter inserted was exceedingly interesting, and the way in which the whole thing was treated and the discrimination bestowed upon the work deserved their warmest commendation. With regard to the exhibition of the principal presentation books upon the table, he thought it a most excellent idea, and he should warmly second that in public, as he had done in private. In old times they used to enjoy very much indeed the mention of works which had been presented, and the opportunity of cordially applauding those who had been good enough to bestow them. It would not take many minutes, and would give nobody any trouble, and would give a great deal of satisfaction and introduce a little more "go" into the meeting. There was mention made of a recommeudation by their very active and intelligent member, Mr. Edwin T. Hall, for the granting of medals or other rewards of merit to craftsmen, and for an annual exhibition of crafts architectural, and so on. It struck him there was something in that which they might lay hold of with advantage. He did not know that it was necessary to bestow medals; but he was quite sure that if they were to award certificates well got up to meritorious craftsmen, using that term in the vaguest manner, they would be very much appreciated, and it would serve to give practical prestige to the Institute in a way which he was sure the public would also appreciate. Of course, he did not for a moment suppose that the matter was ripe for immediate settlement, but he should individually beg leave to commend it to the attention of the Council as a matter which they probably might find worth working out. It struck him that the Science Standing Committee did not rise to the occasion in the way that they might. He saw that a report had been delivered to that Committee upon the existing law in relation to light and air. He knewsomething about light and air, and that subject had been before the Institute for a great many years, and absolutely nothing had come of the consideration of it. The reason was that although no doubt in actions about light and air, which were unfortunately very expensive, and in other respects unsatisfactory, a great many cases occurred in which, he was going to say, a cantankerous neighbour-but it was not even necessary to be cantankerons in that matter-for the purpose of getting something out of the next-door man, who happened to be putting two or three feet on to his house, raised an action in the Court of Chancery. That might be true enough; but still the time had come, he thought, when the Institute ought to recognise, if it was possible to do so, the principle which had been strongly acted upon by the County Council- and, he thought, most judiciously-the principle that the height of houses was becoming a nuisance. Storey upon storey seemed to be built interminably, and the only thing which it was said kept houses down to a rational height were those actions with respect to light and air. If so, then might those actions prosper and flourish, for he was perfectly satisfied that it was most prejudicial to increase the height of houses in the way that was being done. Take the case of New York at the present moment. He had not been there during the last forty or fifty years; but he remembered it very well. Just imagine houses being allowed to be built 200 feet high, with no law of light and air! Where was the ventilation of the street? Where was the lighting of the offices? True, they could do without light; they could light the gas, or turn on the electric light; it was quite enough for them if

they could make money by it. But in this country, although they might be considered old-fashioned by their cousins in America, they had better ideas of the amenities of Nature, so to speak, in respect of great towns; and he thought that if the Science Standing Committee were to turn their attention, now that they would seem to have done with the question of light and air, to the question of the injudicious increase of height of buildings, they might do service. The subject of the treatment of sewage by the process invented by M. Hermitte had attracted their attention. He thought it a very great pity that they should take up that matter. He had no objection to its mention in the Report in order to show the exceedingly scientific aspirations of the Committee, but he hoped they would not waste valuable time upon the consideration of a subject of that kind, although, of course, as they must all admit, drainage had been wonderfully neglected until quite recently. It seemed astonishing that people could have laid down drains in the way they did until the last thirty years, now that they were done so well, and with such very careful attention to every item of detail. He was happy to find that he was mistaken in respect of some of the expenses incurred; but unight he ask what was the item "Solicitors, Accountant, "and Parliamentary Agent, £200," that they had to pay? That was an estimated account, he hoped, and estimated extravagantly. Might he ask the Secretary if they really would have to pay those gentlemen £200, and, if so, what it was for? [THE SECRETARY explained that this related to the estimated disbursements for the current year, and that it included £100 estimated by Mr. Saffery and referred to in the balance-sheet. It was the estimated cost of the solicitor employed to negotiate with the builders in the revision of the Conditions of Contract, and was a maximum item.] He hoped it was very maximum indeed. He hoped they would not pay it. Then, as to the Parliamentary Agent, he hoped they were not going to incur heavy expenses in opposition to the London County Council before the House of Commons.

Mr. BERNARD DICKSEE [4.] asked if he should be in order in putting a question which did not come directly within the compass of the Report, but it was a matter which he believed was before the Council with reference

to the qualification for Fellowship.

THE PRESIDENT said that, as it was not mentioned in

the Report, it would not be in order.

Mr. CAMPBELL DOUGLAS [F.] said that, although he happened to be one of the office-bearers of the Institute, he should like to be allowed to make an observation. Professor Kerr, he thought, had spoken the feeling of them all when he said that the literary record of the Royal Institute was now so very much better than it used to be, and he hinted darkly that whoever was the instrument in bringing that about should get a meed of praise. The Journal now appeared in a nice, comfortable, pleasant document to take up and look at. He thought that the Secretary was deserving of their heartiest and best thanks for the great labour he had bestowed upon it, and the happy result which had accrued.

Mr. H. W. BURROWS [A.] asked to be allowed to say a word with regard to the action of the Science Standing Committee. There were very few members of the Committee present, and he hesitated to speak on the subject. They had lately been asked, in rather a querulous manner, as to what the Science Standing Committee had done. It would appear from remarks which had been made that they had done too much, or tried to do too much. Mr. Woodward had criticised the action of the Committee with regard to an inquiry into an electrical process as applied to sewage. Professor Kerr had tackled them slightly on the same subject, and also said that they were somewhat behind the times in dealing at all with the question of light and air. The question of light and air was only

dealt with because it was brought before the Committee by the Council of the Institute, if his memory served him correctly, as the outcome of a Business Meeting there, and the Report was simply put before them for further consideration and amendment. It was reported upon as amended, and, if he remembered rightly, published in the Journal. So far as the treatment of sewage was concerned, they had no such idea as seemed to be in Mr. Woodward's or in Professor Kerr's mind, viz., the application of the process to the sewage of towns, or anything of that sort. He might say that he was the originator of the suggestion that the system should be inquired into, and the view he had was that in some respects it might be useful to an architect who had to deal with country houses, and the treatment of sewage from them, that there should be some inquiry into the matter, as it might possibly be of assistance to architects in that respect, and in that respect only. As to applying it on a large scale, that he took to be entirely outside an architect's province; but there were certainly occasions where in a country mansion it was very difficult indeed to know what to do with the sewage, and they had appointed a Sub-Committee, to make inquiries as to whether it was applicable, wholly and solely on those grounds.

Mr. LACY W. RIDGE [F.] said he thought the last speaker had hit a point which they ought to bear in mind -that this was the Royal Institute of British Architects, and not merely of London architects. He was quite sure that the subject of the treatment of sewage in private houses, where it had to be treated on the premises, was one well worth the attention of the Science Committee; and it must be remembered that a great many of their members had to do with places where there were no public sewers. Therefore it was a perfectly legitimate subject of inquiry. There was one remark made by Mr. Langston which he should not like to pass without explanation, and that was with regard to the use of the word "some" on page 4. The Report read: "In respect "to the late election by voting papers, under By-law 9, "the Council regret the result, and cannot avoid the expression of their opinion that grave injustice was "done to some of the candidates for Fellowship." It was only necessary to call attention to the fact that some of the candidates for Fellowship were elected; some were not.

THE PRESIDENT said he would reply as briefly as possible to the points that had been raised. Some had already been replied to. He understood Mr. Langston to move that an expression of regret should accompany the intimation of the decease of members of the Institute. It was simply a statement—a record—and his own opinion was that an expression of regret was not called for. The Light and Air Report to which Mr. Langston referred was published at page 223 of the Journal of the present year, where he would find it, and Mr. Ridge had explained the passage in the Report about "some of the candidates "for Fellowship." Mr. Woodward had opened his remarks by a personal statement, and if he (the President) referred to it in a very few words it was simply in the hope that they might be the last on a subject that had not conduced to the gratification of any of them. When a man made a mistake, the best thing he could do was to be sensible of it and to express regret. He was not one of those who were disposed to be hard upon any one for having made a mistake when he had the sense and the courage to acknowledge it. That Mr. Woodward did make a mistake was obvious from the very unanimous expression of feeling which his action educed at the last Meeting; and if he might venture to add one word only he would say that to interrupt a gentleman who was invited to read a Paper by the Institute, whether a member approved of the subject or not, was scarcely good taste, and he was quite sure that

Mr. Woodward would not repeat the conduct to which such exception had been taken. He would congratulate him on having had the courage and good sense to express regret for what had occurred. In regard to the procedure in connection with the Royal Gold Medal, that subject had been mentioned before, but he could not say that he thought the view that had been expressed was the correct one. There were two sides to every question; and if the name of the nominee were submitted to the Institute before ascertaining whether he assented, the Council might be placed in a very awkward position indeed, having submitted the name of a gentleman who might afterwards refuse to accept the nomination. That had occurred before. In regard to the delegates to the London County Council, exception had been taken to that matter on a previous occasion, and he thought he had then replied to it. They were delegates from the Council, Mr. Woodward stated that the Institute had decided that delegates should not be sent without their consent. He (the President) certainly did not understand that, as he had already stated. At all events, they went as delegates of the Council, and he maintained that they had a perfect right, quite irrespective of the Institute, to send delegates on their own behalf. The Conditions of Contract, which had so long occupied the attention of the Practice Committee, he hoped and thought were near completion. It had been a longwinded business, and it was a question whether the game was worth the candle. He did not suppose, for instance, in, his own case that he should ever use the Conditions of Contract that had been so carefully drawn up; but that was an individual opinion. They had undoubtedly been drawn with very great care, and the position of the case at the present moment was that the whole document was agreed to by the representatives of the architects and the builders, with the exception of two clauses, which still remained to be settled. He could only express the hope that very shortly they would be able to bring the new Conditions before the Institute. With regard to the question of finance, Mr. Neale was entitled to criticise, because he had occupied what he ventured to think was the responsible and not altogether ornamental position of an auditor. His opinion was that an auditor was not worth his salt if he merely signed his name without going into any details, and he ventured to give Mr. Neale credit for having taken a different line in practice, whatever he might do in theory. The balance-sheet only of Ordinary Funds had been published along with an explanatory statement by the Secretary. They had in addition, however, from Messrs. Saffery an Income and Expenditure Account. It was decided - rightly or wrongly - but several members of the Council held the opinion which had been expressed by Professor Kerr—that the statement was one which was somewhat unintelligible, and the Council thought members generally would understand the finance of the Institute better if the statement was omitted, and this, although it had been audited, they had ventured to do. The reason why they had thought so was because it was called an Income and Expenditure Account; but there were certain items appearing in that account as estimated which appeared a contradiction of terms. He ventured to think now, with the additional light he had since gained from criticisms on the subject, that it might have been wiser if it had been published, and, of course, this could still be done if the Institute desired it. The item of £129. 4s. 7d. which appeared on the balance-sheet was referred to as appearing in the Revenue Account. The Revenue Account did not appear in the Report as issued, and therefore it was a little inconsistent with it. The passage which said that those statements had been prepared under the control of Messrs. Saffery had been criticised. That had since been altered in the Report to be published in the JOURNAL to the words "prepared by,"

j.

which was more correct. Mr. Neale had asked who was responsible for £2,500, the valuation of furniture and tittings. It was prepared by the Finance Committee. Professor Kerr had referred to the JOURNAL of the Institute, and although that had been partly referred to by the Vice-President, Mr. Campbell Douglas—whom, living so far away as he did in Scotland, they were glad to welcome there on all occasions. He wished to emphasise it by stating that the person who was solely responsible for the Journal of Proceedings as it now appeared was his friend-Mr. White, the Secretary of the Institute. As to the presentations to the Library, he agreed with Professor Kerr that it was desirable they should lie on the table; and the Report stated that it should be done in future. He hoped that the executive would not omit to carry out the decision of the Council in that respect. He had already said to Professor Kerr that their expenses in opposing the Streets and Buildings Bill would not be great. He would not enter into details, nor would it be altogether fit that he should do so; but the Institute was represented before the Select Committee, and, if occasion required, would be heard by counsel. That, he thought, exhausted the points which had been raised on the Report.

The Illustrations to the Papers on Furniture [p. 413].

In addition to the drawings and other exhibits at the Meeting of the 23rd ult. a description of which has already appeared [p. 438], the following drawings, photographs, and chromolithographs were kindly lent by the authorities of the South Kensington Museum:

Woodwork.—Drawing of The Holy Sepulchre, Dresden Museum, and drawings of Gothic Pulpit and Candelabrum,

Sta Maria in Organo, Verona.

Photographs of Choir Stalls at S. Francisco el Grande, Madrid; Choir Stall, early sixteenth century; Pulpit, San Marcos, Leon; Prior's Seat, fifteenth century; Panels,

St. Cross, Winchester.

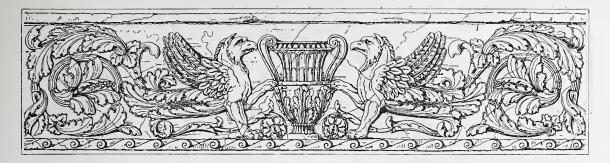
Photographs of the following at the Berlin Museum:-Cupboard, Germau, fifteenth century; Panels, Italian, sixteenth century; Cupboard, Westphalia, 1663; Panel, Cologne, 1550; Side of Chest, German, fifteenth century; Chest, Lower Rhine, about 1530; four Candelabra, Italian; four Picture Frames, Florentine, fifteenth and sixteenth centuries.

Photographs of the following at the South Kensington Museum :- Sideboard, Flemish, fifteenth century; Folding Chair, Flemish, seventeenth century; Coffer, Flemish, seventeenth century; Wardrobe, French, eighteenth century; Armchair, French, sixteenth century; three Panels, French and Flemish; Case for Towel Roller, English, seventeenth century; Panelling of Room, English, sixteenth century; three Chairs, Venetian, sixteenth century; Coffer, Italian, sixteenth century.

Photographs of a Chair, English, seventeenth century, property of Mr. J. W. Jarvis; Armchair, English, seventeenth century, property of the Carpenters' Company; and Cabinet, Italian, sixteenth century, property of the late Earl Granville. Six Photographs of Chairs, Cabinets, and Coffers exhibited at Gore House in 1853. Eighteen Photographs of portions of Choir Stalls in the Church of

St. Peter, Perugia, on three mounts.

Textiles.-Chromolithographs of Velvet, Venetian, fifteenth century; Velvet Brocade, Italian, sixteenth century; Linen Fabrics, Flemish, fourteenth and fifteenth centuries; Velvet Fabric, Flemish, the originals of which are in the South Kensington Museum. Painted Photograph of Wallhanging, German, dated 1549, in the Church at Biddenham, Bedfordshire; three Photographs of Tapestry in South Kensington Museum, illustrating Petrarch's "Triumphs of "Chastity, Fame, and Death," Flemish, early sixteenth century.



THE INFLUENCE OF THE HANSEATIC LEAGUE ON THE ARCHITECTURE OF NORTHERN EUROPE. By J. Tavenor Perry [A.].

Read at the General Meeting, Monday, 28th May 1894; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

The President, J. Macvicar Anderson, in the Chair.

Mr. President and Gentlemen,-

ARLY in the present Session, in a Paper written by Mr. Wm. Simpson [p. 93], in continuation of several communications he had before made on the same subject, published in our Transactions, the attention of the Institute was directed to certain peculiarities of architectural detail imported into one style from another wholly alien to it, practised in a far distant country, and belonging to an age long anterior to the date of the buildings in which they were found. We were invited to see in these works evidence of classical influence in suggesting or modifying details of Indian architecture; and our attention was called to many interesting coincidences and similarities for which it was very difficult to account, but almost impossible to show to be the result of external instigation. To-night, however, I propose to deal with a question of artistic influence, more tangible, and scarcely less interesting than that suggested by Mr. Simpson—an influence which went far to mould or modify the architecture of Northern Europe, and to which much of the richness and beauty of the Northern Renaissance, now so frequently reproduced by the members of our profession, is due. My Paper, therefore, will not be an account of how one distinct and alien style affected another, but its object will be, rather, to show how the living and progressive styles of succeeding periods became transformed by the necessities or peculiarities of an influential and semi-political association of merchants who inherited and carried on the traditions of the earlier German schools at a time when German architecture was, to quote the recent Address by Sir Frederic Leighton,* "stamped with a stateliness and nobility to which the days " of the Minnesänger were surely more propitious than those of the rugged burghers who were "soon to rise to power and to rule in the art-producing world."

In the course of several visits it has been my good fortune to pay to the lands about the Baltic Sea, I have been much impressed by the similarity existing between the buildings, however widely they were scattered, and however divided were the provinces by ethnographic or political differences. In other countries more or less homogeneous in their governments and people, such as France or Spain, strong local differences in style always existed; but over the vast area of Northern Europe which stretches from the sand-dunes of the English Channel to the granite islands of the Gulf of Bothnia, there can only be said to have been one style

^{*} Address to the Royal Academy Students, 9th December 1893.

carried on throughout the Middle Ages—a style quite dissimilar to those of the rest of the Continent, and executed with a uniformity of detail, marking a distinct and complete school. There is nothing in the geological conditions of the countries to account for such coincidences; and the similarities, so obvious, were evidently due to other than merely geographical or political accidents. The history of these countries during the tenth and eleventh centuries, as told in such sagas as the Jomsvykinga Saga,* is little more than a catalogue of wars and sieges; and when, later, the power of the Hansa League became dominant, this authority was only maintained, outside the limits of its own states and settlements, by constant fighting. At no time were those States over which the power of the League became paramount ruled by any united government, whilst the racial differences were as marked from the earliest period of authentic history as they are to-day. Whence, then, came the force which welded into one architectural province countries divided by continuous warfare, by distinctions of race, and by language?

The origin of this architectural uniformity is due to causes different from those which have ruled in other lands; and the secret of it was suggested in a Paper read before the Institute in 1850 by Mr. Charles Fowler, Jun.,† in which he says, quoting from Kugler's Kleine Schriften: "The Germanic style is developed in a peculiar manner on the coasts of the Baltic, "and in some of the adjoining districts of Germany, viz., Holstein, Mecklenburg, Pomerania, "the Old and New Mark Brandenburg, Prussia, Curland, Liefland, and also in the Skandi-"navian countries. These countries were connected and very much influenced by the con-"federation of the Hansa Towns, and it is probably to this influence that we may ascribe much of the similarity of style visible in the buildings of the districts referred to." Rosengarten‡ goes further, and says: "A certain uniformity is peculiar to these buildings, which is owing "principally to the influence of the Hanseatic League, but partly to the power and authority "of the Teutonic knights."

No attempt to follow up the clues pointed out as leading to the solution of this architectural problem seems to have been made, and the subject is too large and the countries involved too extensive and scattered for any one architect still engaged in practice, to deal with in anything like an exhaustive way. But feeling that it is a subject which should not be neglected, I have now made an attempt to put together such information as I have been able to acquire, with the idea of sketching the outline of a theory, to be filled in and corrected hereafter by those who have further information or personal acquaintance with the buildings. It has already been my privilege to call the attention of the Institute to some of the Baltic provinces, though I had to lament that so little published information was available on the subject. I therefore feel the less diffidence in contributing the little knowledge I have gained towards the history of what Kugler so aptly calls the "Baltic style."

At the risk of reciting some facts which must be known to many of you, without the knowledge of which, however, the subject might be unintelligible, I propose to give, as succinctly as possible, a history of the rise and progress of the League, and afterwards an account of the characteristics of the Baltic style, together with some of the most marked features in its arrangements and details; and, later, to endeavour to show in what way it affected the architecture of surrounding countries, and how far the influence of the later phases of the style still survives. But, although I shall instance peculiarities which I consider due to the influence of the Hansa, I at once disclaim any thought, with my present incomplete

^{*} Du Chaillu, The Viking Age.

^{† &}quot;Mediæval Brick Buildings in the North-East of Ger-"many, and on the Baltic Coast," Transactions, 1873-74.

[‡] Rosengarten's Handbook of Architectural Styles, English trans. Lond. 1886, p. 359.

[§] Transactions, 1873-74, pp. 15-31.

knowledge, of laying before you any definite and perfected theory, or of riding an architectural hobby to death.

The Hansa League was an association first of individual merchants, and later of merchant cities, which came to exercise considerable political power over all the countries bordering on the Baltic Sea. The word itself is Gothic, and is found in the Gothic version of the Scriptures by Ulphilas, a copy of which is preserved in the library at Upsala, wherein it is used to signify a "troop." * The use of a Gothic word for the League's description is easily understood when one remembers how important a part merchandise played among the Scandinavian peoples, and that the great city of Jomsborg, called also Winetha, the Venice of the North, was founded by Harald of Denmark in the tenth century, and became the earliest great trading port and market of the Baltic coasts.† I have prepared a chronological table [p. 493] of the principal events connected with the rise and progress of the League, which forms a compendium of its history, from which it will be seen that for a long period there were associations of German merchants to whom were accorded special privileges in various countries, but that it was not until the middle of the thirteenth century that the League became a political entity. The history of the League, therefore, divides itself into two portions—the earlier times, when it was simply an association of traders, during which period the merchants of Cologne appear to have taken the lead; and the later period when, by force of circumstances, the cities of the Baltic coast had been compelled to unite for political purposes, and Lübeck became the head and chief of the whole League. Thenceforth the history of Lübeck becomes the history of the Hansa.

The city of Lübeck was founded in 1143, and a few years later it was incorporated with the Duchy of Saxony. Its rapidly growing importance, due to its position at one end of the landway from the Baltic to the North Sea, induced Duke Henry to transfer to it from Oldenburg the seat of the bishopric, and in 1164 the first cathedral, portions of which still remain, was consecrated. The destruction of Jomsborg, at the mouth of the Oder, which scattered the merchants of that city among the towns of Wendland and Pomerania, still further enhanced its importance, and in 1226 it was declared by the Emperor Frederick II. a free Imperial city. Immediately afterwards it became engaged in a contest with Denmark, and defeated its fleets and destroyed its naval supremacy in an engagement at the mouth of the Trave. But, in spite of this, the position of Lübeck was insecure, and it suffered from land thieves, who preyed upon its commerce and intercepted its communications with Hamburg, which were essential to its free access to the North Sea; and a treaty was made between the two cities for the protection of the ways between Travemunde and the mouth of the Elbe in 1241, and this treaty inaugurated the second period of the League, and the supremacy of Lübeck among the cities of the League became firmly established.

Within a few years of this arrangement between Lübeck and Hamburg, the power of the League was felt all over the north of Europe. A treaty was made with Hakon, of Norway, for the trade with Bergen, and storehouses were erected in London and Bruges. At Damme, the important port of West Flanders, we find Roger of Lübeck and Jourdain of Hamburg negotiating for special privileges for the League; and in 1267 London on the one side, and in 1276 Novogorod on the other, became cities allied to the League. The first serious rebuff the League encountered was in the capture by the Danes in 1361 of Wisby, a city which to a great extent had succeeded to the position of Jomsborg, in the eastern Baltic; but this war with Denmark tended still further to consolidate the power of the League, and, on the signing of the treaty of Stralsund in 1370, it attained the zenith of its power. At this date it is

^{*} Encyclopædia Britannica, art. "The Hansa." † Sharon Turner, Anglo-Saxons; also Du Chaillu. † Histoire de la Ville de Damme. By L. Macquet.

believed that as many as sixty-four cities and towns were confederated, and forty-four in foreign States were allied.

In the long list of these places, of which I have prepared a table [p. 493], it will be seen that nearly all the confederated towns are to this day store-houses of architectural art; and that, although wars in Old Russia, and Metropolitan improvements here, have swept away all buildings of the League in Novogorod and London, in most of the allied towns evidences are yet apparent, in the architectural details or character of the buildings, of the influence exercised over the people of these foreign places by the merchants of the League.

The relations which existed between the League and its confederate and allied towns were peculiar. Over the former, in spite of independent princes who reigned over the States in which the towns were situated, its rule was more or less absolute; for cities, in order to enter the League, were required to have their civil jurisdiction in their own hands, though they were allowed to acknowledge a superior lord; * but the allied cities only received colonies, or settlements, or were visited from the head settlement, or Kontor, by the merchants trading under the auspices of the League, with special privileges, either conferred by the rulers of these foreign States or wrung from them by its power. The foreign settlements which formed the great emporia of the trade were London, Bruges, Bergen, and Novogorod, and the history of the foundation of each of these settlements is interesting. In these the merchants lived apart from the native population in almost conventual seclusion, but their mode of living was rather founded on the rules of the earlier Scandinavians than on those of later monasticism. The Jomsvykinga Saga states that Pálnatóki, the Jarl of Fjon, who founded the city of Jomsborg in Wendland, ordered that "no man older than fifty, or younge, than eighteen winters, could "be received in the following of Pálnatóki." "Anyone who committed what has now been "forbidden, was to be cast out and driven from the community." "No one should have a "woman within the burgh, or be absent from it more than three nights." † In Bergen and Novogorod, where the merchants found themselves settled among a more or less hostile population, such rules as these were strictly enforced; but in London and Bruges, where their neighbours were friendly and not altogether alien in race, they appear to have entered into the duties, as well as the privileges, of civic life.

The history of the London Hansa, the last traces of the buildings of which were only destroyed when the Cannon Street Railway Station was erected, is particularly interesting. It would seem that when Henry III., in 1259, confirmed the already granted privileges of the League, or in 1267, when Lübeck and Hamburg were acknowledged as the heads of it, the merchants were required, in return for their civic advantages, to perform certain civic duties. These appear to have been mainly the repairs and protection of Bishop's Gate, which they were required not only to maintain in structural repair, but to defend, if London were attacked by an enemy. That these duties were not merely honorary is shown by an event which happened in 1281, when, "Henry Wales being mayor, a great controversy did arise between the said "mayor, and the merchants of the Haunce of Almaine, about the reparations of Bishop's Gate, "then likely to fall, for that the said merchants enjoyed divers privileges in respect of main"taining the said gate, which they now denied to repair," with the result that they had to pay 210 marks sterling for the repair of the gate, and undertake to pay one-third of the future costs of its maintenance.‡ This gate was again rebuilt in 1479, and in 1551 the merchants were preparing materials for its rebuilding when the League in England was dissolved.§

The establishment of the League in Bruges, where some of its buildings still remain, was not unlike that of London, and the members of it associated more or less with the

^{*} Antiquary, vol. iv. p. 69.

[†] Du Chaillu, The Viking Age.

[‡] Stow's Survey of London, Thoms' ed. 1842, p. 87.

[§] Pennant.

citizens; but those of Bergen and Novogorod were very different. In them the Jomsborg rules were strictly adhered to, and the surrounding population kept at arm's length. In both of these cities the merchants lived apart in a walled enclosure, which also contained their church, and within which they exercised despotic sway over their own servants and apprentices. Novogorod, which was perhaps the richest and most important of the foreign stations, was the envy of the neighbouring Muscovites, so that their saying ran, "Who can withstand God "and the great Novogorod?" but it was destroyed by Ivan the Terrible when he captured the city in 1477. The buildings of the settlement of Bergen, however, to a great extent remain. When complete they formed a long range of warehouses and lodgings on the north side of the haven, the site of which is still called "the German bridge," connected with their own church of St. Mary, which had two west lofty gabled towers and a polygonal apse without chapels.* Within their enclosure they ruled by their own statutes, independent of the Norwegian laws; and such authority did they assume over the native population that, in 1455, when a dispute arose between them and the citizens as to some trading between the Flemings and the latter, they attacked the king's governor, and, driving him and his people into a church, burnt them and it together. The Norwegian king was not only too powerless to resent this turbulence, but was compelled to confirm the League in its privileges, and order that no Flemings should trade with Bergen.†

Such high-handed proceedings in foreign countries provoked retaliation, and from 1450 to 1550 we find the League at constant war with surrounding States; at the same time, the growing importance of the trade carried on by the English and Flemish merchants gradually undermined its power, and at the outbreak of the Thirty Years' War it suddenly collapsed. Nevertheless, the wealth of its individual merchants, and the continued prosperity of many of the confederated towns unaffected by foreign wars, made this an era of great architectural activity, and to this period of the League's political decline we owe some of the finest and richest buildings in the Renaissance architecture of Northern Europe.

In this brief résumé of the history of the League, we have seen how, in its gradual rise, the centre of authority shifted from the banks of the Rhine to the shores of the Baltic, and the effect of this change on the architecture of the district is very apparent. The earlier influences of Cologne, first on Hildesheim, and then, through Hildesheim, on Denmark and the Baltic coasts, are manifest in the great apsidal churches of Ribe, Roeskilda, and Lund; but when, later, Lübeck became the head of the League, she also became the centre of architectural influence, and the ecclesiastical buildings of the fourteenth and fifteenth centuries in the north of Germany were much more affected and inspired by the Dom of Lübeck than by the far finer, but less German, Cathedral of Cologne.

The consequences of this preponderating authority of Lübeck on architecture were of various kinds. The peculiar social and political organisations of the League were made known in the surrounding and foreign countries with which its merchants traded, and suggested a class of buildings hitherto unknown. Wherever the agents of the League settled, they seem to have indoctrinated the people in the mysteries of brick-making, until, in countries where stone and granite had always been used, the new-fashioned brick eliminated the nobler material. Beside this, there were peculiarities of detail and design, partly arising from these causes, and partly due to mere localisms, which are evident in the buildings throughout the countries controlled by the League.

The effect of the League's influence on the municipal buildings of Northern Europe is so obvious as to require but a passing notice. We have seen that although in the great foreign

^{*} Civitates Orbis Terrarum, 1572.

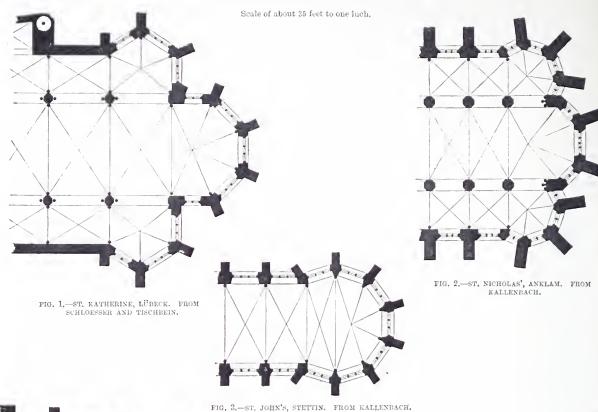


FIG. 5.—ST PETER'S, MALMOR. FROM LÜBKE.

FIG. 4.—DOM LÜBECK. FROM SCHLDESSER AND TISCHBEIN.

settlements the merchants erected for themselves, and resided within, their own enclosures, yet, in the smaller towns with which they traded and in which they had no permanent settlement, their influence and their requirements promoted the erection of guild and trade halls and custom-houses. The important part the merchants took in the affairs of Damme I have already mentioned; and the beautiful Town-hall still standing in that now forsaken little town attests to their dominating influence there. To them also, doubtless, may be attributed the erection of many of the municipal and guild buildings of our own eastern counties, such as Norwich, Lynn, and Boston, which were all towns of the League.

Another, and much more noticeable, circumstance was the gradual abandonment of stone where it had hitherto been used, and the almost universal adoption of brickwork in the countries over which the authority or influence of the League extended. The home of the

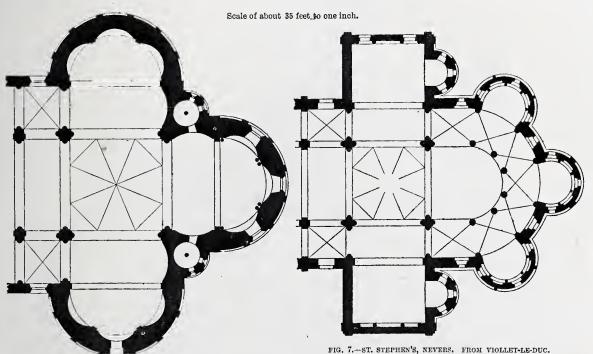


FIG. 6.—THE APOSTLES' CHURCH, COLOGNE. FROM BOISSERÉE.

League and its principal cities were in Wendland, which embraced Pomerania, Mecklenburg, and parts of Lower Saxony, a country of great sandy plains sprinkled over with huge granite boulders brought down by the ice from higher latitudes. Here stone was only to be procured by importation from Sweden or elsewhere at great expense, and the architecture which grew up was almost exclusively of granite and brick. In Stralsund, however, which had closer dealings, perhaps, than any other of the Hansa ports with Sweden and Wisby, stone continued to be used for ornamental purposes in connection with bricks; and in the beautiful Church of St. Nicholas [fig. 21, p. 492], erected between 1311 and 1330, the capitals, bases, and string-courses are of Swedish limestone. The story of this brick architecture as it existed in Pomerania has been mainly told,* but the story of its overrunning stone-producing countries is yet to tell. Throughout Sweden and Norway are fine beds of building stone, easily procurable, but in the Hansa town of Bergen the two churches were of brickwork; Upsala Cathedral was mainly

^{* &}quot;The Mediæval Brickwork of Pomerania," Transactions, 1873-74, pp. 15-31.

brick; and although the earlier work of Linköping, Lund, and Orebro, was executed in stone, the later additions on the western fronts were wholly in red brick. In Livonia, again, where limestone abounds, such old buildings as still remain in the Hansa towns of Reval and Riga are mainly of brick. The case of Wisby and the buildings of Gotland are wholly exceptional.



FIG. 8 .- THE APOSTLES' CHURCH, COLOGNE.

This island, like the neighbouring one of Öland, contains good building stone, of which most of the churches were built during the period when Wisby, having risen into importance after the destruction of Joursborg, looked to Cologne as the head of the League; and, besides, the capture and destruction of Wisby by the Danes, although it consolidated the power of the League, came too soon to allow the later influence of Lübeck to considerably affect its buildings.

In our own country, in the stone-producing county of Yorkshire, the enormous church of Holy Trinity at Hull was mainly brick, and the towers, walls, and houses were all of them of

bricks made at a place south of the town, called "The Tylery"; * and Hull was one of the important Hansa towns in England. The chapel of the Red Mount and the Franciscan church at Lynn, Tattershall Castle, and numerous buildings of brick in the eastern counties, may be fairly attributed to the influence exercised over them by the important Hansa centres of Boston, Hull, and Yarmouth. With what material the merchants built at Bishop's Gate

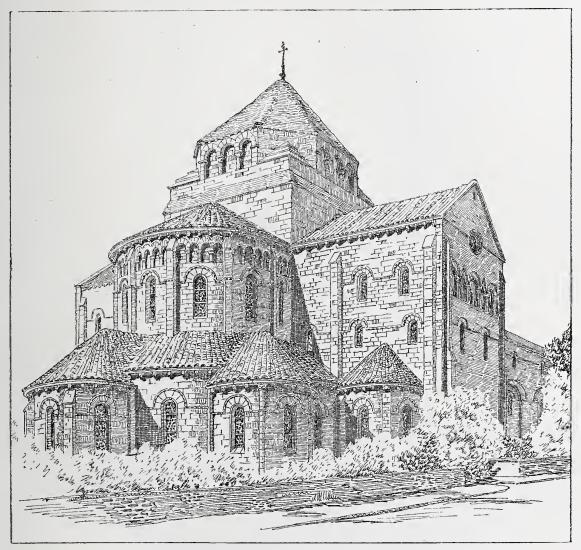


FIG. 9.-ST. STEPHEN'S, NEVERS.

we cannot now say, but from old engravings we may certainly assume that their establishment in the Steelyard was of brick; and the restoration of the privileges of the League in 1474 by Edward IV., after having been in abeyance for nearly thirty years, coincides with the period immediately preceding that great period of brick building in England which included the halls of Gifford, Oxburgh, West Stow, and Hargrave, and portions of the College at Eton. Although in the rebuilding of Bishop's Gate in 1479 we do not know

^{*} The late G. E. Street (quoting Leland), "Brickwork in the Middle Ages," Church Builder, 1863, p. 13.

what materials were used, and though St. John's Gate, Clerkenwell, was rebuilt entirely in stone in 1504, the gate of Lincoln's Inn, erected in 1518, is wholly in brick.* Indeed, we may date from the period of the League's restoration in England the almost complete displacement of stone as an ordinary building material around London, and the introduction



FIG. 10.—ST. PETER'S, MALMOE, SWEDEN.

and development of that brick architecture which culminated in such edifices as Hatfield and Hampton Court.†

I have now to refer specially to those features of architectural treatment which must be

Sandwich, was of moulded brick tracery, but in the restoration stonework was substituted. Careful drawings of it were made by the late Mr. Joseph Clarke.

^{*} Mr. Wyatt Papworth's Renaissance and Italian Styles of Architecture in Great Britain.

[†] About thirty years ago the east window of St. Mary's,

regarded as peculiar to the Baltic style, and which distinguish it, even more perhaps than the material employed, from other contemporary Gothic work. The most important of these,

the arrangement of the church plans, seems to have been overlooked by most writers on the subject, and is not referred to in Fergusson's Handbook, although the two exceptional plans of the Dom and Marien-Kirche at Lübeck are therein published.* Yet this plan is essentially different from the methods adopted in France and England. The great differences existing between the origin and development of the plans of the eastern terminations of French and Baltic churches have scarcely been noticed, and no attempt seems to have been made to account for them; yet a comparison of the plans of the Cathedrals of Lübeck and Cologne will show that their designs could not have been developed from the same starting-point, or have been arrived at by the same methods. eastern portions of the Dom at Lübeck were built, or at least were well in hand,† before the consecration of the choir of Cologne; but its eastern chapels are grouped in a manner quite unknown in France, yet in a way that, in spite of some missing links, shows the origin of its design. In Viollet-Le-Duc's elaborate analyses of French chevets we find that the invariable custom was to set out the radiating chapels on a semi-circle, a method which was the outcome of the gradual addition of three or more apses,

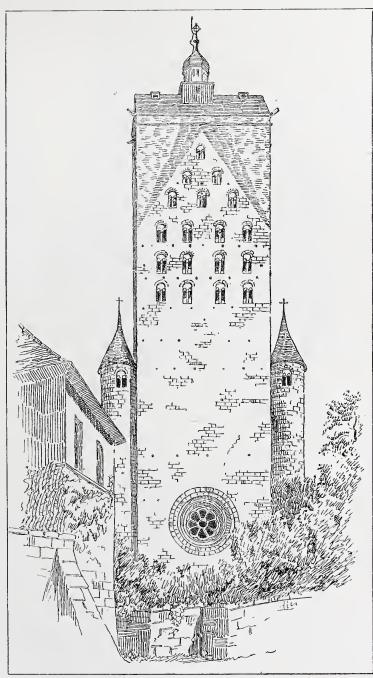


FIG. 11. - WEST TOWER, PADERBORN CATHEDRAL.

as chapels, to the great apse which terminated the choir; whereas the German method was the development of the earlier triapsidal arrangement of the Rhine churches.

^{*} See new edition of Fergusson, ed. by Mr. Phené Spiers, pp. 303, 304. † 1320, H. Otte, Kunst-Archäologie.



FIG. 12.—ST. PATROCLUS' AND ST. PETER'S, SOEST.

As to the origin of the single apsidal or the triapsidal forms we need not now inquire; but we know that the single apse, with the addition of smaller apsidal chapels, became the normal type of early French work, whilst the triapsidal, without added chapels, was repre-



FIG. 13.—ST. MARY'S, LÜBECK.

sentative of the churches of the same date on the Rhine. We may take, perhaps, as the best instances of perfected examples of these types, St. Stephen's at Nevers [p. 481], which was

consecrated in 1095, and the Apostles' Church at Cologne [p. 480], which was completed a little earlier. These churches are, of course, well known to all of us; but I have prepared

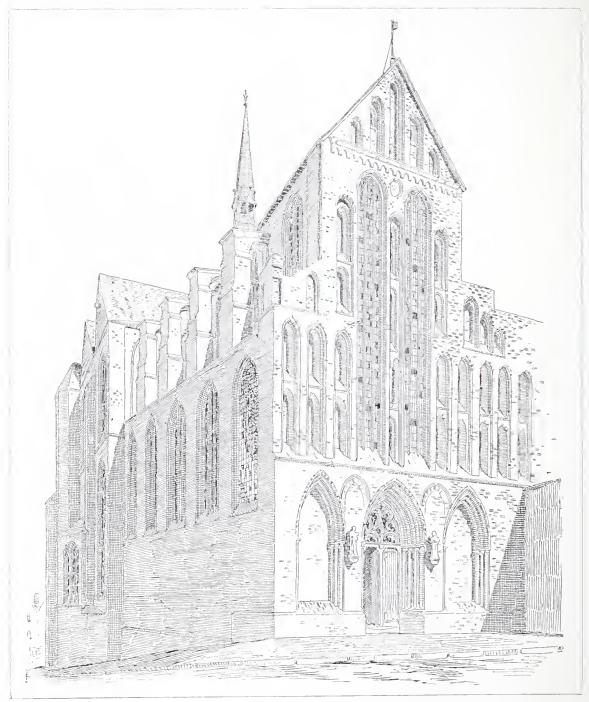


FIG. 14.—ST. KATHERINE'S, LÜBECK.

diagrams of them [p. 479] the better to indicate the essential differences existing between them; and from these it will be seen at a glance that the apse of Nevers is merely the termination

of the choir, to which have been added the chapels, suggesting the future chevet; whilst at



FIG. 15.—TOWN HALL AND ST. NICHOLAS', STRALSUND.

Cologne the three apses are grouped around the choir, and wanted but little development to produce the German form of chevet as at Lübeck. In fact, the French method never varied

from the type of Nevers, but the eastern chapels were always grouped around a single apse; and the German method only varied from the type of the Apostles' Church in Cologne in the number of apses that were grouped around the choir; or, in other words, the French arrangement of the chapels is always around the semi-circle, whereas the Baltic plan is to set its apses, or chapels, against the sides of a square or an octagon.

At the Dom of Lübeck [p. 478], of the five chapels round the east end of the choir those to the north and south open squarely on to the aisles, with the result that the westernmost set of buttresses radiate from the centre of the octagon towards the west, a feature common through-



FIG. 16. - EAST GABLE, PRENZLAU.

out the Baltic provinces, but, to the best of my belief, found nowhere in France, although, strange to say, existing in Westminster Abbey. I believe the earliest and simplest complete example of this peculiar arrangement of the North German chevet is the Dom of Schwerin, which was building from 1248 to 1327, and contemporary, therefore, with Cologne and Westminster. Its arrangement is perfectly symmetrical; the five chapels are all of the same size, the north and south opening squarely on to the choir, and the western buttresses radiating from the centre of the choir westwards.*

Although the actual connecting links between such a church as that of the Apostles' at Cologne and those of Lübeck and Schwerin cannot be pointed out, it is easily seen that there are all the elements of the earlier example contained in the later. The position of the western-

^{*} See sketch plan of Schwerin in Essenwein's Norddcutschlands-Backstein-Architektur.

most chapels, or apses, always remains the same with their radiating buttresses, whilst the intermediate chapels between them and the eastern one are merely an enlargement of the turret spaces of the Apostles' Church, or the square chapels in the meeting-points of the apses

of St. Mary in the Capitol completely developed. The arrangement of the chapels of St. Peter, Malmoe [p. 478], is of the same character, and, with but slight modifications, it became the normal type of the chevet throughout the Baltic provinces.

But the chevet never entirely destroyed the triapsidal arrangement, which survived until both were superseded by an altogether different eastern termination of later date. In St. Nicholas', Anklam, and St. Katherine's, Lübeck [p. 478], the choir is terminated by three polygonal chapels; while at the Cathedral of Linköping the choir, erected by Germans late in the fourteenth century, is finished with three large polygonal chapels applied to the three sides of the irregular octagonal eastern termination.

One effect of the retention of this tri-

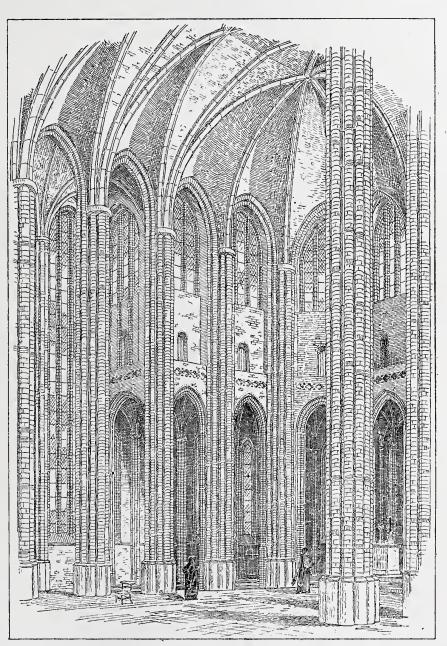


FIG. 17 .- CHOIR AND TRANSEPT, ST. PETER'S, MALMOE.

apsidal, or quasi-triapsidal, arrangement was the omission, or reduction to insignificance, of the transepts. The north and south apses originally were the arms of the cross; and when they became reduced in size so as to form part of the group of five chapels, the transeptal form was forgotten, or only retained to break up the aisle roofs without affecting the ground plan, as

at St. Peter's, Malmoe, and St. Mary's, Lübeck. In France or England the chevet never superseded the transepts, and this is but an additional proof that the French chevet grew only out of the apse, independent of the transept, whilst the German was an incorporation of the apse and transepts, which assumed an accidental likeness to the chevet form. Although the transepts were so commonly omitted in many of the churches where the clerestory was preserved, the architecture of the east end was generally more ornate than the rest of the work. This is well seen in the great Church of St. Mary, Stargard [p. 491], where, although the lines of the string-courses, arcades, and groining are kept throughout, the treatment of the two parts of the church is completely different. A feature in the choir of this church must, if its date be correct, as given by Kugler, early fiftcenth century, be due to Southern influence;

FIG. 18.—ST. JOHN'S, STETTIN.

FIG. 19.—NE BRANDENDURG.

for, I think, only here and at Milan Cathedral is to be found an arrangement of niches round the great piers under the capitals.

I have already mentioned that the peculiarity of the westward radiating buttresses is only to be found, outside the Baltic provinces, at Westminster Abbey; but I would not in the least suggest that this is due to Northern influence. At the same time, this peculiar feature—the greater width across the chapels than across the choir, also very German, the eccentric and perfectly un-French plan of the chapels (six sides of an irregular decagon) - associated with the fact that at the very time Westminster choir was building, Henry III. was permitting the Hansa League to erect its storehouses in London, all taken together form a coincidence at least remarkable.

Although in the Baltic style the arrangement of radiating chapels had been worked out in its own way, and was for long an essential feature in the more important churches, side by side with it was growing up another characteristic form which eventually led to its almost total abandonment—I mean the gable. In French buildings the gable never assumed very great importance, but in German architecture it became a prominent feature; and in the formation of the towers and spires of the early buildings it played a leading part. Of the way in which the spire form became gradually perfected we have the well-known examples of Paderborn [p. 483] and Soest [p. 484], for the earliest periods, which afterwards became stereotyped in the forms we see at Lübeck and Luneburg and throughout the Baltic provinces during the best periods of the style. But the gable alone was afterwards preferred to the spire, and the architects adopted the simple double-gabled saddle-back tower through all the last phases of the style. By the omission of the clerestories, and construction of the aisles of equal height, the gables of the churches became of enormous size, and these presented

so wide a field for the panelled decoration so dear to the Baltic artists as to lead gradually to the extinction of the chevet altogether. One of the finest examples of the transition is the east end of Prenzlau [p. 488], where the three aisless are terminated with shallow apses grouped together outside and gathered over so as to bring the upper surface of the gable to a level, which is covered with intricate tracery, all in brick, standing free from the surface of the wall, and producing a most rich effect in light and shade. In a later example at Neubrandenburg the gable is as richly covered with tracery, and the apses have been altogether omitted.

Of gables at the west end of the churches, where there were no towers, perhaps the most complete and satisfactory example is that of the Church of St. Katherine at Lübeck

[p. 486], which was rebuilt in 1531. Here there are no sham walls or meaningless tracery spread over the surfaces, and although the two great windows may seem excessively lofty and attenuated, yet they are no larger than required to light the interior, and their peculiarities are but characteristic of the brick manner of construction. So fond were the Baltic architects of the effect of these lofty mullions that they frequently prolonged them downwards over the blank wall-space which concealed the aisle roofs, as at St. Nicholas', Stralsund [p. 487], and St. Peter's, Malmoe [p. 482]; but the difficulty of supporting such thin and lofty erections in brickwork, especially where they carried tracery above, resulted in the frequent substitution of two tiers of windows in the same wall-face, suggesting, from the outside, the gallery of



a dissenting chapel, as at the Church of St. John, Stettin [fig. 18, p. 490], and St. Mary's, Stargard [fig. 20].

So enamoured of the gable form did the architects of the style become that it was considered in itself a decoration, and house-fronts, gate-towers, and roofs of all sorts were finished with gables. Where this was a natural termination to a roof, or where fair opportunities for gable terminations were created, as at Neubrandenburg or Bruges, the treatment was legitimate and satisfactory; but where, as at St. Katherine's, Brandenburg, or the fronts of the great Town-halls of Lübeck and Stralsund [p. 487], the gabled fronts were merely a screen-work, solid or pierced, bearing no relation to the roofs behind, they became not only unmeaning, but ugly.

Whatever the demerits of brick as a building material, from an architectural point of view, may be, in one particular it had great advantages over stone. It was too inexpensive

to suggest for its saving the use of a cheaper and commoner ingredient. Thus, in the great and lofty piers which are found throughout the Baltic provinces, we find they are built solid of one homogeneous material, and not, as were so many of our own medieval piers, of rubbish faced up with a thin shell of stone. These great brick piers are a very noticeable feature in the style, and are most marked in those churches where the nave and aisles are of equal height. They are frequently richly moulded, as at St. Nicholas', Stralsund [fig. 21], and Neubrandenburg [fig. 19, p. 490], but the more usual form is a simple octagon.

At first the rich decoration of the wall-surfaces by deeply moulded and traceried arches, although in no way arising out of the construction, produced a very ornamental effect; and where assisted by glazed bricks of various colours, as at St. Mary's, Stargard, the Town-hall, Hanover, and other places, it was often beautiful. These arches, in the lightness of their tracery and their slender mullions, may indeed, in a degree, have suggested such light arcading as the double tracery on the west front of Strasburg Cathedral. The enriched fronts

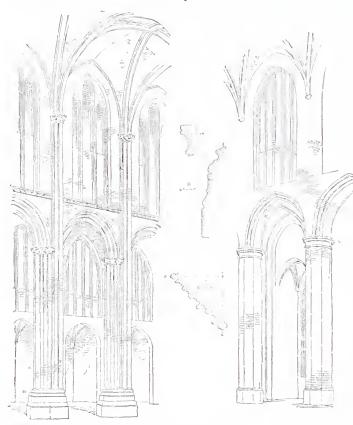


fig. 21.—st. nicholas', stražšund.

FIG. 22.—ST. JAMES', STRALSUND.

of the barbicans of Neubrandenburg, with their elaborate foliations and crocketed gables, however incongruous such decorations may appear in the works of a fortification, are architecturally most satisfactory; but the reverse is the case in the great church of the same town, where the gables and spire are covered with meaningless attenuated tracery bearing no conformity to the parts of the building to which they are applied. From the cheapness of the materials used, and the facility the builders acquired in dealing with this mode of decoration, it quickly degenerated into a series of panels of arches or circles, sometimes moulded and cusped, but generally plain, often having the background covered with a coat of plaster for painted armorial decorations. This panelling is found throughout the Baltic provinces repeated on towers, churches, and houses in a wearisome manner. How far the flint-

work areading of our eastern counties may have been suggested by this, one cannot say, but in many cases it produces an equally monotonous effect.

As the Gothic forms of the Baltic style gradually gave way before the Renaissance, these two principal local features—the gable and the arcading—assumed increased importance; and in the lofty house-fronts of the cities, and the huge castles erected in North Germany before the outbreak of the Thirty Years' War, these features in semi-classic guise are the most noticeable. On the pages of Fritsch's great work * a large number of these are depicted; and

^{*} Denkmäler Deutscher Renaissance, K. E. O. Fritsch.

the old towns all round the Baltic are still full of beautiful examples of German Renaissance too numerous to mention. It is doubtless due to the attention which has been drawn to them, and to the appreciation of their immensely picturesque qualities, which has led to that revival of Renaissance Art in this country meaninglessly described as "Queen Anne," but which is merely an approximation to that form of the Renaissance practised in the Baltic provinces in the last days of the Hanseatic League.

** The illustrations from fig. 8 to fig. 22 are reproductions on a reduced scale from original drawings by the author of the Paper.

APPENDIX I.—LISTS OF THE TOWNS COMPRISING THE HANSEATIC LEAGUE AND OF TOWNS IN FOREIGN Countries allied to them. Compiled from Professor G. Droysen's Historischer Handatlas.

1. Towns of the League.

Wendland and Pommern.—LÜBECK, Head of the League. GRIEFSWALD, HAMBURG, ROSTOCK, STRALSUND, WISMAR. Anklam, Colberg, Demmin, Golnow, Grieffenberg, Grimmen, Kiel, Rugenwald, Stettin, Stolp, Treptow, Tribsees.

Saxony.—Bremen, Brunswick, Goslar, Magdeburg. Ascherleben, Buxtehude, Eimbeck, Gottingen, Halle, Halberstadt, Hameln, Hanover, Hildesheim, Luneburg, Osterode, Quedlinburg, Saltzwedel, Stade, Uelzen, Wern.

Markland.—Berlin, Brandenburg, Coeln, Frankfurt a. O., Havelberg, Kyritz, Oardelegen, Osterburg, Perleberg, Pritzwalk, Seehausen, Stendal, Tangermunde, Werben.

Livonia. - Dorpat, Reval, Riga. Fellin, Pernau, Wenden, Wolmar.

Sweden.-Wisby.

Calmar.

Netherlands. - Amsterdam, Arnheim, Bolsward, Deventer, Dollart, Elborg, Groningen, Harderwijk, Hasselt, Hindelopen, Middleburg, Nimwegen, Staveren, Utrecht, Zwolle, Zutphen.

Prussia.—Dantzig, Elbing, Koenigsberg, Thorn. Braunsberg, Culm.

Westphalia.—Cologne, Dortmund, Munster, Soest. Bielefield, Coesfield, Duisburg, Emmerich, Hamm, Hervord, Höxter, Lemgo, Lippsstadt, Minden, Osnabruck, Paderborn, Roremond, Unna, Venlo, Warburg, Wesel.

2. Allied Towns in foreign countries.

England.—London, Boston, Hull, Ipswich, Lynn, Norwich, Yarmouth, York.

Flanders.-Bruges, Antwerp, Damme, Dinant, Ghent,

Denmark.—Copenhagen, Falsterbo, Flensborg, Helsingborg, Helsingör, Malmoe, Roeskilda, Skanör, Svenborg, Warberg.

Norway.—Bergen. Russia.—Novogorod, Kowno, Pskov.

APPENDIX II.—THE CHRONOLOGY OF THE HANSEATIC LEAGUE.

A.Q. 809 Hamburg founded by Charlemagne. Jomsborg, or Jullin, on the island of Wollin founded 950

by Harald Gormson. London. Privileges granted by Ethelred to German merchants to trade there.

1143 Lübeck founded.

1150 Novogorod established as a free republic.

1158 Lübeck ceded to Saxony.

The Oldenburg bishopric transferred to Lübeck by 1163 Duke Henry of Saxony.

1164 The Dom of Lübeck consecrated.

1177 Jomsborg destroyed.

1190 The Teutonic Order founded by three knights of Bremen and two of Lübeck.

1209 Stralsund founded.

1225 Wisby. First treaty made between the German merchants resident here and the German traders from mainland.

1226 Lübeck declared a free imperial city by the Emperor Frederick II.

1227 Lübeck attacks the Danes in the battle off Bornholm. Lübeck destroys Danish naval supremacy in engage-1234ment at the mouth of the Trave.

1241 Hamburg and Lübeck enter into treaty to protect the roads from Travemunde to the Elbe. (This is regarded as the date of the complete establishment of the Hansa League.)

London. The Hansa storehouses erected. Bergen. Treaty made with Hakon of Norway for 1250 establishment of League in Bergen.

1252 Bruges. Storehouses erected, and the League as "Merchants of the Roman Empire" established in Flanders.

Damme. Roger of Lübeck and Jourdain of Hamburg obtain special privileges for the League in Damme.

1259 London. Henry III. confirms the privileges of the League.

1272 Novogorod. Storehouses erected.

1276 Novogorod. Joins the League.

Mons. Storehouses erected. 1278

London. Troubles between the German merchants 1281 and the citizens as to the cost of repairs to Bishopsgate.

1348 The League attacks Denmark.

Wisby destroyed by the Danes. Consolidation of 1361 the League by the Danish War. (From this time the assemblies of the League become regular.)

1367 The League meets at Stralsund.

Peace of Stralsund by treaty between the League 1370 and Waldemar of Denmark, which "induced close "relations between the League and the Teutonic "Order." (At this time the League was at the height of its power and embraced 64 confederate and 44 allied cities.)

1395 Treaty with Denmark when Albert surrendered to the League.

1426 War between the League and Denmark.

1448 War between the League and England.

Bergen. The German merchants attack the king's 1455 governor and burn him and his men in a church, by which the influence of the League in Norway is much increased.

The privileges of the League in England restored. 1474

1477Novogorod captured by the Russians, and the League $1479\,\,$ London. Bishops gate rebuilt by the German merchants.

1537 Lübeck. Fall of the Bürgermeister Jorgen Wollenvever. (From this time the power of Lübeck rapidly decays.)

1550 The Kontor of Boston suppressed.

1551 London. The German merchants collect materials for the repair of Bishopsgate.

1552 London. Privileges of the League revoked.

The League abolished in England by Elizabeth.
 Outbreak of the Thirty Years' War and gradual decay of the supremacy of the League.

DISCUSSION OF MR. TAVENOR PERRY'S PAPER.

Mr. R. PHENÉ SPIERS, F.S.A. [F.], said that it was nearly thirty years ago since the reader of the Paper, who was the first Pugin Travelling Student of the Institute, stated that he would select for his tour some cathedral town and the churches in its neighbourhood, that by visiting the two together he could see what influence the cathedral had on the surrounding buildings. Mr. Perry in that year (1866) took the cathedral of Durham, and made an elaborate and careful study, which was published in the Transactions, and was of considerable value. He (Mr. Spiers) had on one or two occasions since suggested to the Pugin Students that they should follow a similar system to that originated by Mr. Perry; but, he was afraid, without success. It would, he thought, be advantageous if it were pointed out that if a student would select some particular county, and find out the influence which a cathedral, or other large structure, had upon the surrounding buildings, it would be of great value, as exercising not only the eye but the brains of the young student. Mr. Perry evidently still carried the same idea in his mind, and during a survey of many years had produced a most valuable and suggestive paper---so full of suggestion that he (the speaker) ventured to go a little bit farther in the same direction, in the hope that others might be induced to visit the Baltic provinces. He himself had visited other towns not mentioned or described by Mr. Perry, and it might be interesting to say a few words on their buildings, so he had brought a few drawings illustrating them. The Marien-Kirche at Dantzic was an interesting church, although its plan was of an entirely different character, with its square east end, from those Mr. Perry had brought forward. It was worth attention however from the point of view that it was begun under the direction of the Knights of the Teutonic Order, to whom Mr. Perry had referred. The church also was of value, as contrasting in its section with the churches mentioned by Mr. Perry. It was what was known in Germany as a Hallen-Kirche, in contradistinction to the Hohen-Kirche—that is to say, instead of the centre aisle or nave being double the height of the aisles, which was the usual arrangement in most cathedrals, all the three aisles were of the same height; and as the church itself was of considerable magnitude—namely, about 350 feet long and over 100 feet wide, with a vault 98 feet high (the height of Westminster Abbey)—the stupendous effect and grandeur of the

great hall might be imagined. A similar arrangement was found in the cathedral of Vienna, and it was possible that the influence there and the fact that a German architect was employed led to the same system being adopted to a certain extent in the cathedral of Milan, the height of nave and aisles not being quite of the same dimensions. Though the effect was finer than the more usual treatment, it had one defect—that comparatively little light was admitted to the centre portion. In Milan that was especially the case, because there were double aisles on each side, and the small clerestory windows existing there were of little value. The castle of Marienberg, which was within a few miles of Dantzic, was especially interesting as being the seat of the Master and Knights of the Teutonic Order for 154 years, from 1303 to 1457. There were portions of an older castle existing, dating from 1276, when they came there from Marburg. He had not a general plan of the Schloss, but that which was most interesting to architects would be the Mittel-Schloss, built between 1306 and 1350, in which were found the great halls where the conclaves were held. He had a plan showing those halls, the most important being a square hall with fan vaulting carried by a pillar in the centre—a pillar which the Poles tried to knock away with a cannon-ball when they were besieging the place, in the hope that it would overwhelm the Grand Master and all his Knights in conclave. The stone tracery which was introduced into the windows of the Great Hall was rather suggestive of a Venetian influence; and it was very possible that Venetian masons were sent for, to execute and carry out that work which was foreign to the usual German style. The Mittel-Schloss was of great extent, and included an important chapel with a porch, to which the title of "Golden" had been attached—from the great richness, he supposed, of its decoration. It was, he thought, one of the few, if not the only example of carved brickwork in Germany. Going back to Mr. Perry's Paper, what he had meant to point out was that the principle of the chevet was of German origin, and not French. Looking at his diagrams, there seemed to be some reason for that theory. Mr. Perry at first seemed inclined to agree that there could not have been much Hanseatic influence in Westminster Abbey, but afterwards he dwelt a little on it, and fancied there might have been some connection between the two—the chief reason being the influence of the League at the time when the Westminster chevet was being

built. There was, however, another reason which might be given for that peculiar arrangement and the existence of the western buttresses. The first building which was added by Henry III. in 1220 to Edward the Confessor's Church was a Ladychapel—the largest Lady-chapel, he believed, at that time existing. It opened to the church through an arch 30 feet wide, and, as the eastern wall had been found close to the east end of Henry VII.'s Chapel, it showed that it must have been of extraordinary length. It would seem that when, some twenty years later, he determined to build a chevet in imitation of those which were being built in or added to all French cathedrals, and notably in that of Amiens, he determined to take the same width of opening of arch for the other chapels as for the one he had already built, that being 30 feet, as against 25 feet at Amiens. It naturally followed that by the time his architects got round to the third chapel on each side, it was already on the west side of the circular apse of the choir, and that accounted for the western buttresses. It was an accident, therefore, that the same feature should exist in Lübeck and in Schwerin. At Amiens there were seven chapels instead of five as in Westminster, and the westernmost chapels were in a line with the first transverse rib of the apse. On the previous Friday a Paper had been read before the Architectural Association on "Practical Notes of "Travel," and the author, Mr. Bolton, gave some advice with regard to France and Italy and Spain. He had, however, altogether forgotten Germany; and it seemed, indeed, that very few students ever went there. He (Mr. Spiers) had often to advise young students as to their tours abroad, but they never made inquiries about Germany. Therefore, if Mr. Perry's Paper did nothing more, it would be a considerable advantage in pointing out the interesting features to be found in the North German churches. It was many years since he (the speaker) was there, and his visit was followed afterwards by a tour in the East, which eclipsed all he had seen before and made him forget a great deal that he saw in Germany; he had, however, paid another visit three years ago and studied the churches at Paderborn and Soest, and they struck him as being most interesting and valuable to an architectural student. Those two, and the cathedral at Münster, which was, he thought, one of the finest and most impressive interiors he had seen, would well repay students to visit. He hoped students would now be tempted to go in the direction of Germany, to study its mediæval architecture, and Mr. Perry's Paper should lead to that end.

MR. CHARLES FOWLER [F.] said that some forty years ago he had the honour of bringing the subject under discussion before the Institute, and he was glad to find others had followed up the matter, and more efficiently than he was able to

do. The interesting collection of drawings Mr. Perry and Mr. Spiers had brought before them spoke for themselves. One point had not been alluded to by the reader of the Paper—the buildings which were erected in brickwork at a very early period. As far as he knew, there were only two, dating, he believed, early in the twelfth century. Their names were the Schloss-Kirche at Quedlinburg, which was originally part of a very large monastery and afterwards converted into a schloss and residential palace of the reigning sovereign, and the church at Jerichow—a curious name, though it was known to many of them. They were both very large churches, and entirely different in their construction and arrangement from any of the churches that had been referred There was not much difference in size—the exact dimensions he could not say—but they were both purely Romanesque in style. They had very large crypts, and were much raised above the level of the remainder of the church. They were constructed, except as regards certain portions of the ornamental work, entirely of brick. They had both of them two large western towers, with a peculiar kind of spire, rather short, with very large gables on each side. Unfortunately, both churches had been terribly restored, particularly at Quedlinburg, where there was a great deal of the original stonework remain-The reason he particularly referred to these two churches was because they seemed to show the brick influence anterior to the period referred to by Mr. Perry. Magdeburg, a large portion of which was early work, was principally, if not entirely, of stone, probably owing to the circumstance that, being on the river Elbe, the stone was comparatively cheaply procured by water carriage from Upper Saxony. Last autumn he had re-freshed his memory by visiting the churches in that neighbourhood, and, to his regret, he found that in almost all cases restorations had been made. They were so well restored that it was exceedingly difficult to know how much of the original work was left. Nearly all the churches in North Germany after about the middle of the fourteenth century were on the plan of the three equal aisles—aisles of equal height—which Mr. Spiers had alluded to. They certainly produced a grand effect by their size, but, he thought, were uninteresting, being simply a great vast space. The details were repeated both as regards piers and arches, and as regards windows, throughout the church. There was one other class of buildings which were very interesting—namely, the great gateways of some of these towns; and Stendal particularly afforded very good examples. A diagram on the screen exhibited one of the gates at Lübeck which was also existing at that time, and he was glad to hear from Mr. Perry that it was still there. The Church of St. Peter was particularly interesting,

because its spire was entirely different in character from those of which illustrations were shown. The early work of the south porch of the Dom at Lübeck was interesting, and was evidently in a much earlier style than the rest of the church. He should like to call attention to the way in which the brick tracery was formed at Tangermünde and St. Katherine's, Brandenburg.

MR. W. H. JAMES WEALE (National Art

Library, South Kensington) said that it was only of late years that attention had been paid to the influence of the art of one country on that of another. He thought that, so far as mediæval architecture was concerned, it was the publication of Villard de Honnecourt's Sketch and Note Book in 1849 that first led to the comparison of buildings in widely separated countries. But personal influence, as evidenced in the points of resemblance between Tournay and Rolduc, Westminster and Drontheim, or Amiens and Koeln, was far less important and far-reaching than that exercised by religious orders, such, for instance, as the Cistercians, as pointed out by Sharpe, and more recently by Enlart in the Bulletin Monumental, and Frothingham in the American Journal of Archaeology. Mr. Perry had now called attention to the influence exercised at a period when the practice of architecture had fallen into the hands of laymen, by that very important association, the Hansa. The comparison of buildings would doubtless lead to a more accurate knowledge of the origin of peculiar features. Though agreeing in the main with Mr. Perry, there were one or two points to which he must demur. He doubted the correctness of the statement that wherever the agents of the League settled, they indoctrinated the people in the mysteries of brickmaking. In Flanders the earliest churches were built of veldsteen, boulders found on the surface of the soil, as, for instance, the lower part of the tower of St. Saviour's at Bruges, the church of Snelleghem, &c. Later on, stone edifices were raised under French influence, as St. Martin's at Ipres, the Town-hall at Bruges, &c.; many more from the designs of master-masons from Tournay, Hainault, and Brabant. But at the same time brick buildings were being erected all over the country. He did not know the earliest date of mediæval brickwork constructions in different countries, but excellent bricks were made in Flanders in the twelfth century. And there were many excellent examples of brickwork, such as the hospital of St. John and the hotel of the Grunthuus at Bruges, and the convent attached to the hospital of the Biloke at Ghent, that would bear comparison with the brickwork of any other country. Again, he did not think that the Town-hall, or more correctly the Halles, at Damme in any way attested the influence of the Hansa. The original building, erected in 1242, had fallen into a ruinous state in 1463, and it was determined to rebuild it. The master-masons of Bruges, Ghent, and other towns

were invited to compete; finally the designs of Master Godfrey de Bosschere, of Brussels, were selected. Tenders for the construction were advertised for, and on a certain day these were opened. and those present were encouraged to offer to do the work at a lower price. Each contractor who made a lower offer had a present of wine, in specie or in equivalent money value, given to him, and finally, when the candle which had been lighted at the commencement of the proceedings went out, the work was entrusted to the lowest bidder. In the end, as had been the case in this country in our own times, the result of the mode adopted proved unsatisfactory. The townsfolk were not satisfied; there was a lawsuit and an arbitration. He had been much struck with Mr. Perry's remarks as to the peculiarity of the planning of the apsidal chapels of the Cathedral at Lübeck. If he was not mistaken—but, as he had not been able to refer to the plan in Mr. Verhaegen's Monograph, he must speak under correction—the five chapels round the apse of St. Saviour's at Bruges were grouped much in the same way; now these were designed in 1482 and erected by John van den Poele, who in 1478-81 had built the factory of the Hansa at Bruges, a splendid edifice, ruined in the last century. He also built the well-known Palais-du-Franc at Briges.

MR. H. W. BREWER said that it always struck him, in connection with church architecture in Germany, that there seemed to be two very distinct kinds of churches. One was built in the dominions and under the influence of the "Ecclesiastical States" and the "Prince-Bishops"; the other was a class of church built in the "Free Towns." Now, the churches built by the Prince-Bishops were totally unlike those built in the Free Towns; and the reason was that the churches built by the Prince-Bishops required many chapels, as they were served by a number of priests, whereas the churches in the Free Towns were built to hold very large congregations served by a few priests. Hence it was that what was called the "Hallen-Kirche" was found much more frequently in the towns that were non-episcopal than in the episcopal towns. For instance, at Cologne, Bamberg, and most of the other episcopal towns, the churches as a rule had clerestories, transepts, a number of chapels, and generally more than one apse, whereas the churches built in the Free Towns simply consisted of vast halls, with the aisle sometimes carried round the apse, and sometimes breaking off short and leaving a single apse. It was very puzzling to understand, at times, the German arrangement of apses. Sir Frederic Leighton, in his recent Address to students of the Royal Academy, found great fault, and justly so, with the apse of the Cathedral at Augsburg. But although the apse of the Cathedral at Augsburg was very ugly, it was very instructive, because the architect was evidently trying to combine the square east end

and the regular chevet. There were two architects at work upon that apse. The first planned the arches round the apse the same width as those of the choir. As the latter were very wide, it allowed a very slight cant for the apse arches, so that they appeared almost to give the church the effect of a square-ended building; but, by an arrangement of the vaulting, taking a square bay from each of the three bays and the apse, he got an alternation of square bays and triangular ones, and that led to his being able to arrange nine chapels round the chevet of the apse. So far so good; the idea was one worth considering, and the man had certainly an idea in his head. But the architect who succeeded him simply made the whole design ridiculous by putting in a huge east window in one bay, and leaving the other bays without windows, except little holes very high up in the vaulting. He also stopped the vaulting shafts which were commenced by his predecessor, and therefore left the apse as it was now, one of the ugliest works carried out during the Middle Ages, though if the original architect had carried out the design, the arrangement would have been very interesting. No doubt he intended to have had two windows in each bay, which would have got over the somewhat flat effect of the great bay in the centre. With regard to the plastering and painting on brickwork, he (the speaker) had come across some very remarkable examples of it in Germany, and the funniest of all were on the walls of Ingoldstadt. Ingoldstadt, when he saw it some fifteen years ago, retained the whole of its walls, and nearly all its gates and the towers, and the walls had absolutely painted machicolations along them! There were no real machicolations—simply a plain surface; under that the rest of the walls had been scored out like stone. One fact he would mention, which strongly corroborated the view of Mr. Perry, about the use of brickwork in London. When Fitz-Jocelyn, the Mayor of London, in the year 1477 restored the City walls, he found that the walls all round by Bishopsgate and Cripplegate were in a very bad condition, and he heightened them and added an embattled parapet. Now, although the old walls were of stone, he built his parapet and additions of red brick, and those red-brick additions and parapet were shown in some very interesting engravings now to be seen at the Guildhall. From this he should assume that Mr. Perry's idea that Bishopsgate itself was built of brick might be correct. It was a curious thing that the inhabitants of the Steelyard should have had Bishop's Gate to take care of, because it was out of their district, and the nearest foreign settlement to Bishop's Gate was not that of the Germans, but of the Flemings. The Flemings had a settlement in Broad Street, the Spaniards also, and the Spanish Ambassador lived there. A singular thing took place at the time of the Reformation. When

the Augustinian church was closed it was given over to the Flemings, as a Flemish Protestant church, and remains so till this day, showing that the Flemish colony was still in existence in that part of London at that time; and they were so much nearer to Bishopsgate Street that it was strange that Bishopsgate Street was not more under their charge than that of the Germans. He should like to know whether any one had been to Frauenberg, because he had seen a view of the Cathedral of Frauenberg, and it seemed a very remarkable church; and as Frauenberg was the only German Prince-Bishopric that existed in the extreme north of Germany, it would be interesting to know how far it followed the usual Baltic type of church. From the view he had seen he could not make out whether the cathedral was of brick or whether it was of stone. [Mr. SPIERS remarked that it was brick.] That was a very singular fact, because, if so, it was the only brick cathedral he knew of in Germany that was erected under the auspices of the Prince-Bishops.

Mr. ARTHUR S. FLOWER, M.A. [A.], said he should be glad if Mr. Tavenor Perry would say a word or two more as to the reasons which had induced him to attribute English brickwork to German or Hansa influence. He had given several most interesting and curious coincidences, but it would be still more interesting if he could tell them, as possibly he might be able to do, that he had in the course of his reading come across any definite proofs of influence—either that the Hansa merchants imported bricks, or taught the art of brickmaking, or in any way influenced the So far they had coincidences, but had not got much beyond post hoc, ergo propter hoc. He did not wish at all to traverse Mr. Perry's conclusions, but he thought if he had any further data to give, it might establish those conclusions

more satisfactorily.

THE PRESIDENT said they would all agree with him that the Paper Mr. Perry had been good enough to read was one of very great interest and full of suggestiveness. Mr. Perry had apologised at the outset for giving an historical sketch of the Hanseatic League. Such apology, he thought, was unnecessary, as it was most interesting to recall the circumstances of the foundation of the League; and it led them to reflect on one moral of the Paper—the intimate connection between commerce and architecture. Originally a small association of merchants, the League ultimately became an association of great cities, spreading its influence and exercising political power not only within its own bounds, but in foreign states. The connection between commerce and art was direct and remarkable. It had been illustrated over and over again in the world's history, and nowhere more than in their own country-the greatest commercial power, he supposed, that the world had ever seen—spreading its influence not only at home, but to the most distant ends of the world. How much, then, did it behove them, as architects, to realise the influence that their art might exercise! A league consisted, after all, of individuals, and if each architect composing what they might call a League of architects in this country—the Royal Institute of British Architects, and those outside—would only realise this, that they design not merely for their own delectation, not merely for indulging their own crotchets and fancies, but that their designs must have an influence for good or for evil on their own day and generation, and not only so, but on succeeding generations—if they would only realise this, they would, he thought, be more careful in the designs they some-

times produced. Mr. J. TAVENOR PERRY [A], in returning thanks, said that, as the subject was one in which he took a deep interest, the labour of the preparation of his Paper was a pleasure. In reference to Mr. Spiers's question as to the frequent omission of the surrounding aisle at the east end of German churches, he did not regard this as an element in the essential differences which he believed existed between the chevets of the Baltic provinces and those of France. Mr. Charles Fowler had mentioned the very early churches of Quedlinburg and Jerichow, which were very domical in their vaulting; those in their design must have been influenced by the buildings of Hildesheim or Cologne. The gateway, known as the Holsteinerthor, at Lübeck, of which Mr. Fowler had exhibited a drawing, was, he was happy to say, still standing; and of the great gate towers, with their barbicans, at Neubrandenburg, which were perhaps the finest in North Germany, three had been preserved. Although Mr. Weale disagreed with his views as to Damme, he was glad to hear from so high an authority his belief in the Hanseatic influence on the plan of St. Sauveur at Bruges, an influence which he (the speaker) had always suspected, but had not felt sufficiently sure of to mention. As to the painting upon brickwork, there was an instance of that in their own country—at Tattershall Castle. There was a great deal of brick groining in Tattershall Castle, and this had been plastered over, and brick joints painted on the top of the plaster, following almost, though not quite, the line of the brickwork underneath. As to the question of bricks coming from abroad, he had been careful to say, with regard to Hull, that the bricks were made near Hull; but a great many of the bricks used in Sandwich and in the beautiful east window of St. Mary's, Sandwich, which he saw thirty years ago-but which was destroyed shortly afterwards—were imported from Holland. Mr. Brewer had referred to the Church of Austinfriars as being near Bishopsgate, and being a Flemish church. It was, he believed, used by the Germans, and was always known as the Dutch church, Austinfriars.



CHRONICLE.

THE LONDON COUNTY COUNCIL. Conference with the Bridges Committee.

On the 23rd inst. a deputation from the Art Committee, consisting of Messrs. Alfd. Waterhouse, R.A. (Chairman), Messrs. W. D. Caröe and E. W. Mountford (Hon. Secs.), Messrs. J. M. Brydon, H. Romaine-Walker, and G. Sherrin, accompanied by the President, Mr. J. Macvicar Anderson, waited on the Bridges Committee of the London County Council. Mr. Alma Tadema, R.A., and Mr. Ernest George were unavoidably prevented from taking part in the deputation, which was introduced by the President, who explained that it consisted of some of those whose function it was to advise the Council of the Institute on all matters relating to the purely artistic side of architecture; and that therefore, when a work of such magnitude as a new bridge at Vauxhall was in contemplation, it was natural they should have something to say on the matter. He assured the Bridges Committee that the deputation attended in no spirit of interference, but purely to urge from an artistic point of view that the bridge should not merely be structurally successful, but esthetically beautiful. He hoped the London County Council and their advisers might derive inspiration from the noble monuments of a former generation, such as London Bridge and Waterloo Bridge, rather than from more modern bridges, such as Battersea.

Mr. Alfred Waterhouse, R.A., said that its bridges ought to be among the most attractive features of London's great waterway, and that, though this might be said of the older structures, a great falling-off was to be noticed in the newer ones, and so great a falling-off in the latest, speaking only of those from Battersea downwards, that they might be classed among the ugliest and most ill-considered of such structures. The Art Standing Committee rejoiced to see the London County Council taking up such an important matter, and trusted that they would inaugurate a return to those old principles of bridge-building in which beauty of line and monumental character were sought for, and all tawdry and meretricious ornament (so-called) avoided. A bridge across so wide a river must necessarily be an expensive work, and deserved infinite study in all its details to make it as perfect as possible, though not necessarily to add to its expense. Rennie in his Waterloo and London Bridges, and Mylne in his

old Blackfriars, set an example of how worthily our noble rivers might be spanned. It seemed to him a mistake to paint iron bridges in bright and gaudy colours. The grey tones of London architecture had something very attractive about them, though due, it might be, to smoke. Such tones were destroyed by the juxtaposition of crudely bright colours. An illustration of this existed in the effect produced upon the Houses of Parliament by the pea-green of Westminster

Bridge.

Mr. J. M. Brydon endorsed the views of the previous speakers, and urged the paramount importance of such a structure as a bridge across the Thames. He specially pleaded that it should be of a monumental and architectural character rather than a simple feat of engineering. Without any desire to dictate in any way to the Committee, he asked them to give the preference to stone as the building material-at any rate for Vauxhall Bridge-and called attention to the design of old Blackfriars Bridge as entirely suitable for the proposed work and of great architectural merit, it having been designed by Robert Mylne, an architect of the later half of the eighteenth century. As it might be said that large enough spans could not be obtained with a stone bridge, Mr. Brydon pointed out that the span of the centre arch of London Bridge being 150 feet, and the arches of Waterloo Bridge 120 feet, the spans at Vauxhall need not be greater, as anything that would pass under the two existing bridges would, of course, pass under a new one of the same size. He suggested that, as London Bridge had five arches and Waterloo nine, the new Vauxhall Bridge might be constructed with seven—the centre arch, say, 140 feet wide. He also called attention to the beautiful curved line of the roadway of London Bridge and old Blackfriars, and hoped that this would be followed, rather than a slope up to a point in the centre, like the new bridge at Putney, as a great part of the effect of the older bridges was due to their beauty of line in this respect. Then again, he was anxious for it to be understood that in pleading for an architectural bridge the Art Committee did not mean merely an ornamental one. On the contrary, what they desired to see was a simple, stately, and dignified monumental structure that should be in every way worthy to rank with the two noble bridges lower down the river, and with its position on the waterway of the richest city in the world. With regard to the relative cost of iron and stone, Mr. Brydon said he was aware that the latter was the more expensive, but even that might be modified by constructing the piers and arches in granite and the remainder in Portland stone. And in any case he hoped cheapness would not be the first consideration, but rather the desire to make the most of a great opportunity by a noble addition to the monuments of London.

Mr. W. D. Caröe, M.A., said that, in venturing to add a few words to what had already been said, he would not trespass upon their time by treading in precisely the same paths as those taken by Mr. Waterhouse and other speakers, except in so far as to say how heartily he concurred with their views as to the architectural importance which attached to a bridge, in the heart of the metropolis of the Empire. Such a structure had a public importance, as an architectural monument, equal to that possessed by a great cathedral, or by such buildings as Somerset House, the Bank, the Exchange, or even the Houses of Parliament. In no other structure was there such an opportunity of bringing wholesome beauty into the practical out-of-door lives of the people. He asked to be permitted to approach the question briefly in the consideration of the more recent additions to London bridges—as to how far they had fulfilled the standard indicated, and which he was confident the Council felt with the deputation ought to be aimed at. He did this with less reserve because the London County Council, among the many duties into which it had entered, had not been responsible for any of the bridges to which he should refer. He would only briefly allude to the Tower Bridge by saying that that was in no sense what he meant by a simple and dignified architectural bridge. He objected to the Tower Bridge in the strongest manner possible. The predecessors of the Council, the Metropolitan Board of Works, could rightly claim all the credit, and it was a great deal of credit, for their admirable copy of Rennie's London Bridge at Putney. That bridge had all the simplicity a bridge across the Thames should have, and where there was so much to admire he would not venture to criticise some points of detail where he thought it erred in design, as well as in good masonry construction. Again, the Metropolitan Board of Works left behind it, as a legacy, Battersea Bridge opened only a few years ago by Lord Rosebery and the County Council, though bound to bring it to completion, had nothing to do with its design. To that bridge he desired specially to direct the Council's attention. In general outline like Putney, it rose from either side in a straight slope to the centre. All the great beauty of curve which was possible in a rising bridge was thus completely lost, and hard lines were substituted for graceful ones without any practical gain. He would commend to their notice the exceedingly good line of the bridge portion of the Albert Suspension Bridge, much though its ungainliness in every other respect obscured that great merit. The levels of the land on either side of the bridge were virtually the same as at Battersea. Looking more closely to the detail of Battersea, it might be concisely and accurately described as consisting of granite piers of severely classical design, cast-iron arches with ornamental castings

in the spandrils suggestive of genuine Brummagem casting-handiwork at its vulgarest, and perverse corrugated covings perverse, because all graceful and natural line of apparent strength in the arches was set at absolute defiance. Over those nondescript arches was found a continuation, in cast iron, of the heavy stone classical cornice of the piers, and then a wondrous castiron Arabian parapet, well fitted, doubtless, for a doll's house, or perhaps for a balcony at a Palace of Varieties. But the Battersea varieties had not yet ceased, for, crowning all, they had quasi-Florentine lamps, which, from the proportions and relations they bore to the meagre Arabian pilasters supporting them, and the lengths of wandering gas-pipe supplying them, could evidently claim at least the distinction of having been originally forgotten. Thus far, the bridge esthetically. In some points of construction not much more could be said in its favour. Referring to the masonry junction of the northern respond or abutment with the Embankment stonework, Mr. Caröe said it was so clumsy and so thoughtless as almost to break the heart of a conscientious and practical mason, who believed in mouldings stopped upon the solid, good coursing and bonding, which the traditions of all great architecture of the past had handed down as essentials of good masonry. He had already alluded to the stone cornice continued in iron to the same section, as though what suited one material would suffice for the other, and he would also ask attention to the junction of masonry of the piers with the Arabian parapet. It was structurally as bad as possible. He had presumed thus to dwell upon the many shortcomings of that remarkable bridge, in the earnest hope that a like discredit should never fall upon London's present municipal administrators as attached to their predecessors in connection with it. The Art Committee, whose members had viewed most carefully all the Metropolitan bridges, were unanimous in the adverse opinion they had formed of that excellent example of what a bridge across the Thames should not be. In so prominent and important a situation as Vauxhall crossing at the vantage point of a mighty sweep of the river-in full view of the Houses of Parliament, they hoped that a stone structure, graceful in its line, refined but strong in its detail, powerful in its simplicity, might take the place of the present bridge. Consisting of nine arches, as it did, and when the ironwork was lost in the distance, it had many attractive points. When seen close at hand, its parapet was a masterpiece of effective simplicity. It should surely be possible to replace it by a simply treated architectural structure of, say, five arches for ±380,000, a greater sum, he was informed, than the cost of Putney Bridge, which was several feet longer. If metal must be used as a sinc qua non, the deputation would only ask finally that it should

be used as metal, and that it should not ape a stone construction painted gaudy green, as at Westminster. Mr. Caröe produced a photograph of the new bridge at Mayence in illustration of this point, where ironwork, though in arched form, which was generally objectionable, was here simply applied, while the stone piers and lamps were excellent.

Mr. E. W. Mountford (President of the Architectural Association) emphasised the fact that a stone structure practically looked after itself, while cost of maintenance was an important factor in an iron, or partially iron, bridge. He assumed that the County Council based their estimates for a stone bridge upon the cost of granite. Portland stone was, however, less than half the cost of granite, and would look much more beautiful. There seemed no reason why granite should not be used in connection with Portland stone; the former for the water-work and salient features, and the latter for other parts not liable to injury. He thought, however, that in such an important work, cost was by no means the first consideration. With regard to levels and gradients, he stated his view that it would be quite possible and practicable to design and build a fine bridge in stone, to meet all requirements wherever arches of any kind were allowable. Ironwork could never harmonise properly with stone surroundings, because of the necessity of constantly painting it more especially when it was used imitatively, as in arches, which ought to be of stone. If they wanted to use steel or iron, let them use each honestly and entirely, as steel or iron ought to be used.

Mr. W. II. Romaine-Walker said he had little to add to the suggestions of the various members of the deputation, with which he heartily conenrred. There was one point, however, which had not been sufficiently touched upon, and on which he felt very strongly. He believed he was expressing the unanimous wish of the members of the Art Committee by urging upon the Council that if, after due consideration, they found it necessary to adopt an iron bridge, owing to the numerous difficulties referred to, they should not sanction its being designed with the object of making one material represent another. If it must be iron, by all means let it be iron in construction, and not clothed in stone details. Nothing could be more opposed to all the canons of art. A notable example of how this end could be attained was clearly demonstrated in one of the photographs produced by Mr. Caröe of an admirably designed iron bridge at Mayence.

Mr. Sherrin, in concurring with what had fallen from the other speakers, said that he thought that such an important work should not be trusted to the taste of a single individual. He admitted that there were difficulties in dealing with such a matter through committees, but he still thought

that some other course than that which had

recently ruled ought to be adopted.

The deputation was most courteously received by the chairman and members of the Bridges Committee, several of whom explained the great difficulty they had to deal with in the matter of gradients, as the Surrey banks were so low. This was the cause of the hard lines complained of. A stone arch required a higher level of road than an iron one.

Mr. Waterhouse then remarked that when difficulties were successfully overcome, the result was generally the most pleasing possible. The matter of cost was referred to as an important one, though it was stated that the London County Council did not approve of the principle of carrying out great public works and making undue cheapness an object.

The Hon. R. Grosvenor asked if the deputation

would approve of an open competition.

Mr. Marsland, referring to Mr. Sherrin's point, said that as the designs for the bridge were certain to be canvassed at the Institution of Civil Engineers, he thought the Architects might also express their views upon them—in fact, there was no reason why the County Council engineers should not put themselves into communication with the Art Committee of the Institute.

Mr. Macvicar Anderson assured them that any assistance the Art Committee could give to attain the object they all had in view would be rendered most freely and willingly; and the Chairman of the Bridges Committee having thanked the deputation for their views, the members withdrew.

The L.C.C. New Tribunal of Appeal.

It is perhaps not generally known that, under the provisions of the London Council General Powers Act 1893, no person is now allowed to erect or adapt any building to be used wholly or in part as a dwelling-house upon land, the surface of which is below the level of Trinity high-water mark, except with the permission of the Council, and in accordance with such regulations as the Council may from time to time prescribe with reference to the erection of buildings on such land; and, further, that a Tribunal of Appeal has been appointed under the same Act to consider appeals made by persons to whom permission may have been refused. This Tribunal consists of three members, nominated by the London Council, by the President of the Institution of Civil Engineers, and by the Council of the Institute respec-Dr. Thomas Orme Dudfield (Medical Officer of Health for Kensington) sits on behalf of the County Council, Mr. John Charles Coode on behalf of the Civil Engineers, and Mr. Arthur Cates on behalf of the Institute; and Mr. Cates, at a first meeting of the Tribunal, held on the 25th inst., was elected Chairman. He is also Chairman of

the Tribunal of Appeal constituted under the previous General Powers Act 1890, which Tribunal has already done a large amount of work.

District Surveyors: Qualification as Fellows.

The conditions under which district surveyors are now appointed by the London County Council, after the candidates have duly passed the statutory examination held by the Institute under the provisions of the Metropolitan Building Act 1855, contain a clause requiring every candidate to sign a declaration to the effect that he will personally discharge the duties of his office, that he will give his whole time to such duties, and that he will not carry on business as an architect either directly or indirectly as a partner, or otherwise be interested in such business. No one who has agreed to such terms, and who has been appointed a district surveyor, can therefore be considered a person in practice as an architect, and the question has arisen whether such persons are eligible for admission as Fellows under the terms of the Charter, which lays down that Fellows shall be architects who have been engaged as principals for at least seven successive years in the practice of architecture.

The Council consequently referred the matter to Messrs. Markby, Stewart & Co., the Institute solicitors, with instructions to obtain counsel's opinion thereon, which has been done. The case they submitted, and the opinion thereon of Mr. Arthur Cohen, Q.C., of 2, Paper Buildings, Temple,

are here given.

Case.—The questions summarised are:—Section 3 of the Amending Charter granted in the present reign provides inter alia that Fellows must have been engaged as principals for at least seven successive years in the practice of architecture, and the By-laws contain a declaration to be signed by a Fellow on his election which appears to imply that he intends to continue to practise as an architect. Under the Rules of the Metropolitan Board of Works a metropolitan district surveyor was permitted to practise as an architect outside his district, and therefore an individual who had been, or was, or intended to be a metropolitan district surveyor was not held to be disqualified on that account from offering himself as a candidate for Fellowship of the Institute. Under the regulations of the London County Council a metropolitan district surveyor accepts his office on the condition of not carrying on business as an architect except in the discharge of the duties thereof. The question therefore arises whether a person who accepts a metropolitan district surveyorship on the above terms can fulfil the requirements of the Charter and By-laws.

It is to be observed on the one hand that the regulations appear to contemplate the performance of some at least of the functions of an architect; that the knowledge required by a metropolitan

district surveyor is also required by an architect; and that among the applicants for metropolitan district surveyorships will probably be found Associates of the Institute, or others who are fully qualified to act as architects. On the other hand, a district surveyor's duties are far more limited than those of an architect, and require far less training for their performance, as is shown by a comparison of the Examination Papers on pages 196–205 of the Kalendar with the Heads of Examination on pages 234–5. We presume that a district surveyor ordinarily passes his professional life without being called upon to do any of the constructive work which is peculiarly the province of an architect.

Again, the question might be raised whether under the new regulations a metropolitan district surveyor is a "principal" and "in practice" in the sense contemplated by Section 3 of the

Charter.

You are requested to advise,—

(1) Whether a person who is, or has been, a metropolitan district surveyor appointed under the regulations of the London County Council is in a position to offer himself as a candidate for Fellowship.

(2) Whether, in view of the declaration provided for by By-law 12, a person who intends permanently to occupy such a post is in a position to offer himself as a candidate

for Fellowship.

(3) Whether, in the event of the above questions being answered in the negative, it would be possible to make exceptions in the case of Associates or others who, while qualified to act as architects, have been engaged either partly or altogether as metropolitan district surveyors; and generally to what extent the Institute is empowered to settle these questions at its own discretion in the interests of the public.

Opinion.—I am of opinion that a person who is appointed a metropolitan district surveyor under the regulations of the London County Council is not engaged in the practice of architecture within the meaning of the third clause of the Charter, and that therefore a person who has not been for seven successive years an architect, independently of the term he may serve as such district surveyor, is not in a position to offer himself as a candidate for a Fellowship.

On the other hand, I am of opinion that the third section of the Charter does not require the candidate for a Fellowship to be at the time of his candidature a practising architect. If he has been an architect for seven successive years, he is, in my opinion, eligible as an architect, although he may not be in practice at the time of his can-

didature.

In short, I am of opinion that whilst the

Council may, if it think proper, decline to approve a candidate on account of his not being in practice as an architect, or on account of his being a district surveyor, still, if a person has been in practice as an architect for seven successive years, the fact of his being a district surveyor at the time of his candidature does not preclude the Council from approving his nomination as a candidate for a Fellowship.

This opinion seems to me to answer sufficiently

the questions submitted to me.

Suggested International Competition.

Those who remember the old tumbledown Museum at Boulak, which owed so much to the care and energy of Mariette-Bey, and those who have seen the present Museum, a short distance out of Cairo, will be interested to know that it is proposed to erect a new and great Museum in Egypt, and that the Egyptian Government are about to devote a sum of £150,000 to the work. But the question of its design is apparently still in abeyance, no architect having been appointed, if a correspondent of L'Architecture (10th inst.), the Journal of the Société Centrale des Architectes Français, may be trusted. This correspondent, who signs "A. D.," hopes that an international competition may be organised for procuring a good design for so important an edifice, and there are architects in this country who entertain a similar aspiration. To translate into English the words of "A. D." would spoil the Gallic sentiment they express, and so they are given in the original:— "Le khédive est jeune, fort intelligent, enclin, " nous dit-on, aux belles conceptions artistiques: " pourquoi ne ferait-on pas valoir auprès de lui les " raisons de sentiment élevé qui militent en faveur " d'un appel aux architectes du monde entier pour " l'étude et l'exécution du musée projeté? Certes, " le gouvernement khédivial s'honorerait en " prenant une mesure qui serait à la hauteur du " souci dont, par sa libéralité, il fait preuve envers " les richesses d'art qui lui appartiennent; il leur " assurerait, en ouvrant le concours public inter-" national que nous réclamons, un cadre digne " d'elles et de lui."

This exhortation appears to have induced the Société Centrale to address, through its President, Monsieur Honoré Daumet [Hon. Corr. M.], the Minister of Public Works in Egypt, with a view to the promotion of an International Competition as suggested by "A. D." Monsieur Daumet hopes, according to the Society's Journal (26th inst.), that the Ministry will entertain the proposal favourably, for by so doing Egypt may rival the Governments of France and Italy, which in their time have organised competitions among the architects of all countries for such edifices as the Opera House and the Sorbonne in Paris, and the monument of Victor Emmanuel in Rome.

The letter concludes with the very practical suggestion that the Egyptian Minister of Public Works should forward to the Société Centrale plans and sections of the site of the proposed Museum with a view to the elaboration of a programme for issue to competitors.

No one who knows how much architects are indebted to France for their present knowledge of Egyptian architecture will grudge the French Society its ready initiative in a matter which concerns Egypt and the British Empire more

than the rest of the World.

Probationers at the Glasgow Technical College.

It is gratifying to note the favourable position occupied by Probationers of the Institute in the recently issued list of Prizemen of the Glasgow and West of Scotland Technical College. In Architecture, Course I., Mr. Alex. D. Hislop heads the list of First Class Certificate winners, and Mr. Charles E. Monro is first among the Second Class. In Course II. Mr. Hislop again takes a First Class Certificate. In Course III. Mr. Alex. M. Colquhoun is accorded the premier place with a First Certificate. In Building Construction, Senior Division, Mr. Harry P. Sharpe is placed third in a list of twenty-two who have been awarded First Class Certificates; and in the Honours Division Mr. Thomas A. Moodie is first, and Mr. Thomas S. Fraser second (bracketed with another), in a total of fourteen. Mr. John Fairweather and Mr. James Lochhead, candidates for Associateship, were both students of the Glasgow Technical College. The Lecturer in Architecture and Building Construction is Mr. Charles Gourlay [A.], whose recent lectures are summarised on pp. 515-16.

Architectural Education for America.

A pamphlet edited by Mr. Barr Ferree, under the above title, has recently appeared in New York, and a copy has been received in the Library. It consists of four essays: (1) "The Ecole des "Beaux-Arts," by Mr. Arthur Rotch; (2) "The "Practical Side," by Mr. Robert D. Andrews; (3) "The English System," by Mr. Robert W. Gibson; and (4) "An Outsider's View," by the Editor, Mr. Ferree. The essays are reprinted from the Engineering Magazine for last month and this month; and the three first are by men in active practice, each of whom "presents the especial "claim of the system wherein he has been trained, "and each is thus able to speak with the voice of "authority and of experience for the school he represents." The essay most interesting to the British student is necessarily that by Mr. Gibson, who accurately describes the Progressive Examinations of the Institute, but who, by excusably confusing them with the earlier "Examination "in Architecture," leads his readers to suppose that the test of examination will only be compulsorily applied to those who aspire to become Associates of the Institute at the close of the current year; whereas, since May 1882 no one has been admitted an Associate without first passing an examination, which single test of fitness will be superseded at the close of 1894 by the three progressive tests, called respectively the "Pre-"liminary," the "Intermediate," and the "Final" examinations qualifying for candidature as Associate R.I.B.A. Mr. Gibson summarises the English system as (1) office work, (2) the Association classes, and (3) the Institute examination; and he considers it a great advantage for the student in this country that his academy study is made subordinate to and coincident with actual work under a practising architect. He thinks that further improvement may be made in the character and scope of the examinations, and that there are possibilities in the English system which have not been yet fully developed; but he concludes with the opinion that "this system of standard exami-"nations by a central body with authority, "following a course of study under independent "educating institutions in which variety may be "permitted, is the most promising method of

"architectural education."

Mr. Rotch's remarks upon the École des Beaux-Arts are excellent, and, though the subject is a well-worn one, he has managed to say something fresh about it, and at the same time repeat the secret of its eminence in the fact of the "incom-"parable atmosphere for artistic culture" created by the close connection therein of the students in architecture, painting, and sculpture, their great numbers, their distinguished professors in active practice, and the ardent competition that is fostered within its walls. He especially refers to the "largely conceived, symmetrical plans," which every student of the Ecole is taught to make, and which, he says, have no rivals elsewhere. Indeed, the old anecdote of Garrick at an amateur theatrical performance when, on the entry of a professional, the only one in the company, he said, "I "see an actor," has been no doubt often recalled to mind by disinterested onlookers when glancing at the pages of the illustrated periodicals. At rare intervals, among pages and pages of picturesque perspective views of what used to be called the "uprights" of a building, one is suddenly startled by a French plan of some public edifice; and the thought comes uppermost that there, at least, an architect has been at work.

Mr. Andrews has a great deal to say about the present divorce of Design and Execution, a very large subject which the next century will probably dispose of in a radical fashion. In the office, as well as in the school, the student or architect's pupil has no systematic means of coming in touch with the actual materials for which he is obliged to design. Mr. Andrews would like to see the practising architect, with his pupils, spending a certain specified time on the building as it rises, and he would have the architect's office, like that of the contractor, on the works. He would, moreover, join to every architectural school a school of building trades, and effect by this and other means that reconciliation of execution and design "whose present wide separation is a reproach to "our intelligence, and the worst menace to our " art."

Mr. Barr Ferree, as an outsider, thinks very wisely that the American architect must be trained with a view to his work in America; and that architecture is a "practical art," with "practical "ends"; and that training for it means technical training. Most of the architectural schools in the United States are modelled, in their strictly architectural teaching, upon the famous Ecole des Beaux-Arts of Paris; and this he deplores, though agreeing heartily with many of the principles taught in that school. He insists upon his chief point, that the training of the American architect should be based upon American conditions, having started with the consoling reflection that it is no longer a question whether the architect shall be educated, but "How shall be be educated?"

Architects' Drawings: A Suggestion.

An eminently practical suggestion is made by Mr. J. L. Faxon, an architect of Boston, U.S.A., as to the use to which architects' drawings might be applied when they have served the purpose for which they were made. One is only too familiar with the inferior productions frequently placed before students of technical and other schools as models of architectural drawing, and America apparently suffers even more than ourselves in this respect. Mr. Faxon therefore proposes that the walls of such schools should be hung with architectural designs and details which have outlived their usefulness in an architect's office, thus not only affording the scholars good examples of existing work, but also directing their taste in the right direction. It is desirable as far as possible that drawings so contributed should represent a given building by plans, elevations, and details, so that the design and use of the details may be intelligently understood by the scholar. Contributions should be properly classified and hung in groups, with the name of the contributor attached. The general adoption of such a scheme would unquestionably be attended with most beneficial results.

The Dictionary of Architecture.

Those whose sets of the Dictionary still remain incomplete are reminded that at the meeting of subscribers in May of last year, when the Architectural Publication Society was dissolved, the remaining stock of odd parts was vested in the Hon. Secretary of the Society, Mr. Arthur Cates,

for a period of twelve months, at the expiry of which he was to be at liberty to part with or destroy them as in his discretion he should deem fit. A twelvemonth has now elapsed, and the opportunity of making good imperfections or completing sets of this unique and invaluable work should therefore be taken immediate advantage of, and application made to Mr. Cates before it is out of his power to meet any further requirement.

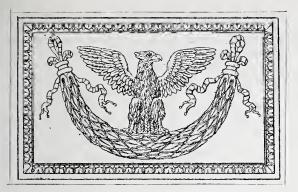
Additions to the Library.

Three interesting German works are among the most recent acquirements of the Institute Library. Kunstbeiträge aus Steiermark is the first annual part of a compilation containing papers connected with architectural and art industries, illustrated by thirty-two plates which give examples of wood, silver, gold, bronze, iron, tin, stucco, &c., work (H. Keller, Frankfurt); Die kgl. Hofkirche zu Fürstenfeld: die Klosterkirche zu Diessen, edited by Otto Aufleger, architect, with an Introduction by K. Trautmann, contains thirty-five illustrations of this church and monastery (L. Werner, Munich); Die Zimmergotik in Deutsch-Tirol, published under the direction of Herr Franz Paukert, includes in one volume six parts which have been published during the last three years, each part containing thirty-two excellent illustrations of examples of Gothic workmanship (E. A. Seeman, Leipzig).

A useful book of reference will be found in Technologie du Bâtiment, by Théodore Château (Bance, Paris, 1863), which has only recently been purchased. The rare editions in the Library have been increased by Martin's translation from Alberti, entitled L'Art de bien Bastir (Paris, 1553). Signor Luca Beltrami [Hon. Corr. M.] has presented his handsome and exhaustive work Il Castello di Milano sotto il Dominio dei Visconti e degli Sforza,

1368-1535 (Ulrico Hoepli, Milan).

Further contributions to the Library are two pamphlets by Mr. T. Mellard Reade [F.], entitled respectively Continental Growths and Geological Periods, and A Cooling and Shrinking Globe and the Origin of Mountain Ranges; a pamphlet on Modern Drainage, consisting of two papers read by Mr. Anketell Henderson before the Royal Victorian Institute of Architects in November and December of last year; Mr. James Keith's Report on the Heating and Ventilation of the Houses of Parliament; and the Maps, &c., to accompany the Report of the Royal Commission on the Metropolitan Water Supply. The Revenue and Agricultural Department of the Government of India have forwarded the second part of vol. xiv. of Epigraphia Indica of the Archæological Survey of India; and the Edinburgh Architectural Association No. 4, vol. ii., of their Transactions. Parts I. and II. of Atti del Congresso degli Ingegneri e degli Architetti in Palermo nel 1892 have been received from the Secretary to the Congress.



REVIEWS OF NEW BOOKS. X.

AN AMERICAN ESSAY.

Greek Lines and other Architectural Essays. By Henry Van Brunt, Fellow of the American Institute of Architects. 80. Boston and New York, 1893.

This charming little book is dedicated to Professor Ware, whose engaging personality is sure to endear him to a literary architect. One is prepossessed in favour of the book, on first opening it at random, by the familiarity of its author with English literature; and one sees that he has not spared himself in his training through his presenting us with his poem on the west doorway of Saint-Trophime at Arles. The early part of the book, which is mystic, and treats of linear symbolism, is perhaps a little remote from modern thought, and we hardly see to what useful purpose it can be put; but it serves the author as a prelude to a treatise on the revival of Greek architecture and Néo-Grèc, and to a capital story about Henri Labrouste, when he was the Travelling Student of the Fine Arts School of Paris. On his return he brought studies of the temples at Pæstum. These were pronounced by the authorities as so carelessly done that triglyphs were shown on the angles. Labrouste in vain protested that such was their place; he was only referred to Vitruvius. But as he still persisted in his opinion, a commission was sent to examine the temples, whose report confirmed his assertion, and the professors were laughed at in Paris; in revenge, they branded Labrouste as an architectural heretic. He lived, however, to build the library of Sainte-Geneviève, that has charmed all lovers of architectural grace and simplicity, in spite of its unarchitectural festoons.

Mr. Van Brunt, true to his linear symbolism, says:

Through the agency of the Greek school, perhaps, more new and directly symbolic architectural expressions have been uttered within the last forty years than previously since the beginning of the seventeenth century. Like the gestures of pantomime, which constitute an instinctive and universal language, these abstract lines, coming out of our humanity and rendered elegant by the idealisa-

tion of study, are, it is hoped, restoring to architecture its highest capacity of conveying thought in a monumental manner.

He admits, however, that the historic languages of architecture have become so hackneyed "that "the great art, of which these have been the only "language, now almost invariably fails to strike "any responsive chord in the human heart, or to "do any of that work which it is the peculiar "province of the fine arts to accomplish. Instead "of leading the age, it seems to lag behind it, and "to content itself with reflecting into our eyes "the splendour of the sun which has set, instead "of facing the East and foretelling the glory

"which is coming."

Besides the eloquence, the aphorisms, and the bits of humour, the book contains solid additions to the knowledge wanted by the architects of the present day. This knowledge may be comprised under these heads—viz. the self-conscious condition of the architects before the enormous mass of past forms and past styles; the discriminating criticism of past styles as manifestations of the spirit of the days in which these styles arose; the methods to be pursued in impressing on the architectural works of the day the spirit of the age; and how architecture is to be again made a popular art. Yet there is one aphorism that cannot be left out: "The "very finest result of high culture, in architecture "as in literature, is to utter thought with

"simplicity."

The conclusion that is forced on us by the perusal of the book, is the want of any desire on the part of the public for beauty in buildings, and the marked absence of architectural invention in modern times. This last want we see no means of curing. Nothing so unpromising for architectural display as a Greek log-hut can be imagined, and yet, thanks to the artistic genius of the Greeks, nothing so near to perfect beauty has since been invented. We can see, too, at the culminating period of Greek art, some of the requisite conditions for producing fine architecture, viz., skill and a certain determination of type, and a preceding age of strong emotions, to produce the artistic temperament. Such an age was found in the period which lasted from the first news of the proposed attempt by Darius on the liberties of Greece, to the final triumph of Greek arms at Salamis and There was then to be expressed the glory and pride of successful resistance, the gratitude to the gods of Greece for their assistance; while the sudden, and perhaps not very creditable, affluence of Athens, afforded the means of expressing these emotions in marble; the genius being given. All these conditions except the skill and type were found towards the end of the Saracen conquests—say, a century after the Hegira; but to acquire the skill and choose the type took several Perhaps Christendom has not yet centuries. found a type, which is not surprising when we

consider that beyond material advantages it hardly knows what to be thankful for, nor whom to thank. We can, however, hardly say that of the skill of the present day; for even if the skill be not perfect, every effort is being made to bring it to perfection; yet, for all that, skill is merely the means of expressing the emotion. The United States has, just now, the men born during an emotional period; not, it is true, such a grand period as that of the repelling of the Persians, for that was unique in the world; nor equal to that of the Crusades; but the fight for the abolition of slavery and the continuance of the unity of the States had been fought out with success: while from the expansion of the people and sudden acquisition of enormous wealth, the States offer material opportunities unknown to the Old World.

The critical analysis of the various styles and phases of styles is also as valuable as it is rare; for it is not a mere grammatical analysis, useful as that would be, but a consideration of how each well-marked period of architecture revealed the state of knowledge, cultivation, taste for beauty, and emotional condition of the people. It, however, rather militates against the main contention of the book, for if a past style can be so modified as to accurately tell the state of the nation employing it, there is apparently less urgent need for the creation of a new style; yet, if we proceed properly, and try to mark our new wants, our new modifications, and our new materials, a new style will be evolved, for styles were not created, but evolved. Few of us, I fear, are duly grateful to those who try to help forward the profession by thinking and writing—and this thinking and this writing are done at the loss of time, money, and reputation—for too often all the reward got is to be classed as visionary theorists.

Mr. Van Brunt most truly says of Renaissance Art:

Although the classic formula was set up and accepted as absolute authority in the fifteenth century, although it has been used with veneration for nearly five centuries up to the present time, and although every architect since Palladio, designing in the style of the Renaissance, has intended above all things to be correct in his use of this simple type, and to build according to the Italian taste, the result has been, not monotony, not cold and colourless uniformity, but a variety of expression elsewhere unknown in architecture.

Although Mr. Van Brunt calls his book "Greek "Lines," nearly a fifth of the whole work is taken up with an elaborate criticism of the Castle of Blois. In this criticism he not only contrasts the Renaissance part of François I. with the Gothic part of Louis XII. and the revived Roman part of Gaston d'Orléans, but points out how the new passion for learning, culture, and freedom, at once swept away the art devoted to the expression of asceticism and mental thraldom, and then made way for archæological pedantry. It is hardly necessary to say that a man of literary taste like the

author, who knows that "A thing of beauty is "a joy for ever" is merely a quotation from Euripides translated into English, condemns in the most emphatic manner the notion that a new style is to be got out of architects' own heads alone, or out of suggestions from Nature alone. He says:

When we can work without caprice and design reasonably, so that every detail shall be capable of logical explanation and defence, without detriment to a pervading spirit of unity; when we can be refined without weakness, bold without brutality, learned without pedantry; when, above all, we can content ourselves with simplicity and purity and refrain from affectation, we shall have conquered the indifference of the people, and shall have accomplished more than has yet been done in modern England with all its archæology, or in modern France with all its aeademical discipline; but we shall have done no more than should result from an intelligent use of our precious and unparalleled condition of liberty in Art.

Like the rest of us, he wants more of the marvellous constructive progress of the day shown in architecture, more of the sentiments of the age, and more of the personal proclivities of the artist. He points out how the new problems, which require solution in America, must produce something that differs from the past, and his conclusion embodies a hope both encouraging and patriotic.

G. AITCHISON.

(28.) OLD LONDON.

Vanishing London: A Series of Drawings illustrating some of the Old Houses, etc., in London and Westminster. By Roland W. Paul. 40. Lond, 1894. Price 15s. [Published by the Author, 3 Arundel Street, Strand, London.]

No book has recently appeared which can vie in attractiveness, at least to anyone with an interest in London or in domestic architecture, with Mr. Paul's "Vanishing London." In this volume are collected some sixty drawings, nearly all from the heart of London, every one of which presents something picturesque or noteworthy. Sketches of exteriors predominate, diversified by notes of detail and a few measured drawings; the letterpress also, concise but instructive, and always to the point, adds much to the completeness of the work. Mr. Paul's admirable manner of drawing is too well known to require special commendation here; enough to say he has found plenty of good subjects, and has treated them with feeling as well as faithfulness. It may not be superfluous, however, to say that many draughtsmen might profitably take a lesson, not only from the drawings themselves, which are models of what architectural sketches should be, but more especially from the clear, regular, and well-formed printing of their titles and accompanying notes; printing such as this, easily read as well as (after due pains taken) easily written, is quite refreshing to see after the distracting effect of the ugly system of "crazy" alphabets and fantastic scrawls, now so fashionable amongst the illustrators of magazines and newspapers, while it is also far more appropriate to a genuine sketch than the opposite style, which wastes an unconscionable amount of time, labouring at an actual imitation of machine-struck

printing.

The series is so well chosen and so evenly executed that nothing could be harder than to have to single out specimens for particular notice; but the sketches of Emanuel Hospital, the Garden House at Clement's Inn, the Rolls Chapel, Lincoln's Inn Gateway, and of the numerous street-fronts from the Strand, Fleet Street, and Bishopsgate, may be mentioned by way of indicating the scope and character of the book. The accuracy of both drawings and descriptive notes is in general unexceptionable, and should ensure Mr. Paul's work a permanent place as a topographical authority. One little slip, though, must be mentioned, only as showing how fast the landmarks of Old London fade out of remembrance. We read here that in the garden of Clement's Inn was "a fountain, now removed to the Temple." One does not, however, need the memory of "the "oldest inhabitant" to recall the time when the centre of that garden, which used to be one of the most charming of the "oases" of central London, was occupied by a quaint figure of a negro supporting, Atlas-wise, a sun-dial. It was the situation and suppliant attitude of this "blackamoor" that gave occasion to the appropriate lines:

In vain, poor sable son of woe,
Thou seek'st the tender tear;
From thee in vain with pangs they flow,
For mercy dwells not here.
From cannibals thou fled'st in vain;
Lawyers less quarter give;
The first won't eat you till you're slain,
The last will do't alive.

This figure did indeed migrate, on the dissolution of the Society of Clement's Inn, to the Temple Gardens, where it may still be seen in a corner near Paper Buildings; but the Temple fountain, although its basin and surroundings were renovated some few years since, is still the same fountain so dear to Lamb, Dickens, and many another

lover of quiet spots.

Vanishing London is not a mere picture-book. In its antiquarian aspect alone, such careful portrayal of buildings, many of them of considerable historic interest, which are only too fully described as "vanishing," is a most commendable work. But these drawings have also a lesson to teach, one never more wanted than at the present time. It is dealing in platitudes to talk to architects on the merits of simplicity and sobriety in design, but would that the public, which now demands from them a sort of effervescent richness in all their work, whatever the style, could only feel the contrast between these old houses and shops and the average of those we build now, could

see that the superiority of the old ones is not to be accounted for merely by the accidents or the colouring-powers of age, could—but this is

wandering off after the millennium!

Mr. Paul has by his research and industry produced a most valuable record of many of the best features of the central districts of London, on which he ought to be heartily congratulated; but he has by no means exhausted even that region, and it is greatly to be hoped that he will continue his labours, and in time give us a second volume at the least; Clifford's Inn is well worthy of his pencil, and its days will probably not be long; Staple Inn, though an interesting portion of it has just been demolished, retains several charming "bits"; the neighbourhood of Great Ormond Street and Queen's Square still demands illustration. These are only random instances; the available material is so great that a uniform series on the lines of the present collection would form a really grand work, and one which would be a welcome addition to many libraries.

ARTHUR S. FLOWER.

(29.)

THE ENGLISH RENAISSANCE.

Architecture of the Renaissance in England: illustrated by a Series of Views and Details from Buildings erected between the years 1560–1630, with historical and critical text. By J. Alfred Gotch, F.S.A., F.R.I.B.A., assisted by W. Talbot Brown, A.R.I.B.A. With 145 plates and 180 illustrations in the text. 2 vols. Price £7 7s. Fo. Lond. 1894. [Mr. B. T. Batsford, 94 High Holborn.]

Mr. Gotch is to be sincerely congratulated on the completion of an arduous undertaking, and on the goodly list of subscribers he has been enabled to append to his work. For some years it seemed doubtful whether such a publication could be achieved in this country, and one can have no hesitation in asserting that the work will attract much attention abroad to the Renaissance in England. On the Continent, works on the "Renais-"sance style" are by no means rare, but hitherto in England little more than picture-books have appeared on the subject, and these, however elaborate their illustrations in the way of lithographed interiors, fall very far short of satisfying the professional artist. This is not a fitting place for a discourse on the style itself, and as two reviews of the work have already been given in the JOURNAL,* little remains to be said of its merits, and one need only direct attention to the general contents on the conclusion of the last part. Examples, varying in number from one to fifteen, have been obtained from most of the counties in England; and these are supplemented by a "chronological list of subjects illustrated," which saves the reader the trouble of continually referring to the text to ascertain the date of the build-It would have been interesting if the

^{*} The R.I.B.A. Journal, Vol. VII. N.S., pp. 253, 423.

authorities for the several dates had been given, as these vary in many cases from received statements. Perhaps this is done, however, in the text itself.

The Part VI. lately presented to the Library is a most delightful collection of fine specimens of the houses of the period; the stately porches inserted in the Gothic walls of colleges; the screen-work, most elaborate, of King's College Chapel, Cambridge, and other examples there and at Oxford, and in London; the ornamental stamped plaster-work of exteriors; the Gate of Honour at Caius, perhaps soon to be "restored." Lastly, the author has kept as a bon bouche the examples of Bramshill and Wollaton, both splendid specimens of the style. To each of these might be applied Falstaff's exclamation, "'Fore God! you "have a goodly dwelling here, and a rich."

In the concluding lines of his Preface the author states that "Of direct copying from Italian "buildings there is little or no trace. . . . After "all, the essence of a building is its plan, and the "plans of the period were all English. And far "from regretting that buildings were then not "more regular, it is exactly their irregularity that "gives them their charm, and imparts to them "that piquant flavour which renders the work of "the early Renaissance so delightful a study."

There is a somewhat modern professional story of a quasi architect appropriating a design, inserting a window in it, and thereby spoiling the effect. Mr. Gotch has, in my opinion, damaged his text by the insertion of the chapter "The Growth of the "New Style," the details of which show great haste. He may have been getting tired of "his "love." He truly says that there must always be a considerable difficulty in tracing the exact steps in a change from one architectural style to another. "Why," a writer has recently asked, "should the type of ecclesiastical architecture have "undergone a change in the twelfth and thirteenth "centuries? To what did this change owe its "origin?" Why should there have been any change from one period of the Gothic style to another, and how came it about?

To elucidate his views, Mr. Gotch, for want of a better example, has pitched upon John Thorpe as a typical architect and surveyor of the period. Unfortunately, we know next to nothing of this person—I should rather say these persons, for there is now not the slightest doubt that there were two, father and son, and the style of writing in the unique volume of sketches exhibits at least two, if not more, hands. There is another important point: omitting the plan of Henry VII.'s chapel, and the plan and elevation of the Somerset Place of the day (1546–49), the earliest example dates 1560, and the latest date yet found in the volume is 1621, a period of sixty years, which, adding a guess of forty years for birth and

death (both unknown), would be rather too long a professional life! The father (an "excellent "geometrician and surveiour") and son were both living in 1612.* The sketches—there are only a few "drawings"—are all, with perhaps two exceptions, scratched over in pencil, showing proposed alterations, reminding one of a peculiarity of some children for pulling a toy to pieces as soon as obtained to make something else out of it. A few sketches are thus dated: 1570, 1580-88, 1596, 1600, 1606, and 1621.

What do we actually know of Thorpe beyond this volume? Mr. Gotch states that he "was a "surveyor with a large court and official connec-"tion"; and "we constantly [?] meet with his "name in connection with surveys and surveying "work"! I should like to know if he has more foundation for this assertion than the four extracts I gave him some years since: first, 1590, plan of the offices and buildings of the palace of Eltham; secondly, 1609, where he is named in a commission for the king surveying the Duchess of Suffolk's land; thirdly, 1611, warrant to pay various sums amounting to £52. 3s. to John Thorpe, surveyor, for repairs of posts, pales, and rails of Richmond Park, carried away by the flood; and fourthly, 1606, more to him for his charges in taking the survey of the house and lands by plots at Holdenby, with the several rates and values of both, employed in drawing down and writing fair the plots of that and of Ampthill House (given in the volume), and the Earl of Salisbury's . . . £70.8s.8d. This is all steward's or land surveyor's work.

No wonder that we have so many plans (few elevations) of the then existing buildings, all probably measured for the proprietors' records on changes of estates; possibly some plans of estates may yet be forthcoming on which we may perceive the interesting line, "John Thorpe, delt."

"Some pages," writes Mr. Gotch, " are occu-"pied with careful studies of the five Orders." There are only two pages! and I am in search of the work from which the Orders were copied. The Thorpes were great copyists—as Mr. Gotch confesses, for on page 75 is a small plan and turrets from Ancy-le-Franc (identified by Baron de Geymüller); the plan of the celebrated Château de Madrid, formerly in the Bois de Boulogne, near Paris, copied to same scale from a work by A. du Cerceau (Thorpe could not leave this plan alone, but set to work to adapt one end of the plan for a square English type!); and a partly unfinished plan of the new Château de Saint-Germain. Then Mr. Gotch goes out of his way to say that Thorpe "evidently went to France as well as studied "French work." In proof of his visit he refers to the plans of the "Queen Mother's House-" altered p. J. Thorpe." I apprehend Thorpe

^{*} See memoir in the Dictionary of Architecture.

was able to obtain engravings (?) of the plans, and again set to work to modify them to his own views! This is the plan which, in the volume of drawings, has the latest date, "1621," and as designed by Jacques (or Solomon) de Brosse it was carried out 1615-20, so that Thorpe must have obtained the plates of the two plans very early. I have not yet ascertained the source; they are, however, engraved to a somewhat smaller scale in Blondel's Architecture Françoise, 1752, ii. pl. 182. The next one is entitled "Mounsier Jammet in "Paris, his howse." I am indebted to Baron de Geymüller for the information that the house was built by Seb. Zamet (died 1614), and he kindly sent me a sketch of it from an old plan of Paris. The house is now destroyed. Lastly, the plan of the terraces and pleasure-house of "St. Jermin's "howse V leagues from Paris, An. 1600." I should say that further research in publications of the period will show whence one of the Thorpes copied these plans for his amusement.

"Thorpe, the practical man, whose work was "actually carried out," writes Mr. Gotch. But to what executed work can he refer that was "actually carried out"? As before observed, the ink and pencil corrections are so numerous that there is no saying what was "actually carried "out." There is no record at Longford House to prove the façade was done by Thorpe. Nor is there any proof that he designed Wollaton, although plans and a half of the front elevation are given. If I remember correctly, the drawings still exist in the office of the clerk of works on the estate, and signed by Smythson. It would be interesting to know if Thorpe's drawing is "copied" from one of these. Is Sir Thomas Tresham to be deprived of the honour of designing his own house at Lyveden because the plans are in Thorpe's

volume, with alterations as usual?

It may not be out of place to state that I have studied this volume of the Thorpes' sketches in Sir John Soane's Museum for over thirty years, and now that it is in my charge I have examined it several times with friends and visitors interested in the subject, to whom I am indebted for many

interesting remarks.

Mr. Gotch continues with references to John Shute, who is only known as a painter, although the long and now destroyed epitaph refers to his many works. It is a pity, when referring to the publication by Shute, he should have printed "there are only two copies of this work extant!" Two copies are known, as he states, but there may be some others still existing out of the three editions. And why Shute is to be termed "a mere "visionary or dealer in abstractions" is a puzzle to me. For the remainder of this essay by Mr. Gotch I must ask permission to refer the student to my own slight production issued in 1883, and entitled The Renaissance and Italian Styles of Architecture in Great Britain, 1450-

1700, wherein are given all the names I had then obtained of master-masons, surveyors, clerks of works, and architects; also the titles of the publications on art issued, English and foreign, in chronological order with the buildings. It need hardly be added that, though considered fairly perfect at the time, at least half as much more has been added in a private copy.

I can quite concur in a nearly concluding observation made by Mr. Gotch, namely, that "the " (later) progression of style, no doubt, was owing "to the largely increased personal element in the "designing; it was now not so much a question " of schools (if there were any.—W. P.) or Guilds "as of Individuals." This chapter of his requires very careful reconsideration.

WYATT PAPWORTH.

NOTES, QUERIES, AND REPLIES.

Early Brick Architecture in Great Britain (p. 438).

In reference to Mr. Peters's queries on this subject [p. 438], much valuable information is condensed in the article "History of Brick and Brick-"making" in the Architectural Publication Society's Dictionary of Architecture. Several papers on the subject which have appeared in the volumes of the Archeologia might also be profitably consulted, particularly Dean Lyttelton's "Dissertation on the Antiquity of Brick Buildings "in England posterior to the time of the Romans," published in vol. i., and a paper by Mr. James Essex on "The Antiquity and the Different Modes "of Brick and Stone Buildings in England," in vol. iv., the former read before the Society of Antiquaries in 1757, and the latter in 1774.

Coming to later days, a mass of useful information on the subject, collected by the late George Edmund Street, was embodied in a series of papers under the title "Brickwork in the Middle "Ages," and contributed by him to the Church Builder of 1863. A few facts culled from the first of these, which deals particularly with the early history of brick in our own country, may here be given, as serving the twofold purpose of answering one, at any rate, of Mr. Peters's questions, and furnishing a note on a subject of not

a little general interest.

The examples of ancient brickwork in England are comparatively unimportant. The Romans employed this material largely in their constructions, their brick being rather a tile than a brick, and used with an enormous quantity of mortar, probably applied whilst hot. In the Roman walls of Verulam, bricks were used as bonding courses between layers of flint. The Roman bricks were quite unlike modern bricks, being much harder and almost impervious to wet. They were usually very large, but thin; some found at York measured 17 by 11 inches, and $2\frac{1}{2}$ inches thick, and some at Verulam 23 inches long and 3 inches thick. Experiments made with a view to ascertain the comparative goodness of Roman and modern bricks showed that a piece of Roman brick weighing 54 grains, after immersion in water weighed only $56\frac{1}{2}$ grains, whereas a piece of modern brick weighing $81\frac{1}{2}$ grains, increased in weight to 97 grains after immersion. Eleventh-century builders at St. Albans made use of Roman bricks from Verulam for their own constructions, and possibly made no new bricks for themselves; though this is doubtful, seeing that there are moulded bricks used for newels, &c., which they would hardly have been likely to find ready-made, even if they had found enough plain bricks for so enormous a building as their abbey. At St. Botolph's Colchester, at Pevensey, at St. Martin's Canterbury, St. Mary's in the Castle Dover, and in many other places, Roman bricks were similarly used. At Brixworth, Northants, the fine Saxon church is built of ragstone, with arches of brick, of the size of Roman bricks, and always protected by a covering course of brick or tile laid round them.

The earliest really English brick building is perhaps Little Wenham Hall, Suffolk (built about 1281), which is well described and illustrated in Hudson Turner's History of the Domestic Architecture of the Thirteenth Century (pp. 151–53). Here, however, brick is only used as a material for walling, and mixed with courses of stone and flint. "The bricks are mostly of the "modern Flemish shape, but there are some of other forms and sizes, bearing a general resemblance to Roman bricks or tiles." The colour of the bricks varies considerably. All the dressings throughout this house are of stone, so that here no strictly architectural use whatever is made of the bricks, and it seems almost as though they had been made use of from other buildings.

At Coggeshall were some remains of moulded bricks of the thirteenth or fourteenth century; whilst the enormous fourteenth-century church of Holy Trinity, Hull, was built in part of brick, with stone dressings. According to Leland,* Hull, in the time of Richard II., seems to have been a completely brick-built town; the towers, walls, and houses being all of brick. Michael de la Pole, a merchant of Hull of this period, appears to have faced an older stone wall with brick, for there is evidence of the building of stone walls at Hull early in the fourteenth century, and Bishop Lyttelton (whose contribution on the subject is mentioned above) saw the brick facing, which had in part fallen from the stone walls, lying at the bottom of the trenches. Hull, no doubt, had great trade with the Low Countries, and derived some of its fashion of building from them, and there are other churches in the neighbourhood which followed the same example. It is remarkable. however, that for a long time builders seem to

have refused to avail themselves openly of anything but natural materials. In Norfolk and Suffolk, for instance, a large number of churches are built with circular towers, so planned for the purpose of economising stone, and yet in the thickness of the walls of many of them the despised brick is found embedded, the natural use of which would have allowed of the erection of square towers.

Tattershall Castle, Mr. Street thought, is about the earliest example we have of the free use of moulded bricks in a really noble architectural work. These moulded bricks are extremely well executed, and are used for the groining of the passages in the walls, though it should be stated that this portion of the work is covered with a coat of plaster, which may probably be original. The enormous size of the keep of this castle makes it, on the whole, the finest example of brickwork in England.

Bricks used in the building of the Priory at Ely in Edward II.'s time were of various sizes, some 12 by 6 by 3 inches, others 10 by 5 by 2 inches; and in some fifteenth-century buildings in Norfolk the bricks are 9 by $4\frac{1}{2}$ by $1\frac{1}{2}$ inches, either of which Mr. Street declared to be a much better proportion than our modern bricks.

Among the numerous existing examples of English brick buildings of the fifteenth and sixteenth centuries, the finest are Oxburgh Hall (1482), Eton College (1441–1510), West Stow, Gifford, and Hengrave Halls (1490-1540), all of them fine works in red brick, with vitrified headers diapered over their surface, and magnificent chimneys of moulded brick. The Red Mount Chapel at Lynn is externally of brick, but all its ornamental parts are of stone. Many of the Essex churches have windows, doors, parapets, and panels more or less executed in brick, and generally with admirable effect. In these the bricks are moulded, and almost take the place of stone. Elsewhere bricks were sometimes used in much the same way as in the commonest nineteenth-century buildings-e.g., in restoring the great church at New Walsingham, Norfolk, Mr. Street found almost all the internal window arches, jambs, and sills executed roughly in brick, and evidently intended to be plastered over, as the rough face of the flint walls projected in advance of the brickwork. In the same church the tower arch of several chamfered orders is similarly of brick, very roughly executed; and there are many examples of the same kind of thing. In the fifteenth-century flint buildings of the same district it is very common to see a sort of discharging arch all over the openings, made of single bricks and flints set alternately, and with very poor effect. It was not, in short, until the very latest period of Gothic architecture that the value of brick as a building material was recognised in every part of this country; and then we have almost innumerable examples,—many of

^{*} Itinerary, vol. i. p. 49.

extreme merit and beauty, the moulded brickwork being extremely elaborate. Most of these examples are, however, to be found in old domestic buildings, their use in churches being rare, save in the districts mentioned. Mr. Trollope mentions the east end of Granby Church, Notts, added in brick, richly moulded, to a stone church. Old Basing Church is an example of its use just before the Reformation, and of the beauty of colour of which it is susceptible. North Wooton Church, near Lynn, is another example of a very fair red-brick tower of the fifteenth century. But it is in domestic buildings, such as Hampton Court, East Barsham, Frant, Hatfield, and the like, that the finest examples are to be found, whilst many of our villages afford examples of the beautiful combinations which may be produced by the employment of wood and brick together.

From J. Tavenor Perry [A.]—

The questions Mr. C. H. Peters asks relative to early brick architecture in Great Britain supply the text for a very interesting and useful essay, and suggest that the subject is one which has never been exhaustively dealt with. To answer them adequately in a short communication is impossible, but an indication of the authorities from which he can obtain the information he requires may be

sufficient for his purpose.

1. The most important of the earliest buildings subsequent to Roman times in which brick is largely used are St. Mary in the Castle, Dover, the bricks of which were made for the purpose and not taken from Roman buildings (see J. Puckle, The Church and Fortress of Dover Castle. Oxford: Parker, 1864); St. Albans, erected of bricks taken from the Roman walls of Verulam (see J. C. and C. A. Buckler, The Abbey Church of St. Alban. London: Longmans, 1847); and St. Botolph's Priory, Colchester, completed 1116.

2. Perhaps the oldest and most complete brick vaulting is in Tattershall Castle, erected in the earlier part of the fifteenth century (see monograph on the castle by Fred. H. Reed, London, 1872).

3. The best historical information on brickwork in England will be found in the Church Builder [see above]; in a paper read at Oxford by Mr. J. H. Parker, published in the Ecclesiologist, vol. xvi. p. 54; a communication from Mr. Gordon M. Hills on West Hampnett Church in vol. xxiv. of the Journal of the British Archæological Association, p. 209; and papers by the Rev. G. Aycliffe Poole on Norfolk churches and on Brixworth published in the reports of societies of the Archdeaconry of Northampton, &c. for 1850, on pp. 85 and 122.

Architects and Master-Workmen. II. (p. 463).

From R. Phené Spiers, F.S.A. [F.]—

In connection with the further inquiry into this subject which I am now suggesting, it has occurred to me that some notes on the status and

titles of our French confrères of a similar period to that covered by Mr. Gotch's work might be interesting, and the notes appended to M. Léon Palustre's great work on La Renaissance en France contain so much that is new that I have thought it worth while to make some extracts. They have been extracted mainly from the various Comptes des Bâtiments, with evidently much labour and research, by M. Palustre, and as such may be of interest to some members of the Institute.

Extrácts from M. Palustre's "La Renaissance en France."

Vol. I. Page 15.—19th April 1652. Maître Julien Destré, "maître ingéniaire et architect," is ordered to prepare "ung plan figuratif" for the Exchange at Lille, with all the required enrichments.

Page 23.—Pierre Danel, "maître d'œuvres" of the town of Saint-Omer, is entrusted in 1502 with the construction of the Church of Auxi, on which he was still working in

1517.

Page 32.—A "Jean Bullant" was "machon" of the Cathedral of Amiens in 1532.

Page 85.—Salomon Brosse "architecte général des bâti-"ments du Roy et de la Reyne" (extract from the *Comptes* des bâtiments de Marie de Médicis for the year 1616).

Page 89.—To "Jacques et Guillaume Le Breton frères, "maçons," 50,355 liv. 17s. 6d. for new work in masonry at

Villers-Cotterets, 1550.

Page 124.—M. Palustre writes: "For—we must not fear "to say it frankly—under the modest appellation [referring "to the note, p. 89] of 'maçons,' which was then employed, "were hidden the real architects." Properly speaking, the term "architect" appears in 1545 in the translation of the Premier Livre d'Architecture, par Sébastien Serlio, made by Jean Martin. In a note to this is an extract from "Christine de Pisan: Fais et bonnes Meurs de Charles V: "Si s'ensuit que les architecteurs (de l'Italien architettore) "c'est assavoir les disposeurs de l'œuvre scevent les "causes des besoignes." Later on, in 1541, we read "à "Bastianet Serlio, peintre et architecteur de Boulogne la "Grasse."

On p. 125 M. Palustre quotes from Lance's Dictionnaire des Architectes Français [80. Paris 1872]: "In the edition of "1544 of the Dictionnaire Latin-Français of Robert Estienne "the word 'architectus' is translated as 'maistre maçon "'ou charpentier'; as for the French word 'architecte,' it "appears for the first time in the Dictionnaire Français-"Latin of the same author, published in 1573."

Page 142.—Jehan François, "maistre maçon et tailleur "de pierres," on 4th October 1515, signs a contract for the completion of the choir of the church of Saint-Aspais.

Page 174.—To Pierre Chambiges, "maistre maçon," for works in masonry at Fontainebleau and Saint-Germain-en-

Laye, 70,174 livres 8s. 2d. 1540.

Vol. II. Page 46.—Jean Potier or Pothier, "maistre "maçon," is mentioned as having built the château of Saint-Légier. The same work, however, is claimed by Philibert de l'Orme. But M. Palustre observes that his position in this case was probably not that of architect, but "superintendant des bastimens du Roy." In the same note Maistre Olivier Ymbert, "architecte pour monseigneur "le due frère du roi," is mentioned in the Cartulaire des Moulineaux, 20 aoust 1577. Palissy, in his Discours admirable, speaks of the "architecte françois qui se faisoit "quasi appeler le Dieu des niaçons ou architectes," referring probably to Philibert de l'Orme, showing, as M. Palustre points out, that the two words "mason" and "architect" were synonymous.

Page 98.—Philibert de l'Orme is mentioned in the Comptes des Bâtiments du Roi, 6th October 1552, as "maistre Philibert de Lorme, abbé d'Ivry, conseiller,

"aumosnier ordinaire, architecte du roy, commissaire or-"donné et député par ledit seigneur sur le fait de l'effigie "et tombeau du feu roy, François que Dieu absolve." This refers to the tomb of François I., now restored at Saint-Denis.

Page 110.—M. Palustre remarks in a note that work was carried out in the sixteenth century in exactly the same way as in modern times, and that the architect had under his orders the contractors (entrepreneurs), whom he insrueted to carry out his designs; he instances Du Cerceau, who (when architect of the chapel of the Valois) contracted with the two builders of the Tuileries, Laurent de Bray and Henri des Isles, for the work.

Page 125.—At the end of the Latin inscription on the portal of the Hôtel de Ville, and dated July 1533, are the

words "Dominico Cortonensi, architectante."

Page 126. In a document of the year 1531, published in the *Comptes des Bâtiments du Roi*, is recorded a payment of 900 livres to Dominique de Courtonne, "archi-"tecteur."

That Dominic of Cortona (called the Boccador), an Italian, should be architect of the Hôtel de Ville at Paris does not suit M. Palustre's patriotic views. He reproduces, therefore, a document dated 1534, in which a list of five artists is given, and Dominique de Cortone's name is put last. From this M. Palustre argues that the Italian was not the architect, but only the inspectorof-works, that he might have been an "ingénieur" or "maître charpentier," but was not a "maître "maçon." He quotes in a note (p. 127) an extract from Littré's Dictionary to prove that the real etymology of the word "architect" was "artisan en "général, et, en particulier, charpentier; mot à "mot, maître des charpentiers." In a second note he quotes Du Cange, "architector vel "architectus, faber qui facit tecta," and again, "Architectant multos spingardos in gyro civitatis, "ubi flebilioris apparebat virtutis," the latter showing that the title was given to those who undertook fortifications and the protection of cities —in short, a military engineer. A third note records that the "maître menuisier, Collin Cas-"tille, who executed in carved woodwork the grand "door of the cathedral of Rouen, was called "'architecte,' a denomination given to another " 'maître menuisier,' " and "never," M. Palastre emphasises, "to any other class of artists, includ-"ing even that of master masons." tunately, this reasoning of M. Palustre, which seems to have been introduced mainly to prove that Dominique de Cortone was not the architect of the Hôtel de Ville at Paris, disagrees with his other statements. It does, however, suggest another consideration which is worth attention namely, the importance attached to the lofty roofs of these French châteaux of the sixteenth century, and in particular the ancient Hôtel de Ville, Paris, of which there is no counterpart in England.

It is amusing to note, however, in a note on page 128, that M. Palustre accounts for the entry of the name of Dominique de Cortone, architect, at the end of the inscription by the suggestion that "he was instructed" (although a master

carpenter) to carve the very obscure names of the "décurions en fonction durant l'année 1533." Churchwardens, therefore, are to be found in all countries.

In a note on p. 153 we find another title: "Maistre Pierre de Sainct-Quentin, maistre "tailleur de pierres" (master-stonecutter). This may have been the term given to the superior class of stonecutters. Thus, on the following page, in a note we find "Pierre Berton de Saint-"Quentin, maître tailleur de pierre et sculpteur."

On p. 158 a list of artists is given, entitled "Sculp-" tors engaged in carving the decorative frieze, "&c., of the Louvre," whilst Jean Goujon reserved to himself the figures. It does not, however, follow that even Jean Goujon was always given the title of sculptor. On p. 260 we find a record: "1541-1542. A Jean Goujon, tailleur de pierre" et masson," payment of an account, &c.

In a notary's record of 11th March 1527, a "Pierre Gandier, maczon, maistre de l'œuvre de "l'église de Tours," is spoken of (p. 184).

An inscription in the church of Notre Dame des Marais (Maine) speaks of the work having been done and conducted ("faiste et conduitte") by three brothers, "Robert, Gabriel, and Hiérosme les "Vietz, maistres maçons, 1596" (vol. iii. p. 126).

The Regeneration of London. II. (p. 461).

From Arthur Cawston [A.]—

I now pass to the second series of recently published books, pamphlets, and articles, which should be of interest to all those—and especially to all those architects—who wish to occupy themselves in the regeneration of the towns wherein they live. This second series consists of books which describe "What reformers and architects have been

"doing in other great towns."

In "Glasgow: a Municipal Study," published in the Century Magazine for March 1890, Mr. Albert Shaw gives a graphic summary of those features of Glasgow's municipal government that are most distinctive, and most likely to have interest for other communities. The general organisation; the sanitary department; hospitals; sanitary washhouses (for disinfecting furniture and clothes); the perfect cleansing department; the improvement trust; the model tenements and lodging houses; the public baths and washhouses; the Corporation gas, tram, and water-works, are all dwelt upon in detail. Not a word is de trop; so to further summarise is impossible. Instead of attempting it, I give Mr. Shaw's introduction to the subject, and the very flattering conclusions he draws of the British Corporation which most relies on its own efforts to supply the wants of its inhabitants.

The people of Glasgow are accustomed to claim for their city the second place in the British Empire. If by the words "city," "burgh," or "borough," there is meant merely a populous place—an aggregation of houses and people with a concentration of various commercial, industrial, and social interests—then metropolitan London would

assuredly rank first and without rival. But if by these words is meant a distinct and complete municipal organism, the people of Glasgow may claim not the second, but the first place among the communities of Great Britain... As a type of the modern city with highly developed and vigorous municipal life, and with complex, yet unified, industrial and social activities—in short, as one of the most characteristic of the great urban communities in the English-speaking world of the nineteenth century—Glasgow may well repay study. It combines in itself most remarkably all that is significant in the history of city government among peoples of British origin—that is to say, to study Glasgow is to study the progress of municipal institutions in every stage.

Let us hope that both the foregoing and following remarks will soon apply to metropolitan London as well as to Glasgow:

All municipal taxation in British cities takes the form of rates levied upon the rental value of occupied lands and buildings. In Glasgow the rates are divided between owners and occupiers in a manner which could not be described without going into much detail. The general financial position of the municipality is excellent. debt is not formidably large, and most of it is potentially covered by the growing sinking-funds of prosperous and productive departments. The numerous undertakings of the municipality, far from imposing heavier burdens upon the ratepayers, promise in the years to come to yield an aggregate net income of growing proportions, to the relief of direct taxation. Glasgow has shown that a broad, bold, and enlightened policy as regards all things pertaining to the health, comfort, and advancement of the masses of the citizens may be compatible with sound economy and perfect solvency.

Whilst we mourn the absence of any definite organic improvement plan for London, stand aghast at the immensity of the task of preparing one, regret the want of a sufficiently powerful municipal authority, and of sufficient municipal enthusiasm to enforce such a plan when prepared, we are doubtless all the while envious of our French neighbours, and of their orderly, logical, and systematic method of procedure. It may, therefore, be of some little comfort to know that even the official plan of Paris does not lay down the revised lines of frontage of every old street, nor the new line to be followed by every new street. Such a task has proved too formidable. The frontages of all the leading thoroughfares that are likely to be required are laid down and scrupulously kept to, but many of the by-streets are still allowed to be as unmethodical as our own.

In the *Century Magazine* for July 1891 Mr. Shaw has an article on "Paris: The Typical "Modern City," in which he writes:—

It should not be inferred that all new suburbs of Paris have arisen upon a ground-plan wisely provided in advance. To some extent, it is true, such has been the case, and in the newest quarters of Paris—for i nstance, in Passy, Neuilly, and other suburbs beyond the gates on the west—the magnificent avenues have been laid down upon the open fields, and the exercise of forethought will have saved all the cost and trouble of subsequent reconstruction. But even in Paris since the Revolution there has been some of the improvidence that prevails elsewhere; and while the inevitable municipal plough has been cutting

its stupendous furrows in one direction, new quarters have been allowed to form themselves improperly somewhere else, with the result of costly reconstruction when the time comes for extending to them the main arterial system of the metropolis.

The quotations already given from Mr. Shaw's articles show that they not only refer to the physical improvement of cities, but to all those features of municipal government that should be of interest to architects. And it is because the greater employment of the architect is bound up with that increasing municipal activity which is becoming so universal, and also because this increasing activity must largely depend (for good or evil) on the architectural profession, that it appears desirable to constantly put before the members of the Institute the latest information on the sub-The importance of architects and other permanent officials could not be better instanced than in the case of Paris. No city has experienced during the last twenty years so many changes of prefects and ministries as Paris has experienced. Yet, because the administrative heads of the various municipal services have been thoroughly competent, it has been possible, in spite of the constant changes of municipal government, to carry out great schemes of public improvement, and throughout there has always been a high and well-ordered efficiency in the execution of all kinds of municipal functions.

Mr. Shaw describes in his article the present government of Paris; the history by which it has become the best-lighted city in the world; the population, housing, transit problems; water supply and drainage, and what it all costs. He then concludes one of the most interesting chapters that it has ever been my lot to read by referring to the splendid systems of municipal education in these words:—

The expense of public education in Paris will not be seriously criticised in any quarter. Probably no other city in the world secures equally advantageous results from the outlay upon schools. Under the Compulsory Education Act the attendance of children in elementary schools has actually been made almost universal. But Paris does not stop with elementary education in reading, writing, and numbers. It maintains a marvellous system of industrial and trade schools for both sexes, in which almost everything that pertains to the production and traffic of Paris is taught and encouraged. American and English visitors at the Exposition of 1889 will remember the remarkable display of the Paris industrial schools, especially in lines of decorative manufacture and art. It is in these schools that Parisian dressmakers, milliners, artificial-flower makers, furniture designers, house decorators, skilled workers in metals, and handicraftsmen in scores of lines of industry are educated to do the things that keep Paris prosperous and rich. It is public money wisely spent that maintains such an educational system. I need not refer to the higher schools of science, of classics and literature, of engineering, and of fine art. All the flowers of civilisation are encouraged by the Paris municipality. The yearly expenditure of a moderate but regular sum for the promotion of fine arts, by means of the purchase, under a competitive system, of designs for public statues, of pictures and mural designs for schools and various public buildings, and of other artistic works, not only educates the popular taste and adds to the adornment and beauty of the city, but helps to keep Paris the art centre of the world, and thus to maintain what, from the economic point of view, is one of the chief and most profitable industries of Paris. The mercantile schools that train so many thousands of women as well as men in book-keeping and penmanship are also an admirable investment.

The value of Mr. Francis Hooper's Paper on "Building Control and Legislation in France," published in the Transactions for 1888-89, has been so often acknowledged that it appears almost unnecessary to mention it again here. It is a most valuable contribution to the subject of town improvements; and doubtless as our municipal authority grows more powerful and more democratic, so will more frequent reference be made to

his pages.

Mr. James Pollard's recently published book on Municipal Government in Berlin* is par excellence a handy text-book for municipal reformers. It consists of a series of articles describing the grand works of social improvement undertaken by the Corporation of Berlin during the last twenty years. Judging by one or two sentences, Mr. Pollard evidently feared that this most interesting study might not prove acceptable to his compatriots because it was "made in Germany"—such fear was, however, fortunately unfounded, for, soon after the appearance of the book, a copy was gratuitously sent to each member of the London County Council and to the principal officials. Further comment on the excellence of the work is unnecessary.

This is what Mr. Pollard has to say of the dwellings of the poor in Berlin:—

Concern for the public health may now be said to dominate the mind of the Corporation; for, though a genuine and exemplary thoroughness characterises every part of their work, there is no department in which such salutary reforms have been effected as in that charged with the care of the health of the inhabitants. Whatever other reforms in administration may be minimised or postponed, any proposal of the people is sure to receive favourable consideration in the municipal council, and, if found practicable, is approved and carried out with a completeness which is only limited by a reasonable regard to economy. Mention has been made of the clearing out of the cellar dwellings, but this will hardly prepare those who know something of the squalor and misery prevailing in the slums of London, Liverpool, Glasgow, and in the lower quarters of our "own romantic town" to learn that there are no slums in Berlin. Yet this is the simple fact. Poverty there is; misery and suffering of the innocent by the ill-doing of others are common enough, as they are wherever frail human beings are gathered together; but filth, which is so usually a concomitant of poverty and crime, has no local habitation. For the past twenty years the Corporation have waged constant and successful war agaiust dirt and material pollution among people and dwellings in any form in which these evils menace the general health of the community.

Every house proprietor is bound, when he finds his tenants keeping their dwellings in a filthy state, to warn them to cleanse them forthwith. If they do not, they are turned out without further ceremony. Should the landlord neglect or fail to perform his duty in this respect, a complaint made by the neighbours—a halfpenny postcard addressed to the proper quarter—will ensure a visit from an officer of the sanitary department. This officer will, if he finds the house filthy, order out the inhabitants, and cleanse it at the landlord's expense.

"But do you not think you interfere too much with the "liberty of the subject?" was the natural question.

"Liberty of the subject, mein Herr?" retorted Stadtrath Meubrink-to whom my best acknowledgments for most courteous attention are due-"liberty of the subject? "May I ask whether your theory of Government is not "the greatest happiness of the greatest number?" The reply was in the affirmative. "And have you not power "to remove people from their houses when these become "dangerous to the health of their neighbours?" "We "have when infectious disease breaks out among them." "Ah, but we anticipate you. We know that this dirt will "gender and foster fever. We don't care to wait till fever "breaks out. It may come in spite of us, through water, "or milk, or otherwise; but we regard all fevers as pre-"ventable diseases, and we feel bound, in the interests of "the community, to prevent them where we can. We, too, "respect the liberty of the subject; but we deny the liberty " of the subject to make himself or his home a source of "danger to the health and life of his neighbours. We are "just a little in advance of you in this matter."

There was no rational answer to this retort. There might have been if it had been the case in Berlin that people, when thus turned out of house and home, were left to drift about the city in shelterless misery. But this is not so. It is far from the Berlin Corporation's idea of public economy that it should be so. Whenever these people are turned out - they are usually, of course, among the very poorest - the house is cleansed and purified, and the inmates are taken to shelters situated in different quarters of the city, and under the charge of the Poor Department. In these shelters they and their clothes are scrubbed and made clean. The workers among them are allowed to go out to their daily avocations, and daily they are made to cleanse themselves. Food is provided for them and their families at moderate cost, which is paid out of their earnings. If they are out of employment, they are put to some simple work within the shelter, and are paid for the work they perform. Persistent disregard of the rules of the slichter is treated as a police offence. After a few weeks' residence the people find themselves actually in some degree out of sympathy with uncleanly habits. They are then allowed once more to betake themselves to a home of their own, all the better for the lessons they have learned. This treatment is repeated where needful. But when people remain incorrigibly dirty their offence becomes a matter for the interference of the criminal authorities. They are then drafted off to the sewage-fields, or some other department of public work, where their earnings are used, in the first instance, to defray the cost of their own keep, the balance being applied, in the next place, to the maintenance of their families, who pass under the care of the authorities.

And this is all done with the assent and approval of the general population. German Socialism has its home and centre in the capital. Berlin is also the centre of German industry. Its population is for the most part a working-class population. The official, the wealthy, the artistic, the military, and the shopkeeping classes form in all but a small percentage of the whole. Yet, though in their meetings Socialists, and working-men who are not Socialists,

^{*} A Study in Municipal Government. By James Pollard, C.A., Chairman of the Edinburgh Public Health Committee, and Secretary of the Edinburgh Chamber of Communice. [W. Blackwood & Sons, 1893.]

air their ideas and grievances, and declaim against the wealthy and the bourgeoisie, they have no quarrel with the treatment of those whose habits make them obnoxious to the public health. You may go through the quarters of the city where the very poorest live; you shall see many signs of poverty, scanty furnishings in the houses, poorly clad men and women, children running barefoot and bareheaded, yet they are clean, and for the most part even tidy. You shall see all this, but you shall find nothing corresponding to the filth and squalid wretchedness which meet you in the uncomely parts of our own city.

Mr. Pollard treats with similar detail and brightness the municipal water- and gas-works, public hospitals, convalescent homes, administration for relief of the poor, where we find that, under proper organisation and control, all these works of government are carried out at about onethird of the cost of the expenditure in Great Britain on similar objects. In the chapter on public works we find that the hospitals and almsliouses are regularly supplied with flowers from the public gardens, and that twice a week each of the schools receives some hundreds of botanical specimens for purposes of demonstration in the class-rooms. We here in England have indeed some lee-way to make up.

At the present moment, when all parts of the country are demanding more local powers, the concluding sentences from the pen of this able

Scotsman will be read with interest:

It is settled public law in Prussia-and it must be owned that the law is distinctly utilitarian in its conceptionthat owners of property hold it subject to the right of the State or the municipality to take it compulsorily, on due eompensation, for any purpose in the public interest. If, then, the Corporation resolve to carry out some improvement—to cut a new street, erect a new institution, or make an extension of the drainage system-proprietors cannot refuse to sell their property if it be required for such purposes. The town, having obtained the necessary sanction from one or other of the authorities described, has a fixed period within which to exercise this right, or it may, for reasons of its own, renounce its right, or make no use of it. But the owner is always bound, and if the town require his property, he and the town must go before arbitration authorities (not law courts), who have experts to guide them, and who fix the full value to be paid for the property proposed to be taken. Both parties, the town and the owner, have the right to dispute the decisions of the arbitrators by a suit in the proper courts, but it is not often that these decisions are overturned. The full value of the property being duly ascertained and fixed, it must be instantly paid in hard cash. More than the full value is not paid. There is no solatium over and above full value. In this manner the whole of the vast expense with which we are so familiar in this country, incurred by corporations in promoting private Bills in Parliament for carrying out measures of local improvement of the most obvious necessity, is wholly obviated. It is as if we had here in operation a public law, dispensing altogether with the irritating and expensive parliamentary proceedings at present in vogue, and leaving corporations and individuals precisely where they are after a Corporation Improvement Bill has been passed into law, with the Lands Clauses Act and other public statutes to guide parties to a settlement of whatever difference may be between them. This, assuredly, though the last, is not the least important lesson we at home may learn from the municipality of Berlin.



9, Conduit Street, London, W., 31 May 1894.

MINUTES. XIV.

At the Fourteenth General Meeting (Ordinary) of the Session, held on Monday, 28th May 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the Chair, with 15 Fellows (including 6 members of the Council), 17 Associates, and 12 Visitors, the Minutes of the Meeting held 7th May 1894 [p. 467] were taken as read and signed as

The following member, attending for the first time since his election, was formally admitted, and signed the

Register of Associates—namely, Frank Lishman.

A Paper, by J. Tavenor Perry [A.], entitled The INFLUENCE OF THE HANSEATIC LEAGUE ON THE ARCHITEC-TURE OF NORTHERN EUROPE, was read by the author, and, having been discussed, a Vote of Thanks to Mr. Perry was passed by acclamation, and the Meeting separated at 10 p.m.

PROCEEDINGS OF ALLIED SOCIETIES.

Mr. Gourlay's Lectures at Glasgow.

The opening lecture of the fourth Session of the Architectural Summer Measuring and Sketching Class was delivered on the 7th inst. by the lecturer, Mr. Charles Gourlay [A.], the subject being "The Value to the Archi-"tect of Sketching and Measuring Old Buildings, and "Hints on how to do so." The lecturer began by pointing out to the students that while in their classes and studios they received a knowledge of the history, with details, and of construction, in architecture, yet something more was needed to complete their course of training for the profession of an architect; this was the study of buildings. Their class visits on Saturday afternoons during the autumn and spring to modern buildings, and their study during the summer of the best mediæval building they possessed—namely, Glasgow Cathedral—together with their visits to other places during their summer holidays, should go far to meet this requirement. The members of the class were exhorted to measure and plot on the spot, and examples of the proper way to go to work to measure a nave arcade, a doorway, with how to measure arches, a window with tracery and cusping, were hung up in diagram and explained; the various methods of measuring mouldings were noted, and that they should be most carefully studied. In sketching, a simple subject was recommended to begin with, and that sketches should always be accompanied by a few sections of the mouldings, having dimensions figured on them. Several of Mr. Street's published sketches were hung on the walls, and had attention drawn to them as admirable examples of work of the kind.

A second lecture was delivered by Mr. Gourlay on Tuesday, 29th inst., on "Scotch Mediæval Architecture." The lecturer began by stating that, on visiting an old church, one not only admires its beauties, but naturally and at once assigns it to one or other of the Gothic periods, and marks wherein its details resemble or differ from those of other contemporary examples. A great variety of interest is thus imported into every portion of the building, into every ornament and every moulding. Beginning with the reign of Malcolm Canmore in 1057, when Scotch architecture proper takes its rise, we find that the architecture is so essentially the outcome of the times that we must look very closely to the history of our country to be able in any measure to appreciate her architectural remains. We can draw no

eonclusion as to the date of the various styles from the form of the arch, because that feature is not universally changed with the succeeding styles. Thus, the semicircular arch, which elsewhere is almost confined to the Norman period, exists in Scotland abundantly during all styles, whether we take the Norman door of Dunfermline Abbey or the late Perpendicular door of the Melrose Abbey cloisters. This probably arose from the perception that, when the necessities of vaulting did not require a pointed arch, the semicircular form, especially for a door, was stronger and more suitable, more easily closed by bars, and avoided the high point hanging above the hinge. Generally speaking, it must be by attention to the details of mouldings and foliated ornaments that the later period of Scotch buildings can be traced, though even this test must be taken with caution. The various periods were given as follows: - Norman, from 1066-1154; First Pointel-Transitional 1154-1189, and Developed 1189-1286; Second Pointed-English Character 1286-1371, and Scotch Character 1371-1560; the characteristics of each were explained, and the lecture closed with special reference to Glasgow Cathedral. It was shown that a small part in the south-west corner of the lower church (c. 1180) is the earliest work remaining; the lower church and choir above were built about 1245, the choir finished before 1280. The nave was finished about the end of the thirteenth century. The central tower below the belfry windows was built before 1300; the upper part between 1408 and 1425, and the spire finished 1425-1447. The towers which stood at the west end of the cathedral, built about 1350, were taken down in 1846. The chapter-house, sacristy, and roodloft were built between 1425 and 1435. The tomb of Bishop Wishart at east end of lower church, was erected about 1317. The stairs leading to the lower church, the undercroft of the proposed south transcpt, and the altars in front of the roodloft were built between 1484 and 1508. The lecture was fully illustrated by photos and sketches.

PARLIAMENTARY.

THE LONDON STREETS AND BUILDINGS BILL. Suggestions from the Art-Workers' Guild.

A sub-committee of Architects appointed by the Art-Workers' Guild to consider the London Streets and Buildings Bill promoted by the London County Council have advised that certain suggestions be sent to the Parliamentary Committee in charge of the Bill. Their report is as follows:-

The Art-Workers' Guild is a body of artists which includes more than fifty architects, for the most part practising in London, and they beg respectfully to lay before the Parliamentary Committee in charge of the Bill a few suggestions with respect to the London Streets and Buildings Bill now before Parliament. In doing so they wish to confine themselves to those matters which affect design in architecture, as they have reason to believe that other bodies, qualified to do so, will deal with those which affect the work of the builder, the surveyor, and the engineer.

Part V., section 41, continues an old restriction of doubtful practical value which has been a great difficulty with architects in designing domestic buildings, and it is suggested that it be altered so as to read: "All wood-work " fixed in any external wall, except bressummers and storey " posts under the same, and frames of doors and windows " of shops on the ground storey, must not be fixed so as to " project beyond the external face of such wall," &c.

Part V., section 46, requires that "Every party wall shall " be carried up above the roof flat or gutter of the highest " building adjoining thereto to such height as will give a " distance (in a building of the warehouse class) of at least " 2 feet, and (in any other building) of 15 inches measured " at right angles to the slope of the roof, or 15 inches above

"the highest part of any flat or gutter, as the case may be." (2) "Every party wall shall be carried up above any "turret, doriner, lantern-light, or other erection of com " bustible materials, fixed upon the roof or flat of any "building within 4 feet from such party wall, and shall " extend at the least 12 inches higher and wider on each " side than such erection, and every party wall shall be " carried up above any part of any roof opposite thereto " and within 4 feet therefrom."

This is an old requirement originally intended as a precaution against fire. But the experience of fifty years has shown that its absence is not a danger, and it is not required in the towns of Liverpool, Manchester, Leeds, Bradford, Huddersfield, Sheffield, Leicester, Cardiff, and Belfast. Such party walls carried up at regular intervals in a row of houses are very unsightly, and the use of them leads to the adoption, in the cheapest class of work, of a very bad type of roof. It is suggested that this section be altered to

something like the following :-

(1) "Every party wall of any new building being a "dwelling-house, and every party wall of any such old " building, shall be carried up to the roof of such building " throughout the entire length of such wall, and the slates " or other roof covering shall be properly and solidly " bedded in mortar or coment upon the top of the wall, " and the roof shall be so constructed that no timber or " woodwork of any description shall extend upon or across " any part of such wall."

(2) "Every party wall of any building of the warehouse " class or of any public building or building used wholly " or principally for purposes of trade shall be carried up " above the roof, flat, or gutter of the highest building "adjoining thereto to such height as will give a distance " (in a building of the warehouse class) of at least 3 feet " 6 inches, and (in any other building as referred to in this " sub-section) of 15 inches measured at right angles to the " slope of the roof, or 15 inches above the highest part of " any flat or gutter, as the case may be."

The advantage of a party wall high enough to form a screen to firemen in buildings of the warehouse class is admitted, but for this purpose the wall should be carried

up 4 feet above the roof.

Part V., section 48, sub-section 1.-We ask that 18 inches be allowed in place of 6 inches for depth of cornice to dormers, &c.

Part V., section 60, sub-section 2, says: "No cornice " shall exceed in projection 2 feet 6 inches from the face " of the wall." It is suggested that this might be better: " No cornice shall overhang the public way more than " 2 feet 6 inches."

The same section, sub-section 5, allows the use of bay windows in dwelling-houses, but (clause b) restricts them to two storeys in height, and (clause f) restricts them to one-half of the width of the frontage. It is suggested that the height may be left free, and the width of two-thirds of the frontage allowed, with proper restrictions as to distance from party walls. It is further suggested that two-thirds of the width of the front be allowed for oriel windows.

Part XIV., section 150. - No provision is made in the constitution of the Tribunal of Appeal for the presence on the Tribunal of any member qualified to judge on any matter requiring a knowledge of art and design. And as the appeals of architects to the Tribunal are likely often to be on such matters, it is desirable that there should be a member competent to deal with them. It is therefore suggested that one member of the Tribunal be appointed either by the Royal Academy or by such members and associates of the Royal Academy as are architects.

Schedule I., clause 2.-We suggest that the following words be inserted after "underneath it": "Excepting to "the extent of 6 inches, provided that such projection be " well and solidly corbelled out, and that the side of the " wall opposite to the corbelling be carried up vertically."



AUGUSTUS WELBY PUGIN, AND FURNITURE. By J. D. CRACE [H.A.].

N the occasion of the reading of the Papers on "Furniture: Domestic and Ecclesiastical" [p. 413] circumstances combined to leave little time or opportunity for discussion of the main subject. I think this was to be regretted, because it is undoubtedly one of those subjects just outside architecture which legitimately invite the attention of architects; and because the Papers themselves were, with one exception, rather invitations to discussion than attempts to deal directly with a somewhat complicated subject.

Mr. Belcher's introduction was, necessarily and properly, general in terms, and pointed to the outward conditions of the present day, the objects to be kept in view, the faults to be corrected. He says truly that "in all good work both form and construction are the result of "long tradition." He might well have added "colouration"; for it is undoubtedly to the long tradition that we must attribute the marvellous excellence of colouring to be found among Oriental fabrics; as it was also the gradual development of traditional methods which produced the magnificent harmonies by painters of the fifteenth and sixteenth centuries. Titian's harmonies are not the invention of one man: they are the outcome of generations, of whom the last steps were Gian Bellini, his father Jacopo, and Gentile da Fabriano.

Raphael owed how much to Timoteo Viti, how much to Perugino? The great culminations of art come about when the tradition is carried through three or four successive steps by men of exceptional talent, or of some special capacity which ensures the infusion of new life at each step. Tradition was the bone and fibre of the old crafts, individual talent and effort their life-blood. The former has been entirely broken, as a continuous growth, by the cessation of apprenticeship; and, so far as the workman is concerned, inducement to individual effort is being seriously undermined. It was when things were drifting in this direction that the designer or draughtsman (or architect), as apart from the actual maker, began to be important to the production of furniture. Mr. Voysey, in the course of his Paper, says, "But since the furniture has been taken out of the architect's hands." It would be interesting to know at what period he believes that the designing of the furniture was habitually entrusted to the architect of the building. Kent designed furniture for Lord Burlington's and other buildings. The brothers Adam, or their Italian draughtsmen, designed plenty of furniture; but that was rather in their capacity of "designers" in a style which had taken the public taste, and was by no means limited to furniture for houses designed by themselves. The brothers Adam were "inevitable." They represented no usual practice, and they will owe their future reputation much more to their interior decorations and furniture than to any special merit in their architecture, which is singularly emasculate.

Let us go back a little. Perhaps there is no finer church furniture in the world than the stalls at Amiens. No architect had to do with this wonderful work; but Arnold Boulin and Alexandre Huet—"menuisiers." The fact is, that unless an architect has made himself thoroughly

Third Series. Vol. I. No. 15.

conversant with the construction or requirements and peculiarities of furniture, it is by no means a matter of course that the result of his designing will be such a conspicuous success. I can certainly say that I have seen examples of the contrary; and I altogether question its being the duty of the client to put up with the product, "however gruesome it may be," though "full of "promise" (I quote Mr. Voysey), while his architect is groping in the dark for the true laws of beauty. I should like, too, to say a word in protest against the cheap denunciations of the "manufacturer," which it is so easy and so common to indulge in. If the matter be looked into impartially, by anyone of competent training, whose memory goes back forty or fifty years, he will be constrained to admit that, in point of taste and a general recognition of some obligations in design, the ordinary product of even Tottenham Court Road is as much superior to what was then to be found there as is the average architectural output of to-day to that of, say, 1850. Manufacturers have usually included in their ranks men whose very contact with the processes of production has made them keenly alive to the best capacities of the product and to the best taste of the day. To take a case in point, Wedgwood's taste and discrimination were at least equal to those of the brothers Adam. Compare such manufacturers as Herbert Minton and Hardman with the average architect of 1850! Why, either of them knew more about art than any but a dozen or two of the whole profession at that time.

Depend upon it, there are always plenty of intelligent men engaged in manufacture, with skill and perception, ready to respond to any clearly defined want of the architects. Abuse of the manufacturer often covers a lack of ability to define what is wanted of him. Most of the eighteenth-century furniture (on which a good deal of praise is now lavished) was the work of well-established manufacturers. I maintain, then, that in general character of design and in recognition of principles (even when not very strictly adhered to in execution), furniture has fairly kept pace with architecture.

The new infusion of life and thought and character into both I believe to be primarily due to Augustus Welby Pugin. I am not blind to the great services in this direction rendered by other men now living. But it was Pugin who laid down the road and pointed the way. To identify Pugin only with the Gothic Revival is to do him much less than justice. By defining for the first time in the history of Art what are the immutable laws which must govern all constructive design, if it is to appeal successfully to human intelligence; and by doing this in vigorous, manly, and fearless language; and, best of all, by himself breaking through all difficulties, and putting his own principles into constant practice, he compelled everyone engaged in architecture or design to listen to him. The principles of adjusting design to requirement and ornament to construction seem obvious enough now. They have been preached with every refinement of language; and the writer who, eight or ten years after Pugin's vigorous promulgation of them, adopted them as his own, and held Pugin up to ridicule, if more widely read, practically carried the arguments no further. But Pugin, who found all the crafts allied to architecture sunk to the lowest level to which, artistically, they have ever been degraded, did not stop to mourn, or to pour contempt on the manufacturer. On the contrary, he sought out the manufacturer, and so convinced him of error, and of the truth of the message he had to deliver, that the manufacturer became an ardent and enthusiastic convert, eager to work for a leader who knew his own mind, and could make his objects and methods intelligible. It might be said of those who were thus brought to see with new eyes that no trouble, no exertion, no outlay, were ever grudged by those who worked for Pugin.

Having once engaged manufacturer or workman on any work, Pugin never worried him; he gave him all the guidance he could, referred him to models or examples, but always gave him some freedom, and credit for some brains. Above all, he gave him the fullest credit for

any success. Let anyone who would judge this man's power, and who knows something of the state of Art in England in 1840, take a walk through the Houses of Parliament, and reflect that the carving, the woodwork, the metal-work, the tiles, the stained glass, the furniture, were done in the seven or eight years following by men who had been ignorant that there existed a principle of design of any kind till he trained them.

When once Pugin knew that he was understood, he never wasted time on the elaboration of a working drawing. It became a sort of shorthand. Everything was there, but you must be able to read it. He took infinite pains himself to understand the conditions and requirements of manufacture, and, having once grasped these, carefully complied with them. He drew with extraordinary rapidity (I used to watch him with a sort of reverence); appeared to have everything clear in his mind, and simply to pour it out from the point of the pencil; and he would often carry on a lively conversation all the time.

We of the present day can hardly understand how much we owe to his teaching. He brought order out of chaos, taught how much delight is to be found in the smaller allied arts, as well as in the noble art of architecture. Above all, he taught—so successfully that a younger generation has come to regard it as a truism, self-evident from the very beginning that there are laws connecting design with constructive motive which must remain true for all time and for all styles. The younger men cannot conceive a time when no such truth had been expressed or recognised, and even the criticism of all design was supposed to be simply a question of taste. Where they have brought themselves to admit that there was such a time, they attribute the change to the silver tongue of Ruskin. But the truth had been driven home by the plain, fearless, and expressive English of Pugin years before. Thousands of workers had learnt what he meant, and had been daily practising what he taught; the Palace of Westminster already stood in evidence of his principles; the House of Lords was in use in 1847. Pugin's True Principles was published in 1841; Ruskin's Seven Lamps not till 1849 (when Pugin's work was nearly done); The Stones of Venice only in 1857. Nor was it a case of priority only. The vigour of Pugin's language, the enthusiasm of the man himself, had carried the day. The purchase of the Soulages collection—from which resulted the Kensington Museum—was mainly effected by Pugin's disciples. The Architectural Museum was founded by Pugin's disciples; and if his name has since been overlaid by those whose success had its roots in his perception and enthusiasm, he remains, none the less, the prophet who revivified architecture, and lifted design out of the ash-heap.—J. D. Crace.

^{**} Pugin's main principles, which have not been much quoted of late, were summed up by him thus:—"The two great rules for design are these: 1st, That there should be no features about a "building which are not necessary for convenience, construction, or propriety; 2nd, That all ornament "should consist of enrichment of the essential construction of the building. The neglect of these two "rules is the cause of all the bad architecture of the present time. Architectural features are con-"tinually tacked on buildings with which they have no connexion, merely for the sake of what is "termed effect; and ornaments are actually constructed, instead of forming the decoration of con-"struction, to which in good taste they should be always subservient. In pure architecture the "smallest detail should have a meaning or serve a purpose; and even the construction itself should "vary with the material employed, and the designs should be adapted to the material in which they "are executed."—The True Principles, &c., 40. 1841. A list of Pugin's other works is appended:—Gothic Furniture designed and etched in the Style of the Fifteenth Century, 27 pl. 40. 1835; Contrasts, 40. 1836 (2nd edit. 1841); Details of Ancient Timber Houses, 40. 1836; Designs for Gold and Silver Smiths, 40. 1836; A Series of Ornamental Timber Gables, Sixteenth Century, 40. 1839; Apology for the Revival of Christian Architecture in England, 36 pl. 80. 1843; Glossary of Ecclesiastical Ornament, 40. 1844 (2nd edit. 1846); Floriated Ornament, 80. 1849; Examples of Gothic Architecture, 40. 1850; Treatise on Chancel Screens, &c., 40. 1851; and several pamphlets. Two volumes of five hundred of his Sketches were photographed by S. Ayling, and published in 80. 1865.



CHRONICLE.

The Annual Elections.

The Scrutineers appointed by the Annual General Meeting to conduct the election of the Council and the Standing Committees for the year of office 1894-95 met on the 8th inst., to the number of six Fellows and five Associates. Mr. Hansard occupied the chair, and received from the Secretary 481 envelopes—216 from Fellows, 254 from Associates, and 11 from Hon. Associates being a little less than a third of the number of subscribing members within the United Kingdom. Of the Fellows who voted, 139 were metropolitan and 77 non-metropolitan; of the Associates the numbers were 189 and 65; and of the Hon. Associates, 9 and 2. Thus 337 metropolitan and 144 non-metropolitan members joined in the elections.

The Presidential Change of Office,

At the Business General Meeting of the 11th inst., after the Scrutineers' Report on the Election of the President and Council for the year of office 1894-95 had been read, Mr. Charles Barry, F.S.A., Past President, moved, and Mr. John Slater [F.] seconded, a vote of thanks to the retiring President, Mr. J. Macvicar Anderson, who, in accordance with rule, remained in the chair until the close of the Meeting.

Mr. Barry spoke of the extreme value of the services that Mr. Anderson had rendered during the three years, not altogether uneventful, which he had served as President of the Institute—three years which had included within their scope questions of no little interest to the profession of architects as well as to the status of the Institute. Mr. Anderson, in his position, and with the dignity of his position, and with that geniality, ability, and courtesy for which he was unmistakably distinguished, had been enabled to render them very large services indeed. He had occupied the chair with absolute distinction, and he had bequeathed to his successor, their dear friend Mr. Penrose, a burden and a responsibility which were not light. That their new President would be equal to the occasion Mr. Barry, who had had the honour and pleasure of knowing him for a great many years, did not doubt, adding - We now offer to our retir-

ing President our most heartfelt thanks for the services he has rendered us, and we hope to see him at our Meetings, if not quite so frequently as

in the past, yet very frequently.

Mr. Slater, in seconding the vote, endorsed Mr. Barry's remarks, and referred to the immense debt which the Institute owed to the outgoing President, Mr. Anderson, who, not alone in the chair of the Institute, but in that of the Council, had presided with an urbanity and with a sense of justice that could not be too highly praised. It was no easy task for any President to follow in the steps of their previous President, Mr. Waterhouse, and it appeared to him (the speaker) to be one of the greatest signs of Mr. Anderson's ability, suavity, and general fitness for the Presidentship of the Institute that he had been no unworthy successor of Mr. Alfred Waterhouse. With regard to the Council, added Mr. Slater. I think I may say that we part with him with feelings, not only of admiration, but of personal affection, for I am sure that the way in which he has presided over our meetings has been such that he has endeared himself to all of us, not only as a President, but as a friend.

Mr. Macvicar Anderson, acknowledging the vote, passed with the utmost enthusiasm, said that the words used by Mr. Barry and Mr. Slater had been not merely complimentary, but so far beyond what the occasion required that it became difficult to reply to them. He might say, however, that his connection with the Institute had not been one of yesterday. He could recall many years of arduous, very agreeable, and pleasant work in various posts he had occupied by their courtesy. When, three years ago, they in their goodness thought fit to elect him to the position which he had always looked upon as the highest honour that one could rise to in the profession, he remembered saying that he trusted, even coming after so distinguished a predecessor as Mr. Alfred Waterhouse, to be able to hand down the traditions of the Institute without sullying or tarnishing their glory; and he could honestly say that neither time, thought, nor study had been spared in trying to do so to the best of his ability. He would fain hope that those efforts, small as they had been, had resulted in maintaining the dignity of this Chair, in furthering the prosperity of the Institute and the welfare of the profession. He thanked them most heartily for what had rendered his task at all times a comparatively easy one the great kindness and consideration that they had extended towards him. It was, of course, absurd to expect that a body averaging twenty men on the Council, and averaging considerably more in General Meeting, should always be of the same opinion, nor was it desirable that they should be; and sometimes it had been a little difficult to steer an even course between divided opinions. He could only hope that in endeavouring to do so

-to be firm and at the same time impartial—he had not been so unhappy as to arouse ill-will on the part of anyone. If there was one consideration more than another that made him happy in vacating the chair, it was the knowledge that he would be succeeded by Mr. Penrose, who seemed to combine the activity of youth with all

the experience and the glory of age.

At the close of the Meeting the ex-President handed the badge of office to his successor, who, as Mr. Slater had previously stated, amid much applause, had been elected a Fellow of the Royal Society on the 7th inst. The ex-President in so doing repeated that if anything could afford him more gratification than another, it was the circumstance that he was succeeded by one so eminent, so able, and so distinguished in every respect, as Mr. Penrose.

A Teaching University for London.

At the same Meeting Mr. Macvicar Anderson, in introducing the motion of which notice had been given respecting the establishment of a Teaching University for London, said the Council had thought it so important that one or two of them attended before the Royal Commission appointed to consider the subject; and their efforts had been directed to impressing the Commissioners with the fact of the desirability that architecture should be represented upon the governing body of the proposed university. They so far succeeded that one of the fifty-six members composing the Senate would be a representative of the Royal Institute of British Architects. The Senate would have power to frame statutes (subject to alteration only by the Queen in Council), to confer degrees, appoint professors, and decide on the admission of new schools to the university. The Council were informed that it was most desirable that those bodies interested in the establishment of the Teaching University should show their approval of the scheme so far as it had been published, the majority of colleges and institutions concerned having already done so. The President therefore moved—"That the Royal Institute of British "Architects has learned with much satisfaction "that the position of Architecture will be duly "recognised in the proposed Teaching University "for London, by the inclusion among the Senate "of the University of a member to be appointed "by the Institute, and that the Institute cordially "desires to render every assistance in its power to "the establishment of such University."

Mr. John Slater said that, as a graduate of the University of London, he seconded the motion with the greatest possible pleasure. He was quite sure that their new President would thoroughly endorse the opinion that it was a very desirable thing for every young man entering the profession of architecture to have had a university career. The sooner it was known and thoroughly recognised

throughout the land that their profession was one which demanded an immense amount of preliminary study by young men, the better it would be, and the less they would have to deplore the horrible ignorance of many of the candidates who came up for their Preliminary Examination.

The motion was put to the Meeting and enthusiastically passed by acclamation; and a communication will be made to the Home Secretary, conveying the terms of the Resolution, after the next meeting of the Council. A brief account of the proposed Teaching University, based on the report of the Royal Commission (which is in the Library), will be found on p. 266.

The Festival Dinner, Monday, 2nd July 1894.

The arrangements for the Dinner to take place on the 2nd prox., at the Whitehall Rooms, in commemoration of the First General Meeting of the Institute, held on the 2nd July 1834, at the old Thatched House Tavern, are progressing; and the attention of members is invited to a notice which appears in the Supplement accompanying this number of the Journal. The chair will be occupied by Mr. Francis C. Penrose, F.R.S., President, and he will be supported by most of the Royal Gold Medallists, some Honorary Fellows, and several distinguished guests representative of Literature, Science, and Art. The Church, the City and Metropolis, Parliament, Official Departments and Corporate Bodies in correspondence with the Institute will be represented at the Dinner.

The Iron and Steel Institute Autumn Meeting,

The Autumn Meeting of the Iron and Steel Institute will be held in Brussels from the 20th to the 21th August. The arrangements are being organised by a Local Reception Committee, of which Monsieur Gillon, President of the Society of Engineers at Liége, is Chairman. On Monday, the 20th August, there will be a reception in the evening by the Local Committee at Brussels. Tuesday will be devoted to the reading and discussion of papers, and visiting the Antwerp International Exhibition; Wednesday, Papers and discussion, and visiting places of interest in Brussels. On Thursday the Mariemont Collieries and the Couillet Steelworks will be visited, and on Friday the works of the Cockerill Company at Seraing and the Angleur Steelworks at Liége.

Additions to the Library.

Monsignor Daniel Barbaro's La Pratica della Perspettiva (Venice, 1568) is a recent addition to the Library, which already possessed a copy dated a year later in the imprint. Collation reveals little difference between the volumes: there is a slight variation in the pagination, and the margins of the earlier edition are ruled with red lines. The publication of this work preceded the death of its author, Patriarch of Aquileia and commentator on

the works of Vitruvius, by two years, and was one of the earliest contributions to the discussion of the then recently discovered art of perspective, Pélerin's work, the first authoritative work on the subject, having appeared some sixty years earlier, in 1505. A deficiency in the Library is supplied by the purchase of a well-preserved copy of the Antiquities of Sicily (John Murray, London, 1819), by John Goldicutt, the first Hon. Secretary of the Institute.

Professor William Cawthorne Unwin [H.A.] has presented his work On the Development and Transmission of Power, being his contribution, with additions, to the Howard Lectures delivered before the Society of Arts in January and February of last year (Longmans, Green & Co., London). Messrs. Crosby Lockwood & Son, the publishers, have presented the second edition of Mr. Wyndham Tarn's Mechanics of Architecture, being a treatise on Applied Mechanics especially adapted to the use of architects.

From Sir Saul Samuel II.A., the Agent-General for New South Wales, has been received the Report of the Department of Public Works for the Year 1892, printed by order of the Legislative Assembly. The Report, which contains twentythree illustrations and seven maps, includes that of the Branch of the Government Architect (Mr. W. L. Vernon [F].), who supplies a list of the new buildings finished during the year 1892, and their several costs. Sydney Hospital, an illustration of which is given, was the most noticeable structure erected during that period, at a cost of £64,911, from the designs of Mr. John Kirkpatrick.

The Journal of Indian Art and Industry (No. 47, vol. vi.), presented by the publisher (W. Griggs, Peckham), contains an account of the wall paintings recently found in the Khwabgah, Fathpur Sikri, near Agra, by Mr. Edmund W. Smith, of the Archæological Survey of India, N.-W.P. and Oudh. Mr. Smith's Paper is supplemented by eleven plates, which are fine examples of colour printing.

NOTES, QUERIES, AND REPLIES. THE ENGLISH RENAISSANCE.

The Author's Reply to his Critics [pp. 463, 511].

From J. Alfred Gotch, F.S.A. F. —

Mr. Phené Spiers, in his remarks on the chapter in my book devoted to "The Growth of the "New Style," has opened a discussion which I hope will tend to throw light on this rather obscure subject; and Mr. Wyatt Papworth, in his interesting review [see p. 507] of the concluding part of the book, has taken exception to the same chapter, or essay as I should prefer to call it, chiefly because of the position therein assigned to John Thorpe. It becomes necessary, therefore, to reply to the strictures from both sides, so far as I am able to do so.

The position taken up in the essay is that, so far as can be at present ascertained, the general designs of houses in the time of Elizabeth and James were supplied by surveyors, but that the masterworkmen usually supplied their own details. In support of this view certain evidence is adduced, which has not convinced Mr. Spiers, but which he does not nullify by any rebutting evidence; he only expresses himself as unconvinced, and seems inclined to think that as things are ordered now, so, in the main, they are likely to have been ordered then. Mr. Papworth, on the other hand, calls some of the evidence in question, and does not accept the conclusions which I draw from part of the remainder. The matter can only be settled —if settled it ever can be—by the weight of evidence; and my object in writing this is to re-state the evidence already adduced, and to touch upon the various points raised by Mr. Spiers and Mr. Papworth.

Briefly stated, my argument is this. Thorpe's collection of drawings sets up a primá facic case that the surveyors supplied small-scale drawings, but few, if any, details. This case is strengthened by such documentary evidence as we possess, for in no case is there anything said to imply that the surveyor supplied any detail-drawings, but the inference is that the workmen supplied their

But, first, we must deal with the noble owners whom Mr. Spiers credits with occasionally assuming the merit of having designed their own houses. No doubt they claimed a great deal of credit for building them, but where is there any record of their aspiring to having designed them? The panel at Wollaton does not help Mr. Spiers, because it only says: "Behold this mansion of Francis "Willoughby, Knight, built with rare art, and "bequeathed to the Willoughbies. Begun 1580 and finished 1588." * It does not father the design upon anyone. Of course the general instructions of the noble owners largely influenced the design, but I do not think the owners themselves have anywhere set up the claim suggested by Mr. Spiers. In the case of Lyveden, which Mr. Papworth mentions, I think a comparison of the existing plan with Thorpe's (vol. i. p. 40) will lead to the opinion that Thorpe's corrections show various alternatives of the designer, and that it is much more probable that Sir Thomas Tresham got Thorpe, the surveyor, to put his ideas into shape, than that Sir Thomas drew the plans, and that then Thorpe copied them, and drew alternative arrangements for his own pleasure.

As John Thorpe's position has a very important

EN HAS FRANCISCI WILLVGHBI MILITIS ÆDES RARA ARTE EXTRVCTAS WILLYGHBÆISQ RELICTAS INCHOATE 1580 ET FINITE 1588.

^{*} The inscription is as follows:--

bearing on the whole question, it will be advisable to consider it at this point somewhat in detail, and the simplest way will be to follow Mr. Papworth's remarks in order.

I should like to point out, however, that, so far as my main argument is concerned, all I want to make clear is that Thorpe's collection, whether the production of one hand or more, is composed largely of the preliminary designs for the buildings there shown. I am indebted to Mr. Papworth for considerable assistance in pursuing the subject of John Thorpe, and for the furnishing of several clues, and I am sorry that the conclusions we draw from what is practically the same evidence are so different. It seems that Mr. Papworth demurs to my taking Thorpe as a typical architect and surveyor of the period, who studied French work, and went to France, and designed most of the houses included in his collection. Mr. Papworth, it would seem, regards him rather as a surveyor merely, and his collection as a series of surveys, "all probably measured for the pro-"prietors' records on changes of estates"; interspersed with copies of other people's designs, on which he has drawn suggested alterations by way of amusement. In this connection I would ask, Did Buckhurst House, or Wollaton, or Losely, or Burghley House, change hands at this period? Or would elevations be required for this purpose? And how can the two different designs for Slaugham be both surveys of executed work?

With regard to Thorpe himself, it is quite true that we know very little of him, and it would be a most interesting task, albeit a long one, to thoroughly sift and classify his sketches, and ascertain how many hands were employed upon them. At any rate, I think we may take it for granted that they represent one interest, and that whether Thorpe, or his son, or an assistant drew them, they emanated from one office, if we may call it so. My reason for supposing that he had a large Court and official connection is, that his name occurs, as Mr. Papworth points out, in the list of those employed for the King in surveying the Duchess of Suffolk's land; that he surveyed the Palace of Eltham; that Ampthill, which he surveyed, was a royal residence, while Holdenby belonged to the Lord Keeper, and was sold to the King; and that the "Lord Salisbury's" was very likely Theobald's, which he exchanged with the King for Hatfield. Then, among the owners of houses included in his collection are the Earl of Dorset, who succeeded Lord Burghley as Lord Treasurer; Sir Thomas Heneage, of Copthall, who held several appointments under Elizabeth; Sir Thomas Lake, Clerk to the Signet, and afterwards Secretary of State; Lord Burghley himself; Sir George Coppin, Clerk of the Crown to James I.; the Duke of Buckingham; and Sir Percival Hart, Chief Sewer to Elizabeth. The list might be extended, but is sufficient to show that he had many Court officials among his employers.

In saying that we "constantly" meet with Thorpe's name in surveys and surveying works, perhaps I rather overstate the case, and I am obliged to Mr. Papworth for pointing this out; as also that I have said that Thorpe devoted "some" pages to studies of the five Orders when I ought to have said "two." But I am able to supplement the instances of Thorpe's employment kindly furnished by Mr. Papworth by at least one more, viz., "Ap. 4, 1609, notes of repairs necessary to be "done about Westbury Lodge, with request from " John Thorpe to — Wingfield to move the Lord "Treasurer that they may be done" (State Papers, Domestic, 1611-18, p. 502); and I am under the impression (though at this distance from a library I cannot verify it) that his name occurs on one or two other occasions. But at any rate he is mentioned in 1590, 1606, 1609 (twice), and 1611, which shows a tolerably continuous employment as surveyor. These notices of him do undoubtedly point to his doing "steward's or land surveyor's "work," but I cannot agree with Mr. Papworth in his conclusion that the whole of Thorpe's collection consists of surveys merely where it does not consist of copies. My contention is that Thorpe divided his time between ordinary surveying work and the designing of the shells of houses great and small, but that he did little towards designing the embellishment of them; and when I say "Thorpe," I regard him as the type of the "architect and surveyor" of his day, though by far the most important of them all.

I will now endeavour to show why I regard many of the drawings in Thorpe's collection as preliminary sketches for the various buildings. In several cases in my book I have been able to place his plans, and in two cases his elevations, side by side with plans and views of the actual building, and the discrepancies show beyond any reasonable doubt that in these instances his drawings cannot be surveys from existing buildings. The differences cannot be accounted for by subsequent alterations, inasmuch as they are of the essence of the thing; and yet, notwithstanding the discrepancies, the general likeness in each case is so striking as to suggest at once that we have here the preliminary sketches, subsequently modified in the carrying out of the work. Take Longford, for instance (vol. i. pp. 19, 20): the plan does not agree either with the plan as at present, or with Thacker's plans published in 1650, i.e. about sixty years after the erection of the building. On the other hand, the elevation agrees very completely with Thacker's, save that Thorpe shows round arches to the arcade, while Thacker's are pointed as in the actual building. The plan obviously cannot have been a survey, and it can hardly be supposed that an elevation would have been wanted for the purposes of change of estates; and if

Thorpe made so considerable an error as to show round arches where he ought to have shown pointed, he could hardly have been the "excellent "geometrician and surveiour" which Mr. Papworth allows. Take Kirby, again (vol. i. p. 33). The building has certainly not been altered in its main dimensions since it was built, and yet Thorpe's plan could hardly be such a survey of it as would be submitted by an "excellent surveiour." Upon Lyveden (vol. i. p. 40) I have already remarked above. As to Audley End (vol. i. p. 47), if Thorpe's plan is compared with Winstanley's (made about 1676), it will be found that the two agree almost room for room, with the important exception of the entrance front of the principal court; and here, again, the discrepancy cannot be accounted for by subsequent alterations, but points to the design having been modified in execution.

So it is with Aston Hall (vol. ii. p. 22) and with Wollaton (vol. ii. p. 60). In the latter case the alterations inside have been so numerous as to leave little of the original arrangements undisturbed; but the exterior of the building shows no signs of having been altered in its main lines, and the discrepancies between the main lines of the two plans are such as to preclude the supposition that Thorpe's plan was a survey of the actual building. His plan shows the entrance front some 23 feet longer than the sides, whereas in reality the side is of equal length with the front. The differences in the elevation are still more obvious, for whereas the general disposition on Thorpe's sketch is the same as in the completed building, the variations render it impossible for the drawing to be a survey of the work as built, if only from the fact that there is no basement storey shown. As to Smythson's share in the work, I see that Mr. Spiers agrees with me in suggesting that he was a master-mason; and with regard to the plans of his which Mr. Papworth thinks are preserved in the office of the clerk of the works, and which he suggests that Thorpe copied, I have had frequent communications from Lady Middleton about the building accounts, in which she is greatly interested, but she has never said anything about plans; and while revising the proof of these lines I have heard from the clerk of the works at Wollaton that there are no such plans. Another point worth noting about Thorpe's elevation of Wollaton is, that he shows two ways of treating the pedestals of the pilasters on the ground storey—one with a raised panel, and one, by way of alternative, with a ring. As a matter of fact, the ring was adopted in execution. This is not the only case in which Thorpe offered alternative ways of treating special features. Others occur on folios 85, 86, 90, 112, 181, and 219, on which he has written below three types of window, "Wch of thes 3 is best." The frequent occurrence of these alternatives points strongly towards the drawings being preliminary sketches. Then, again, the elevation on folio 24 is called

"A front or garden side for a nobleman"; the elevation on fol. 115, which, by the way, is the only sheet that has a section on it, has written under it, "Ment for one of the sydes of a house "about a cort and may be made a front of a "house"; and fol. 263 is entitled "For Mr. "Willin Powell." From all these examples I think that it is hardly straining the case to conclude that the Thorpes were designers of houses as well as surveyors, and it seems to me quite as likely that the pencil alterations which occur so frequently are suggestions made in the course of designing, as that they are alterations made by the Thorpes in other people's plans for their own amusement. That some of the plans—more especially the neat ones—were surveys of existing structures is quite possible; but even in the case of Ampthill, fols. 271-2, which Mr. Papworth says is the survey made by Thorpe about the year 1606, the plan is inscribed, "Ampthill old house "enlardged p. J. Thorpe," which is quite as likely to mean that Thorpe was employed to enlarge the old house as that he merely took a copy of his survey and tried his hand at enlarging it on paper. It should also be noted that in some cases one can see by little subsidiary side-sketches how ideas in planning were developed, an instance of which is quoted in the essay (p. xvii.).

If these inferences are reasonable, then it is not too much to say that Thorpe was a practical man, whose work was actually carried out; although it is perfectly true, so far as I know, that no record exists expressly stating that he carried out any of the buildings attributed to him. It would, indeed, be a singular piece of luck if such direct evidence

were forthcoming.

Then, Mr. Papworth takes exception to the statement that Thorpe evidently went to France. I submit, with all deference, that it is quite as likely that Thorpe went to France and surveyed the houses of which he gives the plans with certain notes, as that he copied them from early engravings to while away his spare time; and for these reasons. In the first place, the plans and part elevation which he copied out of Androuet du Cerceau's book he does not name nor put any title to. The others he both names and dates. In the second place, he adds notes to the latter, which, until the engravings from which he is supposed to have copied them shall prove otherwise, I feel inclined to regard as the notes of an eyewitness. One plan he entitles, "Mounsier "Jammet in Paris his howse 1600," and adds the notes: "All his offices are di. [half] under "ground sellered round about and built 2 stories "above them up to ye roofe," and "First storie "of offices 8fo. This second storie 12fo. hie. "Third storie is 10fo. hie." Another plan he entitles, "St. Jermins howse V leagues from "Paris A° 1600," and has this note against a long flight of steps: "Under thes steares is an Ile

"vawlted very faire with 3 rocks made very arte"ficially with birds stones and organs going with
"water, &c." It will be noticed that both these
plans are dated 1600. The other French plans in
the same category are the ground and upper plans
of the Queen Mother's house, of which the ground
plan is that quoted in the essay, "Queene Mother's
"Howse. . . . altred pr. Jo. Thorp," and dated
1621. It will be a very interesting thing if Mr.
Papworth finds the engravings from which these
plans were copied, and no one would rejoice more
than I, for an ounce of fact is worth a pound of
conjecture.

A few more lines will, I hope, take me past this part of my subject, and leave me free to revert to the main argument of the essay. The reason for calling Shute "a mere visionary, or dealer in "abstractions," lies in the tenor of his introduction to his book, The Chiefe Groundes of Architecture, in which he treats his subject in such an unpractical manner as to shake one's faith in the likelihood of his having possessed much practical ability as a designer of houses. Besides which, according to Mr. Papworth's work on the Renaissance and Italian Styles of Architecture, he died in the same year in which the first edition of his book was published. I am not able to answer Mr. Spiers's question as to whether there is anything at Alnwick which would be likely to be his work. This little work of Mr. Papworth's has been most useful to me, and ever since its publication it has been a kind of vade mecum. I have had it interleaved, and have thus been enabled to make copious notes, additions, and corrections. But, useful as it has been, I do not think that the whole of the remainder of the essay on "The Growth of the New Style" will be found to have sprung from its pages, as would seem to be implied.

But now to return to the main argument. This somewhat long digression about John Thorpe has been chiefly necessary in order to show my reasons for regarding his collection of drawings as largely composed of sketches for houses made by him, or his son, or an assistant. At any rate, whoever did them, and granting that some are surveys of executed works, there still remain a great number which I can regard in no other light than more or less rough designs for houses. With very few exceptions the drawings or sketches—call them which you will—are to a small scale. There are a few full-sizes, and fewer bits of detail. It is certain from internal evidence that some drawings are missing, but they, too, were to a small scale. It is the vast preponderance of the small-scale drawings over the larger details which leads to the inference that the man who supplied the general design did not usually supply the details. If he did, where are all his details gone? Why were they not preserved along with the others? If not here (as they are not), can they be produced from elsewhere—from the State Papers, from the muniment rooms of great houses, from museums, from college records, from anywhere? I do not say they don't exist; I sincerely hope they do, and that someone will speedily find some; but till they do come they cannot be put in evidence, and in the meantime their absence is a kind of evidence against their existence.

But the prima facie case against the likelihood of the surveyor having supplied working details being set up by their absence from Thorpe's collection, it is then strengthened by a perusal of such documents relating to building as are forthcoming. In no place that I yet know of is there anything to suggest that there was a person who supplied all the drawings in the way in which architects supply them nowadays, or to suggest that there was one controlling designer. There are several building contracts printed in Willis and Clark's Architectural History of the University of Cambridge, as well as accounts for panelling and other matters; and nowhere in them is there any phraseology to indicate the existence of a universal designer. On the contrary, the inference is that the masterworkmen supplied their own designs, or else it is expressly stated that the work is to be like certain existing work.

The first contract which I need quote is one which more than any other points to an outside It is for the finials of twenty-one designer. buttresses and for one tower of the chapel at King's College, and is dated 4 Jan. 1512–13. It stipulates that John Wastell, the master-mason, shall make the finials "acordyng to the plattes [draw-"ings| conceyved and made for the same, and "acordyng to the fynyall of oon buttrasse which "is wrought and sett upp: Except that all thies "new fynyalles shalbe made sumwhat larger in "certayn places acordyng to the mooldes for the "same conceyvid and made." The tower is to be made "acordyng to a platt thereof made, re-"maynyng in the keping of the seid surveyour." The surveyor was Thomas Larke, clerke, Archdeacon of Norwich; and it is not stated that he drew the platt, only that he kept charge of it; it is quite as likely that a former mason drew it. In another contract for part of the same building, dated 4 August 1513, there is mention of "another " platte made for the same remaynyng with al the "other plattes afore reherced in the kepyng of the "seid surveyour signed with the handes of the "lordes the Kinges executors." The next contracts expressly call upon the workmen to provide designs. They are for part of the glazing of the windows of King's College chapel; one binds two glaziers to execute four windows "acordyngly to "suche patrons otherwyse called A vidimus" as they shall receive from their employers, one of whom is the surveyor, Thomas Larke. The other contract binds four other glaziers among other things to "dylyver or cause to be dylyvered to"

the before-mentioned two glaziers "good and true "patrons otherwise called A vidimus, for to fourme "glasse and make by other foure wyndowes of the "seid churche" whereunto the other two glaziers be bound.* Here, at any rate, the workmen were to provide the designs, although it may be said that windows are a special kind of work, and that the date of the contract is prior to the period under discussion. As to the latter point, however, it is not likely that the custom would change very rapidly in those days.

In the contracts for the Perse Building (1617) and the Legge Building (1618) at Caius and Gonville College,† and in that for a building (1611) at St. Catharine's Hall, to drawings are referred to, the main sizes and height are specified, as well as the disposition of the windows, &c. Reference is made to some "comely finishinge of freestone"; "one place bordered with freston over the dore in "ye midst, there to place the founders armes"; "chimney-pieces and borders of white stone cleane "and handsomely wrought"; "battlements after "ye order of St. John's new court, with gutters "and spouts of leade to be well sothered and "workmanlike done"; "a faire paire of staires"; "a faire baye windowe on the coll. side"; and so on. But as these features are not to be made to any specified drawing, the presumption is that they were to be made to the contractors' own designs. I have already pointed out in the text relating to St. John's College § that the contractors supplied the drawings for the second court.

Not to lengthen this reply beyond all reason, I will only shortly refer to other documents relating to building matters. Take the account for wainscoting the Hallat Queen's College, Cambridge, dated 1531 32. Every item of cost is put down, including "pro tribus libris ly glew" and "uxori Hawkes "pro candelis." If glue and candles are separately mentioned, surely the designs, had there been any, would have been set down; but they are not. On the other hand, Giles Fambeler, the carver, is paid for seventeen heads "de ly Antyk," and Dyrik Harrison "pro una virga de ly Antik crest," as well as "pro duabus virgis de ly Antik border," evidently referring to special carved work requiring some knowledge of style, which the workmen clearly possessed.

Then there are the letters from R. Williams, the agent at Cobham, to Lord Cobham in 1601, in which he says he has "bargained with Giles "de Whitt for making two chimney pieces for the "two chambers next to your new Chapel." and "Your Lordship must resolve what and how much "you are pleased to have done by Giles de Whitt "either upon some new chimney piece, or upon

"my lord your father's tomb"; implying that Giles de Whitt would do the work from his own resources. And, again, he says (as quoted in the essay), "the plasterer would be sent for to come "to bring to yo" Lo. modells or paternes of the "maner of the sealing that yo" L. maie make yo" choice of that kind of work that shall best like "you, and some care would be had that he be a "good workman and the price reasonable"; which expressly states that the workman provides the design from his own stock.

A perusal of the letters that passed at the building of Burghley House (Transactions, Vol. VI., N.S., p. 103) and of Hatfield House (published in P. F. Robinson's History of Hatfield House, 1833) leads to the conclusion that no architect was employed in the manner in which he would be employed in the present day; but that the owners themselves were the medium through which instructions and drawings reached the works, and that surveyors (not always the same) were sent from time to time to report progress and examine the work. The tenor of the correspondence is quite incompatible with Mr. Spiers's suggestion that the surveyor set out or approved all the work on the spot.

This is the principal evidence for which Mr. Phené Spiers asks, upon which I have come to the conclusion that the master-workmen—not, as Mr. Spiers puts it, every working mason or carpenter -supplied their own details: 1st, because Thorpe's collection contains hardly any details; 2nd, because no mention is made of drawings in building documents of the time; 3rd, because those documents imply, if they do not expressly state, that the workmen, as a matter of course, supplied their own designs. If anyone can produce evidence to establish a contrary opinion, I shall be among the first to welcome it, for, as I have already said, an ounce of fact is worth a pound of conjecture. I do not wish to imply that every workman was an efficient designer; but I take it that the master-workman, who employed others, either was a more or less able designer himself, or had a number of stock designs to select from, or employed specially clever men for the more important parts of the work; but that all the workmen worked to the designs of one man I submit the evidence disproves. In important work, like the Hall of Trinity College, Cambridge, different master-workmen were employed to do different parts of the work. Francis Carter did the roof and screen, and Andrew Chapman did the panelling, under separate contracts. The difference in the detail of buildings of which the general design was supplied from the same source is easily accounted for if the various master-workmen amplified the small-scale drawings for themselves. Take Kirby, Lyveden, Longford, Wollaton, and Slaugham, for instance, all of which I believe to have been designed as to plan, and probably

^{*} Willis and Clark, vol. i. pp. 609-618.

[†] Ibid. vol. i. pp. 204-206. ‡ Ibid. vol. i. p. 111. § Architecture of the Renaissance in England, vol. ii.

^{||} *Ibid.* vol. ii. p. 61.

elevation, by Thorpe (or the Thorpes); the difference in the detail is far more likely to have resulted from the employment of different masons than from a change in the ideas of Thorpe. I do not say that the surveyor never supplied any details, or that in no case did he ever maintain a controlling supervision over the general work, but that as a rule he merely supplied either a plan or plans and elevations, which were handed over to local master-workmen to be worked out. In conclusion, I can only say that I am much obliged to Mr. Spiers and Mr. Papworth for their criticisms and suggestions, and that I should greatly value any fresh evidence, either of drawings or building documents, which will throw light upon the subject.

The Bamian Statues and Caves.

From William Simpson, R.I. [H.A.] —

An illustration of the great statue at Bamian having been given in my Paper on "The Classical "Influence in the Architecture of the Indus Region "and Afghanistan" [p. 93], it has been suggested that it would be of interest to give some further information on these wonderful as well as celebrated statues and caves. The statues, from their colossal size—they are the largest sculptures yet known to exist—possess a special interest in themselves; but at the same time they have a bearing, from the art upon them, on the classical influence which is supposed to have been derived from the Greeks or the Romans, or, as some suppose, by a subsequent communication with the West as late as the Byzantine period. The caves retain traces of construction in their details which show that the Sassanian style extended at one period as far east as Central Asia. These statements will indicate the value that may be attached to these remains in working out the history of architecture and sculpture at an early period in Asia.

When the Afghan Boundary Commission were engaged on their task, a survey party visited Bamian, Haibak, and Balkh—these places luckily coming within their route—and from my connection with the Commission, Major Talbot forwarded to me drawings and descriptive letters from these localities. This material being fuller, and, I believe, more accurate than any that has formerly appeared, it adds considerably to our knowledge of the remains at Bamian.* These documents will be drawn upon in what is here to follow.

Bamian is about 8,500 feet above the sea, in a valley situate close to where the range known as the Hindu Kush joins that of the Koh-i-Baba. It is on the main road from Kabul to Khulm and Turkistan. At the time when Samarkand and

Bokhara were large and important cities this road, being the chief one between Central Asia and Afghanistan, as well as the whole of India, must have been much frequented, and busy with travellers as well as merchandise passing to and fro. This, perhaps, may be one of the reasons to account for the existence of the caves at Bamian, and also at other parts of this old trade route. We now know that there are many groups of caves among the valleys on the same line of traffic leading to the Oxus. Some of these groups are very extensive. At one locality, north of Haibak, there is a place known as *Hazarsam*, or the "Thousand "Caves." * Bamian is about eighty miles from Kabul and 150 from the Oxus. The stream which drains the valley is the Surkháb, or Aksarai, which flows north in the direction of the Oxus. Near to the caves is the ancient fortress of Ghúlghúla, which was said to have been taken and destroyed, in 1222, by Chinghíz Khan. At the northern end of the Bamian defile is an old stronghold, which tradition says was constructed by Zohak, one of the mythic Persian monarchs who reigned after Jemshid.

Ignorance regarding the great idols seems to have been one source of legend concerning them. Dr. Wolff records that one of the figures was called "Shemaya, i.e. 'Shem,' hewn out, in adoration before the rainbow." † That would be the bow set in the cloud after the Flood. Wilford says it is believed that Bamian was the work of Shama, or Shem.‡ Burnes reports that there are "two "figures, a male and a female; the one named "Silsal, the other Shahmama." § That the two principal statues are male and female is an idea that exists up to the present day; and the Mo-hammedans call them "Lat and Manat," believing them to be Allát and Manát, two idols mentioned in chapter liii. of the Koran. The Hindus affirm that the statues and caves were the work of the Panch Pandu ka bhai—the Five Pandu Brothers, to whom they attribute all wonderful remains of the rast.

Bamian is mentioned by some of the Persian writers. In the A'in-i-Akbari it is stated that there are in the district of Bamian 12,000 caves. Moor-

^{*} At the time when these drawings and letters came home, I edited them, and in this form the whole was read as a Paper before the Royal Asiatic Society; the late Sir Henry Yule ["Col. Yule"] added some valuable "Introductory Remarks." See Journal of Roy. Asiatic Soc., vol. xviii. part 3, 1886.-W. S.

^{*} Sam is a contraction for Samaches, or Smaches, the word used in Afghanistan for "caves." Hazar is the Persian for "thousand." It should be understood that this word is generally used by Easterns in a hyperbolicsense, and only means a large number, as in the "Thou-"sand and One Nights," and the "Thousand and One "Columns" at Constantinople. - W. S.

Travels and Adventures of Dr. Wolff, p. 42. Asiatic Researches, vol. iii. p. 134. See also, by the same author, an article "On Mount Caucasus," in vol. vi. p. 456, which contains many legends, principally Hindu, about Bamian. It ought to be remembered that Wilford allowed himself to be imposed upon by his Munshîs, and that he is not considered to be a safe authority.—W. S.

[§] Travels into Bokhara, by Lieut. Alex. Burnes, vol. i. pp. 182-85.

[&]quot;In Zohac Bamian, the castle, a monument of great

croft was perhaps the first European traveller to mention them. Burnes passed the spot on his journey to Bokhara in 1832; he describes the statucs, and gives an illustration of them in the first volume of his travels. The plate was beautifully lithographed by the late Louis Haghe, which makes it look accurate; but

FIG. 1.—THE GREAT STATUE. HEIGHT, 173 FEET.

From sketches by Dr. J. A. Gray, Surgeon to the Amir of Afghanistan.

See drawing of same by Bairay Baksh, p. 104 ante.

han Lal, a Hindu, who was in Burnes's expedition, also wrote an account of his Travels,* and includes a slight account of Bamian. Masson visited the place while in Afghanistan, and gives a short description, as well as a lithographed illustration, which conveys a good idea of the cliff and the caves near the second statue; by comparing it with Colonel Maitland's sketch (p. 534), it will be found to be fairly accurate. Masson assumed that the caves were ancient places of royal sepulture. The late General Sir Vincent Eyre, who was a lieutenant of artillery at the time of the first Afghan War, became one of Muhammad Akbar's prisoners, and was removed with the others, towards the end of their imprisonment, to Bamian. Sir Vincent made sketches of the place, which were lithographed, and, as an old friend of his, he presented me many years ago with impressions of them. He gives some account of the statues and caves, which contain a few interesting details, in a small volume published afterwards. † Lady Sale, with her daughter, Mrs. Sturt, were among the prisoners. She also published a book, in which she describes her visit to the caves. She writes: "At first "seme difficulty was made: "but the General sent about "thirty men to guard us and "our pencils; for several

it is far from being so. Mo-

Frank Dadd, R.I. del.

From The Graphic, 6 Jan. 1801.

[&]quot;antiquity, is in good condition, while the Castle of Bamian is in ruins. In the midst of the mountains are twelve

[&]quot;thousand caves cut out of the rock, and ornamented with "carving and plaster reliefs. These are called *summij*, "and were the winter retreat of the natives. There are

[&]quot;three astonishing idols: one representing a man eighty "ells long; another a woman fifty, and a third of a child

[&]quot;fifteen ells in height. In one of these summijes is a

[&]quot;tomb, . . . held in high veneration." From the A'in-i-

Akbari, vol. ii. p. 169.—W. S.

* Travels in the Panjab, &c., by Mohan Lal, 1846.

[†] The Military Operations at Cabul with a Journal of Imprisonment in Afghanistan. By Lieut. Vincent Eyre, 1843, p. 360.

[‡] Reduce I from a page illustration in *The Graphic*, and published with the Editor's kind permission.

"went intent on sketching. I only copied the "frescoes that were on the walls and ceiling near "the large image; but Mr. Eyre made some very "pretty and correct sketches of Ghoolghoola [the "ancient city], &c.'* These no doubt survived

the events of the war, and are probably still preserved; if they could be found now, their details might be of some value. Sir Vincent Eyre accompanied Lady Sale on one of her visits to the caves, and he reports that "her ladyship, who is well " skilled in numismatics, at the "first glance pronounced the "figures painted on the ceiling " over the images to be identical "with those on many Sassanian "coins." A late author, Dr. J. L. Yavorsky, who accompanied the Russian Mission to Kabul before the last Afghan War, published a narrative of the journey; he describes Bamian, and gives a rude etching of the place.†

Such are the principal authorities from whom in the past we have received accounts of this celebrated locality. Unfortunately, these writers laboured under the disadvantage of knowing little or nothing about Buddhism or Buddhist archæology. The real character of the caves and of the great figures was more or less only a surmise. One or two of the writers suggested that they belonged to the worshippers of Buddha. According to Yule, Moorcroft did so; but then he had the advantage of seeing Buddhism in a practical form in the Tibetan Lamaseries.

Even to those who had not visited the place all doubt was at last dispelled by the publication, in 1853, of Stanislas Julien's life of Hiuen Tsiang.‡ This was the oft-quoted "Chinese pilgrim" who, in A.D. 629, left China on a pilgrimage to the Buddhist shrines of

India; and on his way he passed Bamian, of which he gives, unfortunately, only a few details. He states that there were "une dizaine de Kia-lan "[sangharamas],* où l'on compte environ mille "religieux du petit Véhicule."† He also mentions

"une statue en pierre de Fo "[du Bouddha] qu'on a repré-"senté de bout; elle est haute "de cent cinquante pieds."; This is the large statue, and here it is affirmed to be Buddha. The monks followed the "little "vehicle," he says; this implied one of the well-known divisions among the Buddhists. These statements, it will be easily understood, determined the character of the place. The curious thing in Hiuen Tsiang's account is that he does not even mention the existence of the caves. He alludes to convents that were built, but not a word is said about the numberless caves; and, as he came by way of Balkh, he must have seen them, as they exist along the route in vast numbers. It is not likely that those at Bamian belong to a later date than the statues; yet, unless they did not exist, it is difficult to account for his silence.

Having given these early notices of Bamian, I shall now come to Major Talbot's expedition. The account of it was contained in a letter to myself, which may be given here, omitting those parts which have no reference to Bamian:

Camp, Haibak, 13 Nov. 1885.

My dear Simpson,—Maitland and I have made the long talked-of trip through the Hazara eountry to Bamian, and we are now on our way to Turkistan, having erossed the Kara Kotal to-day. We have had a very fair time of it, but the weather has been bad. . . After seeing Shahri, Ghulghulah, and Zohak, Maitland and I came to the conclusion that these three places, Chahilburj, Barbar, and Gawargin, might well be of the same date. Just below



FIG. 2.—THE SECOND STATUE.

HEIGHT, 120 FEET.

From a drawing by Bairav Baksh, a pupil of the
Jeypore School of Art.

* Journal of the Disasters in Afghanistan, 1841-2, by Lady Sale, p. 423.

† St. Petersburg, 1882.

† Histoire de la Vie de Hiouen-Thsang, par Stanislas Julien. Paris, 1853. In 1857-8 Julien's translations, in 2 vols., were published of the Mémoires sur les Contées Occidentales, par Hiouen-Thsang. This is the complete aecount of the Chinese pilgrim's travels. An English

translation, by the late Professor S. Beal, was published in 1884, entitled Si-Yu-Ki: Buddhist Records of the Western World. This edition contains also the travels of Fa-Hian 400 A.D., and Sung-Yun, 518 A.D. These Filgrims from China, whose works have survived to the present day, are important authorities for the architecture and archaeology of India in the fifth, sixth, and seventh centuries.—W. S.

* Monasteries. † Histoire de la Vie, p. 69, ‡ Ibid.

the fort of Gawargin is a mound which looks like a tope. Near the top a piece of flat wall is exposed, which must, I should say, have been part of the relic chamber, as it appears to have been in the centre of the tope. I spent

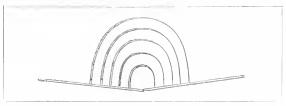


FIG. 3.- PENDENTIVE IN CAVE.

four days at Bamian, but could only give a very small portion of that time in visiting the antiquities. To begin with the figures, there are five.

(1) The big idol, male. The passage up to the top of this figure is broken away, so I measured it with my theodolite, and found it to be 173 feet high. It is sunk in a niche so as to be protected from the weather. The

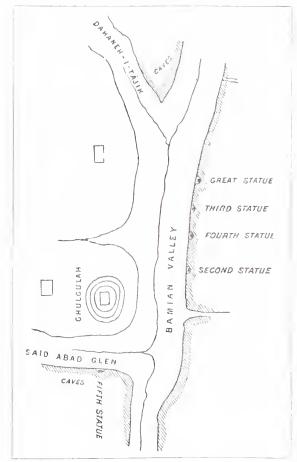


FIG. 4. - SKETCH PLAN OF THE BAMIAN VALLEY.

shape of the niche is something like No. 10, fig. 5. (2) A female figure, 120 feet high, measured by Maitland with a tape. The passage up to the top is still accessible. There are paintings on the roofs of the niches of both these figures. In the case of the latter some have been copied. Both figures have been hewn out of the con-

glomerate rock, but the finishing, drapery, &c., were all added by putting on stucco. The niche of the female figure is irregular, and looks as if it had been left unfinished [fig. 2, p. 529]. (3) A smaller figure, 50 or 60 feet high, estimated. This figure has almost entirely disappeared. (4) A seated figure, about 25 to 30 feet high, in a niche. This figure looks as if it had been cut out and prepared for stucco, but the stucco had never been applied [fig. 6, p. 533]. Shape of niche shown in fig. 5, No. 11. (5) A standing figure, about one mile from the others. Unfortunately, owing to a misunderstanding, we never visited this. No. 4 also has paintings, some of which have been copied. The caves are innumerable; they extend for miles. The best ones are close to the female figure. The doorways are mostly sunk well, 10 or 15 feet, into the rock, with a porch excavated outside. I show drawings of the most remarkable (see fig. 5, opposite).

Most of the caves in good order are now inhabited, so I could not visit them. Of those I did visit, most had domed roofs, the floor being square. The conversion of the square into a circle, preparatory to the springing of the dome, is effected, or rather indicated, in the manner used in the present day with Kucha bricks—that is, by a succession of arches at the corners. Looking at the corner from the centre of the cave it appears as in fig. 3.

... I won't swear to the accuracy of these drawings, as they are done from very hurried sketches, but they are something like. . . .

The caves near the idols are all connected by rambling passages and staircases cut in the rock. Many of the caves have paintings, but we could not see them, as the caves are full of grass, &c., stored for winter.

Zohak is a wonderful fort as regards situation and multiplication of lines of defence. It is fairly well preserved in parts—so much so that the natives say it was not captured but abandoned. Some domed chambers in it are the exact facsimiles of the domed caves above mentioned. I saw no Vihara caves. I inquired about them, and was told that there were some with rooms round a central passage or hall; but as they were occupied I did not see them. They were described as being in one or two cases a square or rectangular room, with a small room opening off from it on three sides, the side of the entrance being the exception. I was also told that there was one cave which had six rooms opening off from itthat is, two from each of the three sides. I think there are very few of these Vihara caves. The different shaped ones I have shown are all mixed up together. It would be impossible to pick out any one lot from their style as having been executed at one particular time; at least, so it seemed to me from a very casual inspection. Many caves have fallen partly; at least, their porches and original doorways have gone. Many others have had their doorways and porches partially bricked up, so that their shape is lost.

I could see no sign of the Sleeping Buddha. I have seen caves more or less all the way to here (Haibak), but nothing new or remarkable; also mediæval ruins.

M. G. TALBOT.

Colonel J. P. Maitland, who formed one of this Survey Expedition, also sent home at the same time a communication, and as it is full of valuable details, including points not touched upon by Major Talbot, it ought to be given.

The Bamian Valley is about half a mile broad, and well cultivated, but there is no town or even central agglomeration of houses, only small villages scattered up and down the valley. To the north is a fairly continuous wall of cliffs averaging about 300 feet in height; to the south is a central plateau separated by the glens called Dahaneh-i-Tájik and Dahaneh-i-Saidabad from the cliffs limiting the

western and eastern part of the valley. On the edge of the central plateau is a small, conical, clayey hill, covered with the ruins of Ghulgulah [fig. 4, p. 530]. This is probably the ancient Bamian. The cliffs are everywhere pierced with numerous caves, but the greatest number is found on the north side of the valley; and here are also the famous idols, the Bút-i-Bamian.* The cliffs round these are literally honeycombed with caves, which are found even in the debris slope at the bottom. They are almost all inhabited by Tajiks, or used as store-rooms, and the entrance is frequently protected by a low mud wall. Facing the cliff the larger of the two idols is to the left, the other to the right. They are about a quarter of a mile apart, and supposed to be male and female, and their heights are respectively 180 and 120 feet. Their names are, as reported by other travellers, Salsál for the male and Sháh Mameh for the female figure. The idols are standing figures, sculptured in very bold relief in deep niches. Between the two large idols are, or rather were, two smaller ones, also in niches. These are equidistant from the large idols and from each other, that is to say, there is a distance of about 150 yards between each of the niches, large and small. One of the smaller niches is about 60 or 70 feet high, and is now empty,

figures have been purposely destroyed, and the legs of the larger one have been partly knocked away, it is said by cannon-shot fired at it by Nadir Shah.* Both idols are draped in garments reaching below the knee. The limbs and contour of the body show through, and the general effect of muslin is excellently imitated in the stucco. The arms of both are bent at the elbow, the forearms and the hands projecting, but the latter are now broken off. The feet have also been battered out of shape. Narrow stairs hewn in the interior of the rock lead up from cave to cave to the heads of the idols, and even to the summit of the hill. The caves, though so numerous, are not large. By far the greater portion of them are chambers 12 to 14 feet square, with domed roofs. I think as a rule several chambers open into each other, and have a wide portico in front by which light is admitted to the doorways. These have generally round arches. There are certainly no pointed arehes anywhere, but some of the openings may be square-headed. The domes are set on the four-sided chambers in a remarkable manner, the square being reduced to an octagon by cornices springing by tiers from the angles, in unmistakable imitation of brickwork. It is a very curious fact that at Kandahar domes are to this day

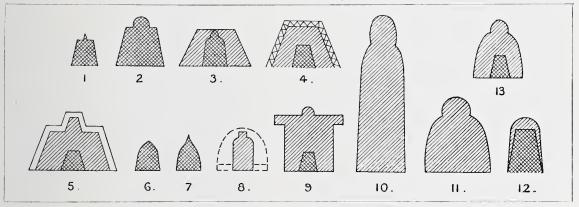


FIG. 5. - SECTIONS OF CAVES, ARCHES, AND NICHES AT BAMIAN.

though a close inspection shows fragments of the idol that once filled it. The second small niche is still oecupied by a sitting figure, which is about 40 feet high, and known as the Bachâ, or child.† The general shape of the niches is the same in all cases, but that of the large female figure is evidently unfinished, and the shoulders are not marked, nor the edges smoothed off. The depth of the niches of the two large idols is about twice the thickness of the figures standing in them: the latter are therefore fairly well protected from the weather, and this accounts for their excellent preservation, nearly all the damage done to them being due to the hand of man. The whole interior of the niches, and particularly the arches over the heads of the idols, have been painted with what appears to be allegorical designs. Although much damaged, in fact oblitcrated where they could be easily got at, enough remains to show the general style of the work, which is exceedingly well executed, and forcibly reminds one of what is generally understood by Byzantine art. The idols themselves are rather clumsy figures, roughly hewn in the rough conglomerate rock, and afterwards thickly overlaid with stucco, in which all the details are executed. The whole arrangement clearly shows that this was not done at a later period, but is part of the original design of the figures. The stucco appears to have been painted, or at least paint was used in some places. The features of the

commonly built on brick-built square chambers in exactly the same fashion. One of the roofs seen was of a different kind, flat, and divided into four by deep wide cuts, crossing each other in the centre. Small cupolas were hewn in the centre of each of the spaces and at the intersection of the The largest cave of all is said to be between the feet of the great idol, but, like several others, it is used for Government stores, and was filled with lucerne, &c. We saw no Vihara caves, but some are said to exist. As above mentioned, the majority of the caves are inhabited. A few years ago it is said they all were. The interiors are plain, without sculptural ornamentation, and now completely smoke-blackened. The whole, however, were plastered with stucco and painted. In one of the upper caves near the head of the female idol some designs are still visible. A short distance east of the female idol, near the foot of the cliff, is a mound, which seems to be the remains of a Buddhist tope. A design on the arch over the female idol can, to a certain extent, be made out with a field-glass. Within a circle is a figure in a long robe, with a spear, apparently slaying something. The two upper corners without the circle are filled with figures of angels or cherubs, waving scarfs at each other. These might well date from the last century. On either side is a border

^{*} Bút is the Persian word for idol.—W. S. † This is Major Talbot's fourth figure.—W. S.

^{*} This destruction by Nadir Shah, or by his Muhammadan troops, may be supposed to have taken place some time in the second quarter of last century.—W. S.

[†] Transactions, Vol. VII., N.S., pp. 262-3, figs. 132, 133.

with male and female busts or half-figures in circles, and all adorned with halos. Outside the central design on the left-hand side is a very curious figure of a human-headed bird. On the east side of the Saidabad glen is an idol, which does not appear to have been noticed by former travellers. It is somewhere up the cliff, which is picroed with numerous caves. The niche is 40 to 60 feet high, and the figure in it has its head covered with a sort of cap, or tiara. The two big idols may possibly have been adorned in a like manner; the top of their heads is now unnaturally flat, suggesting the idea that something has been cut off. It should be mentioned that the caves are very dark; only a small doorway admits light, and without candles, or, rather, good lanterns, nothing can be seen. The stairways are always very narrow and steep. There is almost invariably a shallow recess opposite the doorway. No traces of doors were seen.

Up to the date of this visit of the Survey party only three statues were described; but now we know that there had been in all five. Of the third but little remains; and we have only Colonel Maitland's very slight account of the fifth. The niche, being about 40 or 60 feet in height, shows that the statue must be small in comparison to the first and second statues.

All the accounts agree that the rocky cliffs at Bamian are composed of conglomerate. Both Talbot and Maitland describe the two large statues as "male" and "female," names by which they are known to the natives at the present day; and from this idea has followed that of calling the small sitting figure the "Bachâ," or child. This is, of course, a late Mohammedan nomenclature. From the drawings we can now see that these statues are all figures of Buddha. The Chinese pilgrim mentions only two figures, and from the size he gives them, one 110 or 150 feet, and the other 100 feet, we may assume that he refers to the two large statues, and calls them figures of Sâkya Buddha.

Perhaps the conglomerate rock did not permit of giving minute details in the sculptures, and we may suppose that on this account recourse was had to stucco. In the Jalalabad Valley I found that the caves were plastered, as Major Maitland describes the caves at Bamian; the topes were also covered with plaster, and the mouldings, as well as such details as the leaves of Corinthian capitals, were all worked out in plaster or stucco. This practice seems to have been common in Afghanistan, so it may be accepted that the statues were not exceptional. There are numerous small holes in the large statue; these Sir Vincent Eyre thinks were for the purpose of supporting the plaster, and that this means had probably been employed at some later date when repairs had been intended. The difficulty here would be to know who would have been at the trouble of repairing these "buts," or idols. It is probable that the "Arab invasion" brought the Muhammadans into the locality about the end of the seventh century, and the worshippers of the buts would not be likely to remain

long at Bamian after that. The new-comers would certainly not repair such objects of idolatry; and if the damage done to the great statue is as late as Nadir Shah's time, we may be quite sure that the holes belong to the original construction of the figure. This finds confirmation in what may be seen in the drawings I received; in that of the large statue it is only where the plaster has been knocked away that the holes are seen, and it may be assumed that if the plaster were removed from the upper part of the body, the holes, and perhaps portions of the wood, would be seen there as well. The plaster, with the details of the drapery, is still in a fair state of preservation over a large portion of the second statue, which shows that it must have been a very good kind of material that was used; for, if we reckon from the time of the Chinese pilgrim, it has stood the weather and the sun during a period of more than twelve hundred years.

Hiuen Tsiang, describing the greater statue, says that "its golden hues sparkle on every side, and its "precious ornaments dazzle the eyes by their "brightness." * These words would suggest that the figure had been originally gilt—which is not at all improbable; but the pilgrim was at all times so full of admiration for what he saw in his travels that his language is not free from exaggeration. His account of the second statue is very doubtful as to its accuracy. He says it is "a standing "figure of Sâkya Buddha, made of metallic "stone [teou-shih], in height 100 feet. It has "been cast in different parts and joined together, "and thus placed in a completed form as it "stands." † It seems to me that the author must have written from memory, and fallen into a blunder here. The drapery has been carefully modelled in the plaster, and this would not have been done if such details were to be given in parts that were cast. The explanation might be that the figure was what we understand now by the word "plated," or thickly gilt, which is said to be the case at the present day with the Golden Temple at Amritsur. The sitting Buddha, the "Bacha," might have been formed of cast metallic plates, for there do not appear to be any remains of the stucco or plaster upon it; and as the figure is high up out of reach of iconoclasts, if it had been modelled like the others some remains of the very durable plaster would be still visible. There are very large holes in this figure, which may have been for substantial pieces of wood to support the weight of the metal. If this was the case, it would reduce the pilgrim's blunder to having merely mistaken when he wrote the one figure for the other.‡

^{*} Beal's Transactions, vol. i. p. 51. † Ibid.

[‡] Professor Beal gives a footnote on the word teou-shih, which it may be as well to add here. "This teou-shih is "described by Medhurst [sub voc.] as 'a kind of stone "'resembling metal. The Chinese eall it the finest kind "'of native copper. It is found in the Po-sze country

Major Talbot measured the large statue with the theodolite, and made it 173 feet in height. This is higher than any of the travellers ventured on giving it in their guesses. Sir Vincent Eyre's estimate, which was one of the highest, was 160 feet; that was very close to the truth, but still within the mark. Perhaps the best way of bringing the size home to our minds may be by comparing it to London monuments. The Monument at London Bridge is only 27 feet higher, and the Nelson Column in Trafalgar Square is 3 feet lower.

When Colonel Maitland's sketch of the cliff with the second statue came home, the mounds on the summit caught my eye; from my experi-



FIG. 6. THE FOURTH STATUE. "THE BACHA." From a drawing by Bairay Baksh.

ence of the arrangement of caves and topes in the Jalalabad Valley, I suggested that these were the remains of topes. I am still of this opinion, but as yet no one has inspected or excavated them, so no evidence of certainty can be given. In Maitland's communication I find a slight confirmation in his statement that the staircases which lead up to the top of the statues also lead up to the summit of the hill. This communication would be for pilgrims and visitors to visit the topes. It will be noticed that the largest mound in the picture is exactly over the largest statue.

It may be pointed out that the smaller of the two large statues, like the larger one, bears upon it no appearance of what has been known as the Greek or Classic style of art. The mannered folds, rigid and regular, show that it had been produced by artists from India, or at least by artists that wrought in the style practised in that country. I have quoted the opinion of Lady Sale that the painted decorations were Sassanian in style. As we know now that Sassanian architecture was practised as far east as Central Asia, there is a great probability that the painting and ornament may have been derived from that source. As yet we have but slight material on which to form a judgment on this point. Colonel Maitland identifies the painting with Byzantine art; the nimbus round the heads of the figures might suggest this supposition; but then that attribute is found on Buddhist figures at Sanchi and Amaravati,* and it is common in the Gandhara sculptures. If it could be shown that the nimbus was derived from Byzantium, it would be a very important point to have settled in connection with Buddhist archæology.

The paintings I saw in the Tibetan Lamaseries are, I would suggest, a continuation of the style of those the remains of which are yet visible at Bamian. This brings me to a suggestion as to the origin of the trefoil arch, which is peculiar to the Gandhara and Jalalabad remains. Fergusson suggested that it was derived from the section of the Chaitya cave with its two side-aisles. As a section such as this does not present a form directly visible to the eye, this theory appears to me to be doubtful. Still, I cannot say that it is impossible. My own theory is based on the representations of Buddha or of Buddhist figures. These figures are often represented with an oval form behind, like an aureole surrounding the body, which may possibly have been derived from the lotus-leaf, which is so common in Burmese works. In the paintings at Bamian this oval figure appears, and in some cases it is combined with a nimbus round the head; the circle of the nimbus in these instances intersects the top of the oval in such a manner that the form of the trefoil arch is exactly produced. In two of the Bamian paintings, one can scarcely look at them without saying, "There is the trefoil arch." I have sketches made in Tibetan Lamaseries where a very similar result appears. This arrangement in the case of statues became a kind of reredos, and the lower portion of the nimbus had to be sunk behind the head, and was lost, thus leaving the trefoil arch. The arch thus became a niche for statues, and ultimately established itself as a regular arched form.

^{&#}x27;[Persia], and resembles gold. On the application of fire "it assumes a red colour, and does not turn black. When

[&]quot;'mercury falls to the ground this substance will attract "'it.' But from the statement each part of the figure

[&]quot;was cast separately, it is plain that it was made of metal, "probably brass or bronze. Julien translates it by laiton, brass," p. 51, note 176.—W. S.

^{*} See Tree and Serpent Worship, pl. xli. fig. 1. This figure, from Sanchi, is of course a late one; Fergusson puts it in the tenth century. In pl. lxxxiv. are two figures with the nimbus, from Amaravati; in this case we have a "guess" by Fergusson that they date about the sixth century.—W. S.

In the Gandhara sculptures it is found generally as a niche; and it is in the later Kashmir temples where it is found only as an arch. I merely give this process of development as a guess, for as yet our knowledge is limited.

Hiuen Tsiang mentions the figure of a Sleeping Buddha near to Bamian, which he describes as 1,000 feet in length; this is evidently either an error in the text or a very gross exaggeration on the part of the pilgrim. Sleeping Buddhas, as we know from existing examples, are generally made

large, often colossal; but 1,000 feet would be

writes the name of the dragon Azhdahá, and he was inclined to think that this was the Nirvana Buddha. Mohan Lal and Masson both mention the dragon, and long ago I came to the same conclusion about it that Yule arrived at. All that can be said, is that this is the only object near Bamian that bears any resemblance to the Sleeping Buddha. It need scarcely be pointed out that Ali never was in Afghanistan, and that all the wonderful things told of him in that part of the world are legends of Mohammedan growth.

Little need be said about the caves. The letters

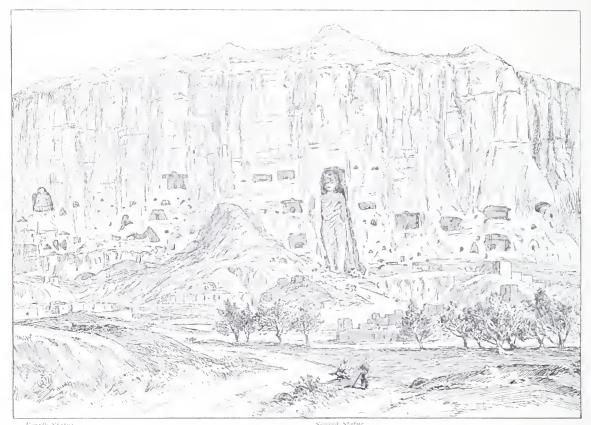


FIG. 7.—THE STATUES AND CAVES OF BAMIAN. Drawn by WILLIAM SIMPSON, R.I., from a sketch by Colonel J. P. Maitland.

gigantic. I had asked Talbot to look out for this figure, and see if any remains of it existed. In his letter he says he could see no sign of it. From previous travellers we learn that there is a large stone figure "bearing a rude resemblance to a "huge lizard, and near the neck of the reptile there "is a red splash, as of blood. This is called the "Azdahar, or dragon, said to have been slain by "Ali or some Muhammadan saint of former days, "and an indentation in the rock close by is held to "be the gigantic footprint of the slayer." Yule

of Major Tulbot and Colonel Maitland give almost the only information we have about them, and that was dealt with in a former Paper of mine.* That Paper included the caves of Haibak, as well as the caves at Bamian. A special interest belongs to these caves from the connection found in them to Sassanian architecture, as they show that the style of structure known under that name was not confined to Mesopotamia, but extended through Persia and as far east as Central Asia.

This officer had been in the first Afghan War, and read the Paper from notes made at the time.—W. S.

^{*} A Paper on "The Mountain Passes leading to the "Valley of Bamian," by Lieut. Gen. E. Kaye, C.B., Proceedings of the Royal Geographical Society, 1879, p. 249.

^{* &}quot;Ôrigin and Mutation in Indian and Eastern Architecture," Transactions, Vol. VII. N.S. p. 225.

Colonel Maitland's sketch of the statues and caves given with this notice is, I believe, very correct in its details, and it conveys a good idea of the high conglomerate cliff, about 300 feet in height, all honeycombed with the caves. He describes passages and staircases behind the caves, which communicate with them, and lead up to the upper part of the statues, and also to the top of

the high cliff.

The latest account of Bamian is from Dr. J. A. Gray, who was there last year (1893). He says that, owing to the rebellion among the Hazaras, the place had been used as the base for 10,000 volunteers who had been organised to put the Hazara rebellion down. A large new barracks had been built, and there were groups of tents and long lines of horses visible in every direction. The caves had been turned into store-houses, and were full of grain and military material of all kinds. Dr. Gray mentions one bit of detail regarding the large statue which is worth repeating, as an indication of size. He saw a man ride up to the figure on horseback, but man and horse were not so high as the toe of the statue.*

Architects and Master-Workmen, III. [p. 511].

From R. Phené Spiers, F.S.A. [F]

The study of Monsieur Palustre's work, La Renaissance en France, consulted in order to ascertain the foreign recognition of the term "architect," has prompted me to prepare a list of some of the more important Renaissance châteaux in France, of which the names of the architects are not known; and to follow it up with a list of the names of the French architects of the period, with their principal works.

Ancy-le-Franc (Yonne). Period Henri II.

Angers. Hôtel de Pincé. Continued, 1533, by Jean de Lespine.

Azay-le-Rideau (Indre-et-Loire), 1516-24.

Beauregard (Loir-et-Cher). Besançon, Palais Granvelle. Blois, Hôtel d'Alluye, 1525. Boucard (Cher), 1545. Bourdeille (Dordogne). Bussy-Rabutin (Côte d'Or), 1535.

Caen, Hôtel d'Ecoville, 1532-38. House of Etienne Duval, 1550.

Chantilly (Oise), 1559.

Châteaubriant (Loire-Inférieure).

Châteaudun (Eure-et-Loir). Early 16th century. Chaumont (Loir-et-Cher). Early 16th century. Chenonceaux (Indre-et-Loire). Château, 1515-24; continued by P. de l'Orme, 1551.

Cons-la-Granville (Meurthe-et-Moselle). Chimney-piece,

Dampierre (Charente-Inférieure).

Dijon. H. Bretenières, 1541. Hôtel de Vogué, 1607–14.

Fontaine-Henri (Calvados). Frasnes (Haute-Saône), 1545.

Joigny (Yonne), 1569.

Kerjean (Finisterre). Landifer (Maine-et-Loire). Lanquais (Dordogne). Éarly 16th century. La Roche du Maine (Vienne). La Rochefoucauld (Charente). La Rochelle. Maison de "Diane de Poitiers," 1559. Lasson (Calvados). ? H. Sohier. Lauzun (Lot-et-Garonne), unfinished, 1570. Le Grand Jardin à Joinville (Haute-Marne). Le Rocher (Mayenne). Louppy (Meuse). Second half of 16th century; German architect. Meillant (Cher). Period Louis XII. Mesnières (Seine-Inférieure), 1540-46. Nantouillet (Seine-et-Marne), 1517-25. Oiron (Deux-Sèvres). Left unfinished in 1519; continued Pibrac (Haute-Garonne), 1540. Puyguilhem (Dordogne). François I^{er}.

Roussillon (Isère). Period Henri II. Saint-Elix (Haute-Garonne).

Saint-Ouen (Mayenne).

Serrant (Maine-et-Loire). Toulouse. Hôtel Bernay, 1530. Hôtel d'Assezat. Usson (Charente-Inférieure).

Uzès (Gard). Valençay (Indre). Vallery (Yonne).

Villelongis (Indre). ? Pierre Nepveu, dit Trinqueau.

The following list of architects of the Renaissance, 1500–1600, is also compiled from Monsieur Palustre's work:

Bachelier (Nicolas). Hôtels Cheverry, Brucelles, Saint-Félix, la-Manmy, Felzins (originally Molinier), Buet, and Laborde (originally Burnet), 1535-70; L'entrée du Capitole, Toulouse, 1545; Porch of the Dalbade, Capitole, Toulouse, 1518.

Bachelier (Dominique), son of above. Maison-de-pierre, Toulouse; Château of Coulanges-les-Royaux, 1540.

Baduel. Château de Bournayal, Château de Graves (Aveyron), (1545).

Baillard or Billard (Charles). Château d'Ecouen, 1512. Baudoin (Jehan). Hôtel-de-Ville, Loches, 1534-43. De Beauce (Jean). Choir enclosure, Chartres, 1511-29. Berthomé (Mathurin). Hôtel-de-Ville, Niort (Deux-Sèvres), 1532-35.

Besnouard (Guillaume), -1511; Hôtel de Beaune-Semblançay, Tours, 1507-18.

Biard (Pierre). Rood screen, Saint-Etienne-du-Mont, Paris. Le Boccador (Dominique de Cortone). Hôtel-de-Ville, Paris. Le Breton (Gilles), 1549-1552. Château de Fontaine bleau, 1527-52; the Cour Ovale, Galerie de François Ier; peristyle, Chapel of St. Saturnin, in the Salle du Bal.

Brosse or de Brosse (Jean). Château de Verneuil (Oise). De Brosse (Salomon), son of above. Continued Château de

Brosse (Jacques de), Château de Monceaux; Façade of SS. Protais and Gervais, Paris. Luxembourg, 1615-20. Bullant (Jean), 1512-1598. Château d'Ecouen, right wing,

1550; Château de Chantilly, 1559; Pont-galerie de Fère-en-Tardenois. Churches near Ecouen; Hôtel de Nesle et Hôtel d'Albret, Paris.

Du Cerceau (Jacques-Androuet), 1516-1592. Addition to church at Montargis, 1565; author of Les plus excellents Bastiments de France, 1576.

Du Cerceau (Baptiste Androuet, also called Jean Baptiste), 590, son of above. Hôtel de Bethune; Hôtel Séguier; Château de Charleval and Pont-Neuf, all in Paris.

Du Cerceau (Jacques II). Pavillon de Flore and adjacent galleries of the Tuileries, 1576-1610.

Chahureau (Jean). Château de Thouars, 1503.

^{*} For most of the references to these sculptures, see note 175 in Beal's Si-yu-ki, vol. i. p. 51.

Chambiges (Martin), father of Pierre Chambiges. Transept, Beauvais; the two portals of Sens Cathedral; Châtean de la Muette, 1541; Portal of Troyes.

-1544. Saint-Germain-en-Laye, Chambiges (Pierre), 1539; the Grotte des Pins and Cour du Cheval Blanc, (1527-31), Fontainebleau; Château de la Muette.

Chambiges (Pierre 11.), son of the above. La Petite Galerie du Louvre (Salon d'Apollon), 1564-72; Ground Floor of the Pavillon Lesdignières.

Charpentier (François). Château de Bonnivet (Vienne); Château de la Roche du Maine (Vienne); Chapelle de Thouars, 1575.

Chériau (Jean). Façade of church, Villeneuve-sur-Yonne (1575); vault of church of Saint-Jean, Joigny (1596).

Daillon (Jacques de), -1525. Château of Le Lude, (Sarthe).

David (Charles), 1650, son-in-law of Nicolas Lemercier, completed St. Eustache.

Delaborde (Mathurin). Apsidal chapels of La Ferté-Bernard (Sarthe), 1535 44.

Delorme (Pierre). South-west wing of Château de Gaillon. Destré (Julien). Bourse de Lille, 1652.

Estourneau (Jacques-Mathieu), 1486-1506-9. Château de la Flèche, 1539.

Fain (Pierre). Architect of principal portion (Gothic-Renaissance) of Château de Gaillon, 1497-1509.

Faulchot (Gérard). Saint-Nicolas, Troyes, 1518.

Fayet (Jean). Halle Eschevinale de Lille.

François (Bastien and Martin). North tower of Cathedral of Tours, 1507; the Fontaine de Beaune, 1510; and the cloister of Saint-Martin, Tours, 1508-19.

François (Gatien and Jean, brothers). Château de Madrid, 1531 - 60.

Gadyer (Pierre). Château de Madrid, 1528-31. Gauvain (Mansuy). Palais Ducal, Nancy, 1501-12.

Gendre (Jean). Belfry of Bressuire (Deux-Sèvres), 1538. Girard (Pierre), dit Castoret. Reconstruction of the façade of the Château de Fontaincbleau in the court of the Cheval Blanc, 1558-61; also the building between the gallery of François Ier and the Galerie d'Ulysse.

Gosequel (G. and P., frères). Entrance gate, St. Thégonnec, and Kergrist-Moëlou.

Gouin (Jérôme), -1527.Notre-Dame des Marais, La Ferté-Bernard, 1502-27.

Grappin (Jean, Robert, and Jean II., three generations). Church of Gisors.

Guenmorau (Guillaume). L'Ossuaire de Quimper, 1514-15. Guillain (Guillaume). Completed Saint-Germain-en-Laye in 1548.

Guitton (René). Château de Peschevcul; Tours du Château de Courtanvaux.

Hamon (Pierre). Cloister "des Célestins," Paris, 1539-49. Hayeneufve (Simon), 1450-1546. Hôtel de Fontville, Le Mans.

Iehannow (Fouquet). Tower of Saint-Mathieu (Morlaix); Tower of church at Bulat, 1530.

Jardes (Robert). Tower of Rennes Cathedral, 1541.

Jovillyon (Antoine). Ch. La Bastie, Loire, 1535-55.

Juste (Antoine). Tomb of Louis XII., Saint-Denis, 1511-32; completed by Jean Juste and Juste de Juste. Juste (Jean). Tomb of Philippe de Montmoreucy, Orion.

1535; tomb of Artus Gouffier, Orion, 1529.

Juste (Jean II.). Tomb of Guy d'Espinay, Champeaux (Illeet-Vilaine), 1553; tomb of Claude Gouffier, Orion, 1539. Lalye (Michel). Succeeded Martin Chambiges in 1532

as architect of the south transept of Beauvais Cathedral. Lemercier (Nicolas), son of above. Continued Saint-Eustache, 1578.

Leroux (Roland). Tomb of Georges d'Amboise, Cathedral of Rouen, 1520-35; Tour de Beurre, Rouen; Palais de Justice, Rouen.

Lescot (Pierre), 1510-73. Louvre, 1546; Fontaine des Innocents, 1550; Hôtel Carnavalet, 1544-46; Jubé of Saint-Germain d'Auxerrois, 1541; Tomb of Henri II. Saint-Denis, 1560-68.

De Lespine (Jean), 1505-76. Tower of Hôtel de Pincé, Angers, 1533; façade of the cathedral, Angers; belfries of La Trinité d'Angers, Beaufort en-Vallée, and Les Rosiers, 1533.

Levau (Louis), 1613-70. Staircase of Tuileries, 1660-65; north and east side of court of old Louvre.

Lissorgues (Guillaume). Château de Graves (Aveyron). Marchand (François), 1606- . Continued choir enclosure, Chartres, 1532-

Masneret (Jean). Château de Peschevcul; Tours du Château de Courtanvaux.

Mercier (Pierre le). Additions to Saint Maclou, Pontoise; Church of Saint-Eustache, Paris, 1532-45.

Mercier (Jacques le), 1585-1654. Old Court, Louvre; Centre Pavilion, west front of Tuileries; Hôtel de Richelien, Sorbonne.

Métezeau (Clément). Hôtel de Ville de la Rochelle, 1516; portal of church at Dreux, 1524.

Métezeau (Thibault), 1533-96.

Salle des Antiques, Louvre.

Nepveu (Picrre), -1538, dit Trinqueau. Château de Chambord, 1524-38.

Odonné (Jean). Clocher de Bressuire (Deux-Sèvres), 1538. Orme (Philibert dc l'), 1515-70. The Tuileries (1564); completion of Salle du Bal, Fontainebleau, 1553; Château de Saint-Maur-les-Fossés, Seine (1546); Châtcau d'Anêt (1552); Tombeau de François Ierà Saint-Denis (1550); author of Le Premier Tome de l'Architecture (1567) and Les Nouvelles Inventions pour bien Bastir (1571); Bridge at Chenonceaux; Choir of Notre-Dame de la Ferté-Milon (Aisne).

Ozanne (Yves). Calvaire de Pleyben, 1650.

Pellevoisin (Guillaume de), 1550. Hôtel l'Allemant and the Hôtel Cujas, Bourges, terminated 1525. Péret (Pierre). Château de Martigné-Briand (Angers).

Perrault (Claude), 1613-1688. East and south façades of old Louvre, 1670.

Petit (Guillaume). Maison du Pont d'Aurore, Beauvais, 1565.

Philippe. Château de Breuil; Château de Luchet, 1535-40. Pilhourt (Thomas). Reconstruction of choir of Rennes Cathedral, 1577.

-1611. Château de Scrrant. Potinière (Jean), Le Prestre (Abel). Maison des Gendarmes, Caen.

Reau (Liénard de la). Notre-Dame, Fontenay-le-Comte, and Fountain, Château de Coulonges-les-Royaux, 1542.

Ribonnier (Charles). Palais de Justice, Dijon; Château du Pailly, near Langres.

Ribonnier (Nicolas). Château de Sully (Saône-et-Loire), 1567; Châtcau du Pailly (Haute-Marne).

Robin (Alexandre). Château de Javarsy, 1514. Rousseau (Etienne). Château of Azay-le-Rideau, 1516-24.

Salvanh (Jean). Château de Gages (Aveyronj; west gallery of Cathedral of Rodez, 1562.

Sambin (Hugues de). pupil of Michel Angelo, 1520-1602. Façade of Saint-Michel, Dijon, central porch, 1562; Palais de Justice de Besançon, 1582-85; screen of Chapel of the Salle-des-Pas-Perdus, Dijon, 1582.

Senault (Guillaume). North-east wing of Château de Gaillon.

Sohier (Hector). Choir and chapels, St. Pierre, Caen, 1515-45; Château de Lasson (Ĉalvados); Château de Chanteloup (Manche).

Souffron (Pierre): Château de Cadillac (Gironde), (1593-1603); Château de Caumont-Savès (Gers).

Taron (Anselme). Le Grabatoire, Le Mans, 1535-42. Tesson (Mathias). Hôtel de Ville d'Arras, 1573.

Texier (Jehan), -1536. La Ferté-Bernard, Notre-Dame des Marais, 1527-31.

Vaast (Jean). Choir of Beauvais, 1524.

Vaast (Jean II.). Continued Beauvais, and built tower and spire, 1581.

Le Vasseur (Loys). Restoration of Souvigny-sur-Même, 1531.

Viart (Charles). Hôtel de Ville, Orleans, 1498; Hôtel de Ville, Beaugency, 1526; gallery of François I^{er}, Blois. Vietz (Robert-Gabriel and Hiérosme). Continued Notre-Dame-des-Marais, La Ferté-Bernard, up to 1596.

An Elizabethan Drawing.

From WYATT PAPWORTH [F.]

In the Thorpes' Volume of Drawings in Sir John Soane's Museum is a drawing entitled " $\frac{1}{2}$ a front or a garden syde for a noble man," and dated 1600. It is one of those which I suspect to be a copy or adaptation by Thorpe from a foreign publication of the period. This has been illustrated by C. J. Richardson in his Observations on the Architecture of England, &c., 4to., 1837; but he has added in a corner, "W. Burleigh," in a smallish ordinary writing! I possess an unfinished tracing of the same front, in the right-hand corner of which appears the bold signature of "W. "Burghley," the small letters being a full quarter of an inch high. As the name does not appear on Thorpe's drawing, it becomes interesting to know the origin of Richardson's and my dissimilar signatures, and the cause of the former having placed it on a plate professing to represent Thorpe's original drawing. I need scarcely add that the elevation does not work in with the plans of Burleigh House, near Stamford, which was then in existence. Is such a drawing or illustration known to any of the readers of the JOURNAL?

The Regeneration of London. III. [pp. 461, 512].

From the late Arthur Cawston [A.]—

In the current number of the Nineteenth Century Mr. Reginald B. Brett writes: "To the "English middle classes, however, with their "ludicrous vanity and pharisaical faith in their "own institutions, . . . Palmerston's lectures " were read and approved with avidity, and while "he ministered to the weakness of his country-"men, he fostered in them a wish to maintain "their existing Constitution intact, as an example " to other nations of a perfect form of government." After reading this description of the narrowmindedness of the middle classes in England fifty years ago, it is a consolation to us English architects, who are often the advisers as well as the servants of the English people, to remember that in those days the large majority of English people were unrepresented, and therefore not pharisaical. The woman, for instance, who in those days used to slave like a beast of burden in our coal mines; the agricultural labourer, who in those days used to starve in his hovel; and the mechanic, who spent his short life in his cellar slum—these and such as these evidently were not pharisaical, nor did they consider the Constitution then existing to be a perfect form of government. Heaven forbid that Londoners who now correspond to such as these, or the middle-class Londoners, or any others who go to make up the majority, are still sufficiently conservative and vain as to believe that our vestry system and our late Metropolitan Board of Works should have been left "intact as " an example to other nations of a perfect form of "government." And yet, if the majority of Londoners are not so Tory, how is it that both they and their political leaders never tire of abusing the loyal Englishmen who compose London's Council? Let us hope this antipathy proceeds from ignorance rather than from vanity. Ignorance in the minds of the majority as to what the Progressives are driving at. One may well believe that is so, for even London Radicals themselves until lately had no very clear idea of what they themselves want.

Mr. Sidney Webb's London Programme, published in 1891 by Messrs. Swan Sonnenschein (1s.), met this deficiency. It was a complete textbook of the London Liberal Programme for that year. Those, however, who wish for a more recent text-book on the same subject should apply to Mr. J. A. B. Bruce, secretary of the "Eighty" Club (2, Middle Temple Lane, E.C.), for the first penny pamphlet which they have issued this month on "The New Politics" (i.e. Municipalism versus Individualism). In this pamphlet, entitled The Reform of London, by Sidney Webb, LL.B., L.C.C., Chairman of the Technical Education Board, &c., all the questions dealt with in the London Programme have been brought up to date.

Architects will not be disposed to quarrel with Mr. Webb when they learn that the subjects dealt with are not yet of purely architectural interest, for we all shun a whited sepulchre, and doubtless agree that before London's visible body is made beautiful, its expanding public life should be purified and intellectually reformed.

The following criticisms of Mr. Webb's work

will probably be read with interest:—

The London elector will find in Mr. Webb's book a lucid summary of the programme which the Progressives have, here a little and there a little, been endeavouring to realise. London politics are complicated and difficult. We do not remember any discussion of them which says so much in so limited a space as Mr. Webb's little handbook, or any which is at once so clear in analysis and so definite in its aim.

It is unnecessary here to treat the London Programme in detail. It will be sufficiently known to our readers that the "advanced" London Liberal is now awake to the futility of a programme consisting of leasehold enfranchisement and the glorified vestries, and that he aims at an immense scheme of municipal socialism, which to a large extent is to be paid for by the owners of property out of the unearned increment. What is to be done, and how, is fully set forth in this little book. The abolition of vestries, substitution of district councils, the municipalisation of the docks, gas, water, markets, hospitals, tramways, police, parks, and poor-law, the erection of municipal houses and lodgings, the reform of the City Companies,

and the improvement of London registration-each and all of these questions find a place in Mr. Webb's London Programme. London, in a word, is to be made from a chaos into a city. The advantages of living in the capital city of the Empire are to be felt by poor as well as rich; the burdens are to be borne by rich as well as poor. To the rich Englishman, wherever his lot may be cast, London is the centre of all that is most brilliant and interesting and attractive. But the condition of London's poor is one of the most depressing and alarming plague-spots in the Empire. The ideal of the London reformer is to reduce this unenviable pre-eminence in misery. "With deeent housing," says Mr. Webb, "with short hours, regular work, and "adequate wages, the worker will at last have been placed "in a position really to take advantage of the opportunities "for eivilisation which life in the capital of the Empire "should imply. London, clothed and in its right mind, "may at length come to take its proper place in the his-"tory of cities, pre-eminent no longer only in size, but "also in all the civilisation rendered possible by the higher "freedom of collective life." The long orgies of unmodified competitive life which London alone, of all England's great towns, has endured during the last fifty years is thus to come to an end—so far as programmes will bring it to an end.

But how far is that? Will London Programmes—and programmes tacked on, too, to the machinery of political wire-pulling—suffice? We know that

Our Fouriers failed Because not poets enough to understand That life develops from within,

We hope that "our Webbs" will not fail for the same reason. "Programmes" and "constitutions," after all, will not carry us very far. Before the least of these reforms can be carried out, London needs to get rid of its hopeless apathy and indifference—an apathy which is at least as common among the poor as it is among the rich. Without London apathy we could never have had London anarehy; and if you remove the one the other will follow. But

It needs a high-souled man To move the masses even to a cleaner styc.

Where among London politicians is "the high-souled" man" who will move the masses, not merely to a cleaner stye, but to the social Utopia foreshadowed in Mr. Webb's London Programme?

A criticism of the same book from a different standpoint may be of interest:—

In view of the coming General Election the book before us is a most opportune publication, constituting as it does a complete text-book of the London Liberal Programme. It is, like everything from Mr. Webb's pen, very readable, lucid, and interesting, and should be studied, not only by all London politicians, but by provincial politicians as well. For, indeed, while professedly treating of London problems alone, many of the reforms advocated apply equally to other towns; while some, such as the question of registration, for justance, are of imperial interest.

It is well, however, that London should have a special programme and a special appeal. Deprived, until quite lately, of any real self-government, even now the self-government that has at last been vouchsafed to her is trammelled and curtailed in every direction. As Mr. Webb well puts it:—

"The London County Council is often assumed to eorrespond roughly (outside the City) with the Town Council
in a provincial borough. But it is a municipal authority
without any of the powers and duties which take up
nine-tenths of the time of a provincial Town Council. It
has nothing to do with paving, cleansing, or lighting the
"streets; waterworks, gasworks, markets, and tramways
are completely outside its province; its police form an

"army as alien as the Irish Constabulary; it is function"less and almost powerless in valuation and assessment;
"it does not collect its own rates; it has no more control
"over the Thames than over the tides; it is neither the
"sanitary nor the burial authority; and it eannot even
"prepare or supervise the registration of the voters who
"alect it

"It is, in fact, simply a cross between the county is justices and the Metropolitan Board of Works; and its chief occupations are a strange hoteh-potch of lunatic asylums and the fire-brigade, main drainage and indus-

" trial schools, bridges and baby-farms."

Further than this, while hampered in its action by all sorts of absurd restrictions on its power, the representative body of London is harassed and harried in the House of Commons-to which, by the way, no appeal should be necessary. . . . People sneer-provincials, who have themselves enjoyed fifty years of self-government, sneer-at the lack of interest that Londoners take in their own affairs. But corporate interest cannot be evoked without the existence of a centre, of some rallying point. How could the interest of local citizenship be evoked by the existence of the vestries or by that vestried vestry, the Metropolitan Board of Works? The thing was impossible. But already, with the change of system, the interest of Londoners in their municipal affairs is being awakened. And if and when they are at last allowed really to govern themselves they intend that their great municipality shall outvie in intelligence, activity, and zeal that of Birmingham, of Manchester, or of any other large town. To turn this prolonged apathy into really acute interest Londoners must be given both freedom and power. They must have not only the rudiments of Municipal Home Rule, but real selfgovernment. That which is still lacking who runs may read in this little volume: London as it might be and ought to be is contrasted with London as it is.

Mr. Sidney Webb's political proclivities are so well known that, it may be, some old-fashioned politicians will be "put off" his book by imagining that it is yet another propagandist manifesto of those "economic bushrangers, the young men of the Fabian Society." This is not so. On this oceasion Mr. Webb writes more as a Radieal than as a Fabian, and, except on one subject-leasehold enfranchisement - every reform that he advocates is, as far as we can see, included, or at least about to be included, in the authorised programme of the Liberal Party; is certainly included in the programme of every Liberal and Radical in London. We do not mean, of course, for a moment to insinuate that Mr. Webb is in any degree false to his Fabian faith; but "collectivism"-the "pro-"motion of the interests of London as a whole rather than "those of individual Londouers"-is, as regards municipal matters, as dear to the heart of the Liberal as to that of

the Fabian.

And what are these essential reforms? London Radieals are not red and revolutionary: they are a moderate and peaceable set of persons. Their principal desire, as far as London is concerned, may be summed up in a word-a free hand to the great central representative body of the Metropolis. Give this body, say they, the largest possible power of dealing with all questions affecting citizenship in London. Give it full power to deal with the water question, the question of lighting, the question of foodsupply-both as to provision and as to supervision. Give it power to deal, by way of ownership, of supervision, and, if necessary, of administration, with the tramway question. Give it power to solve the difficulties of the housing question. Make it responsible for "law and order" in its own area. Give it power to deal with the large group of financial questions classed under the head of local taxation and rating, including the problems of "unearned inere-"ment," betterment," "ground values," and "a muni-"cipal death duty," and, in connection with this question

of equalisation of taxation and relief of burdens, London's heritage in the City Companies should be brought into the common stock.

At the present moment we Metropolitan architects have before us a striking example of the trouble of endeavouring to govern the details of London by a national Parliament. For twenty years past we have been imploring Parliament to consolidate and amend the Metropolitan Building Acts. At length the draft of a Bill to accomplish this was deposited in December last. On the 1st June 1894 only nine of its 192 clauses had been considered by a Committee composed of the members for Sheffield, Oxford, Cheshire, Clapham, and Chelsea, representing one side of the House, and the members for Otley (Yorkshire), Aberdeen, Islington, Reading, and Dumbartonshire, representing the other side of the House. If the same rate of progress continues—that is to say, one and a half clause every month we may expect the Bill to pass this Committee of non-metropolitan members in 128 months, allowing time for holidays but not for dissolutions. The next step will be to present the Bill as amended to the full House of Commons for discussion, where only some eighty members out of 670 are interested in the affairs of the Metropolis. When time can be found for the discussion, the Bill may be read a third time, or it may be remitted again to the provincial Committee; but when at length the House does deign to find sufficient time to discuss and approve these building details, the Bill will be sent to the House of Lords, where it will go through the same—probably even more lengthened—discussion in Committee.

Besides the cost in time and money that this system involves, surely the very principle is faulty. Surely it is not right that we Londoners should submit regulations as to the width of our streets, the height of our buildings, and the details of our fireproof constructions, &c., to members who come from other parts of the kingdom and have the interests of their own localities to attend Surely those who have lived amongst our crowded slums and streets, like our London doctors; those who have built every building that exists in London, like our London architects, district surveyors, and contractors; those who have mastered every conflagration that has occurred during the last fifty years, like the officials of our London Fire Brigade; and those who have managed the most crowded street traffic in the world, like our London police officials surely, I say, a representative Committee of Londoners such as these would be far more competent to advise on the details of a London Streets and Buildings Bill than even the pick of provincials? And especially does this seem to be so when it is remembered that in the one case a Committee of Londoners would hear the merits of each detail discussed by the experts themselves, whilst under the present system the merits of each detail are likely to be obscured from a provincial Committee by the inflated language of Metropolitan barristers.

** The foregoing contribution from Mr. Arthur Cawston was received at the Office of the Institute on the morning of his death.

The London Streets and Buildings Bill,

Since progress was last reported [p. 458] the proceedings before the Select Committee of the House of Commons to which the consideration of this Bill is referred have been as follows: On the 7th ult., at the third sitting of the Committee, the petitioners were required to lodge all their amendments to the Bill with the London Council on or before the 18th ult., for consideration of the Committee on their re-assembling on the 24th ult. Part I. of the Bill, as further amended by the promoters and reprinted, was then issued.

At the fourth sitting the consideration of Part IV., which is the most contentious part of the Bill, and most seriously affects the interests of architecture and the future appearance of London, was deferred for a time, probably to be taken last, or nearly at the end of the Bill; and at this and the succeeding sittings, till the eighth sitting on the 5th inst., the whole time of the Committee was occupied with the consideration of Part I., with the result that nearly every new and objectionable provision was eliminated, and a fairly satisfactory result obtained. On the 6th inst. a reprint of Part I. as amended was issued by the promoters.

At the eleventh sitting, on Tuesday, the 12th inst., Clause 127 was under discussion when the Committee adjourned, and is likely to occupy some little time.

In addition to Part IV., Part IX. (Dangerous and Noxious Businesses) stands over for the present, together with several clauses in other parts of the Bill before clause 127. The questions of the Tribunal of Appeal, By-laws, Interpretation, and other important subjects remain to be considered.

The National Home-Reading Union.

The baleful influence exercised by the legion of worthless publications which cater for the amusement of the youth of our day, and the amount of time squandered over idle competitions of the word-counting and word-missing type, is so incalculable that any attempt to correct the taste for such literature and divert the energy expended into more satisfactory channels should receive the hearty support of all thinking persons. So much good work is being accomplished in this direction by the National Home-Reading Union that a few words calling attention to its general objects and methods may not be out of place here.

In the main this society seeks to develop a taste for recreative and instructive reading; to direct home study, and check the spread of pernicious literature among the young; to select the best books for those with little leisure; and to remedy the waste of energy and lack of purpose among those with time and opportunity for reading. The Council is presided over by the Rev. Dr. Percival, Head-Master of Rugby, and the executive committee by Dr. Hill, Master of Downing College, Cambridge. The Union is divided into four sections: 1. Young People's Section; 2. General Course; 3. Special Courses; 4. Introductory. To render study attractive no fitter means could be devised than those adopted by the society, whose practice is to take the student to the locality which most abundantly illustrates his work. Geology can best be taught on the top of a mountain or in a Derbyshire cave; the beginnings of history acquire an objective reality as one stands within the circle at Stonehenge; an English cathedral is in itself a text-book of architecture; botany is irresistibly interesting when the teacher accompanies his pupils through a wood or over a moor.

The summer assemblies of the Union are open to all, whether members or not, and will be held this year at Buxton, in Derbyshire, during the last week in June, and at Salisbury the first week in July. Mr. Woodall, M.P., will preside over the Buxton meeting, which is to open with an address by Archdencon Farrar; and lectures will be delivered by the Rev. Dr. Hunter, of Glasgow, Professor Scaman, the Rev. R. Hailey, F.R.S., Canon Hicks, Mr. Walter Crane, and others. By permission of the Duke and Duchess of Rutland, a garden-party is to be given at Haddon Hall. The Marquis of Bath will preside at Salisbury, where the art, archaeology, and history of early England, "From Stonehenge to Salisbury Cathedral," will form the subject of study, with lectures by Mr. York Powell, M.A., Mr. J. R. Tanner, M.A., the Dean of Salisbury, Sir Robert Ball, LL.D., F.R.S., Professor Jebb, M.P., Professor Baldwin Brown H.A., General Pitt-Rivers, and others. Full information can be obtained from the Secretary of the Union, Surrey House, Victoria Embankment, London.

The Appointment of District Surveyors.

In connection with the subject under discussion at the Business Meeting of the 11th inst. [p. 542], it will be remembered that in 1889, when the question of the appointment of district surveyors was taken up by the London County Council, the District Surveyors' Association were invited by a Committee of the London Council to give their views on the subject. The Association replied, contending that it was unnecessary and undesirable to make any alterations in the existing system, for the following reasons, which, they stated, were founded mainly on their experience in working the Acts:—

1. That he present [1889] system works well, and that capable officers have been appointed under it, by whom

existing enactments as to buildings have been faithfully carried out.

2. That the present law, as administered by the district surveyors, ensures a certain standard of stability, sauitary arrangement, and safety against fire; and if any greater degree of perfection is desired in these respects, it should be sought rather by improving the rules for the construction of buildings, and possibly by the creation of a Special Court for hearing Building Act eases, so as to obtain greater uniformity in decisions, than by altering the status of the district surveyor.

3. That it is a great advantage for a district surveyor to be a practising architect, as is usually the case under the present system, rather than a salaried officer precluded from private practice. The architect has a more thorough knowledge of the numerous difficulties experienced in earrying out works, and is more competent to deal with them, and to exercise a certain discretion in interpreting the provisions of the Building Acts. His opinion and advice carry more weight, and he is often able to give them with great benefit to the public.

4. That it is important that those who have to pass and approve plans of the largest buildings that are earried out in the metropolis, and are employed by the Council to report upon dangerous structures, should be architects of standing; and this is especially the case with regard to public buildings, over which the district surveyor has more control and responsibility than in other cases.

5. That the payment of district surveyors by fees is preferable to payment by fixed salary, because it ensures a proper relation between the duties performed and the emolument received. If a fixed salary were paid, a disproportion in this respect would in many cases shortly arise, and this would more especially be the case in suburban districts, where at one time great numbers of houses are in progress of ercetion, and at another comparatively little work is being done. Further, payment by fees is an inective to the district surveyor to take care that all works to which the regulations of the Building Acts apply are brought under his notice and supervision.

6. That if payment by salary were adopted a department for collection of fees and prosecution of defaulters would appear to be a necessity. Under the existing system fees are frequently abated or entirely remitted, to the satisfaction of the public, when the works are not of an extensive or important character; but if the fees become a tax due to the funds of the County Council, no such discretion could be exercised in collecting them, and in many eases great cause for discontent on the part of the public would arise.

7. That if district s reverors were procluded from private practice and paid by salary the post would not be so valued by the profession, and, therefore, architects of the same stanling would not become candidates, and the effect would be to lower rather than to elevate the office.

8. That the question of the status of district surveyors, and of the desirability or otherwise of making them officers of the Metropolitan Board of Works, was thoroughly inquired into before the Select Committee of the House of Commons on the proposed Metropolitan Buildings and Management Bill, 1874, when many witnesses were examined, with the result that the Committee recommended: "That with regard to district surveyors their status "should remain the same as under the former Acts of "Parliament."

Under the present [1894] Regulations of the London Council a Candidate for a District Surveyorship has to sign a declaration that he will not "earry on business as an architect, . . . or "indirectly as a partner, or otherwise be interested "in such business."



9, Conduit Street, London, W., 14 June 1894.

MINUTES. XVI.

At the Fifteenth General Meeting (Business) of the Session, held on Monday, 11th June 1894, at 8 p.m., Mr. J. Macvicar Anderson, President, in the chair, with 32 Fellows (including 9 members of the Council), 28 Associates (including 2 members of the Council), the Minutes of the Meeting held 28th May 1894 [p. 515] were taken as read and signed as correct.

The Secretary announced the decease of Arthur Cawston [A.], and, on the motion of Mr. Wm. Woodward [A.], it was

Resolved, that an expression of the sympathy and condolence of the Institute with the family of the late Mr. Cawston in the sad loss they have sustained by his accidental death be entered on the Minutes, and communicated to them.

The receipt of donations to the Library was announced, and an expression of thanks to the several donors was ordered to be entered on the Minutes.

The following members, attending for the first time since their election, were formally admitted, and signed the Registers of Fellows and Associates respectivelynamely, Charles George Hood Kinnear (Edinburgh) and Charles France (Bradford), Fellows; and William Tillott Barlow, Associate.

THE ANNUAL ELECTIONS.

The President read the Report of the Scrutineers appointed by the Annual General Meeting [p. 467] to conduct the election of the Council, as follows:

THE COUNCIL, 1894-95.

To the Chairman of the General Meeting to be held 11th June 1894.

Sir,—We have the honour to report that the voting papers were removed from the envelopes without being unfolded. The envelopes were then handed to the Secretary. On examination of the voting papers it was found that 472 ballot papers for the election of the members of the Council had been received. Of these, two were invalidated entirely, owing to no erasures having been made therein. In addition to the above, votes for the following sections were found to be invalid owing to irregularities:-For members of the Council, 10; for Associate-members of the Council, 8. The remaining votes were then counted, with the following results-namely,

President.—Francis Cranmer Penrose, M.A., F.R.S.

(unopposed).

Hon. Secretary.—William Emerson (unopposed).

Vice-Presidents (4). — James Brooks, Campbell Douglas,

Alexander Graham, Aston Webb (unopposed).

Members of Council (18).—Ernest George, 398; George Aitchison, 395; Arthur Cates, 388; Richard Phené Spiers, 385; Thomas Blashill, 375; John Slater, 370; John Alfred Gotch, 365; John McKean Brydon, 364; John Belcher, 356; Wyatt Papworth, 351; Thomas William Cutler, 333; Edwin Thomas Hall, 332; Benjamin Ingelow, 332; Arthur Edmund Street, 332; Henry Louis Florence, 328; William Douglas Caröe, 311; Edward Augustus Gruning, 311; Lacy William Ridge, 305. The following candidates are not elected-namely, Leonard Stokes, 252; Edward Mitchel Gibbs, 251; Eustace James

Anthony Balfour, 232; William Young, 195; Ralph Selden Wornum, 192; John G. Fineh-Noyes, 130.

Associate-members of Council (2).—Paul Waterhouse, 360; Thomas Miller Rickman, 335. The following candidate is not elected: - Herbert Osborn Cresswell, 190.

Representatives of Allied Societies (9).—Henry Crisp (Bristol Society of Architects), Edward John Dodgshun (Leeds and Yorkshire Architectural Society), Thomas Drew (Royal Institute of the Architects of Ireland), John Goodacre (Leicester and Leicestershire Society of Architects), Henry Hartley (Liverpool Architectural Society), John Holden (Manchester Society of Architects), John Howitt (Nottingham Architectural Society), Joseph Oswald (Northern Architectural Association), William Forrest Salmon (Glasgow Institute of Architects) (unopposed).

Representative of the Architectural Association. -

Edward William Mountford (unopposed).

The above members declared to have been duly elected compose the Council.]

Auditors. - Fellow, Frederick Todd; Associate, William Woodward (unopposed).

We have the honour to be, sir, your obedient servants, OCTAVIUS HANSARD (Chairman), THOMAS HARRIS, FREDK.

Todd, H. Hardwicke Langston, Fred. W. Marks. A vote of thanks to the outgoing President, moved by Mr. Charles Barry [F.], and seconded by Mr. John Slater [F.] [see p. 520], was carried by acclamation; and votes of thanks were also passed, upon the motion of the President, to the outgoing member of the Council, Mr. T. E. Colleutt [F], and, upon the motion of the Hon. Secretary, to the Auditors for the year of office 1893-94, Mr. James Neale [F.] and Mr. F. W. Marks [A.].

The President read the Report of the Scrutineers appointed by the Annual General Meeting [p. 467] to conduct the election of the four Standing Committees as follows :-

To the Chairman of the General Meeting to be held 11th June 1894.

Sir,—We have the honour to report the results of the election of the four Standing Committees.-We are, sir, your obedient servants, George Judge (Chairman), James NEALE, W. A. LONGMORE, ROBT. OVENDEN HARRIS, W. MALPAS-WONNACOTT, HORATIO PORTER.

ART STANDING COMMITTEE.

Fellows (10). - The following candidates are elected: -Ernest George, 395; Alfred Waterhouse, 385; John McKean Brydon, 357; James Brooks, 356; Wm. Douglas Caröe, 354; Edward William Mountford, 348; John Belcher, 342; Frank Thomas Baggallay, 335; Eustace Balfour, 287; and James Neale, 250. The following candidates are not elected:— Walter Talbot Brown, 200; William Young, 193; and William Kidner, 138.

Associates (6). - William Henry Bidlake, 309; Arnold Bidlake Mitchell, 288; George Campbell Sherrin, 236; William Henman, 221; Andrew Noble Prentice, 218; and William H. Romaine-Walker, 211. The following candidates are not elected:—John Begg, 204; Owen Fleming, 203; Charles Henman, 131; Alfred Hart, 90; and George Kenyon, 90.

LITERATURE STANDING COMMITTEE.

Fellows (10).—The following candidates are elected:— Richard Phèné Spiers, 428; Arthur Edmund Street, 418; George Aitchison, 416; Alexander Graham, 415; Benjamin Ingelow, 415; Frank Thomas Baggallay, 402; Edgar P. Loftus Brock, 402; Sydney Smirke, 398; Frederic Chancellor, 390; Caspar Purdon Clarke, 378.

Associates (6).—Paul Waterhouse, 351; Arthur Smyth Flower, 336; Andrew Noble Prentice, 291; Ravenscroft Elsey Smith, 284; Herbert Osborn Cresswell, 267; Leslie Waterhouse, 211. The following candidates are not elected: - Stewart Henbest Capper, 191; John Begg, 175; Robert Langton Cole, 137; Banister Flight Fletcher, 137; Herbert Arnold Satchell, 116.

PRACTICE STANDING COMMITTEE.

Fellows (10).— The following candidates are elected:— George Enoch Grayson, 382; Edwin Thomas Hall, 382; Thomas Batterbury, 371; Samuel Flint Clarkson, 371; Walter Hilton Nash, 369; Joseph Stanislaus Hansom, 363; Lacy William Ridge, 363; Edmund Woodthorpe, 353; Henry Cowell Boyes, 351; Alexander Henry Kersey, 237. The following candidates are not elected: -Franc Sadleir Brereton, 217; and Graham Clifford Awdry, 197.

Associates (6). Thomas Miller Rickman, 373; Frederick Henry A. Hardeastle, 327; Augustus William Tanner, 319; Robert Stark Wilkinson, 284; William H. Atkin Berry, 280; and Henry Thomas Hare, 275. The following candidates are not elected:-Francis T, W. Goldsmith, 264; and R. St. Aubyn Roumieu, 247.

SCIENCE STANDING COMMITTEE.

Fellows (10). The following candidates are elected: Percival Gordon Smith, 155; Lewis Angell, 154; William Charles Street, 153; Herbert Duncan Scarles-Wood, 148; Thomas William Cutler, 141; Henry Tanuer, 140; Arthur Baker, 138; William Warlow Gwyther, 128; Henry Dawson, 110; and Professor Banister Fletcher, 106. The following candidates are not elected: -John Salmon Quilter, 78; Benjamin Tabb rer, 74.

Associates (6). - Henry William Burrows, 423; Maximilian Clarke, 122; Francis Hooper, 414; George Pearson, 405; George Austin Pryce Cuxson, 395; Bernard John

D.cksee, 390.

On the suggestion of the Chairman, a vote of thanks was passed to the Scrutineers for their services, and acknowledged on their behalf by Mr. Octavius Hansard.

The following eandidates for membership were elected by show of hands: -

As Fellows (2).

JOHN REGINALD NAYLOR [.1. (Derby). ABNOLD BIDLAKE MITCHELL 11.,

As Associates (29).

CHARLES SPENCER HAYWOOD (Accrington). WILLIAM ARTHUR LEWIS.

LIONEL SARGANT.

THOMAS HANDY BISHOP.

LEWIS ERIC GEORGE COLLINS.

JOHN FREDERICK FOGERTY, B.E. (Bournemouth). ARTHUR STEDMAN (Towcester

THOMAS EDWARD THICKPENNY, jun. (Bourne.

CHARLES CYRIL ABSOLOM.

GEORGE SMITH HILL (Glasgow).

ARTHUR JOHN PICTOR (Barnstaple).

RALPH WALDO BEDINGFIELD (Leicester) [Pro-

bationer 1890; Stulent 1891.

FREDERICK E. COATES (Sunderland).

LOUIS JACOB.

JAMES LOCHHEAD (Glasgow). ARTHUR HENRY WHARTON GLASSON.

GEORGE PERCY PRATT.

ANSTIS GEORGE BEWES.

LEONARD HARRIS DUTCH (Manchester).

JOSEPH CHARLTON MAXWELL (North Shields).

EDWARD TYLEE [Probationer 1891; Student 1893].

JOHN FAIRWEATHER (Glasgow).

SOLOMON FORD.

ARTHUR HAY LIVINGSTONE MACKINNON (Aber-

As Associates—cont.

JOHN ANDERSON (Aberdeen). GEORGE SUTHERLAND (Elgin, N.B.). ROBERT ANDREW EASDALE (Castleford). JAMES St. JOHN PHILLIPS, B.E. (Belfast) [Pro-

bationer 1889; Student 1892]. HENRY WALTER COUSSENS (Hastings) [Pro-

bationer 1891; Student 1892].

The President having moved, and Mr. John Slater [F.] seconded [see p. 521], it was

RESOLVED, That the Royal Institute of British Architects has learned with much satisfaction that the position of Architecture will be duly recognised in the proposed Teaching University for London by the inclusion among the Senate of the University of a member to be appointed by the Institute, and that the Institute cordially desires to render every assistance in its power to the establishment of such University.

Certain questions, raised Mr. Bernard Dieksee [A.] and Mr. Henry Lovegrove [A.], with respect to the Qualification and Election of Fellows were replied to by the President, and matters connected with them were discussed [Appendix A.

The President, having declared the Meeting closed, in vested the newly-elected President, Francis Cranmer Penrose, M.A., F.R.S., with the badge of office, and the pro-

ceedings terminated at 9.30 p.m.

APPENDIX.

District Surveyors under the Regulations of the London County Council; their admission to Candidature as Fellows.

The Questions put to the Council by Mr. Lovegrove [A.] and Mr. Dicksee .f. were four, namely-

1. Why are there only two names of candidates for Fellowship recommended for admission, when the Council have received some months ago several other nominations?

2. Why have these other nominations not been passed by the Council, seeing that several elections have taken

place since the nominations were sent in?

3. Is it a fact that counsel's opinion has been taken on the question as to whether the candidates whose nominations for Fellowship have not yet been passed by the Counc I can, under the Charter and By-laws, be excluded from going to the ballot? And is it a fact that counsel has expressed the opinion that the said eandidates cannot

4. Is it not a fact that an Associate of the Institute, Laving been elected a district surveyor in 1891 and signed the declaration required of him by the London County Council, did send in his nomination (which was accepted by the Council) and was elect d a Fellow in 1893?
The PRESIDENT, answering the questions eategorically,

said, in reply to the first, that the Council had only passed two applicants for admission to candidature as Fellows. The answer to the second question was that, with the exception of one applicant, the others had not been passed, or, in other words, admitted to candidature as Fellows, because the Council were not satisfied with their qualifieations. With regard to the one applicant referred to, the question arose whether, under the recent regulations of the County Council as to district surveyors, the gentleman in question was eligible for election as a Fellow. Inasmuch as one of the conditions of accepting the position of district surveyor under the new regulations of the County Council preeluded him from practising as an architect, the question was raised whether anyone who was thus prec uded was eligible for election. That question was debated in Council, and considered of sufficient importance to be referred to their legal adviser, who took counsel's opinion

upon it, and the case and opinion were published in the last number of the Journal [pp. 501-2]. With regard to the gentleman to whom he referred, his case had not yet been dealt with on its merits. The opinion of counsel was to the effect that there was nothing to preclude him as a district surveyor from coming forward as a Fellow; and at the first meeting at which those matters were taken, the new Council would consider his case with others. With regard to the third question, he had already answered that in his reply to the previous question. The answer to the fourth question was that the fact was as stated The gentleman in question was Mr. Crow, who applied to be admitted to Fellowship. The Council passed his nomination paper, and he was elected. When the case was dealt with by the Council the question was not raised as to his eligibility or otherwise as a district surveyor. It was true that the new regulations of the County Council had been established at that time and had been published, but it had not, apparently, occurred to anyone that they applied to that particular case. Afterwards the question was raised, and the Council deemed it their duty to deal

with it in the manner described. Mr. HENRY LOVEGROVE [A.] said that it was the custom years ago for a gentleman when he was appointed district surveyor to offer himself within the next few months for a Fellowship. He did not know why that was the custom. The only difference now was that a district surveyor of the County Council had to agree to two things. One was to give his whole time and attention to the work, and to carry on no other business; the other was a very simple one, but was erroneously represented in the public Press. He had to state a time when he could be seen. There was, however, no great hardship in that. The papers reported that the district surveyor must be in attendance at his office from half-past nine or half-past ten till four or five o'clock. That was not the case. The district surveyor had to choose a time when he could be seen at his office, which was quite as convenient for the district surveyor as for the general public. Some members of the Institute thought that the examination for district surveyors was not so comprehensive or wide in its scope as the examination for Associateship. He himself had been several times moderator for both, and he knew that the architect's examination for an Associate was, as it should necessarily be, fairly wide in its scope, and touched on a great many subjects. At the same time, the district surveyors' examination was a rather severe one, because many gentlemen who had passed the Associate's examination came up three or four times for the district surveyors' examination. But it must not be considered that a man walked out of the street to be examined for a district surveyor. Almost all the sixty-eight district surveyors at present holding office, with the exception of three or four, were Associates or Fellows of the Institute. He believed-and he was using now the words of a member of the Council-that if the District Surveyors' Association had worked more with the London County Council in the new regulations, there would have been no new district surveyors elected at all, but their number would have been gradually decreased by giving increased districts to those gentlemen already holding the office. As all knew, the District Surveyors' Association, rightly or wrongly, set up its back, and other gentlemen were brought in and elected. Well, having in view the fact that the majority of the past elected district surveyors were Associates or Fellows of the Institute, he ventured to think that in the future nearly all the gentlemen offering themselves would be those who had passed the Associates' examination. He felt sure that, coming with such a recommendation, a candidate would stand a much better chance with the County Council Committee than if he simply came forward with the one certificate of having passed the District Surveyors' Statutory Examination, because there were-

very able men on that committee, and they thought a great deal of a man's qualifications in every way. They thought that he should know a great deal more than merely the strength of materials and some questions on the Building Acts, which of course were included in the District Surveyors' Examination. It had been said that a district surveyor had very little to do with the practice of an architect. At the present time he (the speaker) had the busiest district in London, though it was not so large in amount of fees as one or two others, and sometimes he had to draw on a board or on a piece of waste-paper the construction of the building. In many cases architects were not employed at all, and the builder got into a most hopeless muddle. Then, again, some of the architects' drawings were not so perfect as they might be, and he knew a case where one of the examiners sent in some very incorrect drawings to the district surveyor. If district surveyors were to be excluded in the future, where would the Institute get its examiners from? They must be Fellows of at least seven years' standing; and if examiners were to be selected from the body of the Institute generally, who, though acquainted with architecture, were unacquainted with the actual working and details of the Building Acts, he should be very sorry indeed for the examinations. That was another reason why they should admit district surveyors as Fellows. [Mr. E. T. HALL [F], rising to order, thought that the question whether the Institute was going to admit district surveyors as Fellows was not before the Meeting; it had not been suggested that they should not be admitted.] The question as to whether a district surveyor was eligible had, he understood, been submitted, after a delay of many months, to the legal advisers of the Institute, and they had taken the opinion of Mr. Cohen, Q.C., on the matter. That learned counsel, he thought, agreed that he (the speaker) was right in every point. He agreed that a district surveyor who had been in practice for seven years could be elected a Fellow. There was, he thought, a clause in one of the By-laws that a Fellow could retire after a certain time and become a Retired Fellow. But it had been decided that, according to the By-laws, a candidate for Fellowship need not be in actual practice, but that he shall have been in practice for seven consecutive years. That being so, it appeared to him that if they put it to the vote, and he was chosen, the Council must, on their own By-laws, admit him as a candidate for Fellowship. If he was objected to by the general body, let him be blackballed. Speaking for himself, as an Associate, he should be very pleased to proceed to the higher degree, having been a member of the Institute for nearly twenty years. It seemed to him that, while it was the intention of the London County Council to do all they could to raise the status and to put honour and dignity upon the office of district surveyor, it would be very unfortunate indeed for the Institute, as the examining body, to say, "We do not "care a bit what the County Council thinks about this: "we shall certainly shut our doors against those who "accept the office of district surveyor in the future." If they were to go carefully round, asking some of their members how much they practised, they would find some of them doing nothing at all—certainly doing less architectural work than one who from day to day examined plans in his capacity of district surveyor. He must not be personal, or he could certainly name Fellows of the Institute who filled appointments in which they had very little designing to do. They were elected Fellows before they took those appointments, and he should say to them, "Keep them by all means: make the Institute as com-"prehensive as possible. Do not limit it simply to those "who have obtained some distinction because of their beautiful drawings." There was one very important thing to which he would call their attention. Some gentlemen had forgotten that public buildings-and Mr. Blashill would bear him out in this-were absolutely at the discretion of the district surveyor. Theatres and music-halls were largely within their control as to construction. True, theatres had to go before the Theatres Committee as to staircases and passages and things of that kind; but the rest of the building was left entirely to the district surveyor. [A Member: No.] For himself, during the last twelve months, he had had to pull up an architect very sharply indeed, and cause a large expenditure because of his faulty construction of a public building. If he had not known anything about the construction of buildings, and had never made plans and drawings himself, it would have been very difficult. As it was it was as easy as possible. He found tault, and eminent experts were consulted, and they decided he was right, and the owners of the building had to go to a great expenditure to meet his demands. He considered there was no law to prevent Mr. Dicksee and other district surveyors being nominated as Fellows.

Mr. BERNARD DICKSEE [A.] said he thought it was very important that the status of a district surveyor should reach as high a point as possible. It was not only necessary to have a district surveyor, but he must certainly have been an architect, even if he be not practising as an architect still. It was desirable, he thought, when a district surveyor was a member of the Institute, that he should be a Fellow, and not merely an Associate. He had the honour of being an Associate of the Institute, and directly he was appointed district surveyor he had himself nominated for Fellowship, because, he thought, being a district surveyor, he ought to hold the higher position. He thought that, practically, the opinion of counsel was entirely in their favour, although, as was generally the case, one thing was said in one part of the opinion and another thing in another part; he thought the third elause hardly agreed with the second. The President had given a careful explanation as to the reason why one of the new district surveyors had been cleeted as a Fellow, and he should hope that, having let one in in that way, they would let all of them in. Mr. Lovegrove had referred to the fact that the members of the examining body were to be Fellows of seven years' standing; and, of course, if in future district surveyors were not to be elected Fellows, the examining body would have to consist entirely of Fellows who were not district surveyors, and it would eertainly be very desirable that there should be at least some members of the examining body who were district surveyors, and consequently aware of the difficulties with which district surveyors had to cope.

Mr. WILLIAM WOODWARD [A.] said that it seemed that Mr. Lovegrove and Mr. Dicksee had entirely lost sight of the question before the meeting. He apprehended that they all desired that a distinction should be drawn between their friends the old district surveyors, and those who became district surveyors under the new rules of the County Council. The election of Fellows of the Institute was contingent upon their being practising architects, and their work of seven years being considered satisfactory in the eyes of the Council. The London County Council said that its new district surveyors should not practise as architects. Then it was utterly impossible that any of the new district surveyors could become Fellows of the Institute. [A member: Why?] Because, if the London County Council laid down that the new district surveyors should not practise as architeets, and the eligibility of a Fellow of the Institute depended upon the approval by the Council of his executed works as an architect, and his being a practising architect, how was it possible that a new district surveyor could come within the rules as to admission to Fellowship?

THE PRESIDENT said that counsel had laid down distinctly that if a man had been in practice for seven years, that was sufficient -that the fact of his becoming a district surveyor afterwards did not disqualify him.

MR. LΔCY W. RIDGE [F.] said it was much to be

regretted that the subject had not come before them in such a form that the opinion of the Institute could be taken upon it. They had the opinion of counsel, which was a thing he did not value very much, because he thought that the By-laws were perfectly clear. The qualification of a Fellow of the Institute was that he should have been seven years in practice as an architect. Therefore, any man who had been seven years in practice as an architect was duly qualified to be put up as a candidate for Fellowship. The question really before them, and to which it was desirable that they should give their minds in order, if possible, to eome to some understanding about it, was this: whether it was well for the Institute to assume to itself as a principle, that the man who came up as a eandidate for Fellowship should be at that time a practising architect. That was the point before the Meeting. To his mind the greatest difficulty the Institute was under at the present moment was the distinction between Fellows and Associates. He wished, when they were revising the By-laws, they had got rid of the whole distinction. It had been a trouble to them ever since, and, so far as he could see, it was likely to remain a trouble for some time to come. The reason given for the distinction years ago was that the higher class of members of the Institute should be practising architects; that other persons engaged in architecture might be admitted to the Associateship, but that the higher body in the Institute should be men bona fide engaged as principals in the practice of architecture. Their views must to a certain extent differ from those who were associated with the praetice of architecture in other capacities. He did not think any of them would urge for a moment that those who were associated with architecture in other capacities had quite the same standing and relationship with regard to architecture and to the Institute as those who were bona fide practising on their own account and on their own responsibility. That was the old reason given for the distinction, and he thought that while the distinction remained it should be kept up. Therefore, as a member of the Council he should not, as at present advised, recommend the passing of a candidate who came holding a district surveyorship under the modern regime, because he did not consider that he stood bona fide in the position of an independent architect. But it was not a point on which he felt very strongly; it was not a point on which he should not be prepared to accept the direction of the general body, if it came to any decision on the subject; and it was with regret, feeling that the matter was one of some importance - particularly to some individuals—that he found that the Meeting was not coming to any decision.

MR. H. HARDWICKE LANGSTON [A.] said that the line had be in attempted to be drawn at the Meeting between the practising architect and the architect that practises. He submitted that if there was a branch-indeed, a very large tree-in which an architect practised more than another, it was in the performance of those responsible duties which were connected with the office of a district surveyor. If he was not an architect in the discharge of those duties. then he was nothing. He did not understand the last speaker in his observations, and in his eudeavour to draw a fine line between the two. He had been a member of the profession for over a quarter of a century, and he submitted to the consideration of those present whether a gentleman who could carry out the high duties and responsibilities of a district surveyor was anything less than an architect. Then as to his being an independent practising architect, what greater position could he occupy than one as a judge-and he was a judge in those matters in which it was necessary to lay down and define and expound the law as contained in the Building Acts relating to the metropolis? The position of a district surveyor was at least a permanent and a solid position, and one which many looked up to with envy, and he maintained that

a man who administered the London Building Acts was an architect; and it was only a fair thing that the Institute should recognise such talent as against the infant London County Council. The Institute ought to show its mettle, and not stultify itself by saying that no district surveyor

should come forward as a Fellow.

Mr. C. FORSTER HAYWARD, F.S.A. [F.], said that if it was the opinion of the Institute that a district surveyor should be a practising architect, the Institute should give an expression of its opinion at the present moment, when, as they were all aware, the Streets and Buildings Bill was before a Parliamentary Committee. One of the questions which had always been considered in previous Building Acts had been the position of the district surveyor. The Institute, he believed, and almost every other association in London connected with building had always pressed upon Parliament the importance of the district surveyor being a practising architect. If the Institute would only impress that point upon the Parliamentary Committee, whether it was gained or not, there would be at least the record that the Institute really thought that the proper person for the office of district surveyor should be a practising architect. He would ask whether the Council could not instruct counsel before the Committee to urge that point very strongly. Even if they should not suceeed mattered comparatively little, for if the County Council should maintain its regulations, that did not affect the point that the Institute should still bring up the matter before the Committee and have it properly fought out. He hoped the Council would think the point over, and see if they could express once more a distinct opinion that a practising architect was the proper man for the post of district surveyor. It did not require, he thought, very much consideration for any architect to feel the excessive importance of the administration of the Building Acts. If a district surveyor was merely an official he would not have the same interest in his art, because he was not allowed to practise, and after a time he would very likely become a mere official, carrying out such regulations as were required, instead of feeling and sympathising with his brother architects. If the district surveyor simply had to say, "Well, that is the rule—that is the regulation. I do not "personally care; I am only an official; I am only acting under the County Council," that position was one very much to be deprecated. He himself had to say much the same thing sometimes; but at the same time he felt very distinctly that he was also under those very same regulations as architect, and that next week he might be called upon to feel the burden of them himself. But if one did not have that feeling as an architect then one's sympathies were half gone, and one's tendency was to become merely an

THE PRESIDENT said he was sure that everyone in the room agreed with him in sympathising most sincerely with Mr. Lovegrove and Mr. Dicksee, because it was always a most difficult thing to make out a case when no case existed, and when the speakers were conscious that that was so. So far as he was aware, there was no intention to preclude district surveyors from becoming Fellows of the Institute. The question did arise as to the eligibility, under the new regulations of the County Council, of a district surveyor for election. As he had already said, the Council thought it right not to grope in the dark, and the best and most reliable course to pursue was to take counsel's opinion on the subject. That opinion was in favour of the eligibility of district surveyors.

PROCEEDINGS OF ALLIED SOCIETIES The Sheffield Society.

President, Mr. E. M. Gibbs [F.]; Vice-President, Mr. Charles Hadfield [F.]; Treasurer, Mr. F. Fowler; Hon. Secretary, Mr. C. J. Innocent [F.]; Members of Council,

Messrs. W. C. Fenton, Thos. J. Floekton [F.], R. W. Fowler, H. W. Lockwood, J. Smith, and T. Winder, M.Inst.C.E. Annual Meeting held the second Tuesday in May.

The Leicester and Leicestershire Society.

President, Mr. John Goodacre [F.]; Treasurer, Mr. W. Jackson [F.]; Hon. Secretary, Mr. S. Perkins Pick [A.]; Members of Council, Messrs. A. H. Paget [F.], Stockdale Harrison [F.], and A. E. Sawday [F.]. Annual Meeting held 19th March 1894.

The Manchester Society.

President, Mr. John Holden [F.]; Vice-Presidents, Messrs. John Ely [F.] and James Murgatroyd [F.]; Hon. Secretary, Mr. Paul Ogden [F.]; Assistant Hon. Secretary, Mr. Edward Hewitt [F.]; Members of Council, Messrs. A. H. Davies-Colley [A.], T. Chadwick [A.], R. Knill Freeman [F.], F. Mee, J. D. Mould [A.], W. A. Royle [F.], Edward Salomons [F.], J. H. Woodhouse [F.], T. Worthington [F.], P. Hesketh [A.], J. S. Hodgson, H. E. Stelfox [A.]. Annual Meeting held 26th April 1894.

The Glasgow Institute.

President, Mr. W. Forrest Salmon [F.]; Secretary, Mr. C. J. MacLean; Treasurer, Mr. Alex. Petrie. Members of Council, Messrs. John A. Campbell, Henry E. Clifford, John Keppie, James M. Monro, Alex. Skirving, A. G. Thomson, John Thomson, T. L. Watson [F.], and J. B. Wilson [A.]. Annual General Meeting held the third Tuesday in October

The Northern Association.

President, Mr. Joseph Oswald [F.]; Vice-Presidents Messrs. J. H. Morton [F.] and J. Cresswell, Assoc.Inst.C.E.; Hon. Treasurer, Mr. J. T. Cackett [F.]; Hon. Secretary, Mr. Arthur B. Plummer [F.]; Hon. Solicitor, Mr. H. C. Harvey; Hon. Librarian, Mr. H. C. Charlewood [A.]. Committee, Messrs. G. T. Brown, H. C. Charlewood [A.], W. Glover, F. W. Rich, J. W. Taylor [F.], C. E. Oliver, and C. S. Errington. Annual Meeting held 11th April 1894.

The Bristol Society.

President, Mr. Henry Crisp [F.]; Vice-Presidents, Messrs W. B. Gingell and T. S. Pope; Council, Messrs. E. W. Barnes [F.], F. B. Bond, W. V. Gough, W. S. Paul [A.], F. W. Wells, and J. Wood [A.]; Hon. Secretary and Treasurer, Mr. W. L. Bernard. Annual Meeting held the third Monday in May.

The Nottingham Society.

President, Mr. John Howitt [F.]; Vice-President, Mr. A. N. Bromley [F.]; Members of Council, Messrs. A. H. Goodall, W. A. Heazell [F.], W. Jolley [F.], H. Walker [F.], and F. B. Lewis [A.]; Hon. Secretary and Treasurer, Mr. A. Ernest Heazell. Annual Meeting held 11th April 1894.

The Royal Institute of Ireland.

President, Mr. Thomas Drew, R.H.A. [F.]; Hon; Secretary and Treasurer, Mr. Albert E. Murray [F.], Council, Messrs. Sandham Symes, J. J. O'Callaghan, J Pawson Carroll [F.], George C. Ashlin, Charles Geoghegan William M. Mitchell, Sir Thomas N. Deane, Messrs. J. L-Robinson, R. C. Millar [F.], J. H. Pentland [F.]. Annual Meeting to be held 16th December 1894.

The Liverpool Society.

President, Mr. Henry Hartley [F]; Vice-Presidents, Messrs. A. Culshaw [F] and H. W. Keef; Hon. Treasurer, Mr. James Dod; Hon. Secretary, Mr. H. L. Beckwith; Librarian, Mr. J. W. Blakey [A.]; Members of Council, Messrs. T. Cook [F], T. Harnett Harrisson [F], H. W. Keef, H. A. Matear [F], T. Mellard Reade [F], T. Myd-

delton Shallcross, J. Woolfall, R. J. Angel [A.], and J. W. Blakey [A.]. Annual Meeting held the first Monday in May.

The Birmingham Association.

President, Mr. William Henman [A.]; Vice-President, Mr. H. H. McConnal [A.]; Hon. Secretary, Mr. C. E. Bateman; Hon. Treasurer, Mr. A. Harrison; Hon. Librarian, Mr. C. Silk; Members of Council, Messrs. H. Beck, E. C. Bewlay, W. H. Bidlake, M.A. [A.], H. Buckland, A. Reading [A.], H. R. Lloyd [A.], F. Barry Peacock, and J. A. Swan. Annual Meeting in June.

The Leeds and Yorkshire Society.

President, Mr. E. J. Dodgshun [F.]; Vice-Presidents, Messrs. W. Watson and W. Carby Hall [A.]; Hon. Treasurer, Mr. W. H. Thorp [F.]; Hon. Librarian, Mr. W. H. Beevers [A.]; Hon. Secretary, Mr. F. W. Bedford [A.]; Members of Council, Messrs. H. B. Buckley, J. H. Greaves, W. A. Hobson, G. F. Danby, J. Ledingham [F., and W. C. Williams [F.]. Annual Meeting held 16th April 1894.

The Devon and Exeter Society.

President, Mr. James Jerman [F.]; Vice-President, Mr. C. E. Ware, M.Inst.C.E.; Hon. Treasurer, Mr. C. J. Tait [A.]; Hon. Secretary, Mr. E. G. Warren; Members of Council, Messrs. F. J. Commin, James Crocker [F.], J. M. Pinn, Arnold Thorne [F.], and, ex officion, E. H. Harbottle [F.]. Annual Meeting held 27th February 1894.

The Dundee Institute.

President, Mr. Robert Keith; Vice-President, Mr. Leslie Ower (F.); Members of Council, Messrs. G. G. Maclaren, James Foggie, Wm. Briggs, and Wm. Nixon; Hon. Secretaries, Messrs. J. J. Henderson and Geo. Jamieson; Hon. Treasurer, Mr. Robert Hunter. The above have been nominated for election at the Annual Meeting to be held on the 28th inst.

The York Society.

President, Mr. William Hepper; Vice-Presidents, Messrs, H. Perkin F. and Alfred Creer, Assoc.M.Inst.C.E.; Past Presidents, Messrs. W. G. Penty F. and A. Pollard; Hon. Treasurer, Mr. Norman R. Yeomans; Librarian, Mr. J. Walker; Committee, Messrs. G. Benson, E. T. Felgate, J. T. Pegg, J. G. Perry, and J. H. Sellers; Hon. Secretary, Mr. A. B. Burleigh. Annual General Meeting held the first week in November.

Cardiff, South Wales, and Monmouthshire Society.

President, Mr. E. Seward $|F_*\rangle$; Hon. Secretary and Treasurer, Mr. J. Coates Carter; Hon. Assistant Secretary, Mr. C. L. Wilson. Annual Meeting held the second Wednesday in January.

ARCHITECTS AND PLUMBERS.

The following letter and the enclosure appended have been received from the Clerk of the Worshipful Company of Plumbers:—

5th June 1894.

Dear Sir,—I am directed to ask your support of the national registration of plumbers, which has been undertaken with the object of improving the efficiency of plumbers' work by promoting in a practical and systematic way the training of the men. particularly in the sanitary branches of their work, and bringing them under an adequate system of responsibility for its efficiency.

The system has been brought into existence and fostered very much through the influence of architects in various parts of the kingdom, and among the earliest who aided in establishing the system in London may be mentioned Mr. F. C. Penrose, Mr. Ewan Christian, the late Mr. E. l'Anson, and the late Mr. George Godwin—prominent London members of the Royal Institute of British Architects.

It is unnecessary to enlarge npon the desirableness of the object, as you will, of course, be fully conversant with the subject, as well as with the difficulties which have to be met with and overcome in earrying out the object practically. I may, however, invite attention to the enclosed communication, which was addressed by a distinguished member of your profession, Mr. Edwin Seward, of Cardiff, to a recent Conference of sanitary authorities and others, representing various towns in Sonth Wales and the West of England. The communication, it will be noticed, embodies a general review of the subject, and the result of Mr. Seward's professional experience in connection with the matter.

Having regard to the obvious importance of the object aimed at in the interests of the health and comfort of the community, it is felt that the architect's profession will be disposed to render the object such assistance as may be practicable. I therefore ask you to give support to the registration system, encouraging the apprentices and young men entering the trade to avail themselves of the technical classes of instruction which may be opened in their district for instruction in the practical branches of the work by skilled workmen, with general instruction in the various subjects connected with plumbers' work and honse drainage in their relation to house sanitation.

I send you herewith a list of the plumbers registered np to 1st March last; but as considerable additions are made from time to time, I shall be glad to send snpplemental lists whenever they may be required.—I am, dear Sir, yours truly, Wm. R. E. Coles, Clerk.

The following is the communication referred to in the above letter, and which, as therein stated, was addressed to the Conference of Sanitary Authorities by Mr. Edwin Seward F., President of the Cardiff, South Wales, and Monmouthshire Architects' Society, recently admitted to alliance with the Royal Institute:

Speaking not only as the President of the Eastern South Wales District Council, but also as an architect, it seems to me that one of the most important subjects introduced at the Conference is that of the separation by architects of plumbers' work from the work of other trades in their specifications and the resulting contracts. I believe such a course to be—as a general rule—a very beneficial one in the one direction to which an architect must look—namely, the ultimate soundness and efficiency of the work.

Some care is, however, required in putting this separation of work into practice, and, in my opinion, it is sufficient for the present to aim at special treatment of the sanitary portion of the plumbers' work only (except in special cases). The laying of lead flats, valleys and gutters, and the exterior work of a building might well be dealt with as part of the general contract; but the water supply, both hot and cold, and certainly the whole of the sanitary fittings are usually best dealt with by making them form a separate plumbers' contract.

One of the foremost difficulties on this head, however, arises from the fact that contractors as a body are not in favour of such a separation. Without entering too deeply into their reasons, it must be evident that some additional difficulty is apt to arise from workmen employed on a separate contract being given the rnn of the contractor's job perhaps earlier than they may be needed, and such workmen are thus somewhat in the way, perhaps, later, and they may thus cause delay and derangement to the procedure of the general contractor. It is true that a small exercise of patience and contrivance on either hand may so obviate these disadvantages as to reduce them to little or nothing; but in these days of labour difficulties small grievances often assume unnecessary proportions. A further reason why the general contractor objects to separating the plumbing is doubtless the most evident, viz. that, as a contractor, he would prefer that the bnying of material and employment of labour, with their resultant profits, were in his own hand. Where the contractor is really able to guarantee the best and most modern of sanitary plumbing; all of these reasons should be very weighty ones, but the experience of most architects will show, I think, that the contractors in that position are a very decided minority. We may, therefore, assume that, on the whole, the separation of sanitary plumbing—with all its possible consequences for good or evil on the public health—is either very desirable or actually essential.

Now, as to the best method of securing this end.

First, it must be taken for granted that the best method is one that will not produce unnecessary friction, and also will not introduce elements of dissatisfaction and uncertainty tending to induce contractors to "cover" themselves by pricing their estimates at an unnecessarily high rate. If, therefore, it is a fairly ascertained fact that the architect is dealing with a contractor who keeps, or will employ, only the best obtainable workmen, then I think the architect may content himself with the one proviso only, that registered plumbers alone shall be employed on the work. On the other hand, if tenders are to be obtained from general contractors by advertisement—as is usually the case—then I think the architect should discuss the plumbing question specially with his clients—whether a committee or a private employer—and obtain their instructions for dealing with the sanitary plumbing from the first as a sub-contract.

He should then treat it accordingly in his specification, and in the bills of quantities, the general contractors being advised from the first that this course is to be followed, and due allowance being made for him in respect

to attendance on plumbers, &c.

In any event, the employment of registered plumbers only should be made a sine qua non. In most recent specifications, since the extension of the registration movement among the plumbing craft has permitted this, I have made it a proviso in specifications; but the actual sepa-

ration cannot so readily be insisted on.

An instance of one course of procedure arose within the past week or two in connection with important extensions which I am about carrying out at the Glamorgan and Monmouthshire Infirmary at Cardiff. In the specifications I found it desirable to limit the clause respecting plumbing to the demand for registered plumbers, and tenders were obtained on this basis. Upon the selection of a tender, and before its acceptance, an interview was arranged between the contractor, the committee, and myself, and certain points were discussed. One of the chief of these was my desire to make a sub-contract of the whole of the sanitary plumbing, and, after discussion, this was fully agreed to by the contractor, whose tender was then accepted. I think this method of discussion and consent has many advantages. Among others, if a general contractor is really prepared for doing first-rate plumbing by registered men, he is placed in the position of declaring that and it avoids any chance of what may, in some cases, prove an injustice by forcing a sub-contractor upon him whether he will or no.

In any case, however, I think architects should aim at using their opportunities for advancing the plumbing craft by endeavouring to employ registered plumbers, both

masters and operatives.

LEGAL.

Architects' Charges,

GODDARD v. GROSVENOR.

This action came before Mr. Justice Charles on the 30th ult. The plaintiff, R. W. K. Goddard, an architect, sued the defendant, C. H. Grosvenor, the hon. secretary of a committee appointed to carry out the proposed enlargement of St. Paul's Church, Clacton-on-Sea, to recover a

sum of £79 odd for plans and designs stated by him to have been prepared at the request of the committee. It was said that though in the first instance the committee only proposed to alter one aisle at a cost of about £1,000, yet it was necessary for the plaintiff, when designing for that alteration, to design a complete building, as it was the intention, if funds were forthcoming, to enlarge the whole church so as to seat 1,000 persons, instead of 600 as originally constructed. To carry out the designs the plaintiff had prepared would, he estimated, cost about £10,000, and the work upon those plans had occupied him in all some nineteen days.—Mr. W. H. Moresby appeared for the plaintiff; and Mr. B. Houghton for the defendant. Expert evidence was called to show that the amount of the claim was well within the charges fixed, it was contended, by the universal custom and usages of the profession.

Mr. Justice Charles observed that, though those charges had been proved over and over again in the Courts to be the customary ones in the profession, yet the Courts had always refused to be bound by them. In every case it was a question for the Judge and the jury as to what sum was a reasonable and fair remuneration for the work done and

services rendered.

The defendants admitted liability for a reasonable amount, and paid £25 into Court as sufficient to satisfy the plaintiff's claim against them.

In the result, judgment was given for the plaintiff for 50 guineas, inclusive of the money paid into Court.

Metropolitan Building Act—Dangerous Structures. EX PARTE HERRING.

This case came before a Divisional Court, consisting of Mr. Justice Cave and Mr. Justice Collins, on the 4th inst,, and was an application on behalf of the owners of certain houses in Wandsworth to set aside ten orders made by Mr. Biron, one of the police magistrates of the metropolis, under the Metropolitan Building Act (18 and 19 Vict., c. 122), for pulling down portions of the brickwork at the backs of the houses as "dangerous," on the ground that such orders can only be made when the building or wall is dangerous to passengers. The Metropolitan Building Act (18 and 19 Vict., c. 122, s. 69) gives power to the local authority (now transferred to the London County Council), on their receiving a complaint that any structure in any building or wall is in a dangerous state, to require their surveyor to make a survey and report, and, if he reports that the structure is dangerous to passengers, then to order it to be shored up for the protection of passengers; and on his making a complaint to a magistrate he may order the structure to be pulled down. There having been such a complaint and survey and report as to the back premises of ten houses in Richmond Road and Charles Street, Wandsworth—the report not stating the structure (a wall which bulged) was dangerous to passengers or passers-by, but showing that it was dangerous to the inmates—it was objected before the magistrate that he could not make the order; but he said he had repeatedly made such orders. and did not think it was essential to show the structure was dangerous to passengers, and he regarded the point as settled, and he made the orders and refused to state a case to raise the question.

Mr. Tindal Atkinson, in support of the application, moved for a rule or order in the nature of a mandamus to the magistrate to state a case, maintaining that the order to pull down would only be made when the report showed danger to passengers or passers-by. Mr. Justice Cave asked why the inmates also should not be protected. Counsel replied that the Act appeared to be directed at danger to passengers, and referred to the enactment regarding "shoring up" the premises. The learned Judges pointed out that subsequent clauses clearly showed that the word "dangerous" included structures dangerous to inmates as well as those dangerous to passengers, and

refused the application to order the magistrate to state a case. In giving judgment, Mr. Justice Cave said that the Court ought not to listen to an application the effect of which would be only to narrow or defeat a very salutary statute. They were glad to find that the magistrate considered the law as settled.

THE COLONY OF NEW SOUTH WALES. Architects' Certificates.

The case of Stanton v. Straub, in the Equity Court of New South Wales, in which Mr. J. Horbury Hunt [F], President of the Institute of Architects, N.S.W., was joined as defendant, in some of its aspects recalls the memorable case of Cutler v. North, heard in the Home Courts some three years since, and illustrates anew the difficulties and vexations incident to the profession. The plaintiffs were the Right Rev. G. H. Stanton, Bishop of Newcastle, N.S.W., and the Very Rev. A. E. Selwyn, Dean. The material facts are fully stated in the following judgment, delivered by Mr. Justice Owen on the 12th March last.

This is an interlocutory application for an injunction to restrain the defendant from proceeding with an action at law against the Building Committee of the Anglican Cathedral at Newcastle. The defendant, John Straub, is the contractor for the building, and he is suing the members of the Building Committee for the sum of ±3,762, which is the amount certified by Mr. Horbury Hunt, the architect of the building, as the amount at present due to the contractor. The case which is made in the pleadings by the plaintiff in this Equity suit is that the defendant, Mr. Horbury Hunt, is unfit to exercise the duties of architeet in an impartial and unbiassed manner, and that he has been guilty practically of fraud in charging a much larger amount to the Building Committee than the amount actually due to Straub, and it is alleged in the pleadings that his professional vanity has been hurt by not having the honour and distinction of finishing such a building, and that out of anger and spite he has increased the certificate by a very large amount, and that, therefore, the Equity Court ought to interfere to restrain the defendant Straub from suing on that certificate, and that the Equity Court itself should take an account and say how much is due for the work done. The charge of bias in the Equity pleadings, if a good defence at all, appears to me to be a ground which the defendants in the action at law could plead as against the certificate. I can see no reason why the misconduct and incapacity because that is what it really amounts to of the person selected as the supreme arbitrator in all matters connected with this contract should not be pleaded just as much in the Court of Common Law as in the Court of Equity. But, further than that, the plaintiffs distinctly plead collusion between the architect and the contractor, because, setting out what the plaintiffs allege to be the misconduct of Mr. Horbury Hunt, the plea alleges that the defendant is well aware that such certificate has not been bona fide given as aforesaid. It alleges that Straub, in trying to enforce the certificate in the Court of Law, where he knew such certificate would be conclusive, was aware all the time that such certificate was given mala fide, and that there had been collusion between the architect and contractor. That unquestionably is a good plea at law, and that is the very plea which the defendant has set up in the action at law. That being so, there is no reason for the plaintiffs coming into this Court to stay the proceedings at law. There is no doubt that this Court was open to either party at an early stage to have sought its jurisdiction. The Court could have dealt with the certificate, and, if it had been set aside, could have gone into the merits of the case, and said how much was actually due. . . . But in this case there has been a distinct charge of fraud, not only against the contractor, but against Mr. Horbury Hunt, and it appears to me that I ought not to deal with this case merely on a question of pleading where a charge

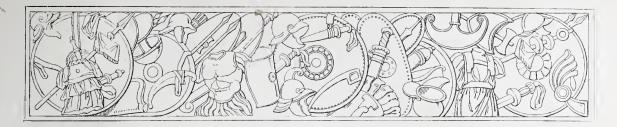
of that kind has been made, but that I ought to express my opinion of the merits as disclosed in the affidavits. Whatever may be said of the argument that Mr. Hunt acted improperly under feelings of irritation and anger, the question for the Court is, What are the facts which are proved? Mr. Hunt has produced affidavits of eleven architects and contractors, all of them men of high standing and experience in this community-Mr. Mansfield, Mr. Rowe, Mr. Wardell, and other architects, and a great number of contractors—and every one of them says the certificate is absolutely fair. No doubt some of them have made their calculations only from seeing the contract itself and the photographs, and working the thing out, not on the spot; but others have visited the spot itself and made their investigations on the spot, and the whole of these eleven witnesses swear that the certificate given by Mr. Hunt for the work is perfectly fair and perfectly justified. Against that there is only the evidence of one contractor in Newcastle, who, I have no doubt, has given his evidence perfectly fairly and bona fide; but really it appears to me to be a question of judgment whether one or another estimate is fair. No doubt it is quite possible for one man to make an estimate very much lower than another, both acting perfectly bona fide; but when it comes to be a question of fraud, and whether Mr. Hunt has fraudulently made out this certificate, or that he has given it from a spirit of bias or hostility to the Committee, then it appears to me most important to ascertain what are the views of other thoroughly competent men as to the certificate which he has given, and they all say his certificate is perfectly fair and just. It must be borne in mind that this is not the final certificate. If it was, the case might be different, because in the case of a final certificate the whole matter has to be gone into, and all the items adjusted, so that the parties may know the total amount to be paid for the building; but this certificate is a mere progress certificate, and, according to all the evidence, and the law as laid down by the Privy Council, these progress certificates are nothing more than advance notes, and are subject to adjustment from time to time. Such a certificate may be adjusted in the next progress certificate, or it may not be adjusted until the final certificate. In this case the certificate given by Mr. Hunt is merely a progress certificate, and does not purport to be absolutely correct. It is merely an advance note. Under these circumstances it appears to me that the whole ground is cut from under the plaintiffs' feet. If the certificate is a bona fide and fair and just estimate of the amount of work then done, what becomes of the theory that Mr. Hunt may have been biassed? The whole thing falls to the ground. It is not necessary for me to go into the question as to the amount of ill-feeling existing between Mr. Hunt and members of the Committee. There is no doubt a good deal of ill-feeling on both sides, and the only question is whether that ill-feeling influenced Mr. Hunt to act improperly in granting the certificate. It is clear, to my mind, that there is no ground whatever for saying so.

The application was dismissed with costs.

The case of Straub v. Stanton, to restrain

The case of Straub v. Stanton, to restrain further proceedings in which the injunction prayed for in the above action was sought, came up for judgment in the Supreme Court of the Colony on the 14th March, when it was stated that the matter had been settled, but a verdict would be taken for £3,930, representing the amount of the architect's certificate, with interest added thereto. Verdict was accordingly given for the amount claimed, with costs.

It is satisfactory to add that a few days after the settlement of the above cases, Archdeaeon White and two other members of the Cathedral Building Committee ealled on Mr. J. Horbury Hunt for the purpose of a friendly conference, to put matters on a business-like basis, and allow the work to be resumed. As a result, all difficulties have been disposed of, and the Building Committee have decided to act in conjunction with him as the architect.



PRESENTATION OF THE ROYAL GOLD MEDAL

To Sir Frederic Leighton, Bart., P.R.A. [H.A.], Monday, 25th June 1894.

ADDRESS BY THE PRESIDENT, FRANCIS C. PENROSE, M.A., F.R.S., F.R.A.S.,

KNIGHT OF THE ORDER OF THE SAVIOUR IN GREECE.

COLLEAGUES AND GENTLEMEN,-

HIS evening we have before us a grateful task, and one in which I feel it to be a high privilege to take a share, in presenting, in the name of our Most Gracious Patron, Her Majesty the Queen, the Gold Medal to one who has greatly honoured us by accepting it at our recommendation. The distinguished President of the Royal Academy is well known to all of us here by his works and by his renown, to many by his friendship, and his genial courtesy to all who have had any intercourse with him.

As it is possible that someone who has not sufficiently followed the considerations which have guided the Institute in this award might ask, Why should a medal intended for the recognition of architectural merit be awarded to a painter? I propose addressing myself briefly to that point by-and-by; but, in the first place, I will endeavour to trace shortly some of the steps by which our distinguished friend has attained the highest eminence in our British world of Art.

Sir Frederic Leighton was born at Scarborough, and his natural inclination towards the graphic arts early declared itself. His father, a physician, though he had other views for his son—intending, it is said, to give him a University education, with a view to his ultimately being called to the Bar—nevertheless encouraged him to make himself acquainted with anatomy, and gave him every facility for the study of art in order that he might be equipped for the profession should he eventually follow it. We early find him, then, studying at Rome; and, if I may be allowed a moment's digression, this leads me to reflect that I must occasionally have fallen in with him during the winter and spring months at the Artists' excursion called the Cervara, or on the Pincio, or when it was the ambition of the British art students who were there to fall in with John Gibson at his early coffee at the Lepre.

Dr. Leighton became so far a convert to his son's wishes as to consent that the latter's drawings should be submitted to the famous American, Hiram Power—a man not less remarkable for his great skill as a sculptor and his knowledge of art, than for his noble physique, his courteous manners, and his sterling character—and if he decided that there was the true artist's ring about these works, his son should no longer be opposed in following the bent of his inclination. We may, I think, appreciate the pleasure which the good American had in assuring the father that there could be no doubt whatever on the subject. The pithy way in which old Hiram Power gave his verdict is worth recording: "Then you think," said Dr. Leighton, "I ought to let my son be an artist?" to which there came the answer: "You have no choice, sir; Nature has done that already." After this, the youthful painter studied in various European centres, and made himself proficient,

Third Series. Vol. I. No. 16.

not only in the art of the countries in which he sojourned, but also in the languages, as those who have heard him discoursing with foreigners can testify. At Brussels, when eighteen years of age, he produced his first finished picture, "Cimabue finding Giotto in the "Fields." He shortly afterwards showed his sympathy with our profession by a painting of which the subject was the death of Brunellesco. After some residence in Paris, working at the Louvre, he studied at Frankfort under the painter Steinle, to whom he submitted the design of his magnificent picture "The Triumph of Cimabue," which he carried out at Rome. I have heard that during this period Thackeray fell in with him, and prophesied that, although as yet altogether unknown in England, he would become President of the Royal Academy.

The great picture above referred to was sent to England for the Exhibition of 1855, then held in the rooms of the present National Gallery. The seniors here present can remember, and many of the juniors who saw the picture when it was exhibited again at Manchester can well understand, the fervour which was created on all sides by the unexpected appearance of such a work by a man hitherto unknown. The picture was immediately bought by the Queen. But, for the present renouncing what might have seemed a lucrative opportunity for accepting work in London, he returned to his studies, and resided for some years on the Continent, chiefly in Paris, in communication with some of the most distinguished painters of that capital.

Soon after his return to England, he painted the fine fresco representing "The Five Foolish "Virgins," in the church at Lyndhurst, in the New Forest; and in the same material, but more recently, two large fresco paintings at the South Kensington Museum, representing the Industrial Arts applied to Peace and War.

It is, however, impossible, in the space here available, to enumerate anything like a list oven of his principal paintings. "The Power of Music" was exhibited in 1856. The great classical subject of "Hercules Wrestling with Death for the Body of Alcestis" must be specially mentioned, for it called forth the praise of his friend Browning in the poem called "Balaustion's Adventure":—

I know, too, a great Kaunian painter, strong As Herakles, though rosy with a robe Of grace that softens down the sinewy strength, And he has made a picture of it all.

More lately we have seen the fine, pathetic picture of Andromache, dejectam conjuge tanto, in her captivity. In 1881 the merited compliment was paid him in the request from Italy that he should contribute his portrait to the gallery of distinguished painters in the Uffizi at Florence.*

Thus far we have followed his career as a painter; but, not content with the triumphs of his brush, he has invaded the sculptor's domain. In 1877 we admired the fine group of the "Athlete struggling with a Python," and in 1886 his bronze statue of "The Sluggard." I shall presently have to speak of his potential claim to graduate in architecture.

I necessarily omit much. Of him it can without exaggeration be said, Nihil tetigit quod non ornavit. Up to 1883 he had for many years, as their Colonel, led the Artists' Corps of Volunteers. His eloquence in presiding at the Royal Academy Dinners is the theme of all.

Étranger of the Institut (Académie des Beaux-Arts) and a Commander of the Légion d'Honneur. In Germany the rare distinction of Frederick the Great's "Ordre pour le "Mérite" has been conferred on him—an honour accorded to very few.

^{*} The dates of the principal steps of Sir Frederic Leighton's advancement are these:—Associate of the Royal Academy, 1864; Royal Academician, 1869; President, 1878. In the last-named year he was knighted, and in 1886 created a baronet. In France he is an Associé

The social side of his character is equally admirable, and many are those who can bear witness to generous actions on his part, both in purse and kind sympathy.

I do not suppose there is anyone in this room who questions that the Institute has been thoroughly right in making the award of this medal which we have the happiness of bringing to its consummation to-night; but, as I said before, in case there should somewhere be a doubter, I will make a few remarks on that head. Had Sir Frederic Leighton no other claims upon us than the noble architectonic works that have often been products of his hand, works, many of them in oil and fresco, executed for the embellishment of public and private buildings, the Institute would have a perfectly good answer to give. The late Prince Consort thus defined the ruling principle—namely, that the appropriation of the Gold Medal should be left an open question to be raised according to circumstances in each year, and to be applied as the Council might periodically feel to be the best for the general interests of the profession. The Institute would therefore be justified in awarding the medal to an artist of high distinction either as a painter or sculptor. But Sir Frederic Leighton is very much more than a painter. He is the only President of the Royal Academy, from the time of its first foundation, of whom it can with certainty be said that he has evinced a thorough knowledge of all the great Arts, and who is practically great as a painter, a sculptor, an orator, and a writer.

The greatest master in Art since the days of Pericles is reported to have said, "I know "but of one Art." There have been but few who could justly adopt those words, but one of those few is Sir Frederic Leighton. Similar to its tripartite analogy in Nature, where length, breadth, and thickness form one space, so architecture, sculpture, and painting are one in Art; the practice is different, but the principles, whenever excellence is touched, are found to be the same in each branch. You know Sir Frederic Leighton's high achievement in sculpture. In architecture there is the clearest evidence of what I have called his potential merit had he had occasion to practise in our special branch.

In biennial Addresses to the Students of the Royal Academy, particularly in the years 1889, 1891, and 1893, we find criticism of the highest value clothed in beautiful language on the Spanish, French, and German Schools of Mediæval Architecture. Not mere sketches and generalisations, but dealing with the subject in an exhaustive manner. Our ex-President has most happily and justly eulogised these addresses, saying in his discourse to students at the beginning of this year that they demonstrate in regard to architecture that their writer "possesses an intelligent and a critical grasp of the subject second to no modern author. To "few indeed is it given to combine with wide historical research and keen critical acumen the "indescribable charm of composing poetry in prose. Let me commend to your thoughtful "attention the study of these singularly learned and graceful discourses."

That an artist of such refinement would also be in sympathy with the spirit of classical architecture will not be doubted. I had myself frequent opportunities of bearing witness to his appreciation of the elements of beauty in the works of the Greeks at meetings of the Publication Committee of the Society of Dilettanti; but I wish particularly to call your attention to the masterly summaries of the characteristics of Mediæval architecture as practised by the leading races of Continental Europe in the Academy lectures before referred to. The whole series is full of practical teaching in clear and incisive language; but, as in this address limitation is necessary, I will confine myself almost entirely to what is said on the evolution of Gothic architecture from its source at Saint-Denis. After a short discussion of the earlier manner of vaulting from the Roman type, in which stability for the waggon vault was sought in the resistance of solid masses of brick and concrete work, we read:—

"The substitution of the principle of a balance of active forces to this principle of inert

"resistance is probably the greatest revolution ever introduced in the science of building; "we have here the generative principle of Gothic architecture, its essence and its life. How "this revolution was brought about I can of course only indicate to you in summary outline. "Let us first note in passing that the presence of a pointed arch, except as a structural form, "does not constitute Gothic architecture. Isolated radiating pointed arches have been built "in ages and countries in which the Gothic style was not dreamt of; a building might be "Gothic in structure and principle without showing a pointed opening anywhere; it is through "the roof, not through the window, that the formative Gothic idea entered."

Then, after describing various expedients for securing stability, including the important step taken at Vezelay, where intersecting vaults, but without ribs, were substituted for the continuous waggon-head—an advance, but not yet satisfactory—we read: "A few years later, "in the early middle of the twelfth century, a Benedictine monk, feeble of frame, but of a lofty "spirit, Suger, the great Abbot of Saint-Denis—who has on sculptors, by the bye, this special "claim, that he boldly withstood the bitter denunciations launched by St. Bernard against the "sculptural decoration of churches—began the erection of a church in which the tentative "gropings, at which I have just hinted, gave place to the systematic and logical application "of a new and fruitful conception—the idea of stability based on the balance of active forces, "expressed in a self-sustaining combination of upright supports and vaulting ribs, with "detached buttresses bringing their action to bear exactly on the points at which the thrust of "the vaults is gathered up."

The address concludes: "Is there any lesson that we may draw from this hurried "survey of artistic evolution among the French? I have dwelt with emphasis on the genius "of their Mediaval builders; do I advocate—the young architects for whom I have mainly "spoken to night may ask—do I advocate the adoption of Gothic forms for the purposes of "our own lives? I have spoken to little effect if my answer can be doubtful. Artistic "forms are the vesture of ideas and the expression of mental conditions; the ideas and "mental conditions of our day are widely removed from those of the Middle Ages; the modern "mind cannot with fitness put on the garb which was moulded on the mind of a day long past. "But if we may not fitly adopt those forms, we cannot too reverently note the spirit which "presided over their development, for a like spirit brought to bear on other material and "under other conditions may yet bear new and noble fruit. And the characteristics of that "spirit are—a masculine independence, a tenacions grasp of central principles, a fearless "sincerity in expression, a scorn of shams, and trust on truth."

In Sir Frederic's address for last year we find admirable criticisms on the German Mediaval architecture; praise where due is given to the German Romanesque, and afterwards the reflection, which appears to me perfectly just, that the Germans as a race were never in unison with Ogival architecture; and in respect to their great achievement—Cologne Cathedral—though not withholding praise, he observes, as I think most truly: "We feel that we are in "the presence and under the spell of a powerful will, grasping serenely and solving with "unfailing and intellectual resource a scientific problem; we bow accordingly before a "triumph of skill and volition; we are not, as it seems to me, thrilled by the kindling touch of "genius."

To the pictorial works by Sir Frederic Leighton in connection with architecture already named may be added paintings for the ceilings of a house at New York, of which our Gold Medallist, Mr. Richard M. Hunt, was architect, as well as several of the same character in London. But I must specially mention one work combining architecture in the solid with which he has had much to do. I allude to the removal of Alfred Stevens's monument from the south chapel in St. Paul's to the nave for which it was originally designed, which was

done entirely under his inspiration and in no small degree at his expense. I feel sure that there can be no need for me to dilate further on what seems to require no argument in justification of the action of our ex-President and of the Council, and of the Institute which has ratified their action in awarding this medal, especially when, to the great advantage of the Institute, Sir Frederic Leighton's acceptance of it sheds lustre on the roll of Gold Medallists, so well begun with the loved and honoured name of Professor Cockerell; and it must be obvious to all of us that the whole profession gains from the fact that the chief representative of Art in its three branches in this country thereby shows how much he is in sympathy with Architecture.

Francis C. Penrose.

SIR FREDERIC LEIGHTON'S REPLY.

Mr. President,-

ELLOWS and Associates of the Royal Institute of British Architects, how deep, how warm, is my sense of the great honour I have just received at your hands—an honour which you have said, Sir, is conferred, for the first time in the annals of the Institute, on a painter—I need hardly tell you. Neither need I say how much of grace has been added to this distinction by the terms in which my old and honoured friend, your eminent President, has sought, with generous indulgence, to justify before his hearers the exceptional character of this award. I am touched, Sir, by those words, and by the cordial reception with which they have been met; but none the less am I embarrassed in the consciousness of the exiguity, on the most favourable estimate, of my services to the ancient and noble craft to the furtherance of which this institution ministers.

So much may perhaps be said, that enthusiasm and sympathy are contagious, and that he renders in his small degree some service to Art who contributes by word, if not by deed, to the spreading of that atmosphere of favouring interest in which every creative effort best thrives and prospers. And, assuredly, in reverent enthusiasm for the Art which has clothed in stone and marble so much of sublime inspiration, and has invested Use which is its moving cause, with so much of Beauty which is its eloquence, none sits among you to whom I yield vantage or precedence. But since a painter—and, if I may, without immodesty, assume for the nonce that other honourable title, a sculptor—has been made the recipient of your highest favour, you will perhaps bear with me whilst, in a few words, I profess my faith on the relationship of the Arts one to another—a subject on which very divergent opinions are often expressed, and in regard to which it seems to me a certain confusion of thought sometimes obtains.

This, indeed, none deny: that the co-operation of the Arts has given to the world some of its choicest masterpieces; that though the House of the Virgin Goddess at Athens would have been indeed a supreme work in its balanced strength and subtlety without the added majesty of the Phidian sculptures, nevertheless the collaboration of Phidias and Ictinus has enhanced infinitely the dignity of that perfect edifice; or that the purple radiance of the lights of Chartres Cathedral, and the sombre gleam of the mosaics of St. Mark's of Venice, have greatly heightened the poetry and appeal of those two famous structures. Neither is it open to challenge, that great advantage must accrue to the followers of each of these arts from a knowledge of and sympathetic insight into the nature of the other two, and by a living perception of the fundamental affinities which unite them. On the other hand, the fruitfulness of solidarity (if I may use an un-English word) between them has led, I think, to no little misapprehension as to the true character of their relationship. In sight of the magnificent results of their union; in sight of the fact that the graphic arts have so often furnished the crowning adornment of the builder's work, adorning it as the flower adorns the

tree; in sight also of the high signification of architecture, a significance which I fear is not always sufficiently remembered, as expressing in its works the temper and spirit of nations and of epochs—in sight of these things, I say, some have been led, or misled, into assuming that the only fit and proper function for the graphic arts is to enhance and adorn the works of the architect; that architecture, therefore, is in a manner the generating master-art to which the others are but ancillary and subordinate. I am aware that I am treading delicate ground here; but even in your midst I must affirm this assumption, and its corollary the subordination of painting and sculpture, to be a shortsighted fallacy, revealing but a scant apprehension of the character of that house of many mansions—the House of Art. Sir, even in the face of Architecture arts of which the theme is Man and the myriad-mooded aspects of the outer world stand erect and unabashed; even among the children of Ictinus, and of Robert de Luzarches, of Brunellesco, and of Wren, the sons of Phidias, of Michelangelo, and of Donatello, the disciples of Raphael, of Titian, of Rembrandt, and of Reynolds decline to strike or vail their colours. In remote medieval times, Sir, when the building was the book, the open volume in which alone could be read by an unlettered people the truths of Faith, and that little which was then the sum of human knowledge—in days before the printing press had shorn architecture of half its phonetic function—some such contention on its behalf was no doubt tenable. But in more modern days great changes have come over Art, and notably over painting, which, without abdicating for a moment its severer and more restrained function in connection with architecture, or its more monumental and idealistic developments, has explored and occupied whole regions of new emotional and imaginative suggestion; the realm of mysterious and alluring glooms wherein Rembrandt is king, and all the witching range of the fugitive and fitful lights which flit and flame and faint across the fair face of the land, and of the sea in which Turner conjures without a peer. In these its phases the painter's art is self-centred and unbeholden.

But whilst in days in which narrow isolation is repudiated by Architecture some of her sons invite the sister arts to what is but a gilded vassalage, we see, on the other hand, less seldom than I could wish, a tendency to fly to an opposite extreme—a tendency to instal the picturesque in a position of perilous pre-eminence; to forget that in this masculine builder's art every portion of every work should form part of an organic, logically developed whole, springing from and grafted on material, conditioning requirements scientifically grasped—a tendency to work from the surface, and even, in extreme cases, to mistake for the exercise of a virile and logical art a more sprinkling of ornament, broadcast and haphazard, over a perhaps confused and incoherent structure.

It has happened to me, Sir, and more than once, to be asked by earnest and gifted students to express my views on architecture from the painter's point of view. Now, my answer has invariably been, and ever must be, that I acknowledge in architecture no painter's point of view. Architecture, being an art of which the conditions are unique as well as imperative, recognises no determining artistic motives outside itself. These conditions are, I repeat, the rigorous fulfilment in each case of the demands of a dictated problem of Utility, resulting in a structure stamped with the expression of its functions, lit up and ennobled throughout by the spirit of Beauty. I say "throughout," for that spirit must leaven it from its birth, and the signs of it should grow and blossom with it, and not be flung over it as a superfluous garment or an adventitious gawd. The beauty of a truly noble building should be, indeed, as the inner soul breathing out of it and made manifest, not as a fair mask to be assumed or laid aside at will; and these results will be achieved by those to whom the gift is given, through the strengthening within them of the æsthetic sense, so that it may flow out on to and permeate the work from the outset, and use and decorum may thus walk hand in hand

to their mutual enhancement. Now this sharpened sense of beauty—I use the word in its widest sense—is the stamp and hall-mark of the artist, whether he build, carve, or paint; and as the labours of the painter and the sculptor are in their nature untrammelled by considerations of the useful and the necessary, intercourse with the followers of the purely graphic arts is of great profit and strengthening to those whose paths are less free and their shackles more numerous.

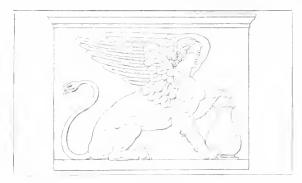
But whilst Architecture may gain, from intercourse with the other arts, a heightened charm, a warmer, richer, and more supple life, how great is the service that she, in her turn, if rightly consulted, may confer on the other arts! For where better than in her best and purest works can the painter and the sculptor learn the great and needed lessons of wise restraint, of noble reticence, of strength controlled, and of ornament made doubly precious by sober use? Of a truth, Gentlemen, these three arts may draw ever-increasing strength and power from closer communion of spirit among their several votaries; and it is as a symbol of that growing communion that even those who may least deem me worthy of it may yet, I think, welcome the honour for which I have risen to express my warm, my respectful, and most unfeigned thanks.

Fred. Leighton.

THE SOCIÉTÉ CENTRALE DES ARCHITECTES FRANÇAIS.

A COMPLIMENT TO BRITISH ARCHITECTS.

HE architects of France, who have recently held their annual Conference, varied their ordinary bill of fare this year by a visit to Lyon, where, among other business, they assisted, on the 12th inst., at a professional banquet, having on the way thither inaugurated their approach by a déjeûner at the Hôtel de la Cloche, Dijon, on the 10th inst., under the Chairmanship of M. Guadet, Member of the Institut de France. The banquet at Lyon brought together 170 convives, and M. Daumet, Member of the Institut de France, President of the Central Society of French Architects [Hon. Corr. M.], worthily took his seat at their head. This festivity was followed, in due course, by a dinner at Bourg, at which the President of the Society also presided; and on the 16th inst., in Paris, the Hôtel Continental became the scene of a very brilliant entertainment, following the distribution of prizes and marking the end of the Conference. About 140 convives took part in the banquet, which was presided over by M. Ch. Yriarte, representing the Minister of Public Instruction and the Fine Arts, and M. Daumet, the President of the Society—the latter taking the Chairman's duties. M. Daumet, having proposed the health of President Carnot—"si bienveillant pour les artistes" —the health, also, of the Minister of Public Instruction, of the Director of Civil Buildings, and of the Director of Fine Arts, and having read a telegram from "nos confrères Russes," who sent their best wishes, proceeded to toast another body of foreigners with whom, he said, the French Society held relations of veritable friendship—viz. the Royal Institute of British Architects. His words, most happily chosen and most complimentary to the Institute, concluding an excellent speech, are given in L'Architecture, 23rd inst.; and they were referred to by Mr. Charles Barry in the speech he made on Monday, 25th inst., when seconding the vote of condolence [p. 571] with the French architects in that terrible calamity which has aroused the indignation not of France alone but of the whole world. The programme of the Conference, which was given in the issue of L'Architecture, 12th ult., comprised Papers and Discussions on Education in the Provinces, Property in Works of Architecture, Departmental Councils of Civil Buildings, &c., varied by excursions, and visits to old buildings, as well as to the Exposition Universelle at Lyon.



CHRONICLE.

The London Streets and Buildings Bill.

The Select Committee in charge of the Bill, which had been holding three sittings a week latterly instead of two as originally arranged, adjourned on Tuesday the 19th to Tuesday the 26th inst. In the interval the Bill as amended in Committee was reprinted, incorporating therein further amendments made by the promoters but remaining to be considered by the Committee. Among the latter are the extensive modifications on the original made in Part IV., which nevertheless is printed in the same form and manner as are Parts 1., 11., and 111., which, so far as the Committee are concerned, may be considered as practically settled. No memorandum or explanatory statement is issued with the reprint, and the difficulty of appreciating its present form is not diminished by the fact that the numbering of the clauses has been altered. For instance, clause 136 of the draft Bill appears as clause 151 in the reprint, and this occurs throughout the Bill. Consequently, to any one who has not faithfully followed the proceedings before the Committee, and carefully noted what has been done, the reprint is confusing and uscless. Indeed, it is impossible in general terms to give an idea of the actual position of the proposed legislation. It is satisfactory to note, however, that the views of the Select Committee generally have not been in favour of the excessive powers sought by the London County Council; that almost all of the objectionable proposals, so far as they have been dealt with, have been eliminated; and that the Bill is greatly improved by the amendments adopted.

At the sitting of Tuesday, the 26th inst., the consideration of the amendment proposing to remove the obligation to carry up the party-walls of domestic buildings above the roofs was resumed. Mr. F. W. Porter, Surveyor to the Sun Fire Office. Mr. Jackson, Assistant Secretary to the Royal Insurance Office, and Sir Eyre Massey Shaw gave evidence in support of the present legislation requiring the party-walls to be carried up above the roofs. In support of the amendment Mr. John Willis, Superintendent of the Liverpool Fire Brigade, gave evidence as to the practice of building

in Liverpool and surrounding districts, where continuous roofs were common. Mr. Littleton supported the amendment, contending that the carrying up of party-walls through the roofs of domestic buildings was neither necessary nor desirable; but after much discussion the Committee decided that the clause should stand as drawn, maintaining the existing law. The amendment was therefore lost.

Another important matter dealt with was Clause 151, By-laws, which was much improved by further amendments beyond those introduced by the London County Council in the reprinted Bill.

The constitution of the Tribunal of Appeal has now been settled thus in Clause 163:—One member to be appointed by a Secretary of State, one by the Council of the Royal Institute of British Architects, and one by the Council of the Surveyors' Institution, thus establishing a Tribunal of three instead of the five proposed by the London County Council. Provision is also made for the filling of any vacancy, temporary or permanent; and generally the clauses relating to the Tribunal, Nos. 163 to 175, have been materially improved.

The Committee sit again on Thursday the 28th, and Friday the 29th, to proceed with the remaining clauses and with Part IV., after which the Definitions and Schedules will be considered. A copy of the reprint of the Bill is in the Library.

The Chair of Architecture, Liverpool.

The Council of University College, Liverpool, having approved the scheme formulated by the Technical Instruction Committee on the Proposed School of Architecture at Liverpool, have decided to connect the Roscoe Professorship of Art with a central scheme for art instruction in that city, and allot to it the income from the endowment of the Roscoe Chair: and, further, to provide suitable accommodation for the Professor of Architecture and the classes in that subject. The Managing Board consists of sixteen members, among whom are two representatives of the Liverpool Architectural Society one to be the President for the time being) and one respectively of the Liverpool Academy of Fine Arts, the Liverpool Master-Builders' Association, and the Building Trades' Federation. The Council of the University now invite applications for the Professorship, the fixed endowment of which is 4375 per annum, with share of fees from students and other emoluments. The Professor is to conduct Architectural classes at the College, and to act as Director upon the Managing Board. In respect of the present appointment it is understood that the Professor will be permitted to undertake such professional practice only as will not interfere with the discharge of the duties of his Chair. The appointment is for five years, and the Professor will be cligible for re-election. Applications must be lodged with the Registrar of the College on or before the 25th prox. It is to be hoped that

the College will secure the services of an accomplished and able Professor, who will give effect to their evident desire to advance the cause of architectural education.

The Godwin Bursary Report, 1893.

Mr. Banister F. Fletcher's Report as Holder of the Godwin Bursary * for 1893 has already been alluded to in these pages in terms of commendation, and the more critical perusal rendered necessary for the purpose of the slight résumé attempted below has only served to confirm the opinion previously expressed. Mr. Fletcher is to be congratulated on the excellent use he made of the unique opportunities afforded by the Columbian Exposition of Chicago, for rarely can it fall to the lot of a student to range a field so prolific in examples of the particular subjects for the study of which the Bursary was instituted. On all matters connected with the architecture represented in the designedly ephemeral structures at the Exposition the Report may be consulted in the confident expectation of finding within its pages the information sought.

Section I. briefly recounts the preliminaries in regard to the question of site, and the composition and functions of the Commission appointed to carry out the general arrangements of the Exhibition, and goes on to tell how the boundless marshy waste chosen for the site, consisting of a succession of low sand dunes situate on the shore of an inland sea, was turned to the best and most effective use by the eminent "landscape archi-"tect," Mr. Olmstead, to whom was entrusted the laying-out of the grounds. In an interview with Mr. Olmstead the author gained much information about this part of the undertaking, which is duly

retailed in the Report.

The question of procuring designs for the great buildings was a problem not a little difficult of solution, and many and various were the suggestions offered. At length a Council of Architects was decided upon, who, sinking personal idiosyncrasies, agreed to work together for the benefit

of the whole scheme. It was fortunate, remarks the author, that at the head of this Council was placed by mutual consent Mr. Richard Morris Hunt (Royal Gold Medallist 1893), who is looked up to as the Nestor of the architectural profession in the States, and who exercised a controlling influence over the other members of the Council; and more fortunate still that the architects of the buildings surrounding the great court were all pupils or direct followers of Mr. Hunt. Mr. Post and Mr. Van Brunt were pupils; Messrs. Howe, Peabody, and Stearns had been pupils of Mr. Van Brunt; and Mr. McKim, by his training at the Ecole-des-Beaux-Arts, was of the same school of thought and design. Harmony was thus assured, with a result the more satisfactory to architects because it led to what was practically an exhibition of architecture. True, the expression of American life in the art was not to be found, but this can be forgiven in face of the object-lesson afforded of the accepted canons of architectural art with respect to proportion, and its union with sculpture and painting, and those points which are apt to be overlooked in a new country. Nevertheless, the reproduction of these great classic designs all over the country for town-halls, museums, and the like is strongly deprecated; it is sufficient that American architects, who are already advancing so rapidly along certain new lines of departure, should profit by the lessons such designs teach, without slavishly copying the forms. Otherwise a great "classic revival" will result, and stay for a prolonged period the true progress of art in America. Section I. concludes with a tabular statement showing the extent of area covered, and statistics as to the number of exhibitors, attendance, receipts, cost, &c., of all the principal exhibitions since that held in London in 1851.

Section II., The Greater Buildings, commences with a list of the principal buildings, and gives the area occupied, cost, dimensions, and names of the architects who designed and superintended their construction. The largest of all, the Manufactures Building, measured 1,687 by 787 feet, and cost £200,000; the most expensive, costing £240,000 with the annexe, being the Machinery Hall, the dimensions of which were 846 by 492 feet. Taking the buildings in their order of importance, Mr. Fletcher proceeds, with the aid of photographs, illustrations from American periodicals, and a large number of sketches and measured drawings of great excellence from his own hand, to describe them in considerable detail, treating of the general scheme of plan and ornament, the methods of construction and materials employed, and calling attention to the more prominent characteristics, both as to construction and design. A few features common to all the buildings may usefully be noted.

The enclosing walls were built of a framework

^{*} The Godwin Bursary, consisting of a Silver Medal and £40, was founded for the promotion of the study of works of Modern Architecture Abroad, and is awarded to any member of the profession who shall submit the best selection of practical working drawings, or other evidence of special practical knowledge, and testimonials. The holder of the Bursary is required to spend not less than five weeks abroad (in Europe or America), to study, examine, and report on some of the best specimens of modern planning and modes of construction, drainage, water-supply, ventilation, and other sanitary arrangements to be found in the place he undertakes to visit. Within a given time he must furnish the Council with an illustrated memoir descriptive of the

[†] Mr. Fletcher left England for New York on the 17th May 1893, and visited Brooklyn, Philadelphia, Baltimore, Washington, Chicago (where he spent five weeks), Niagara, Montreal, Boston, and back to New York, returning to England in the middle of August.

of wood, properly braced, and sheathed on front and back with boarding laid diagonally, to which was fixed the exterior facing of "staff"—a material the composition and mode of preparation of which are given in the Report. All the statuary and ornamentation, such as caps, pilasters, &c., were formed of this material, which can be sawn, planed, and tongued like wood, and if painted, and the weather kept from penetrating behind the face, will last, it is said, as long as wood. Mr. Fletcher gives as well the recipe for making the paint used on the exterior of the buildings. This consists of varying proportions of rice-flour, bicarbonate of soda, linseed oil, water, and table salt; and besides being considerably cheaper is much more satisfactory than ordinary oil-paint for brick, cement, or plaster.

The foundations of the buildings were constructed entirely of plank. The load on the soil for spread foundations was 2,500 lbs. per square foot, and a maximum load of fifteen tons per pile where piling was used. As the soil was almost entirely sand, and the subsoil either clay or sand, the spread foundations were put right on top of the sand. The main floors of all the buildings, except the Machinery Hall and the Mines Building, were figured for 200 lbs. per square foot. The Machinery Hall was figured for 250 lbs., and the Mines Building for 150 lbs. The galleries were figured for 80 lbs. per square foot, except those used for restaurants, which were figured for 100 lbs. The roof trusses were figured for 40 lbs. per horizontal foot, or 25 lbs. vertical load and 30 lbs. wind pressure. Purlins and jack rafters were figured for 30 lbs. per horizontal foot. The unit and fibre

Tension: steel 20,000 lbs., iron 14,000 lbs. per square inch.

strains were as follows:—

Compression: steel 15,000 lbs., iron 10,000 lbs. (reduced by formulæ) per square inch.

20,000 lbs. fibre strain was allowed in steel pins, and 20,000 lbs. in iron pins.

Steel pins, bearing, 20,000 lbs., iron 15,000 lbs. Steel rivets, 20,000 lbs. bearing, 10,000 lbs. shear. Iron rivets, 15,000 lbs. bearing, 7,500 lbs. shear.

Wood, fibre strain, white pine, 1,200 lbs. maximum. Bearing perpendicular to fibre, 300 lbs.; shear with grain 100 lbs.; maximum bearing at end of timber 800 lbs.; tension 800 lbs. to 1,000 lbs.

The wooden framework was a novel construction never before attempted on so large a scale; and it is interesting to note the methods employed to keep within the architectural lines of the design all the constructive necessities. The upright posts as a rule were 6 inches by 6 inches, braced with cross-bracing and nailed with round nails of great holding power, put up without any framing out of stock sizes of lumber. Stock sizes were used so that the framework might be sold as salvage at the close of the Exhibition. This box construction was then sheathed with rough boarding laid diagonally, and the "staff"

nailed to the sheathing. Where extra strength was required the framing was double sheathed, on the inside as well as the outside, the sheathing being reversed for extra strength. In the case of height exceeding a certain length, horizontal ties were added, and from this platform the framing started afresh. The sheathing was well nailed to each stud-post, and at least one half of the boards were continuous over plate, and everywhere broke joint. Plates 30 feet long or under were made in pieces in one length, plates over that length being formed of two or three pieces breaking joint, at least 10 feet apart, spiked with ten spikes per running foot. Sheathing on all plates was on two sides diagonally in opposite directions nailed with ten nails per running foot. Rain-water pipes were of corrugated iron.

From an architectural point of view the Agricultural Building was the finest, owing to the union of architecture with painting and sculpture. The latter was most unsparingly applied, and might be considered almost a dream in "staff," presenting a composition which, owing to the expense, it would be impossible to render in any lasting material.

From a constructional point of view, the steel cantilever trusses of the great nave and aisles of the Mines Building by Mr. S. S. Beman were exceedingly interesting and novel. The central space to be roofed was 630 feet long and 230 feet wide, with an extreme height of 100 feet at the centre, and 47 feet at the sides. Steel cantilever roof trusses, supported on steel stancheons, were placed 64 feet 5½ inches apart longitudinally, with a span of 115 feet, and aisles on either side of 57 feet 6 inches span. The total area, therefore, of 630 feet by 230 feet was carried on sixteen supporting stanchions.

As a colour scheme the Transportation Building was probably more important than any erected in recent years, from the simple fact that it was designed from the commencement for colour treatment. Mr. Sullivan, one of the architects responsible for the building, is an enthusiastic botanist, and all his system of sculptured as well as colour work is derived from a study of practical botany.

The method of designing the sculpture on the Fisheries Building is interesting. A full-size drawing was first made of old Romanesque capitals, and this was taken to the sculptor's studio, and there worked over with representations of animals real or mythological, such as frogs, reptiles, various kinds of fish, dolphins, &c. The outline of the old cap was retained, and the detail filled in with various things connected with the sea. A variety of caps was thus produced, which could be easily cast in "staff" and duplicated throughout the building.

Section III. The States Buildings.—The pages comprising this section are devoted to the more

important buildings erected at the expense of the different States of the Union. In regard to methods of construction there was nothing very novel to report, and in general the buildings were treated without any regard to each other or to grouping, their design being determined by associations connected with the founding and historical development of each State, thus affording opportunity of introducing many interesting features. Many of the buildings ranked highly as designs, and all were interesting as illustrative of the manners and resources of the various States, and the enormous and varied wealth of the country in building materials.

Section IV. The Constructive Exhibits.—In this section a short account is given of the more noteworthy exhibits connected with methods of construction, and of materials such as building stones, bricks, tiles, &c. The fireproof partition walls formed of hollow tiles varying in thickness from two to six inches, now so general in the States, are a great improvement on the old 6-inch lath-and-plaster partitions ordinarily used in England. The skin of the tiles is half an inch in thickness, and is left rough on the face for receiving the plaster. The tiles are laid one over the other to break joint, and are further secured longitudinally by iron clips, wood bricks being set in the vertical and horizontal joints to afford nailing surface for the architraves, wainscoting, &c. The hollow tiles allow the introduction of flues for ventilating, heating, &c., and gas and water-pipes, electric wires, &c. Outer walls are also constructed of these tiles.

Steel is used largely for constructive purposes, and some novel exhibits were shown in the way of steel roofing and steel ceilings and wainscoting. The roofing is prepared in sheets and painted with graphite paint. It costs 14s. per hundred square feet, and 20s. for laying. The thin plates of steel used for ceilings are designed to supersede ordinary plaster ceilings; they can be pressed out to any pattern, and it is claimed for them that they are fire- and water-proof, permanent, will not shrink, burn, warp, crack, or fall like plaster. They can be applied over old plaster ceilings. For rough wear in large halls or schools the steel wainscoting would be of service. The Ransome concrete inventions formed an important exhibit; they are applicable to various constructions, especially for floors and foundations, allowing of the distribution of a great weight over a large area without sacrifice of height. An explanation of the principles which guided the inventor is given in the Report.

Section V. The Sanitary Exhibits.—The various forms of drain traps and w.-c. apparatus exhibited are described in this section, and attention drawn to anything novel in their application. The ambitious scheme formulated for the Hygiene and Sanitation Bureau by Dr. Brewer, the Superintendent of this department, unfortunately fell through from want of support by the Exhibition authorities; hence the opportunity was lost of making the department, what it might and should have been, the most complete of its kind. Dr. Brewer's original proposals were for a most comprehensive scheme, the details of which are set out in a prospectus inserted in the Report.

Section VI. Heating and Ventilation.—Some interesting and useful notes are given in this section culled from a pamphlet on the Heating and Ventilation of Residences, by Mr. James R. Willett, being an Address delivered by him to the Engineering Society of the Illinois University. The work has since been presented to the Library by Mr. Fletcher, who states that the information contained therein, based as it is upon the practical experience of a practising architect, will be found very useful. With regard to the methods of ventilation adopted in the States, the disc fans seem to be most favoured, and it is surprising they should be so little known in England. Several kinds were exhibited, the chief advantages consisting in the quantity of air set in motion, the small power required to work the apparatus, the adjustability of the blades, its easy removal to any part of the

room, and its noiselessness.

Section VII. The Institute of Building Arts.— This is a permanent exhibition in the city of Chicago of every class of building materials, systematically arranged, and under the care of a responsible curator. The institution is under the control of the Illinois chapter of the Institute of Architects, and bears the same relation to the constructive arts generally as the Parkes Museum does to sanitation and hygiene. Anything new in methods of construc-tion or materials is here exhibited, with incalculable advantage to architect, client, and builder, who may compare and select at will. Such an institution, suggests Mr. Fletcher, started under the auspices of the R.I.B.A., under the control, say, of the Practice Committee, would be of the greatest service to the profession in England. Under proper management and under one roof all new methods could be judged by periodical visits, saving much time and trouble in single investigations. The income of the institution under notice is derived from a nominal annual charge for exhibit space, amounting to five dollars per superficial foot per annum. The institution is free to the public, and information given gratuitously; materials are tested free of charge, and lectures delivered on special subjects connected with the exhibition. That the institution is popular may be judged from the fact that it is visited on an average by over 1,500 persons monthly.

Sections VIII., IX., X. Specifications and Contract Drawings of Buildings.—Through the courtesy of Mr. D. H. Burnham, the Chief of Construction to the Exhibition, Mr. Fletcher was able to include in his Report a selection of the specifications prepared for the erection or completion of the various portions of different buildings in the grounds. The selection comprises all or most of the trades engaged on the buildings. Mr. Fletcher observes upon the great value of these documents, especially in connection with Sections IX. and X., which comprise the majority of the original contract drawings and ironwork details of the several buildings. These drawings are bound up separately in four volumes, Book I. consisting of those for the Manufactures and Liberal Arts Building; Book II., for the Electricity, Transportation, Fisheries, and Women's Buildings; Book III., for the Administration, Machinery, Agricultural, and Mines and Mining Buildings; and Book IV. of Ironwork drawings of roofs of the Administration, Machinery, Manufactures and Liberal Arts, Electricity, Mining, and Horticultural Buildings. All the drawings are deposited in the Library, where also the Report in its entirety may be consulted.*

The late W. Calder Marshall, R.A. [H.A.].

William Calder Marshall, R.A. [H.A.], who died on Saturday, the 16th inst., at the age of eighty-one, had been an Honorary Associate of the Institute since 1878. The following memoir is kindly contributed by his son, Mr. Charles J. Marshall [4].

My father was born in Edinburgh, 18th March 1813, and from his youngest childhood was devoted to modelling, making figures in clay when quite a little child. The earliest work of his which exists is a bas-relief of his sister, made when he

was a very little boy, the only tool employed being

From 1822 to 1826 he was educated at the High School of Edinburgh, and afterwards attended classes under Professors Pillans, Jamieson, Leslic, &c. For one session he studied drawing at the Edinburgh Academy, and entered the Trustees' Academy in 1830, which he attended until he became a student of the Royal Academy in London in 1834, on the advice of Chantrey. During the year 1834 he worked in Chantrey's studio as a pupil, and in 1835 became a pupil of Bailey, under whom he remained for a year. In this year he obtained the Silver Medal in the Antique school at the Royal Academy. In August 1836 he left for Rome, where he studied for two years, Rome at that time holding a much higher position as a school for artistic education than it does now. Many stories he used to tell of his journey to Rome and travels in Italy, in those days made by diligence and steamer, and of the pleasant life in Rome, where students of all nations formed a society of their own, and where he met many famous men, such as Thorwaldsen, Gibson, and others, who were then in the midst of their career. Many of his fellow-students have since become famous and remained his lifelong friends; my father, however, survived nearly all his contemporaries.

In 1838 he returned to England, arriving just in time to see the Queen's coronation. He then took a house and studio in London, and actively commenced his profession. In 1840 he obtained a gold medal at the Manchester Exhibition, and was also elected an Associate of the Royal Scottish Academy, and in the following year obtained the Gold Medal of the Royal Academy, London. In 1833, when he was twenty years old, he exhibited at the Royal Scottish Academy his first work (a bas-relief of Sterne's Maria), which now stands in his studio beside his last statue, "Echo," finished last year when he was eighty. Between these dates an immense number of works were done. He was most industrious, never being so happy as when working, doing the whole of the modelling himself, and never at any time employing assistance, even for the mere building up of the figure.

In 1835 he first exhibited at the Royal Academy, and, with the exception of the two years when he was in Rome and in 1861 and 1866, he never missed a year until 1891, and he never had a single work rejected. In 1844 he was elected an Associate of the Royal Academy, and in 1852 a full member.

His sympathies were all on the side of ideal art, and he executed many groups and single figures from subjects taken from Greek and Roman mythology, from ancient history, and from English poetry. Many of his works were selected by the Art Union for prizes, and the small Parian reproductions of "The Dancing Girl reposing,"

^{*} Mr. Fletcher acknowledges his indebtedness to the following gentlemen for assistance kindly rendered him while collecting the information contained in his Report: Mr. R. M. Hunt (Royal Gold Medallist 1893), architect of the Administration Building; Messrs. McKim, Mead, and White, architects of the Agricultural Building; Mr. D. H. Burnham, Chief of Construction; Mr. Geo. B. Post, architect of the Manufactures Building; Mr. Robert S. Peabody, architect of the Machinery Hall; Mr. Robert Craik Maelean, Editor of the Inland Architect; Mr. E. C. Shankland, Engineer-in-Chief to the Exhibition, and designer of the great roofs; Messrs, Adler and Sullivan, architects of the Transportation Building, and better known as the architects of the famous Auditorium Building at Chicago; Mr. S. S. Beman, architect of the Mines Building; Mr. Frank D. Millet, the well-known painter, and Director of Colour to the Exhibition; Messrs. Jennie and Mundie, architects of the Horticultural Building, who also volunteered much information about the steel construction of the tall buildings of Chicago. To Mr. D. H. Burnham he is specially indebted for his kindness in installing him in the draughting room of the Exhibition, and placing all the contract drawings and information of every description at his disposal; and for the sets of contract drawings and ironwork details, comprising Sections IX. and X. of the Report, presented by the author to the Institute. This unique and interesting collection of copies of the original drawings of the Exposition, for which the Institute is greatly indebted to Mr. Fletcher, comprises over 200 sheets, consisting of plans, elevations, sections, and details of the principal buildings. Three of the four volumes containing them measure some six feet by four.

"Sabrina," "Lear and Cordelia," &c., are well known. "The Dancing Girl reposing" gained the first prize of £500 at the Art Union in 1848. Some of his other principal ideal works, of which considerably more than one hundred have been exhibited at the Royal Academy, are: "Creation "of Adam," "Ophelia," "Paul and Virginia" (1843), "First Whisper of Love" (1845), "Sa-"brina" (1846), "Eurydice" (1847), "Ajax "praying for light" (1855), "Undine" (1863), "Venerable Bede" (1869), "Tali Players" (1873), "Prodigal Son" (1877), "Sabrina thrown into "the Severn" (1881), &c.

He also did several public statues, among others that of Sir Robert Peel at Manchester; Jenner, formerly in Trafalgar Square, now in Kensington Gardens; Crompton, the inventor of the spinning mule, at Bolton; Captain Coram, in front of the Foundling Hospital, and Sir George Grey in Cape Town. For St. Stephen's Hall at the Houses of Parliament he did a statue of Lord Somers and one of Lord Clarendon. In the great competition for the monument to the Duke of Wellington in St. Paul's he gained the first prize of £700 for his design, but owing to the site being changed from that originally proposed the competition was thrown over. He was, however, commissioned to execute the bas-reliefs, "Righteous-"ness and peace have kissed each other," and those on each side of the main subject, the other bas-reliefs in the chapel being executed by Woodington, who gained the second prize.

Of busts my father did a good many, one of the best being of the poet Rogers, who was a personal friend of his. Of sculpture purely to decorate buildings, his most important works were—the allegorical group of "Agriculture" for the Albert Memorial in Hyde Park, the tympanum of the pediment of Bolton Town Hall, and the two figures of "Learning" and "Justice" at the entrance of the late E. M. Barry's buildings at the

Temple.

In 1861 my father was elected an Honorary Member of the Royal Scottish Academy. At the Paris International Exhibition of 1878 he was a British representative, and in recognition of his services received the order of Chevalier of the Legion of Honour. In 1891 he retired from the Royal Academy, and since then has only modelled the figure of "Echo," which has not yet been exhibited. In spite of his advanced years he was active, and enjoyed good health until last summer, when he began to fail, but was not seriously ill until April.

During the last few years of his life he has been finding homes for the original plaster models of his ideal works, his "brain children," in various public institutions and museums, such as the Children's Hospital, Bristol; Salford Museum; Science and Art Museum, Edinburgh; Mappin Art Gallery, Sheffield; Goldsmiths' Institute, New Cross; Imperial Institute; Battersea Town Hall,

&c. Instructions have been left that more of these original plaster models may (in the discretion of his executors, and under certain conditions as to payment of carriage, &c.) be presented to public institutions possessing well-lighted positions suitable for statuary, but which are unable to purchase works of art.

Additions to the Library.

Professor Aitchison, A.R.A. [F.], has presented a pamphlet he received from Dr. Dörpfeld [Hon. Corr. M.], entitled Ausgrabungen im Theater von Magnesia am Maiandros (Athens, 1894), and Mr. Henry Frowde has sent Archaologia Oxoniensis, Part IV. (Oxford, 1894), containing, among other interesting articles, a short Paper "On the use of Lead as a Covering for Saxon "Churches," by Mr. J. P. Harrison, and a description by Mr. J. Oldrid Scott [F.] of the new "Win-"dow in Lichfield Cathedral." Mr. J. F. Wadmore [A.] has presented a collection of three pamphlets, written by himself, on "Thomas "Smythe," of Westenhanger, reprinted from Archæologia Cantiana, the first of which, dated 1887, is already in the Library. The complete work, well illustrated as it is, makes a valuable addition to the archeological notes of similar subjects preserved in the Library. A Treatise on the Law of Support for Land, Buildings, and Public Works, by George Banks, M.A., Barrister-at-Law, has been presented by the publishers, Messrs. Sweet and Maxwell, Limited.

While at the moment little is being published of architectural interest, notable old editions are being added to the Library, for, since the last issue of the Journal, it has been enriched by the acquisition of two editions of Palladio, the former of which, chronologically, is I Quattro Libri dell' Architettura (Venice, 1616). The Institute possesses a first edition of this work, published at Venice in 1570, with the Earl of Burlington's autograph on the title-page, and the date January 1743. The other and more recent edition is Le Muet's translation of Palladio, Traieté des Cinq Ordres d'Architecture, with the translator's Nouvelles Inventions pour l'Art de Bien Bastir (Paris, 1647), first published in 1626. Richards translated this work (which contains interpolations of Le Muet's without his indicating the fact) for English readers in 1663, among whom it had a considerable vogue, and ran through a dozen or more editions, four of which are on the shelves of the Library. Another acquisition is Claude Perrault's Ordonnance des Cinq Espèces de Colonnes selon la Méthode des Anciens (Paris, 1683), first published seven years earlier, and known to English readers by James's translation (London, 1708), which is also in the Library. The Town Hall of Amsterdam must always be included among the remarkable buildings of the world, and the addition of an excellent monograph, Afbeelding van 't Stadthuys van Amsterdam, will be highly appreciated. Begun in

1648 and finished in 1655, it was designed by the author of the book, Jacob van Campen, who flourished in Holland about the middle of the seventeenth century, and of whom a remarkably

fine engraving appears therein.

Two works dealing with architectonic science, which have been added, are Clermont's La Géomètrie pratique de l'Ingénieur, ou l'Art de Mesurer (Strasbourg, 1723), and the third edition of Traité de Stéréotomie, by C. F. A. Leroy, revised and annotated by M. E. Martelet (Paris, 1862), and illustrated by seventy-four plates separately bound.

Le Musée Plantin-Moretus et ses Bâtiments à Anvers is a recent publication, by M. Max Rooses, director of the museum, and illustrated by some excellent etchings by M. B. Kriéger (Paris: Librairie Centrale des Beaux-Arts). The museum, founded in 1576 by Christophe Plantin, and containing the various collections of its founder, his son-in-law, Jean Moretns, and his descendants, after having been in the possession of several generations of printers, passed in 1876 into the hands of the Communal Administration of Antwerp, and a year later it was opened to the public. At the point where the Rue Grégoire-de-Tours joins the Boulevard Saint-Germain in Paris, M. Charles Garnier [Hon. Corr. M.] was commissioned in 1876 to erect, for an association of booksellers, &c., a building, of which a complete illustrated account is given in Le C'erele de la Librairie, de l'Imprimerie, de la Papeterie, du Commerce de la Musique et des Estampes (Paris: Cercle de la Librairie, 1881). Enseignement de l'Architecture, by Théodore Lachèz, containing numerous papers connected with the education of an architect as conducted at l'École Impériale et Spéciale des Beaux-Arts, l'École Centrale d'Architecture, and L'École Impériale Centrale des Arts et Manufactures (Paris: A. Lévy, 1868); the Rapport Verbal made by M. de Caumont at the meetings of the Société Française d'Archéologie held in 1861 62 (Paris: Derache, 1863); a reprint from the original (1859) edition, with additions, of The Oxford Museum, by Sir Henry Acland and John Ruskin (London and Orpington: George Allen); Il Duomo di Parenzo ed i suoi Mosaici, by the Cavaliere G. Boni Hon. Corr. M. (Rome: Tipografia dell' Unione Cooperativa Editrice); and a History of St. Silin Church, Llansilin, by Mr. Arthur Baker [F.], (reprinted from Archæologia Cambrensis); a Lecture by Mr. J. Wolfe Barry [H.A.] and a history and description by Mr. J. E. Tuit of the Tower Bridge, both noticed on this and the next page, complete the list of recent additions which call for particular mention.

There remains, however, to be noted a group of original drawings by Isabelle (whose work on Les Edifices Circulaires et les Dômes, classes par Ordre Chronologique is familiar to members) for the Ecole Royale d'Arts et Métiers de Châlons, as approved and signed by the Secretary of State of Public Works, the drawings also bearing the signature of Isabelle under the inscription, "Ré-"digé par l'architecte soussigné, Paris, le 20 "Septembre 1842" (and later dates), which have come into the possession of the Institute.

REVIEWS OF NEW BOOKS, XI.

THE WATER GATE OF LONDON.

The Tower Bridge: A Lecture. By John Wolfe Barry, M.Inst.C.E. Large 80. Lond. 1894. [Printed for private circulation.

The Tower Bridge, its History and Construction from the Date of the Earliest Project to the Present Time. By J. E. Tuit, M.Inst.C.E., Engineer to Sir William Arrol & Co., the Contractors. 40. Lond. 1894. Price 5s. The "Engineer" Office. 33, Norfolk Street, Strand.

The designer of a public building does not often receive from his contemporaries a whole-hearted triumph. So general is the dissatisfaction of the critics who buzz round a national monument that the creator of any conspicuous edifice must inevitably prepare himself for a measure of warm abuse. It is not altogether easy to account for this universality of disapproval, though much of it may be ascribed to the fact that the critics who give it birth are either experts who may be jealous, or laymen who must be ignorant. The disapproval and its universality still exist; and one is tempted to speculate whether our age, of all the ages, is alone incompetent to create, whether our age alone is the victim of a pessimism that can believe no good of itself, or whether indeed the grumblers have been at work through all the cen-Perhaps they have been. Who knows turies. but that the Parthenon may have been as much attacked by the cheap press of Athens (or its equivalent) as was the Albert Memorial in our day? -- and the writer reserves the right to prefer the Parthenon to the monument at South Kensington, for all that. Once only in my recollection has a modern building been spoken well of by an evening paper: the paper was the Globe, and the building -well, the building, not to mention names, was and is an abortion!

The Tower Bridge, to come to the point, is now just ready for traffic and criticism. The attack has begun, and not the least interesting part of the little book which Mr. Wolfe Barry has kindly presented to our Library is comprised in the paragraphs which meet the current strictures of

his critics.

Of course, the most confident attitude of attack is that which protects itself under a pseudo-Ruskinism; and, brandishing a Lamp of Truth, asserts that Mr. Barry, with his granite towers, has dressed up an iron structure to look like one whose strength lies in masonry—that, in fact, his great turrets are great humbugs. To the insinuation that the towers are deceptive the engineer

might reply, with the Scotch repartee, "That's a "lee." The criticism, being one of constructional propriety, could only come from a more or less initiated expert, whose trained sense of the laws of materials was offended, and no such person could ever for one moment be deceived into thinking that the towers consisted of stone-work Mr. Wolfe Barry might thus urge in his defence that the deception does not even momentarily exist. But he takes a gentler course. He points out, first, that he would have been obliged in any case to erect some sort of covering to the metal structure of his great piers, and secondly that the Parliamentary and other conditions under which the bridge was sanctioned enjoined its assimilation in design to the architecture of the Tower of London. It therefore became a question whether the steel skeleton should be enclosed in stone of some kind or in sheets of cast iron! Mr. Wolfe Barry very properly shrank from the attempt to imitate the Tower of London in the latter material; and the existing stone and granite structures were the result. The engineer thus amply justifies his use of materials, but he will, I am sure, permit the expression of an individual opinion that a less florid style of fenestration and ornament would have brought the new building more closely into harmony with the ancient fabric adjoining it, and that a certain gain in solid dignity might have been the result. Then, again, everybody has his likes and dislikes, and there may be some who would agree with me in wishing to see the stone finials removed from the octagonal turrets. They seem to mar the undoubted majesty of the general outline by a touch of flippancy in their exuberance.

It need not be said that those parts of Mr. Wolfe Barry's book which treat of the construction and the mechanism of the bridge are full of interest, but it should be announced that, with a singular consideration for those who are not engineers, he has explained the details in such a way that the most unlearned can understand them, and, further, that he has prefaced his account by a brief historical

sketch of London bridges in general.

As a triumph of science, as a work of necessity, and finally as a gigantic enterprise, the bridge is a possession of which all Londoners must feel a Metropolitan pride; and, indeed, a competent and experienced critic has been heard to say that, having visited most of the important cities of the world, he has never seen a finer water-approach than the entrance to the City of London through the Tower Bridge.

Few of us have the means of personally instituting such a universal comparison, but I think all will admit that to fling across the Thames a structure which should avail itself of all the newest resources of the engineer's art, and should at the same time harmonise with an adjoining building which is by many centuries its senior,

was a task which might most easily have ended in miserable bathos. This is the task to which Mr. Barry and his colleagues have set themselves; to have succeeded in it to the utter satisfaction of all critics was impossible, but to have avoided the apparently inevitable anticlimax is a result on which, apart from their engineering triumph, they may well be heartily congratulated.

Another work on the same subject, by Mr. Tuit, M.Inst.C.E., engineer to Sir William Arrol & Co., who were the contractors, has been presented by the publishers. It is a republication in book form of articles which have appeared in the *Engineer*, supplemented with detailed descriptions of the foundations and superstructure. In the matter of drawings it is very complete, and contains a reproduction of Mr. Wyllie's sketch, which realises to the full the poetry of the conception.

Paul Waterhouse.

(31)

ARCHÆOLOGICAL SURVEY OF INDIA.

Annual Progress Report of the Archæological Survey Circle, North-Western Provinces and Oudh, for the year coding 30th June 1893.

Epigraphia Indica, Vol. II. Part XIV. of the Archæological Survey of India. Edited by James Burgess, C.I.E., LL.D., &c., assisted by A. Führer, Ph.D., Archæological Surveyor, North-West Provinces and Oudh. La. 80. Lond. 1893. Messrs. Kegan Paul, Trench, Trübner & Co., Charing Cross Road, London.

This Progress Report, which has been presented by the Chief Secretary, N.-W. Provinces and Oudh, contains two Reports—the first by Dr. A. Führer, Ph.D., Archæological Surveyor; and the second by his Assistant, Mr. E. W. Smith, who is

entitled "Architectural Surveyor."

Dr. Führer's Report is supposed to be devoted to the "Epigraphical Section," but it also contains some interesting details relating to architecture. Rajputana was the field of his explorations in 1892–93, when he visited Ajmir, Pushkar,* Mount Abu, Udaypûr, Nâthdvâra, Chitôrgarli, Dhar, Mandu, Sanchi, and other places less familiar to the general reader. Over much of this ground Colonel James Tod threw the glamour of his enthusiasm when he published his Annals and Antiquities of Rajasthan as far back as 1829. I have visited most of the localities, and sketched many of the structures mentioned in the Report. The first cold season I was in India enabled me to see the Mohammedan architecture of Delhi, Agra, and Fatehpur Sikri, and the first impression produced on my mind was the great superiority of the structures in these places over the works of the Hindus; but

^{* &}quot;Pushkar," this is the new spelling. I have always known the place as "Pokur." I shall of course follow the orthography of the Report. The place is nine miles from Ajmere. Dr. Führer mentions the temple of Brahmâ, but he does not say that it is the only temple in India dedicated to that god.—W. S.

the next season enabled me to see the Hindu architecture of Rajputana, particularly the extensive remains of Chitôrgarh. While among these I was inclined to rank them as the best, my final conclusion being that it would be difficult to

decide which were the superior.

At Ajmere, anciently called Ajayamera, Dr. Führer reports upon the old Masjid there, which has the envious legend attached to it, perpetuated to this day in its name, Arhâi-din-kâ-Jhônprâ, or the "Shed of two-and-a-half days," the time supposed to have been occupied in building it. Like the old Masjid at the Kutab old Delhi—this one was also largely constructed out of the pillars and fragments of destroyed Hindu or Jaina temples. In 1875-76, on removing the débris of the fallen cloisters on the north side of this Masjid, six large slabs of polished black marble were found, bearing inscriptions in Sanscrit and Prakrit. These turned out to be portions of two unknown plays, entitled Lalita-vigrahar ájanâtaka, and were composed in honour of Vigraharâja, Deva of Sâkambhari, the modern Sâmbhar. Their date is about the beginning of the thirteenth century.

Mount Abu and its famous temples are described in the Report, but there is nothing new to record. Udaypûr is not an ancient place. It was founded in 1568 by the Rana Uday Singh, after the last terrible sack of Chitôrgarli, when Akbar took the place. At that siege, when the city could no longer be defended, a *johur* was proclaimed—an empty tank was filled with the wood and ghee that remained; these were set fire to, and all the women and children thrown into the midst. Tod tells that after that "eight thousand Rajpoots ate "the last beera * together, and put on their saffron "robes; the gates were thrown open, the work "of destruction commenced, and few survived "'to stain the yellow mantle' by inglorious sur-"render." † Chitòrgarh in the inscriptions it was called *Chitrakita* – was the old capital of the ancient Rajput State of Mewar. The Ranas of Mewar represent one of the oldest Royal families in India; they can trace their descent back through the Suryavansa and the Chandravansa. These are the solar and lunar races of mythic antiquity, to which all old family pedigrees in India aspire if possible to be connected with. This old city stands on a platean from two to three miles in length, and from 300 to 450 feet in height above the surrounding plain. The position is a very strong one, for the sides of this tableland are formed of rocky searps, on the top of which are the embattled ramparts and defensive towers that enclose the town. Within these walls there yet remain the public buildings, temples, palaces.

† Tod's Rajasthan, vol. i. p. 327.

towers of victory,* tanks, &c., as well as the streets, market-places, and all that belonged to the city at the date of the last sack, when it was abandoned, and has remained deserted ever since. I have seen many ruined cities, but I can recall none which has left the same impression on my mind, an impression no doubt produced by the splendid buildings and the great size of the place, standing there on the hill-top solitary and silent. When I visited this place in 1861, it cost me many nights' journey carried in a dooly, having to put up in villages during the day while my dooly-bearers slept and rested. Often there was no accommodation for travellers, and I had only a shed or the shadow of a tree to rest under; and for food, a share of my dooly-bearers' was all I had to depend upon. This will explain how at that time very few people had seen or heard of the glory of the spot. Now a railway runs past it, and in the future it is more likely to be visited by those who are able to appreciate its architectural remains. I venture to predict that when these have been properly drawn and photographed, Chitôrgarh will enjoy a fame that will stand in the first rank, and that the art on its monuments will be the subject-matter of many a pencil and pen.

From Chitôrgarh Dr. Führer went on to Bijôlî and Dhir, the latter being the ancient capital of Malaya, or Malwa. There are two Masjids here which have been erected out of the material of older Jaina temples, similar to what took place at Delhi and Ajmere. One of these is called the "Lat Masjid," from a fragment of an iron column, or Lat, lying near it. This piece is 24 feet in length, and is not round, but square. Fergusson+ mentions this, but thinks that the iron had only been used by the Hindus for some constructive purpose. Dr. Führer now reports two other pieces, one of which stands in the Maharaja's gnesthouse, and has a "bell capital"; as these are probably only fragments of one original piece, the bell capital" is sufficient to show that it has been a Lat similar to the one now at Delhi.

Near to Komalmer, in the Aravali range, the existence of a temple of the Chaunsath Yoginis is reported. These are The Sixty-four Female Demons. It is described as "a primitive temple," and the statues, which I assume are those of the sixty-four demons, "are all of the purest white "marble, each about 3 feet in height, and well "executed." The walls of the courtyard were once entirely covered with immense slabs of black marble "bearing inscriptions of the eleventh

† Indian and Eastern Architecture, p. 241.

^{* &}quot;The beera, or pan, the aromatic leaf so called, "enveloping spices, terra japonica, calcined shell-lime, and pieces of the areca nut."—Tod.

^{*} These are the two celebrated towers. One is the Jayastambha, erected by the Râna Kumbhakarna, to commemorate a victory he gained in A.D. 1439. The other is a Jaina tower: it is a Kirttistambha, and was erected in Samvat 952. It was dedicated to Rishabhanátha, the first Tirthamkara. Reproductions of my sketches of these towers will be found in the Transactions, Vol. V. New Series, pls. xiii. xiv.—W. S.

"century, but now only a few fragments are left." It is to be regretted that the Report gives such slight details of the remains, for very few of these temples are known to exist in India. Cunningham stated * that only five temples of this kind had, up to 1879, been discovered. The most of these were circular, but one at Khajurâha was quadrangular.† Perhaps the best known of these temples is the one at Bhera Ghat, near the Marble Rocks on the Narbada, of which I sketched a portion in 1861. This is a circular temple, 130 feet in diameter, with a cloister all round formed of eighty-four cells: these contain statues of the sixty-four Yoginîs, and twenty other figures. There is a question as to whether the circle constituted an hypethral temple in itself, or was only the outer enclosure of a central shrine. Details of the one found in Rajputana would have been valuable for comparison with those previously known.

Dr. Führer's Report ends with a visit to Sânch-Kânakherâ, or the "Bhilsa Topes," and records the finding of a large number of new inscriptions, amounting to nearly 400, among which 378 are legible, against 198 in Sir A. Cunningham's book; and Stupa No. 11 has yielded, instead of 43, nearly 100, among which 78 are legible. In addition, some statues of Buddha, with interesting dedications, have come to light during the excavations.

The Report of Edmund W. Smith deals almost entirely with the details of the work done, that is, the drawings, photographs, &c., which have been produced by the staff under his charge. A few of the photographs are given with the Report.

In noticing former issues of the current valuable series of the Epigraphia Indica, it was explained that, although the inscriptions are chiefly of value in relation to Indian history, yet they often have references to temples which should not be overlooked. The last Part, which has been presented by the Government of India, chances to contain an exceptional article by Dr. G. Bühler, on some Jaina sculptures which were found at Mathura by Dr. Führer in his exploration of the Kankâlî Tîlâ‡ in 1890-91.§ The Jainas, it may be explained, were a sect that came into existence about the same time that Buddhism appeared; and the teaching of the two sects was closely allied. When Buddhism disappeared it is supposed that many who belonged to it went over to Jainism, which has existed down to the present day. They are a large and very wealthy body, and have many splendid and costly temples, those on Mount Abu being perhaps the best known. Although their more modern temples are plentiful, remains of their older architecture are scarce—indeed, I

1871, of some Jaina sculptures and inscriptions,* but none were said to have any indications of architecture upon them. This serves to prove the value attaching to Jaina sculptures that may chance to have upon them any scraps of architecture; and those lately discovered at Mathura are partly fragments of this kind, some of the sculptures having representations of stupas upon them. Dr. Führer has a comprehensive work in hand upon these sculptures and inscriptions; but in the meantime he has allowed Dr. Bühler to publish some of them in the Epigraphia Indica, where four plates appear, reproductions from photographs. The first plate supplies us with a new term in Indian architecture; it is "Ayâgapata." The word, Dr. Bühler says, is clearly enough made out on the inscription. The sculpture to which this name belongs is a slab 3 feet by 2 feet 8 inches, covered with ornament and symbols, with a figure of a Jina in the centre. Several of these slabs have been found, and Dr. Bühler states that the name, Ayagapata, "may be appro-"priately rendered by 'tablet of homage or wor-"'ship," since such slabs were put up in temples, "as the numerous inscriptions on them say, 'for "'the worship of the Arhats.' The Ayagapatas "seem to be a distinctive feature of the ancient "Jaina art, as neither the Buddhists nor the "orthodox sects mention them." The small Jina in the centre of this tablet scarcely differs from the common dhyani Buddha sitting cross-legged. It has the *chhatra*, or umbrella, over his head. Four trisulas, in form the same almost as the Buddhist examples of this symbol, fill up a belt round the Jina. The most prominent object on the tablet fills up the circular belt next to the last; it is so large, beyond that of the other symbols, that one may hazard the conjecture that it may have been the special thing the Arhats bestowed their homage upon. Dr. Bühler does not identify it with the swastika, but it seems to me to be only a peculiar variety of that symbol, the marked difference being that the four limbs, instead of being gammas, are curved forms, and apparently intended to represent the halves of trisulas. Is it possible to suppose that this figure was intended as a combination of the two symbols? In each of the four circles formed by the curves there is a symbol: these are a swastika, a trisula, two fish, and what is supposed to be a monogram. In the belt encircling this, which is so narrow that it is only intended as a kind of border, there are small female figures represented as running or flying: the four centres of this belt contain, first, a small figure sitting

might say that, up to the present, hardly any

vestiges of it have been brought to light. Cunning-

ham mentions the finding at the Kankâlî Tîlâ, in

cross-legged; two of the spaces have sacred trees;

^{*} Archæological Survey of India, vol. ix. p. 62.

[†] A plan of this will be found in Fergusson's Indian and Eastern Architecture, p. 246.—W. S.

† Tilå, a mound or hillock.—W. S.

§ See The R.I.B.A. Journal, Vol. IX. N.S. p. 468.

and the fourth has a stûpa, unfortunately so small that its details cannot be made out. The four outer triangular corners have in each of them a female figure that appears to be holding up the whole of this circular frame of symbols. These figures, instead of legs, have long continuations that may be serpents, or perhaps they are only intended as ornamental rolls. It can scarcely be said that there is anything in these details we are unaccustomed to, and yet the whole combination is different from what we are familiar with on the old Buddhist sculptures.

The second plate contains three subjects: the first of these is of great interest from its bearing on a noted Jaina legend, which is very ably worked out by Dr. Bühler. The other two are relievos "found on the fragment of a doorstep from one "of the two temples buried under the Kankâlî "mound." On one of these relievos there is a representation of a stûpa, and although small, yet the main features of it are distinct enough, and it may be accepted at least as a rough model of a Jaina monument of this kind; and on that account



STUPA ON JAINA SCULPTURE, MATHURA.

it is a welcome addition to our knowledge. A sculpture at Sanchi has a stûpa upon it which resembles this one from Mathura in most of its details.* The winged figures, like sirens, presenting offerings-Suparnas Dr. Bühler calls them-are almost the same in both sculptures; but in the Mathura one there are a number of Kinnaras, or centaurs, who are also bearing offerings for the The stûpa in the Sanchi sculpture is exceptional in its great height, and from this Fergusson suggested that it may have been the representation of one of the Afghanistan Topes, which are much higher in proportion to their width than those at Sanchi. The costume and appearance of the figures worshipping at this stupa differ widely from those in the other sculptures; this made it probable that they were some tribe not belonging to the plains of India, and they might be a late migration, or they may have been a party of pilgrims from across the Indus. Now that we have the representation of a Jaina stûpa, we find that it is also higher than those usually represented in the Sanchi sculptures, or the Sanchi stûpa itself, whose proportions we know exactly. One very noticeable feature in the Sanchi example just alluded to is that it has three rows of the "Buddhist Railing" represented upon it, one above the other, and the Mathura one has the same number, to which it may be added that the old position of the rails in both cases is very much the same. The small stûpa on the Ayâgapata, although indistinct as to its details, is also a tall one. On pl. iii. there is a small stûpa with two rows of the "Buddhist Railing" upon it: this also shows the structure as being high in its proportions. These facts do not help us in solving the peculiar problem presented by that particular stupa of the Sanchi sculptures; that which had been accepted as a probable explanation now falls to the ground, thus leaving the whole question to be begun again.

Plate iii. shows the reverse and obverse sides of a sculptured *Torana*.* Without its surroundings it is difficult to form an idea as to what may have

been the construction and appearance of the gateway to which this slab belonged. The sculptures on this fragment are, although of a primitive character, most carefully and beautifully executed—finer, I should say, than anything on the Sanchi Toranas. The curved belts of ornament are very fine, being both varied in design and delicate in every way.

Plate iv. has no architecture upon it. The only point of interest is that of a *Dharmachakra*, or

"Wheel of the Law," which stands upon a trisula, and with the exception of a slight detail or so is the same as those on the Buddhist sculptures. An inscription gives its date as Samvat 79, or 156-197 A.D. The group of sculpture with this wheel was the gift of a female lay disciple, and "was set up at the Vodva stûpa, built by the gods." This phrase Dr. Bühler interprets as meaning that it was so ancient that its real origin had been completely forgotten. This would imply that stupas among the Jainas were no new thing. This is confirmed by some remarks of Dr. Bühler's on the stupas described above. He says: "With "respect to the stûpa, which we shall meet "again more than once in the other plates, I "repeat that it is a form of the funeral monu-"ments once used and worshipped by all Indian "sects that followed the Jāāna and Bhakti "Mårgas, and I refer for some of the reasons for "this theory to my article Vienna Or. Journal,

^{*} Fergusson's Tree and Serpent Worship, pl. xxviii. fig. 1.

^{*} Torana, it may be explained, is a term now applied to such structures as the gateways at the Sanchi Stúpa.—W. S.

"vol. iv. pp. 328f. I may add, however, that "Brahminical Chaityas * are occasionally men"tioned in the Mahâbhârata. Thus we read "(Mah. 1, 109, 13–14): 'That country, O king,
"'protected on all sides by Bhîshma, in accord"'ance with the sacred law, became lovely, being
"'adorned with hundreds of Chaityas and sacri"ficial posts.' The juxtaposition of the Chaityas
"and Yûpas† shows that Brahminical sacred buildings, probably stûpas, were meant."

I must give Dr. Bühler's concluding remarks, as they show the progress that is being made in the archæology of Indian architecture. He says: "These new sculptures from the Kankâlî Tîlâ "teach the same lesson as Dr. Bhagvânlâl's "Mathura slab published in the Transactions of " the Leyden Congress, and prove that the ancient "art of the Jainas did not differ materially from "that of the Buddhists. Both the sects used the "same ornaments, the same artistic motives, and "the same sacred symbols, differences occurring "chiefly in minor points only. The cause of this "agreement is, in all probability, not that the "adherents of one sect imitated those of the other, "but that both drew on the national art of India "and employed the same artists. Full proof of "this assumption, which modifies the statements "in some standard works on Indian archæology "regarding the development of ancient Indian "art, can only be obtained by the excavation of "really old Brahminical temples. And it is to this "task that the Archæological Survey in India "ought to direct its attention, as a thorough "exploration even of a few Saiva and Vaishnava "temples, which date from the second or first "century before our era, will do more for our "knowledge of the history of the Indian religions than the excavation of a hundred stûpas or "Vihâras. But even at present various pieces of "collateral evidence are available which support "the view that all the general Indian sectarians "took their sacred symbols and the ornaments of "their temples from one common store-house. "Chief among these is the now generally acknow-"ledged fact that the Brahminists, the Jainas, "and the Buddhists, all and at the same time "contributed to the development of the cave "temple architecture which formerly was con-"sidered to be a speciality of the Buddhists. It "is now conceded that the oldest known caves at "Barâbar and Nâgârjunî belonged to the Vaish-"nava Âjîvikas, and those near Katak to the "Jaina worshippers of the Arhats. The un-"doubtedly Buddhist Lenas date from somewhat "later times. It is, therefore, not in the least "doubtful that all old Indian sects used rock-'excavations for sheltering their ascetics who

"wished to live in retirement, and sometimes also "their idols; and it is highly probable that this "usage goes back to times antecedent to the rise "of Buddhism and Jainism. In the face of such "facts one can only say that it would be sur-"prising if the worship of stûpas, of sacred trees, "of the Wheel of the Law, and so forth, more or "less traces of which are found with all sects, as "well as their representation in sculptures, were "due to one sect alone instead of being heirlooms "handed down from remote times before the "beginning of the historical period in India."

These words show that the study of Indian architecture is not standing still; while at the same time they warn us that some of the older theories which have been accepted will require modification in the light of later knowledge. As to the importance of exploring a Saiva or Vaishnava temple of the last two centuries B.C.; in noticing a Progress Report in these pages last year, * I called attention to a statement in it that at the site of the ancient Adhichhatra in Rohilkhand, Dr. Führer had come upon "a large two-"storied Saiva temple, built of carved brick, and "dating from the first century B.C." Dr. Bühler's opinion, as expressed above, will show I was not far wrong in saying at the time that this was a "startling announcement." Dr. Führer's account of this temple has not yet been published, but when it appears, new light may be expected to be thrown upon many points that are yet doubtful regarding the early architecture of India.

WILLIAM SIMPSON.

(32)

THE SENTIMENT OF BEAUTY IN TOWNS.

Esthétique des Villes. Par Ch. Buls, Bourgmestre de Bruxelles, Membre de la Chambre des Représentants. 80. Bruxelles 1893. Printed for private circulation. Émile Bruylant, 67 Rue de la Régence, Brussels.

An Essay by the Burgomaster of a capital city, with especial reference to the domain he temporarily governs or controls, will seldom fail to interest readers; but when the subject of it is treated from a high æsthetical standpoint and made generally applicable to all historical towns, as in the pamphlet under review, it becomes almost a duty, at least for architects, to consider it carefully and try to profit by the suggestions and arguments it contains. This is the more desirable in the present case, because M. Ch. Buls forwarded his Essay early in the current year to the Lord Mayor of London, who then confided it to the Institute, and whose gift was briefly acknowledged at the time [p. 186].

M. Buls is, wisely, an admirer of the picturesque which is derived from chance, not art: the old cities grew, and extended themselves little by little, as necessities or needs ordained and in conformity therewith, sometimes along the banks of

^{*} Chaitya is generally understood to be the same as Stûpa, but it is supposed that there was another very similar form of monument which may be at times meant by this word.—W. S.

† Sacrificial posts.—W. S.

^{*} The R.I.B.A. Journal, Vol. IX. N.S. p. 422.

a stream which ultimately dried up or was vaulted over, and its sinuous course left naturally a curved, irregular, serpentine-like highway; sometimes round the foot of a hill in a semicircle, or up the hill in spiral fashion. If in a wilderness it were necessary to build a town, M. Buls would follow the same conditions, as hill, or watercourse, or plain directed. He would not lay out a new town with streets straight and at right angles to each other like the "Bastides" or Free towns founded in France by Edward I. of England. He thinks it all very well for Americans to do so on a perfectly level site—which, by the way, they do not—and obviously he would have preferred the tortuosity of half a dozen np-and-down streets like those which used to lead to the Northern Railway Station in Paris, before the Rue Lafayette was pierced; and he would have denounced an innovation which permitted the miserable cocherde-flacre to toil slowly up an easily inclined plane along a broad straight avenue, instead of whipping his more miserable horse au pas up the narrow and irregular streets which that magnificent thoroughfare replaced or ventilated. M. Buls, nevertheless, admits that a rational being having to go from one point to another in a town should be allowed, if the option be possible, to do so in a straight line: hence his indignation that a onceopen space in Brussels, across which the public had made tracks in a logical and practical fashion, was laid out for building purposes without regard to those "courants naturels de la circulation." The public had found out for itself that two sides of an equilateral triangle were greater than the base, but the landowner and the builder cared little for that; they made their streets and built their honses so that the public had afterwards to renounce its short cut, to give up the diagonal, and take the two sides of a rectangle—as many a bigger public in a bigger city than Brussels has had to do, during many generations of men invincibly ignorant of the '' Esthétique des Villes,'' and bereft of a Burgomaster to bewail their lot.

But M. Buls, though not afraid here and there to tilt at a windmill, has words of exhortation which none can afford to ignore. Architects would produce, he says, more satisfactory plans of sites and of public buildings, more original and more durable, if they would take advantage of topographical accidents, of practical exigencies, and of needs imposed by the use to which the buildings are destined. They should not hesitate to alter the course of a street or pierce a block of buildings if by so doing the view can be obtained of a tower or spire, or of some interesting monument. Happy Brnxellois! What architect would not serve you if such things were always possible! But surely Brussels, being an old historic city, must have landed proprietors with rights which architects must respect! M. Buls is on firmer ground when he reminds architects that nowhere

in the old Brussels can there be found a place or square created—planned with malice aforethought —as is often the case in modern towns, simply to exhibit a monument, a palace, a church, like the Place des Palais, the Place Poelacrt, and the Place de la Société Civile. He says: "Quand "une place n'a pas de destination utilitaire, elle "est morne et déserte; elle est une création arti-"ficielle, manquant de vie et ne justifiant pas son "existence." The old "places publiques" were markets, places of assembly for trade or other purposes, as may be verified in every part of the old world. He does not object, though, to the formation of a place where several main roads meet; and Logic or Reason—both objectionable critics—may urge that a fountain or a monument of some sort to mark the centre of such a place is not æsthetically, or even practically, useless.

There are a few excellent passages in the pamphlet which must not be spoiled by translation. For instance:—

C'est de la vue horizontale que les architectes devraient surtout se préoccuper et non de la vue cavalière [bird's-cye view], sensible seulement pour les aéronautes qui planent de loin en loin au-dessus de la ville (p. 13).

Les administrateurs d'une grande ville qui a une histoire et qui conserve des restes trop rares, hélas! du passé, ne doivent pas se préoccuper uniquement des intérêts de la viabilité. Ils doivent se souvenir qu'ils appartiennent à une nation qui compte dans l'histoire de l'art et chez laquelle les bourgeois mettaient leur fierté à orner la cité natale. . . . Une ville prospère doit fatalement se transformer, s'adapter à des besoins nouveaux de circulation, à des exigences de propreté, d'hygiène et de confort. Mais ectte évolution ne doit pas se faire brutalement, elle doit s'opèrer avec un respect filial pour tout ce qui peut, sans inconvénient, être conservé de souvenirs anciens (p. 15).

Nots ne voyons que deux sources d'inspiration pour les artistes qui cherchent à être de leur temps et de leur pays. C'est l'interpretation ornementale des formes qui dérivent des matériaux employés dans la construction et l'adaptation de motifs quisés dans notre architecture nationale à la destination de l'édifice (p. 29).

C'est le quartier a fashionable part of Brussels] des palais et des hôtels princiers, conçu à une époque où les règles académiques empéchaient de comprendre la valeur et la poèsie des quartiers bourgeois (p. 35).

When it is added that M. Buls has a good word to say for the English villa and domestic architecture generally, that he is able to describe, in pleasant badinage, the various architectural fashions that have had their day in Brussels during the last thirty years, christening one, "le "style ébéniste," because the houses resemble "de grands buffets avec une ornementation con-"venant beaucoup plus au bois qu'à la pierre"; when it is known that he can quote James Fergusson's History of the Modern Styles with effect; that he has seen the classical world, and especially Greece; that he criticises the alterations, developments—improvements or otherwise—of his own city with technical acumen, it is impossible not

to congratulate the Belgian capital upon its choice of a Burgomaster, and the Burgomaster upon the subject he has chosen for a thoughtful and well-written Essay.

WILLIAM H. WHITE.

NOTES, QUERIES, AND REPLIES. The Tower Bridge.

It may be of interest to members to be reminded that there exists in the Library a chromo-lithograph, presented by the Bridge House Estates Committee on 30th November 1887, bearing an inscription as follows: "The Tower Bridge—the "memorial stone was laid by H.R.H. the Prince of Wales on behalf of H.M. the Queen on 21st "June 1886, the Right Honourable John Staples, "Lord Mayor, Edward Atkinson, Esqre., Chair-"man of the Bridge House Estates Committee." On the left of the inscription are the words "John "Wolfe Barry, Engineer," and on the right, "Sir "Horace Jones, Architect." Those who are curious in this matter may like to examine the drawing of 1886 (designed in 1885) and compare it with the finished structure to be opened to the public on Saturday; and they cannot fail to note remarkable divergencies from the architect's original sketch. This fact has probably had its just influence upon Mr. Wolfe Barry, who, when acknowledging the assistance rendered to him by his early collaborator, says [in the pamphlet of which a review appears on p. 563]: "I cannot "but express my great regret that the work was "so soon after its commencement deprived of the "architectural knowledge and experience of Sir "Horace Jones, and that he has not lived to see "the mode in which his conception of a large "bascule bridge across the Thames has been "realised." A full description of early designs for the Tower Bridge is given in Mr. J. E. Tuit's book, also noticed in the Review before mentioned, and an elevation of the design of 1885, by "Messrs. Jones and Barry" will be found on page 27 of that book.

The Condition of the West-End Streets.

From John Hebb [F.]—

A recent traveller, Mr. Georges Montbard, in his entertaining book *Among the Moors*, thus describes a street in a Moorish town:—

It is incredible what things there are in this street—this canal, rather—this cloaca maxima. . . What don't you find there! carcasses, vegetable refuse, animal ordure, old rags, loathsome pallets swarming with vermin, broken furniture, disjointed cages, blocks of stone. It is, in fact, the tout à l'égout in the strictest sense of the word. And these things will remain there for days, months, years, until the wood rots, the vegetables putrefy and return to the soil; until the shreds torn from the carcasses shall disappear in the maws of the vultures. And when the broiling sun shall have dried up these marshes, calcinated these bones, what remains will return to dust under the hoofs of mules and the tramp of human feet.

This description, with some little modification, will apply to the condition of some of the streets of London. It is true we have no vultures in London, but then they are a palliative, and not an aggravation.

Lord Randolph Churchill has done well in calling attention to the "stercus odoriferæ collu-"viesque viæ" of the West End of London (he does not trouble himself about the streets of other parts) which render the Metropolis a standing disgrace to the local authorities and a source of amazement to foreigners. It must be evident to everybody acquainted with the subject that it is impossible to properly cleanse roads without using water, and that in abundance. In all Continental cities the principal thoroughfares are regularly flushed with water at night or in the early morning, and the streets thus kept free from the accumulation of refuse. This is done in the City of London, where the work commences at eight o'clock in the evening, and is usually continued until eight or nine o'clock the following morning. There can be no valid reason why this system should not be extended to the whole of the Metropolis. It is only a question of expense, and this should not be allowed to stand in the way of an obvious and indeed necessary improvement. What renders the adoption of this system difficult for London is the high cost of water, which is due to the fact that the water supply is in the hands of private monopolists, and not, as is the case with Paris and many of our large provincial cities, in the hands of the municipality. The average cost of water in London is 4s. 4d. per annum for every head of the population, while in Paris (where the supply is much more abundant) the cost varies from 2s. 1d. to 2s. 5d., or about one-half that for London, and this comparative cheapness accounts, no doubt, for the cleanliness of the Parisian thoroughfares.

Mr. Weaver, the Surveyor to the Vestry of Kensington, attempted to excuse the shortcomings of his vestry by pleading that it would be impossible to introduce the Paris system in London in consequence of the insufficient size of the sewers and the amount of traffic in the Metropolis, and wound up his apology by asserting that no comparison could be made between Paris and London, as Paris was a city of pleasure and London a city of business; an assertion which must be very amusing to anybody acquainted with the inner life of the former city, and whose experience is not limited to an acquaintance with the Boulevards and the Rue de la Paix. Lord Meath effectually disposed of these excuses by pointing out that there need be no interference with the traffic if the work of cleansing the streets were done during the night or the early hours of the morning, and were entrusted to an efficient staff, and not to aged and incapable men, employed merely to keep them off the parish and reduce the

rates.

The question of confining the work of cleansing the streets and removing refuse to certain hours is an important one, and ought to be pressed upon the vestries. These operations go on all day long, and it is not an uncommon thing to find our finest thoroughfares obstructed in the busiest part of the day by tumbrils and mudcarts. There is, however, no reason why the removal of refuse and the cleansing of streets should be one of the most prominent features of London life as it is at present. Byron contrasted the difference in this respect between Italy and England: in Italy

Recling with grapes a waggon stop, the way; In England 'twould be dung, dust, or a dray.

The contrast is indeed a striking one. We sneer at the sanitary condition of Italian cities, but it is to be doubted whether the *inmondizzajo* and the *pozzo nero* are any worse than the chaotic arrangements which do duty with us for municipal sanitation.

Concrete Pile Driving.

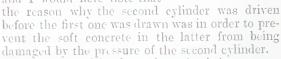
From F. DE J. CLERE F.J. Wellington, N.Z.— Though Wellington, N.Z., is one of the best

situated capital cities in the world as a commercial distributing centre, it has had the orest drawback poses within reasonable distance of its wharves and jetties. This being the case, reclamation has been resorted to, and the best sites, extending over many acres, were a few years ago covered with the water of the harbour to a depth of from twelve to fifteen feet. The material used for reclamation was loose rock and clay taken from the hillsides in the vicinity, and offers a poor foundation for brick buildings. Generally piles of Podocarpus Totara (a very lasting timber) have been driven to a solid bottom and then covered with concrete. Some fourteen years ago the acting colonial architect, Mr. Burrows, used concrete piles as a foundation for the Supreme Court building, but for some reason or another the experiment was not repeated until a few months ago, when my firm again used the same materials for the foundation of a four-floored brick warehouse for Messrs. Sharland & Co. Whether our molis operandi was the same as that of Mr. Burrows I cannot say; but feeling that our experience might be of service in other cases, I am venturing to send you this record of the matter. The building we were to erect was a wholesale drug store. 100 feet long by 10 feet wide, and having three floors above the ground, the walls being of brick of ordinary thickness, resting on a good concrete foundation, which rested in its turn on concrete piles. The "plant" required to put these piles in position consisted of two steel "cylinders" as sketched, a wooden "dolly" of Anstralian iron bark, an ordinary derrick and 25 cwt. monkey, and donkey engine and winch, and for each pile a cast-iron shoe (weighing 72 pounds each), formed as

shown in fig. 1. After excavating for the concrete footings the shoe of the pile was placed in position, and the cylinder lowered on to it; a small portion of sand was then thrown in to form a cushion for the "dolly," and a "grummet," or ring of rope, was placed between the top ring on the "dolly" and the top of cylinder, in order to prevent the jar burring the latter. The whole pile was then

- Dia ivside

driven in the ordinary way two feet into the solid original bottom of the harbour, and the "dolly" withdrawn from the cylinder and the next cylinder driven. The first cylinder was then pumped dry and filled with concrete, and by means of a rope passing through blocks hung above it, and carried to winch of donkey engine, the cylinder was drawn, and the semi-liquid concrete left in the ground in the shape of a pile about 13 inches in diameter. The second cylinder was then treated in the same way. The piles in the long stretches of walling were spaced about three feet apart and arranged as in fig. 2; but when they had to be closer we found it necessary to leave the cylinders in the ground, as the power at the contractor's disposal was not sufficient to draw them out of the lightly compressed soil. These cylinders, having to be driven only once, were made of thinner material than the rest. It should be noted that as the concrete had to spread out as the cylinder was drawn, a 12-footlong cylinder was required to make a 10-foot-long pile; and I would here note that



The stuff used for the reclamation being porous, we found that the tide rises and falls in trenches

as in the harbour; hence the necessity of pumping out the cylinders; and it was very noticeable that at high tide the cylinders were much more easily drawn than at low. The n

O O FIG. 2.

FIG. 1.

drawn than at low. The number of piles driven in a day averaged seven.



9, Conduit Street, London, W., 28th June 1894.

MINUTES. XVII.

At the Sixteenth General Meeting (Ordinary) of the Session, held on Monday, 25th June 1894, at 8 p.m., Mr. F.C.Penrose, F.R.S., President, in the Chair, with 58 Fellows (including 19 members of the Council), 52 Associates (including 2 members of the Council), 2 Hon. Associates, and 27 visitors (exclusive of several ladies), the Minutes of the Meeting held 11th June 1894 [p. 541] were taken as read and signed as correct.

The Secretary announced the decease of William Calder

Marshall, R.A. [H.A.]

The following members, attending for the first time since their election, were formally admitted, and signed the Registers of Fellows and Associates respectively—namely, Frederick Montague Gratton and David Jenkins, Fellows; and Lister Coates and Henry Walter Coussens, Associates.

The President, having invited the serious attention of the Meeting while he made a communication from the Council respecting the lamentable event which occurred on the 24th inst. at Lyon whereby the life of the President of the French Republic had been sacrificed, formally moved a vote of condolence with the architects of France; and Mr. Charles Barry, Past President, having seconded the motion in sympathetic terms, it was

RESOLVED, that the Royal Institute of British Architects desires to be associated with the Central Society of French Architects in an expression of the horror and indignation with which the news of President Carnot's mournful death has been received; and to offer, on behalf of British architects at home and beyond the seas, respectful and sympathetic condolence with their colleagues of France in the terrible calamity of last night.

The President, having delivered his Address on the Presentation of the Royal Gold Medal, the gift of Her Majesty the Queen, handed the same to Sir Frederic Leighton, P.R.A. [H.A.], who replied in acknowledgment of the honour, and the proceedings terminated at 9.15 p.m.

The Birmingham Society.

The following officers were elected, at the meeting of this Society on the 22nd inst., for the Session 1894–95: President, Mr. Wm. Henman [A.]; Vice-President, Mr. W. H. Bidlake, M.A. [A.]; Members of the Council, Messrs. Jethro A. Cossins, Wm. Hale [F.], H. R. Lloyd [A.], F. Barry Peacock, A. Hale, E. Hale, E. C. Bewlay; Librarian, Mr. C. Silk; Hon. Treasurer, Mr. A. Harrison; Hon. Solicitor, Mr. A. R. Lynex; Hon. Secretaries, Messrs. Charles E. Bateman and Herbert T. Buckland.

The Devon & Exeter Society.

In the list of officers of this Society printed on page 546 the name of Mr. Edward Appleton [F.] should have appeared among the members of the Council.

LEGAL.

Party-Walls.

JOLLIFFE v. WOODHOUSE.

This case, which came before the Court of Appeal on the 22nd inst., raised a question of considerable importance as to the law relating to party-walls. According to the report

in The Times of the 23rd inst., the plaintiff was tenant from year to year of No. 17 Coronet Street, Hoxton, where he carried on business as a fish salesman. The defendant was the owner of the adjoining house, No. 19. Towards the end of 1891, or the beginning of 1892, the defendant pulled down his house with the intention of rebuilding it, and it was found that the party-wall between Nos. 17 and 19 was not strong enough to support the new building. The defendant accordingly served notice upon the plaintiff under the Metropolitan Building Act 1855 of his intention to pull down the party-wall. The defendant began to pull down the wall on 16th February 1892. Thereupon the plaintiff, on 17th February, issued the writ in this action for an injunction to restrain the defendant, his architect, builders, surveyors, or servants, from interfering with the party-wall, or in any way hindering the plaintiff from carrying on his business or rendering his house uninhabit-The rebuilding was completed in August 1892. The trial of the action was commenced before Mr. Justice Bruce in April 1893, the defence being that the acts complained of were done under the powers of the Metropolitan Building Act 1855. The plaintiff then sought to make out that the defendant had exceeded his powers under the statute, and an order was made by consent directing the action to stand over to enable the plaintiff to give full particulars of alleged acts of excess of statute. The plaintiff duly delivered particulars under this order, from which it appeared that the main complaint was that the defendant had allowed an unreasonable time to elapse before the completion of the rebuilding. In May 1894 the action was tried before Mr. Justice Grantham and a common jury, and leave was obtained by the plaintiff to amend his statement of claim so as to raise the issue of delay in the rebuilding. The jury found a verdict for the plaintiff, damages £40, and judgment was entered accordingly. The defendant now applied for a new trial on the ground of misdirection. The points which he mainly relied on were two. First, that the Judge ought not to have allowed the claim to be amended, inasmuch as the cause of action had arisen since the writ; and, secondly, that as the defendant had provided a competent architect and builder he was not responsible to the plaintiff for the delay caused by their negligence.

Mr. A. T. Lawrance and Mr. St. L. Leslie for the defendant; Mr. Crispe and Mr. Swanton, for the plaintiff.

Counsel for the plaintiff were not called on.

Lord Justice Lindley said it was contended that the Judge had no power to amend so as to give to the plaintiff in this action any relief in respect of injuries sustained after the issue of the writ. But that point was clearly waived by the defendant by the consent order, and even apart from that order his Lordship was not satisfied that the Judge had no power to allow the amendment under the circumstances. Then it was said that the defendant was not liable for the injury caused by the delay in rebuilding, because he had employed a proper architect and a proper builder, and that they were responsible for the negligence, if any, which gave rise to the delay. That contention was founded on a mistake. person who sought to knock down a party-wall for the purpose of rebuilding it had a right to do so both at common law and by statute, but it was his duty to rebuild it with reasonable despatch. Here the plaintiff had a cause of action against the defendant for the breach of that duty, and it was no answer to say that the defendant had delegated that duty to his builder or architect. A man could not delegate a duty, and the class of cases in which an employer who had engaged a competent contractor was held not liable for the negligence of the contractor had no application. The defendant might employ a contractor if he chose, but that did not enable him to get rid of the responsibility for the breach of the duty which he owed to the plaintiff. That clearly appeared from Bower v. Peate (L.R. 1 Q.B.D. 321) and

Hughes v. Percival (8 App. Cas. 443). The application should be refused.

Lord Justice Lopes concurred. Cubitt v. Porter (2 Man. & Ry., 267) decided that an action would not lie against an adjoining owner for pulling down a party-wall for the purpose of rebuilding it but he was bound to do so without eausing any unnecessary inconvenience to his neighbour, and without unreasonable delay. That also appeared from section 85, sub-section 3, of the Metropolitan Building Act 1855, which provided that no building owner should exercise any right thereby given " in such " manner or at such time as to cause unnece-sary incom-" venience to the adjoining owner." In absolute duty was thrown upon the person knocking down the wall to do so within a reasonable time and in a reasonable manner, and he could not delegate that duty to a contractor.

Lord Justice Davey concurred.

General Building Line.

WENDON V. THE LONDON COUNTY COUNCIL.

The judgment of the Court of Appeal (2nd March) upholding the decision of the Queen's Bench Division in the case of Wend n v. The Low Count / C until was briefly adverted to on p. 363 of the Journal. Its great importance to building owners and other fully justifice the detailed

report which follows.

From the case stated by the Metropolitan Police Magistrate it appears that previously to March 1890 the owner of a piece of land situate in Full am, to indel on the west by Munter Read, and on the cast by Filmer Read, I did out upon the land a road for building at a new street, forty bet in width, called Fernhurst Road and communicative la a straight line directly between Muniter Road and Frince Road. In March 1890 the owner deposited with the Ve try of Fulham plans for the erection of twelve shop upon the of Fernhur t Road. At that time there were no building or fronting the Fernhurst Roal. The site of the pathernmost of the shops was on the north side of Fernanct Road, and immediately at the junction of that road with building complained of in the summons. In August 1890 the owner commenced to build upon the site in accordance with the plans, and constructed immediately between the site and Fernhurst Road the footings for the front and and creeted upon the footings, and imme lintely adjoi in a and abutting upon Fernhurst Road, the tlank wall of the shop to a distance of thirty feet from Munster Road, and to a height of twelve 'eet from the level of Fernhurst Road. He then discontinued the laid line operations, and portions of the work soon became covered with rulbish. Subsequently, in 18/2, he creefed upon the north side of Fernhur-t Road a number of dwelling bouses, the fronts of which were erected at a distance of thirty feet from the centre of the roadway, and about ten fort back from the front of the wall mentioned above. In July 1892 the to the appellant, who purchased the feetings and dank wall, and who, in January 1803, commoneed building operations, utilising for that purpose the portions of the work which had been creeted by the owner. At the date of the summons the shop had been carried to the height of two storeys, or about twenty-three or twenty-four feet from the level of the ground, and it projected about ten fe t in advance of the general line of building presently to be mentioned. No portion of the work was erected in advance of the flank wall, or further in advance of the general line of buildings than the flank wall. At the date of the summons the footings and flank wall formed part of the building complained of in the summons. The consent in writing of the London County Council had not been obtained to the completion of the building by the appellant, and on the 21st March 1893 the superintending architect of the Council decided the general line of building on the north side of Fernhurst Road to be the main fronts of the dwelling-houses erected thereon as above stated. The magistrate ordered the appellant to demolish so much of the building as was erected by him beyond the general line of buildings in Fernhurst Road. Upon appeal, the Divisional Court affirmed the order of the magistrate see report, p. 128, ante. The building owner appealed.

Mr. Channell, Q.C., and Mr. R. Cunningham Glen, for the appellant Wendon; and Mr. Avory for the respondents,

the London County Council.

The Master of the Rolls, Lord Esher, in delivering judgment, stated the question to be whether what was erected after the general line of buildings in the street was defin d was a "building, structure, or erection" within the meaning of section 75 of the Metropolis Local Management Act 1862. That depended upon what was the true is terpretation of that section. It was admitted that the case did not come within section 74. The state of things before the general line was defined was this: Part of a wall had been built to a height of 12 feet by the appellant's prelecessor in title. That, in Lord Esher's opinion, mu't be taken to be the same as if the appellant had himself built it. The wall was intended to be the beginning of a shop or house. The building of the wall was discontinued for two years and a half; but inasmuch as there was no aban lom ient the case must be treated as if what was some before and after the building line was established had been done continuously. Then, was what was done after the general line was established erecting of a "building, structure, or creetion" within the meaning of cti n 75? . . . The answer must depend in a great meaare upon the facts, and the true inference to be drawn from them. The wall was built to a height of 12 feet before the general he was catable hed, and it was intended to 10-11 part of a collaine: let the question was whether the wall was, as a fast, sufficiently alvanced to be a "building, "st ucture, or cr ction" within the section. The section did not prevent a buildin exitting at the time when the general line war established from being finished or completel afterwards. The words are: "No building shall be "er eted" and the interpretation put upon them by the Court in Auk vod v. We transfer Local Board (41 L. J. Ch. 723) was that in order to bring a case within the section the ground must be vacant at the time when the building line was established. If what had been erected at that time was not a "building, structure, or crection." it could not be said that the builder was afterwards completing or altering a "building, structure, or crection" which existed at the time when the building line was established. If, therefore, the Court thought that at that till this was not a "building, "structure, or creetion." what was done afterwards was erecting a building after the building line had been ascertained, and not in rely completing a building. What in any particular ease amounted to a "building, structure, or "ercetien" was a question of fact. Then, did the wall amed noto a baid line? The intention with which it was erected had little to do with the question. The question was. What was it? not what it was intended to be. The wall, his Lordship thought, was not so far advanced as to le a "Inilliam, structure, or crection" within the meaning of the section. There was nothing in the statute which said that where a building had been commenced before the building line was ascertained it might not be completed afterwards; but this wall, as a fact, was not a "building" within the section at the time the general line was established, and the land at that time was therefore vacant land within the true meaning of the section. If so, what was done afterwards was erecting a building, and the order of the magistrate was right. The appeal was dismissed.

Lord Justice Lopes and Lord Justice Davey followed

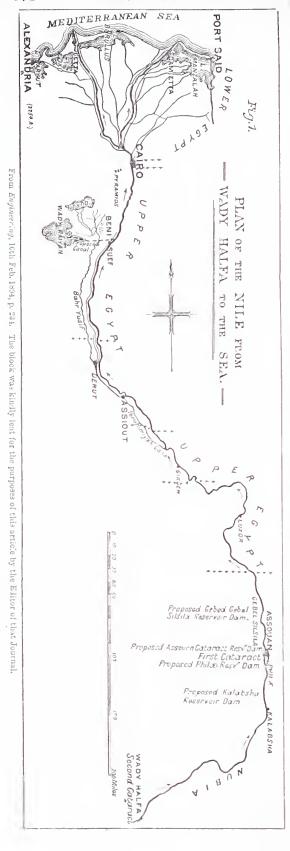
with judgments to the same effect.



NILE RESERVOIRS: THE FAYOUM AND RAIYAN-MOERIS. By Mr. Cope Whitehouse, M.A., Grand Officier de l'Ordre du Medjidieh.

ORE than two thousand years have passed since Herodotus contributed to Hellenic literature an account of three monuments of the ancient world, which stood on the confines of the unconquerable Desert, and whose foundations had been laid before the world of history began. They were all on the physical frontiers of human thought. No effort of man can ever carry the triumph of art over nature beyond the rocky plateau on which stand the huge pyramidal masses of Gizeli and Dahshur. If the Ionian traveller might have been deemed capable of exaggerating, though with no apparent motive, the dimensions of the Labyrinth, Strabo was well fitted by birth and education to estimate justly human achievements, and Pliny declared that this vast structure was still considered by Roman architects and engineers the most striking and awe-inspiring work of human hands. It, too, stood in the Desert. "Wonderful as is the Labyrinth," said Herodotus, "the work "called the Lake of Moeris, which is close by the Labyrinth, is yet more astonishing. The "circuit of its circumference is 3,600 furlongs, which is equal to the entire length of Egypt "along the sea-coast." Thus these three productions of human intelligence and organised labour were associated not only in contiguity, but in pre-eminence; and passed so far beyond the range of modern thought that, in 1882, it was denied that two of them, and those the more splendid of the trilogy, had ever existed. Architectural and engineering works are dramas. "Who is he," exclaimed Diodorus, gazing upon the vast expanse of the Lake of the Sea, "that considers its admirable utility and its incredible magnitude, that is not forced to "ask how many myriads of men were employed, and how many years were spent in its "completion?" "Considering the benefit and advantage brought to the Government by this "great work, none ever could sufficiently extol it, according to what the truth of the thing "deserved. For being that the Nile never kept to a certain and constant height in its "inundation, and the fruitfulness of the country ever depended upon its just proportions, "King Moeris dug this lake to receive such water as was superfluous, that it might neither "immoderately overflow the land, and so cause marshes and standing pools, nor, by flowing "too little, prejudice the fruits of the earth for want of water."

Had the Greek men of letters been in closer harmony with the skilful engineers who constructed the Pyramids, the Labyrinth, and the Lake, it would have been better for their own reputation, since, at all events, Voltaire ridiculed, and Jomard denied, the possibility of such an excavation as would correspond to their description. A wise adaptation of means to ends is a characteristic of Oriental engineers from the earliest times. It enabled the Phænicians to propose to Xerxes what have seemed to us mythical or monstrous feats. It induced the architects of the Ptolemies to cover the island of Philæ with temples, which grow out of, and complete the work of, Nature.



The Pyramids of Gizeh were saved from destruction at the hands of Mehemet Ali half a century ago by Linant de Bellefonds. The Labyrinth, lost to sight, was lost to literature when Lepsius identified it, with singular crudeness and temerity, as the miserable hovels of wretched unbaked mud-bricks at Hawara. Well might Messrs. Perrot and Chipiez say: "The plan and "description of the building, first discovered " and described by Jomard and Caristie, hardly "corresponds with the account of Strabo, and " with what we learn from other ancient sources " as to the magnificence of the Labyrinth and "the vast bulk of the materials of which it was " composed" [History of Art in Ancient Egypt, p. 25]. The inland sea had also disappeared. It had not simply been evaporated by the sun, but deleted as a fable. Jomard had given to the shallow lake of the Fayoum, the Birket el-Qerun, a somewhat increased surface and about sixteen feet of greater depth, and then abandoned the measurements and other features—the depth of 250-300 feet, the circumference of 450 miles, the blue colour of its waters, the prolific fisheries, with the countless fishermen on its sandy shores, its major axis stretching north and south, the pyramid-crowned island where the water was nigh fifty fathoms deep-to be treated as textual error or vain repetition of wilful falsehood. The whole fabric of Greek and Roman literature, historical and scientific, was thus shaken to its base.

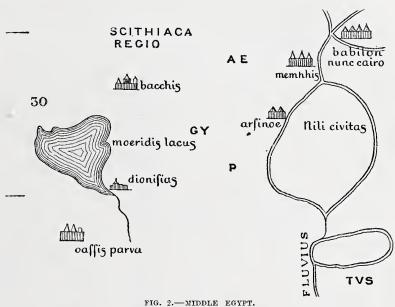
Worse fate was in store for the Lake when Lepsius persuaded the scientific world to accept the theory of Linant de Bellefonds.

From the Arab conquest to the time of Mehemet Ali, the cultivation of Egypt had been by inundation. This foreigner, who as coming from ancient Greece might be compared with the Ptolemies, introduced into Lower Egypt that substitution of irrigation for inundation which first turned attention to the storage of a part of the surplus flood-waters of the Nile for use in summer. Egypt has three seasons, not four; and summer, therefore, is here a conventional term employed for the period from the middle of April to the middle of July, at which the Nile, which discharged into the Mediterranean

a thousand million cubic metres on 10th October 1878, had delivered at Cairo on 1st July of the same year scarcely fifteen millions. This year, for more than two months, not a single drop has come within miles of the Mediterranean, except as polluted with salt and sewage, trickling from drainage cuts into the beds of the Damietta and Rosetta branches, laid bare and dry by the Barrage, or into the salt marshes from Mareotis to Menzaleh. The peasant of Lower Egypt is engaged during the inundation in keeping the flood out of his lands, which are covered with summer crops during the entire period, and are already in September whitening with cotton. These agriculturists, however, read in Arabic books, such as those of Ali Pasha Mubarekh, or in the vernacular papers, seven of which have a circulation of many thousand copies, the story of how the Pharaohs prevented the flooding of the Delta by escaping the water into the Fayoum.

In April these farmers are anxiously telegraphing to Cairo, or studying the daily bulletins, to determine whether the supply to be expected from Equatorial Africa will justify further

labour on fields planted on the chance that the Nile may deliver a maximum of thirty million cubic metres as against the average of twenty. From August to October they are only eager that the delivery should be the least possible. While, therefore, a million cubic metres supply of water per day, up to a total supply of thirty millions, represents in round terms £500,000 worth of crops, beyond this amount it is useless. Every inch of excessive flood is a loss in the labour expended in guiding it to the sea, and four inches of further rise



From an Atlas by Claudius Ptolemy in the Doge's Palace of Venice. 1554.

at Assouan in October are quite sufficient to strike with dismay the heart of the Government, and threaten or produce disasters which are to be measured by millions of pounds. This danger is increased by the wider area recently brought under summer cultivation. High-flood relief is a necessity.

To the south of Cairo all this is changed. The peasant pursues the ancient method of cultivation. He is dependent upon the inundation to which the fellah of the Delta is indifferent and hostile. The long plateau, which extends in varying width by the side of the perennial river-bed, is enclosed by embankments of earth, or on one side by the Desert. Such an area is technically termed a basin. In June it is an arid plain, except where small patches of Indian corn, millet, or melons are irrigated. If this irrigation is carried on by lifting the water with the well-known shadoof, the result is a "living wage" of three farthings for a day's work of eight hours. Steam pumps and perennial irrigation are confined to favoured areas. The Nile flows past the lands of Upper Egypt for five hundred miles protected by the Government, and preserved for the use of the Delta with its prescriptive claims.

There is otherwise a cessation of all employment. The sun splits the black earth into

clods. The deep fissures serve as a subsoil ploughing. In the end of August they will be filled with the silt-charged water. In September the basin is a lake, except where the villages, palm-groves, and gardens are protected from the flood, or where the upper corner of each basin, nearest to the river, owing to the slope of the terrace, has not yet received the last

·TABVLA·

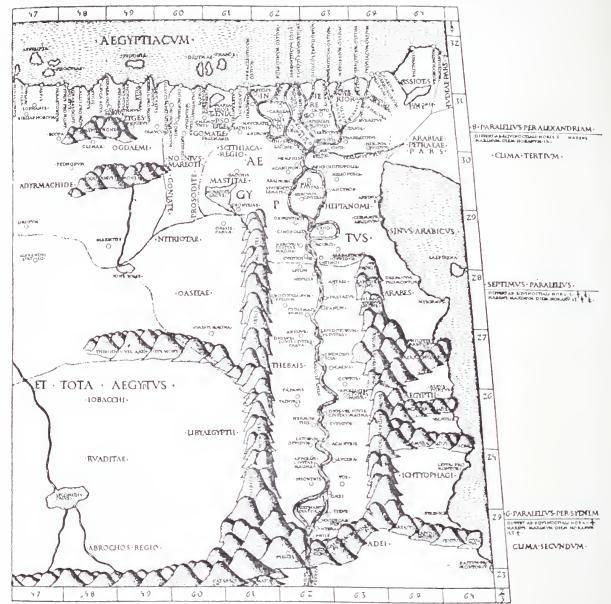


FIG. 3.—Reduced from the copper engraving in the editions of Cl. Ptolemy. Rome 1478-1508.

filling, which usually takes place in October. Thus these basins are like steps by the side of the stream. The peasants are employed in preserving their isolation, and defending the great main bank from the river, and the cross banks from the action of the waves.

The sun still ploughs and the Nile manures over 2,000,000 acres, which yield £9,000,000. But there is a tract of about 300,000 acres, developed by Ismail Pasha, which is assimilated

to the irrigated areas of the Delta, and produces £2,500,000, of summer crops, chiefly sugarcane. Every peasant naturally desires that his land also should be irrigated. He only asks permission to exclude the inundation and satisfy his wants from the life-giving river. The low-Nile daily flow at the cataracts of Assouan is about 30,000,000 cubic metres. For that part of the Nile Valley lying south of Assiout there would be required about 12,000,000 cubic metres daily, and from Assiout to Cairo about 10,000,000 more. Thus no reservoir is required for Upper Egypt, so long, at all events, as the Italians, Abyssinians, English, Germans, Congolese, and French, who now surround the catchment basin of the Equatorial rainfall, or the Mahdists who control its passage at Khartoum, neither extend cultivation nor tamper with a great lake or a little affluent. The water-storage, which threatens the submergence of the island of Phile, the destruction of the ancient remains in the valley for a hundred miles, the extrusion of 30,000 inhabitants of Nubia, the depopulation of this section of the great river-way, is not to be utilised for six hundred miles. The total amount required to give Upper Egypt all that it longs for but may not touch, to maintain existing areas in the Delta, and extend cultivation to the coast-line and the Menzaleh bank of the Suez Canal, is only 3,600 million cubic metres. It is obvious that an increased delivery from Lake Victoria-Nyanza, with its surface of 70,000 million metres, of three inches would be more than enough, and equal the proposed dam of 70 feet at Phile. If the Abyssinians would hold up four feet on Lake Tsana it would serve the purpose still better. If the six cataracts in the long course of the Nile from Assouan to Khartoum were strengthened, raised, and contracted, so as to detain a little longer in the reaches of the river the onward progress of the water, no reserve would be required, certainly above Cairo.

Reverting to the present condition of basin-cultivation in Upper Egypt, after these basins have been filled, and stood undisturbed for ten days, the agriculturist prays to Allah, as in Strabo's time he implored Isis and Osiris, to lower the Nile as rapidly as possible, so that the seed may be sown and the crop spring up during the cool autumn. The moisture that is in the ground is, in the absence of rain, the sole source of aqueous nutrition. If, therefore, the period of drainage be delayed, the crop is overtaken by the parching winds of spring, and is stunted in straw and with scant-filled heads. The emptying of these basins, however, is a very delicate operation. The Nile must have fallen low enough to accept the increased volume without endangering the land further north. The banks in the Delta will have been weakened by three months' strain. The peasants, of whom 53,000 worked last year as Nile corvée, forced, unfed, and unpaid,* grudge each hour taken from their own fields; and force, fine, and imprisonment are required to keep them at their posts. The peasants of Upper Egypt join with their brethren of Lower Egypt in the demand for a drainage-canal and flood-escape above the neck of the Delta.

On the 3rd March 1882, a camel, a horse, eight Arabs, and a European were in the Desert fifty miles west of the Nile, in the latitude of Beni-Suef. A less attractive region could not be imagined. Never travelled by any except an occasional Bedouin, it was a moment of exceptional danger as revolt was already imminent in Cairo. The son of the Sheikh had abandoned me an hour after daybreak. His father had exacted a pledge—was it for his horse's sake or mine?—that I would not sleep beyond the limits of the Fayoum. Somehow travellers' note-books are always recovered, and as I rode I pencilled a line: "He filled Lake Moeris, "threaded the Labyrinth, and solved the secret of the Sphinx." At least the world should know my object, if mine were to be the notoriety of a strange death. None of these things have been accomplished. Still, that visit has marked an epoch in more than one department of

^{*} See Parliamentary Report, Egypt, No. 1, 1894, pp. 34, 35.

scientific inquiry. The Royal Institute of British Architects published in 1888 a map * which shows that the Fayoum is not, as had been previously stated, bounded on the south by Desert rising to the high plateau. This depression, for which I retained the Arabic name given to the spring and small oasis in its southern corner, has been made the subject of minute investigation. The map of the Roman edition of Claudius Ptolemy [fig. 3] led me to believe that it might be used as a drainage-basin for Middle Egypt, if not as a reservoir. "So extensive," says Mr. Garstin in his Report on Perennial Irrigation and Flood Protection in Egypt (1894, p. 30), "has been the literature that the name of the Wadi Raiyan ought to be as well known "to the world as the Lake of Geneva." "It is the opinion of all the authorities cited, "including Sir C. Scott-Moncrieff, Colonel Western, Colonel Ross, and Major Brown, that the



FIG. 4.—TEMPLE NORTH OF DIMEH, THE ANCIENT BACCHIS [FIG. 2].

"project of converting it into a lake is a perfectly feasible one, and that the reservoir thus formed could be utilised to supply the wants of Lower Egypt during summer."

It was expressly stated by the historians of the five centuries which include Herodotus and Pliny that the Fayoum depression was a part at least of a vast lake, 450 miles in circumference, filled annually, above the level of low-Nile at Memphis, with an evaporating surface and an escape-canal sufficient to ensure to the inhabitants of Middle Egypt independence of the Nile as a drainage-canal. Instead of running the water off to the Mediterranean, they opened the sluices, or, in more intelligible technical language, cleared the silt from the floodescape, and lowered the waters in the basins outside at pleasure.

In 1882 the entire scientific world had accepted the theory of Linant de Bellefonds, which assumed that the great lake was, in fact, only a small local reservoir. My researches

^{*} Transactions, Vol. IV. N.S. between pp. 16 and 17: Geological Sketch Map of Egypt and Sinai, by W. Topley, F.G.S.

conclusively proved that the alleged facts were erroneous, and that in the fifth century B.c. practically the entire area was submerged. On my visit to Dimeh a temple was pointed out in the Desert, about five miles to the north. Dr. Schweinfurth justly enjoys the honour of having visited and described it (1885). It was, as my photographs (1889) [figs. 4 and 5] show, only a garrison temple. Its façade [fig. 4] may have been covered with stucco, which might account for the vertical position of the stones. The bold and chaste style of the interior [fig. 5] forbids the imputation of coarse or clumsy workmanship. It stands at the level of cultivated land in the Nile Valley. Its position proves that the lake once stretched in a vast

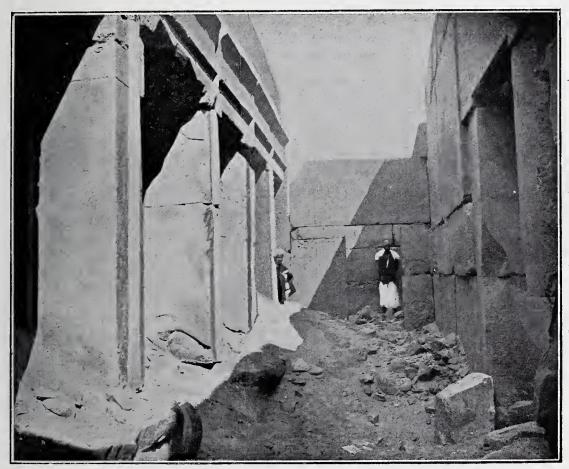


FIG. 5 .-- INTERIOR OF TEMPLE [FIG. 4].

sheet of water from Medinet to the western hills, broken only by a pyramid-crowned island, which I identify with Dimeh. This promontory would be an island if the water reached the level of Medinet; and the long causeway, which Lepsius described as a street, has been pronounced by Dr. Schweinfurth to have been a quay. My aneroid observations were verified and confirmed by a Government expedition under Major Brown.*

Is this the Bacchis, whose latitude and longitude are given in the text of Claudius Ptolemy? It is scarcely possible to determine which of the two points was selected by the Alexandrian cartographer to mark the northern end of the district of Moeris. On the south, the Wadi Raiyan connects with a long, narrow valley, shown by my observations to be slightly

^{*} See his work, The Fayoum and Lake Moeris.

below the level of the Nile. It communicates with the Raiyan basin by a valley a little higher than the flood level. It contains the remains of a monastery [figs. 6 and 7], frequently altered or rebuilt, but apparently abandoned in the fifteenth century. This is the Dionysias of Ptolemy. Its gateway [fig. 7] was discovered by me, in 1883, at a farmhouse thirty miles distant, on the Bahr Jusuf, to which it had been transported stone by stone on camels.

The Raiyan basin must not be confounded with the Moeris of Herodotus. But as that traveller expressly describes the lake in his day as longer than it was wide, his words would be justified by assuming that this depression was a southern basin, into which the overflow passed when the lake had risen above a certain height. It is clear that the Lacus Moeridis of the Ptolemaic Atlas [fig. 2] was never intended to represent that of Herodotus; nor can it be a mediæval attempt to reproduce the submerged Fayoum, or the Birket el-Qerun. It corresponds so closely in position, shape, and size, with the Wadi Raiyan and Wadi Muellah that it would seem

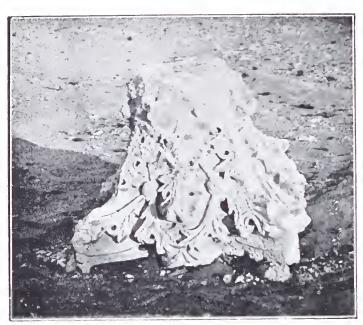


FIG. 6.—COPTO-BYZANTINE CAPITAL AT DIONYSIAS [FIG. 2].

impossible to explain its presence as the fortnitons result of a merely conjectural restoration of the lost lake of the Greek historian.

It is a striking illustration of the irony of Fate, that the success of those engineers who designed Moeris, and their successors of the Ptolemaic renaissance, should now threaten the submergence of the fairest, the most poetic, architectural remains in Egypt; and, incidentally, the early extinction of every trace of human labour, except two, from Assouan to Cairo [fig. 1]. The Citadel and the Pyramids would still confront each other across the plain where Cairo was. Memphis was thus threatened, according to Herodotus. It has been obliterated. The Fayoum

would be a place of refuge, and from this ark the land might be repeopled. Except the Pyramids all the monuments would have utterly perished.

Linant de Bellefonds was so intimately acquainted with the Nile that the problem of storage presented itself to his mind in its true complexity. He recognised the impossibility of making a reservoir in the valley itself, with due regard to the safety of the country. When one stands in the presence of a Pharaoh, to whose ancestors, centuries earlier, had been due the regulation of the Nile by the Fayoum-Moeris, he realises that time in Egypt is not as elsewhere. Three thousand years have not sufficed to crumble to ashes the frail tenement of that soul, much less to fade the map of a gold-mine worked in B.C. 1357. Seti I. expressed his belief that future generations of travellers, from Koptos to Berenice, who quaffed a cup of water from the perennial well he had with infinite perseverance sunk in the Desert, would bless his name. The hieroglyphs are an equivalent of those Greek words of Diodorus, which tell how the king, known to him as Moeris and the Arabs as Raiyan, thought that in the great lake he had left an imperishable monument to his belief in the True, the Beautiful, and the Good, as the end and aim of a wise monarch.

When, therefore, about 1840, Linant de Bellefonds was called upon by Mehemet Ali to advise upon the best method of increasing the summer supply, he discussed, only to dismiss from further serious consideration, a storage reservoir formed by a dam across the river. An elevating dam, such as he proposed, at Silsileh, keeping the water at about flood-level, would have been only a repetition, higher up, of the Ibrahimieh system of perennial canals, and the Bahr Jusuf, with its successful career of well-nigh four thousand years. The Barrage, at the neck of the Delta, is a similar structure. Here, however, the peculiar configuration of the bed of the Nile, which drops to the level of the sea, forms a deep pool which the flood-waters of the river no longer scour. At this very moment the river is stagnant at Cairo, of a dark

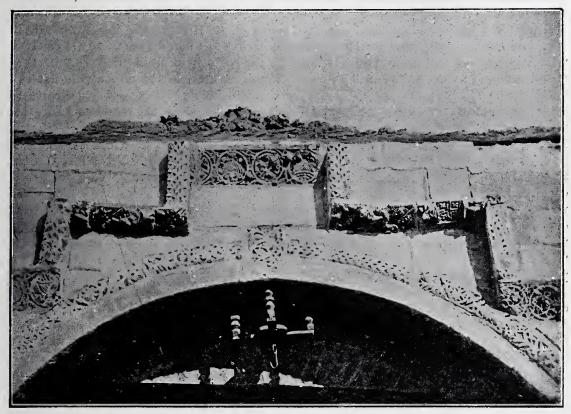


FIG. 7 .- GATEWAY OF THE DEIR MUELLAH, THE ANCIENT DIONYSIAS OF PTOLEMY.

green colour, and even the water which is delivered from the hydrants has an offensive smell. It is an objection to any barrage in such a climate, and dealing with water so highly charged with putrescent germs as the White Nile, that when ponded up it rapidly deteriorates. It would be fatal to a Silsileh reservoir, scarcely less serious at Assouan, but would perhaps permit storage at the Kaibar cataract, with the subsequent aëration in the long Nubian reaches of the river and their filtering beds of sand.

Political and strategic objections did not then exist. No one even dreamed that the frontier of Egypt could ever be brought back to Wadi Halfa. Who could imagine that such a well-known disease as Mahdism would be so neglected as to cause in four years the loss of five million lives? Sporadic cases of this religious mania had been treated by mild or drastic measures, by a bribe or the knife, by every Caliph and Cadi in Islam since the death of the Prophet. Ismael understood the disease, and each outbreak was confined to the local centre.

Linant de Bellefonds proposed to utilise the upper Eastern plateau of the Fayoum, with a surface of 400 square kilometres and a storage capacity of 2.915 million cubic metres. The project was never studied in detail. It was again mentioned by him in 1872, but only as of academic interest. In 1880–82 an attempt was made to change his Silsileh project into a reservoir by a French group under the direction of a M. La Motte, backed by Nubar Pasha. It had no real principle of vitality. It has, however, from time to time, been presented for renewed consideration. It has of late been hoped, rather than thought, that it might furnish an answer to the question, How to save Philæ?

At precisely the same time I was pursuing those "scholastic researches," as Lord Cromer has termed them, which were mainly based upon the Greek historians, Arabic traditions, and Ptolemaic maps. "It is probable," wrote Mr. Moberly Bell in The Times of 2nd May 1888, "that if Mr. Cope Whitehouse had appeared in Egypt in 1882 as the mercenary would-be "promoter of a simple commercial enterprise, his views would from the first have received a "more serious consideration. It is, however, at least equally probable that they would not "have achieved the same success." It seems incredible that, in the face of the figures by which the Department of Public Works now seeks to justify the proposed destruction of Phile, the value of a drainage-canal or flood-escape and a storage-reservoir should have been persistently denied from 1883 to 1891. The official estimates of annual gross receipts are now £12,000,000. In 1887, and again in 1888, Sir C. Scott-Moncrieff fixed the maximum net revenue at £115,000, and Mr. Moberly Bell put it at about £80,000. Yet I had furnished to the Foreign Office in 1887 my own calculation, verified by evidence of a trustworthy character, that an increased revenue of £2,500,000, or a capitalised value of £100,000,000, would result from pouring the superfluous and dangerous waters of the Nile into the barren desert of the Wadi Raiyan! To use Mr. Moberly Bell's words again, "Mr. Cope Whitehouse " had indicated to the Government the existence of an Eldorado, and they hesitated to avail "themselves of it." He might have added: or allow others to carry these researches to a practical conclusion at personal pecuniary risk.

So far as the addition to the prosperity of Egypt of this large sum is concerned, it seems certain that my estimates can no longer be considered exaggerated. Sir B. Baker concedes £7,000,000 per annum of gross receipts, and if he proposes that the tax-collector shall only tithe this amount, it is in ignorance of the fact that the proportion is the other way. The peasant of Upper Egypt tithes the flood-crop, and is content when only nine-tenths go to the Government. Those who are interested in the preservation of Philae must confront this financial issue, and recognise the impossibility of seriously demanding the maintenance of the present situation at any such annual loss as even £2,500,000.

It is with poignant anguish, and a strong claim to sympathy, that I watch, with feelings akin sometimes to terror, the conversion of the fame of a King Moeris, and of that Pharaoh Raiyan who befriended the patriarch Joseph, into the disfame of an Erostratus. There would have been no reservoir proposed had it not been for me. At least, before a final decision is reached, let us each strive to secure the fullest possible examination of the whole subject in its strategic, sanitary, political, asthetic, and historical aspects, as well as from financial and engineering points of view.

COPE WHITEHOUSE.





CHRONICLE.

The late President of the French Republic.

At the General Meeting of the 25th ult., before the business of the evening was taken, the President, Mr. Penrose, F.R.S., referred to the assassination of Monsieur Carnot at Lyon on the previous evening, and asked leave to move a resolution expressing the sympathy of British architects with their French brethren in an affliction which had plunged not France alone but the whole civilised world into deepest grief. The motion, seconded in moving terms by Mr. Charles Barry, F.S.A., Past President, was passed in silence; and a letter was despatched, at the close of the Meeting, to the President and Council of the Société Centrale des Architectes Français, as follows:—

GENTLEMEN AND HONOURED COLLEAGUES,—At a General Meeting of the corporate body of British Architects held this evening, for the purpose of investing Sir Frederic Leighton, P.R.A., with the Royal Gold Medal presented by Her Majesty The Queen, for the promotion of Architec-

ture, it was unanimously

RESOLVED, that the Royal Institute of British Architects desires to be associated with the Central Society of French Architects in an expression of the horror and indignation with which the news of President Carnot's mournful death has been received; and to offer, on behalf of British architects, at home and beyond the seas, respectful and sympathetic condolence with their colleagues of France in the terrible calamity of last night.

We have the honour to remain, &c.,



F. C. Penrose, President. Aston Webb, Vice-President. John Slater, Member of Council. Wm. Emerson, Hon. Secretary.

William H. White, Secretary.

25th June 1894.

The following reply, addressed to Mr. Penrose, was received from Monsieur Daumet [Hon. Corr. M.] on the 29th ult.:—

Paris, le 28 Juin 1894.

Monsieur le Président et très honoré Confrère,—Les membres du Bureau et du Conseil de la Société centrale des Architectes français, réunis hier, ont entendu la lecture de la lettre confraternelle que vous me faisiez l'honneur de m'adresser au nom des membres de l'Institut Royal des Architectes britanniques, à l'occasion du deuil qui frappe notre pays. Tout français méritant ce nom est encore frémissant du crime accompli sur le digne Président de la République, Monsieur Carnot. Nous sommes tous pénétrés de vive gratitude par l'expression des sentiments d'indignation ressentis par nos confrères anglais dans une circonstance aussi douloureux que tragique.

En votant hier une adresse à la veuve ainsi qu'à la famille du grand citoyen que la France vient de perdre, la Société centrale des Architectes français n'a pu mieux faire que de reproduire textuellement le passage de la lettre où vous exprimez avec tant d'éloquence et si énergiquement

votre horreur pour le forfait accompli.

Nous sommes toujours touchés, Monsieur le Président et très honoré Confrère, des témoignages de bonne confraternité que vous nous donnez en toutes circonstances; et récemment encore nous étions unanimes, à notre réunion annuelle, en vous adressant nos vœux les plus chaleureux pour la prospérité des membres de votre Institut Royal.

Veuillez recevoir, Monsieur le Président et très honoré Confrère, l'expression de mes sentiments de haute considération et de cordiale sympathie.

Le Président de la Société centrale des Architectes français; Membre de l'Institut:

H. DAUMET.

THE ANNIVERSARY DINNER.

Monday, the 2nd inst., being the sixtieth anniversary of the First General Meeting of the Institute, which was held on the 2nd July 1834 at the old Thatched House Tavern, was the occasion of a Festival Dinner, to which were invited several noblemen and gentlemen, some of whom were able to honour the Institute with their presence. The Dinner took place in the Whitehall Rooms of the Hotel Metropole, with Mr. Penrose, F.R.S., President, in the Chair, supported on his right by the Ambassador of the United States, the President of the Royal Society, the Bishop of Ely, Sir Edmund Lechmere, Sir Douglas Galton, the President of the Institution of Civil Engineers, and the representatives of other corporate bodies; while on his left were the President of the Local Government Board, the Bishop of Peterborough, Sir F. Dixon-Hartland, Sir John Fowler, Sir Stuart Knill, the President of the Surveyors' Institution, and other representatives. A full list of the guests and members, with a few of the latter's friends, making a total of 208, is here given:-

Professor Aitchison, A.R.A., Past Vice-President; Mr. T. W. Aldwinckle [F.]; Mr. L. Alma-Tadema, R.A. [H.A.]; Mr. J. Macvicar Anderson, Ex-President; Mr. Richard Armstrong [F.]; Mr. H. S. Ashbee, F.S.A.; Mr. James Bailey; Mr. T. Barnes-Williams [F.]; Mr. R. Barratt;

Mr. Charles Barry, F.S.A., Past President (Royal Gold Medallist); Mr. J. Wolfe Barry, C.B., M.Inst.C.E. [H.A.]; His Excellency the Hon. Thomas F. Bayard, Ambassador U.S.A.; Mr. Wyke Bayliss, President of the Royal Society of British Artists; Mr. Walter Beetles; Mr. John Belcher [F.]; Mr. E. Ingress Bell [A.]; Mr. Thomas Blashill [F]; Sir A. W. Blomfield, A.R.A., F.S.A., Past Vice-President (Royal Gold Medallist); Mr. Godfrey Boulton, M.A.; Mr. David Brandon, F.S.A., Past Vice-President; Mr. F. S. Brereton [F.]; Mr. Thomas Brock, R.A.; Mr. Bernard Brooks; Mr. C. W. Brooks [A.]; Mr. James Brooks, Vice-President; Mr. J. Martin Brooks [A.]; Mr. J. M. Brydon [F.]; Mr. W. D. Caröe, M.A., F.S.A. [F.]; Mr. G. E. Carpenter; Mr. Arthur Cates, Past Vice-President; Mr. Francis Chambers [F.]; Mr. F. Chancellor [F.]; Mr. Ewan Christian, Past President (Royal Gold Medallist); Mr. T. Chatfeild Clarke [F.], President of the Surveyors' Institution; Mr. H. H. Collins [F.]; the Right Rev. Lord Alwyne Compton, D.D., Bishop of Ely [H.A.]; Mr. A. M. Cope; Mr. Charles II. Corbett, J.P.; Mr. W. H. Corfield, M.A., M.D. [H.A.]; Mr. J. D. Crace [H.A.]; Mr. Walter Crane; the Right Rev. Mandell Creighton, D.D., Bishop of Peterborough; Mr. G. R. Crickmay [F.]; Mr. A. G. Cross; Mr. Alfred W. S. Cross [F.]; Mr. Edgar Cross; Mr. Alfred Culshaw [F.]; Mr. Henry Currey, Past Vice-President; Mr. T. W. Cutler [F.]; Mr. H. D. Davis [F.]; Sir F. Dixon-Hartland, Bart., M.P., F.S.A.; Mr. E. J. Dodgshun [F., President of the Leeds and Yorkshire Society; Mr. T. Olinthus Donaldson; Mr. Thomas Drew, R.H.A. [F.], President of the Royal Institute of Architects of Ireland; Mr. John Dunn [F.; Colonel Edis, F.S.A. [F.]; Mr. T. M. Ellis [A.]; Mr. William Emerson, *Hon. Secretary*; the Venerable Archdeacon Farrar, D.D., F.R.S.; Mr. Barr Ferree; Admiral Field, M.P.; Prof. Banister Fletcher [F.; Mr. E. B. Florence; Mr. H. L. Florence F.; Mr. Arthur S. Flower, M.A., F.S.A. [A.]; Sir Walter Foster, M.P.; Mr. Charles Fowler [F.]; Sir John Fowler, Bart., K.C.M.G. [H.I.]; Mr. Frank Fox [A.]; Mr. Charles France [F.]; Mr. T. Fraser; Mr. W. J. Fraser; Sir Edwin Galsworthy; Capt. Sir Douglas Galton, K.C.B., F.R.S.; Mr. Ernest George [F.]; Mr. E. M. Gibbs (F.), President of the Sheffield Society; Mr. Alfred Gilbert, R.A.; Mr. Alfred Giles, Ex-President Inst.C.E.; Mr. William Glover; Mr. John Goodacre, President of the Leicester Society; Mr. Alcx. Graham, $\label{eq:F.S.A., Vice-President} F.S.A., Vice-President; Mr. G. E. Grayson [F.]; Mr. Frank C. Greenfield; Mr. Horace Gundry [F.]; Mr. J. H. Gwyther; \\$ Mr. W. W. Gwyther [F.]; Mr. Charles Hadfield [F.]; Mr. William Hale [F'.], Ex-President of the Birmingham Society; Mr. Edwin T. Hall [F]; Mr. Octavius Hansard [F]; Mr. E. J. Hanson [F]; Mr. Edward Hanson; Mr. E. H. Harbottle [F]; Mr. F. H. A. Hardeastle [A]; Mr. Thomas Hardy; Mr. Thomas Harris (F.); Mr. Christopher Harston [F.]; Sir Charles A. Hartley, K.C.M.G., F.R.S. [H.A.; Mr. Henry Hartley [F.], President of the Liverpool Society; Major Heales, F.S.A. [H.A.]; Mr. G. T. Hine [F.]; Mr. John Holden [F.], President of the Manchester Society; the Very Rev. S. R. Hole, D.D., Dean of Rochester; Mr. F. U. Holme [F.]; Mr. J. W. Hulke, F.R.S., President of the Royal College of Surgeons; Mr. F. W. H. Hunt [F.]; Mr. B. Ingelow [F.]; Mr. Henry Jarvis [F.]; Mr. James Jerman [F.], President of the Devon and Exeter Society; Mr. George Judge [F.]; the Right Hon. Lord Kelvin, President of the Royal Society; Mr. George Kenyon [4.]; Colonel Sir N'g 1 Kingscote, K.C.B. [H.A.; Sir Stuart Knill, Bart., Master of the Worshipful Company of Plumbers; Mr. W. H. Knowles [F.]; Mr. Edwin Lawrence, LL.B. [H.A.]; Sir Edmund Lechmere, Bart., M.P.; Sir Frederic Leighton, Bart., President of the Royal Academy [H.J.] (Royal Gold Medallist); Sir James D. Linton, President of the Royal Institute of Painters in Water Colours; Rev. Donald Macleod, D.D.; Mr. E. H. Martineau [F.]; Mr. A. J. Meacher [s.]; Mr. Ed. W. Mountford [F.], President of the Architectural Association; Mr. G. C. Morant; Mr. Andrew

Moseley [F.]; Mr. James Murgatroyd [F.]; Mr. A. S. Murray, LL.D. [H.A.]; Mr. John Norbury; Mr. John Norton [F.]; Mr. J. G. Finch Noyes [F.]; Mr. W. Q. Orchardson, R.A. [H.A.]; Mr. James Orrock, R.I.; Mr. Alfred T. Osmond [H.A.]; Mr. J. Oswald [F.], President of the Northern Association; Mr. Wyatt Papworth [F.]; Mr A. N. Paterson, M.A. [A.]; Mr. H. A. Pelly [A.]; Mr. Francis C. Penrose, M.A., F.R.S., F.R.A.S., President (Royal Gold Medallist); Mr. H. R. Perry [A.]; Dr. J. S. Phené, F.S.A. [F.]; Mr. F. S. Philpot; Mr. C. J. Phipps, F.S.A. [F.]; Mr. Beresford Pite [A.]; Mr. Rowland Plambe [F.]; Mr. W. W. Pocock [F.]; Mr. F. W. Porter [F.]; Mr. Horatio Porter, M.A. [4.]; Mr. W. H. Preece, C.B., F.R.S.; Mr. A. N. Prentice [4.]; Mr. F. G. Hilton Price, F.G.S., Director of the Society of Antiquaries; Mr. H. W. Primrose, C.S.I.; Mr. John S. Quilter [F.]; Sir Robert Rawlinson, K.C.B., President of the Institution of Civil Engineers; Sir Benjamin W. Richardson, F.R.S.; Mr. W. B. Richmond, A.R.A.; Mr. T. M. Rickman, F.S.A. [A.]; Mr. Lacy W. Ridge [F.]; Mr. R. R. Rowe, F.S.A. [F.] Mr. P. Sabel; Mr. Joseph Sawyer [F.]; Mr. E. Seward [F.], President of the Cardiff, South Wales, & Monmouthshire Society; the Right Hon. G. J. Shaw-Lefevre, M.P., President of the Local Government Board; Mr. John Slater, B.A. [F.]; Mr. R. Elsey Smith [A.]; Mr. P. Gordon Smith [F.]; Mr. Lewis Solomon [F.]; Mr. Lewis Solomon [F.]; Mr. Henry Spalding [F.]; Mr. R. Phené Spiers, F.S.A. [F.]; Mr. G. A. Spottiswoode [H.A.]; Sir John Stainer, Mus. Doc.; Mr. A. R. Stenning [F.]; Mr. J. J. Stevenson, F.S.A. [F.]; Mr. Coutts Stone [F.]; Mr. W. Larner Sugden [F.]; Mr. Arthur Sykes [A.]; Mr. Benjamin Tabberer [F.]; Mr. Henry Tanner [F.]; Mr. John Taylor [F.]; Mr. Yeoville Thomason [F.]; Mr. E. Maunde Thompson, C.B., D.C.L., Principal Librarian of the British Museum; Mr. Frederick Todd [F.]; Colonel Trollope; Mr. John Trotter; Sir Charles Turner, C.I.E.; Prof. Unwin, F.R.S. [H.A.]; Mr. R. F. Vallance [F.]; Mr. James Walker, C.I.E.; Mr. Alfred Waterhouse, R.A., Past President (Royal Gold Medallist); Mr. Paul Waterhouse, M.A. A.]; Mr. T. H. Watson [F.]; Mr. Aston Webb, Vice-President; Mr. Thomas Wells [A.]; Mr. William H. White, Secretary; Rev. J. B. Wilson, M.A.; Mr. E. M. Wimperis, R.I.; Mr. J. T. Wimperis [F.]; Sir Henry Trueman Wood; Mr. W. Woodward [A.]; Mr. R. Selden Wornum [F.]; Mr. William Young [F.]; Monsieur J. Van Ysendyck (Hon. Corr. M.); Monsieur M. Van Ysendyck; with representatives of The Times, The Builder, The Daily News, and the Central News, Limited.

The Duke of Westminster, K.G., Sir Francis Sharp Powell, M.P., and the late Sir Henry Layard, G.C.B., all Honorary Fellows, who were invited, had expressed a desire to be present, but were prevented from carrying out their intention; and at the moment of sitting down to dinner, the Dean of St. Paul's, who was ailing, called to express personally to Mr. Penrose his regret at being unable to join the party. The Lord Mayor, the President of the Incorporated Law Society, Sir John Hutton, and Mr. Markby had also accepted invitations, but were unable to be present. Professor Hayter Lewis, F.S.A., Past Vice-President, Mr. J. L. Pearson, R.A. [A.], Mr. Hepper, President of the York Society, Mr. C. B. Arding [A.], Mr. Gruning [F.], Mr. H. Hardwicke Langston [A.], and Mr. H. S. Legg [F.], all of whom had taken seats, were prevented from attending.

At 7.30 p.m. Grace was said by the Ven. Archdeacon Farrar, and at the close of dinner,

sung by the "Dilettante" Vocal Quartette. The President then gave "The Queen," which was followed by the National Anthem; and after that "The Prince and Princess of Wales and the rest "of the Royal Family," alluding in the course of his speech to the fact that the Prince had been "Patron" of the Institute for more than thirty years, and that both the Duke of Saxe-Coburg-Gotha and the Duke of Connaught had been Honorary Fellows since 1879. The toast of "The Houses of "Lords and Commons" was given by the Dean of Rochester in a humorous speech, which was loudly applauded, and responded to by the Lord Bishop of Ely and the Rt. Hon. G. J. Shaw-Lefevre, M.P.

The toasts of "Literature, Science, and Art" and of "The Royal Institute of British Architects "and the sixteen Allied Societies" then followed,

a report of which is here given:

H.E. THE HON. THOMAS F. BAYARD, Ambassador of the United States.—My Lords and Gentlemen, the toast I have been entrusted to propose is "Literature, Science, and Art," nothing less than three of the great elevating and humanising forces of the world; for these three generate that liberation and liberality of thought, that universality of perceptions, tastes, and habits, among mankind which thus become the best hope and basis for a common purpose and understanding among men, and may justly be called the chief jewels in the crown of higher civilisation. Literature, Science, and Art are the inveterate and invincible foes of ignorance, selfisliness, and those blind passions out of which brute force and stupid contention are evolved, and by which peace and justice are driven from their proper use in the diplomacy of nations. The liberal Arts are the Arts set free—the thoughts of men led forth, liberated, and marshalled for free expression, sometimes in words, clothed in letters; sometimes in sculpture—in

> The brass that seems to struggle, And the stone that seems to speak;

sometimes canvas is the field on which thought sows its seed, in the splendour of colour or the marvel of form; sometimes, marshalled into action, Science claims as her own these children of the brain and soul. But in such an assembly as this, the lines of delimitation between this great trinity of human perceptions grow dim and faint, and are so blended in a common atmosphere of fellowship and in a current of co-operative intent and purpose, that Literature, Science, and Art seem interchangeable expressions with a single meaning. Nisi soluta non agunt may be a maxim of the chemists, but it is equally true of other forces than the material. Literature, Science, and Art cannot live, or certainly cannot expand, or attain their full stature, if bound by the fetters of political partisanship, personal animosities, or mercenary and selfish association

—such things have no place here. The death of nations approaches when great thoughts die, and, if I comprehend its objects, this Society was intended to nourish and strengthen such thoughts, to organise intellect, and create here a centre for its manifold operations. The Graces and the Muses are natives or inhabitants of no single country, but seek and find their homes in human hearts everywhere. Their favourite home is in that country which is inhabited by the noblest minds; but any human being can put himself on terms with them if he has a heart for such work, and salutes them with truth and respect; for a man can always select his own influences. But, pardon me if I have forgotten that it is mine only to propose, not to respond, for that is happily left for other hands. Words of my own failing, I seek in my own land, and in the words of one of its sweetest singers, the needed invocation. Let me quote Whittier—

> As if some Pantheon's marbles broke Their stony trance, and lived and spoke, Life thrills along this alcoved hall— The lords of thought await our call.

And this figure of speech is to-right made a sober and delightful reality, for we can call the living lords of thought to respond to the lofty summons of your toast—and to answer for Literature, in the name and by the mandate of your Society, I summon the Bishop of Peterborough; for Science, Lord Kelvin will respond; and for Art, Mr. Alfred

Gilbert, R.A.

THE BISHOP OF PETERBOROUGH. - My Lords and Gentlemen, I am in the unfortunate position of an advocate who would be disavowed by his clients. I have, it is true, disfigured paper with printer's ink; but no one ever calls me a man of letters, save in the genial mood which is engendered by dinners in reference to all things except politics. The subject which I have chosen to treat floats in a melancholy limbo. Science will have nothing to say to history, because its material, the doings of mankind, is tainted with ineradicable inaccuracy. Literature looks askance on history, unless it be condensed into epigrams, or resolved into picturesque descriptions of unimportant but dramatic events. The historian, who pursues the humble object of finding out what was the business of the world and how it was done, is led to the conclusion that it was as tedious in the past as it is in the present. He discovers in the records of the past the same proneness to what I may call inaccurate statement which we recognise in the political utterances of to-day. We notice this inaccuracy, I observe, chiefly in the arguments of those whose conclusions are different from our own. But the historian, whose only object is to discover the truth, must notice them on all sides. He can only enliven his pages by imparting to them some of the dreariness which is consequently created in his own mind. I would, however, hasten to assure you that his conscience does not compel him to adopt the same high object when he is suddenly called upon to represent Literature, on whose chartered freedom of imagination he often casts a longing glance. How am I to express the gratitude of the varied and distinguished body for whom I speak? There is present one of our chief men of letters, Mr. Thomas Hardy, whose first literary work was an essay which obtained a prize given by this Institute. He would have told you how much he had learned from his architectural training, how it taught him that quickness of observation and that power of analysis which have enabled him to depiet so skilfully the various features of English landscape. I could not do better than pursue this subject and point out some analogies between men of letters and the members of that great profession whose guests we are tonight. Now there is a current myth that all young architects begin by designing houses of exquisite symmetry, which is obtained by omitting windows in staircases and passages. I do not know if this be true; but men of letters often begin their career by sacrificing light to beauty. They construct epigrams which sound well till you look, and then you can see nothing in them. This is a superficial analogy; but if we go further we find that literary activity, free as it seems to be, is directed and limited by the same causes as affect the architect. There are poets innumerable. It is impossible to pick up a volume of modern verse and not be struck by great literary dexterity, eonimand of form, and frequent felicity of expression. Yet poets complain that they are little read, and that the complexity of modern life does not present one supreme motive which is capable of large treatment. Do not architects make the same complaint? Their wealth of imaginative decoration is seldom called for: their finest designs rest unused in their portfolios. Men rarely ask for great monumental buildings, but for a supply of their current needs in forms which are necessarily tentative and slight. More lucky than the poet in his public is the novelist, who, frankly accepting life as it is, tries to express some moment in its development. Never were heroines so articulately virtuous or so persuasively didactic; never were heroes more uneonscionably courageous; never were villains more subterranean in their plots or more conclusively routed by the bewildering acuteness of the detective. Architects are limited by actual facts, and cannot rise to such heights of audaeity; but, like the novelist, they are endeavouring to find expression for the varying shapes of human activity. Happiest among men of letters are the critics, whose function it is to connect the present with the past and preserve a standard of literary attainment. It is theirs to interpret and to adjust, to bring the great thoughts of all times into relation with modern life. We eannot be too thankful for their assiduous eare in teaching us our own littleness, and bidding us bow down before unknown worthies whom from time to time they resuseitate or discover. The work of an architect ought to make him his own critic. He has to restore or adapt an ancient building. He ought to be sufficiently humbled by the careful study of a monument of previous skill. In case he should not be sufficiently aware of his own insignificance, the Society for the Protection of Ancient Buildings has undertaken to teach him due humility. I fear that I have wandered to a painful subject. Let me notice only one other analogy between Literature and Architecture. Both are frankly democratic; they appeal to all men, and try to reach the mind through the eye. Their merit lies in their power to attract, to captivate, to lift men outside their surroundings and teach them to see and think for themselves. Men of letters and architects alike are taught by experience the same lesson. They begin by hoping to be original; they learn that, when a motive has been expressed as well as it can be expressed, there is no going beyond. Nature teaches the architect one great truth—that it is the trivial, however ingenious it may be, which soonest perishes. That work lasts longest which is constructed on the simplest and soundest principles, which are often also the oldest. It is the highest merit of our literature of to-day that, amidst its apparent luxuriance, its chief exponents hold fast to those great primal truths

> Teach high thoughts and amiable words, And worthiness and a desire for fame, And love of truth and all that makes a man.

In the name of that literature I tender you hearty thanks.

LORD KELVIN, P.R.S.—My Lords and Gentlemen, I cannot forget that Architecture was the first practical application of science. I have always felt, in respect of mere dynamical science, that it was difficult to imagine how our predecessors, three or four thousand years ago, succeeded in eutting out the obelisks and other great monoliths from the native granite, in conveying them to their destined sites, and in raising them up to stand on end. Dynamical science originated in those works; but science did not end there. Since those earliest times we have had the building of monuments, temples, cathedrals, town-halls, houses of parliament, and bridges. This last bridge, the Tower Bridge of London, is not only a beautiful architectural work; it is a triumph of mechanical science and engineering skill, carried out under Mr. Wolfe Barry, whom we are glad to see among us to-night, and his able coadjutor, Mr. Henry Brunel, adding lustre to names already made illustrious in architecture and engineering by their distinguished fathers. And what are we to say of the houses of modern

London? They are full of engineering science ancient and modern-some of it good, some of it not good; good hydraulics, good heating by open fires, bad arrangements for giving them air, miserable attempts at ventilation; good very new hydraulic and electric lifts; and best of all, good electric light. It is to be desired that architects should feel, more perhaps than they have felt in the past, that their beautiful province is not merely a decorative art—an art which covered their country with beautiful objects; but rather with objects which, while they are beautiful, must also be useful. Houses, too, must not only be useful but be healthy, and science should be applied in all details in the most thorough manner by architects. I dare, therefore, to ask you to consider Architecture not simply as a beautiful art, but also as a magnificent application of science.

Mr. ALFRED GILBERT, R.A., briefly re-

sponded for "Art."

SIR FREDERIC LEIGHTON, Bart., P.R.A. [H.A.].—Mr. President, my Lords and Gentlemen, it is my privilege to-night to propose to you a toast which cannot fail to elicit at this table the warmest and most cordial response—it is Prosperity to the Royal Institute of British Architects, and to those other Bodies, sixteen in number, drawn from an area embracing two hemispheres, and extending from Dundee to New South Wales, which are allied to it in one common purpose. This privilege, honourable as it is, carries with it in my case considerable elements of embarrassment. Were it my duty to convey only my personal feelings towards the Council and members of this body it would be a simple task to express once again, as I did on a recent occasion, my respectful gratitude for a signal honour which it was their pleasure to bestow on me a week ago—an honour of which, keenly as I felt it, I showed my appreciation, with the ingratitude which marks mankind, by discoursing to them at no small length on the subject of their own art, as if, forsooth, I were one having the slightest quality and title for authoritative utterance in respect of it. But I have risen not in my own name, but as the mouthpiece of the sentiments which animate all those who are honoured to-night with the hospitality of this Institution. And, Sir, when Mr. Macvicar Anderson laid on me your command that I should propose this toast, I seemed for a moment to trace in your action some lurking grain of that sense of humour and impulse to satire which gave often so special and racy a spice to the work of the architects in mediæval times, for you were aware, Sir, that I am unfortunately without any personal knowledge of the inner working of this Institution to which you ask me to address my brief remarks to-night. I know, indeed, as all know, that it celebrates this day the sixtieth year of a constantly growing public activity; I know that it

exercises certain important public functions; I know that it publishes, at rapid intervals, a very interesting Journal covering the whole area of its operations. Beyond this, I fear I must own—and as an Hon. Associate I own it with contritionmy knowledge does not extend. Was it your intention, Sir, delicately to hint that in the days in which we live knowledge of a subject is not a condition antecedent or indispensable to public speech or printed utterance? And yet, Gentlemen, viewing the matter from higher ground than that of detail, I am bold to think that there is a fitness in your permitting me to propose this toast, for it is the essence of your duty and function as a body that you should promote the interests—the highest interests—of one of the noble Trio of those Arts to which it has been given in the days of their splendour to fill the world with their radiance. Who, then, can more deeply feel the dignity and responsibility of such a function, or more warmly wish you God-speed in its fulfilment, than the representative of a great institution which embraces those three arts in its care, and one who, while clearly affirming their distinctive attributes and characteristics, yet sees how great is the gain to each in a close spiritual communion, and himself loves and cherishes them with an equal love and reverence? And let us in drinking and appreciating this toast keep before us the peculiar and far-reaching scope and power of this great building art. To painting and to sculpture, as to music and architecture, it is given to transport the spirits of men into regions of noble and sweet emotion, and they do so through the suggestive treatment of the forms and hues of animate and inanimate creation. Like music, they lift and adorn life; like it, they are not based on any necessity other than the need of men for spiritual food. With your art it is otherwise; it grapples more closely with life, for it is rooted in the soil of necessity; it provides primarily for material wants; to it is conceded the high faculty of infusing into the thing of necessity the divine afflatus and essence of beauty, and of making, if nobly used, the inevitable surroundings of our lives—the roof over our heads, the walls that shelter us, the buildings in which we pray, govern, teach, trade, or take our leisure—yield quickening and satisfying nourishment to our highest æsthetic instincts and perceptions. To such and so great an Art do you minister. May you long thrive under your weighty and responsible task! And let me couple with this toast the name of the distinguished and accomplished gentleman who only the other day yielded the Presidential chair to the eminent and learned exponent of the principles of Athenian architecture. I have not the knowledge, nor would it become me, to speak of the special qualifications Mr. Macvicar Anderson brought to his arduous duties; it is more to the

point that golden words concerning him are on the lips of all his fellow-workers. I only may be allowed to note the constant and graceful courtesy of which I have so often had personal and plea-

sant experience at his hands.

MR. J. MACVICAR ANDERSON, Ex-President.—Sir Frederic, my Lords and Gentlemen, I should not have ventured to respond for this toast in the presence of my revered friend the President, had not Mr. Penrose himself desired me to do so. With that native modesty which is the appropriate characteristic of a distinguished man, he may have thought that one who has just assumed the reins of government is likely to be less conversant with the affairs of the Institute, and less competent, therefore, to speak of them, than one who has occupied a position of responsibility for the last three years Be that as it may, I have regarded the wish of the President as a command, and must therefore seek your indulgence, while, in his presence, I endeavour to reply to the important toast which has been so appropriately proposed by the President of the Royal Sixty years since, the first meeting Academy. of what afterwards became the Royal Institute of British Architects was held in the Thatched House Tayern. The meeting was small, but the names of those who composed it were not unknown to fame. There was Charles Barry afterwards Sir Charles-whom I have more than once designated as in my judgment the greatest English architect this century has produced, happily still represented among us by a son, who bears his name, the past President of the Institute, and by a younger son—our guest this evening—whose ability in carrying to successful completion one of the engineering feats of modern times has just received deserved recognition. There was Donaldson, the Father of the Institute; there was Basevi, Decimus Burton, Joseph Gwilt, Philip Hardwick, Papworth—now represented by his son, the erudite Chrator of Sir John Soane's Museum—and Seward, whose descendant, as President of the Cardiff Architects' Society, continues the traditions to which his relative subscribed sixty years since. Such were some of those who attended that first meeting, and who were instrumental in organising the Institute of Architects. I am well aware that in these days of Combinations, Federations, and Unions the mere reference to organisation aronses a tremor of suspicion; and not unnaturally, for I have known organisations whose first purpose was legitimate and commendable turned from their fair use, and become not blessings but curses, bringing disaster and ruin on the industries and interests which they were designed to foster and encourage. It is well, therefore, to state that the Royal Institute of British Architects was founded, and is maintained, not for the benefit of architects, but for a far higher purpose which every true architect

desiderates—the promotion of Architecture. How important to the public is such a purpose you will readily recognise. If you possess pictures or groups of sculpture, and if from change of taste or change of fortune you desire to part with them, transference to "Christie's" will readily dissipate anxiety as to your possessions. If great compositions of past masters in music, which once delighted, have lost their charm, you need not listen. If literary works of favourite authors have ceased to rivet the attention they once commanded, you can close the page. But with Architecture it is far different. When once the ideal of the architect has become crystallised in material and enduring form, it remains, from year to year, and passes from generation to generation, creating in the minds of beholders emotions of hope and gladness, or, it may be, alas! of depression and despair. How desirable, then—nay, how essential—that all that can be done should be done to promote what is true and good and beautiful in Architecture. I may be asked, what has the Royal Institute of British Architects done in this direction? On this subject I could speak volumes. Readily recognising, however, that to enter fully on technical details in an after-dinner speech would be unpardonable, I confine my remarks to one or two points only. The founders of this Institute, to whom I have already referred, with that reverence for the works of past ages which form so indispensable a feature in the study of any art, recorded their conviction that their primary efforts should be directed to the formation of a library of reference. Were it possible for any of them to look in at Condnit Street now, they would admit that their aspirations had been amply realised in our Library of to-day, which, so far as I know, is second to none in point of interest or of value to students of Architecture. They anticipated that the meetings and the publications of the Institute would become the means of communicating what might be carious and interesting to the public and to the profession. I doubt not that they would frankly recognise that our meetings and our publications are so conducted as to convey useful information in an intelligent form both to architects and to the public. Again, the Institute has been an active agent, especially of recent years, in fostering and encouraging the great cause of education, by having called into existence, as the result of its policy, facilities for study and for the acquisition of knowledge, not merely in the metropolis, but throughout the length and breadth of the empire, by means of its Allied Societies. Further, by offering year by year prizes, bursaries, and travelling studentships of considerable value, the Institute seeks to bring to light the latent talent of the rising generation; while, by the annual presentation of a gold medal, the gift of Her Majesty the Queen, it seeks to recognise merit in older men, who have made their mark in

Architecture or in the arts and sciences connected therewith. It is the glory of this medal that it is not restricted to English architects, but is conferred on distinguished men of any nationality. Only a few days since it was presented by the President, with the full approval of Her Majesty, to one who is accepted as the typical representative of the fine arts in this country, Sir Frederic Leighton, not for his work as a painter or a sculptor, but for those remarkable addresses to students which for the last few years have tended so directly to promote the knowledge of Architecture. I have pointed to what I may call the "pious "intentions" of those founders of the Institute who met for the first time this night sixty years since, and I have shown briefly—but I hope convincingly -how these intentions have been realised. One only, through no fault of ours, remains to this day unfulfilled. These are the words in which it was expressed: "It may not, perhaps, be assuming too "much to suppose that, as in the case of other "societies certainly not more important to the "community, the Government will . . . afford to "the Institute a place for holding its meetings "and depositing the collection it may acquire." Government has succeeded Government for sixty years, but these words are still as a dead letter. Is it too much to hope that my words may yet fall like good seed on receptive soil, and that Her Majesty's Government, by repairing the omission, may thus enable us to devote our resources more unreservedly to the cause in which all branches of the community have so direct an interest—the promotion of Architecture? I may not detain you longer. On behalf of the Royal Institute and of our Allied Societies, I have to proffer grateful acknowledgments to you, Sir Frederic Leighton, for the kind and eloquent terms in which you have proposed the toast, and also to this company for the cordial manner in which it has been received. I do so all the more heartily because I am well assured that in drinking prosperity to the Royal Institute of British Architects and our Allied Societies you have in truth wished prosperity to the great, the noble, the elevating art, which it is at once our privilege and our glory to represent.

Mr. ALFRED WATERHOUSE, R.A., having toasted "The Representatives of Corporate Bodies "and other Visitors," Sir John Stainer, Mus. Doc., responded. Lord Kelvin then gave the health of the President, and alluded to Mr. Penrose's recent election to the Royal Society. The President's reply terminated the proceedings at about 11.30 p.m.

THE STREETS AND BUILDINGS BILL.

Proceedings before the Select Committee [p. 602]. After some twenty sittings of most patient in-

After some twenty sittings of most patient investigation the Select Committee of the House of Commons have reported this Bill, but in a very

different shape from that first presented to the

On the 28th ult. the much-contested Part IV. was opened by Mr. Cripps, Q.C., with explanations which appeared to foreshadow a desire on the part of the promoters to conciliate the opposition so decidedly expressed to this Part, even in its reduced and amended form.

Dr. Longstaff, who has throughout been the champion of the Bill, and practically the sole witness of any importance put forward by the promoters, gave evidence in support of the measure, contending that the action of the London Council was justified by the Model Bye-laws now in force in many towns with an aggregate population of

2,750,000 persons.

On the 29th ult. Dr. Longstaff's cross-examination proceeded, affording him further opportunity of defending the proposed legislation. Dr. Shirley Murphy, the Medical Officer of Health to the London Council, gave evidence as to the increase of diseases of a certain kind with the density of the population, and cited examples of recently erected model dwellings which were, in his opinion, insanitary. Dr. Ransome, of Manchester, followed with the usual array of statistics, which had evidently done service in many lecture-rooms, but was quickly disposed of. He was succeeded by Dr. Marshall Ward, Professor of Botany at Cooper's Hill, who has recently aroused so much interest at the Royal Society and the Royal Institution by his discourses on the effect of sunlight on bacteria. Dr. Ward produced the striking results of his experiments on the anthrax bacillus, which, although unaffected by boiling at 68° Cent., was killed by sunlight and even by the arc-light. He had had, however, no experience of the action of typhoid or cholera bacillus under like circumstances; his evidence, consequently, availed but little. The last witness of the day was Mr. Goldstraw, chief of the building-surveyors employed by the Corporation of Liverpool, who came up to praise the Model Bye-law system in force at Liverpool, and to say that Part IV. was, on the whole, fair and satisfactory. He admitted, however, that in 1893 the death-rate of Liverpool was 24.7, while that of London, which was to be improved up to the Liverpool standard, was only 20.6!

At the seventeenth sitting, on the 2nd inst., Mr. Bruce, Chairman of the Housing Committee of the London County Council, and the last witness called for the promoters, denounced the present state of the law as disgraceful in permitting the re-erection of insanitary buildings on closed sites.

The case for the County Council on Part IV. was thus closed without one technical or professional witness—excepting only their own Officer of Health—having been put forward to support the attempt of the London Council to impose on London legislation of a most destructive and oppressive character. The proposed measure has been sub-

ject to continuous modification and reduction in the face of a most formidable opposition. Enormous costs and expenses have been imposed on those public-spirited persons and corporate bodies who have come forward to protest against the Metropolis of the Empire being reduced to the level of a third-rate provincial town, and against the obstacles to be thrown in the way of architectural improvement, which would result in an all-pervading meanness of elevation with no compensating

sanitary advantage.

The first witness for the opponents was Mr. Ralph Clutton, who dealt with new sites and the limiting angle, and the open spaces being only required above the top of the ground floor. Mr. Arthur Cates [F.] followed with large coloured diagrams, showing conclusively what would have been the effect of the proposed restrictions on well-known buildings recently erected in the West End, and how improvements contemplated in the near future would be rendered impossible if Part IV., even in its amended form, became law. Mr. Charles Fowler [F.] expressed the view that a hardand-fast line should not be enforced, and illustrated the grounds of his opposition by examples from the Portland Estate. Mr. Marsh illustrated the effect on City properties; Mr. Dickins on small properties, working-men's houses, &c. Mr. George Trollope nrged that there was no necessity for such legislation, and that it would seriously affect the building trade. Mr. W. D. Caröe [F.], from his knowledge of Liverpool, very neatly showed the weakness and inapplicability of Mr. Goldstraw's evidence, and objected to the limiting angle as leading to bad construction—a long sloping roof at back involving increased danger from fire, while a stepping back necessitated expensive construction by girders on each floor. Mr. D. C. Nicholls supported and confirmed the preceding witnesses.

At the eighteenth sitting, on the 3rd inst., Mr. Enstace Balfonr [F.] illustrated, from instances on the Duke of Westminster's estate, the mischievous effect which would result if the Bill became law, Mr. A. R. Stenning [F.] gave similar instances from the City of London, and characterised the proposed legislation as most unfair, and calculated to diminish the value of property in the city.

Mr. Danckwerts, Mr. S. Pope, Q.C., Mr. Russell Griffiths, Mr. Grain, and Mr. Littler, Q.C., then addressed the Committee against the clauses. Mr. Cripps, Q.C., having replied, promised to bring up new clauses to meet the objections as far as

possible.

At the nineteenth sitting, on the 5th inst., ten new and amended clauses were brought up, and after some discussion held over for consideration

at the next sitting.

Part XII., Clause 130.—The status and position of District Surveyors, and the question as to whether they should be debarred from private practice, were then considered. Mr. W. D. Caröe

gave excellent evidence with telling effect. After making good use of the petition of the Institute on this point, and forcibly expressing the views of the Institute Council, he went on to illustrate the result of the conditions imposed by the London Council in 1890, by the number of candidates who came up for certificates. In the eight examinations before 1890, there were sixty-seven candidates, and in seven examinations held during 1890–93 there were only twenty-eight. In October 1893 and April 1894, when examinations should have been held, there were no candidates at all. Mr. Charles Fowler, Mr. Eustace Balfour, and Mr. J. Douglass Matthews supported Mr. Caröe's contention.

There was much apparent confusion of mind on the part of some members of the Committee as to the exact position of District Surveyors, and the cases of Borough Surveyors and like salaried officers were cited as analogous. In the end an amendment proposing to grant District Surveyors the right of private practice was negatived, and, on the other hand, the objectionable words in Clause 130, sub-clause c, "Such appointment to "be subject to such conditions as the Council "may think fit," were struck out. The matter consequently remains as it stood before the London Council attempted to legalise their recent action by the introduction of the words now eliminated.

At the twentieth sitting, on the 6th inst., the new and amended clauses of Part IV. were considered, and as the Chairman had announced that this would be the last sitting of the Committee, all parties speedily arrived at more or less agreement on their revision, the opponents reserving their right to oppose in another place should they consider it necessary upon further examination of the clauses. Evidence was given on a variety of points. The Chairman ruled that the limiting angle, now 63½°, was a cardinal principle of the Bill, and that nothing further against it would be allowed.

The proceedings before the Select Committee have thus terminated, and the result clearly shows that had the London Council consented to discuss Part IV, and the contentious portions of Part I, with the delegates of the Royal Institute of British Architects and the Surveyors' Institution, a much more satisfactory result would have been obtained, a great waste of the ratepayers' money avoided, and the public spirited opponents of the Bill spared the enormous expenditure incurred in order to protect London from the mischievous and impracticable propositions put forward.

Much credit is due to the learned Chairman of the Select Committee, Mr. Stuart Wortley, Q.C., for the patient attention he has given to the complicated questions discussed, and for his earnest endeavours to arrive at an equitable result. The public are largely indebted to him for the great

improvements made in the measure.

The Bill has been again reprinted in accordance with the final decisions of the Committee, and was read a third time in the House of Commons on the 16th inst. [p. 603]. It will now go up to the House of Lords for further consideration and revision before a select Committee of that House.

The arrangement of the Bill as reprinted is different from that first introduced. Parts I., II., and IV. have become Parts II., III., and V. respectively, and the clauses throughout have been renumbered. It is probable that the renewed consideration which Parts II. and V. will receive in the House of Lords will lead to further amendments.

The spirit of the clauses affecting new buildings and rebuilding may shortly be given thus, adopting the new numbering:—

Part II.—Formation and Widening of Streets.

Clause 10.—Sub-section 4 provides that before any person commences to widen any part of a street less than 40 feet or 20 feet wide respectively on either side to a less extent than the prescribed distance, i.e., 20 feet from the centre of the road for streets adapted for carriage traffic, and 10 feet from the centre for footways, he shall give notice in writing to the Council, with a plan of the proposed widening, and shall not, except with express sanction of the Council, commence to execute such widening until two months from the date of the notice.

Clause 12 authorises the Council, where they deem it expedient in the public interest that the street, by reason of its length or importance, or of its being likely to form part of an important line of communication, or for other sufficient reason, should be of greater width than 40 feet, to direct that any street, not being within two miles of St. Paul's, about to be formed or laid out, or about to be adapted for carriage traffic for the first time, may throughout or in part be of a greater width than 40 feet, but not more than 60 feet.

Clause 13.—Sub-section 1 provides that no new building or its external fence or boundary of the forecourt shall, without the consent of the Council, be nearer than the prescribed distance from the centre of the roadway.

Sub-section 2 empowers the Council, after consulting the local authority, to require a greater distance than 20 feet, but not exceeding 30 feet from centre of roadway. This sub-section is not to apply to any street within two miles of St. Paul's.

Sub-section 3 gives liberty of appeal to the Tribunal of Appeal against the determination of the Council.

Sub-section 5 provides that where any person intends to alter or re-erect a building existing at the commencement of the Act or seven years previously, which may not be in conformity with the provisions of this section, he may cause plans to be prepared showing the extent and height of such building in its several parts, and the extent of the forecourt, to be certified as correct by the District Surveyor. He shall then be at liberty to alter or re-erect such building; but so that no land within the prescribed distance shall be occupied by the building or forecourt except that previously so occupied, and that the altered or re-erected building shall be in no part of a greater height than the height hereinafter prescribed [now settled at 80 feet]. If such plans are not submitted, or if the District Surveyor or the Tribunal of Appeal decline to certify their accuracy, the site and building are brought within the preceding provisions of the section. No dwelling-house to be inhabited or adapted 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, and

no building shall be converted into such dwelling-house within the prescribed distance.

Clause 15 provides that where, in the case of the formation or laying out of a street over land which at the commencement of the Act or seven years previously has been occupied by buildings, or where, in the case of the adaptation for carriage traffic of any street or way not previously so adapted or used, the Council shall require a greater width than 40 feet, or that the prescribed distance shall exceed 20 feet, the Council shall be liable to pay the owner compensation for the loss or injury (if any) sustained by him by such requirement. The amount, if not agreed to, to be settled by arbitration according to the provisions of the Lands Clauses Act.

Clause 18 provides for copies of the printed regulations of the Council relating to this part of the Act being kept at the principal office and supplied at all reasonable times without charge to any applicants for them.

Clause 19.—Any applicant for sanction to the formation or laying out or adaptation of a street, or for the certificate of a District Surveyor, who may be dissatisfied with the refusal or conditional grant of such sanction or with any condition imposed by the Council or with the refusal of such certificate, may appeal to the Tribunal of Appeal.

Part III.—Lines of Building Frontage.

Clause 22 provides that no building shall, without the consent of the Council, be erected beyond the general line of buildings certified by the superintending architect.

Clause 23 empowers the Council to set back any building projecting beyond the general line of buildings, which may have been taken down to an extent exceeding one-half of its cubical extent, or otherwise demolished, to such line as they may direct, subject to payment of compensation, which, in case of difference, is to be determined by arbitration as provided by the Lands Clauses Acts.

Clause 25 provides for appeals to the Tribunal of Appeal against the certificate of the Superintending Architect.

Clause 30 provides that this part of the Act shall not apply within the City.

Part V.—Spaces at Rear of Buildings. Spaces about Buildings not Fronting on Streets. Height of Buildings.

Clause 38 enacts that with respect to domestic buildings erected after the commencement of the Act, and abutting on a street formed or laid out after that time, there shall be provided in the rear of such building an open space, exclusively belonging thereto, of an aggregate extent of not less than 150 square feet.

In certain specified and exceptional cases such open space may be provided wholly or in part above the level of the ceiling of the ground-floor storey. In all other cases the open space shall be free from any erection above the level of the adjoining pavement, except a water-closet, &c., not exceeding 9 feet high. Such open space shall extend the entire width of such building, and to a depth in every part of at least 10 feet from such building.

The height of any such building in relation to the space required in the rear thereof shall be determined by a diagonal line drawn from the boundary of the space furthest removed from the roadway in front at the level of the pavement of such roadway at $63\frac{1}{9}$ ° as the limiting angle, above which line no part of the building except only chimneys, dormers, &c., shall extend. When the land at the rear of such building abuts immediately on a street, the diagonal line or limiting angle may be drawn from the further side of such street at the level of pavement, and the open space may be provided on any part of the land.

In the case of corner sites the Council may, subject to certain provisions, permit the erection of buildings not exceeding 30 feet in height upon such part of the space in the rear as they may think fit.

With respect to domestic buildings erected after the

commencement of the Act abutting on a street formed or laid out before the commencement of the Act, the provisions of the section are to apply, with the modification that the diagonal line or limiting angle of $63\frac{1}{2}^{\circ}$ shall start from the level of the ceiling of the ground-floor storey instead of the level of the pavement in front.

Clause 39 gives to the Council power of control over the plans for dwelling-houses to be inhabited or adapted to be inhabited by persons of the working class erected after the commencement of the Act not abutting on a street, with liberty of appeal to the Tribunal of Appeal from the refusal of the Council to sanction the plans, or against any

of the conditions prescribed by the Council.

Clause 40 would appear to apply to every case of rebuilding throughout existing London, and provides that when any person intends to erect a domestic building (not a dwelling-house to be inhabited by persons of the working class) abutting upon a street, on the site of a domestic building existing at the commencement of the Act, or on a site then vacant, but which has been occupied by a domestic building at any time within seven years previously, it shall be lawful for such person, before commencing to erect the intended domestic building, to cause to be prepared plans showing the extent and height of the previously existing building in its several parts, and may cause such plans to be submitted to the District Surveyor, who, if reasonably satisfied of their accuracy, shall certify the same under his hand. Such person may then erect the intended domestic building, but so that no land shall be occupied by the newly-erected building except that which was occupied by the previously existing domestic building as so certified, and that such newly-erccted building shall be in no part of a greater height than the height hercinafter prescribed. If such person should fail to submit such plans to the District Surveyor, or should the District Surveyor or the Tribunal of Appeal decline to certify the accuracy of the same, he shall, in rebuilding, be bound by the preceding provisions of this part of the Act relating to domestic buildings abutting upon a street formed or laid out before the commencement of the Act.

If a deviation is desired in any respect from the plans certified by the District Surveyor, the Council shall sanction such deviation on such conditions as they may think fit, provided such conditions do not in any case exceed the conditions prescribed for new dwelling-houses abutting on a street formed or laid out before the commencement of

the Act.

In the case of new streets over old sites, or the widening of existing streets, the Council have certain dispensing

powers.

A person dissatisfied with any decision of a District Surveyor under this section may appeal to the Council, who may make such order as they may think fit, and any person dissatisfied with any such order may appeal to the Tribunal of Appeal.

Clause 44, in terms similar to the existing law (1890), limits the height of buildings to 80 feet, which thus becomes the prescribed height before referred to.

Clause 46 cnacts that after the commencement of the Act no existing building on the side of a street formed or laid out after the 7th August 1862, and of a less width than 50 feet, shall, without the consent of the Council, be raised, and no new building shall, without the consent of the Council, be erected abutting on any such street so that the height of such building shall exceed the distance of the front or nearest external wall of such building from the opposite side of such street.

Part VI.—Construction of Buildings.

Clause 58 provides that every new building exceeding 60 feet in height shall be provided on the storey the floor of which is above 60 feet from the street-level with such means of escape in case of fire for the persons dwelling or

employed therein as may be reasonably required under the circumstances of the case; and no such storey shall be occupied until the Council has certified.

Part IX.—Dangerous and Neglected Structures.

Clause 101 provides that if the owner of the structure dispute the necessity of any of the requisitions comprised in the notice, he may require that the subject shall be referred to arbitration—of an independent surveyor appointed by him, the District Surveyor, and a third surveyor, as arbitrators.

Clause 102.—Notwithstanding the notice requiring arbitration, the Court may on complaint by the Council, if of opinion that the structure is in a dangerous condition, make any order for the taking down, &c., of that structure.

Part XV .- The Tribunal of Appeal.

Clauses 169-180.—The Tribunal of Appeal, by which almost every contested question arising under the Act is to be decided, consists of three members, constituted as follows: One member appointed by a Secretary of State, one by the Council of the Royal Institute of British Architects, one by the Council of the Surveyors' Institution.

Part XVI.—Miscellaneous.

Clause 185 authorises, with the consent of the Council, the restoration of any part of an old building of architectural or historical interest in the same material and in the same design as before.

The late Austen Henry Layard [H.F.].

Sir Henry Layard, G.C.B., who died at his residence in Queen Anne Street on the 5th inst., leaves behind him a name high on the list of archæologists and explorers. His connection with the Institute was of long standing. As far back as 1850 he was elected an Honorary Member; in 1868 the Royal Gold Medal for the promotion of architecture was conferred upon him; and in 1889, after the extinction of the class of Hon. Members, he was elected an Hon. Fellow. His Paper on Mosaic Decoration,* read before the Institute on the 30th November 1868, showed how close a student he had been of architectural decoration in all ages of the world's history, and added not a little of value to knowledge of the subject.

Austen Henry Layard, the son of Mr. Henry P. J. Layard, of the Ceylon Civil Service, and grandson of Dr. Layard, Dean of Bristol, was born in Paris on the 5th March 1817. His boyhood was passed mainly in Italy, where he was educated, and where in the society of artists and connoisseurs he early acquired a taste for the fine arts. Destined by his parents for the law, at the age of sixteen he was sent to London to qualify for that profession. Nearly six years, therefore, he spent in a solicitor's office and in the chambers of an eminent conveyancer. The law, however, was little to the taste of the future explorer. Layard was in love with the East. As a child his imagination had been stirred by the stories of the Arabian Nights; he had greedily read every volume of Eastern travel that he could lay hands on. While in London he had made the acquaintance of Sir Charles Fellowes, whose account of his discoveries

^{*} Transactions 1868-69, Vol. XIX. p. 31.

among the ruined cities of Asia Minor he had listened to with keenest interest, and he yearned to follow in his footsteps. Works of famous travellers had roused in him an ardent longing to visit Persia, Babylonia, and the wild tribes of Kurdistan. In the hope that some day he might visit those countries, he had even endeavoured to master the Arabic characters and to learn something of Persian. When, therefore, a relative, a high official of Ceylon, hinted at an opening for him either at the Bar or Civil Service of that island, he seized the opportunity, anxious on any

pretence to get to his beloved East. On the 8th July 1839 Layard started for Ceylon. The beginning of the year 1842 found him no nearer his destination than Baghdad, and he had at last resolved to abandon the idea of proceeding to India. His vocation had dawned upon him. The story of his life during this period is told in his own inimitable way in a work written some forty-five years later *-a narrative teeming with adventure as daring and exciting as any on record. Then it was that he visited the ruins of Nimroud, and first conceived the design of making excavations in them should the opportunity ever arise. A few days' journey from there, he fell in with Flandin, the painter, and Pascal Coste, the architect, engaged in making drawings of the famous sculptures of Taki-Bostan, for the purpose of their great work, Voyage en Perse, published by the

French Government in 1851.

During this time Layard became fairly proficient in the Arabic and Persian languages. Several months he spent among the Bakhtiyari tribes, residing in the castle of their hospitable chief, Mehemet Taki Khan. In 1842 while at Mosul he made the acquaintance of Botta, then meditating those excavations which ended in the discovery of the Assyrian ruins at Khorsabad and the unearthing of the Assyrian sculptures now housed at the Louvre. In transferring his researches to Khorsabad, Botta had abandoned the mounds near Mosul, which were believed to be the site of ancient Nineveh. Layard was convinced, however, that the excavation of Kouyunjik, the largest of the mounds, would lead to important He had endeavoured, without success, to induce an English merchant to undertake the work, fully assured that the objects of antiquity discovered would amply repay the expense.

Not till three years later, in 1845, was Layard able to embark on his pet scheme. Sir Stratford Canning (afterwards Lord Stratford de Redcliffe), Ambassador at Constantinople, had employed him in various unofficial missions in Albania, Servia, and Bosnia; and his knowledge of the region enabled him to render great assistance in the Turco-Persian Boundary question. Meanwhile Sir Stratford had become so favourably disposed towards him and

his projects of archæological discovery that in 1845 he generously provided him with the means out of his own pocket, and Layard was enabled to begin the work which had so long occupied his thoughts. The result is well known. Two years' digging revealed the remains of four immense palaces. The mound of Kouyunjik itself covered the great palace of Sennacherib. In that of Sardanapalus, with its alabaster-lined walls decorated with bas-relief and cuneiform inscriptions, the Royal library was brought to light in which were discovered the tablets, now in the British Museum, which contain the story of the Deluge. The inscriptions, the winged bulls and lions, and numerous other wonderful specimens of Assyrian art discovered by Layard are among the most precious contents of our National Museum. The account of these discoveries was given by the explorer in those fascinating volumes Nineveh and its Remains and Nineveh and Babylonworks which, translated into almost every European tongue, obtained a world-wide circulation. As the result of a second expedition, undertaken for the British Museum, this time with Parliamentary aid, he published in 1853 another important work—Discoveries in the Ruins of Nineveh. Upon his return home numerous marks of distinction were conferred upon him. In 1848 he was made a D.C.L. at Oxford; in 1853 he received the freedom of the City of London; and in 1855 he was elected Lord Rector of Aberdeen.

His exploring days over, after holding for a short time an Attachéship to the Embassy at Constantinople, Layard turned his attention to politics, with a special view to Eastern affairs. In 1852 he was returned Member of Parliament for Aylesbury, and in Lord John Russell's brief Administration of that year he served for a few weeks as Under-Secretary for Foreign Affairs. In 1854 he was again in Turkey, and witnessed many of the engagements in the Crimean War, viewing the battle of the Alma from the maintop of the Agamemnon, and making himself acquainted with the condition of our troops before Sebastopol. The latter was a subject he felt very strongly upon; he was one of the first to advocate a Parliamentary Committee of Inquiry, and himself gave evidence before it. In 1855 he was offered a post in Lord Palmerston's Government, but declined. Losing his seat at Aylesbury in 1857, he went to India, and spent some time investigating the causes which led to the Mutiny. In 1859 he unsuccessfully contested York, but was returned for Southwark in the following year. In 1861, under Lord Palmerston, he served again in the post of Under-Secretary for Foreign Affairs, and held the appointment till 1866. In Mr. Gladstone's first Administration (1868) he was First Commissioner of Works, and became a Member of the Privy Council. It was Layard who, believing "that the First Commissioner re-

^{*} Early Adventures in Persia, Susiana, and Babylon. 2 vols. 80. 1887. John Murray.

"quired the aid of an officer conversant in a high "degree with Architecture," appointed the late James Fergusson "Secretary of Works and Build-"ings," which newly-constituted office he afterwards tried to alter to "Inspector of Public Build-"ings and Monuments"—his memorandum thereon being dated 11th March 1869. But the Treasury refused to sanction the alteration, though at the same time consenting to abolish the office of salaried architect to the Department, then held by the late James Pennethorne.

From 1869 onwards Sir Henry Layard's career was a diplomatic one. In that year he was appointed Envoy Extraordinary and Minister Plenipotentiary at Madrid; eight years later, on the retirement of Sir Henry Elliot, he obtained the post he had always coveted of British Ambassador at Constantinople. The cession of Cyprus to Great Britain was negotiated by him, and as a reward he received the Grand Cross of the Bath.

In 1880 he retired from Constantinople, and the best part of his life since was spent in Venice, where, at his well-known house, the Ca' Capello, looking on to the Grand Canal, he surrounded himself with a fine library, a noble collection of pictures and bronzes, marbles and mosaics, tapestries, ancient furniture and bric-à-brac, relics of the past, the spoils of his long and varied career. Sir Henry was a trustee of the National Gallery. He had received the German "Ordre pour le Mérite," and—a distinction he prized above all others—he was a Corresponding Member of the Institut de He was a considerable authority on Italian art, many years ago having published a valuable contribution on the Brancacci Chapel. In 1887 appeared his revised edition of Kugler's Handbook of the Italian Schools, and he edited and wrote an introduction to Miss Ffoulkes's translation of Morelli's Italian Painters, published in 1892. Some of his valuable collection of paintings have been bequeathed to the National Gallery.

The late William Jackson [F.].

The following memoir of the late Mr. William Jackson, who had been a Fellow of the Institute since 1889, is kindly furnished by Mr. John Goodacre [F.] and Mr. S. Perkins Pick [A.], President and Hon. Secretary respectively of the Leicester Society:

The death of William Jackson, under peculiarly sad circumstances, has removed from our midst a well-known and accomplished member of the profession. He formed one among a small number of enthusiasts who founded the Leicester and Leicestershire Society of Architects, and was for nearly twenty years the Honorary Secretary, and up to the time of his death he retained the office of Honorary Treasurer to that Society. He manifested the keenest interest in all matters affecting the honour and integrity of architectural practice, and was for years the mainstay of the Society whose business he so ably managed.

The funeral of our late colleague, which took place on Saturday at the Leicester Cemetery, was attended by a number of personal and professional friends who desired to pay a last mark of respect to the deceased.

Mr. Jackson was a native of Leicester; he was articled to the late Mr. Parsons of that town, and after spending some time in his office he commenced practice. He erected many large buildings in Leicester and neighbourhood, including warehouses and factories for Messrs. Cooper, Corah & Co., Messrs. Stead, Simpson & Nephews, Messrs. Walker, Kempson & Brown, Messrs. Hart & Levy. The Barracks in the Newarke, the Leicester Daily Post and the Mercury offices and works, and a considerable number of dwelling-houses and other buildings in and about Leicester were designed and superintended by him.

He was a man of wide knowledge and extensive reading; an earnest student and an authority upon the archæology and history of all the ancient buildings and remains of Leicester and Leicestershire. He contributed many valuable papers to the reports of the Leicester Society of Architects and other publications. Among these will be remembered "The History and Description "of Leicester Abbey," published in the present JOURNAL [pp. 129, 166]; notes on St. Margaret's Church, St. Mary's Church, the Trinity Hospital, Kirby Muxloe Castle, the Roman pavement in Jewry Wall Street, and a very able dissertation upon the claims of Leicester for the restitution of its ancient title, namely, that of the "City" of Leicester.

A Teaching University for London.

The minutes of evidence taken by the Royal Commissioners appointed to consider the Draft Charter for the proposed Gresham University in London, with tables of witnesses and of institutions represented, have now been published, together with an appendix and analytical index. Appendices 46 to 50 consist of a collection of Papers handed in by Mr. Arthur Cates for the consideration of the Commission. These include an account of the Progressive Examinations of the Institute, with the respective programmes of the various stages; a description of the Architectural Curriculum at King's College, and the classes held there in Architecture and kindred subjects under the auspices of the Carpenters' Company; and Papers relating to the courses at the Architectural Association, London. Also particulars of the Departments of Architecture at the Cornell University and Columbia College, U.S.A.; and the Programme of the Course in Architecture at the Technical High School, Vienna. The courses of the Ecole des Beaux-Arts are given under Questions 22, 559A, and 22,562. That the position of architecture will be duly recognised in the proposed University by the inclusion in its senate

of a member appointed by the Institute is no doubt largely due to the evidence given by the members of the Council who attended before the Royal Commission. These gentlemen were the then President, Mr. Macvicar Anderson, Mr. Arthur Cates, Mr. John Slater, and Mr. William Emerson; their evidence is printed at pp. 1024–1041 of the Minutes.

The late W. Calder Marshall's Works.

Mr. Charles J. Marshall [A.] writes that the studios of his father, the late W. Calder Marshall, R.A., which contain a large number of his works, will be thrown open to visitors from twelve till seven o'clock, on Monday the 23rd until Saturday the 28th inst., on presentation of visiting card.

Proposed Portrait of the Ex-President.

The Council, in furtherance of what they believe to be a very widely-spread wish, have appointed a Committee to take such steps as may be deemed advisable to obtain a portrait of Mr. Macvicar Anderson to be hung on the walls of the Institute, in recognition of his untiring zeal and valuable services, ungrudgingly rendered for so many years, both as President and as Hon. Secretary. The Committee appointed to act in the matter are Sir Arthur Blomfield, A.R.A., Mr. Aston Webb, Mr. A. E. Street, M.A., and Mr. Emerson.

Additions to the Library.

Messrs. Longmans, Green, & Co., the publishers, have presented Engineering Construction in Iron, Steel, and Timber, by William Henry Warren, Challis Professor of Civil and Mechanical Engineering, University of Sydney, New South Wales. Professor Warren states that the special feature of his work lies in the various examples which illustrate the design of the most important classes of structures in iron, steel, and timber, which have all been selected from existing works. The Library Committee of the Reform Club have presented, through their librarian, Mr. Charles W. Vincent, a second and enlarged edition of the catalogue of their extensive and notable library, with a revised historical introduction by Mr. W. Fraser Rae, chairman of the committee. catalogue, for completeness and ease of reference, is an excellent example of its kind. The Executive Council of the Imperial Institute have presented the Year Book of the Institute for 1894.

Amongst numerous pamphlets recently received, Professor Aitchison [F.] has presented two. The first of these, Ausgrabungen in Tralles (1888) [Gebrüder Perris, Athens, 1893], contains two papers by Carl Human and Dr. Wilhelm Dörpfeld [Hon. Corr. M.], which give an account of the excavations at Tralles, and note the recovery of three sculptures of first importance; these are a colossal head of a Dionysius, the head of an Aphrodite, and an unnamed life-size draped statue. The object of the Orient-Comité zu Berlin

(under whose auspices the pamplilet was published), working in co-operation with the directors of the Imperial Ottoman Museum, in the excavations of 1888, was to discover the body of the Dionysius. A description of Tralles and its ruins, and the result of the excavations, are given; the latter recording the discovery of various fragments of Grecian architecture and sculpture. Ausgrabungen im Theater von Magnesia am Maiandros, by Dr. Wilhelm Dörpfeld (same publisher 1894), gives an account of the excavations made and the inscriptions examined at the Theatre.

The Real Associação dos Architectos Civis e Archeologos Portuguezes have presented a biography of their founder Chevalier Joaquim Possidonio Narciso da Silva [Hon. Corr. M.], whose portrait appears as a frontispiece to the pamphlet, and lists of whose works as an architect and archæologist, and of the numerous distinctions conferred upon him, are given at the end [Typographia Universal, Lisbon]. M. Charles Buls has presented his pamphlet Le Pèlerinage d'Olympe [Alfred Vromant & Cie., Brussels]; and Mr. John Hebb [F.] La Polychromie dans la Peinture et l'Architecture Arabes en Egypte, by Max Herz, architect, communicated to the Institut regyptien on the 6th January 1893 [Imprimerie Nationale, Cairo]. Betterment by the Council versus Betterment by Recoupment [Diprose & Bateman, London] has been received from its author, Mr. Walter Emden of the London County Council.

The Technology Quarterly, No. 4, vol. vi., contains amongst numerous papers one read by Mr. Howard A. Carson before the Massachusetts Institute of Technology last December on The Metropolitan Sewerage System. The Paper is well illustrated. Parts 6 and 7 of Der Formenschatz (G. Hirth, Munich and Leipzig) have also been received.

Ornamental cards have been received from the Comptroller's Office, Guildhall, as mementos of the ceremony of opening the Tower Bridge by the Prince of Wales, on behalf of the Queen, on the 30th of last June.

A new work, just issued, entitled *Three Periods* of English Architecture, by Mr. Thomas Harris [F.] has been presented by the publisher, Mr. B. T. Batsford. It contains several beautifully printed plates and other illustrations.

REVIEWS OF NEW BOOKS. XII.

(33.)

BRITISH ANTIQUITIES.

Archæologia Oxoniensis. Part IV. 80. Oxford and London 1894. Price 2s. [Mr. Henry Frowde, Amen Corner, London.]

The new part of Archæologia Oxoniensis not only keeps up to the promise of its predecessors, but goes beyond the previous numbers in the

variety and interest of its contents. The first article concludes Mr. Landon's valuable series of papers on the Heraldry of the Colleges of Oxford, and is written in the true heraldic spirit of uncompromising accuracy in even the most minute details; many curious pieces of history are to be found here, together with sundry useful warnings of the dangerous consequences of "a little know-"ledge," never so fatal as in matters heraldic. There are many excellent people who thoroughly despise all such labour as trivial; who, while prone enough to avail themselves of heraldic adornments as telling aids to decorative effect, or at least as serviceable for filling up blank spaces, are yet rather proud of not caring a fig whether what they carve or paint is really correct and appropriate. Yet are not the entirely arbitrary and conventional character of heraldry, and the perfectly free option which now exists as to its use or non-use, the very things which ought to ensure it proper treatment? Call it a childish game if you will (and heraldry is like a game in respect that no one is obliged to take it up unless he likes); but if you do elect to play—play according to the rules! And it will be found that the very definiteness and strictness of these rules make them all the easier to learn and to apply. Heraldic symbols, moreover, may be regarded as a method of succinctly relating facts independently of writing, and have the valuable property that, if correctly expressed, they can always, like a good code of signals, be correctly interpreted; the carelessness which represents them wrongly is not a mere artistic blunder, it is a wilful confusion and falsification of records which otherwise would be of invaluable service in historic research.

In a short note, Mr. J. Park Harrison throws some useful light on a rather obscure subject—the roof-coverings of Saxon churches; these he shows to have consisted, in some instances at least, of small plates of lead, cast in rounded forms, and laid in overlapping courses, in appearance very much resembling the scale shaped tiles often used to cover the walls of South-country cottages.

A Roman pedestal lately discovered at Cirencester, with an inscription of considerable interest, especially from its bearing on the geographical divisions of Roman Britain, is described and illustrated by Mr. F. Haverfield in a scholarly paper; that excellent authority on military archaeology, Mr. Oman, discusses Rouse's curious drawings of fifteenth-century warfare, with many instructive comments; and last in order, but not least in interest to architects, Mr. J. Oldrid Scott contributes an article, unfortunately without any illustrations, on "The New Window in Lichfield "Cathedral." Mr. Scott gives a very clear explanation of the reasons which determined his bold, and it is to be hoped successful, action in the North Transept. He frankly apologises for what he allows was a departure from the principles of

conservative restoration; but he defends the course which he adopted as being the only sound and rational one in the circumstances, and maintains in addition that the work rendered necessary by considerations of safety has actually proved an artistic gain to the Cathedral. Though he can never hope to satisfy all critics, Mr. Scott has certainly got a strong case, and urges it in a very convincing manner.

The numerous short notes and reviews can only be mentioned, as serving to complete a capital number of a publication which worthily deserves to flourish.

ARTHUR S. FLOWER.

(34.) BUILDING LAW.

A Treatise on the Law of Support for Land, Buildings, and Public Works. By George Banks, M.A., Barristerat-Law, Royal 80. Lond. 1894. Price 10s. net. [Messrs. Sweet and Maxwell, Chancery Lane.]

The Law of Building and Engineering Contracts, and of the Duties and Liabilities of Engineers, Architects, Surveyors, and Valuers, with an Appendix of Precedents, and an Appendix of Unreported Cases. By Alfred A. Hudson, Barrister-at-Law. Royal 80. Lond. 1891. Price 29s. net. [Messrs. Waterlow and Sons, London Wall, and Messrs. Stevens and Haynes, Bell Yard, Temple Bar.]

To those architects and surveyors whose minds have a legal bent I do not know a book which should be more thoroughly welcome than this recently published work of Mr. Banks. His style is exceptionally lucid and clear, and complicated questions of law are so brought before us that little difficulty of thoroughly grasping their meaning, even to laymen, is presented. This fact, together with an excellent "Table of Contents," should secure for Mr. Banks's work a rapid exhaustion of the first edition.

The value of the work to architects and others engaged in building or mining operations is unquestionable, and a perusal of the cases cited, and of Mr. Banks's introductory remarks, will show that too much care cannot be exercised when dealing with property from which adjacent or subjacent rights of support may or do exist; the conclusion one arrives at being that it will not be safe to jump at any conclusion on any particular case, but that each must be throughly investigated and its merits laid bare.

I shall not attempt to present a detailed review of this exhaustive work, but I heartily recommend its perusal to all, and express the hope that Mr. Banks's labours will secure that reward which will be most pleasing to a good author.

Mr. Hudson's book on the Law of Building and Engineering Contracts is already tolerably well known to those engaged in matters connected with building, and it is not too much to say that it cannot be too well known, forming as it does a complete text-book on the large and important subject with which it deals, rendered additionally valuable by the fact that it has been written and compiled by

one who, prior to his becoming a barrister, had become versed in the technicalities and practical difficulties connected with building operations, by

himself practising as an architect.

To say that client, architect, and builder should not be without such a book would be poor praise for the work done; but speaking for my own profession, I may safely say that it is nothing less than a necessary part of an architect's education that he should make himself thoroughly acquainted with all Mr. Hudson has to say on those legal essentials an ignorance of which may easily land client, architect, and builder in ruinous complications. The work is made more useful and indeed attractive by the precedents and authorities cited, and more complete by quotations of not only the reported cases, but of important judgments the transcripts of which have been furnished by parties interested.

Mr. Hudson is not a whit too strong in his caution to builders not to sign contracts undertaking to abide by the decision of a third person directly interested in pleasing his employer by his decision; but, notwithstanding the many cases one could mention in which the builder has been defrauded by unscrupulous third persons, we still hear of his placing himself on the losing side by blindly signing documents specially prepared for his future delectation; and one views with favour the suggestion of Mr. Hudson that the large interests at stake, and the peculiarly technical nature of building contracts, would justify the formation of a "Building Court," presided over by a judge with assessors. The information given on pp. 29-30 respecting valuations by men who have not taken out a licence will surprise a great many architects, as it seems that the enactment referred to is wide enough in its terms to cover every valuation made by an architect which is binding between the builder and employer. The enumeration of the duties of an architect on pp. 42-43, &c., will, perhaps, lead some architects to the conclusion that, after all, their duties do not cease with pretty sketches of imaginary buildings, taken from impossible points of sight.

Mr. Hudson follows on with detailed examination into the rights and obligations of quantity surveyors, arbitrations and awards, extras, certificates, professional charges, and all the paraphernalia attaching to the law and practice of the architect and surveyor, and too much commendation cannot be expressed for his labours, which must prove so useful to every architect and sur-

veyor who desires to steer right.

Mr. Hudson has also published a little book entitled Legal Advice to Engineers, Architects, Surveyors, Contractors, and Employers; but as this is really a concise epitome of his larger work just referred to, and that in a very readable form, I need only say that the commendation which is

due to the more comprehensive work applies equally to this handy little pamphlet.

WM. WOODWARD.

NOTES, QUERIES, AND REPLIES.

The Suez Canal and the proposed Philæ Reservoir: a Possible Parallel.

Can it be that the British engineer is more than once destined to seek and find a Nemesis in Egypt? In the palmy days of jocular legislation, when the French had a great and well-considered scheme for uniting the waters of the Red and the Mediterranean Seas, certain chiefs of engineering science in England drew up a report to the effect that the canal which Ferdinand de Lesseps had the temerity to plan was, though not wholly impracticable, a Quixotic scheme which a businesslike people with sound common sense would do well to avoid; and therefore England turned a cold shoulder upon it, with results such as ordinary travellers to the far East may daily see and admire. The Suez Canal is now one of the most reasonable, useful, and creditable efforts of science that the moderns have achieved—a boon to the world generally and to the British Empire in particular. Yet if it had been left to some of the engineers of this country to utter a last word in the matter, the cutting of a canal from Port Said to Suez might even now perhaps have been a burning question of the day; and the destruction of Philæ the Beautiful reserved to grace a future and possibly remote engineering triumph. But as the Suez Canal, in spite of the British engineer, has been a fact for more than a quarter of a century, so the question of the hour in Egypt and the United Kingdom is the submergence of Philæ and its historical monuments—a question to which the British engineer is again ready with a cut-and-dried answer. This time, however, he has a scheme of his own: the erection of a huge dam, nearly a mile in length and 70 feet high, across the bed of the Nile, in order to pond up the water for a hundred miles in a huge reservoir, which will menace by its presence not only the population in its immediate vicinity, but jeopardise even the agricultural existence of Egypt.

When, after the Indian Mutiny, a great line of railway was laid down between Calcutta and the North-West Provinces, care was taken not to run it through or into the great cities it was intended to serve. Strategists argued that the main line must be secure from the danger of being blocked or injured by any sudden rising of the population, or of being seized by insurgent forces, whereby the highway from East to West and North might be endangered. Hence the traveller who visits Benares has, or had, to change carriages at a junction a few miles from the sacred city. It is the same at Agra, the same at Delbi, each of which is at some miles' distance from the main

line. Nobody has doubted the wisdom of such a plan in a densely populated country held by a few men of another race. But in Egypt things appear to be looked at from a different standpoint, and Government as well as the British engineer seem prepared to try experiments on the sole artery through which runs its life-blood. And the excuse for it is that a reservoir in that position will be comparatively cheap! Yet the engineers of ancient Egypt, in their successful efforts to improve Lower Egypt, set an example to their successors of to-day when they took advantage of the strange, rockgirt depression of the Fayoum, some seventy miles from Cairo, and created with Nile water a vast lake which, during a part of the year, they kept within its proper bounds, and during another part caused to flow back to the Nile for the special use and irrigation of the Delta. Though the British engineer of to-day seems willing to ignore this fact, the rest of the thinking world, on the contrary, would emulate the deed of Moeris, and thereby leave the course of the Nile absolutely free. How this can be done no one has shown better than Mr. Cope Whitehouse, a gentleman who devotes his life to familiarising the public with this important subject, pionsly hoping, no doubt, that in remote new editions of the History of Egypt his name may be ultimately coupled with that of the mythical king. And if it be true that whoever makes two ears of corn or two blades of grass grow upon a spot of ground where only one grew before does more essential service to his country than the whole race of politicians put together, surely the man who would bring again corn out of Egypt - or, if not corn, cotton - to Loudon, as in days when Egypt was the granary of Rome, and this without ontraging the artistic sentiment of the world, has fairly earned an instalment of honours that Swift thought should be his due.

Mr. Cope Whitehouse, in a variety of articles see pp. 573-82 for a contribution from him, has shown how Lower Egypt may be provided with all the water it requires, without inflicting upon the whole Egyptian population a perpetual sense of insecurity. The British engineer, on the contrary, in his haste to provide Egypt with a lake that shall never run dry, proposes to place it 500 miles sonth of where it is really wanted. Though more than a generation ago he expressed grave doubts about the endurance and financial success of the Suez Canal, he has now nothing but the most sanguine conviction that the reservoir he is prepared to construct in the valley of the Nile itself is the best and only businesslike solution of the question how to water the Delta during a part of the year. Yet there are still many businesslike people with sound common sense, both at home and abroad, who believe that the only enduring fact likely to accrue from the accomplishment of his Quixotic scheme will be the irreparable destruction of Philæ and its historical monuments. Indeed, it is not in

the land of the Pharaohs that men look for the British engineer's most brilliant successes, ubiquitous as are the monuments of his skill and energy. In the case of the Suez Canal he was supremely wrong, and there is nothing sufficiently encouraging in his present scheme of a Nile reservoir to show that he may now be supremely right.

Systematic Testing of Bricks & Brickwork [p. 463].

In the last two Supplements to the JOURNAL has appeared the initial list of subscriptions promised towards this Fund contingently on the estimated sum required, £200, being contributed. The Ex-President, Mr. J. Macvicar Anderson, heads the list with the liberal donation of £10 10s., but so far the sum subscribed falls very far short of the required amount, the total subscriptions at the date of going to press only reaching £54 12s. Should the Fund be satisfactorily established, it is intended to apply it in the first instance towards the systematic testing of brickwork according to the scheme described in the report of the Science Standing Committee printed at page 55. The need for more exact knowledge of the relative strength of bricks and brickwork is generally admitted, and the most satisfactory means of meeting the want is by such a series of practical and authoritative tests as is recommended by the Science Committee. Members of all classes of the Institute are therefore earnestly requested to aid by their subscriptions in carrying out the necessary experiments, and to send in their names, with the amount of their intended donation, to the Secretary of the Institute at as early a date as possible. A complete list of subscribers will be published a little later.

"Augustus Welby Pugin and Furniture" [p. 517].

From Francis T. Dollman [A.]—

It really did me good to read Mr. Crace's remarks on the late highly gifted Augustus Welby Northmore Pugin. I am one of the very few survivors of his father's [Angustus Pugin's] pupils, and A. W. N. Pagin was in age only a few months in advance of myself. Of course, I knew him well, and appreciated to the full his truly wonderful powers. Mr. Crace speaks of his extraordinary rapidity in drawing. I can by experience fully endorse this, for on one occasion he and I were on a steamer going from Ramsgate to London. The sea was especially lively that morning, and when the vessel was rounding the North Foreland it was particularly demonstrative. I went into the chief cabin, and there found Pugin sitting at the edge of a table with a small board and a twofoot rule in his hand (he never used a T-square), an ink-bottle at his button-hole, and his pen covering the paper with most elaborate detail with the greatest rapidity. "Does not the motion "of the boat trouble you?' I said. "Not in the

"least," was his reply, and he continued to work on with the utmost unconcern. It is really too bad that anyone should affect to undervalue the extraordinary powers of Pugin; and to read, as I (and very likely others) have read, criticisms on Pugin as one who was only able to design a boss, a finial, or a crocket puts a severe strain on one's patience. Requiescat in pace. Pugin did his seventy years' allotted work, alas! in only forty years.

From WILLIAM WOODWARD [A.]—

Mr. Crace accentuates a subject by no means unimportant in its bearings. The broad question is whether the designing of Furniture properly comes within the scope of the architect's true functions. And we are at once confronted with the query, what is "Furniture"? I answer it by defining "Furniture," which should be outside the true architect's domain, as those movable items in a building which do not form an integral part of the structure, and which are usually taken away by the occupier at change of quarters. That the architect may have a voice in the selection of even those movable items is not, of course, open to question, but to foster the idea that it forms any part of the functions of the architect to design and superintend the manufacture of such work is, in my opinion, fraught with the greatest mischief to the young architect, and is a mistaken notion which must culminate in distinct injury to the profession. Again, as Mr. Crace points out, there are manufacturers "whose very contact with the "processes of production has made them keenly "alive to the best capacities of the product and to "the best taste of the day," and I need not weary my readers by quoting a list which is known to everyone who has given the least consideration or thought to the very beautiful products of the brain and hand of these masters of their craft. It is very difficult to avoid comparisons in such matters; and to men of taste who are not led away by strivings after idiosyncrasies and impossible ideals, the general conclusion is that experts in any particular branch of science or art produce far more satisfactory work than those who think they can acquire in a day the result of a life's study. Sir Frederic Leighton, in his address [p. 553], made some home-thrusts which will, it is to be devoutly hoped, bring before the patrons of architectural Art a sense of the injury they have done in supporting the superficialities of men who have neglected true principles, burlesqued architecture, and dragged it down from that high pedestal upon which, in England, the genius of Wren. Barry, Pugin, Smirke, Hardwick, Cockerell, Pennethorne, Scott, Street, Burges, and others placed it.

A Learned Lodge of Masons.

From WYATT PAPWORTH [F.]-

In the Ars Quatur Coronatorum Transactions, vol. vi., 1893, there is an admirable likeness of

Professor T. Hayter Lewis, F.S.A. [F.], Past Master of the Lodge, and a copy of it, I would suggest, should be preserved in the Library. Among the many papers of interest in the volume is one entitled "The Tau as a Keystone," by the late H. J. Whymper. It has reference to the construction (in India) of an arch with perfectly square stones, such arch eventually requiring a keystone of the segmental shape which is adopted in the "Mark Degree" of the fraternity. A photograph is given of the ruins of the Temple of the Sun at Marttand,* dated about 700 A.D., and sketches of earlier instances of the use of this keystone in other Kashmir temples, up to 220 B.C.

Mr. C. Purdon Clarke [F.] contributes a paper of special interest to architects on "The Tracing-"board in Modern, Oriental, and Mediæval Opera-"tive Masonry," in which he relates the practice of the Persian master-builder in setting out his work of building a house, apparently independent of the aid of plans; actually he has first of all worked out the general scheme on a sectionallined tracing-board—the key to the mystery of their craft. The use of drawn plans is shown by the Chaldean statue, now in the Louvre, of a princely builder or architect who lived about 2000 B.C., the Egyptian canon of proportion, B.C. 1250, and the change of scale necessary when representing figures of different sizes in the same picture. These are illustrated, as well as the canon of the human figure, from Vitruvius, 1521, from a drawing by Lionardo da Vinci. An Ionic Cap and Base, from the edition of Como, 1521; a Roman interior, from the same; a sketch plan, attributed to Raphael Sanzio, A.D. 1514—these are all developed on squares. A figure, taken from the portico at Madura, exhibits the use of a centre line, equal to the height of the required figure, divided into ninety-six parts, and the figure is developed upwards—an ancient system still in use at Madura in 1882.

A continuation of this remarkable paper is given by Mr. W. Harry Rylands [H.A.], who quotes various references to the tracing-board of the mediæval period; and others to the Egyptian period. The statue above mentioned is that of the architect Gudea, discovered at Tello by M. de Sarzec, and given in his Découvertes en Chaldée. In the work by Prisse d'Avennes several examples will be found of the use of squares as a basis for designs. Scales are given in his illustrations.

Some old lodge chairs at Coventry and Exeter are interesting as examples of furniture of the end of last century.

The volume contains some good photographic views of Canterbury and its cathedral, which are given as mementoes of the "summer outing" of 24th June 1893; and an account of the remarkable

^{*} See Mr. Simpson's sketch of the Temple at p. 100.

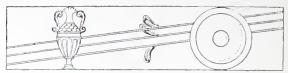
frescoes (?-W. P.) in the chapel of St. Gabriel, probably 750 years old. Six photographs of these are included, with a view of the apse.

Some of the fraternity may be glad to know of the second paper on "Masonic Clothing," by Mr. Fred. J. W. Crowe.

Painting of Arabic Buildings in Egypt.

From John Hebb [F.]—

Mr. Max Herz, architect to the Commission for the Protection of Arabic Buildings in Egypt, has recently published in pamphlet* form a communication made by him to the Egyptian Institute, in which he urges on the Commission the advisability of restoring the painted decoration of these buildings to their original brilliancy. Mr. Herz is of opinion that the walls of the mosque Ibn Touloun (recently restored), which are covered with plaster arabesques, were decorated in colours, although all trace of this decoration appears to have been lost. This mosque had previously undergone several restorations, one at the close of the thirteenth century by Houssâm-el-Dyn Lachyn, to whom the mosque (which was then in ruin) served as a sanctuary, and it was in remembrance of this circumstance that he restored the building. The mosque El-Azhar underwent the same fate, as well as the mosque El-Hâkem, which has long been a ruin, and the madrassas El-Kâmelieh and El-Sâhlehieh, which are of the first half of the thirteenth century. Mr. Herz, apparently, proposes to restore the painting to these buildings from some slight remains of decoration discovered by him on the ancient gate of the citadel, built by Saleh-el-Dyn towards the end of the twelfth century, which he has reason to believe was largely employed towards the end of the thirteenth century. At the mosque El-Mouayyed the Commission removed no fewer than five coats of plaster from a portion of the walls, disclosing some exquisite arabesques and inscriptions in relief richly gilt and coloured, of which an illustration is given. Mr. Herz is of opinion that it would not be difficult from the traces which remain to restore this painting to its primitive splendour. He also proposes to restore the decoration to a tomb of the time of the Sultan Kaïtboy, known as the Kobbat (cupola)-el-Fuddaouieh, at Abbassieli, near Cairo, which is richly adorned with arabesques in wet plaster painted in colours. Mr. Herz contends that the portions of decoration which are painted red were intended to be covered with gilding, of which he has found some slight remains, and recommends that this gilding should be renewed. This is an extremely hazardous step, as it will be impossible to imitate the colour of the old gilding.



9, Conduit Street, London, W., 26 July 1894.

PROCEEDINGS OF ALTIED SOCIETIES.

The Devon and Exeter Society.

On the 21st inst, the Devon and Exeter Architectural Society visited Plymouth with the view of holding a Conference relating to professional education in the counties of Devon and Cornwall, and the extension of the Society's work in those two counties. At Plymouth, after having been joined by several of its county members at Millbay, the company were met at the Athenæum by Mr. James Hine |F|, who had kindly undertaken the duties of guide for the visit. At the Conference the chair was taken by the President, Mr. J. Jerman [F.], and among others present were Messrs. Edward Appleton [F.], M.Inst.C.E., and E. H. Harbottle [F.], past Presidents; Messrs. J. Crocker [F.], H. G. Luff [A.], and N. G. Bridgman [A.].

In opening the proceedings, the President said there were two subjects for consideration. The first was the extension of the Society's area of work. At present they had a very respectable list of members from the county, but they desired to fulfil the mission imposed on them by the Royal Institute, and embrace the adjoining county of Cornwall. In April last year the Institute submitted a proposal to divide the United Kingdom into provinces for the promotion of architectural education by the systematic organisation of such means of instruction as were at present available. It was hoped by such Conferences as that, some decided steps might ultimately be taken for promoting instruction in professional work.

In the course of the discussion, Mr. Thorne (Barnstaple), speaking of architectural education, dwelt upon the necessity of the provision of a circulating library for the benefit of students, so that similar advantages might be given as provided for London and other districts, and he suggested that a fund should be raised for that purpose. The suggestion was cordially approved. The Hon. Secretary (Mr. E. G. Warren) announced that a room had been secured for the Society at Commercial Chambers, Exeter, where he hoped a library and reading-room would be started forthwith. He also expressed a wish that county members would, on their visits to Exeter, use the room. The resolutions eventually passed were:—"That the "Council of the Society consider the desirability of pro-"viding for lectures of an educational nature"; and "That steps be taken to harmonise the name of the " Society with the district included by the Royal Institute " of British Architects, viz., Devon and Cornwall."

The Northern Association.

The annual excursion of the Northern Architectural Association was held on Saturday, the 21st inst. The following twenty-seven members assembled at Thirsk station:-Mr. J. Oswald [F.] (Neweastle), President, and Mr. J. H. Morton [F.] (South Shields), Vice-President; Messrs. J. T. Caekett [F.] (Newcastle), Treasurer, H. C. Charlewood [A.] (Newcastle), Hon. Librarian, J. W. Donald [A.] (South Shields), W. Glover (Newcastle), W. Hope (North Shields). W. Livesey (Raby Castle, Darlington), (Newcastle), H. Cayley, M.A. (Durham), R. B. Dick (Newcastle), H. Cayley, M.A. (Durham), R. Cayley, M.A. (Durham), castle), T. A. Lofthouse [A.] (Middlesbrough), C. T. Marshall (Newcastle), S. Piper (Newcastle), E. and R. Rieh (Newcastle), J. W. Twist [A.] (Selby and Leeds), G. Brumell (Morpeth), R. H. Morton (South Shields), H.

^{*} Li polychromie dans la peinture et l'architecture arabes en Egypte, par Max Herz, architecte. Le Caire, 1393.

Oswald (Newcastle), H. Raine (Sunderland), J. A. Lofthouse (Middlesbrough), C. J. Pringle (Newcastle), and H. Gibson (North Shields). The party travelled by special saloon carriage from Newcastle. Conveyances were in waiting at Thirsk Station, and the members were driven to Coxwold (passing Shandy Hall), where the church was inspected. They then proceeded to Byland and Rievaulx Abbeys, where a very pleasant afternoon was spent. The members then returned to Thirsk, and dined at the Fleece Hotel. Mr. J. A. Lofthouse was elected a Student during the day.

The South African Association.

In delivering his Address on the 27th ult. as retiring President of the South African Association of Engineers and Architects, whose centre is Johannesburg, Mr. Arthur H. Reid [F.] remarked with pride on the result of the past year's labours of the Association. The Council's report showed that the general meetings and visits to works numbered 17; the Council and special Committee meetings, 22. The membership roll had increased from 43 to 56, and 19 papers or addresses had been read by members. The financial position of the Association was satisfactory. The library and reading-room had proved useful to members, and during the coming year they would be added to, as far as the funds of the Association admitted. The Council had decided to have all the papers that had been read by members printed for circulation in pamphlet form. Members, and more especially new-comers, would find them both interesting and instructive, and Mr. Reid recommended their presentation to the several professional bodies at home and abroad. He was of opinion that during the coming year they should take steps to become affiliated to some of the European professional bodies. Their position was now established as the only repretative body in Africa, and the personnel of their members was so powerful in numbers and status that a successful career seemed assured. He would take the opportunity of tendering his congratulations to the Royal Institute of British Architects, London, which would celebrate the sixtieth anniversary of its foundation on the 2nd July, and in doing so would express the hope that, by following the excellent example of the Institute, their Association might in the future occupy the same honourable position as the senior body in Africa that the Royal Institute of British Architects occupied in the old country. He would suggest that the incoming Council should arrange for an exhibition of drawings, photographs, and samples during next year. He also thought a medal should be offered for the best paper read by any member before the Association in successive years, and it might be well, in the public interest, if the Council had the power to specify the subject. It afforded him great satisfaction to report that a distinct improvement in the class and quality of buildings erected in Johannesburg had taken place during the past year. The residential buildings recently completed were, as a whole, far superior to those met with in the neighbouring Colonies, as regarded comfort, sanitation, stability, architecture, and furniture. The business premises were even more marked in their improvement, and the town might well be proud of such structures as Henwood's Buildings, the Ægis Buildings, the Gold Fields of South Africa Block, Green's Chambers, and many others. In view of the rapid increase of the town, the President suggested that the Council should place their services at the disposal of the Sanitary Board, with the object of producing new and improved Building By-Laws. The existing ones were practically unworkable, and new ones were absolutely necessary. For instance, provisions for the escape of inmates and salvage of goods in case of fire should be made imperative in the immense piles that were being erected. Access to roofs of all buildings over two storeys high should be provided with hand-rails for the safe passage of the inmates of the upper floors in case they were cut off

from escape by the staircases. A limit to the height of buildings in streets of varying widths should also be fixed. Regulations bearing upon party-walls were most necessary, as the present absurd system of erecting two independent side walls to each building, and wasting two or three feet of frontage in doing so, could not, in the face of the value of land and frontage, continue. He had just successfully carried through the first party wall contract entered into in Johannesburg, which he reckoned saved his client 300l. and two feet in the width of his frontage, and his neighbour the same. The disfigurement of streets by huge advertisement hoardings had been started, and should be suppressed, and the matter of sky signs also required regulation; and some steps should be taken to curtail the network of overhead telegraph, telephone, and lighting wires that were now spoiling the appearance of their streets. Being himself a member of the Sanitary Board, he should have much pleasure in introducing any proposed reforms to the attention of that body. During the past year or so they had been provided with suitable Law Courts, Hospital, Market, and Police and Gaol accommodation, and would shortly have new Post and Telegraph Offices; but a Town Hall, Public Offices, Fire-Brigade Station, Public Bath and Washhouses, Slaughter-houses, Library, Churches, Schools, a proper Water Supply, Drainage System, Garbage Destructor, Town Lighting, and last but not least a Town Clock, were still to seek. The building trade had been supplied with all labour it required for the past year, and the class of labour was much improved. There had been no strikes or disturbances in the constructive trades, but there had been many scrious failures on the part of the masters, involving merchants and employers in heavy losses, and causing both engineers and architects serious annoyance. He attributed most of these failures to a lack of business capacity and capital, combined with incompetence in the matter of estimating. It was most necessary that a Master Builders' or Contractors' Association be formed for the purpose of keeping the trade together, establishing a business-like routine in the conduct of contracts and in estimating for them, and of providing a competent practical body, to whom the professions would look for advice and assistance in case of need.

The Royal Victorian Institute, Australia.

Intending candidates for Associateship of the Royal Victorian Institute of Architects are now required to pass an Examination conducted on almost identical lines with the R.I.B.A. qualifying Examination. A Board of Examiners is appointed by the Council; the Examination is written, graphic, and oral, and lasts five days; candidates must be at least twenty-one years old, and must submit, to the satisfaction of the Council, evidence of general education and authenticated proofs of ability in drawing before they are admitted to the Examination. The Probationary work required consists of a building of the candidate's own design, fully drawn out as working drawings to a scale of 1 inch to the foot, and comprising plans, elevations, and sections, fully figured, showing construction, drainage, &c., with details of construction and ornament, and a perspective view; also a drawing of architectural ornament-Classic or Mediæval-from the round or relief, in outline or shaded. The syllabus of the Examination is divided into three groups or sections—namely, Group A, History and Characteristics of the Styles of Architecture; Mouldings, Features, and Ornament; Geometrical and Perspective Drawing. Group B, Shoring; Sanitary Science; Water and Gas Supply; Nature, Property, and Application of Materials; Principles and Practice of Construction. Group C, Drawing and Designing; Planning and Arrangement; Specifications; Quantities and Estimates; Professional Practice; Oral Examination. Instead, however, of presenting themselves for the whole of the subjects at once, as in the R.I.B.A. qualifying Examination, candidates are permitted to take any one of the Groups A, B, or C in successive Examinations. In such case a considerably higher proportion of marks must be gained in each subject than is required from candidates entering at once for all the subjects. Certificates are not granted, nor results announced, until the candidate has passed in all the groups. The President of the Royal Victorian Institute is Mr. A. E. Johnson [F.], Soane Medallist 1843.

PARLIAMENTARY.

The House of Lords on Betterment.

The Select Committee of the House of Lords appointed to consider and report whether, in the ease of improvements sanctioned by Parliament and effected by the expenditure of public funds, persons, the value of whose property is clearly increased by an improvement, can be equitably required to contribute to the costs of the improvements, and, if so, in what eases and under what conditions Parliament should sanction the levying of such contributions in Local Acts or Provisional Order, have issued their Report in the following terms:

1. The Committee have taken evidence from the promoters of several Bills which have contained provisions for imposing what has been called a betterment charge in respect of improvements effected by local authorities.

2. They have also had before them witnesses who have had experience of the actual working of betterment charges in various forms, and they have taken the evidence of other experienced witnesses and of gentlemen who have written upon the subject.

3. They made known their willingness to hear any evidence that any municipal body or local authority might be disposed to lay before them. The Committee, having fully considered the evidence taken before them, have

come to the following conclusions, viz .-

(1) The principle of betterment in other words, the principle that persons whose property has clearly been increased in market value by an improvement effected by local authorities should specially contribute to the cost of the improvement is not in itself unjust, and such persons can equitably be required to do so. But the effect of a public work in raising the value of neighbouring lands is shown by experience to be uncertain. Whether, in any particular case, it is possible for a valuer to pronounce that such an effect has been produced by the completion of any public work is a point upon which the cyidence of eminent valuers differs greatly.

(2) The Standing Orders should be amended so that in any case where a Private Bill renders any property liable to a special charge on the ground that its market value will be increased by the completion of a public work, the owners of such property, or of any interest therein, shall be entitled to notice before the introduction of the Bill, in like manner as if the property were to be compulsorily

nurchased.

(3) It should be provided in the Bill that within some reasonable period after the completion of the work, the owner of the property intended to be charged should receive notice of the amount of the charge which the local authority proposes to make in respect of the alleged increase in the market value of the property due to the work in question. Inasmuch as the appropriateness of the period must to some extent depend upon the nature of the work and the condition of the neighbourhood, it would be difficult to fix any definite time applicable to all cases, but these considerations should be borne in mind by the Committee to which the Bill is referred. The period should not be so short that the effect of the improvement eould not be adequately tested, and it should not be so long as to make the property intended to be charged suffer in its market value by the suspension of the decision as to the charge.

(4) In default of acquiescence by the person on whom

notice is served the amount of the charge to be made should be decided by an arbitrator, unless the said person claims to go before a jury, and the decision should be

taken with as little delay as possible.

(5) All the costs of such arbitration or inquiry before a jury should be borne by the local anthority claiming to lay such charge, unless the arbitrator or jury shall find or award the same sum or a greater sum than that which the local anthority sought to lay upon the property, in which case each party shall bear his own costs incident to the arbitration or inquiry, and the costs of the arbitrator or jury shall be borne by each of the parties in equal proportions; unless it should be otherwise ordered by the arbitrators, or in the case of a jury by the High Court, upon the ground that the opposition to the proposed charge has been frivolous and vexatious.

(6) If the owner has property in the immediate neighbourhood which is found to be injured in its market value by the same work, the amount of the injury should be considered in determining the charge to be imposed upon

him for improvements.

(7) If the owner is of opinion that the charge exceeds the enhancement of market value due to the public work, he should be entitled to claim that the local authority should purchase the property in question at the value which it bore, without regard to any improvement conferred or to be conferred upon it by such work; but under such eireumstances a local authority purchasing a freehold or long leasehold should not be compellable to dispossess the occupying tenants, and should, if they prefer it, be empowered to purchase the reversion, subject to any intermediate interests.

(8) If any question should arise as to the incidence of the betterment charge between any of the persons entitled to different interests in the same property charged, the

question should be determined by arbitration.

(9) Various witnesses have illustrated their opinions by reference to the Bills now before Parliament, but the Committee (to which these Bills have not been referred) has formed no opinion on the merits of either of the Bills in question; but inasmuch as the provision as to notices in paragraph (2) is inapplicable to the Bills already introduced, the Committee consider that it ought to suffice if the Select Committee to which the Bills in question are to be referred should be satisfied that adequate notice has been given to all persons who may be affected by the pro-

posed process of charging.

(10) The Committee have received evidence upon what has been called "recoupment," that is to say, powers given to a municipal or other public body to take land beyond what is necessary for the actual execution of the work, so that some part at least of the improved value may be secured by the improving public body in ease of the burden upon the ratepayers. Some evidence was given by persons who had actual experience of the operation of such a system, the general effect of which was, that it had not proved successful; but the Committee are not satisfied that it has ever been tried nuder circumstances calculated to make it successful, inasmuch as uo sufficient power has ever yet been given to local anthorities to become possessed of the improved properties without buying out all the trade interests, a course which is inevitably attended with wasteful and extravagant expenditure.

THE LONDON STREETS AND BUILDINGS BILL. The Select Committee's Reports [p. 589].

On the 19th ult. Mr. Stuart-Wortley reported from the Select Committee to whom the Bill was referred: That they had agreed to the following Report:-

That a Report from the Home Office had been considered by the Committee, and that they had adopted such of the recommendations therein contained as appeared applicable to the case as submitted to them.

That there are no other circumstances of which, in the

opinion of the Committee, it is desirable that the House should be informed.

Mr. Stuart-Wortley further reported :-

That they had examined the allegations contained in the Preamble of the Bill, and found the same, as amended, to be true; and had gone through the Bill, and made amendments thereunto.

On the 9th inst. Mr. Stuart-Wortley reported from the Select Committee to whom the re-committed Bill was referred that they had made further amendments thereto,

and had agreed to the following Report:-

That a Report from the Home Office on the Bill, dated the 27th April 1894, together with a Supplemental Report, dated the 13th June 1894, were laid before the Committee. As regards the clauses referred to in these Reports:

Clauses 139 and 164 were withdrawn by the promoters. Clauses 136, 150, 179, and 180 were, in various ways, amended and modified.

As regards Clause 144:

After considering the existing enactments, which will be consolidated or re-enacted under the Bill, the Committee were of opinion that this clause might be allowed.

That there are no other circumstances of which, in the opinion of the Committee, it is desirable that the House should be informed.

Mr. Stuart-Wortley further reported:

That they had amended the Preamble of the Bill by striking out the recital therein as to proceedings under repealed Acts, the clause relating thereto having been withdrawn, and had found the same, as amended, to be true; and had gone through the Bill, and made amendments thereunto.

The Third Reading.

On the London Streets and Buildings Bill being brought up for third reading in the House of Commons on the 16th inst., Mr. Stuart moved that certain standing orders be suspended, and that the Bill be taken into consideration, provided amended prints have been previously deposited.

Mr. Howell moved as an amendment that the Bill be considered that day three months. He said that the hybrid committee to which the Bill had been referred, appointed on his own motion, had performed their work in an exemplary manner, and his objection was to the materials with which they had to deal. He held that a great province like London ought to be governed, not by private Bill legislation, but by public Acts. This Bill repealed three public Acts as regarded the matters covered by the Bill. It had been the recent policy of the House not to increase private Bill legislation, but, on the contrary, to substitute public for private Bills. . . . The dangers of private Bill legislation bad been illustrated by the London County Council's General Powers Bill, some clauses of which had been unanimously rejected by the House. This Bill contained a dangerous dispensing power; and there was no course open to him but to move the rejection of the Bill by way of protesting against such private Bill legislation.

Mr. Stuart-Wortley said the opposition could hardly be serious, after the inquiry by the hybrid committee appointed on the motion of the hon. member himself. The issue now raised was discussed on the second reading of the Bill, and it was understood that the opposition was withdrawn on the condition that the Bill was referred to a large hybrid committee instead of the ordinary private Bill Committee. Having presided over the committee, he felt bound to say that the hon. member's precedents rather told against his motion. . . . He hoped the House would see that this Bill, which had received more than ordinary discussion,

would pass without further delay.

Mr. Cohen said it was seldom he found himself able to support legislation promoted by the London County Council, but he cordially joined in the appeal that this Bill should not be further delayed,

Mr. Shaw-Lefevre thought it would be a great pity if this Bill, after all the labour devoted to it, were rejected.

The amendment was negatived, and on the question that the Bill be considered, Mr. Weir moved the following clause :- "The site of every house and premises to be "built after the passing of this Act shall be drained in " such a manner as to carry away all surface water, and " such drainage shall be done to the satisfaction of the " local authority."

Mr. Stuart said he must oppose the introduction of the proposed new clause. They had just managed to carry the consideration of the Bill against a strongly-expressed complaint that the provisions of the Bill were already too large. He was confident that it would be impossible to introduce a clause of this kind into the Bill until it had received full consideration at the hands of the Committee.

The motion was then negatived.

Sir C. Dilke moved, after Clause 210, to insert the following clause: - " 210a. - After the passing of this Act it "shall be lawful for the Council, on the application of any " local authority, to transfer to such local authority any of "the powers conferred by this Act upon the Council, and "thereupon all the provisions of this Act and all by-laws "made thereunder relating to powers so transferred shall " be construed as if the local authority were named therein "instead of the Council."

Mr. Whitmore thought that the members of the London County Council were willing to accept the proposal, and that the Committee would make no objection to such a clause being introduced. In his opinion the proposal was

a good onc.

Mr. Stuart felt compelled to oppose this proposal also, as it was not, in his opinion, germane to the object of the Bill. It might be desirable to raise the question on some other occasion, but under the present circumstances he asked the House to oppose the motion.

Sir J. Lubbock was inclined to think there was a great deal to be said in favour of Sir C. Dilke's proposal, but the present, he thought, was an inopportune time to press it upon the consideration of the House, and he hoped, therefore, that the right hon. gentleman would withdraw it.

The clause was by leave withdrawn, and the standing orders having been suspended, the Bill was then read a third time.

LEGAL.

Setting Back Buildings in Streets.

THE SUTTON LOCAL BOARD V. HOUGH.

This case, decided by Mr. Justice North on the 14th inst., calls for some notice. The plaintiffs applied for an injunction to restrain the defendant, a grocer, of 21 High Street, Sutton, from building beyond a line prescribed under section 155 of the Public Health Act, 1875. High Street is an old and very narrow thoroughfare in the plaintiffs' district. The defendant had pulled down and proposed to rebuild his shop on the old line. The plaintiffs had not prescribed any general building line for the street under section 154 of the Act of 1875, but fixed a line for the particular site some six fect behind the old line, and refused to pass the building plans unless they were altered to conform to the new line. in effect amounted to setting back the shop front on the defendant's site, and he contended that it was not a bonâfide exercise of the local authority's powers, because on each side of his house were comparatively new houses, and the Board had not laid down a general line in that part of the street to be carried out under the compulsory powers of section 154.

Mr. Swinfen Eady, Q.C., and Mr. C. E. E. Jenkins supported the motion; Mr. Samuel Hall, Q.C., and Mr. Bramwell Davis opposed.

Mr. Justice North in giving judgment said it was obvicus

that what the local board were doing was with a view to widen the street as opportunity arose when houses were from time to time rebuilt, and what they were doing was precisely what they were empowered to do by section 155 of the Publie Health Act. It was true they had an additional power under section 154, but the exercise of that involved their taking the whole of the houses abutting on the side of the street to be set back. He could not see that the requiring the house to be set back some six feet was at all an unreasonable exercise of the board's power, and he must grant the injunction asked for.

Wooden Structure erected without Licence.

LONDON COUNTY COUNCIL v. HUMPHREYS.

This was a ease stated by a metropolitan police magistrate, who had dismissed a summons charging the respondents with erecting a wooden structure of a movable and temporary character (called a bungalow) without tho appellants' licence in writing, contrary to Section 13 of the Metropolis Management and Building Acts Amend ment Act (45 Viet. c. 14). It was proved that the respondents were manufacturers of, and dealers in, buildings constructed of wood and corrugated iron. Their premises included a piece of land 80 feet long and 40 feet wide, where for two years past cottages, bungalows, stables, &c., so constructed had been shown and sold to customers. The bungalow in question was 31 feet long, 28 feet wide, and 17 feet high to the ridge of the roof; it rested on the ground and had no foundations; the floor was wooden and the inside was lined with matchboarding; the outside was covered partly with corrugated iron and partly with wood; the roof was wood and iron; the interior was divided into four rooms by means of wooden partitions; there was neither chimnoy nor flue. The appellants contended that it was a wooden structure or erection of a movable or temporary character and came within the section, and the purpose for which it was erected was immaterial. The respondents contended that they had merely exhibited on their own premises an article which they had for sale, as a eoach-builder exhibited vehicles which he made and sold, and that the section did not apply. The question was whether the learned magistrate was right in holding that the respondents had committed no offence. The case eame before a Divisional Court (Mr. Justice Wills and Mr. Justice Kennedy) on the 16th inst.

Mr. Paldy, for the appellants, and Mr. Poland, for the

Mr. Justiee Wills, in dismissing the appeal, said the case was one of some difficulty. The structure came within the actual words of the section, but the authorities cited showed that that in itself was not conclusive. The question was whether the Act was intended to apply to structures that were not purposed to be used where they stood, and were only part of a manufacturer's stock in trade. It was impossible to draw a logical line; but the question was to be answered in each case by considering what was the purpose of the structure and the object of placing it where it was placed. If the object was exhibition only with a view to removal when a purchaser could be procured, then the principle of the cases cited applied, and the Act did not affect it.

Mr. Justiee Kennedy eoneurred. Was one compelled to hold that this temporary building eame within the operation of the Aet? On the whole, he thought not. It would be very difficult to formulate a definition. There was, however, one salient point. The structure was not intended for use on that spot. It was on the premises solely for the object of immediate sale. The Aet was intended to apply to buildings movable and temporary, it was true, but only to buildings put up for use on the spot. If the Aet covered this ease, no one could construct a summerhouse or any kind of habitation for man, still less could they expose it for sale outside, without a particular licence

from the London County Council in each ease. The learned Judge could not hold that such could be necessary. The decision of the magistrate must be affirmed.

What is a New Street?

ST. OEORGE'S LOCAL BOARD V. BALLARD.

This ease, adjourned from the Bristol Assizes, raised a point of some importance as to the construction of the local by-laws. The plaintiffs, the urban sanitary authority, claimed an injunction to restrain the defendant from laying out or constructing a new street at Providence Place, Church Road, Bristol, of a less width throughout than 36 feet, in accordance with the district by-laws. The real question was, what is a new street under the by-laws? It appeared that there was a certain lane about 8 feet wide and 175 feet long, commencing at the south side of Church Road, and ending in a cul-de-sac at the entrance of Christeliurch Viearage. On the east of this lane a row of houses ealled Providence Place had been built before the Local Board was created. On the western side was a strip of land which formerly eonsisted of gardens belonging to the houses before named. This strip was acquired by the defendant, who proceeded to build three houses upon it, although plaintiffs warned him that they would apply for an injunction to restrain him, on the ground that he was laying out a new street of a less width than that allowed by the by-laws. The material by-laws were as follows:-

4. Every person who shall lay out a new street which shall be intended for use as a carriage road shall so lay out such street that the width thereof shall be 36 feet at the least. 5. Every person who shall construct a new street which shall exceed 100 feet in length shall construct such street for use as a carriage road, and shall, as regards such street, comply with the requirements of every by-law relating to a new street intended for use as a carriage road. 6. Every person who shall lay out a new street which shall be intended for use otherwise than as a carriage road, and shall not exceed in length 100 feet, shall so lay out such street that the width thereof shall be 24 feet at the least.

The defendant said that the way in question, if a street at all, was an old street and not a new street. The three houses in question were shops in Church Road, having a frontage thereon of 51 feet. The flank wall of one house abutted on the lane in question, but none of the houses had or needed to have aeeess to the lane.

Lord Coleridge, Q.C., and Mr. Radeliffe, for the plaintiffs; Mr. Bullen and Mr. Lloyd for the defendant.

Mr. Justice Lawrence gave judgment on the 21st inst., saying that the whole question really turned on the point whether, under the eireumstanees of the ease, the defendant had laid out a new street or not. No one could doubt that, if he had proposed to build a row of houses opposite to Providence Place and extending for more than 100 feet, he would be thereby making a new street for use as a earriage road in accordance with by-law 5, and by by law 4 this must be at least 36 feet in width. The fact that it was a cul-de-sac would make no difference in that respect. But the question was, whether building three houses opposite Church Road, one of them flanking on Providence Place, was laying out a new street. He felt great difficulty in saying that it was. If there were no land behind the three houses no one could possibly say it was. There was, however a piece of land behind those houses which might or might not be built on. In Gosset v. Malden Urban Sanitary Authority, in which a man built houses abutting on a drive, the Court held that the sanitary authority had struck too soon. He could not help thinking that the same thing had happened here. As far as he could see, in the present state of things, there was nothing to justify him in saying the defendant was laying out a new street. The plaintiff was therefore not entitled to his injunction, and there must be judgment for defendant, with eosts.



THE THREATENED DESTRUCTION OF PHILAE—A PROTEST.

By Monsieur Edouard Naville, Ph.D., D.Litt.,

Correspondant de l'Institut de France.

OR a long period engineers of various nations have been studying the creation in Egypt of large reservoirs where a part of the surplus water of the Nile flood could be stored, so as to prevent the great loss which takes place when the summer-Nile is exceptionally low, and to increase the production of the country by the substitution of perennial irrigation for inundation in Upper Egypt, as well as to extend the area of cultivation by the reclamation of the vast marshes which now cover one half of the Delta. These studies have led to several projects, upon the merits of which I have no opinion to express. The only one which has to be considered here is that based on the construction of the so-called Dam of Assouan, which practically would be built at the top of the First Cataract, just below the Island of Philæ. It is certain that this dam finds great favour with the engineers employed by the Egyptian Government from their especial point of view. According to the opinion of the author of the project, Mr. Willcocks, and of Mr. Garstin, the head of the Irrigation Department in Egypt, a dam at Assouan would be far the cheapest, the most easy to construct, the safest as regards the quality of the building material and of the rock upon which it would rest, of all the dams proposed between Gebel Silsileh and Wadi Halfa, and would best fulfil the various conditions required for a dam which is to resist an enormous weight of water. But it has this very serious fault, upon which we cannot insist too strongly. It is to be placed below the Temple of Philæ; and, as Mr. Garstin himself says, "every dam established on the "First Cataract will immediately drown a great part of the temple during several months." Moreover, if the height of the dam were raised by three metres, in order that its effect might be felt on the whole surface of Egypt, the inundation produced by the reservoir would extend as far as the villages south of Korosko.

It is against this wholesale destruction of Philæ and its ruins, and also of many temples and cemeteries above, that I should like to record my most emphatic protest. In so doing I know that I have with me the unanimous assent of many learned bodies in Great Britain and abroad, and of the friends of Egyptian antiquities, who, both in Europe and America, have already spoken in most distinct words. A few remarks on the Temple of Philæ will show how great is the interest, and how great the value of the monuments thus doomed to perish.

Every traveller who has been up the Nile has been struck by the remarkable beauty of the Island of Philæ. Hidden among majestic granite rocks, whose layers, blackened by time and weather, look like the remains of gigantic buildings, it suddenly appears with its garland of green palms bending gracefully over the river. The history of the temple of Philæ has not yet been written. We do not know the name of the king who laid its first stone. However, considering that there are tombs at Assouan belonging to the Sixth Dynasty, and that the kings of the Twelfth marched their troops into Nubia and built temples and fortresses even above the Second Cataract, it may be safely asserted that the site of Philæ was occupied at a

period of remote antiquity, and that the temple we now see is only the successor of an older one. As it is, nearly the whole of the constructions belong to the Greek and Roman epochs, except a building erected at the southern entrance by King Nectanebo, the last of the native Pharaohs. The interest of the temple lies in the inscriptions which cover its walls, but perhaps even more in its architecture. A complete description of the edifice is required to show how the general idea of an Egyptian temple has been modified in accordance with the site where it was erected, and how well temple and site fit together and form a perfectly harmonious whole.

Beginning at the southern end, we pass first through the most ancient part of the building, a rectangular area enclosed by a colonnade of sixteen columns bearing an architrave and a cornice. There are no traces of a ceiling; the space between the columns is walled up to half the height of the shafts; the capitals have the form of an open lotus-flower, whence rises a Hathor head, which takes the place of the abacus. Light and air played freely in that small construction, which at first sight seems not to have been finished. In front were two small obelisks of sandstone; at a short distance a staircase, leading towards the river. This building has been copied, with slight changes on the eastern side, by the Emperor Tiberius. All travellers must remember the elegant pavilion, at the foot of which they leave their boat when coming from Assouan: it differs from that of Nectanebo by its size; it is larger and nearly square, and in the capitals the Hathor head is replaced by a high abacus.

What was the purpose of these two buildings, which are found nowhere else in Egypt? They have both been called temples, which they evidently are not. I am inclined to believe that they were the halls where the processions formed after they had landed close by. I here entirely agree with Ebers, who first advocated this view. The processions played an important part in the festival of the old Egyptians. We know that great ceremonies were performed at Philæ, which, up to a very late date, was a famous place for pilgrimages, because the tomb of Osiris was supposed to be there or in the neighbourhood. It was in this southern hall that the priests coming from Nubia, and bearing their offerings, made their last preparations before entering the temple. For this reason it was built close to the river, whence an avenue led to the great pylon. Subsequently, as is often the case in Egyptian temples, the avenue was turned into a peristyle court, which extended from the pavilion to the pylon. The Emperor Caligula began, but for some unknown reason did not finish, it. The court is irregular, the two long sides are not parallel. Owing to the form of the island, it was necessary that the western side should follow the river. As for the eastern colonnade, perhaps the wish to preserve some old buildings may have determined its direction. The variety of capitals is marvellous.

I have dwelt thus long on the description of that part of the edifice in order to show how disastrous would be its destruction, or even the realisation of the idea put forward by some of the advocates of the Assouan barrage. They propose to rebuild the temple on the adjacent island of Biggeh; I am not sure that this remedy is not as bad as destruction. Philæ was planned and built in conformity with the shape of the island. Every one of its parts has its purpose, its raison d'être. In case the temple were removed, what would become of the two pavilions and of the court of Caligula? Evidently Biggeh has not the same form as Philæ. What would become of the long supporting wall crowned by Caligula's colonnade and ending at Nectanebo's pavilion? Would the court be rebuilt in its irregular form, or would the two colonnades be parallel? In the first case, supposing the irregularities of the ground not to be the same, what would be the appearance of the new building? What would be the significance of the pavilions if they were placed away from the river, or not at one of the landing-places through which the temple was approached? Let the site of the temple be changed, and the

greatest part of the interest of the edifice will be gone. It will no more be the Temple of Phile. It will be like a plant uprooted from its native soil, or like a huge museum-specimen which might as well be carried anywhere.

Beyond what I called the first court we reach the actual temple, in which we recognise the usual division, the first pylon giving access to another peristyle court; afterwards the second pylon, the hypostyle hall—called by Strabo the pronaos—and the sanctuary with its adjoining chambers. I need not mention the great number of valuable inscriptions which would be lost for ever. Most of them are of a religious character, referring to the worship of Osiris, Isis, and Horus; but there are also many of a different kind. There are important lists referring to the geographical division of the country; others are astronomical; or they describe the ritual and the objects which were employed in the ceremonies, the preparation of some of the substances which were used in the worship, the sacred books, the purifications which the priests had to undergo. Generally speaking, we find there all the kinds of texts in which the Ptolemaic temples are particularly rich.

But what I should like to insist upon is the great loss that Philæ would be to Architecture and to the student of Egyptian art. In no other temple are some of the characteristics of Egyptian building so strongly marked as at Philæ—I mean the taste for irregularity, the disregard of symmetry and of the straight line in the plan and direction of the temple. The two pylons are not parallel to each other, their doors are not in a line. They have between them a peristyle court which is not rectangular, the western side being much longer than the eastern. The axis of the temple is a broken line which nearly follows the curve of the island. Besides, the orientation differs from the great majority of the Egyptian temples. It looks due south towards the direction from which Horus was supposed to have come when he conquered Egypt. Evidently Philæ was intended to be the great sanctuary of the province of Nubia, to which it belonged.

There are other curious points to be noticed in the construction, and a careful study would probably reveal a good many more. After passing the first pylon, on the western side, we find a small temple, supposed to be the birthplace of Horus, where the god is represented suckled by his mother Isis. The capitals of the columns have also Hathor heads. In an open place like Karnak a small sanctuary depending on the large one, and opening on one of its courts, would be turned the other way; it would be perpendicular to the axis of the court. Here it is parallel, obviously because there was no room to build it in the usual way. If we look for the constituent elements of the Temple of Philæ, we shall find the same plan as in an ordinary temple, but the nature of the ground compelled the architects to admit some variations which are easily explained, although they seem considerable at first sight.

In regard to art, although the sculptures are not to be compared with those of the eighteenth dynasty, some of them are very fine, and in the inner chambers their state of preservation is perfect, even to their colours. The columns, some of which possess remains of their original paint, are very good specimens of the influence that Greek and Roman ideas exerted over Egyptian architecture. The Greeks and Romans could not break through the fixed and immutable laws which had ruled the construction of Egyptian temples for many centuries, but within those narrow bounds they introduced more variety.

These few facts may give an idea of the irreparable loss which science and art would suffer if the Temple of Philæ were swamped by the water of the Assouan Reservoir. Who knows whether the loss would not be even greater than we think? Nobody can say what may be hidden in the soil of the island, under the Coptic houses, or in the foundations of the temple, and what treasures would perhaps disappear without any hope of recovery. This danger exists, not only for Philæ, but for all the land along the river as far as Korosko. Several

other temples would share the fate of Phile, such as Dakkeh and Kalabshah,* where are found curious sculptures of Roman times and a great number of demotic inscriptions, some of which, the so-called meroitic, have not yet been deciphered. Nubia has never been well surveyed, still less excavated; and all that is still buried in the ruins of the temples and in the cemeteries, which have hardly been touched, would certainly disappear.

* By the courtesy of the Executive Committee of the Society for the Preservation of the Monuments of Ancient Egypt, the Institute is permitted to publish authentic particulars of works of archæological and artistic interest likely to be submerged by a reservoir with the dam on the First Cataract and known as the Assouan Dam. These particulars form the Appendix to a Pamphlet, which the Society is about to widely circulate, entitled Irrigation Reservoirs in the Valley of the Nile, as follows:—

The Island of Phila.- Upon this stands the temple of Isis, the centre of the group of buildings which date from the time of Nectanebo (fourth century B.C.) to that of Diocletian (end of third century A.D.). Among these buildings are the long corridor of columns leading from the small temple of Nectanebo to the pylon of the temple of Isis; the kiosk, or Pharaoh's Bedstead, of the time of Tiberius; the small triumphal arch of the time of Dioeletian; the quay walls with which the island is surrounded, and which are in part older than any of the existing temples, being partly Ptolemaic and partly Roman. When the reservoir was full, the water would submerge everything. The temple walls are not only covered with sculptures, still in excellent preservation and retaining much of their original colour, and with hieroglyphic inscriptions, but are also covered with graffiti left by pilgrims to the shrine, of extreme historic value. There are also numerous Coptie remains.

Inscriptions on the Neighbouring Rocks.—These date back to the eleventh and twelfth dynasties. They are in most cases at so low a level that they would be submerged by this reservoir.

Temple of Biggeh. On this island are the remains of a temple older than any on the island of Philæ. It is supposed that Biggeh was a sacred place before Philæ.

Temple of Debot. A temple stands here still well preserved, except in parts which were shaken down by an earthquake in 1868, a bad omen for the proposed dam. It is surrounded by a wall of masonry, in which are three large doorways leading directly to the façade. The remains of a great approach from the river are still in fair preservation. The whole stands on river deposit, and would fall to pieces as soon as submerged. The temple is of the time of the Ptolemies, and bears on its walls the name of one of the dynasty of native kings who reigned in Nubia during the period of the Ptolemies and the Roman emperors.

Gertassa.—Here are the remains of a small Ptolemaie temple. The basement wall on which it stands would be submerged, and would soon yield. Close by are large quarries of fine sandstone. These contain a vast number of inscriptions and graffiti, chiefly Greek, dating from Roman imperial times. From this quarry the stones for Phihe were taken. South of the quarries are walls of masonry inclosing a large area. A temple stood within. The gateways are ingeniously arranged for defence. In the walls stairs have been constructed leading to the top for the use of the garrison. This work is probably Roman.

Tafeh Taphis of the Itinerarium Antonini.— Here stands a small but very perfect temple, and about it are the remains of several houses of stone, almost unique. They are of late Ptolemaic or Roman work.

Temple at Kalabshah (Talmis).—This is the most magnificent structure in Nubia. It retains its quay walls, stairs of approach, and vast surrounding walls of masonry in a condition more complete than any other temple in Egypt. A pylon wider than the front of Westminster Abbey stands on the upper terrace, and leads into the great courtyard

and temple. The site was sacred in the eighteenth dynasty. The existing structure is Roman, the builders having utilised in part the earlier Ptolemaie edifice. The walls, with their sculpture, are in a very perfect state, the roof only having fallen in. In the courtyard are a vast number of graffiti, many of which have yet to be cleared and deciphered. They extend down to about A.D. 540, when Silko, the Christian King of the Nobades, defeated the Blemmyes, and recorded his exploit on the temple walls.

Dendur.—Here is a very perfect little temple of Ptolemaic times, with the interior covered with wall sculptures and inscriptions, which are of peculiar interest. It stands upon a very well-preserved terrace. To the north lie the remains of the ancient town.

Koshtemneh.—Here are the remains of a great reetangular fort of sun-dried bricks, which formed one of a chain of ancient forts through Nubia, extending to Semneh, south of the second cataraet. The external dimensions are 304 feet by 252. The walls are 12 feet thick. The remains of a temple, probably of the nineteenth dynasty, can be traced within the enclosure, whilst numerous ancient brick buildings, probably of the same date as the fort, lie around outside.

Dakkeh (Psclchis).—This is one of the best preserved temples in Nubia. The pylon is absolutely perfect. The temple itself is covered with sculptures and inscriptions. The cartouches of Thotmes III. and Seti I., taking us back to the eighteenth dynasty, have been found. The existing temple is chiefly the work of the native king Ergamenes, and also of the Ptolemies and Roman emperors.

Kubban (Contra Pselchis).—Opposite Dakkeh stands the great briek fort of Kubban. This great structure is of ancient brickwork, with the walls 18 feet thick, and in parts 25 feet high. Names of kings of the twelfth dynasty have been found immediately to the south, and the ruins of the temple within the area of the walls seem to be of the eighteenth or nineteenth dynasty. The fort commanded the road to the gold mines. With the exception of the walls round the city of El Kab, Kubban is the most complete fortress north of the second eataract.

Korti.—Here are remains of an ancient city with masses

Muharragah (Hicrasucaminos).— Here are ruins of a temple of late date. On the walls are many graffiti in Greek, and hicroglyphie seulptures and inscriptions yet to be deciphered.

Elescyih and Anibeh.—The waters of the reservoir would extend to Korosko if the dam be constructed at Philæ. They will extend further south, at least to Anibeh, if the dam be constructed at Kalabshah. In this event the fort and ancient town opposite Elescyih will be submerged, and probably the rock exeavation at Elescyih itself; but the chief loss would be the great mass of ancient tombs at Anibeh. Here are still standing brick pyramidal tombs probably of the twelfth dynasty, some retaining within them their ancient wall painting. Graves under eairns, or surrounded by rings of stone, are numerous.

The welfare of Egypt and its inhabitants, the chief purpose of the engineers, ought obviously to be the paramount consideration. If the Assouan Reservoir is likely to be a great boon to the nation at large, art and archeology must remain in the background. But even were the serious objections against the work itself, and the present conflict of opinions as to its results, victoriously silenced, we have a right to ask that, if there is any alternative, preference should not be given to a scheme which would lead to an act of gross vandalism; and that economy should not be practised at the cost of some of the finest and most precious historical monuments of Egyptian art.

Edouard Naville.

Geneva, 15th August 1894.

ARMS OF DAMME.

DAMME, A CITY OF THE NETHERLANDS. By J. Tavenor Perry [A.].

Flanders, once played a leading part in the history of the Netherlands; and the public buildings which yet remain within its ruined fortifications attest to the past importance of the place and to the wealth of its merchants. It was founded in 1178, and it owed its origin to a vast inundation which in that year spread the waters of the Zwin over so large an area of country that it menaced Bruges with destruction.* Under Count Florence III. of Holland a thousand men, Zealanders and Frisians, all experts in dykebuilding, soon repaired the breaches, and the legend runs that whilst doing so a dog, left by the floods on a slight eminence, so disturbed the labourers

with its howls that they cast it with the earth into the last hole they had to fill up, and the dyke was known henceforth as the Hondsdam, the Dyke of the Dog. At this point the new town of Damme was founded, and a dog appears upon its shield of arms, and surmounts the flèche of its Halles.

The Zwin, now nearly silted up, was a great landlocked sheet of water formed by the river Scheldt, and was the most important harbour on the west coast of the Netherlands. In it gathered some of the early fleets of the pirates which harassed the English shores; into it retired the Danes in 883 after they had been defeated by King Alfred, and from it they attacked Ghent; † therein, by Ysendyke, lay the ships of the great Earl Godwin, and thence he made his frequent attacks on England during the period of his exile; and on the waters of the Zwin was fought the first great naval battle between England and France, when Edward III. destroyed the French fleet. The position selected for the site of the new town, at the end of a creek of the Zwin and within three miles of Bruges, made it the port of the Brugeois, and it became the landing-place of all the illustrious visitors to that city from the west or from the ports on the Scheldt. The history of the first hundred years in Damme was uneventful, but it must have grown rapidly in importance, as the foundations of its great church were laid during that period, and in 1213 it was sufficiently wealthy to tempt Philip Augustus to attack and pillage it; but the period of its greatest importance commences with the establishment of the Hansa Comptoir in the town in 1240. In the following year Joan of Constantinople renewed the original charter granted to the town in 1180 by Philip of Alsace, and confirmed the burghers in all their privileges; and a second charter, granted the same year, provides that they may erect a hall for the display of their goods for sale. But whilst granting such freedom for the purposes of trade, it is provided—and this shows the great

^{*} Histoire de la Ville de Damme, by L. Maquet. Bruges, 1856.

† The Anglo-Saxon Chronicle. Edited by J. A. Giles.

‡ A Short History of the English People, by John Richard Green. Lond. 1878.

influence already acquired by the merchants—that no artisan shall be eligible for election as an alderman unless he has been admitted to the Hansa of London (L. Maquet). During the next hundred years the prosperity of Damme was at its height; in 1249 Margaret of Con-

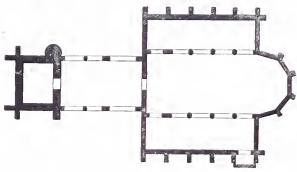


FIG. 1. - NOTRE-DAME, DAMME.

stantinople founded there a hospital (still in existence) for the poor and infirm, and in 1253 she granted to the foreign merchants trading in the town, at the request of Roger of Lübeck and Jordan of Hamburg, several special privileges and exemptions. It was in Damme, during the wars of Edward III. with France, that the deputies of Flanders met his envoy in 1342, when they refused to support their Count Louis of Nevers in his alliance with the French King; and here Hugh of Hastings disem-

barked from twenty ships in 1346 to assist Jacop van Artevelde and the Gantois.

In 1367 came a great storm and flood, when a great part of the town of Damme disappeared in the inundation, and the gradual retirement of the waters of the Zwin began. It afterwards suffered much in the civil wars, and was captured in 1381 by the Gantois under

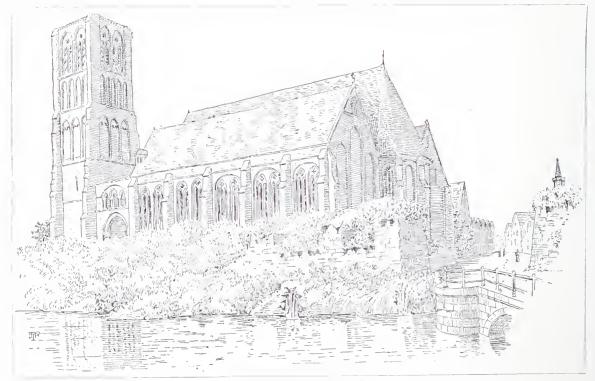


FIG. 2 .-- NOTRE-DAME, DAMME.

Ackerman. But although the navigation of the Zwin by Sluus became yearly more difficult and the harbour almost disappeared in the sands, the value of Damme as a strategic position in reference to Bruges and Ghent maintained its great importance, and to this fact and to the wealth of its burghers must be attributed the considerable building operations of the middle of the fifteenth century, of which the evidences remain to this day. It was during this

period that Margaret of York came hither from Sluus in 1468 with her brother Edward IV. for her marriage with Charles the Bold. This was perhaps the last brilliant event the town witnessed, and its own decay with the increasing importance of the neighbouring Hansa towns of Aardenburg and Sluus went on apace; but we find that it retained sufficient strength or

value to merit the attack of Marlborough in his Flemish campaign, and in 1716 its fortifications, some portions of which are still left, were destroyed.

Of the buildings erected in the days of its splendour, except a few brick houses, only three survive, but two of these are of great interest. The church of Notre-Dame [figs. 1 and 2] belongs to two epochs: the earlier portion, which consists of a nave, transepts, and a western tower, may be contemporary with the foundation of the

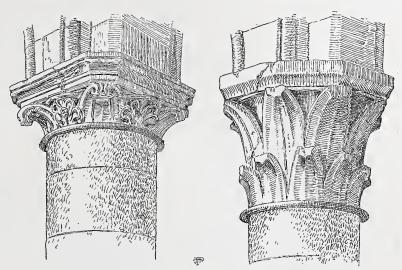


FIG. 3 .- CAPITALS IN NAVE OF NOTRE-DAME, AARDENBURG.

town; but the nave is now roofless, and was burnt in 1578 by the troops of the Prince of Orange. The arcades and triforia are transitional in character, built of Tournay stone, with carved capitals, but the tower is mainly of brick, with a good deal of stone used in its lower parts. The eastern portion has three lofty aisles of equal height, with cylindrical shafts of Tournay stone; the choir terminated with a polygonal apse, and the aisles with square east ends. This part of the church is built entirely of brick, although some stone tracery is being

inserted in the windows in the restoration now going on. Considerable remains of a vaulted rood screen exist, partly embedded in the present west wall of the choir, with rich traceried windows, but the whole is in a very decayed and damaged condition. The church of Notre-Dame at Aardenburg, a town with which Damme was intimately connected, and through which its intercourse with Ghent passed, was in many respects similar, and it has met with a like fate. The nave, which is dis-

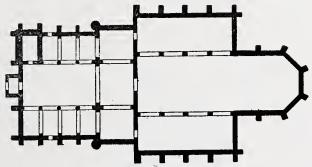
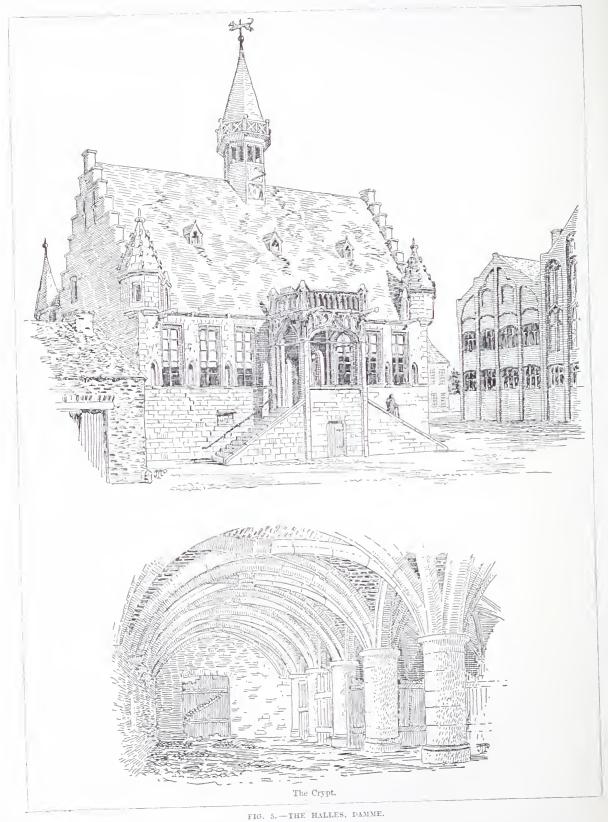


FIG. 4.-NOTRE-DAME, AARDENBURG.

used, is carried on cylindrical piers of Tournay stone, with boldly carved capitals [fig. 3], one of which is of a very English character, and there is a good triforium arcade, and a clerestory of lancets. Mr. Weale * gives the date of this as c. 1195, and of the eastern part as rebuilt in the sixteenth century. For its date this portion of the church is good in its proportions and plan, but it is now walled off from the nave, coated with whitewash, and pewed and galleried for Calvinistic services. The aisles are lofty, of equal height, the side ones square-ended, and the centre, extending two bays further, ends hexagonally. All is very elabo-

^{*} Belgium, &c., by W. H. James Weale. Lond. 1859.



rately vaulted in brick, and the brick tracery of the windows is much better than might be expected for the date to which the work is assigned. The sketch plans [figs. 1 and 4] will show the likeness existing between these two churches.

By far the most interesting building in Damme is the Halles [fig. 5], often erroneously called the Hôtel de Ville, but, as we have seen by the charter of Joan of Constantinople, intended for the display and sale of goods. It consists of two storeys; the lower one, level with the road, is divided into aisles and vaulted, and the upper one, containing two or three halls, is approached by a bold perron carrying a handsome portal. The whole of the front is built of stone, but the back and ends are mainly of brick. The work appears to be of two dates; the basement has its walling of small, wellcoursed stones; but the upper part, though much more elaborately finished, has the ashlar more random in the coursing and more irregular in the size. Its history, as related by Mr. Weale, is briefly this.* It is said to have been founded in 1242, a date which will fairly accord with the lower part of the building, and the work thus immediately follows the establishment of the Hansa in the town. But in the floods of 1403-4, and the civil wars which succeeded them, the



FIG. 6.—ANGLE TURRET, THE HALLES, DAMME.

damage done must have been almost irreparable, and we find that arrangements were made for its rebuilding. In 1464, after a competition among architects,† the plans of Godevaert

de Bosschere, mason, of Brussels, and Jan van Herve, carpenter, of Sluus, were selected, and between that date and 1468, Guillem, son of Godevaert de Bosschere, mason, Jacop Quaetwant, mason, and Andries Centurion, carpenter, carried out the works. The appointment of a mason of Brussels, where stone was more commonly used than in West Flanders, may account

* Bruges et ses Environs, by W. H. James Weale. Bruges, 1884. Also

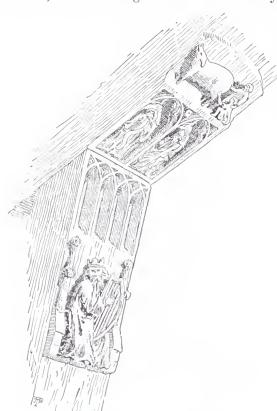
FIG. 7.—SKETCH PLAN OF THE CRYPT.

CAPITAL BASE ARCHES OCIVES

Histoire de l'Architecture en Belgique, by A. G. B. Schayes. Brussels. † "The Influence of the Hanseatic

[&]quot;League, &c.": discussion [p. 496].

for the whole of the front being carried out in that material; and the similarity in some of the details, as in the angle turrets and doorway of the Belfry of Sluus [fig. 8], may be due to the



CORBEL OF CEILING BEAMS IN THE HALLES, DAMME.

stone, but the filling-in is of brick. It is connected with the upper floor by a newel staircase, contained in a square brick gabled turret. The upper floor is divided into large rooms, one still used as a council chamber, in which is a fine hooded mantel-piece well carved in stone, with the ancient castiron fire-dogs, and a most extraordinary and enormous pair of tongs. Both this and the adjoining room have the corbels of the oak roof elaborately carved. These were done by Wouter van Ingen, of Sluus-the smaller ones in 1464, for which he was paid 5s. each, and the larger in 1465, for which he had 7s. 6d. each.

work of Jan van Herve. However this may be, the work is quite unlike that being carried on at the same time in Bruges by Jan Van de The vaulted basement, which may be in part a portion of the original building, has the cylindrical piers and arches in Tournay



FIG. 9.-THE BELFRY, SLUUS.

The miserable condition in which this fine building remains is deplorable, in spite of some slight efforts at reinstatement which have been made. The basement is used as a stable and cattle-shed, full of straw and wood and other combustible materials, whilst the J. TAVENOR PERRY. upper floor has become an estaminet.



CHRONICLE. THE CAIRO COMPETITION.

Immediate Necessity for an International Jury.

A translation of the Programme and Conditions of the competition for a new Museum of Egyptian Antiquities to be erected in Cairo, with a plan of the site, which will be found in the present issue [pp. 628-30], may assist the architects of this country in deciding whether it is worth their while to participate in it. The all-important question of a jury or tribunal of assessors competent to judge of the merits of the several designs submitted, and impartial enough to come to a right decision without regard to the nationality of the several authors, is left by these Conditions in a very unsatisfactory state. It will be observed that the jury, though referred to, are not yet even nominated; that the "Administration"—l'Administration du Musée-reserve to themselves the "formation" of such jury; and that, while the Egyptian Government invite the architects of all countries to compete, it is the "Administration" of the Museum who draft the programme, impose the conditions, and appoint the jury. Not a word can be said in disparagement of the chief administrator-Monsieur de Morgan-and the excellent work he does, nor of his staff. He knows Englishmen well, and they invariably speak well of him. At the same time, not only are the present administrative authorities of the Egyptian Museum of Antiquities French, but the British Minister in Egypt, Lord Cromer, is known to make a point of avoiding all interference with them, to such an extent, it is averred, as to oppose the appointment of Englishmen to any official posts connected with archæological research or survey in Egypt. It is therefore all the more honourable and disinterested on the part of Monsieur Daumet [Hon. Corr. M.], the distinguished President of the Central Society of French Architects, to have insisted on the appointment of an International Jury. In a letter lie has recently addressed to the Egyptian Minister of Public Works, he expressed the feelings of architects all over the world on the subject of public competitions when he wrote— "Or, la première garantie que recherchent des "architectes sérieux avant de prendre part à "un concours est celle que leur offre la constitu-"tion du jury . . . dans un concours international "surtout, la formation de ce jury est très délicate; "la logique et l'équité sont d'accord pour de"mander que le jury soit, lui aussi, international." These words cannot be too often repeated. The first consideration with British architects willing to submit designs in open competition is to be assured of the bona fides of those who invite them; and this is only possible in an international competition when the jury appointed are also international and their names are duly published to the world. No time should be lost in making the desired announcement, especially as the date for sending in the designs is the 1st March nextbarely six months, if the delay necessitated by their transit to Cairo be taken into consideration. Much is due to the French architects for the energy they have displayed in the matter of this competition; and more, indeed, for their having taken such high ground in recent appeals to the Egyptian Minister. The obvious duty, as well as inclination, of their brethren in this country is to support them in the course they have rightly adopted.

Nubia and its Future.

At the Oxford meeting of the British Association for the Advancement of Science, a Paper was read by Mr. Somers Clarke on the geography of Lower Nubia and the changes which would result from the proposed Nile reservoirs of Assouan or Kalabshah. It was illustrated with lantern slides showing how, in 1878, the ex-Khedive Ismael was the undisputed master of the entire catchment basin of the Nile, with an over-lordship of much of the adjacent country. This area passed within the sphere of British influence in 1882. In 1894 Egypt is confined to the region north of Wadi Halfa. It is now proposed to convert about one hundred miles of Nubia into a lake. If the northern limit of the depopulated area is fixed at Assouan, and the river-level is raised from 90 metres above sea-level to 118 metres, the island of Philæ will be submerged to a depth of 14 metres above the floor of the great temple. It was stated that the proposal to raise the Temple of Isis above the lake could not be considered as adequate to the just demands of an age which recognises the priceless value of such historical monuments. If it is conceivable that a platform or plinth could be inserted beneath this building, with a base of 150 feet in breadth, 225 feet in length, and 50 feet in height, heightened by a parapet against wave action, no such remedy can be suggested for the colonnade, already impaired in stability. Further lantern slides were exhibited giving the other buildings, temples and forts to the south, including Kalabshah, whose destruction is contemplated. Mr. Somers Clarke laid special stress upon the extrusion of 30,000 Nubians from their homes, and the impossibility of providing for them in any part of the present limited area of Southern Egypt. He insisted upon, at least, a thorough survey and careful record of all that is now con-

tained in this section of the valley—not only of the unique antiquities, but also of all that bore npon the life of the country, human, animal, and vegetable.

Professor Norman Lockyer pointed out that the temples of Philæ were Ptolemaic and Roman reconstructions of ancient edifices founded 6,000 years ago, and that in their orientation and other characteristics they had preserved valuable information of ancient astronomical science which we had not as yet been able to fully master. Their destruction, therefore, would arrest inquiry unless a most careful and exact copy were made of each building. He said that it was the intention of the Egyptian Government to devote a sum of £50,000 to this work, if the construction of the reservoir were approved by England and the other Powers.

Mr. F. C. Penrose expressed his entire concurrence with Professor Norman Lockyer as to the necessity of a thorough examination of the whole district, and the preservation of its archæological treasures, so far as possible, by minute and accurate drawings or models.

The very beautiful water-colour drawings of Mr. Phené Spiers, made while some of the structures were in a far more perfect state of preservation, were exhibited in the hall, and attracted

much attention from experts.

It may be added that Mr. F. W. Webb, the wellknown engineer, has written to Engineering (10th inst.) to ask the question, "Why not put a "concrete wall round the island, so as to inclose the "temples, and a culvert to the lower side of the "dam to carry off water that may filter through?" Similar suggestions have been made elsewhere. They are due to a failure to appreciate the height of the proposed wall, which would completely destroy the asthetic value of Phila. So far as the colonnade and some of the other architectural monuments are concerned, the wall would be in close contact with the buildings. It is easy to speak of "a concrete wall," but it would in fact be a dam over 50 feet high, between the water on one side and the island on the other nearly 1,000 yards long, and requiring exactly the same measure of stability as the so-called "low-level "dam" across the river. It would certainly cost not far from £300,000.

Preservation of the Temples of Karnak.

While so much is being said and written on the subject of the proposed reservoir below Philæ, it is important that the object which the Society for the Preservation of the Monuments of Ancient Egypt has had in view for so many years should not be allowed to drift into the background. Of all the noble monuments bequeathed to us by Ancient Egypt, none equal in grandeur the majestic ruins of the Temple, or group of temples, of Karnak, now known to thousands of travellers in pursuit of health from its near proximity to Luxor, in

recent years famous as the health resort of Upper Egypt. The grave and imposing entrance to the great temple fronts the Nile at a distance of about a quarter of a mile from the river-bank. Passing through the pylon with its two gigantic towers, one enters the spacious enclosed court which was almost the latest addition to the temple, being erected by Shishak, the contemporary and ally of Jeroboam of Israel, ten centuries before the Christian era. Near the centre, striking and impressive in its graceful solitude, rises the one tall pillar, sole remnant of the avenue of twelve similar columns which formed the approach to that masterpiece of Egyptian architecture, the Great Hall of the Kings. The Hall itself, which is thickly planted with columns, some nearly seventy feet high, is roofless; but gigantic stones resting on the capitals unite the pillars of each row one to the other. A single stone-latticed window remains. Walls and pillars are adorned with a maze of figures and hieroglyphics cut into or relieved upon the stone, and still retaining much of the colour with which they were originally decorated. The sculptures executed under Seti (c. 1400 B.C.) are in full relief, and in grace and delicacy of design excel those added by his successor, Rameses II. The whole scene presents a mingled picture of majesty and ruin, strength

and decay, difficult to convey in words.

To arrest further decay, and to preserve to posterity this magnificent group of ruins, is the task set itself by the Society for the Preservation of the Monuments of Ancient Egypt. The scheme by which it is hoped to achieve this end has been described by Mr. Poynter, R.A., in The Times. The mischief, he explains, is due to the crystallisation of the salts contained in the soil, which eat away the bases of the columns and walls. This destructive agent is set in action by the annual inundations of the Nile. The salts in solution penetrate the porous surface of the sandstone, and, as they crystallise in drying after the waters have retired, minute fragments of the stones are broken off. The result of this process, repeated annually through many centuries, may be seen in any photograph of the ruins. The columns, instead of resting on a broad base, have but a narrow neck for their support; this finally fails them, and the column falls. The fate which has overtaken so many undoubtedly awaits all those within reach of the inundating waters. The scheme which the Committee have decided to adopt is one devised by Major Brown, R.E., Inspector-General of Irrigation for Upper Egypt. It consists in pumping the Nile water out of the area of the ruins, and preventing the cause of mischief by keeping them dry. It is proposed to employ for the purpose a steam pump and engine-house with a well, and an 18-inch pipe drain to carry the inundation water back to the Nile as fast as it enters the ruins. The Egyptian Government have given their consent to

the carrying out of this scheme. The Society is to pay the expenses of the erection of the pump, engine-house, and other apparatus, and to provide for the working of the engine for two years. After that period the Egyptian Government have undertaken to take charge of the operations and furnish the means for the permanent working of the engine to keep down the water. During the past season Major Brown has been actively at work, and the engine-house and pump are nearly if not quite completed. Care has been taken to place the engine-house in as inconspicuous a position as possible outside the general area of the ruins.

Mr. Poynter appeals for further funds to enable the Society to carry out the whole work and hand it over complete to the Egyptian Government at the end of the two years. The total cost is estimated to amount to £1700, more than half of which, it is satisfactory to note, has already been subscribed. The Institute numbers among its members many ardent archæologists to whom such a promising scheme cannot fail to commend itself. Any desiring to contribute towards the balance required should forward their subscriptions to the Hon. Treasurer, Mr. F. G. Hilton Price, F.S.A., 17 Collingham Gardens, S.W.; or to the Hon. Secretary, Mr. Edward J. Poynter, R.A., 28 Albert Gate, S.W., who states that he will send a report, containing details of the scheme, to any one desiring further information.

The Congress at Budapest.

At the Congress of Hygiene and Demography, which is to be held at Budapest from the 1st to the 9th September, under the patronage of the Emperor of Austria and the presidency of Count Karolyi, Mr. Arthur Cates [F.], Mr. T. W. Cutler [F.], and Mr. John Slater [F.] will represent the Council of the Institute. The heads of subjects to be discussed will be found printed at p. 309.

The Streets and Buildings Bill.

The London Streets and Buildings Bill 1894 passed the House of Lords on the 14th inst., with amendments which have been accepted by the House of Commons. The London County Council seem well content with the metamorphosis the Bill underwent in its passage through committee; and the promoters, they consider, may be congratulated on having so far accomplished the much-needed amendment and consolidation of the building law. While lamenting that many points had to be yielded, which might have been carried through had time permitted evidence to be taken on them, the County Council nevertheless acknowledge their indebtedness for the assistance rendered by the opponents to the Bill as originally drafted. "It would be wrong to suppose," they observe in a recent report, "that the oppo-"sition to which it has been subjected has in "all cases damaged the Bill. Far from it. The "opposition of the Royal Institute of British "Architects, of the Surveyors' Institution, and of "the Ecclesiastical Commissioners has, upon the "whole, resulted in making it a better measure, "and certainly a more workable one." Good; it is a pity, however, that the conference between the promoters and the representatives of the Councils of the Institute and the Surveyors' Institution, which produced such excellent results on the noncontentious portions of the Bill, was not extended to the new legislation, especially in Parts I. and IV., which provoked such determined opposition. The promoters would have had the advantage of the technical skill and practical experience of the delegates, which would have resulted in a still better, more workable, and more equitable measure; and a vast expenditure of time and money on both sides would have been avoided.

New Travelling Studentship.

In the year 1886 Mr. Thomas W. Aldwinckle, architect, presented a purse of £50, to be competed for by members of the profession between eighteen and thirty years of age, the successful competitor to make a visit of not less than eight weeks' duration to Italy, for the purpose of studying works of Classic or of Classical Renaissance Architecture. This special Studentship was won and held by Mr. George J. Oakeshott $[\bar{A}.]$, now in Australia, two of whose drawings made in Siena and Florence are reproduced as specimens in the Transactions, Vol. III. N.S., and a short description of them is there given by him. This summer, Mr. Aldwinckle, now a Fellow of more than seven years' standing, is pleased to offer a Travelling Studentship of the value of £50 per annum, during three consecutive years, for study in Spain. The details, however, are not yet settled, the Council having asked Mr. Aldwinckle to join the Prizes and Studentships Committee in order to arrange the Conditions under which he would like the Bursary to be held. Needless to add that the Council have thanked the liberal donor very heartily for a valuable addition to the several Studentships in the gift of the Institute.

The Sanitary Institute Congress.

The subjects for discussion at the Fourteenth Congress of the Sanitary Institute, to be held at Liverpool next month, are:—The Housing of the Working Classes; Rivers Pollution; Means for preventing the Spread of Infectious Diseases; Propagation of Cholera by River Communication and Railway Lines, and its Prevention; Precautions with regard to Public Disinfection; Sanitary Arrangements with regard to Emigrants; Examination of Food Supplies and the carrying out of the provisions of the Food and Drugs Acts; Sewerage, Sewage Treatment and Disposal, Sewage Farms; Collection and Destruction of Refuse; The Abatement of Nuisances; Port

Sanitation; Local Government Act 1894 (otherwise the Parish Councils Act) and effect upon Rural Sanitary Inspectors. Over 100 Sanitary Authorities, including several County Councils, have already appointed delegates to the Congress, and as there are 1,500 members and associates in the Sanitary Institute, there will probably be a large attendance, in addition to the local members of the Congress. The delegates of the Royal Institute of British Architects are Mr. John Holden, President of the Manchester Society of Architects, and Mr. Henry Hartley, President of the Liverpool Architectural Society.

The late Wyatt Papworth [F.].

The death, last Sunday morning, of Mr. Wyatt Papworth deprives the Institute of one of its staunchest supporters, a firm and constant friend of sixty years. Present, a boy of twelve years, at the First General Meeting, held 2nd July 1834, when his father with eleven others subscribed their names to the First Address, he attended the Anniversary Dinner held on the 2nd ult. at the Whitehall Rooms, not without some personal discomfort, which the hearty welcome he received but slightly alleviated. His career during those eventful years has been one of hard work, mainly of a literary character. The Editor of the last three editions of Gwilt's Encyclopædia, the chief contributor to the Dictionary of Architecture, which he edited from its very beginning, and which he happily lived to complete, he retired a short time ago to the comparative seclusion of Sir John Soane's Museum, doing there in a few months more work as its curator and of a more generally useful description than his two predecessors had attempted in as many years. Few men possessed more knowledge of a special kind, no man imparted it with truer modesty; and if he seldom rose to speak at a General Meeting, his remarks, always valuable when he did rise, were listened to with a respectful earnestness that few other members have enjoyed, even the most eminent.

Wyatt Papworth, who was born 23rd January 1822, was the second son of John B. Papworth, architect to the King of Wartemberg, and one of the founders of the Institute. His elder brother was John Woody Papworth, an equally indefatigable worker on behalf of the Institute, who died in 1870. Educated at University College School, he received his early professional training in the office of his father. Serving for a time under the Commissioners of Sewers for Westminster, he afterwards entered the office of Sir John Rennie, and subsequently accepted the appointment of assistant, and later of surveyor, to the Alliance Fire Insurance Company, the branch office of which at Ipswich was erected from his designs. This appointment he held for over forty years, retiring in 1888. He rearranged the large corner building in King Street, St. James's, for the Junior

Army and Navy Club, and was successful in a number of competitions, though from one cause or another only three or four of his designs were carried into execution.

He was elected Fellow of the Institute in 1860, and served for many years on the Council, of which he was a member at the time of his death. He had been Master of the Worshipful Company of Clothworkers, and took a leading part in the promotion of technical education.

It is, however, for his literary work that Papworth will be particularly remembered, and especially for his unwearied services as Editor of the Architectural Publication Society's voluminous Dictionary of Architecture. This work, which originated with him and occupied so large a part of his active life, was begun in 1852 and brought to a satisfactory conclusion in 1892, the whole having been produced under his editorship. Among the numerous works by him in the Library may be mentioned the Life and Works of J. B. Papworth (his father), privately printed in 1879, and his Renaissance and Italian Styles of Architecture in Great Britain, published in 1883. The essay "Peculiar Characteristics of the Palladian "School of Architecture," which won him the Silver Medal of the Institute in 1849, as regards research, value of matter, and style of composition, is a model of its kind, and intending competitors for the Essay Prize would do well to study it. An extract from this Essay is printed in the present issue [pp. 631-32]. He was a frequent contributor to the Journal from its commencement, and besides reviews and other articles, the Institute is indebted to his industry and research for a number of valuable Papers.

The late Lawrence Booth [F.].

Mr. Thomas Chadwick [A.], of the firm of Messrs. Booth & Chadwick, of Manchester, has kindly furnished the following particulars of the life and work of his late partner, whose death occurred on the 25th ult.:—Mr. Lawrence Booth - old not in actual years, but in his connection with the Institute, the deceased gentleman having been elected an Associate thirty years ago, and elected a Fellow twenty-four years ago—was in his fiftyeighth year. He served his articles at Oldham under Mr. Stott, and having completed them, he became assistant to Messrs. Blackwell & Son, of Manchester. After three years' service this firm were so pleased and satisfied with his abilities that they offered him a partnership, which was accepted, and the new firm conducted its business under the title of Blackwell, Son & Booth. The firm subsequently, on the death of its senior member, became Blackwell & Booth, and in the year 1876 Mr. Booth succeeded to the business on the death of his partner, Mr. Isaac Blackwell.

Mr. Booth will be remembered chiefly as the architect of the Salford Union Hospital at Hope,

near Eccles; the Barnes Convalescent Home at Cheadle; the Bury Infirmary; and Hospital work for the Bury and Chorlton Unions, and for the Manchester Infirmary Board. Several churches have also been erected from his designs—namely, Christ Church, Walshaw, near Bury; St. Thomas's Bury; restorations and extensions at St. Paul's Bury, St. Mary's Rawtenstall, and Tunstead Church, near Bacup. Mr. Booth was also the architect of the Middleton Free Library; the Public Hall, Library, and Baths at Newton Heath, Manchester; the Bank Street Schools, Bury; and the Public Baths at Pendleton for the Salford

Corporation. Apart from his private practice, he was a warm advocate for the affiliation of local societies with the Royal Institute. Possessing a ready pen, he was a frequent contributor of suggestions intended to serve the interests of the profession. He took an early part in the movement which brought about the system of Progressive Examinations, and took a deep interest in the question of the proper training of the architectural student. For two years he was President of the Manchester Architectural Association, now merged in the Manchester Society of Architects, an allied branch of the Royal Institute, during which time he made many personal sacrifices to benefit the Association, with the corresponding result that during his occupancy of the presidential chair much excellent progress was made. He has also served as President of the Manchester Society of Surveyors and Valuers. Owing to failing health during the past year or two, he did not feel equal to devoting himself so thoroughly to matters of general professional interest, and it is greatly to be regretted that one so eminently qualified to take a leading part in these matters should have been taken from us at a time when his ripe experience and power of moving others in the right direction,

Museum for Sanitary Appliances at King's.

and of infusing enthusiasm at the same time, would

have been so beneficial to the profession.

The Worshipful Company of Plumbers invite members of the Institute to visit the Museum for Sanitary Appliances and the Plumbers' Workshops which they have opened in connection with their advanced classes for plumbers at King's College, London. The plan of the old drainage which was met with, and the plan of the new work carried out by the Company, are to be seen at the Museum. An order of admission can be obtained on application to the Clerk of the Plumbers' Company at 1 Adelaide Buildings, London Bridge.

The Decimal System of Measurement.

Mr. T. J. Willson [A.] has presented to the Institute a metal two-foot rule of the standard English foot, divided decimally, which was given him many years ago by the President, Mr. Pen-

rose, who adopted the decimal system when conducting his Greek investigations at Athens. This system is easy in use, and for exactness, facility in tabulation, and especially in calculation, vulgar fractions being avoided, possesses many advantages over the duodecimal. As simple proportions of $\frac{1}{10}$, $\frac{1}{15}$, $\frac{1}{100}$, $\frac{1}{300}$, and so on, form the basis of Continental drawings and engravings, they can be reduced much more conveniently and accurately by the decimal foot, at a considerable saving of time and trouble. In converting metres into feet, and vice versa, the readiness of the decimally-divided foot is also an advantage obvious in itself. Mr. Willson, who first became familiar with the decimal system when working with Mr. Penrose at Athens in 1846–47, states that he has frequently used it in measuring ancient and other work in England, and that as the conversion of dimensions so stated into eighths of inches is ready, the inherent error of 4 per cent. being easily allowed for, there is practically no inconvenience. It may be too much to expect building surveyors to accept the decimal division of the foot; but, if tested thoroughly, the advantages of rapidity and correctness would be found to rest with a system in which $\frac{1}{8}$, $\frac{1}{16}$, or any such attempt at accuracy is superseded by decimal parts.

Additions to the Library.

Three parts of the sixth volume of Ars Quatuor Coronatorum, the Transactions of the Lodge Quatuor Coronati, No. 2076, London, which contain numerous profusely-illustrated Papers and much information of Masonic and general interest, have been received from Mr. Wyatt Papworth, whose final contribution to this Journal was a notice of them in the last issue [p. 599]. The presentation was accompanied by the St. John's Card (27th December 1893) of the Lodge. Mr. Thomas S. Pope, of Bristol, has presented his pamphlet, Notes on Baptismal Fonts, illustrated by himself and others.

From Brussels come the *Notes de Voyage* of M. Paul Saintenoy in the counties of Kent, Oxford, Cambridge, and Northampton, and the third part of the eighth volume of the *Annales* de la Société

d'Archéologie de Bruxelles.

The Transactions, Vol. V., part 1, of the Essex Archæological Society have been received from the Society, containing among numerous Papers a brief one by Mr. F. Chancellor [F.] on Leez Priory—a subject of considerable interest to architects, which is further dealt with by Mr. Chancellor and Mr. John Sergeaunt in Papers lately read before the Felsted School Natural History Society, and published, with a ground plan of the Priory, in the Society's Report, presented by Mr. Chancellor. The same Report contains also a Paper giving an account of the Lake Village discovered two years ago near Glastonbury. Vol. XXXIX. of the Sussex Archæological

Collections has been received from the Sussex Archæological Society. Among the Collections is a valuable Paper by Mr. J. Lewis André, F.S.A., on "The Chancel Screens of Parish Churches." The Yorkshire Archæological Society presents Part 50 of its Journal, containing among other contributions "The Brus Cenotaph at Guis-"brough" by Mr. Charles C. Hodges, and "Notes "on Yorkshire Churches" by the late Sir Stephen The Canadian Society of Civil Glynne, Bart. Engineers have contributed their Transactions, Vol. VII., part 2, which contain a Paper on Domestic Sanitation by Mr. Alan Macdougall.

The Forty-first Report, and Supplement, of the Department of Science and Art of the Committee of Council on Education; the Report (1892) to the Special Committee of the London County Council on Technical Education, by H. Llewellyn Smith, Secretary of the Committee; the Report from the Select Committee of the House of Lords on Town Improvements (Betterment); and Reports from the Select Committee of the House of Commons on the London Streets and Buildings Bill, with the Proceedings of the Committee, have been added to the Library.

Mr. Sidney Webb has presented through the publishers [Messrs. Longmans, Green & Co., London and New York The History of Trade Unionism; a remarkable book, the joint work of Mr. and Mrs. Webb, which has been treated by the London press with just commendation.

A work, which has already reached a twelfth edition, by Mr. T. M. Clark, Fellow of the American Institute of Architects, entitled Building Superintendence: A Manual for young Architects, Students, and others interested in Building Operations as carried on at the present day, has been presented by the publishers, Messrs. Macmillan & Co. From Messrs. Hendricks & Co., of New York, has been received the Architects' (fuide and Contractors' Directory of America; and from the Senate of the Edinburgh University the Calendar for 1891-95.

REVIEWS OF NEW BOOKS. XIII.

THREE ARCHITECTURAL PERIODS.

Three Periods of English Architecture. By Thomas Harris, F.R.I.B.A., F.San.I. 80, Lond, 1894. Price 7s. 6d. [Mr. B. T. Batsford, 94 High Holborn, London.]

It is not everyone who can appreciate the exact motive of such a book as the one under notice, which is both the gospel of a new style and the "whole duty of man" as architect.

Architecture, to be the true expression of a people's temperament, must be largely unconscious, and it is essential that it should give such expression if it is to be of the highest character. The satisfaction of physical needs can be supplied by the less comprehensive art of building; but national architecture, in the true sense of that word, should tell the historian something more than the pitch of civilisation or luxury which marked this or that epoch or people. Like the traditional folk-song, it should let him into the secret of habits of thought; it should embody popular aspirations, and fix for him the shifting sands of opinion and doctrine. With all deference to the many eminent men who are put into the witness-box by Mr. Harris on behalf of the possibility of attaining to something of that sort under existing conditions, I feel quite unable to follow them. Four hundred years ago the knell of all such hopes was sounded once for all. It may be true that the introduction of Renaissance was due to the whim of a minority numerically insignificant, whose wealth enabled them to reproduce here what had caught their fancy abroad. It is obvious, indeed, that Gothic, so to call it, survived in out-of-the-way corners and in vernacular art for a very long period; but has not fashion always its word to say in matters of art? and is not its dictum, after all, the expression of some section of contemporary opinion? Grant that fashion was primarily responsible for the banishment of Gothic—the effective cause still the attitude of mind of the people at large made the change possible.

Where would Gothic be now, Mr. Harris asks, if it had been allowed to work itself out without interruption? We shall probably be not far wrong if we answer that it would have stood pretty much where, as a fact, it does stand. Its vitality was a thing of the past; it was dying of inanition before the poisonous draught was ever held to its lips. I hesitate to say that all art has found its highest manifestation in the service of religion. Such a sentiment is, I gather, hopelessly out of date; but I would point to the fatal and consistent decline from enthusiasm to individual vanity, and from that to formality almost unrelieved, which marks the course of Gothic architecture in England. Man had, once on a time, been content to be the unit in the great army of designers; by the fifteenth century he had become what he is now—an individual, self-conscious and self-centred; he had dethroned tradition to make way for caprice, and had set up the figure of hard commonsense as his

It was this spirit which was accountable for fan-vaulting, for which we may be grateful; but it was the same spirit which made the reticulated west front of Bareham Church, illustrated by Mr. Harris, a hideous possibility. This was a depth rarely plummed; but Mr. Ruskin's strictures on all perpendicular window tracery are true in the main. The T-square and set-square had become the senior members in the architectural firm; the forms, if not the principles, were worn out, and the invader practically found a beaten army before

Mr. Harris asks the rising school of architects to take up Gothic where it was left, and to carry out its principles in modern materials and to modern ends. Why use this much-abused term, "Gothic," at all? What does it connote? I have reviewed books in this journal which restricted its meaning so jealously that not one old building in England could be found to satisfy every requirement; and this severity on the one side is counterbalanced by a laxness of view which would admit the presence of a pointed arch as a sufficient justification for the epithet. Form will always have the "pas," and principles humbly hold her train for a large majority so long as human nature endures, but neither of these are the "Gothic" which it is our mission to exploit.

If we avail ourselves of all that is newest and best in material, if we set ourselves in the forefront of those who are prompt to satisfy each new requirement of the world of business or pleasure, and if we do this with the greatest economy of material and the most scrupulously careful adjustment of means to ends, then we shall be practising Gothic. Such, to take an example, were the elements which went to the production of the Forth Bridge; and if we may be allowed to drop a name which has done overmuch service already, and masqueraded in motley too long, we have nothing but acclamation for the principles. Mr. Harris, however, means something more than this. "In "the meantime," he writes, "we must be prepared " to adopt new methods of construction, and, ac-"customing ourselves to novel forms and propor-"tions arising out of the use of materials unknown "to our forefathers, force ourselves to break with " prejudice and take commonsense and reason as "our guide." There is nothing like leather, of course; but it is at least a question whether we may not look forward to the days when iron and aluminium may run in harness with the materials which long custom has hallowed without being necessarily prejudiced or illogical.

No one could admire the engineering feats of the last decade more sincerely than the present writer, or be more genuinely in agreement with the desire that the mastery of metal construction should be part of our equipment. Some years ago, in these very pages, he wrote: "It is strange to "think that even among architects, who are also " men of taste, there are many who can see nothing "beautiful in the fabric of the Forth Bridge, in "the infinitely delicate adjustment of means to " ends, and in the boldness of the conception, but "prefer to ask why it is that engineers either "ignore the propriety of having a (so-called) "architectural motive, or, accepting it as a "duty, do but show their incompetence to deal with it."

Since those days the French Exhibition buildings have served as a vast object-lesson in the decorative treatment of iron construction, and the

value of emphasising the constructive features themselves in the true Gothic spirit has been put beyond question. No one could appreciate more highly than I do this casting away of the old trappings, the stage wardrobe which had been worn out in the service of stone construction; but it is quite another thing to look forward even with equanimity to the day when stone shall never serve a higher purpose than the filling-in of an iron framework, or to see wherein the wisdom of such a hope resides. This would be to put an undeserved slight on a lifelong friend, and to make a despot of an extremely useful and faithful servant. Iron has its place, and a large one; but there are conditions under which it is almost an outrage.

Is not metal as natural a material as wood or stone? it is asked, with a strange disregard for the effects of manufacture in taking the bloom off that naturalness. One might, in certain circumstances, accept the use of iron for a cathedral; for warehouses, for shops where every included space is of value, and generally for business quarters, its suitability is patent; and one might go a step further than Mr. Harris appears to do, and ask for structures which shall be metal from top to toe, fillingin as well as construction; but the evolution of the artistic sense will have to be many stages further on the road to perfection before the harmony of metal building with woods and pastures can be

admitted.

Where so revolutionary a policy is in question, it seems almost superfluous to consider such minor matters as the style of the near future before metal has become paramount. The brief span of purgatory, when Paradise is in sight, is of small moment. Style, to be universally accepted, cannot be a matter of individual or even of corporate predilection; it must have its foundation in some feature of universal application and first-rate importance, and such an element would undoubtedly be supplied by the general use of what is practically a new material to architects; but if we are to wait or to work for the birth of a new style, we shall grow greyheaded in the process-"Rusticus expectat, dum defluat amnis." The new style will be born on the Greek Kalends-not a day sooner. The changes which followed one another in natural and logical sequence when architecture still had its roots in the ground cannot in the nature of things be looked for when the artificial has to be accepted in default of the natural. Changes, of course, are incessant: restlessness, Jones's too human desire to outshine Brown, whim, and even perversity, a thousand qualities inherent in a too-fully awakened consciousness, are enough to account for them, without the virtues which are similarly urging their possessors on to some goal not fully understood and never quite attained. It seems certain that we must move on in a circle, the satellites of a bygone style or styles, till some vast body, hurtling

through space, shall cross our orbit and end the service of centuries. Nothing can do this but the wholesale introduction of a new material, and if Mr. Harris is simply actuated by the desire to break through tradition, he is quite justified in asking us to throw aside the materials which keep it alive.

But is this worth our while? Many of us see in the work of those very men who proclaim the rottenness of things much greater merit than they would presumably admit themselves. If architecture has not progressed – mystic word!—it has at least passed into a phase which has many charming characteristics of its own, less vital, indeed, than the product of a large and spontaneous movement, but marked generally by the care to confine the "mad intellectuality" of the individual within reasonable limits. More than this we must not ask for; but one thing is certain: that incessant introspection is not the way to cultivate naturalness or to exercise the faculties of origination.

In the use of metal, then, our salvation lies, if we are to be saved by the rupture of old ties and the repudiation of centuries of indebtedness; and in the use of metal we may look to see our young men asserting their powers in a way worthy of their artistic ancestry; but it this is to mean the sacrifice of all the forms with which, in their latter-day manifestations, the eye is again being charmed, it will not be wholly gain.

ARTHUR EDMUND STREET.

(36)

BETTERMENT.

Betterment by the Council versus Betterment by Recoupment. By T. W. L. Emden, L.C.C. Pamph. Price 2d. [London: Messrs. Diprose & Bateman, Sheffield Street, Lincoln's Inn.]

Mr. Emden's little pamphlet adds one to the many cases brought against the view taken by the London County Council on the subject of betterment. He offers a suggestion upon the oft-debated lines of "recoupment"; and although there is much to be urged in favour of that principle, an objection of great weight stands in its way. In course of time the State, as represented by the Council, may become a ground-landlord, with property upon its hands which it cannot advantageously get rid of, a correspondingly heavy charge being thrust upon the ratepayers.

However much we may disagree with the motives which underlie the persistent efforts of the London County Council to make "Betterment" part and parcel of municipal street improvements, we cannot but recognise that a large amount of gratuitous labour has been expended by one or two progressive members of that active body at Spring Gardens. And we cannot but believe that those gentlemen have fully persuaded themselves that what is practically a new tax properly comes within the scope of their municipal duties. It

might be thought, with reason, that, given an absolute necessity for a new street, or a widening of an old one, given the sanction of the Legislature to proceed with those works, that a purely municipal authority would at once so proceed, and leave the question of a new tax entirely to the legislative body which sanctioned the improvements. The gentlemen at Spring Gardens are perfectly well aware that no sane person has ever yet had the courage to deny the accuracy of the proposition that if by any street improvement the value of premises abutting upon or in the immediate vicinity of that improvement is enhanced, those who are in receipt of that enhancement of value should contribute fairly towards the cost of the improvement. Why, then, has the fight proceeded for so long a time? Why has London been compelled to endure all the inconveniences attaching to congested thoroughfares when the basis of settlement appears so clear? It is simply and solely because the gentlemen in the majority at Spring Gardens do not desire to fix the charge upon the real recipient of the enhanced value; but whether he has been "bettered" or the reverse, they have made up their minds that the wicked ground-landlord should be made to suffer for all his past misdeeds, and now be made to bleed for having sustained his legal right to hold that which he has legally acquired. Again and again has the London County Council been told by the Legislature that their street improvements have been recognised as necessary, but that their ideas of "Betterment" have not; and again and again have the schemes been completely shelved because the new idea has not been duly appreciated by those perfectly competent to form an accurate judgment.

We can all well remember the first attempt at "Betterment" in connection with the proposed "Strand Improvement," and the amusing plan prepared by the London County Council to define what was euphemistically termed the "Betterment "Area"—an area which included the confines of Lincoln's Inn Fields and ignored premises abutting upon the improvement. We see, day after day, that protrusive unsightliness at the southern end of Tottenham Court Road—the cost of demolishing which is scarcely worth a moment's consideration—and we know that it so remains because of "Betterment"—an instance in which the charge for "Betterment," levied on the right person, would be undoubtedly equitable. We know that, taken altogether, the finest bridge in the world as an instance of the amalgamation of the art and science of the architect and engineer (the architectural art portion being due to our departed President, the late Sir Horace Jones) has its approaches delayed and marred by the London County Council, first because, again, of this "Betterment" mania, and next, because Spring Gardens thought they knew better than the Corporation the proper lines of

approach to a bridge in the planning and erection of which they had had nothing whatever to do. Various attempts to cajole Parliament to let slip in this "Betterment" clause having in every instance been unsuccessful, we are brought to the inquiry into the subject by the Select Committee of the House of Lords which commenced its sittings in May last, whose Report appeared in the last issue of this Journal, and although the terms of that Report might have been more clear and decisive, it should be ample to convince the London County Council that they have now no sufficient reason to longer delay the commencement of those street improvements which they themselves say are urgently required; and that an equitable method of providing for any "Betterment" and for any "Worsement" has been formulated in the

Lords' Report.

The mass of evidence given before the Select Committee is instructive reading, and we now know that the term "Betterment" was not imported from America, any more than the system proposed by the London County Council coincided, as they stated it did, with that adopted by our friends over the water, whose witness stated, fairly and clearly, that "he would certainly advise a "country which had not yet adopted the Betterment "system not to do so." The Town Clerk of Manchester was good enough to say that "he thought "the original assessment made for the purposes of "betterment ought not to be disturbed, even though "the anticipated betterment of the property charged "might not be realised," and I congratulate the citizens of Manchester on the possession of so well-balanced a mind as that owned by its Town Clerk. Mr. Fletcher Moulton stuck to his colours when he ingenuously stated that whether 50 per cent. exacted as a contribution "was too much or "too little did not seem to him to be of the essence "of the scheme"; and Mr. Charles Harrison's evidence was in accordance with all we have heard from him as the real author of this "Betterment" idea.

The expert witnesses pretty well agreed in the injustice of the principle as proposed by the London County Council, and on 19th July Lord Halsbury moved in the House of Lords the adoption of the Report of the Select Committee already referred to, and he opportunely explained that when the London County Council issued their plan of a "betterment area," that was not really what they meant—they really intended to convey that "no person outside the "line drawn could be made to pay this additional "taxation," and it is to be much regretted that the London County Council did not say so before. The Earl of Morley asked a question which I have never yet heard the London County Council fairly answer, and that is the meaning of the word "owner," which Lord Halsbury now explains "included the freeholder, the owner of a lease,

"and the owner of a reversion." Exactly, and I do not envy the position of an arbitrator appointed by the London County Council who has the duty placed upon him to honestly apportion the respective charges in connection with any street improvement to be levied on the freeholder, the leaseholder, and the owner of a reversion. Some discussion arose on the question whether or not an owner could call upon the local authority to purchase the property supposed to be "bettered," and, under Clause (7) of the Report, certainly this power appears to be given to an owner. It is, in my opinion, a very undesirable power, because it would in time convert the local authorities into large owners of property, which would probably be "managed" at a ruinous cost to the ratepayers, and place in the hands of local authorities a controlling strength which might be utilised for purposes quite different from those originally intended. For myself, I cannot see why the present quinquennial assessments could not justly deal with all questions of local improvements, raising the assessments fairly on all property improved by local or municipal expenditure.

The Report was eventually adopted by the Lords, and it is devoutly to be wished that the London County Council will take its beating amiably, and that we shall very soon see those street improvements started which are of most importance to the public at large, and by no means wanting in interest to the architectural profession.

WM. WOODWARD.

NOTES, QUERIES, AND REPLIES.

Competition Abuses, Past and Present.

The time has happily gone by when an architect of any professional experience or knowledge of the world accepted the cynic's advice never to engage in a competition unless assured of possessing a "friend at court"; or when that whilom rare bird, a professional assessor, rejected every design submitted to him and accepted an invitation to prepare one of his own, with the promise of being entrusted with its execution. memorial of 335 Fellows and Associates and of about 1000 non-members, presented some fifteen years ago to the President and Council of the Institute by the late Mr. Street, R.A.—whereby the memorialists offered to bind themselves not to take part in any public competition unless a professional adjudicator was appointed—led competition promoters to see that the architects were in earnest; and the fact was accentuated by the formation, soon after, of a League, every member of which agreed to ignore any and every invitation to a public competition where no engagement to appoint a professional assessor was entered into at the outset. So successful was this movement that since then public competition promoters of

respectability have invariably employed assessors chosen from the higher ranks of the architects, and often nominated by the President of the Institute at the promoters' request. The further honourable obligation that "every promoter of a "competition, and every assessor engaged upon "it, should abstain absolutely from competing, "and from acting as architect for the proposed "work," has also been scrupulously adhered to, at least as far as professional assessors are concerned.

Nevertheless, there are still hosts of small local representative bodies in various parts of the United Kingdom, from which emanate invitations to submit designs under conditions and according to instructions of the most ludicrous description. A member of the Institute only recently called attention to two specimens of the kind referred to, neither of which offered any hope that a professional assessor would be employed. One was for a public hall and offices, the designs for which were to be sent in by the 30th ult. The conditions stated that the cost was not to exceed £2000, while the accommodation asked for necessitated a building containing at least 200,000 cubic feet, which, at sixpence a cubic foot, would cost £5000. The representative of the promoters, being appealed to with this argument, merely replied that a good plan would not be discarded on account of the estimate exceeding £2000, and that competitors were to keep their estimates as near that sum as possible. The second case was a public competition for a market, the cost of which, according to the conditions, was not to exceed £4000, and the designs were to be delivered on the 4th inst. The architect whose design was selected as the best was to be awarded a premium of £30, which was to merge in his commission of 5 per cent. if he were entrusted with the execution of the work; but the promoters reserved the power to withhold the premium and also any expenses whatever incurred by the selected architect if the tenders to carry out the work should be more than 10 per cent. in excess of the stipulated cost of £4000. Moreover, they did not bind themselves to carry out the plan selected nor any of the plans, and they reserved "the right to retain possession for "a period of three months from the 4th day of " August 1891 of any or all of the nusuccessful " sets of plans, with liberty to make such use of "them as they might think fit." Even if, by a miracle, all went well and in accordance with the conditions, the successful architect—God save the mark!—was to receive 5 per cent. on the amount of the contract, which commission was to be payment in full for all the services usually rendered by an architect, for travelling expenses, and for quantities. "Can anything be done," asks the same correspondent, "to prevent such unfair " treatment of our professional brethren, otherwise "than abstaining from competing?" But why

call the treatment "unfair"? There was no compulsion in the matter. The trap was laid in the open and in the light of day, so that all might see; and if an architect, or anyone calling himself one, was caught by the leg and had his pocket picked, it was purely and simply his own fault. For an architect of experience and respectability to submit a design under such conditions is to encourage and coudone "unfair treatment," constituting in itself an abuse of the competition system.

Here is a specimen of another kind of competition in which architects have been invited to

indulge as follows:—

HARTLEPOOL SCHOOL BOARD. TO ARCHITECTS.

The above Board are desirous of obtaining, by competition, plans, specifications, elevations, and estimates for a two-storied upper standard school to accommodate 250 boys and 250 girls in Galley's Field, Hartlepool, with cookery and laundry arrangements for the girls' school, and with laboratory and demonstration room for the boys' department.

The Board do not bind themselves to accept any plan. and the plan (if any) selected will be accepted only subject

to the approval of the Education Department.

All drawings are to be on a scale of 8 feet to the inch, and to be sent, carriage paid, addressed to the Clerk, Hartlepool, on or before the 30th day of September next.

The plan, estimate, and specification (if any) accepted to become the property of the Board.

A plan of the ground may be seen on application to Mr. Robert Edger, Clerk to the Board.

The only conditions under which the Hartlepool School Board and the several competitors (if any) are to be bound are contained in the above advertisement and a block plan of the site on which the school is to be built. The Board, be it observed, undertake to do absolutely nothing in exchange for the designs which they invite. They guarantee the employment of no assessor, professional or otherwise, to select the best design; they offer not a single premium; they do not undertake even to return any of the designs; and if, in their constituents' interests, they shrewdly reject such designs as may be submitted, no competitor can reasonably complain should he be asked to remove his drawings at his own expense. What does the Education Department, referred to in the advertisement above quoted, say to it? And are all the officers of that Department satisfied with this sort of thing? But, it may be argued, the members of the Hartlepool School Board have a proper sense of fitness, of responsibility, of honour. Unhappily, in the present state of representative institutions, a School Board need not consist of educated men; and there is nothing in the advertisement in question to show that Hartlepool is more favoured than many other provincial towns of the same size and importance.

Doubtless there are many other current examples of this sort of competition folly and injustice, and to establish a pillory in which to fix their promoters would be fairly-legitimate as far as concerned the majority; but it might also be a little hard on a few innocents who concur with the more "knowing" through sheer ignorance and inexperience. It is not, therefore, desirable to seek a remedy by such means; but the success of the movement which resulted in the acceptance of the "professional assessor" by all respectable and responsible men, involved at some period of their lives in promoting a competition between architects, ought to encourage a little further co-operative action in this matter. If, by a professional combination, a small representative committee were appointed, wholly independent of the Institute and with power to act, it would be possible to publish at stated periods a list of those public competitions the conditions of which were manifestly unfair; and if, at the same time, the great majority of respectable and self-respecting architects seriously undertook to ignore all and every of such competitions, promoters would awake to a sense of the position, and a recurring scandal be profitably effaced.

The French "Pied" and the English "Foot."

In a recently published book of Memoirs to serve for the History of the First Napoleon, the Emperor's height is given as 5 feet 2 inches, but nothing is vouchsafed by the translator to enable a reader to find out whether English or French measure be intended. In like manner, oddly enough, Thackeray has also stated, in the Paris Sketch Book, as part of his "Meditations at Versailles," that Louis the Fourteenth was 5 feet 2 inches high; and he added an illustration in which "Ludovicus" was shown in his proper person at a height of 62 inches, while "Ludovicus Rex" attained, with the aid of scientifically constructed shoes and a lofty wig, a height of some six feet. But Thackeray was always hard on the Most Christian King, whom he classed in the category of "Snob Royal," and he did not choose to remember that the old French "pied" was nearly an inch longer than the English "foot." Roundly stated, the present mètre equals 3 feet $3\frac{1}{2}$ inches English, while three French feet are about an English inch short of the mètre, so that 5 feet 2 inches French would be more than 5 feet 6 inches English; though, as stature goes in England, such a height makes but a little man. Nevertheless, if the 5 feet 2 inches quoted above be French measure, those Englishmen who love the France of History may console themselves with the belief that Louis the Magnificent and Napoleon the Great were not much less than 5 feet 7 inches high, in their boots.

Origin of Sculpture in Indian Architecture.

From William Simpson, R.I. [H.A.]—

The transition from wood to stone in the architecture of India is generally accepted to have begun about the time of Asoka, 250 B.C. As

this was known at the period when the classic influence was discovered in the Indus region, it was assumed that the Indian builders borrowed the idea of using stone from the practice of the Greeks, either of Alexander's time, or of those who belonged to the Greek kingdom of Bactria. To this was added the further theory that Indian sculpture owed its origin to the same source. Then followed the declaration of writers that they could see this Greek influence in the sculptures of Sanchi and Amaravati. Well, perhaps they are right; but I spent some days at Sanchi in the cold season of 1860-61 sketching these sculptures, and I have failed to distinguish it. To me the first evidence of the classic influence in the sculptures from the Peshawar Valley arose from contrasting their distinct difference from the sculptures of the Sanchi gateways. There are other difficulties that stand in the way of this theory. As yet we have no evidence that a classic influence, be it Greek or Roman, had reached the Indus at the time of Asoka, nor even at the period when the sculptures of the Sanchi Toranas were wrought, which may be put roughly as about the beginning of the Christian era. Amid so much uncertainty, this theory of the origin of sculpture must remain undetermined until a more exact chronology of the classic influence has been made out. Meanwhile, a very small bit of data has just turned up which appears to suggest a much more probable origin of sculpture in Indian architecture than that which has lately prevailed. I use the word "suggest," because it would be assuming too much to say that "it has established" the case. The point is likely to remain speculative—at least for the present. In the last Part of the Epigraphia Indica Dr. Bühler gives translations of a number of the inscriptions found at Sanchi by Dr. Führer in his tour of last year through Eastern Rajputana and Central India.* These inscriptions record in almost every case the names of persons who had made gifts of a pillar or a rail to the stûpa; but there is one inscription that presents a marked exception to the other. It records that "the workers in ivory of Vedisa "have done the carving."† If the word "sculp-"ture" had been used instead of "carving," it would not have altered the sense; and here we find a glimpse at least as to some of the artists, and the source of their art. These ivory carvers merely changed their material, and wrought in stone instead of ivory. Workers in other materials might have done the same. Previous to Asoka it is assumed that the architecture was of wood. Are we to suppose that the wooden architecture of India had no ornamentation on it? Why, some of the rudest of races who use wood for their houses decorate with carving; and we may be sure that

^{*} See, for notice of *Epigraphia Indica*, p. 563 of the present volume of the JOURNAL.
† *Epigraphia Indica*, vol. ii. Part xv. p. 378.

decoration in wood was prevalent in India long before the time of Asoka. If the ivory carvers could change their material, the sculptors in wood could do so also. We know that brick was one of the early building materials of India, and in noticing a *Progress Report* last year I quoted Dr. Führer's announcement that he had discovered "a large two-storeyed Saiva temple, built of "carved brick, and dating from the first century "B.C." * If these bricks should turn out to have

or carving—which would almost mean that they possessed no decorative art—till the time of Alexander's invasion.

Systematic Testing of Bricks and Brickwork [pp. 55, 463, 598].

The Fund for Experimental Research started on the suggestion of the Science Standing Committee amounts at the time of writing to £55 13s., which includes the ten guineas promised by the ex-Presi-

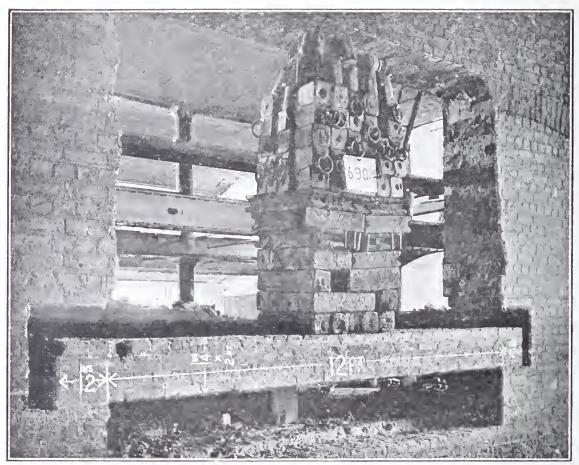


FIG. 1.

been moulded instead of carved, it would not alter the case, for the moulds must have been designed and cut; and, whatever the style may have been, it was not likely to have been derived, as early as the first century B.C., from beyond the Indus.

This is not the occasion to show that there were architects, or builders, in India as early as the Aryan invasion; for even without that knowledge it seems to me that it would be too much to assume that the people of India had no sculpture

dent, Mr. J. Macvicar Anderson, should the Fund be satisfactorily established. The estimated sum required is £200, which will be applied, in the first instance, towards the systematic testing of brickwork according to the scheme described in the report of the Science Committee [p. 55].

The subjoined communication, with illustrations, from Mr. Berrington [A.], is interesting as showing the breaking weight, after a lapse of fifty years, of a beam of brickwork cut out of a solid wall, built with mortar made with Halkyn Mountain lime. This experiment, however, concerns rather the tensile strength of an exceptionally good

^{*} The R.I B.A. Journal. Vol. IX. N.S. p. 422.

mortar or cementing material, whereas the information more generally desired is in regard to the sustaining power of brickwork piers of comparatively small dimensions as supports where there is a concentration of weight, such as piers for carrying warehouse floors or lofty buildings.

From J. A. Berrington [A.]—

In connection with the investigations into the strength of bricks and brickwork advocated by the

The brickwork was cut out, top and bottom, twelve feet wide, leaving a lintel with this span seven courses deep (about two feet), and two feet width of wall; the ends of lintel were not cut free from the other brickwork. This was loaded with all the weight that could conveniently be put on it in iron "kentledge," without sensible deflection or signs of weakness. Two courses were then cut off, and the whole weight again put on, but with the same result. Finally the lintel was further reduced a course,

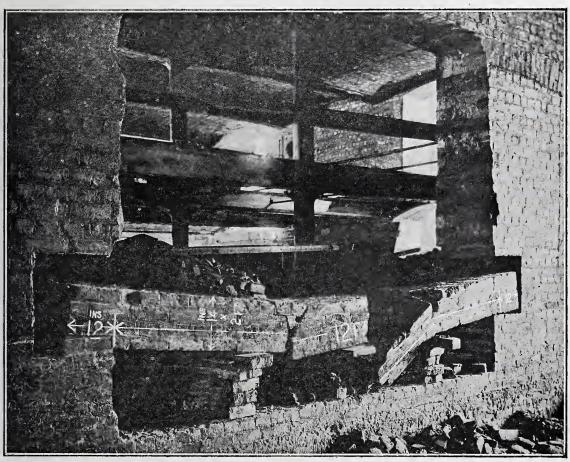
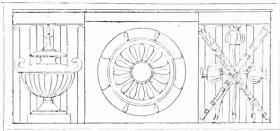


FIG. 2.

Science Committee in their report lately published in the Journal [p. 55], I am enabled, through the kindness of Mr. A. G. Lyster, M.Inst.C.E., Assistant Engineer to the Mersey Docks and Harbour-Board, to communicate the following account of some interesting experiments recently conducted under his superintendence.

The brickwork in question is about fifty years old—part of the Albert Warehouses at Liverpool—and was built with hand-made bricks set with ground mortar made with Halkyn Mountain (Flintshire) lime. This lime is in a high degree hydraulic, and makes mortar of exceptionally good quality.

leaving it four courses deep (fourteen inches), and the ends were cut free, the mortar beds of the bearings being left intact. A centrally-placed load was then put on gradually to the weight of 4 tons 15 cwt., which stood on the brickwork lintel for several days, with no apparent effect. The weight was then increased to 6 tons 9 cwt. 23 lbs., as shown in the illustration, fig. 1. This weight it stood for about thirty hours, when it broke during the night in the manner depicted in fig. 2. Other tests were made with similarly astonishing results, but the above will serve to show the quality of the brickwork in these warehouses.



9, Conduit Street, London, W., 23 August 1894.

INTERNATIONAL COMPETITION

FOR A MUSEUM OF ANTIQUITIES AT CAIRO.

The Egyptian Government, being desirous that the collections of antiquities at present in the museum at Ghizeli should be exhibited in a building thoroughly suited to the purpose and possessing every possible condition of safety, have decided to put to competition the design for a new Museum of Egyptian antiquities at Cairo.

GENERAL CONDITIONS.

The competition is open to architects of whatever nationality.

Designs must be sent in to the Office of Public Works at Cairo before March 1, 1895, at noon. Any design delivered later than this will be rigorously excluded from the competition.

All the designs admitted to the competition will be publicly exhibited at Cairo for a period of at least ten days.

After the closing of this exhibition premiums will be awarded to the authors of the best designs in accordance with the report of a jury, the formation of which is reserved by the Administration [of the Museum?].

A premium of six hundred pounds * (Egyptian) will be paid to the author of the best design. Other premiums, amounting in the aggregate to four hundred pounds (Egyptian), will be divided among the authors of the four next best designs. The jury are furthermore to have power to award "honourable mentions" to the authors of designs deserving of such distinction.

EXECUTION OF THE DESIGN.

All designs which have obtained premiums will become the property of the Egyptian Government, with the right to make such use thereof as they may think fit.

The Government will not pledge themselves to carry into execution any one of the designs sent in or classified.

Should the author of the design placed first offer guarantees which may be deemed satisfactory, the Government may treat with him regarding the direction of the works on terms to be discussed, in which case the premium allotted to him will merge into his commission, payable on the supervening contract. These remarks concerning the direction of the works are offered, however, merely as an explanation, having no binding force beforehand either ou the Government or on architects taking part in the competition.

TRANSMISSION AND RECEIPT OF DESIGNS.

Designs should be sent under seal addressed to "S.E. " le Ministre des Travaux Publics," Cairo, Egypt.
The parcels should bear the superscription " Projet d'un

" Musée des Antiquités égyptiennes."

Every document and drawing forming part of the designs should bear either the name of the author, who should notify his address in a letter of advice, or else an

* All sums of money, premiums, &c., are stated in Egyptian pounds and decimal fractions of a pound. The pound sterling is worth 0.975 Egyptian pound, and the twenty-frane piece is worth 0.770 Egyptian pound.

inscription, device, or motto, to be reproduced on a sealed envelope containing the name and address of the author.

In the latter case, to prevent mistakes, the design and the sealed envelope should not be forwarded by post to the Office of Public Works, but delivered direct by a representative of the author of the design, when they will be officially stamped and numbered, and a receipt handed to the depositor. After the award of the jury is announced all the sealed envelopes corresponding to plans which have not been premiated will be burnt without being

Designs which have not obtained premiums will be returned to their authors, or to their representatives, on demand.

DOCUMENTS AND DRAWINGS REQUIRED.

Every design must comprise -

- 1. An explanatory and illustrative report.
- 2. A block plan or general plan of the whole.
- 3. Plans, sections, and elevations in sufficient number to well explain the design in all its parts.
 - 4. Sections of mouldings or other details (not obligatory).
 - 5. A specification.
- 6. An estimate sufficiently detailed to make it clear that all the necessary expenses are included therein and exactly calculated.

The scale for the general plan will be 1000 The scale for plans and sections will be $\frac{1}{100}$. The scale for details will be 100

Competitors may supplement their designs with any drawings or documents of a nature to make them better understood.

GENERAL ARRANGEMENT OF THE DESIGN.

Site.—The building is to be placed on the site shown in the accompanying plan, so as to be isolated and surrounded on all sides by a garden.

The garden is intended for the exhibition of certain massive monuments little affected by the weather; it is to contain, also, various accessory buildings, such as a dwellinghouse for the Director-General, workshops and outbuildings, dépôts de matériel, and for appliances used in the transport of antiquities and in the works of excavation. These accessory buildings are not included in the present programme, but a site for them must be reserved and shown in the block or general plan in such wise as not to interfere with the ultimate enlargement of the Museum.

The main front of the building will face the Avenue, twenty metres wide, which borders on the east the ground appropriated to the Museum; and it is to be set back ten metres from the alignment of this Avenue. An iron railing, to be fixed along this Avenue, is included in the present programme; and small lodges, consisting of one or two rooms for the native porters of the Museum, are to be arranged next the entrance gate.

On its other two sides the Museum garden will be enclosed by walls, the erection of which is not included in the present programme.

Component parts of the Building .- In addition to the vestibules, passages, staircases, &c., required for the different parts of the building, the Museum building must comprise the following services distributed on a ground storey and a first storey:-

- 1. On the ground storey:
- (a) Galleries for the exhibition of ponderous objects and monuments of large size.
- (b) Stores or repositories (magasins) for the storage of heavy and bulky objects and monuments prior to their elassification and exhibition.
- (c) A gallery for the public sale of antiquities not required by the Museum.
- 2. On the first storey:
 - (d) Galleries for the exhibition of the least ponderous

objects and of such as require a drier air for their preservation.

(e) Stores or repositories for the storage of these objects prior to their classification and exhibition.

(f) A numismatic gallery with its special store or repository.

(g) Laboratories divided into three or four rooms for the preparation and manipulation of antiquities.

3. On either the ground storey or first storey as may be suitable to the building:

(h) A library.

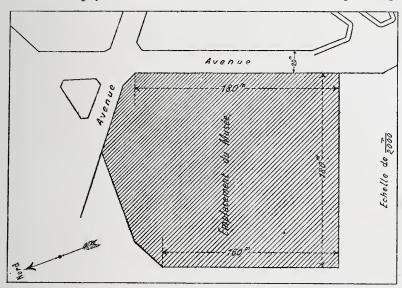
(i) Offices for the administration of the museum, comprising the private room of the director-general and that of the curator; two rooms for the assistant-curators; and five or six rooms for the staff.

Minimum superficies destined to each service. The

making its way up the walls and penetrating the floor of the ground storey. The floor-level of the ground storey must not be below "23:50 mètres" [the official level of the Avenue being "21 mètres"], and must be at least 2 metres above the level of the surrounding land. In addition, perfect ventilation must be secured beneath the floors of the ground storey, either by cellars (sous-sols) or otherwise.

On the ground storey the flooring of the Exhibition galleries, of the corridors, and of the stores or repositories must be capable of bearing at every point an excess weight (surcharge) of 6,000 kilogrammes per square metre; on the first storey the flooring must be calculated to sustain a minimum surcharge of 750 kilogrammes.

The coefficients of strain demanded for the metals used in building will be, per square millimetre of section:



PLAN OF THE SITE FOR THE MUSEUM.

superficial space to be given to each of the component parts enumerated above must equal at least the following figures:—

5 aros.								
Exhibition gallery on the ground storey							6000 sc	. metre
Ditto on th	e fir	st sto	rey	•			3500	,,
Stores on the ground storey							1200	,,
Ditto on the first storey							600	,,
Numismati	c ga	llery	with	its st	ore	1	150	,,
Laboratorio	es						300	,,
Library							150	,,
Sale-room							150	,,
Offices.							500	,,

GENERAL INSTRUCTIONS.

The building must be so planned as to be easily capable of enlargement in proportion as the collections increase; it must not contain large internal courts, increasing the surface covered by the building to such an extent as to interfere with its external development within the limits of the site.

It should not be forgotten that the greater number of Egyptian antiquities, including many stone monuments, owe their perfect state of preservation, after thousands of years, solely to the absolute dryness of the places in which they were discovered. Humidity is their greatest enemy. As the soil of the city of Cairo, besides being readily permeable, is but slightly above the level of subterranean infiltrations during the rising of the Nile, special precautions must be taken to prevent such humidity from

In a general way, all the Exhibition galleries are to be lighted from above. As the light is very bright in Cairo, provision must be made to prevent it being too intense in the galleries and producing a glare detrimental to the effect of the objects exhibited.

About three-fifths of the Exhibition galleries on the ground storey should consist of spacious galleries at least 12 metres wide and 10 metres high, intended for monuments the most important as much on account of their size as of their artistic interest.

The other two-fifths may consist of less spacious galleries 6 to 7 metres high and receiving a less perfect or less direct light; these will contain either objects of but secondary artistic interest, or restorations of tombs completely

closed and lit inside by artificial means.

The stores or repositories both on the ground storey and the first storey are to be arranged so as to be capable of subsequent conversion into Exhibition galleries without requiring much alteration.

The entrance doors of the stores or repositories on the ground storey must be 4 or 5 metres wide, in order to

admit the entrance of bulky objects.

The construction of the entire building must be fireproof. There must nowhere be wooden floorings; those of the ground storey may be simply in cement, and those of the first storey paved in mosaics or similar materials. Only the offices and laboratories are to be closed by wooden doors. The numismatic gallery, and a gallery on the first floor reserved for jewels and other valuable objects, are to be closed by grilles.

In the dry climate of Cairo the air is frequently laden with a fine dust, which it is a matter of importance to exclude from the Exhibition galleries. The internal ventilation must therefore be devised in such a way as to render the opening of windows and skylights (lanternes) unnecessary except for eleming.

sary except for cleaning.

The normal height of the storeys is to be at least

6 metres.

The utmost freedom is permitted to architects with respect to the style of the construction; the interior decoration is to be very simple. The chief object to be aimed at is to have the largest possible surface adapted for the exhibition of the collections, without, however, losing sight

of the imposing character which befits a building destined to hold the antique treasures of the Old Egypt.

Nature of the Soil.—The soil of the avenue situated on the east of the museum site is at a level (la cote d'altitude) of 21m.000. The level of the subterranean water varies, according to the season, from 14m.000 to 19m.50. The subsoil consists, in the upper part, of a bed of rubbish descending to 16m.000, and below, of an indefinite bed of sand mixed with oose (limon), which is incapable at any point of supporting a load exceeding two kilogrammes per square centimetre. Detailed results of borings made on the site will be supplied on application to the Office of Public works, Cairo.

Expenditure - The sum allowed for the building, such as is shown in the present programme, is £120,000 Egyptian. In no case must the estimate exceed this amount.

The Minister of Public Works,

Cairo, 10 July 1894. (Signed) H. FAKHRY.

In addition to the above, the pamphlet issued by the Egyptian Minister of Public Works, which may be seen in the Institute Library, gives the current prices of labour and materials in Cairo, and other particulars. It is worthy of note that the Scale to be used for plans and sections is one centimetre to a metre—equivalent, roughly speaking, to an English eighth-scale; and there can be no doubt that British architects will be well advised to use the French measure for all drawings they may submit in this competition. For all practical purposes, the French mêtre equals three feet three-and-a-half inches English. Excellent paper scales, similar to those with which the French architects work, used to be obtainable from Messrs. Holtzapffel & Co., of Charing Cross, and doubtless are still manufactured by that firm.

** The Under-Secretary of State for Foreign Affairs, on the 4th inst., forwarded to the Institute twelve printed copies of the following circular:— Her Majesty's Secretary of State for Foreign Affairs has received a copy of the Supplement to the Egyptian Journal Official containing a statement of the conditions under which architects are invited to compete for the prizes—amounting in all to 4E. 1,000—offered for the best and four next best designs for the new Museum of Antiquities at Cairo. This copy of the Programme can be seen at the Commercial Department of the Foreign Office, London, between the norms of 11 a.m. and 6 r.m. It is hoped that additional copies of the Programme will shortly be at the disposal of persons who may decide to compete.

LIBERTY AND PROPERTY DEFENCE.

The report for the year 1893-94 of the Liberty and Property Defence League, recently issued, states that the work of the League, whether measured by its amount or its importance, has shown an unusual increase beyond that of any previous years. The cause of this, it explains, is doubtless due to the relegation of the Irish question into the middle distance of the political field, thus enabling domestic and social reformers of all sorts to occupy the foreground for the exhibition and furtherance of their various schemes of philanthropy and regeneration by Act of Parliament. All the care bestowed upon the Labour Question results in the appearance in Parliament every session of a large number of Bills, each so drafted as to make it seem to the democratic voter that, on the Royal Assent being given thereto, he will, without effort, enter into the enjoyment of a higher standard of living or a lower rate of expenditure at the cost of the landlord. eapitalist, and middleman. Such credulity of the working class in face of experience is, under an extended suffrage, at once the obstacle in the way of sound government, and the opportunity of the self-seeking politician, Imperial and local. During the past year there has been a large increase in the demands for the League's leaflets and pamphlets, and in

the requests for the attendance of its lecturers and speakers at meetings. The number of applications from societies and companies federated with the League, and from other bodies outside the federation, for eo-operation in withstanding legislation contrary to their interests and to the principles the League was founded to uphold has also greatly risen.

LEGAL.

Continuing to Build after Notice-Penalties.

THE LONDON COUNTY COUNCIL v. WORLEY.

This case came before a Divisional Court on the 3rd inst. It was an appeal by the London County Council against a decision of Mr. Curtis Bennett, a metropolitan police magistrate, refusing to impose penalties under the Metropolitan Management Act, 25 and 26 Viet. c. 102, s. 85, which imposes a penalty of 40s, for every day on which a building is continued of a height exceeding the width of the street, after written notice to reduce it. The ground on which the magistrate had refused to convict was that the proceeding was out of time under section 107, which says that "no person shall be liable for the payment " of any penalty or forfeiture unless the complaint has "been made before the magistrate within six months after the commission or discovery of the offence." The original offence in the completion of the building above the height allowed (without the licence or leave of the Council) was on the 8th February 1893. The enactment (sec. 85) is-" No building shall be erected on the side of any new street " of a less width than 50 feet which shall exceed in height " the distance from the front of such building to the oppo-" site side of the street without the consent in writing, &c , " and every person committing any offence under this " enactment shall be liable to a penalty of £5, and in case " of a continuing offence to a further penalty of 40s. for " every day during which such offence shall continue after " notice from the Board." In April 1892 there was notice from the Council to the builder that the building would be an offence, and this was received by the owner. In July 1892 the building (which is at Kensington Court) was roofed in, and the wall then was of the prohibited height, and so the offence of erection was completed. In October 1892 there was a penal notice to the builder for the erection of the building above the height limited. In November 1892 there was a summons against the builder for the penalty for the erection of the building. The magistrate doubted whether the case came within the enactment-i.e., whether the building was "erected" on the side of a new street, the front being in an old street and the side of the house in the new street. In June the ease came before the Court, and the magistrate was overruled, and in October 1893 there was a conviction for the penalty for the original offence, the erection of the building. In February 1893, the building being completed, the builder withdrew. On 1st March last the Council proceeded against the owner, on a penal notice in December, to recover the penalty of 40s, a day for continuing the building, that is from 23rd December 1893 (the date of the notice) to 7th March 1894. The magistrate thought the proceeding out of time, as being beyond the six months limited by the Act. The magistrate, however, stated a case, on which the Council appealed against his decision.

Mr. Poland, Q.C. (with Mr. Avory), argued the case for the Council. Mr. Dickens, Q.C. (with Mr. Charles Lloyd), argued it for the owner, contending that a proceeding should have been taken against the owner for the original offence within the six months.

The Court came to the conclusion that the magistrate was wrong, and that the penalties were recoverable.

Mr. Justice Mathew, in giving judgment, said he had tried to discover a doubt in favour of the building owner, but was unable to do so. The construction of the statute was perfectly clear. The offence charged against the

owner was the continuance of the building after the notice, and it seemed to him clear that the penalties were recoverable. The contention was that the offence could only be continued by the party proceeded against for the original offence, the erection of the building; but that was an erroneous view, and the magistrate ought to have imposed the penalties.

Mr. Justice Kennedy concurred, though, he said, not

without hesitation.

Case sent back to the magistrate with the direction that he ought to have convicted.

Ancient Lights.

THE DUKE OF DEVONSHIRE AND OTHERS v. BIBBEY.

In the Chancery Division, on the 3rd inst., the plaintiffs, the Peabody Trustees, moved for an interim injunction to restrain the defendant from erecting a building opposite the block of Peabody Buildings erected in February 1874 in Stamford Street, Lambeth, so as to obstruct the ancient lights of the latter buildings. The defendant's old building, erected on a seven-foot strip of land, was originally 17 feet 6 inches in height. This had been pulled down, and the defendant was erecting a building of greater height, not only on the seven-foot strip, but advanced upon an additional strip of 3 feet, with the result that it darkened particularly the ground-floor windows of the Peabody block.

Mr. Marten, Q.C., and Mr. Howard Wright appeared for the plaintiffs; and Mr. Warmington, Q.C., and Mr.

Gatey for the defendant.

Mr. Justice Kekewich thought that, on the evidence, a sufficient case had been made out for restraining an interference with the plaintiffs' light by reason of the defendant's building on the three-foot strip. His Loraship did not intend to say anything with regard to the building on the seven-foot strip, except that he did not grant an injunction as to that. Accordingly an injunction would go as to the building on the three-foot strip, but that on the seven-foot strip would not be touched by the present order.

Building Line—Urban Authority—Rejection of Plans. THOROLD V. THE NORTH ORMESBY LOCAL BOARD.

This case, heard in the Queen's Bench Division on the 9th inst., had reference to the principle upon which the enactment in the Public Health Act 1888, as to the power of local boards with regard to the erection of buildings beyond the front main wall of houses on each side, is to be construed. In the Public Health Act 1888 (51 and 52 Vict. c. 52), section 3, it is provided that it shall not be lawful in any urban district, without the written consent of the urban authority, to erect or bring forward any house or building in any street or any part of it—such building—beyond the front main wall of the house or building on

either side thereof in the same street.

In the present case it appeared that the Local Board District of Ormesby has a population of about 9,000, and comprises in its area two places—the village of Ormesby (near Middlesbrough, Yorkshire) which is mainly rural, having a population of about 150, and the town of North Ormesby, with a population of over 8,000. North Ormesby is about two miles from the village, and has sprung into existence within the last forty or fifty years. Ormesby Road is a road leading from Middlesbrough and North Ormesby to the village of Ormesby. Part of it is named Westbourne Grove, and is close to and forms part of North Ormesby, and was treated by the Local Board of Ormesby as one of the streets of that place. Whitehouse Lane commences at a point where North Ormesby as a town ceases, and continues for nearly two miles to the village. The Local Board have for the last sixteen years treated West Terrace and Westbourne Grove as a public street, and have lighted it and watered it. The Local Board have also from time to time served notices upon the frontagers of the street to level and make good the footpath under section 150 of the Public Health Act 1875, and the work has been done by or charged on the frontagers. The whole of the east side of West Terrace has been built upon some years since, and comprises twenty-two houses. Nearly the whole of the east side of Westbourne Grove is built upon, and comprises villa residences. In November 1893 Thorold built a dwelling-house on the west side of Westbourne Grove, at a distance of 330 feet from Grove Road, setting back the house 26 feet from Westbourne Grove. The house is a small one, and the only approach to it is from Westbourne Grove, with a door leading into the house facing Westbourne Grove. Thorold submitted to the Board plans of four small cottages intended to be erected by him in Westbourne Grove. The plans showed that each cottage had a frontage of 18 feet to Westbourne Grove, and that the front main walls of the cottages would be only 10 feet from Westbourne Grove. The distance between Thorold's residence and the cottages to be erected is about 90 feet, and the intervening space consists of land purchased by him for building. The Local Board were of opinion that the "building line" in that part of Westbourne Grove north of Grove Road was fixed by Thorold's house, the front main wall of which was 26 feet from Westbourne Grove, and believing that it was undesirable to have houses erected in Westbourne Grove in an irregular line they rejected the plans as being in contravention of the above enactment in the Act of 1888. This was an application on behalf of Thorold for a mandamus to the board to approve the plans.

Mr. Scott Fox argued on his behalf that the case did not come within the enactment, and that the Board could not act arbitrarily and take away the party's property, which would be the effect of refusing approval of his plans.

Mr. Roskill argued on behalf of the Board that the case came within the terms of the enactment, and that the Board had a discretionary power, and had a right, in the exercise of their discretion, to reject the plans. After a long argument, the Court came to the conclusion that the Board were not justified under the enactment in refusing their approval of the plans. Mr. Justice Mathew, in giving judgment, said: —Each case must be determined on its own circumstances, and the enactment must be construed reasonably. When it is proposed virtually to take away a man's land we are bound to look carefully into the circumstances. It appears that Thorold had built himself a house in a certain line, and now proposes to build four cottages at a distance of 90 yards in the same road, the front walls of which project slightly beyond that line. Where there is no continuous line of building of any kind the enactment can hardly apply. Where land is laid out for building purposes it may be different. But we have to deal with the case as it stands. A house has been erected, and buildings are proposed on the opposite side of the road. Why are they objected to? To that there is no answer but that the Board are entitled to exercise a discretion-which, however, turns out to be caprice-to say how under such circumstances the buildings on the opposite side shall be used. It appears to me that there is no evidence of the existence on the side of the original building of any line of frontage.

Mr. Justice Kennedy concurred.

Rule absolute for a mandamus to the Board to approve the plans.

PALLADIO.

A Student's Appreciation of his Work.*

The peculiar characteristics of Palladio, which may be derived from the examination of his works and the perusal of his treatise, as a whole and in detail, are:—

^{*} An abstract of a portion of Mr. Wyatt Papworth's Prize Essay of 1849. The original MS. is in the Library, and the same, revised and corrected, was published in the Transactions, 1851–52.

An arrangement of Plan, suitable to the customs and habits of the nobility of the Venetian territory, generally displaying great convenience and accommodation (according to the rank of his patron) by the disposal of the household offices, either in the house under the principal apartments, or outside, communicating with it by covered colonnades, open at one of the sides only. The disposition of the apartments is managed with great regard to their correspondence and proportion to each other on each side of the vestibules and saloons (a matter not so observable in his contemporaries), and more particularly so in his designs for irregular situations.

An arrangement and decoration of the façade preeminently adapted to the Order selected and the class of edifice, and in conformity with the purpose of a town or a country-house, a basilica, or a church. Some of his most noble effects are obtained by the novel introduction and happy employment of two Orders; the one on a scale comprehending the entire height of the edifice, the other subordinate, comprehending about two-thirds of that height; in every case but that of S. Giorgio both Orders rise from the same level, and in his grandest and noblest building they are placed only on a small plinth, otherwise they are mounted on a high pedestal or stylobate. This principle of the double Order had been employed by the ancients in the adjustment of side porticos to the temples, as Palladio displays in his restorations of them; it was also used in the Propylea at Athens, in which, the subordinate being 10, the principal is 15; amongst his own works, in the Casa del Capitano, it is as 10 to $16\frac{1}{3}$; the same in the Basilica; in the Casa Valmarana, as 10 to 201. To this principle, says Mr. Cockerell, a great part of the secret of Palladio's magnificence may be attributed.

Another marked distinction in his designs from those of the preceding age is the almost constant application of a pediment to the central part of the principal façade, and also to the ends of his colonnades, as a finish for the roof. "In all the houses," says he, "which I have built in the "country, and also in some (very few) of those which I have "made in towns, I have always placed a pediment where "the chief entrance is, because it makes the principal entry "to the house more conspicuous, and contributes very much "to the magnificence and grandeur of the building. This "gives the entrance façade a great advantage over the "others, as it must for that reason be made higher; besides, 'it is much more proper to put the arms of the owner "there, and they are generally placed in the middle of the "pediment." The height is made to vary from one-fourth to one-sixth of the length of the horizontal cornice, and to depend inversely on the number of columns below it; a modification which renders the height nearly proportional to that of the building itself. At the Villa Pojana (as onc example) we see a sad departure from ancient rules, in the want of the continuation of the horizontal cornice that should connect the lower extremities of the inclined mouldings; a defect which has been too often followed by his copyists.

Palladio searcely ever repeated himself in any of his numerous compositions; he had at his disposal all the means, all the combinations which the elementary parts of Architecture could furnish, and he had the art of moulding them to his use, without ever exceeding the just medium which the art permits. His Orders are elegant, and he did not scruple to vary the proportions of an Order according to the nature of the building to which it was to be applied; he generally made the heights of his columns, when used in a particular storey only, equal to the width of his principal rooms—a circumstance probably accidental, but which might have suggested itself from the rule established by Vitruvius in the case of a circular temple, for making the heights of the column equal to the width of the cell: Palladio adapted the Composite and Corinthian Orders to

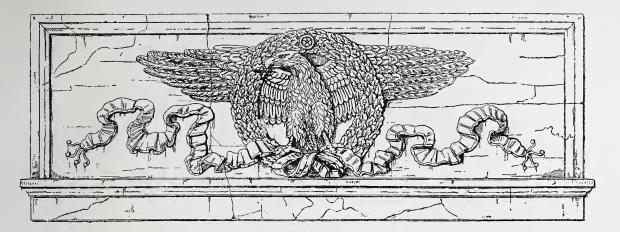
enclose two storeys of apartments.

Palladio left the columns and pilasters plain when used at the ends of porticos, and most of the School have followed his example: he was generally particular in applying a single Order to each storey it was intended to decorate, though in large buildings he had no objection to introduce, at the angles, a tier of mezzanine windows, occupying perhaps four storeys in height: the large Orders he retained for his entrance halls and courts, with small pilasters behind them to carry the floor of the gallery: his favourite display of the Orders seems to be the Doric and Ionic; then the Ionic; and thirdly, Ionic and Corinthian. Of the first, the Chiericato Palace affords a good example; the second appears mostly in the porticos to the country houses; the third is shown in the house at Udine. He also used the Ionic alone with good effect on a rustic basement; and in the same way, the Corinthian. The upper Orders are sometimes placed on pedestals and sometimes not, and the pedestals are as often found without plinths, both arrangements seeming to depend upon the position of the windows and the height of the storey. The lower columns were placed upon plinths or surbasements; the larger Orders generally upon pedestals, to give additional height to them.

In his grandest works, the entablature is generally proportioned to the Order and unbroken, but in many fine specimens by him there are instances of happy effects obtained by the use of it broken by the projection of the columns. In the members of the cornice be never lost sight of the character of the Order employed; when used only as a crowning feature, he adapted it skilfully to the general character of the building; he was extremely particular in the adjustment of the profiles; the architraves were rarely sculptured; the friezes were too often made swelling; which inethod, however, in an entablature where little decoration is introduced, and on a small scale, as in windows and doors, may have a good effect, and may occasionally be permitted. In most instances he left the frieze plain, but when it was decorated the ornament used was not of a very elegant description; the upper ornaments (in the cornice) were always carefully centred over each other. The pedestals were never decorated with panels, sunk or raised. His doors, windows, and niches were composed with great simplicity, and he introduced them in fewer numbers and of a larger size than usual in buildings of the time; their architraves were generally broken at the top after the ancient manner—a method which has been carried somewhat to excess by his many imitators and copyists; the pediments he used alternately angular and circular, but never broken. In his arcades, he employed a simple semicircular arch resting on piers, in conjunction with the trabeated arrangement adopted from the ancient baths; or else he divided the interval between the two piers into three parts by small piers or columns, with an arch only covering the central aperture; a combination which seems to have been copied from some of the colonnades of Diocletian's Palace. The domes which he erected are almost invariably hemispherical.

No one has employed rustic work with more taste and with more reserve; under the influence of his judgment we can consider it a means of opposition, which gives value to the blank parts of the edifice, and causes the elegance of the columns and their ornaments to appear with greater brilliancy. At the same time that it shows, with more or less energy, the character of each kind of edifice, it has the advantage of giving an air of grandeur to the building; but then it was not made use of by him to that excess (as at Florence), which only seems to agree with walls of fortresses and prisons. By his management of its varieties he produced an agreeable combination between the general mass and the detail, so that the spectator finds in these varieties as many beauties, if not more, than in any other style, although the style itself seems to have less to spare

than any other.



THE NEW MUSEUM IN THE ORTO BOTANICO, ROME.

By Professor the Commendatore R. Lanciani [Hon. Corr. M. Rome], D.C.L. Oxon.

Correspondent de l'Institut de France.

NEW centre of archæological interest has recently been inaugurated in Rome, in the so-called Orto Botanico, between the Colosseum and the Church of San Gregorio, on the Cælian Hill. The new building, although modestly called Magazzino Archeologico, is, in fact, a museum of great value to students interested in the origins and prehistoric life of Rome. My special object in proposing the organisation of this collection, and in arranging it has been this: If at some future time the city should decide to collect in this new institution all the treasures discovered in Rome since 1870, which are now dispersed in various places, no part of the work will need to be done over again. The galleries opened on 7th May are only six in number, but they form part of a grand scheme carefully prepared and studied in every particular, so that no alteration will be required in case of future additions. Let me add that the building is surrounded by a garden, to which architectural monuments, falling on the line of new street and river improvements, can be, and are, bodily removed. If we consider, furthermore, that the Orto Botanico is one of the few shady recesses of modern Rome which have escaped "civilisation," that its charming and old-fashioned groves are enclosed by such monuments as the Colosseum, the Claudium, the Palaces of the Cæsars, the Churches of St. John and St. Paul, and St. Gregory on the Cælian, and that the hum of the great city hardly reaches this secluded corner, we must acknowledge that no better site could have been selected for the new museum.

One gallery is devoted entirely to building and decorative materials; the second and third to monuments contemporary with the foundation of the city, or, at all events, anterior to the building of the Servian walls; the fourth to inscribed or sculptured monuments of the Republic; the fifth to miscellaneous sculpture; the sixth to objects pertaining to the aqueducts and water-supply of ancient Rome.

The first abovementioned is the one best calculated to impress the student of architecture, and to its contents I propose to direct the special attention of my readers. The scheme is to collect in this gallery—(1) samples of building materials used in Rome from the time of the construction of the Palatine walls to the downfall of the Empire; (2) specimens of actual construction in brick and reticulated work, in opus quadratum, &c., taken from buildings of ascertained date; (3) marbles used for decorative work. This last collection includes some unique specimens—for example, the breccia di Villa Casali, so named from the place of

discovery; the breccia di Villa Adriana, a large block of Rosso di Levanto from the theatre of Balbus, a marble which till now was thought to be unknown to the Romans, &c.

There are special divisions in this gallery for the illustration of various other branches of mechanical and architectonic handicraft. The best, for every reason, is the one illustrating the work of the figulus (potter and brickmaker). Beginning from the diminutive bricks used for the pavements of opus spicatum, and from those of middle-size used for the construction of hypocausta, there are seen all the varieties in shape, in weight, in colour, produced by the imperial and private figling. There are square and round pipes for the distribution of hot air, round bricks used for building columns in the so-called Pompeian style, triangular bricks for facing (cortina), tiles three feet square, chimney-tops, hearths, tools used for brickmaking and for mason's work, and even specimens of rope and of a workman's apron. This last, made of coarse canvas, was found embedded in concrete in the foundations of one of the buildings in the Gardens of Sallust.

Another division illustrates the stonecutter's work, and shows how the hardest kinds of marbles, as well as basalt and porphyry, were cut and mouldings formed on them; what kind of silicious sand was used for the purpose; what saws, what chisels, and so on. The remaining sections refer to the trade of the carpenter, the painter, the locksmith, the moulder in stucco and terra-cotta, the brassfounder, and others. The exhibition of earthenware is truly remarkable: there are bath-tubs 8 feet long, shafts of wells 2 feet 4 inches in diameter, washing troughs, sitz-baths with a small furnace to keep the water hot, dolia, or jars, of 25 amphoræ capacity, fountains, tanks, basins, amphoræ, coffins, altars, &c. Two sides of the gallery are occupied by a collection of brick-stamps, the largest ever made, giving the consular date of the year in which the material was produced, the name of the potter, and of the owner and manager of the figlinæ. These stamps were generally impressed in the soft clay by means of a seal cut in boxwood or east in metal; a few, however, are hand-written, or rather graffiti, scratched with a nail or with the point of a stick. One of the bricklayers must have been a poet and a scholar, as his tile is inscribed with the first verse of the **Lineid**.

The description of the specimens in Galleries I., II., III., IV., and V. pertains more to an archeological than a technical paper." The sixth, however, is of great interest both to the architect and the engineer, as it contains objects connected with the water-supply of ancient Rome. The oldest and most curious are the tubes used for the distribution of the Aqua Marcia in the third century before the Christian era. They are hollowed out of oblong blocks of peperino or tufa, from four to five feet in length, and two feet square, the round bore being only eight inches in diameter. The blocks telescope into each other with marvellous accuracy, the joints being also cemented with a mixture of plaster and oil. This primitive tube was carried across the Esquiline and the Cælian, from the neighbourhood of the Porta San Lorenzo, to the temple of Claudius, a distance of over a mile. The first step towards improvement was made by the substitution of light clay pipes (embedded in concrete) for the clumsy old peperino blocks. Some of these terra-cotta tubes are one foot in diameter and three feet long; they also telescoped into each other, and were lined with the same quality of stucco. Lead pipes come generally in use towards the end of the Republic. There are some three hundred specimens in the collection, all inscribed with the name of the owner and of the plumber - a precaution necessary in case of repairs, as hundreds of pipes must have run in a tangle under each street of the city. The largest lead aqueducts yet discovered in Rome ran from the great reservoir at the Porta Viminalis (by the modern railway station) to the forum of Trajan, a distance of 2,350 metres. The tube weighs one quarter of a ton per metre. There

^{*} A description of the contents of these galleries is number of *The Antiquary*, under the title of "A New given by the Comtesse Florence Gautier, in the August "Museum at Rome."

is also in this gallery a collection of keys and regulators and spikets to increase or diminish ad libitum the supply of water: they are east in bronze, and so is a pump with double action—a probably unique specimen. The artistic and æsthetic side of the collection is represented by a set of marble fountains, the characteristic ornaments of which are figures of cupids gently put to sleep by the sound of the falling waters. These Roman waters were not all pure and wholesome: the Alsiatina and the Anio Vetus were only used for irrigation, and for cleansing of the sewers; while the Marcia and the Virgo were alone absolutely free from impurities. The fact is confirmed by the exhibition of the deposits and incrustations with which the various pipes are choked. When this Museo dell' Orto Botanico is completed I feel sure that the architect and the engineer, as well as the student of Roman art and antiquities, will find in it ample and new subjects for investigation.

R. Lanciani.

NOTES ON SOME AFRICAN STRUCTURES. By Mr. J. T. Last, F.R.G.S.



THE study of the form and construction of houses or dwelling-places is an important item in the acquirement of a knowledge of the people who inhabit them. This is especially the case with the natives of East and Central Africa. Here one may meet with every description of dwelling, from the primitive forest shelter, passing on through stages of more or less permanent structures to the large, stone-built, flatroofed houses of the Arabs who

live on the coast. The kind of house in use points very distinctly to the mode of life and habits of the occupier; as, for instance, the little "lean-to" shelter, or the small round grass hut, discloses the owner as one who is a traveller, and not a settled resident in the country. The semi-permanent huts of the Masai indicate a nomadic people who wander about with their flocks and herds, resting wherever they can find suitable pasture. A village of wellplastered and somewhat substantial-looking huts shows that the natives have settled for the wet season, and will remain till after the rains are over. The insecure bush-fence round the village implies that the people are ever on the alert, and that they will not be afraid to stand up in defence of their own. The strong, square, fort-like tembe points to a tribe permanently settled in the country, people who occupy themselves both in agriculture and cattlekeeping, and who, if attacked, prefer to fight behind a shelter rather than fearlessly in the open like the Masai. The circular hut in all its varieties may be said to be the common dwelling of the agriculturist, and the square-shaped building the home of the trading native, the coast man, or natives who have visited the coast and adopted some of the customs in vogue there. The internal arrangements of the houses are well worthy of close observation and study, for from them considerable knowledge of the modes, habits, and customs of the people may be learned.

The Masai houses are generally built about 6 feet high, 6 feet or more wide, and about 8 to 12 feet long. Some are simply conical huts, with diameter about the same dimensions as the height. A framework of slender withes is formed and bound together, as shown in

the drawing fig. 1. This is thatched with grass; then bullock hides are laid on; and finally the whole is covered over with cattle-dung. This is smoothed down by hand, and as it dries it becomes very hard and tough, and makes the roof perfectly watertight.

There is great variety in the shape of house used by the people of East Africa. Some are of the most primitive design, others are more elaborate and form quite comfortable dwellings. Considerable skill and artistic taste are also frequently shown in the manner in which the outside walls of the houses are ornamented with the blackened bamboos.

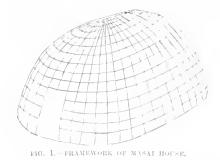






FIG. 2. SHELTER, FOREST CAMP.

FIG. 3. -TRAVELLERS' GRASS HUT.

The simplest form of building is that shown in the sketch fig. 2. A few poles are placed on the ground, cross-poles are laid on the top of these, and from them others extend sloping to the ground; on these a covering of small boughs, leaves, and grass is placed; the ends of the house are blocked up with sticks and grass, and the work is finished. Buildings of this kind are used by natives in their gardens occasionally, but generally they are found by the roadside occupied by caravans of men travelling on a long journey.

Fig. 3 is also a very temporary structure, chiefly built and used by Swahili, Wanyamwezi, and other native porters in caravans. They are built about 4 or 5 feet high, and some 7 feet in diameter. Six or seven men are able to sleep in one of these small huts. They find it fairly warm, but generally they can do with a good amount of heat and smoke.

Fig. 4 represents a house as used in the Nyika country, the district around Mombasa, on the East Coast of Africa. They are built about 8 feet high by 10 feet wide, and may be as



much as 15 feet long. Sometimes they are divided into two or more compartments. The framework is made of slender poles bound together with withes and forest vines, and all is covered with a thick thatch of grass which extends to the ground.

Fig. 5 is the "tembe," a kind of building used over a large tract of country extending from Usagala to Lake Tanganyika. The walls of these buildings are from 6 to 7 feet high. The framework is made of poles bound together with withes and sticks, after which the whole is covered inside and out with a thick coating of clay. The distance between the two walls may be 8 or 12 feet; if the latter, an extra row of poles is set up midway to help to support

the roof. The roof is formed by throwing beams over from wall to wall, these being covered with smaller wood, boughs, and grass. A thick coating of clay and gravel is then laid over the whole. In some cases the outer walls are very neatly plaited together with slender withes, forming a kind of wickerwork; in such a case only the inner walls are plastered with mud, the outer being left bare. Buildings of this kind are chiefly found in those districts

which are subject to frequent raids from the surrounding marauding tribes, the space enclosed being used for housing the cattle at night.

In fig. 6 we have a sketch of the style of house in use among the Sango and Zori tribes. I first came across this









FIG. 6.—SANGO HOUSE.

FIG. 7.—SAGALA HOUSE.

FIG. 8,-MAKUA HOUSE.

FIG. 9.—MAKUA HOUSE, NAMULI.

kind of house in the South Sagala country, where some Sango people had recently settled down. A circle of poles is set up and made to meet at a common point above. These are bound together with forest rope and cross-sticks, and then thatched with grass which reaches to the ground.

Figs. 7, 8, and 9 represent the various forms of the African round hut. The Sagala house is the most common form met with. The bell-shaped roof is found among the Namuli hills in the Makua country, and also among the Yas tribes. The Wanyamwezi and other distant inland tribes construct a much larger kind of round house; sometimes the centre pole is 25 feet or more in height, and very frequently a wide open verandah is found all round the house. Makuas also build a similar house with open verandah, but not so large. Inside these round houses a second circular wall is generally built which reaches to the roof. The central space enclosed is used as a sleeping-room, and always has a fireplace of three stones let into

the floor at the foot of the sleeping-place. The space between the two walls is used for cooking purposes, stowing away goods, and housing a few goats, sheep, fowls, and any other live-stock the natives may have. The walls of these houses are strongly built of stout poles bound together with smaller sticks or split bamboos, and then covered with mud, being plastered inside and out. Frequently also the whole of the roof is covered with a kind of wickerwork, then thickly plastered over with mud, and finally thatched with grass. This roof-plastering is done

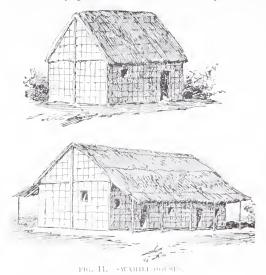


FIG. 10.—LOMWE HOUSE.

to preserve the house in case of fire. Here the rats take up their abode. Occasionally the natives take off the thatch and have a rat-hunt. This is invariably followed by a feast, for the natives do not believe in throwing the rats away.

Fig. 10 represents a Lomwe house. The builders of these houses occupy the banks of the Lukugu river, which rises in Namuli. It is, I think, the finest and most comfortably arranged

of all the East African native houses. The roof is bell-shaped; walls some 7 feet high; well and neatly plastered, or artistically built with bamboos, and plastered inside. There is also a



good verandah. Occasionally a window is seen, but the natives have a great objection to holes in the walls of their houses.

Fig. 11 represents the common Swahili "kibanda," or square house. This style of dwelling is affected by men from the coast, or by some few natives who have been to the coast and have there adopted some of the customs of the Mohammedan Swahilis. In most Nguru and Zeguha villages some few houses of the Swahili type will be found. Occasionally an Arab or more influential Swahili will build a larger house of the Swahili style, having a number of rooms. The walls are always well plastered with mud, and are even sometimes whitewashed with lime brought up from the coast for that purpose. An Arab kibanda has always a good verandah, and here

the Arab owner spends most of his time with his friends. The Arabs and other coast people always enclose a piece of ground at the back of the house with a high fence. This enclosure is almost entirely restricted to the use of the female portion of the family; seldom is a male

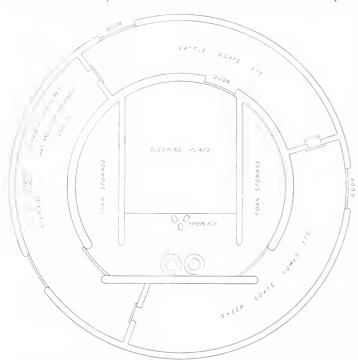


FIG. 12,-GROUND PLAN OF CIRCULAR HOUSE, EAST AFRICA.

stranger allowed to enter there. Arabs and Swahilis, in common with most Mohammedans, have a great aversion to the presence of males, not members of the family, inside their houses. This may account for the fact that the Arab always meets his male friends in the verandah of his house, where he holds a kind of "baraza." The house, when small, is generally divided into two parts—a bedroom and what may be termed a livingroom. In larger houses quite a number of rooms are formed, some being especially set apart for the use of the women of the house; the others are common to the use of both males and females, though seldom used by the latter, excepting slave-women. At the coast villages and towns, where Mohammedan influences are stronger, the

common "kibanda," or square house, is the building most in use. The wealthy Arabs and others build stone houses. These are of thick walls, large, and airy, from two to four storeys high, and always having a flat top.

Considerable ingenuity is exercised in the arrangement of the space in the circular huts [fig. 12]. The inner wall divides the space into two parts. In the central part a kind of raised daïs some 6 inches or a foot above the floor is made to answer as a sleeping-place. This sleeping-place is often enclosed at its sides by walls some 4 or 5 feet high, the spaces between these and the inner circular wall being used for storing corn and other effects. The enclosed space between the two circular walls is generally divided into three separate compartments, each having a doorway in the outer wall, and another leading into the inner room. The different compartments also communicate with each other by small doorways in the partition walls. In the construction of a round house the builder has to consider two things chiefly, namely, to make the best of the space at his disposal, and to so arrange it as to ensure all possible means

of safety and ability to escape from the house if pressed by enemies. The prominent idea in a builder's mind when he is arranging his doorways and outlets is how far they will afford him a means of safety, or of dodging and escaping from an enemy.

Fig. 13 shows the ground plan of a smeltinghouse as used by the Waitumba people of East Africa. There is a little variety in the construction of these "nyanja," or smelting-houses. In some cases the roof slopes down to the ground, and is thickly thatched with grass on all sides. In this case a long tunnel-like passage some fifty yards or more long, and 6 feet high by 6 feet wide, is built leading

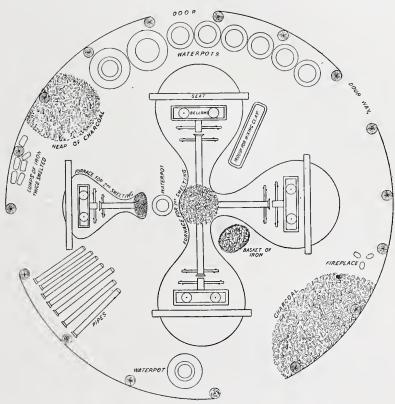


FIG. 13.—PLAN OF "NYANJA," OR SMELTING-HOUSE, USAGARA, EAST AFRICA.

up to the nyanja. This is arranged so as to form a kind of shaft to the smelting-furnace, and produces a great draught. Houses of this kind are found among the Wa-Comwe, who live at the foot of the Namuli Hills in Makuani, East Africa.

A description of the manner of mining, smelting, and working the iron may be of some interest, so I give it as I saw it in operation on the Itumba Hills in East Africa. These hills were once inhabited by an extensive tribe, which through intrigue and the requirements of the slave trade is now almost exterminated. The deserted gardens and ruined village sites show how great a tribe once occupied these hills; now the villages are few, small, and scattered far apart. Of the men still remaining most of them are of good height, and are strong and muscular. This is probably owing to the toilsome work of blowing the bellows and pounding the iron with heavy stones. In appearance they have very much in common with the sooty foundrymen and blacksmiths of our own country; and as the artisan and mechanic at home are

generally quicker in perception, clearer in thought, and more ready of wit than the agriculturist, so these Itumba iron-smelters and blacksmiths are far superior to all the surrounding agricultural tribes in acuteness, ingenuity, and banter. These men are almost exclusively engaged in working iron—that is, smelting and working up the metal into hoes and other implements. The first process is digging and cleansing the ore. This work is generally done by the women. On the hill-sides there are three places where the ore is found: according to report, and judging from the cheapness at which hoes were formerly bought, they must have been far more plentiful than they are at present, and iron must have been produced in far larger quantities. It is just possible that the natives formerly dug deeper into the earth, and so obtained the ore more plentifully. Now it seems that the people never dig beyond two feet into the ground, where there is a layer of red clayish sand in which the particles of ore are found. It produces probably about 5 per cent. of ore. The workings I visited, to judge from the broken nature of the ground, were probably on the site of some very old excavations. A stream of water some four gallons per minute had been brought down in a gutter to the seat of work, then a series of little pits had been made in a row, each one lower than the other. These were about 3 feet in diameter and some 10 feet apart. The water from above was guided so as to fall into each of these pits successively, out of one into the other. The sand containing the ore is put into these pits, and washed over and over till all the loose sandy matter has been carried away by the water, and the iron ore and small stones left at the bottom. These are then taken out of the water pans and put in the sun to dry; when dry they are placed, a little at a time, in a kind of fan (ungo), and fanned, after the old-fashioned manner of winnowing corn in England; the stones being lighter than the small pellets of iron, they come to the front, and so are separated. The stony part is laid aside ready for a further cleansing. The iron ore which has been obtained is put away into bags made from the fronds of the fan-leaved or the date palm, when it is ready to be sold to the smelters. In this state the iron ore is called "mudapu."

The spot where the mudapu is found is generally considered to be the property of the chief of the district, and he works it with his own people. The ore is sold at the rate of its equivalent in bulk of clean corn. Some of the buyers come a distance of twenty miles or more. These take it home, the women reclean it by the fanning process, and it is ready for the furnace. The next thing is to prepare an abundance of charcoal for the furnace. For this a number of men go out into the forest and cut down the trees required. These are cut into logs some 5 or 6 feet long; a place is cleared on the ground; grass, small sticks, and branches are laid first, then the logs are packed in a pile some 10 feet square and 6 feet high. The pile is set alight and carefully tended till all is reduced to charcoal. When cool it is broken up so that the largest pieces are not more than 2 inches in diameter. This is then very cleverly packed in grass and conveyed home. Some wire-grass, of the kind called "lukoka" (very much like wire-grass at home), is placed on the ground, and the charcoal heaped on it. Then the ends of the grass are drawn together and tied, after which the whole bundle is tied together with a creeping plant used as a cord: in this manner it is carried home to the Ujanja. The mudapu and makala (charcoal) being ready, the next thing is to arrange the pipes (kelwa) and the bellows (mirrikuto). The pipes are made of clay moulded on a bamboo (mgwami). They are about $2\frac{1}{2}$ inches in diameter and some 5 feet long, having a lip round one end. The bellows are made of wood, with a tube of the same material, the top being covered with a piece of skin, with a stick as a handle projecting from the centre. When these are arranged a fire is made in the centre of the pit. As soon as the fire is of sufficient force a double handful of ore is taken and dropped lightly into the fire followed by charcoal. When this is fairly through with a red heat more charcoal is added, followed by two double-handfuls of ore, which is covered with a little more

The furnace is now in working order, and about every twenty minutes more charcoal and iron ore are added. The proportion is generally two of ore to eight of charcoal. An incessant blowing is kept up from three sets of bellows by a man and boy at each set, where they work by turns. This is maintained from the time the fire is lighted till all the ore is put into the furnace. Towards the end they diminish the amount of ore put in and add more charcoal. As the heap of iron ore and charcoal increases in size in the furnaces the pipes from the bellows have to be raised so as to be kept just below the surface of the melting mass. When all the ore is melted the furnace is left for about half an hour, when two or three earthen pots (mabiga) of water are thrown over the mass. The loose charcoal is then removed from around the mass of iron, and a strong cord made of kongi grass is passed round it, with which it is hauled out of the pit and left to cool. In this state the iron is very much like a large lump of blacksmith's "slag" or "hards." Generally these lumps are from 15 to 18 inches in diameter and from 2 feet to 2 feet 6 inches in length. After being taken from the pit the lumps may be left any length of time before the process is carried further. Generally large numbers of lumps are made as stock to work from. When ready the iron lumps are broken up with an iron hammer, made by the native blacksmith, into little pieces, none of them larger than a walnut. These pieces are then re-smelted in another furnace, which is served only with one set of bellows. A fire of charcoal is made in the pit. When sufficiently hot, about two handfuls of iron are dropped in with a little charcoal. After this is melted more iron is added gradually till about eight or ten pounds have been put in; it is then covered with charcoal and heated until the iron has become a fairly compact mass. When it is well melted, and the charcoal amongst the iron consumed, the outer charcoal is poked away with a green stick. The lump of iron is seized with a large pair of tongs and conveyed to the anvil, where a man stands ready to pound it into a solid mass. The anvil is a large stone, and from its appearance one might judge it had been in use for years; the hammer is a lump of iron about 2½ inches square and 5 inches long, with a hole in the middle for inserting a handle. The iron is now ready for the blacksmith, who is generally the chief both of the village and the smelting-house.

Though the iron has been smelted twice it is still very porous, so that the blacksmith has first to heat the lump very hot, then whilst he is holding it with his large tongs another man pounds it into a more solid mass with a large stone. The spike part of the hoe is hammered out from one end of the lump, and the blade from the other part. All the pounding is done with different-sized stones, except the last finishing touches. The hoes vary in size according to the lumps of iron from which they are made; the largest are about 8 inches across the blade. The hoes are used by inserting the spike through a hole in the end of a handle some 5 feet or more long. All the blacksmiths' work here is done in the open air, but in many places a special shed in the village is set apart for such work.

J. T. Last.

Mr. William Simpson [H.A.], R.I., writes in reference to the foregoing Paper as follows:—One evening during the summer I was invited to a friend's house to meet Mr. Last, who had made explorations in Africa for the Royal Geographical Society. An important Paper of his appeared in the Society's Proceedings of April 1890, with an elaborate map of Eastern Africa, prepared from Mr. Last's surveys. In conversation he described to me how the natives, in the places he had explored, constructed their dwellings, and I was interested in what he said about the form and manner in which the people of the Masai country built their huts, from their resemblance to the huts of the Todas, in Southern India, which are described in a Paper of mine read before the Institute in 1891.* This led

^{*} Transactions, Vol. VII. N.S. pp. 248, 249. See also, p. 313 ante, a Note (with illustrations) by Mr. Simpson on Huts found at Trani and Bari, in Southern Italy.

me to inquire of Mr. Last if he would make me a sketch of the Masai huts and add a few notes, which he kindly promised to do. As our conversation chanced to widen out about other huts, and into the manufacture of iron by the Africans, he made his notes and sketches to include them all.

The ideas and customs of man in his early conditions are now being studied by the folklorists, comparative mythologists, and other followers of scientific methods in a manner that had not been done before, and the results have been of great value. Although such has been the case with these investigators, it may be doubted if the student who is in search of origins in architecture will derive the same benefit from the constructive efforts of man in his more primitive state. Still, it must be evident that this is a point that cannot be fully determined until every investigation has been gone through—and that will take time. Meanwhile, however, the foregoing Paper will serve as a slight record of what man builds for himself while in one of his rude phases of development. For my own part I should say that we ought to have more details of this kind, for the double purpose of reference and for recording such primitive efforts. The latter may now soon disappear, as Mr. Last's Paper shows that a more developed style is already encroaching, from the Mohammedan influence, upon the older forms of construction in Eastern Africa; and the increase of European emigration, which has already begun, may in a few years wipe out both the African and his architecture.

The origin of the barrel-roof of the Chaitya cave in India, as suggested in my Paper, was derived from representations of the Toda mands, or huts; the change implied in this theory of origin is considerable, and the long period of time implied in the development prevents one from speaking of it as an idea which is established beyond a doubt. All that can be said is, that as yet it is the only suggestion of origin for this peculiar roof which has been produced. In the huts of the Masai we have a similar form of roof, and produced by a method of construction closely allied to that of the Todas. These houses of the Masai have another feature in their construction which is repeatedly mentioned in the cunciform inscriptions. Mr. Last says that the roof is first "thatched with grass, "then bullock hides are laid on," and that such a roof is "perfectly watertight," In the Annals of Sargon that monarch is made to say: "I built in the town palaces covered with skins." * This statement is often repeated in the inscriptions, and I give a few of the references to them in the footnotes. In some cases "skins of sea-calves" are mentioned, and a note by Professor Julius Oppert will be found, t in which he thinks it was either buffalo or boar-skins that were used; but there is also a "sea-amsi" mentioned, and he thinks it was "the skin of a cetaceum." It need scarcely be recalled that skins formed part of the covering of the Tabernacle. This snggests an interesting question, as to how far skins have been employed for roofing in early times.

The plan of the Circular House which Mr. Last supplies, showing how a primitive man arranges for his domestic wants, is particularly interesting: and it may be of use in tracing the purpose of more developed structures. The same may be said of the Smelting-house: I have seen quite as rude a process in the Himalayas as that described by Mr. Last. The use of iron or metal opens up a number of questions. Some years ago the question of the date when iron began to be known was a subject of discussion; it became, if I remember rightly, an Homeric question, as the Iliad was often referred to in relation to the value of iron among the heroes of that old poem. Now, if people in the condition of civilisation of the African races can make iron, it would be reasonable to suppose that iron must have been known among the more civilised people long before the time of Homer. Metal as an architectural material was recognised and in use long before the present "Iron Age." With the Greeks it was bronze and not iron; with them it was largely used in combination with wood. The same may be said of the Phonicians. The Temple of Solomon had a large quantity of bronze about it. The Africans have not yet reached a development in their building that requires metal: their condition has not advanced to a settled state that requires permanent structures. Withes, branches, posts, grass, thatch, mud, and, we may suppose, wattle-and-dab are their architectural materials. The constant movement of tribes from one place to another, owing to raiding and fighting, prevents anything but the most temporary kind of habitation being erected. If time were allowed them to consolidate their organisation, so that large towns and more durable houses could be built, the knowledge of the smelting process would naturally lead to the use of iron or other metals; but this is just the condition that Mr. Last's Paper shows the people of Africa have not yet attained in their structural efforts.—WILLIAM SIMPSON.

^{*} Records of the Past, vol. vii. p. 54. See also p. 52. Vol. ix. p. 18; vol. xi. pp. 21, 33, 34, 36, 4), † Ibid. vol. xi. p. 34.



CHRONICLE.

The late Wyatt Papworth [F.].

The funeral of Wyatt Papworth was solemnised at Highgate Cemetery on the 23rd ult., where, in spite of the heavy downpour of rain, a large number of mourners assembled. Besides the two sons of the deceased and several of their relatives, there were present Mr. Arthur Cates [F.], Mr. C. Forster Hayward [F.], Mr. George Low [F.], Mr. F. R. Meeson, and Mr. P. Gordon Smith [F.]; and the Institute, in the unavoidable absence of the President and Hon. Secretary, was officially represented by the Secretary.

The Condition of London Streets.

That the maintenance and management of certain of our metropolitan streets are susceptible of improvement few will be disposed to deny. stercus odoriferæ colluviesque viæ of the West End, of which Lord Randolph Churchill complained in a letter to The Times some two or three months ago, continues unabated; and, judging from the number of letters which lately appeared in The Morning Post, in whose columns this and other grievances of long-suffering Londoners have been well ventilated, no steps have yet been taken to remedy the nuisance. Needless to say, the vestries, ever open to attack, come in for their share of criticism, although it really seems that, in some quarters at any rate, these much-abused bodies have done their utmost, by diligent scouring and cleaning and the free use of chemicals, to render the streets less malodorous, and to minimise as far as possible the other evils complained of.

The present system of road-making in London, despite the vast sums of money expended, it is to be feared, is hardly a satisfactory one. It is open to doubt indeed whether wood is the best material for paving. The wooden blocks being porous, after a few weeks' traffic the surface becomes saturated with a sort of concentrated essence of manure; and a shower of rain or the passage of the water-cart converts the road into what is practically little better than a shallow cesspool. Asphalte, though in a less degree, is open to something of the same objection. The danger to health

through the polluted atmosphere is not the only evil to be reckoned with. The slippery condition of the streets is a constant menace to life and limb of both man and beast, as the numerous accidents daily testify.

Mr. W. Sowerby, an engineer who contributed a very sensible letter to the discussion in The Morning Post, avers that we have lost the art of road-making—lost it with the world's greatest models before us. For the better regulation of the streets he suggests that tracks should be laid down with smooth slabs of suitable width and gauge for the wheels of vehicles, the space between for the horses' feet being paved so as to give good foothold. Where the width of the road would admit, there might be four tracks, two for slow and two for quick traffic. Such tracks could be laid so that vehicles might pass off and on freely even at the crossing of the streets. The system is the old Roman road, such as may be seen in several parts of the country, especially in Chester, and as at present existing still in Rome, Milan, The first cost, Mr. Sowerby maintains, would not be more than the present system, and the expense of repairs would be very trifling, as once well laid they would be most durable. The present objectionable tram-roads with flanged-wheels could then be entirely dispensed with, as every road would be a tram-road, and every vehicle a tram-car. It would also be suitable for country roads, instead of expensive iron tramways such as have been lately so much discussed by County Councils.

One correspondent, remarking upon the absence of gutters in wooden pavements, recommends that they should be provided with cement gutters, which, with curved sides and rounded edges, might be deep without being dangerous. Refuse could be swept into these gutters and then washed away, as is the practice in Paris; this would further obviate the rotting away at the edges which is now so apparent.

Although perfectly willing to admit that the local municipal authorities have had a certain success in their efforts to keep disease from penetrating the bodies of the vast majority of Londoners, it is certain that the present methods of sweeping and cleansing the streets leave much to be desired. Boileau satirised the Paris filth of his day in the memorable couplet—

Elixir d'excréments pourris, Maudites crottes de Paris!

and if the reader will substitute "London" for "Paris," the quotation will afford an accurate description of every metropolitan roadway even in the haunts of fashion in the very middle of summer. Take, for instance, the majority of subordinate wood or asphalte roadways in the neighbourhood of Grosvenor and Portman Squares. The formula for cleaning them is this: On a fine morning the

dust, mainly composed of horse-dung, is carefully swept into the gutter on either side of the way; and an hour or so later a water-cart sprinkles sufficient water over the sweepings to render them moist, if not absolutely to convert them into mud. In due course the sun, fooling with the London fog, begins to dry the moistened manure, which, towards afternoon, is caught by the metropolitan breezes and earried away in the noses, mouths, and wearing apparel of passers-by. This is repeated daily in fine weather. On rainy mornings, when there are pools of water thickened into consistency by the dust and dung aforesaid, the mud, or some portion of it, is shovelled into a cart which, while rolling off leisurely, deposits many a splash of liquid filth on carriage-way, or gutter, or pavement, as the case may be, and as the position of the cart permits. Of course, during winter the mud-eart is often in evidence, and the water-cart disappears altogether; but in summer the latter predominates, and one has been seen by the present writer near Montagu Square, on a Sunday, which in London is like the Night of Scripture, when no man can work. It is, however, only just to the metropolitan municipal authorities to add that neither the Christian pauper nor his excellent masters members of a vestry or a local board—are ever known to disturb, in their official capacities, the filth and slime of a London Sabbath.

The A.A. Curriculum 1894-95.

A distinct alteration for the better is observable in the scheme of the Architectural Association Curriculum as published in the Brown Book just issued. The course of study, instead of being taken in four divisions, extending over as many years, is now arranged in three divisions, and takes three years to complete. The course, moreover, is much simplified. That thoroughness of teaching and training which is claimed to be the guiding principle of the course of study laid down in the Curriculum will not be found to suffer from the rearrangement, and the change is likely to be hailed with satisfaction by the students.

In the classes in Division I. Mr. R. Elsey Smith [A.] is the lecturer on the Orders of Greek and Roman Architecture; Mr. F. R. Farrow F. on Materials and Construction; Mr. William G. B. Lewis on Practical Perspective; and Mr. R. Holmes, M.A., on Elementary Physics as applicable to Building and Calculation of Strengths. In Division II. the lecturers and subjects are:—Mr. F. R. Farrow [F.] on English Architecture to the year 1500; Professor Kerr [F] on Materials, their Nature and Application; Mr. Cole A. Adams [F.] on Elementary Ornament and Colour Decoration; and Mr. R. Holmes, M.A., on Stresses and Strains. In Division III. Mr. F. R. Farrow [F.] on The History of Architecture; Professor Kerr [F] on Materials, their Nature and Application; Mr. A. Beresford Pite [A.] on Practical Design; and Mr. Max Clarke [A.] on Sanitary Science. The Studio Instructor in Divisions I. and II. is Mr. William G. B. Lewis, and in Division III. Mr. J. A. Slater. Among the lecturers in the extra subjects are Mr. John D. Crace [H.A.] on Colour Decoration; Professor Henry Adams, M.Inst.C.E., on Land Surveying and Levelling; Mr. John Leaning on Quantity Surveying; Mr. Henry W. Burrows [A.] on Geology; and Mr. Lacy W. Ridge [F.] on Professional Practice.

The high standard at which the Association teaching aims ensures that any young man who works consistently and thoroughly through its Classes and Studio will have no need to fear the ordeal of the Progressive Examinations of the Institute.

Professor Banister Fletcher's Classes.

The Session 1894-95 of the classes in Architecture, Building Construction, and Modern Practice at King's College opens with the Michaelmas term on the 10th prox. These classes, which are under the direction of Professor Banister Fletcher [F.], are specially arranged to enable architects' pupils, improvers, and others intending to follow the profession of architecture to prepare for the Progressive Examinations of the Institute. The entire course extends over three years, one year being devoted to each of the stages—elementary, advanced, and final. Occasional students may join any or all of the classes, and take the three courses in one year; but it will be found to interfere less with his office work, and be more permanently beneficial to him, if the student's studies are spread over the three years. The classes are fixed late in the afternoon, and the Studio, of which Mr. Banister F. Fletcher [A.] is Instructor, is open every evening. For assistants and others unable to attend during the day evening classes are held, and lectures delivered by Professor Banister Fletcher every Monday, from 7 to 8 p.m. The Syllabus is to be seen in the Institute Library. The distribution of prizes gained last session will take place at the College on Wednesday, the 3rd prox., when the Professor will deliver a lecture on "An Architect's Ramble "amongst London Buildings."

Mr. Cranage's Lectures at Newcastle.

The Northern Architectural Association calls the attention of its members, and of students of architecture in the district of which it is the centre, to the course of twelve lectures on Gothic Architecture announced to be delivered at Newcastle-upon-Tyne during the early weeks of the ensuing session by Mr. D. H. S. Cranage, M.A., of King's College, Cambridge, in connection with the University Extension movement. Newcastle, it will be remembered, is the headquarters of the Association. The introductory lecture is to be delivered

to-day, the 20th September, when Mr. Cranage will explain the plan and scope of the lectures, and deal with Definitions, and the Three Principles of Construction, illustrating his subject with views of celebrated Classical buildings. "Archi-"tecture before the Norman Conquest" forms the subject of the second lecture, to be delivered on the 27th inst. "The Norman Style" will be dealt with in the third and fourth lectures, on the 4th and 11th October; and "The Early English Style" in the fifth and sixth, on the 18th and 25th October. Lecture VII., 1st November, "The Decorated "Style"; VIII., 8th November, "The Perpen-"dicular Style"; IX., 15th November, "Mould-"ings"; X., 22nd November, "Timber Roofs and "Screens"; XI., 29th November, "Architectural "Art." The concluding lecture, on the 6th December, will be devoted to illustrations of the Principles discussed in the lectures by reference to a local building or buildings. The inclusive fee for the whole series of this extremely comprehensive course is five shillings.

The late Henry Faija, M. Inst. C. E. [H.A.]

Henry Faija, M.Inst.C.E., a member of the Institute since 1881, died at his Sunbury residence on the 21st ult., of epithelioma, after a protracted and distressing illness, which for the last three months of his life compelled him to retire from active business. The following notice of his life and work is kindly furnished by his

partner, Mr. D. B. Butler:

Henry Faija was born in London in 1844, and educated at University College School, whence he was duly articled to a shipbuilding firm on the After occupying important positions in various shipbuilding yards in the North of England, he turned his attention to engineering as a profession, and in 1870 started practice as an engineer in John Street, Bedford Row, W.C. It was here that he almost accidentally took up the subject of Portland cement, for on obtaining a commission to design and erect a cement works he became impressed with the crude and wasteful methods then employed for producing the material in question. Thereupon he commenced to make a special study of the subject, for which he afterwards attained a world-wide celebrity. About 1875 he removed to Westminster and established a Portland cement testing-room and laboratory, where cements and kindred materials were examined and reported upon, and the increase of this branch of his practice was an indication of the value which was placed upon his opinion.

In 1881 he read a Paper before the Institute on the subject with which he had already closely identified himself; since that time he had read Papers on the same and kindred subjects before nearly all the principal learned Societies both in England and abroad, and last year he was specially invited by the American Society of Civil Engi-

neers to read a Paper before the Engineering Congress at the Chicago Exposition.

As an inventor his efforts were marked by special ability, several ingenious inventions bearing his name. One of the principal results of his researches in the examination of cement for the estimation of its constructive value is his apparatus for determining its freedom from expansion. This, by artificially accelerating the setting and hardening of a sample, enables an opinion to be arrived at in twenty-four hours; while in the ordinary course it would take at least a week. When the magnesia "scare" occurred in 1888, owing to the failures at Aberdeen, he was particularly active in opposing the idea that sea water had a destructive effect on concrete properly constructed of sound cement, and the results of his experiments and the arguments deduced therefrom went far to prove the correctness of his theories.

His chief work as an author is his little handbook, Portland Cement for Users, which was published in 1881, and has since attained sufficient popularity to warrant its being included in Weale's Rudimentary Scientific Series; he also contributed articles at various times to the leading

professional papers.

Apart from his acknowledged ability, his unvarying straightforwardness and upright dealing were highly appreciated by all who came in contact with him professionally, while in private life his kindly good-nature and readiness to assist will make his loss severely felt among those who had the good fortune to number him among their personal friends.

The Labour Congress.

It would be out of place in this JOURNAL to discuss at any length the proceedings of the session of the Labour Parliament recently holden at Norwich. Yet it may be permitted, on behalf of the many members of the Institute who are not unfavourably disposed towards the principle of trade unionism as till lately understood, to express a word of regret at the wild and mischievous proposals embodied in the resolutions passed with such glib celerity at the Norwich Congress. It is difficult to treat seriously of the work of a body of men who, without the slightest approach to rational discussion, declare in favour of the nationalisation, not only of land and mines and railways, but of all the instruments of production, distribution, and exchange—that is to say, of all public and private property. After such a proof of the temper of the representatives of labour, and of their capacity for the duties appertaining to them as such, the rest of their performances seem tame by comparison. That the artisan and labouring class should become the great leisured class of the community by the compulsory limitation of its hours of labour has long been a plank in the platform of self-seeking Labour agitators. But what is to be said for the egregious proposal to make it a penal offence for employers to bring extra labour into a district where the existing supply is sufficient? The true significance of this, of course, lies in the fact that if men go out on strike all business is to remain at a stand-still until they are pleased to go back to work, and any attempt to introduce outsiders put down

by the strong arm of the law.

It will hardly be disputed that trade organisations conducted by cool-headed men on sensible and moderate lines would be a likely means of settling disputes between labour and capital; and a gathering of picked men, representing the general views of their class, discussing temperately matters of disagreement which arise between employers and employed, would help materially to solve the industrial problems of the day. Employers, doubtless, would look at the results of such discussions through different spectacles from their men; but, at any rate, they would learn where the shoe pinched, what the grievances of their men were, and what they actually wanted; and out of this knowledge a compromise or a working arrangement might easily be arrived at. This, however, does not suit the Labour leaders; it is too insignificant, too unimportant. They prefer to dabble with a task for which they are entirely unfitted, and for the performance of which they certainly have no mandate from their constituents.

When English representatives have taken part in Labour Congresses abroad, they have pointedly stood aloof from the Socialism of the Continental leaders. The English artisan is not a Socialist, and one good result may follow from the proceedings at Norwich: he will be able to see for himself whither the leaders of the new trade-unionism

would lead him.

The Gohna Dam and the suggested Nile Dam.

An object lesson for those who would construct a dam across the bed of the Nile, and submerge the island of Philæ, is afforded by the recent overflow of the Gohna lake, and the consequent destruction of a vast number of buildings and other property the population of the district invaded by the waters having been saved solely through the prescience and skill of the British administrative officers. A leading article in The Times (29th ult.) gives an excellent description of the whole affair. About a year ago a landslip occurred by which a tributary of the river Alaknanda was naturally dammed so as to form a long, deep lake; and last March "the "dam formed an exposed surface of 423 acres; but "the river had already become a lake of two and "three quarter miles in length, and this was grow-"ing steadily, the dam being, of course, submerged "by the mounting waters." The dam burst on the 26th ult., and the following account of what happened is taken from "Reuter's Special Service" as reported in The Times:--

A flood 30 feet high, sweeping onward with irresistible force, reached Chamoli, halfway between Gohna and Srinagar, at half-past twelve on the 26th. At one in the morning there was another tremendous rush of water, which descended with an awful roar, but nothing was visible, owing to the constantly-thickening mist. The flood travelled at an average rate of twenty-four miles an hour all down the valley, rising in places to a height of 200 feet. At Chamoli it rose to 160 feet, destroying the bazaars and the hospital. At Srinagar the devastation was even more widespread, and it is not expected that a single house for miles around has been left standing.

The flood reached Hardwar which is 160 miles distaut from Gohna, where the dam was formed] at nine o'clock on Sunday, and by noon the river had risen 12 feet. It presented a magnificent spectacle, and the view from the surrounding heights was at once grand and terrible. Immense trees, logs, carved doorposts from Sringar, and immense quantities of similar debris, mingled with the carcasses of animals few of them, however, being domestic animals—were swept along by the seething torrent. The great mass of the dibris followed the course of the blue stream, which carries two-thirds of the river. The lesser stream, which passes the Ghâts and temples of Hardwar, was less congested, and this is no doubt the explanation of the fact that the shrines are reported safe. At Hardwar all Government buildings, with the exception of the telegraph-office, were destroyed.

That all destruction of human life was averted is due to the fact that the precise date of the overflow of the dam was accurately calculated by Mr. Thomas H. Holland, whose investigations into the Golma landslip are published in the Records of

the Geological Survey of India.

Now, it may be well to remember that "before "it the lake in question could overflow, its length "must reach seven miles"; and to ask. What is to be the length of the lake which it is proposed to form in Upper Egypt? The suggestion is to erect a dam, nearly a mile in length and 70 feet high, across the bed of the Nile, in order to pond up the water for a hundred miles in a huge reservoir. If the destruction cansed by the bursting of the Gohna natural dam, which ponded up the water for seven miles, was such as it is stated to be, it may be possible, perhaps, to calculate the extent and amount of damage likely to be caused to Egypt by the bursting of the proposed artificial dam near Phila, and the letting loose of a lake or reservoir of Nile water one hundred

The Howard Lectures of Prof. Unwin H.A.], F.R.S.

One of the latest additions to the Library is Professor Unwin's book on The Development and Transmission of Power from Central Stations Longmans, Green & Co.], being the Howard Lectures delivered at the Society of Arts in 1893. A review of the work will appear at an early opportunity, and meanwhile Mr. Arthur S. Flower, M.A., an energetic Hon. Secretary of the Literature Standing Committee, sends a note about it as follows:—

There are two classes of persons who are nowadays expected to know everything—or very nearly

so-if we may judge from the courses of instruction laid down or proposed for aspirants to their respective professions, and these are naval officers and architects. Of the former it has recently been stated with an air of authority that "to-day, in "order to raise him out of the ruck, he ought to "know (in addition to seamanship, navigation, "pilotage, gunnery, &c.) much of chemistry, "steam, law, electricity, pneumatics, hydrostatics, "dynamics, metallurgy," together with extra accomplishments too numerous to recount. In most of the sciences just mentioned average architects, of the grown-up generation at any rate, are no more profoundly versed than the majority of sailors brought up in the ways of the older school. The nautical simile is more particularly suggested by the very prominent position assigned by Professor Unwin to hydraulics: "ἄριστον μὲν ΰδωρ" appears to be the text of his discourse. Briefly, every practicable system of accumulating, storing, and transmitting power for mechanical purposes is here described and discussed with admirable method and thoroughness; and the conclusion of the whole matter seems to be that the world-old water-wheel, in its new form, the turbine, stands fair to supplant both steam-engine and steamdriven dynamo alike. Here is promise of a consummation devoutly to be wished—machinery without smoke! If the new engineers succeed in bringing this about, they may after all restore again the beauty of a world which the old ones have done so much to render hideous. May good luck attend all such developments of the use of water!

REVIEWS OF NEW BOOKS. XIV.

THE SUPERINTENDENT SUPERINTENDED.

Building Superintendence: A Manual for Young Architects, Students, and others interested in Building Operations as carried on at the present day. By T. M. Clark, Fellow of the American Institute of Architects. Twelfth Edition. 40. New York and London, 1894. Price 12s. nct. [Macmillan & Co., 29–30 Bedford Street, Covent Garden, London.]

Quis custodiet custodem? They do some things better in America, and many things differently; but, for all that, young architects out there are, inwardly, much like young architects here. If they get any work at all they begin, like us, with a "first job," and have, like the English beginner, to go forth and do battle with an omniscient contractor, conscious that for their own part they are not quite sure of the right appearance of Portland cement, or of the way a plumber makes a wiped joint. It is to give strength to the weak knees of these nervous novices that Mr. T. M. Clark has written a book—one of those books which bring courage to a young architect in the thought that, though on the site he is sole arbiter, he has in his study a High Court of Appeal to which he can

refer in secret. In such books as this the superintendent looks for superintendence, the director for directions. Mr. Clark, to be sure, writes as an American for Americans, and though there is much in his crowded pages of small print from which an Englishman may learn, it is not a book for British babes, inasmuch as it is full of expressions and methods which have no place in our vocabulary or practice. "Crandling" and "Pene "hammering" would, I fancy, be called for in vain in an English mason's yard; and though we have in our churches the equivalent of the "bell deck' and the "robing room," we do not recognise the "society room under the chancel." An intelligent reader, especially if not too young, will none the less find in the book a store of interesting and useful miscellany. If the doubts and troubles of the youthful architect are much the same on both sides of the Atlantic, so also are the wiles of the unscrupulous contractor. Americans, we know, are not often taken in, but it seems that for all that it is worth the American builder's while to "try it on" sometimes.

In America, as here, there exists the wicked man who will cut his stair strings too narrow, and attempt to set things right by throwing the treads out of level; there, as here, a contractor will put his foundations in wrong, and subsequently correct his error by building the superstructure according to plan, but without reference to the position of the foundations. I recall, by the way, a curious and very disastrous example of this particular evil practice in connection with a county church in Dorsetshire. In the severe drought of last year the church was found to be falling on the north side. An expert was called in, and he began his investigations by searching for the footings. These were easily discovered on all sides of the church but the north, and so near the surface that they could be touched with the point of an umbrella bored into the sod. Subsequently a hole was dug against the north wall, and the footings and concrete were found at last set back three inches behind the face of the wall! The original contractor had obviously discovered a mistake in the setting out of his concrete and footings, and to correct the error had built his main wall oversailing the foundations. It is to the prevention of these and many another blunder and fraud that Mr. Clark addresses himself, and there is much in his remarks in all sections of his work which may be regarded as applicable, in detail as well as in principle, to the architecture of all countries. In many ways the most interesting part of his work to an English reader is the chapter on the construction of a timber house. Building Acts and local by-laws have unfortunately expelled the timber house from almost all English There can be no doubt that many advantages are to be set against the principal objection to this style of building, and though we

are practically forbidden to indulge in it in this country, we may realise on reading Mr. Clark's book that in America the subject is not neglected, and that the proper method of construction (there are many wrong methods) is carefully cherished. The homes of farm settlers, and even town buildings, in many parts of the North American continent are, I am aware, constantly put together with the most reckless disregard of construction. It would astonish some of our examiners fresh from the three volumes of Building Construction to learn how long a house will last which is simply held together by nails. Building Superintendence, while recognising the prevalence of these haphazard methods locally known as "balloon-"framing"—gives its readers an ample description of the truer constructive principles of timber buildings.

It is a rather rude shock to one who believes that the Americans are ahead of us in all things scientific, mechanical, and hygienic to find that the peppermint test is regarded as the ultimate criterion of drains and plumbing. The smoke test is, to be sure, alluded to, but condemned as inconvenient; and our modern stringent water-tests are—by Mr. Clark—practically unrecognised.

Paul Waterbouse.

(38.)

PROTESTANT CHURCHES

FROM THE REFORMATION TO THE PRESENT DAY.

Der Kirchenbau des Protestantismus von der Reformation bis zur Gegenwart. Herausgegeben von der Vereinigung Berliner Architekten. With 1041 Plans, Sectjons, and Elevations. Large 40, 1893. Ernst Toeche, Berlin.

When the Berlin Association of Architects was recently reorganised, its members wished to find a means of diffusing more widely the influence which they already possessed as the leading Architectural Society of Germany. With this end in view they sought for their consideration subjects that might be of interest, not only to themselves, but also to the public in general. "For," to quote their words, "we trusted that the choice of "such a subject would more surely lead to that "sympathy with public opinion without which " architects cannot hope to acquire any effectual "influence on outsiders." Among the various subjects proposed none seemed more suitable than that of Protestant church building, and for this choice there are many reasons. Of late years large numbers of churches have been built, and the subject has attracted considerable public attention. There are as usual two parties holding opinions diametrically opposed to each other, each striving for the upper hand. On the one side, special stress is laid on the acknowledged feeling of solemnity produced by the buildings of the Middle Ages for the Roman Catholic ritual; while on the other there is a striving for an original plan and arrangement which should arise from, and

represent the spirit of the Protestant form of worship.

Very little had been previously written on the subject, and it was felt that the best way to work it out was to go into its history, and to trace the development of the various arrangements at present in use, and their appropriateness to the ritual. In order to collect materials for such a work architects were invited to send in to the Society drawings of every kind of Protestant church from the time of the Reformation, and eventually Herr K. E. O. Fritsch, editor of the Deutsche Banzeitung, was asked to classify and arrange them for publication. This he has done with admirable clearness. Over 300 plans, showing the most varied arrangement of parts, are given; they are drawn to a uniform scale of $\frac{1}{9000}$, and are in most cases accompanied by elevations or sketches, sometimes even sections. The letterpress is also very interesting, tracing as it does the development in the pre-Reformation churches from the conventual to the parish church, and showing that the demand for a large, clear, open floor space is not so entirely a Protestant requirement as has usually been supposed. On the other hand, much greater stress is laid on the Protestant innovation of fixed seating, which is shown to have exercised considerable influence on the relative positions of altar and pulpit, as well as on the general plan of the church. To have both in full view of the whole congregation is an essential of the Protestant plan, and thus deep choirs or transepts are shown to be undesirable. Peculiar, and found chiefly in the churches of Saxony down to the end of the last century, are the "Betstübchen," box-like enclosures for the use of the higher classes, reserved for private prayer. A royal box overlooking the altar is always provided in every church where royalty may be expected. The extent as well as the number of galleries is especially striking; even four tiers are found, accommodation being thus provided in the Gnadenkirche at Hirschberg for as many as ten thousand persons; in this case seventy-two parishes assembled under one roof.

The subject is treated exclusively with regard to the plan, its suitability to the requirements of the Protestant service, and the degree to which the difference between the two forms of religion is expressed. The style or system of building is not discussed, but many references are made to the unpropitious circumstances under which the large majority of churches were built. The available funds were usually of the scantiest, while accommodation was required for vast congregations, and many churches had to be built in the shortest time possible.

The greater part of the book naturally deals with churches in Germany, of which quite one half belong to the last fifty years. There are also chapters on the other countries of Europe and

America, and an English reader may perhaps regret that specimens of churches erected in this country have not been chosen for illustration more representative than some of those selected.

B. A. CHARLES.

(39.)

THE CASTLE OF MILAN

UNDER THE VISCONTI AND THE SFORZA.

Il Castello di Milano sotto il Dominio dei Visconti e degli Sforza, MCCCLXVIII-MDXXXV. With 183 illustrations. 80. 1894. [Ulrico Hoepli, Milan.]

Signor Beltrami in the introduction to his most interesting book says that the object he had in view in collecting and arranging the notes of composing it was to excite interest in a work which has monopolised his attention during the last nine years. In 1884 the Consiglio Comunale, wishing to benefit the city of Milan by erecting new quarters for the Tribunal Buonaparte and a manœuvring ground, pitched on a spot which to the public eye was "dismally dark, surprisingly "vast, and obstinately uniform." Signor Beltrami then came forward and pointed out that under this very spot lay the ruins, quite intact, of the formerly renowned Castle of Milan, and that the least that should be done before destroying its traces would be to take exact plans of it and report on the state of preservation of its different parts. Then the Lombardic Historical Society and other bodies went into the question, and finally the Government, seeing the strong feeling against trespassing on this ground, forbade any steps to be taken which might seem to harm the integrity of the monument. As a result of this timely interference Signor Beltrami was commissioned by the Minister of Public Instruction to excavate the ruins, study the subject, and make a restoration of the old work as far as possible.

This book contains the result of his researches, offered in the most acceptable form. To insure clearness he has divided the subject into two In the first he deals with the changes in the construction of the castle and the history of its lords, entering into description only where the lucidity of the narrative requires it. And in the second he gives a methodical and complete description of the different parts as they were in the time of the Sforzas. The first part is mainly composed of extracts from the MSS., of which he consulted several hundreds, in the State archives of Milan, and the National Library of Paris, connected and explained by his own comments. He says he adopted this method because it suited the character of the work in hand. In the one case he was excavating the original building and restoring just so much as was necessary to render the original conception intelligible, and in the other he was digging out old documents, adding his explanations where they were required. Besides this it was his business to controver many

old ideas and reverse long-standing conclusions, the most effectual way of doing which was to quote the ancient documents word for word.

These are chiefly communications exchanged between the reigning duke and his architects and engineers, whom he addresses as "Our beloved," either on the one hand giving orders for certain changes and additions, or on the other containing descriptions of how the work was progressing and how it was being carried out. Other details are furnished by eyewitnesses from their diaries or correspondence. The historical account begins with the Visconti, for it was Galeazzo II. who in 1358 founded the Castello di Portia Giovia, as Milan at that time possessed no other protection than a battlemented wall around the city.

The castle was added to and embellished by the successors of Galeazzo II. till 1447, when Duke Filippo Maria died; while, the succession being disputed, quarrels arose, and the castle was razed

to the ground.

When Francesco Sforza was offered the dukedom he began rebuilding the castle, and the documents record such astonishing rapidity in the progress of the work that without any doubt the Visconti foundations were used, and the work carried on somewhat on the same lines, but in brick instead of stone, and on a much grander scale. The custom seems to have been to employ more than one architect on the same building, each with his particular wing assigned to him, for there is a letter from one Filarete, proposing to decorate the principal front with a terra-cotta frieze representing bulls' heads and swags; while another, Jacopo da Cortona, writes to the Duke strongly urging him not to use this form of decoration, owing to the perishable nature of the material.

Although several architects' names occur in connection with the work, one Gadio da Cremona seems to have had most influence. He was placed in authority over the others, and held his post for

nearly thirty years.

Up to 1535, when the account of the varying fortunes of the castle ceases, it seems never to have been free from builders. One duke would add in the direction of fortifications, whilst his successor would spend large sums in decorations. One painter, Saletta, estimates at 1,700 ducats the painting of a room in blue with gold lilies and stars, and another asks 2,300 ducats for adorning the great hall with frescoes representing a hunting scene, in which portraits of living and dead men are to appear, and Duke Galeazzo Maria even writes to define what positions the more important personages are to assume.

Bramante, we know, worked on the spot, for his pupil Cesare Cesariano mentions the fact in his *Comento di Vitruvio*, and amongst other things a little bridge has been discovered which could

only have been designed by that master.

Lionardo da Vinci also worked here, but neither in the capacity of architect, painter, nor sculptor, by which he is generally known. He offered himself as military engineer, and quoted the different works of fortification on which he had previously been employed.

Among the 178 engravings scattered through the letterpress there are facsimiles of several of Lionardo's sketches representing the alterations and additions to the fortifications. All the important rooms appear to have had their walls and ceilings adorned with colour decoration, which can still be made out when the whitewash is scraped off, and scraps of which have been copied and illustrated in the book. At one time there must have been a great deal of carved stone work about, but most of the decorative sculpture has disappeared, and the only chisel work of the sixteenth century which has escaped spoliation is that intimately connected with the construction, such as capitals, keystones, &c. These, which have been carefully reproduced, form fine examples of the skill and delicacy of chiselled stonework brought to perfection under the hand of Bambaja.

ETHEL CHARLES.

(40.) PARENZO CATHEDRAL.

Il Duomo di Parenzo ed i suoi Mosaici. By G. Boni. Estratto dall' Archivio Storico dell' Arte. Anno VII. fas. II. Pamph. large 4n. 1894. Tipografia dell' Unione Cooperativa Editrice, Roma, Via di Porta Salaria, 23x.]

At the head of the Adriatic Gulf, nearly opposite Venice, between the 45th and 46th parallel of latitude, is the town of Parenzo in Istria, with a population of about 2,500, once a city of considerable importance and the seat of a bishopric, but now sadly shorn of its splendour, although retaining traces of its former magnificence. The cathedral was built between the years 512-5. under the empire of Justinian, during the pontificate of Pope Vigilius, by Bishop Euphrasius, whose monogram is carved on several of the capitals of the nave. The building, which is of the basiliea type, is nearly contemporaneous with the basilicas of Sant' Apollinare-Nuovo (A.D. 493-525) and Sant' Apollinare-ad-Classem (A.D. 538-549) at Ravenna, but retains the atrium, baptistery, and other adjuncts of which the Rayemia churches have been deprived, together with a curious chapel or crypt of uncertain date at the north-east angle.

The plan in Ségur d'Agincourt's work (plate lxxiii. 9) is to a very small scale, and is apparently copied from an Italian source. There is a good plan to scale in Mr. T. G. Jackson's Dalmatia, the Quarnero and Istria (iii. p. 311), from Professor Eitelberger's work, in which all the essential features of the building are shown. The cathedral is about 200 feet long, exclusive of the baptistery and campanile at the western end, and about 60 feet wide measured outside the walls. The aisles are divided from the nave by arcades supported by

antique columns of marble and granite, the soffits of which are ornamented in stucco. This stuccowork was considered by Eitelberger to be of the Renaissance period, but Cav. Boni considers it to be cotemporaneous with the church. The greater part of the pavement is ancient mosaic, portions being of great interest. The windows are described by Ségur d'Agincourt as being closed with perforated marble slabs similar to those at the amphitheatre at Pola; but it would appear from a passage in Cav. Boni's monograph that these have been removed and the windows modernised. The lower portions of the walls of the apse are richly inlaid with mother-of-pearl, porphyry, serpentine, and other precious materials; and the upper portions, including the semi-dome, are decorated with figure-subjects in mosaic on a gold ground. This decoration was attributed by Eitelberger (Mittelalter Denkmal.) to the 13th century, but it is evident from the photographs in Cav. Boni's work that the mosaics are only a little later in date than the church itself, namely, the middle of the sixth century. Mr. Jackson observes (Dalmatia, &c., iii. 324), "The mosaics are a good deal patched "with painted and gilt plaster in different places; "but on the whole they are extremely well pre-"served, and have, at all events hitherto, escaped "the misfortune of restoration." This was written in 1887; but since that time it appears that the mosaics have been handed over to the restorer, and will probably suffer the same fate that has overtaken the mosaics of San Vitale, St. Mark, and elsewhere on the opposite coast of the Adriatic. This is what Cav. Boni, after describing the mosaics, says is being done:

Such are the mosaics of the cathedral of Parenzo, true architectonic decorations—solidified music, as it were. The restoration of these decorations had been already begun when I visited the building; the restoration consisted in detaching the mosaics on canvas, scraping off the mortar from the joints between tesserse in order to bring them together, filling in the interstices with plaster or stone, and refixing the mosaics to a level surface, with the addition of a new gold background composed of tesserse of a uniform greenish orange colour arranged in parallel lines.

This method of restoration, if it has the merit of preserving a portion of the materials employed in mosaics of the sixth century, at the same time destroys their most noble characteristics, those, in fact, which reveal the deep and delieate intuition of the effect resulting from the mingling of coloured light, from the distance maintained between the tessere, from the necessity of allowing for the abstraction of sunlight by the atmosphere, and all the other peculiarities which combine to make these mosaics a work of art capable of exciting the delight and admiration of generation after generation yet to come. This kind of restoration ends in becoming an industrial work worth so many florins the square yard.

I do not intend by this to make any suggestion whatever, either to the Central Commission of Vienna, who set aside a considerable sum for the maintenance of the famous cathedral, or to the restorers who continue to earry out at Parenzo that which they were not permitted to do at the Basilica Labicana at Rome; but having had the good fortune—which I esteem greatly—to see these important mosaics, I feel it my duty to satisfy a debt of

gratitude for the instruction and delight I have derived from them, as well as from the beautiful Istrian strand, which deserves that so much of this monument of its prosperity as remains to us should be preserved as far as possible in all its integrity and authenticity.

The building at the north-east angle of the basilica near the eastern end of the north aisle is described by Agincourt as an ancient triclinium consisting of a vestibule and assembly hall, with seats for the bishop and the clergy, and a small oratory. It is probable that this building is the only remaining portion of a more ancient building on the site. It contains some fragments of early pavement, which are figured in Mr. Jackson's Dalmatia, &c. At the western end of the nave is an octagonal baptistery, in front of which is the campanile.

The mosaics in the upper portion of the central apse were discovered about four year ago by the architect Natale Tommasi, they having been hidden under a thick coating of lime-white, and are described by him in the Transactions of the Istrian Archæological Society (vol. vi. 1891, p. 511). These mosaics were consequently unknown to Mr. Jackson, whose book is dated 1887, and are of great beauty and interest. It is noted by Cav. Boni that the tesseræ of the gold background of the figures of our Lord and the Apostles are inclined at an angle of about thirty degrees, so as to present a perfectly normal surface to the plane of vision of a spectator entering the church. This gold background has suffered from the caustic action of the lime-white with which it was so long covered, and some of the tesseræ have lost the vitreous surface which protected the gold-leaf; but those which are intact have, in Cav. Boni's words, "the beautiful warm tone of old sequins, "inclining to orange tawny in full light, but "tending towards a citron yellow in a grey light."

It seems evident from Cav. Boni's guarded remarks that these beautiful and almost unique examples of early Christian art are being destroyed by restoration. There is no question here, as is sometimes the case, of building a vestry or an organ chamber, of heating a church by underground pipes, of re-arranging the seating, pulling down a western gallery, or doing the thousand-and-one things which are now considered necessary to fit an old building for public worship. Here we have a work of art of extraordinary beauty and rarity, practically intact with the exception of some slight damage which in no wise affects the value of the design, every inch of which is as precious as the brushwork of Claude or Teniers or the chiselwork of Michelangelo or Donatello, being restored in a vulgar, mechanical manner, and reduced to the condition of decoration done at so much a square yard. No one would dare now to advocate the restoration of the Elgin marbles, the Rosetta stone, or the Codex Sinaiticus; but because these mosaics

form a part of a building, they are subjected to the same brutal treatment as the rest of the building, and are lacked, patched, and reworked with no more compunction than if they were the signboards over a gin-palace. It is incredible that the Austrians, who are credited with some culture and some zeal for art, should be so short-sighted and so indifferent to the value of the antiquities of their mother country.

It seems probable from the inscription at the base of the semi-dome at the east end of the nave that Euphrasius availed himself largely of the materials of the ancient basilica in the construction of his church. He found the ancient temple, he says, in a ruinous condition, tottering to its fall; and foreseeing its eventual collapse, he put in new foundations, and rebuilt the superstructure, which he decorated at great expense. This was a common practice in the sixth century, and the early Christians appear to have had no scruples in making use of pagan temples, or of adapting them to Christian ritual. In Boeckh's great work on Greek inscriptions (Corpus Inscriptt. Græc.) is the following inscription copied by Dr. Porter at Edhra, the ancient Edrei of Scripture, in the Hauran, east of the Jordan:

The abode of demons has become a House of God. A saving light has shone forth where darkness did conceal. Where there were idol sacrifices, there are now choirs of angels. Where God was provoked, now God is propitiated. A certain man, the lover of Christ—Joannes, the son of Diomedes—from his own funds offered a gift to God; an edifice worthy to be seen; placing in this the esteemed relic of the gloriously-victorious holy martyr George, who appeared to Joannes himself, not in a vision, but manifestly, in the year 9 of the year 410, i.e. A.D. 346.

In another inscription we find a Bishop Theodorus proclaiming that he had built a Christian church at Philæ, the sacred isle of Egyptian paganism, and had even changed one of the ancient temples themselves into a Christian church, having first removed the images sculptured on the walls (Contemporary Review, June 1880).

Kandler (Dizionario Corografico dell' Italia) asserts that the cathedral of Parenzo was built on the remains of a temple to the Capitoline Deity. The mausoleum, he further states, known as the Martyrdom, the Canonry (erected about 1260), and the Bishop's palace have underneath the remains of buildings formerly intended for the use of the military. These buildings appear to correspond with those alluded to by Neale (Dalmatia and Istria) in the following passage: "Lastly among "the canonical buildings on the south side of the "church is one said to have been a tithe-barn, "with a grand range of Romanesque coupled "windows bearing date 1250." These buildings are not shown on the plan.

The cathedral was restored in 1847 by Bishop Antonio Peteani. The baptistery was restored and almost rebuilt in 1861.

Cav. Boni's monograph, which is of the most

erndite character, is largely occupied with a description of the mosaics and inscriptions, and is illustrated by a plan of the cathedral—which differs from the plan in Mr. Jackson's book, the so-called triclinium at the north-east angle not being shown—and a number of beautiful photographs by the Marquis Giorgio Polesini of Parenzo.

JOHN HEBB.

(41.)

MR. RUSKIN ON MODERN GOTHIC.

The Oxford Museum. By Henry W. Acland, M.D., and John Ruskin, M.A., Honorary Students of Christ Church. From original Edition, 1859. With Additions. 80. 1893. George Allen, London and Orpington.

This little book derives its chief interest from two long and highly characteristic letters of Mr. Ruskin on the subject of the buildings of the University Museum at Oxford, which are not to be found printed elsewhere. Neither the book nor the letters are actually new; but as the first and second editions of the former, in which alone the letters appeared (several editions having been since published without them), date from so long ago as 1859 and 1860, and are hardly more than painphlets, they have not only been long out of print, but are comparatively little known. The present volume has as its nucleus a lecture by Sir Henry Acland, entitled "Remarks addressed to a Meet-"ing of Architectural Societies at Oxford," originally delivered in 1858, and now revised and expanded; to which are added, besides the two letters already mentioned, a letter from Professor Phillips, the geologist, describing the series of British and Irish marbles which, in the form of pillars and shafts, with elaborately botanical capitals and corbels, adorn the central court of the museum; also several prefaces and appendices by the author, and a few illustrations. The latter include a very fine example of line engraving, by Le Keux, representing a capital with foliage of natural ferns; there is also a ground plan of the buildings in their present state, which shows, by comparison with the plan in the first edition, that the museum now extends over twice the area which it occupied in 1859. It ought to be mentioned that the execution, both of this plan and of the book generally, shows an immense improvement over that of the first edition; in fact, the new edition is a remarkably clear and pretty specimen of typography. The subject matter in general is, however, decidedly fragmentary, and the book cannot in any sense be called a satisfactory monograph of the museum; it is only fair to say that any one hoping to obtain from it a systematic and complete account of the buildings, either as regards their history, structure, or contents, would be sorely disappointed. But taking it just for what it is, a chance collection of thoughts and reminiscences connected with the museum. pleasantly and sympathetically put together, it will be found often suggestive and sometimes even entertaining.

The letters from Mr. Ruskin will be sure to afford much delight and satisfaction both to believers in his teaching and admirers of his style, for they contain most distinct and authoritative expressions of "the master's" opinions on many a vexata quæstio, couched in language wellnigh unsurpassable for beauty and vigour. Indeed, they are quite representative documents, and would give to any one quite unacquainted with Mr. Ruskin's other works a very good general notion of his views and principles in matters architectural, as well as of his manner of writing. The principal subjects here dealt with are the advantages of the Gothic style for modern buildings generally, and its special suitability for the purposes of the new museum; the value and grandeur of scientific studies; and the leading ideas which should guide and control the employment of all forms of decorative art. On the choice of a Gothic design for the proposed museum Mr. Ruskin writes to Sir Henry Aeland:

I am quite sure that when you first used your influence to advocate the claims of a Gothic design, you did so under the conviction, shared by all the seriously purposed defenders of the Gothic style, that the essence and power of Gothic, properly so called, lay in its adaptability to all med; in that perfect and unlimited flexibility which would enable the architect to provide all that was required, in the simplest and most convenient way; and to give you the best offices, the best lecture-rooms, laboratories, and museums, which could be provided with the sum of money at his disposal.

So far as the architect has failed in doing this: so far as you find yourself... in anywise inconvenienced by forms of architecture; so far as pillars or piers come in your way when you lave to point, or vaults in the way of your voice when you have to speak, or mullions in the way of your light when you want to see; just so far the architect has failed in expressing his own principles, or those of pure trothic art. I do not suppose that such failure has taken place to any considerable extent; but so far as it has taken place, it cannot in justice be laid to the score of the style, since precedent has shown sufficiently, that very unconfortable and useless rooms may be provided in all other styles as well as in Gothic.

Having visited the museum when just completed, he writes in his second letter:

You will not think that it was matter of indifference to me when I saw, as I went over Professor Brodie's chemical laboratories the other day, how closely this success of adaptation was connected with the choice of the style. It was very touching and wonderful to me. Here was the architecture which I had learned to know and love in pensive ruins deserted by the hopes and efforts of men, or in dismantled fortress-fragments recording only their cruelty: - here was this very architecture lending itself, as if created only for these, to the foremost activities of human discovery and the tenderest functions of human mercy. No other architecture, as I felt in an instant, could have thus adapted itself to a new and strange office. No fixed arrangements of frieze and pillar, nor accepted proportions of wall and roof, nor practised refinements of classical decoration, could have otherwise than absurdly and fantastically yielded its bed to the crucible and its blast to the furnace; but these old vaultings and strong

buttresses—ready always to do service to man, whatever his bidding—to shake the waves of war back from his seats of rock, or prolong, through faint twilights of sanctuary, the sighs of his superstition—he had but to ask it of them, and they entered at once into the lowliest ministries of the arts of healing, and the sternest and clearest offices in the service of science.

These quotations are somewhat lengthy, but as we happen also to have Fergusson's opinion of this particular building, given in the chapter on the Gothic Revival in his *History of Modern Architecture*, it is, to say the least, amusing to compare the opposite ways in which the Oxford Museum affected these two distinguished critics. Fergusson said:—

The third building chosen to illustrate the downward progress of the art is the New Museum at Oxford. This was designed to be Gothic in conception, Gothic in detail, and Gothic in finish. Nothing was to betray the hated and hateful nineteenth century. . . . The roof of the Great Central Hall of the Oxford Museum and the ironwork that supports it are made purposely clumsy and awkward. The Lecture-rooms are cold, draughty, and difficult to speak in. The Library is a long, ill-proportioned gallery, with a rudely constructed roof, painted in the crudest and most inharmonious colours; the windows glazed in the least convenient manner with the worst possible glass; and the bookcases arranged, not to accommodate books, but to look monkish. . . . On wandering further you enter what seems a kitchen of the age of that at Glastonbury, and find a professor, not practising alchemy, but repeating certain experiments you believe to be of modern invention; and the only relief you experience is to find that his thermometer and barometer and other instruments must, from the style of their ornaments, belong to an age long anterior to that when those impostors Torcelli, Galileo, and Newton are said to have invented these things.

There could hardly be a better illustration of those diversities of temperament which influence so enormously what people call their artistic judgment, producing differences of appreciation quite irreconcilable, because there does not exist any sort of mutual base for their discussion.

Mr. Ruskin is not always credited with being a friend to scientific research, but never, even in an inaugural address at a British Association Meeting or Congress of Hygiene, have its claims to respect been more forcibly indicated than in this book. Many are the pieces of criticism which it is tempting—but scarcely fair—to quote; there is only room now to recommend the perusal at least, if not the exact following, of the letters themselves, by the preservation and careful publication of which Sir Henry Acland will certainly win the sincere gratitude of many readers.

ARTHUR SMYTH FLOWER.

NOTES, QUERIES, AND REPLIES. Architects and Artisans or Artificers.

From OWEN FLEMING [A.]—

On 8th December 1893, at an ordinary meeting of the Architectural Association, a most interesting

discussion took place upon the Education of London Workmen. It was my privilege to initiate the debate, and I ventured to suggest for the consideration of the meeting the desirability of appointing a Standing Joint Committee of architects, builders, and workmen to consider the numerous and troublesome questions which are continually arising in connection with the development of the education of our artificers, and to encourage a close and sympathetic understanding between those who design and those who execute the designs of others. I ventured to urge that the responsibility of architects did not end with the education of themselves, and I submitted that if architects failed to assert their rightful position as leaders of workmanship, it was reasonable to assume that others would fill their places, and it was a serious question whether any persons were as qualified to direct workmanship as those whose lives were devoted to a study of the question. The discussion was of a particularly animated and thoughtful character, and the idea of a Joint Committee was warmly supported by representatives of the three classes concerned. Mr. Blashill, a Fellow of the Institute, in the course of a sympathetic speech, said: "If they could get the committee together, "he was certain that good would come of it, not "only to the trades but to London also." Mr. Henry Holloway, who represented the Association of Master Builders, fully endorsed the proposal, and said how much the master builders appreciated the opportunity that had been given them of being present at the discussion. On behalf of the workmen, Alderman Taylor, in an able contribution to the debate, expressed himself "very pleased with "the suggestion with regard to the Joint Commit-"tee"; while Mr. Verdon, the secretary of the Building Trades' Federation, thought "that the "project under consideration would be the means " of drawing the three classes -viz. the architect, "the contractor, and the working-man-more "closely together, and so bridge over the gulf that " had divided them."

The press devoted considerable attention to the discussion, and welcomed the idea of the suggested conference. The Daily Chronicle said that "the "hands of those already engaged in the work of "diffusing the opportunities of technical education "would be immensely strengthened if the leading " spirits of every branch of industrial art and work "would actively follow some such course" as was proposed at the Architectural Association; while Mr. Broadhurst wrote that if the movement in question is energetically followed up, and the suggested reforms are carried out by architects and supported by the public, the country will be deeply indebted to the promoter; and in no section of society will they find more loyal helpers than in the trade unions affected.

On the first available opportunity a resolution was approved at a General Meeting of the Asso-

ciation instructing their committee to proceed with the matter, and after considerable deliberation and inquiry they have decided to recommend the Association to call a conference of representatives of the various bodies interested in the question. Since this decision was arrived at, a Trade Conference has been held at the County Hall, Spring Gardens, S.W., at the invitation and under the auspices of the Technical Education Board, and at that conference a resolution was proposed to form a committee immediately to consider the decline of apprenticeship. The chairman of the conference, however, interposed, and suggested to the meeting that in view of the conference then being promoted by the Architectural Association it would be better to let the proposed committee come out of that conference rather than from the one over which he was then presiding. The mover of the resolution and the other representatives present cordially concurred in this suggestion, and the matter was thereupon left in the hands of the Architectural Association.

The proposal, therefore, is now assuming a definite shape, as the Committee of the Association have forwarded full particulars of the proposed conference to the following bodies, whom they have determined should be invited to take part in the deliberations:

Architects:

The Royal Institute of British Architects.

The Architectural Association.

The Art Workers Guild.

Independent London Architects.

Master Builders:

The Institute of Builders.

The Master Builders' Association.

Warlanan .

The Building Trades' Federation.

The Operative Bricklayers' Society.

The Amalgamate 1 Society of Carpenters and Joiners.

The National Association of Operative Plasterers.

The United Operative Plumbers' Association.

The Operative Stonemasons' Society.

City Companies:

The Carpenters' Company.

The Plumbers' Company.

The Bricklayers' Company.

Educational Bodies:

The Technical Education Board.

The London School Board.

Polytechnies:

The City and Guilds' Technical Institute.

The Battersea Polytechnie.

The Borough Polytechnic.

The Goldsmiths' Institute.

The People's Palace

The Regent Street Polytechnic.

The agenda that has been drawn up is of a very comprehensive character, and includes the position of apprenticeship and the direction and character of technical education, the influence on the education of the skilled workmen of the Technical Education Board, the School Board, the City Companies, the Trades Unions, and the Department of Science and Art, the question of registration in the trades, the overlapping of trades and consequent disputes and strikes, and the possibility of organising competitions and meetings for discussion between architects and workmen.

It is obvious from the above that the active sympathy and co-operation of the Institute is of the highest degree of importance if the conference (and probable permanent committee arising theretrom) is to be a success. Speaking as a member of the Institute, I would with all deference, submit that a movement which may fairly be described as of national moment should be aided and encouraged in every way by us. As I ventured to suggest in my Paper to the Association, it is a movement which should be led and directed by architects, and this view has been emphasised by the decision of the conference of workmen and the Technical Education Board of the London County Council to leave the matter in our hands. It has been suggested to me that it would have been more conrecous if I had laid the original proposal before the Institute instead of the Association. This view of the case has certainly much to commend it, and if I had originally fully realised the extent to which the proposal has since developed I should undoubtedly have done so. But if blame is due on this point it is due to me only, and I feel convinced that the Institute and its Council will not allow this consideration to weigh with them, but will give generons and earnest attention to the proposal now being made to them by the Association, and take advantage of the opportunity to lead as nobody but they can lead this important movement.

Painting of Arabic Buildings in Egypt p. 600].

From Mr. Somers Clarke, F.S.A. --

A recent visit to some of the buildings in Cairo, the coloured decorations of which are being "re-"stored" under the auspices of Mr. Herz, leads one to hope that further work in this direction may be stopped. The Eastern mind is averse to repairs of any description. Many of the most beantiful monuments of Arab art were falling to pieces until recently. Now, however, these structures are, for the most part, placed under the charge of the "Comité de Conservation des Monuments de l'Art "Arabe." This body has been in existence for a good many years, and some of the works "restored" in its early days are terrible to look upon. No words can describe the horrors of the Sebil of El Ghuri perpetrated by a former architect to the conservators, Franz Bey. There is not a trace of antiquity left. The present architect in charge of the repairs is Mr. Herz, and he may be congratulated upon having dealt with many of the ancient buildings in the most careful, tender, and conservative manner. His proposal, therefore, to restore

painted decorations perished long ago is a great disappointment. He has already been experimenting in the Mosque El Muaiyad. spring of this year there might be seen on the pulpit and on some of the doors experimental restorations. The very words "experimental re-"storation" carry absurdity on their face. In this mosque the marble has been either renewed or scoured, new capitals and new bases are added to the columns. The grand colours of age have been rejected, and if the painting be completed, glaring vermilion, violent blue, and staring gold will take the place of the sober greys, browns, and orange imparted by the lapse of centuries. The colours used in the so-called restoration are very different from the colours used in the original work; and, different or not, the thing is utterly false, and most horribly discordant. Reference has been made to the Sebil El Ghuri. Across the road is the Mosque El Ghuri. Here nothing has yet been done. Some repairs are undoubtedly needed, but a more harmonious, venerable, and beautiful effect than this mosque presents, bearing on its walls the touch of time, cannot be found. A "thorough "restoration" would make the place abominable. The building as it stands is an excellent example of how much beauty there is imparted to the structure by age, and by what a little touch the whole could be upset. A very unfortunate feature in the repairs is the extraordinarily bad glass used to mend the windows. The old glass is of rich amber, green, and ruby; the modern is the thinnest and most glaring stuff. The old seems to be altogether removed and the rubbish set in its place.

Forgotten Staircases: an Old Story.

From John Hebb [F.]—

It is an amusing example of the persistence of popular errors to find how frequently it has been attributed to architects that they had forgotten the staircase of a building they had designed, and only perceived their mistake at the last moment. In a biographical sketch of his great-uncle, Thomas Leverton, by Professor Donaldson, in the Dictionary of Architecture it is gravely recorded that "Leverton built a house in the country for "Nathaniel Middleton, Esq., wherein he is said "to have forgotten the staircase." No further particulars are given, and it is therefore impossible to investigate the origin of the legend—as legend it certainly is—as can be demonstrated from the repetition of the tale in various places.

In 1834 the Lyceum Theatre, London, was rebuilt by Samuel Beazley, architect and dramatic author, when it was then asserted that the architect had forgotten the gallery staircase, and that a temporary staircase had to be constructed in order to admit of the theatre being opened. The Athenœum, in noticing the opening of the theatre, alludes to this rumour in the following paragraph:—"We are happy to perceive by Mr.

"Beazley's letter to the papers that he has ex"plained away his supposed omission of a gallery
"staircase. The temporary wooden stairs at
"present seen outside the theatre might very
"naturally lead people up to such a belief, but
"the judicious steps he has taken will set all right
"again, and bring people's understandings down
"to the real ground on which the matter rests."*

The Builder, on the occasion of the re-opening of the theatre under the management of Madame Vestris, in allusion to the report, explained that the contract for rebuilding the theatre, which had been destroyed by fire, did not include the green-room and dressing-rooms, which were postponed until 1838, and cost about £3,000. "The "side building included the gallery stairs; conse-"quently, until erected, a temporary staircase to "that part of the house was required. This gave "rise to a curious report that the architect had "forgotten to provide means of access to the "gallery within the house; which appears to have "been generally received, since we find a letter "from the architect in The Times explaining the "circumstance and contradicting the inference." †

The architect of the theatre addressed the following letter to *The Times* newspaper:—

Sir,—Not supposing that any one would seriously believe that I had forgotten the gallery staircase in the new theatre, I suffered it to pass unnoticed; but understanding that the paragraph had been copied into most of the London journals, I am urged by my friends to contradict a report for which there is no foundation.

The fact is that for the security of the audience in case of fire all the entrances, together with the wardrobes, greenroom, dressing-rooms, and offices, are planned on the outside of the main wall of the theatre, and the staircase to the gallery is in that compartment on the north side which is devoted to the dressing-rooms, green-room, &c., and it not being within Mr. Arnold's plan to erect that compartment of the building until the theatre (the main point) was completed and opened, it of course became necessary to construct a temporary staircase to the gallery until that part of the building could be finished. An inspection of the original plan, copies of which may be seen at the Woods and Forests, at my office, and at my builders, Messrs. Grissel & Peto, York Road, Lambeth, will convince anybody of the truth of this statement. I can only add, that the temporary staircase has been constructed with every regard to security, and has been inspected by the architects to the Woods and Forests, the district surveyor, and the surveyor of pavements, as well as built under my own superintendence.

Your giving publicity to this fact and contradicting the rumour will add to the obligation already conferred by your favourable report of my building.—I remain, Sir, your most obedient servant,

SANUEL BEAZLEY.

29, Soho Square, 16 July [1834].

Mr. Beazley's letter is not very convincing, and it is difficult to understand, if he was so anxious with regard to the safety of the audience from fire, why a permanent staircase was not constructed to the gallery, nor why the authorities permitted the temporary staircase, which appears to have been

^{*} Athenæum, July 19, 1834. † Builder, vol. v. p. 489.

of wood, to remain for four years after the opening of the theatre.

It seems probable that there was another reason why the permanent staircase to the gallery was delayed beyond that assigned in Mr. Beazley's letter to The Times, and that was that Mr. Arnold was in negotiation with the owner of a house adjoining the theatre in Exeter Street in order to obtain a more advantageous site for the staircase than the original site of the theatre afforded.

The permanent staircase to the Gallery when erected was an extremely inconvenient one: the second flight, the steps of which were of cast iron with open risers, being only 3 feet 6 inches wide in one flight of twenty-four steps, and the top flight 5 feet wide in one flight of twenty-six steps. This staircase remained until 1883, when it was removed on the requisition of the Metropolitan Board of Works, and a new staircase provided in its place.

A curious variation of the popular legend is related by Léon Gozlan in a description of Balzac at Jardies, where the celebrated novelist built himself a villa. Gozlan declares: "On a " prétendu qu'en dirigeaut lui-même avec un "despotisme sans concessions la construction du "pavillon de Jardies] il avait oublié l'escalier. "Qu'il admit aucun conseil, aucune observation, "ancune critique venue de son architecte ou de "ses maçons c'était là un fait que nous attestons; "mais qu'il ait negligé de commander l'escalier "dans l'ordonnance intérieure de la maison et "qu'un beau jour maçons et architectes soient " accourus lui dire "Monsieur de Balzac, la maison "'est finie, quand voulez-vous que nous fassions "'l'escalier?' c'est là un second fait qui exige "dans la mesure de son importance une expli-"cation." * The explanation was that Balzac had found that the space assigned by his architeet for the staircase eramped the size of the rooms; he therefore deferred the construction of the staircase until the house was nearly finished, and eventually absorbed the space intended for the staircase into the house, and built the staircase outside. In this instance no blame is attributed to the architect, as it is evident from Gozlan's description that Balzac took the conduct of affairs into his own hands, and was practically his own architect.

A Builder's Estimate of the Architect's Functions.

From William H. White F.

Not long ago, on an evening when it was my good fortune to take part in the Annual Dinner of the Institute of Builders, I sat next a member of that body whom I had met on a previous occasion. and who had his own specific views "with regard " to architecture as a close profession, and the " necessary relative position and qualification of "the surveyor." Having served his articles with a well-known architect in London, this gentleman has for some time carried on an excellent business in the country as a builder and general contractor; and he would solve the sad and once-vexed question of "Architecture, an Art or a Profession?" in the following fashion:

An architect should pass a preliminary classical examination on a par with the Legal and Medical.

A second examination should be in the history of architecture from its earliest stages to the present, showing a full knowledge of the social and political causes.

A third examination should be in planning, together with certain complete drawings and with a special reference to cubical contents of air, superficial area of light, relative space of halls and corridors, ventilation and acoustic properties. I think, also, a knowledge of the rudiments of sanitary science would be useful.

At least one year should be spent on the Continent, and a given number of sketches and measured details required

before a diploma is granted.

Of course, if the conditions were enforced many would be plucked; so are many would-be "limbs of the law" and of medicine - and so much the better for the respective professions.

An architect, by these means, would at least be a gentleman by education, and in possession of the knowledge that should protect the public from the gross atrocities that are from time to time inflicted upon them; and the profession would be protected from the "designing" builder and the aspiring artisan.

I do not think an architect should be called upon for more than a very general knowledge of construction, but should rely upon a fully-qualified surveyor, who should be compelled to take up a certificate from an institute upon whom all responsibility should rest, as no certificate should be given until satisfactory examinations have been passed both as regards construction and prices, the latter to be based on the cost of material and the necessary labour. not upon "I can get it done," without any knowledge of

Under such conditions an architect remains on good terms of friendship with his client, and would have time to fully develop the art of his profession. You will notice I do not mention any examination in art, as I think this impossible: but I teel the architect's future would depend upon the artistic treatment of his work, and upon this he would either rise to distinction or remain an unknown quantity.

The un qualified penius must remain as in other professions - outside the pale, or become the ghost, as he so often does now. The surveyor should be appointed by the architect and paid by the client, the "quantities" forming the basis of the contract. Of course, any action taken would be retrospective to a certain extent.

The author of the foregoing, perhaps quite unwittingly, has conceived of no new artistic genius, but, on the contrary, describes the practice of a small number of "architects" both in England and France. For instance, you are the friend or acquaintance of your client, and know just enough about the scientific two-thirds of your profession to enable you to converse with him thereon; you visit the works while in course of construction, if your other engagements permit, and you sign the certificates for payments to the contractor when the surveyor whom you are privileged to appoint tells you! You yourself, immersed in seas of drawing-paper, remain at home or in your office,

^{*} Balzac en Pantourles, p. 30.

and sketch and colour elevations or perspective views as the divine afflatus with which you are invested may direct, conscious that your client's interests are safe in the charge of the surveyor you have appointed, whose "Quantities" are to form (though, under present circumstances, they do not) the basis of the contract to which your friend the client and a general contractor have subscribed their respective names. But, wisely enough, the member of the Institute of Builders who takes this rose-coloured view of the modern architect does not say how much the latter should be paid for his work, which would obviously be "the "requisite preliminary sketches" mentioned in the first sub-clause of Clause 11 of the Schedule of Practice and Charges. The surveyor would do the rest of the items of that sub-clause, namely the "drawings and specifications sufficient for an " estimate and contract. Detailed drawings and "instructions for execution." The surveyor would also superintend the works, and examine and pass the accounts. Is it not possible that, under such a division of labour, the "designing" architect might eventually find himself quite as much the obedient humble servant of the surveyor whom he appointed as is the general contractor with whom his client entered into an agreement? And is it not further possible that, in the present tendency to dispense with middlemen, the surveyor might soon find himself master-of-the-work? The London County Council have already got rid of one middleman in the shape of the general contractor; with the increase of education and the development of artistic feeling in this country, the client may also dispense with the other middleman, the architect-draughtsman. In 1888, nearly three years before the cry of "Architecture, an "Art or a Profession?" came prominently before the Royal Institute of British Architects, Sir Richard Temple had said on his own responsibility, at a general meeting, when he read a Paper on Picturesque Architecture, that "in former ages the " master-architects were artists first, then archi-"tects, then engineers"; but my friend of the Institute of Builders goes further than the ex-Governor of Bombay, for he would have an artist (who should belong to a close profession) make the preliminary sketches of a new building, and he would appoint a surveyor to be its architect. This, surely, is one of the last straws of the load of argument used in discussing the dubious query, whether Architecture be, or be not, only an art. My friend has convinced me, at least—which may be taken for what it is worth—that an architect, if he is to fulfil his duty to a client, must possess, not only a thorough knowledge of the arts of design and of the sciences pertaining to construction, but also of the business of building—for all and each of which he is paid, however inadequately, in the "five per cent. commission" he is entitled to receive from his client.



9, Conduit Street, London, W., 20 Sept. 1894.

The last of the Single Qualifying Examinations established in 1882 is to be held in November. After that, the recently inaugurated Progressive Examinations will come into full operation. All applicants for the Associateship who send in their papers after the 3rd November will be required (except in the case of practising architects and chief assistants, who may obtain certain exemptions by special resolution of the Council) to qualify, by passing three distinct examinations, for registration (1) as Probationer and (2) as Student; and (3) for candidature as Associate. Full particulars, given in the Supplement to this issue of the Journal, are also advertised in the professional newspapers.

The Institute of New South Wales [pp. 545, 571].

The following are the officers of this Society for the year 1894-95:—President, Mr. J. Horbury Hunt [F]; Vice-President, Mr. J. B. Barlow; Hon. Treasurer, Mr. James McDonald; Members of Council, Messrs. W. G. Coward [F.], T. Rowe [F.], W. Kenwood, Ambrose Thornley, Henry A. Wilshire; Hon. Secretary, J. J. Davey.

THE ARCHITECTURAL ASSOCIATION.

The following are the members of the Committee for the year 1894-95:—President, Mr. E. W. Mountford [F.]; Vice-Presidents, Messrs. F. G. F. Hooper [A.] and A. Beresford Pite [A.]; Messrs. John Begg [A.], W. D. Caröe, M.A., F.S.A. [F.], F. R. Farrow [F.], Owen Fleming [A.], E. S. Gale, Theo. Moore [A.], G. H. Fellowes Prynne [F.], W. H. Seth-Smith [F.], Paul Waterhouse, M.A. [A.], and Edmund Woodthorpe, M.A. [F.]; Hon. Treasurer, Mr. H. W. Pratt [F.]; Hon. Librarian, Mr. J. W. Stonhold [A.]; Hon. Secretaries, Messrs. F. T. W. Goldsmith [A.] and Banister F. Fletcher [A.].

Syllabus of Meetings 1894-95.

The Ordinary and other General Meetings will be held in the rooms of the Royal Institute, 9 Conduit Street, W., at 7.30 p.m., as follows:-

at 1.00 p	in, as follows:
Oct. 12.	Conversazione.
,, 26	Annual Meeting. President's Mr. E. W. Mount-
	$\operatorname{Address}$ ford .
Nov. 9.	The Study of Modern Archi- Mr. A. Beresford
	tecture
,, 23.	Sanitation in regard to Hos- Mr. Keith D.
,,	pitals and Infirmaries . Young.
Dec. 7.	The Modern Theatre of the
	The Modern Theatre of the Continent Mr. E. O. Sachs.
1895.	,
Jan. 4.	Architectural Illustration . Mr. C. G. Harper.
10	Mr. John Slater,
,, 18.	Bricks $\left\{ egin{array}{ll} & \mathrm{Mr.\ John\ Slater}, \\ & \mathrm{B.A.} \end{array} \right.$
***	Mr. W. S. Wea-
Feb. 1.	Architectural Perspective . Mr. W. S. Weatherley.

,,	15.	The					
		arel	hitect	urall	у со	nsider	ed,
		wit]	h Illu	strat	ions		
		The t	ise of	Scu	lptu	ral De	co-
		4		41		4 4:	

ration at the present time

Lee. Mr. F. W. Pome-Plaster work roy. Mr. J. W. Singer. " 15. Iron and Brass

Mr. H. H. Sta-

Mr. T. Stirling

tham.

	. M., II., III.	-1
	Specifications, from a Buil- Mr. Henry H	01-
31 36	Specifications, from a Buil- der's point of view Mr. Henry H loway. (Holloway Bro	,
Mar. 29.)	(Holloway Bro	S.)
	Ditto, from an Architect's Mr. E. C. Pinks	s.
April 26.	Painting and its relation to	
11p111 201	Painting and its relation to Architecture	ılł.
May 3.	Members' Soirée.	
	Treillage Mr. John Belch	er.
53 53	Nomination of Officers.	
,, 24.	The Influence of Architectural Style upon Design . Mr. Walter Crai	ne.
	Election of Officers.	
,, 31.	Annual Dinner.	

THE LONDON COUNTY COUNCIL.

Dwellings for expropriated Artificers.

At the Eighth International Congress of Hygiene and Demography, recently held at Budapest, a Paper was presented by Mr. Thomas Blashill P., on the Dwellings in Blocks built by the London Council for persons of the "Working Class who are displaced by the clearance of In-"sanitary Areas." This Paper, which sketches the history of "The Housing of the Working Classes Act 1890," and goes fully into the work done by the London Council under its provisions, will always be useful for reference, even without all the plans referred to therein. Two examples of those plans will be found on p. 219 ante. Mr. Blashill's Paper is as follows:

For many years past it has been evident to all persons who have studied the condition of the poorer portion of the town population of England that great evils have been caused by the crowding of large numbers of inhabitants upon very small areas, and by the unwholesome condition of many of the houses in which such people live. Societies in the tirst instance were established by private individuals with the view of providing healthy dwellings at a moderate rent. The most important of these societies was founded in 1862, through the very large gifts and legacy of Mr. Peabody, a London merchant, and is named after him "The Peabody Trust." It was, however, felt that the subject was so important that it ought to be dealt with by the public authorities, and in the years 1868, 1875, 1879, 1882, and 1885 Acts of Parliament were passed with the object of clearing unhealthy areas and providing healthy dwellings for their inhabitants.

This group of Acts is known by the names of Mr. Torrens and of Mr. (now Viscount) Cross, who were chiefly itistrumental in promoting this particular kind of legislation.

In the year 1890 the whole of these Acts of Parliament were consolidated under the name of "The Housing of the "Working Classes Act 1890."

Under Part I, of the Act, the municipal authority charged with putting the Act into operation, upon being satisfied of the unhealthiness of a particular district, must make a scheme for its improvement, which scheme has to be confirmed by the Secretary of State for the Home Department. The practical effect of this Act, and the older Acts, has been to cause several municipal authorities to purchase the houses in many unhealthy districts and to provide new dwellings in those districts.

In the County of London, except the central portion which is the City, the municipal authority charged with this duty is the London County Council, which in the year 1889 succeeded to the powers and duties of the Metropolitan Board of Works.

During the time that these Acts of Parliament have been in operation the Metropolitan Board and the Council have caused the erection of a large number of buildings

It was the habit of the Metropolitan Board to sell the land when it had been clear, I of buildings to societies or to individuals, who became bound to erect dwellings to the approval of the Board and of the Secretary of State. This mode was found very costly, and the London County Council determined to keep the land, and to pay for the dwellings built upon it. One of their objects was to prevent serious loss of money under the former system, but the main object was to keep full control over the erection and the management, so as to benefit the occupiers in a greater degree. The money borrowed to erect the dwellings that have been built will be paid off in fifty-five years, when the municipality will possess them free of encumbrance.

In this Paper I shall confine myself to the existing mode of carrying out the Act of Parliament of 1890, and to the particular class of dwellings that are now thought fittest

for being erected under that Act.

As an illustration of the mode of dealing with an unhealthy district I present plans of the "Boundary Street" scheme, which deals with an area of fifteeu acres in extent, in the parish of Bethnal Green, and involves the demolition of 728 houses, and the closing and removing of twenty streets. The whole of the fifteen acres will be entirely cleared of buildings with the exception of two churches, three elementary schools, and one large factory. It has been replanned on the radiating system of streets. A circular garden 270 feet in diameter will occupy the eentre of the area, and from this seven avenues, varying from 50 to 60 feet in width, radiate, the buildings being arranged upon the intervening sites. Great care is being taken in the development of this area to render it a good example. This is the largest scheme that has been undertaken under these Acts of Parliament. Its object is, moreover, almost entirely confined to the provision of better dwellings, and it has not been to any material extent affected by the need for better and more direct thoroughfares - a matter which has largely influenced schemes of this kind.

Although this district is situated within one mile of the centre of the City of London, its inhabitants were of the poorest class, a whole family frequently living in a single room. The streets were narrow, the spaces at the backs of the houses were also rarrow, and they had in many cases been made still worse by the erection of buildings used for trade and manufacture. The houses were old and dilapidated, the rooms were dark, dirty, and unwholesome, and these corditions. Many of the inhabitants were of a very low type, but many were of the Lonest working eass. Alderman Fleming Williams the Chairman of the Public Health and Housing Committee has publicly said that those areas were not quarantine depots in which the sufferers could be iso ated from the rest of the people. Living there were costern ongers, machinists, market porters, toy makers, warehorsemen, and others, who in a thousand ways spread throughout a healthy community the germs

For the four years ending 1889 the average mortality on this area exceeded 40 per 1,000, whereas the average mortality of the parish of Bethnal Green, in which this district is situated, was no more than 22's per 1,000. That of registration London for the same period was 18:8 per 1,000.

In the first of the group of Aets for the Housing of the Working Classes it was provided that the total number of persons turned out of unhealthy districts should be provided with dwellings upon land within the same district or in its vicinity: but it was soon discovered that this could not be done. By the Act of Parliament of 1890 the Hone Secretary is empowered to sanction a scheme which provides dwellings for one-half the number of persons who will be turned out, and this is sometimes the largest uumber that can be provided for; but in the Boundary Street scheme new dwellings will be provided for 4.700 persons, the number turned out being 5,719.

NEW DWELLINGS.

The first consideration in the design of new buildings is as to the kind of dwellings that may reasonably be provided. It must be remembered that the municipal authority is dealing with the poorest class, and therefore the dwellings provided should, as a rule, have the minimum amount of accommodation which is considered to be suitable for the residence of a family. The dwellings must be arranged upon comparatively small areas of ground. The Peabody Trust and the private societies that have been in existence for many years have provided dwellings in high buildings of from five to seven storeys in height. The general experience of these societies is that the rooms at the top of their dwellings let very easily at a very slightly reduced rent, or even at the same rent as the lower storeys. They are generally very much approved by their tenants. Objections have, however, been raised, chiefly by the medical officers and by persons who object to the climbing of a large number of stairs, to buildings of the height of six or seven storeys. The London County Council have for the present fixed the height of their buildings at five storeys, and as the distance of one building from the nearest building to it is fixed at the height of the higher of the two buildings, five storeys is in very many cases as much as could properly be provided upon the sites available.

I will limit myself to a description of the dwellings provided for families in the buildings now being finished or that are being designed for the London County Council, their design being largely founded upon a study of the most successful buildings that have been erected in London during recent years. It must be understood that these dwellings are not suggested as models of what a workingman's dwelling should be, but as being just sufficient for the accommodation of a family, the amount of rent that such a family can pay being insufficient to provide more accommodation. In the following description it must be understood that the number of persons (taking adults and children together) is estimated at two persons per room.

Self-contained dwellings.—The dwellings consist of one room, two rooms, three rooms, and four rooms respectively. Of these the one-room dwellings are very few; and it is my opinion that, except where they can be provided very conveniently, they need not be provided at all. A family of two persons can very readily find accommodation elsewhere. The chief need is for dwellings of two and three rooms, in which families of four and six persons can be accommodated.

Three-room dwellings are most required, because a family with four children has great difficulty in finding accommodation. It is probable that, for similar reasons, four-room dwellings would be useful; but the number of families having six children is not so large, the older children may be earning wages, and such a family may be able to take a small house.

There are certain qualities which family dwellings of the smallest class ought to have. These qualities must vary in different places. In London a self-contained dwelling should be entered directly from a wide passage or from the landing of the staircase. The stairs and landings should be at least 3 feet 6 inches wide. This entrance is, in fact, the outer door of a house.

The Council demand that all habitable rooms should be at least 8 feet 6 inches in height; the family living-room must have a floor measurement of at least 144 superficial feet clear of all fire-places and other solid obstructions; the bedrooms must measure at least 96 superficial feet; a small scullery with a sink, copper, and towel-roller must be attached to each living-room; and beyond the scullery there must be an open lobby through which access can be got to a w.c. The w.c. is thus entirely cut off from the house.

The fittings required for the living-room are a cooking-range, which may be 2 feet or a little more in width, and which must contain an oven and boiler. The range used in the Council's dwellings is the Cundy range, in which the oven is placed below the fire. There must be a ventilated food cupboard close to the outer wall, a coal-box and dresser, with two drawers and a pot-board underneath the

drawers on which to keep kitchen utensils; also three shelves on the upper part of the dresser. About half a dozen coat-hooks are fixed to a rail on the wall. There must be besides a cupboard for plates and other articles not of a perishable nature. No fittings of any kind are provided in the bedrooms, but there may be cases in which a cupboard can easily be provided.

It must be remembered that, according to the calculation of two persons per room, the room which is called the living-room must be used at night as a bedroom. It must therefore be so arranged that a convenient place can be found for putting a bed for two persons. Sometimes the parents sleep in this room, sometimes the children are put there, and in other cases the whole family may sleep in the bedrooms. The bedroom doors invariably communicate with the living-room, and are probably left open.

Drainage and removal of refuse.—Although the w.c.'s are separated from the house by an open lobby, great care has been taken to make the drainage practically perfect. The closets are of the type called "wash-down," solidly set in concrete; they are flushed with two gallons of water, but three gallons would be in many cases more effectual; the soil-pipes are taken outside the buildings; they are thoroughly ventilated so as to disconnect them from the sewers. The waste pipes from scullery sinks are treated on the same principle.

It is possible that dust-shoots will have to be provided so that the dust and dry refuse from each dwelling will be poured down these shoots; but it is hoped that the parish authorities may be induced to remove the dust in iron pails daily or at frequent intervals from each dwelling.

COST OF DWELLINGS, RENTS, AND OCCUPATION. With regard to cost it has been the wish of the London County Council to provide these dwellings at the lowest possible rate, and, if possible, at such rates as the persons who have been turned out of the unwholesome dwellings could afford to pay. In some cases this object has been attained, in other cases it has not been possible to attain But there is another obstacle to letting these dwellings to the class of persons that have been turned out. In many cases the people have been so long accustomed to live in dirty rooms that they could not be induced to keep these rooms clean, nor would they desire to live in rooms of this class. In fact they very rarely apply for these dwellings, and as many months must elapse between the time when they are turned out of the unwholesome dwellings and the time the new dwellings are ready, they have generally succeeded in establishing themselves in other houses of a description somewhat similar to those they have lived in. The new dwellings are, however, always let to persons of the working class, and it is hoped that in the course of a few years the unwholesome dwellings will be

entirely swept away.

The persons to whom the new dwellings are let usually earn about 21s. per week, which is the rate of wages usually earned by messengers, labourers, &c. The average cost of the Council's buildings containing dwellings is £80 per room, which is considerably more than artisans' dwellings built by private societies have cost during several years past. The cost of building has, however, very much increased within the last two or three years, and the old artisans' dwellings companies have for the present ceased to build. The London County Council are, however, able to expend more money than a private society can afford to spend for dwellings of a similar kind, because they can borrow money at 3 per cent.—which is a very low rate of interest.

Associated dwellings.—Upon consideration of the whole question, it is thought that the Council should in the future provide a considerable number of dwellings of a cheaper kind than those which they have hitherto built.

It will be remembered that the dwellings which I have described are "self-contained" or "complete" dwellings, having their own sculleries and w.c.'s, but those which I am about to describe are called "associated" dwellings.

In them each separate dwelling will generally consist of a living-room with one bedroom, or a living-room with two bedrooms; but it is probable that a few single-room dwellings may be provided, and it may be convenient in special cases to attach three bedrooms to a living-room.

In these buildings there will be a common scullery for the use of all the dwellings on one floor. In this scullery a sufficient number of sinks will be provided, and from it the w.c.'s for women and young children will be approached; w.c.'s for men will be provided in another place. All these

are shown upon the drawings.

It will be possible to provide facilities for washing clothes in connection with the common sculleries, or in washlouses built upon the tops of these dwellings; but no decision upon this point has been arrived at, and it is possible that a laundry may be built in a central position upon the Boundary Street area for the use of the whole of the dwellings. In that case no arrangements for washing clothes will be provided in any other dwellings that may in future be built upon this area.—Thos. Blashill.

LEGAL.

District Surveyor's Requisition Non-compliance.

LEGG U. SILK.

A similar point to that decided in Wallen v. Lister, the judgment in which will be found reported verbatim at page 411, came before Mr. Haden Corser at the North London Police Court on the 7th inst., Mr. George Legg F., district surveyor for Hackney, being the plaintiff, and Messrs. Silk & Son, builders, of High Street, Homerton, detendants. According to the Law Journal the defendants were summoned "for that they did, contrary to the Metropolitan "Building Act 1855, ss. 38, 41, cut into the party-wall between Nos. 413 and 415 Mare Street, Hackney, by inserting "a rain-water pipe without previously giving notice to the district surveyor." Further, the summons charged the defendants with omitting to open up the work for the inspection of the district surveyor, as required by section 45 of the Act.

Mr. W. E. Windsor defended, and raised the preliminary objection that two offences were named in the one summons.

Mr. Haden Corser said that one offence must be omitted, and Mr. Legg said that he would withdraw that part relating to the notice, as the other matter was more important. The Act gave him power to order the opening up of the work, and the defendants had put him off and failed to comply with his notice. On June 14 he discovered men at work under the defendants' direction cutting into the party-wall between the two houses and inserting drainpipes. He complained that he had received no notice of the work. Next day the defendants sent him notice. Witness then demanded plans. A few days after he inspected the place again and found that the bricks had been reinstated. He told the defendants to open the wall. They said they would have to get the consent of the owner. Then, after saying that the wall should be opened, and making an appointment, they said that the owner would not give his consent, and since then the witness had been unable to inspect what had been done.

Mr. Windsor: You gave the defendants forty-eight hours' notice to open the work directly you discovered the irregularity, and yet you wait nearly three months before you come to this court and ask the magistrate to enforce it by thing the defendants £20. In the meantime the defendants have left the premises, and have no control whatever over them. Mr. Windsor referred to the case of Smith v. Legg,* in which a decision of Mr. Haden Corser in favour

of the district surveyor in similar circumstauces had been reversed by the Queen's Bench Division.

Mr. Haden Corser thought that that case governed the present one. The Queen's Bench Division had decided that if the work had been completed the district surveyor had no remedy.

Mr. Windsor: It decided that the district surveyor must be always on the alert to discover an irregularity and nip it in the band.

it in the bud.

Mr. Haden Corser: A thousand district surveyors could not do that. In my opinion this decision places a premium on law-breaking. All that a builder has to do where there is an irregularity is to keep quiet until the work is completed, and then the district surveyor has no remedy.

Mr. Windsor: But the district surveyor is protected by the section imposing a penalty of ±20 for not giving notice, and Mr. Legg has elected to withdraw that part of the

summons.

Mr. Haden Corser: It is an omission in the law that

must be remedied. I must dismiss the summons.

Under the new London Building Act 1894, which has received the Royal Assent and comes into force on January 1, 1895, provision is made for cases where the builder has left the building on which an irregularity under the Act has been committed; so that the life of the cases above referred to will not be long.

The Building Line.

The Law Journal, commenting upon the recent decision of Mr. Justice Mathew and Mr. Justice Kennedy in Thorold v. The North Ormesby Local Board, reported in these columns at p. 631, observes upon the difficulty of getting at the true inwardness of the Public Health (Buildings in Streets) Act 1888. Section 3 of that Act, which superseded section 157 of the Act of 1875, causes much perplexity when old lanes or highways, with few or no buildings on either side, are in process of conversion into streets in the ordinary sense, such as are contemplated by section 157 of the Act of 1875 (Robinson v. The Barton Local Board, 50 Law J. Rep. Chanc. 226; L. R. 8 App. Cas. 798). It has therefore caused a good deal of litigation, and the tendency of the decisions is to restrict its operation so as not unduly to affect the rights of building owners or place their land extra commercium. In The Ravensthorpe Local Board v. Hinchcliffe, 59 Law J. Rep. M. C 19; L. R. 24 Q. B. Div. 168, it was decided that the section did not apply where the house or building on either side was merely begun and its walls had not been raised to any substantial height. In The Attorney-General v. Edwards, L. R. (1891) 1 Chanc. 194, a somewhat special case, Mr. Justice Romer appears to have regarded a public institution as not being a building to the line of which a building owner must conform: and now, in Thorold v. The North Ormosby Local Board ante, p. 631. Mr. Justice Mathew and Mr. Justice Kennedy seem to have held that section 3 does not apply unless there is a continuous line of building. In that case the appellant had built himself a house in a lane on the side hitherto unbuilt upon, and had sent in plans for a row of cottages on the same side as his house, but ninety yards distant. The local authority rejected his plans for the cottages, purporting to act under section 3, but the Court held this rejection, under the circonstances, to be mere caprice, and issued the mandamus to approve the plans. The decision does not purport to affect cases where a regular laying-out of ground for building purposes is undertaken, nor to decide what constitutes "laying-out": and it must also be acted upon subject to section 157 of the Act of 1875 and by-laws as to new streets thereunder, for it may be feasible for a local authority to prevent houses being built on land which falls within the prescribed width of a new street, even when it is impossible to prescribe the position of the houses by reference to adjoining buildings.

^{*} The R.I.B.A. Journal, Vol. IX, N.S. 192, 228.



SESSIONAL STATISTICS.

SUMMARY OF PROCEEDINGS.

October 2nd.-Fifth Meeting of the Council 1893-94

(20 members present).

October 9th.—Second Meeting of the Professional Practice Committee of Council (5 members present).

October 11th.—Second Meeting of the Alliance Committee of Council (3 members present).

October 12th.—Third Meeting of the Art Standing

Committee (7 members present).

October 13th .- FOURTH MEETING OF THE LITERATURE STANDING COMMITTEE (5 members present).

October 16th.-Sixth Meeting of the Council (23 mem-

bers present).

Oetober 17th.—Second Meeting of the Practice Stand-

ING COMMITTEE (16 members present).

October 23rd.—First Meeting of the Finance Committee of Council (9 members present).

October 24th.—Second Meeting of the Board of Exami-NERS (ARCHITECTURE) (13 members present).

October 30th.—Seventh Meeting of the Council (13

members present).

October 31st.—First Meeting of the Nominations for Fellowship Committee of Council (5 members present). November 1st.—Second Meeting of the Science Standing Committee (13 members present).

November 2nd.—Fourth Meeting of the Art Standing

Committee (9 members present).

November 2nd.—Third Meeting of the Board of Exami-NERS (ARCHITECTURE) (9 members present).

November 3rd.—Eighth Meeting of the Council (13

members present).

November 6th.—Ninth Meeting of the Council (18 members present).

November 6th. First General Meeting (Ordinary), Mr. J. Macvicar Anderson, *President*, in the Chair.—Nomination of candidates for membership. The York Architectural Society and the Cardiff, South Wales, and Monmouthshire Architects' Society admitted to alliance. Opening Address of the Session, by the President. Vote of thanks.

Minutes, page 26.

November 10th.—Fifth Meeting of the Literature STANDING COMMITTEE (5 members present).

November 14th.—Third Meeting of the Practice Stand-

ING COMMITTEE (11 members present).

November 14th & 15th.—Preliminary Examination in London, Manchester, and Bristol to qualify for registration as Probationer.

November 14th, 15th, & 16th.—Intermediate Examination in London to qualify for registration as Student.

November 16th.—Fourth Meeting of the Board of Examiners (Architecture) (16 members present). November 20th.-Tenth Meeting of the Council (22

members present).

Third Series. Vol. I, No. 20, 18 Oct. 1894

November 20th.-Second General Meeting (Ordinary), Mr. J. Macvicar Anderson, President, in the Chair.-Statement respecting November Examinations and announcement of names of gentlemen registered as Students. Paper by Mr. Falkener: The Grecian House as DE-SCRIBED BY VITRUVIUS, read by the Secretary. Discussion. Minutes, page 60.

November 27th to December 2nd.—Examination, in London and Manchester, to qualify for Candidature as Asso-

December 1st .- Fifth Meeting of the Board of Exami-NERS (ARCHITECTURE) (15 members present).

December 2nd.—Sixth Meeting of the Board of Exami-NERS (ARCHITECTURE) (12 members present).

December 4th.-Eleventh and Twelfth Meetings of the Council (18 members present at each).

December 4th.—Third General Meeting (Business), Mr.

J. Macvicar Anderson, President, in the Chair.—Nomination of candidates for membership. Announcement that by a resolution of the Council under the terms of By-law 20 two Fellows had been suspended from Membership until the 31st inst., and that two Fellows and two Associates had ceased to be members of the Royal Institute. Announcement re Exhibition in Meeting Room of Mr. Falkener's paintings and drawings. Vote of thanks to Mr. Falkener. Announcement of names of gentlemen registered as Probationers. Election of members. Questions by Mr. Sydney Vacher [A.] respecting the Examinations, and by Mr. William Woodward [A.] respecting the delay in the revision of the Conditions of Builders' Contracts, replied to by the President and Mr. Edwin T. Hall [F.] respectively. Minutes, page 86.

December 6th.—Third Meeting of the Science Stand-

ING COMMITTEE (13 members present).

December 7th.—Fifth Meeting of the Art Standing Committee (7 members present).

December 8th.-Sixth Meeting of the Literature Standing Committee (5 members present).

December 11th.—Second Meeting of the Finance Com-

mittee of Council (4 members present). December 13th.—Seventh Meeting of the Board of

Examiners (Architecture) (13 members present). December 18th.—Thirteenth Meeting of the Council (19

members present).

December 18th.—Fourth General Meeting (Ordinary), Mr. J. Macvicar Anderson, President, in the Chair. Nomination of candidates for membership. Announcement of names of gentlemen who had passed the Examination to qualify for Candidature as Associate. Paper by Mr. William Simpson, R.I. [H.A.]: THE CLASSICAL Influence in the Architecture of the Indus Region AND AFGHANISTAN, read by the Secretary. Discussion. Minutes, page 125.

January 1st.—Fourteenth Meeting of the Council (17 members present).

January 2nd.—First Meeting of the Studentships and Prizes Committee (16 members present).

January 3rd.—Fourth Meeting of the Science Stand-ING COMMITTEE (13 members present).

January 5th to 15th.—Exhibition of Drawings for Stu-DENTSHIPS, PRIZES, &c.

January 8th.-Fifteenth Meeting of the Council (16 members present).

January 8th.-Fifth General Meeting (Business), Mr. J. Macvicar Anderson, President, in the Chair.—Decease announced of Baron von Hasenauer [Hon. Corr. M. Vienna], Lord Crewe [H.A.], and William John Mettam [A.]. Election of members. Announcement of the award of the Studentships and Prizes for 1893-94. Paper, by Mr. Maurice B. Adams [F.]: BLICKLING HALL, NORFOLK: ITS DRAINAGE, WATER SUPPLY, AND OTHER Works. Discussion. Minutes, page 195. 4 Y

January 11th.—Sixth Meeting of the Art Standing Committee (6 members present).

January 12th.—Seventh Meeting of the Literature STANDING COMMITTEE (10 members present).

January 15th.-Sixteenth and Seventeenth Meetings of the Council (19 and 21 members present).

January 15th. - Sixth General Meeting (Ordinary) .-Decease announced of César Daly [Hon. Corr. M. Paris; Royal Gold Medallist 1892]. Address to Students by the President on Some Aspects of the Mutual Rela-TIONSHIP OF ARCHITECTS; and a REVIEW OF WORK OF THE TRAVELLING STUDENTS 1893, AND OF THAT SUB-MITTED FOR STUDENTSHIPS AND PRIZES 1894, by Alex. Graham, Vice-President. Presentation of Medals and OTHER PRIZES. Minutes, page 198.

January 16th.-Fourth Meeting of the Practice Stand-ING COMMITTEE (15 members present).

January 24th.—Fifth Meeting of the Science Standing Committee (9 members present).

January 26th.—Eighth Meeting of the Board of Exa-MINERS (ARCHITECTURE) (5 in inbers present).

January 29th. Eighteenth Meeting of the Council (19

members present).

January 20th. - Seventh General Meeting (Ordinary), Mr. J. Macvicar Anderson, *Presibat*, in the Chair. - Paper by Professor Kerr [F.].: Observations on the PLAN OF DWELLING HOUS S IN TOWNS. Discussion. Minutes, page 240.

January 30th. - Fifth Morting of the Practic: Standing Committee (11 members present).

February 6th. Sixth M 1 (186 of the Pra tite Standing Committee (9 members present).

February 7th. Sixth Mi Ting of the Stence Standing Committee (12 members present).

February 8th. Seventh Moring of the Art Syndam Commettee (8 members present).

February 8th. - Seventh Mounts of the Practic Stand-ING COMMITTIE (S trembers present)

February 9th. Eighth Mediting of the Literature STANDING COMMITTEE (13 members present).

February 12th. Nineteenth Meeting of the Council (22 m unbers present).

February 12th. - Eighth General Meeting (Ordinary). Mr. J. Macvieur Anderson, Praider, in the Chair Nomination of candidates for admission. Respector to petition the House of Commons against the Lopdon Streets and Buildings Bill promoted by the London County Council. Resolution to convene a Goreal Meting for the purpose of discussing points of the Boltan I alvising thereon. Announcement that the Consillaroposed to submit to Her Majeso the Que a the name of Sir Frede ie Le Jaton, P.R.A. H.A. as the R val Gold Me Iallis 1894. Pap rs b. Mr. C. H. Towns al F., Mr. James C. Powell, Mr. G. Schint, and Mc. N. H. J. Westlake, on Mosar and F. and Discussion.

February 14th.—NINTH MEETING OF THE BOARD OF EXA-MINERS IN ARCHITECTURE (10 relighers present).

February 20th & 21st. Prefaminary Exomation in London, Manchester, and Bristol, to qualify for registration as Probationer.

February 20th, 21st. & 22 tl. Intermediate Examination in London to qualify for registration as Socient.

February 22nd.—Tenth M Ting of the Board of Exa-

MINERS (Architecture) (10 me nbers present). February 22nd.—Convering reference Practice Standing COMMITTEE AND THE INSTITUTE OF BUILDE'S 4 members

R.I.B.A. present). February 23rl.-Strond Meeting of the Prizes and STUDENTSHIPS COMMITTEE (5 m unbers present.

February 26th .- Twentieth Meeting of the Council (11 m mbers present). February 26th. - Ninth General Meeting (Ordinary),

Mr. J. Macvicar Anderson, President, in the Chair. Mr. T. W. Marks elected Associate-Auditor in place of Mr. G. A. T. Middleton resigned. Announcement of names of gentlemen registered as Students. Papers by Professor T. Roger Smith [F.], Professor J. A. Fleming, M.A., D.Sc., F.R.S., Professor G. Carey Foster, F.R.S., and Professor T. Hudson Beare, B.Sc., on THE NEW Engineering and Physical Laboratories at University College, London. Discussion. Minutes, page 319.

February 27th .- ELEVENTH MEETING OF THE BOARD OF EXAMINERS (ARCHITECTURE) (9 members present).

March 5th to 10th.—Examination in London, Glasgow, Manchester, and Bristol to qualify for candidature as

March 9th .- Twelfth Meeting of the Board of Exa-MINERS (AR MITECTULE) (14 members present).

March 9th.—NINTH MEETING OF THE LITERATURE STANDING Committee (7 members present).

Murch 10th. Thirteenth Meeting of the Board of

March 12 h .- Twenty-first Meeting of the Council (21

Miren 12th. Special General Meeting, Mr. J. Mae-vicar Anderson, Prosificat, in the Chair. Recommendation of the Council that the Royal Gold Medal 1894 bc awar led to Sir Frederic L ight m, Bart., P.R.A., adopted. Minutes, page 360.

Marc' 12//.- Tenth General Meeting (Business), Mr. J. Mary'e r Ander a. President, in the Chair. - Decease anne new of A. H. E. In on Is F. And F. And we Heiton [F], and J. B. Mi che Withers F. Am uncement that by a resolution of the Concil under the terms of Bybe Members of the Roy, I Institute. Announcement of n meset and an are istend as Probationers. Election of circuits. R. M. i. c. i. Loxion Stim is and Build-in s Buildy All in Circs. F. . Debate on the same and adjoin consult! M. ich 1941. Minutes, page 360. Marc. 140. Same in M. i. on in . Science Standing

 $M_{\rm crit} = 10$ %. From N in M and or the Board or Experiments (V) in Eq. (8) from errors (d), $M_{\rm crit} = 10$. Twenty-second Meeting of the Council

Macvice Anders u. Problem, in the Chair. Decease an model of Francis Mark and Risco. A. and Samuel II . Anomacom at of a mes of gentlemen who halmassel to commutation to qualify for Candillature British & Line (1) the Lord N Strept's and British & Line consuled. Minners, page 409.

111 / 15 11 - 11.

A . I. . I. MIDIE OF THE SIENCE STANDING C T T THE HILL THE TALE

Am | 5 | .- Third Meeting of the Professional Practice Committee of Council 3 members present).

April 518. - Easieu Meeting of the Art Standing Com-MITTE (7 13001 1-11 = 11).

1 ri (h. Third Meeting of the Finance Committee of Council 4 in all rs present).
April 197.—Twenty-fourth Meeting of the Council (19)

merchers present).

Arril 911.—Eleventh General Meeting (Ordinary), Mr. J. Maevi at Andrson, Prostat, in the Chair.—Paper by Mr. Thomas Bashill F.: The Council Chamber AND ITS A ESSO AFS. Discussion. Minutes, page 409.

A r'l 10/h.-Et HTH MFETIN, OF THE PRACTICE STANDING

A ri 13' .- Tenth Meetin, of the Literature Stand-in Count, le 6 moult is present.

April 20 .- Twenty-fifth Meeting of the Council (11

April 23rd.—Twenty-sixth Meeting of the Council (17

members present).

April 23rd.—Twelfth General Meeting (Ordinary), Mr. J. Macvicar Anderson, President, in the Chair.—Decease announced of William Haywood [F.]. Papers by Mr. John Belcher [F.], Mr. Voysey, Mr. Aldam Heaton, and Mr. Caröe, M.A. [F.], on Furniture: Domestic and Ecclesiastical. Discussion. Minutes, page 438.

May 2nd.—Ninth Meeting of the Science Standing

Committee (9 members present).

May 3rd.—Ninth Meeting of the Art Standing Com-MITTEE (7 members present).

May 7th.—Twenty-seventh Meeting of the Council (20

members present).

May 7th.-Fifty-ninth Annual General Meeting, Mr. J. Macvicar Anderson, President, in the Chair. -- Nomination of candidates for admission. Annual Report of the Council received and adopted. Appointment of Auditors 1894-95. Appointment of Scrutineers to direct the election of the Council and Standing Committees. Announcement that the Sixtieth Anniversary of the First General Meeting would be celebrated by a Dinner on Monday, 2nd July. Minutes, page 467.

May 9th.-Ninth Meeting of the Practice Standing

Committee (10 members present).

May 11th.—ELEVENTH MFETING OF THE LITERATURE STAND-ING COMMITTEE (6 members present).

May 22nd.—Tenth Meeting of the Art Standing Com-

MITTEE (8 members present).

May 28th.—Twenty-eighth Meeting of the Council (16 members present).

May 28th.—Fourteenth General Meeting (Ordinary), Mr. J. Macvicar Anderson, President, in the Chair.— Paper by Mr. J. Tavenor Perry [A.]: THE INFLUENCE OF THE HANSEATIC LEAGUE ON THE ARCHITECTURE OF NORTHERN EUROPE. Discussion. Minutes, page 515.

June 6th.- Tenth Meeting of the Science Standing

Committee (8 members present).

June 11th.-Twenty-ninth Meeting of the Council (16

members present).

June 11th.-Fifteenth General Meeting (Business), Mr. J. Macvicar Anderson, President, in the Chair.—Decease announced of Arthur Cawston [A.], and vote of sympathy and condolence with his family passed. The Reports of the Scrutineers appointed to direct the election of the Council and Standing Committees for 1894-95 read; and the same declared to be duly elected. Election of members. Resolution expressing the satisfaction of the Royal Institute that the position of Architecture would be duly recognised in the proposed Teaching University for London by the inclusion among the Senate of a member to be appointed by the Institute, and that the Institute would render every assistance in its power toward the establishment of such University. Questions by Mr. Bernard Dicksee [A.] and Mr. Henry Lovegrove [A.] regarding the qualification and election of Fellows replied to by President, and matters connected with them Minutes, page 541. discussed.

June 18th.—First Meeting of the Council 1894-95 (14

members present).

June 21st.—First Meeting of the Art Standing Com-

MITTEE 1894-95 (6 members present).

June 22nd.—First Meeting of the Literature Stand-ING COMMITTEE 1894-95 (7 members present).

June 25th.—Second Meeting of the Council (17 mem-

bers present).

June 25th.—Sixteenth General Meeting (Ordinary), Mr. F. C. Penrose, F.R.S., President, in the Chair.— Decease announced of W. Calder Marshall, R.A. [H.A.]. Vote of condolence with the Central Society of French Architects on the assassination of President Carnot. Presentation of the Royal Gold Medal to Sir Frederic

Leighton, P.R.A. [H.A.]. ADDRESS BY THE PRESIDENT, and Sir Frederic's Reply. Minutes, page 571.

July 2nd .- Festival Dinner at the Whitehall Rooms to celebrate the Sixtieth Anniversary of the First General Meeting, held 2nd July 1834.

July 4th.-First Meeting of the Science Standing Committee 1894-95 (10 members present).

July 13th.—Second Meeting of the Literature Stand-ING COMMITTEE (8 members present).

July 19th.—First Meeting of the Board of Examiners

(Årchitecture) 1894-95 (11 members present).

July 30th.—Third Meeting of the Council (12 members present).

July 31st.—First Meeting of the Practice Standing Committee 1894-95 (9 members present).

Otcoler 1st.-Fourth Meeting of the Council (12 members present).

October 11th. Second Meeting of the Science Standing Committee (13 members present).

October 12th. Third Meeting of the Literature Stand-ING COMMITTEE (7 members present).

October 15th.—Fifth Meeting of the Council (17 members present).



THE REFERENCE LIBRARY.

[Additions: 7th June 1893—29th September 1894.]

DONATIONS.

Drawings, Prints, Photographs, &c.

ADAMS (M. B.) Fellow—Architectural Association— Illustrations of excursion in Norfolk and Suffolk 1893. 10 sheets. E. Lond. 1893 Illustrations of excursion in Somersetshire 1892.

8 sheets. E. Lond. BLICKLING HALL-View of S. front. E. Lond. 1893

BOLTON (A. T.) Associate, Soane Mcdallist 1893—Design for railway terminus. 6 sheets. D. & E. Lond. 1893 GEYMÜLLER (H. DE) Correspondant of the Institut de France, Hon. Corr. Member—Specimens of thesaurus of architecture. 7 sheets. E. ----

GRATTON (F. M.) Fellow—China—Views.

P. ob. fo. HERTS (H. B.)-New York-Columbian memorial arch. E. ___ [1893]

HILL (G. S.) Institute Silver Medallist 1893-Glasgow Cathedral crypt. 5 sheets. E.

HUNT (R. M.) Hon. Corr. Member (Royal Gold Medallist 1893)—Chicago—World's Exposition: views. 3 sheets.

LOW (G.) Fellow-London-St. Martin's in the Fields: plans, elevations, section. 2 sheets. D. —— 1839 St. Mary Woolnoth: plans, elevations, sections, details. 11 sheets. D. --1844

RIMMER (H.) Soane Medallist 1892-Design for chapterhouse. 2 sheets. E. Lond. 1892

SALOMONS (Sir J.) - Sydnex-Views of public and private P.

buildings. 33 sheets. P SCOTT (W.)—Rome—View from Ponte Sisto.

E. TONGE (J. H.) Soane Medallist 1894—Study for a college. 3 sheets. E. Lond. 1894

WHITE (William H.) Fellow & Secretary—India—Græco-Buddhist remains. 12 sheets. P. -

WOODWARD (W.) F.S.I., Associate—London—Proposed improvements. 5 sheets. E. Lond. 1894 Total: -1 volume; 110 sheets.

Bust, Medal, &c.

CATES (Arthur) Past Vice-President—Bronze Medal. The Arthur Cates Prize.

CORPORATION OF THE CITY OF LONDON-Bronze Medal. Commemorative of visit of King and Queen of Denmark.

PIRCH (G. vox)—Bust: Sir II. Jones. C. B. Birch sculp. SALOMONS (E.) Fellow-Manchester Society of Archi-Tects-Impression of seal.

Total: 1 Bust; 3 Medals &c.

Books, Pamphlets, &c.

ADAMS (H.) M.Inst.C.E.-Practical designing of strucso. Lond. 1894 tural ironwork. AGENT-GENERAL FOR NEW SOUTH WALES-

Sydney - Dept. of Pub. Wks.: Report.

pain, fo. Sydney 1893 AlTCHISON (G.) A.R.A., Past Vice-President-GAR-TRINGEN (H. von) & OTHERS -Ausgrabungen im theater pam. la. 80. Athens 1894 von Magnesia. HUMANN (C.) & DÖRPFELD (W.) -- Ausgrabungen in Tralles. pam. so. Athens 1893

ALLEN (G.) the Publisher Acland (Sir H. W.) & Ruskin (J.) The Oxford Museum. sm. 80. Lond. 1893 ANDERSON (J. Macvicar) President CHICAGO-World's

Exposition: catalogue of British section.

sm. so. Lond. 1893 ANGEL (R. J.) Associate—Lectures on sanitary plumbing. So. Lond. 1893

Technical ANONYMOUS — Manchester — Municipal School: syllabus. 80. Manch. 1893]

Perrix (G. S.)—Australian timbers.

pam. sm. So. Sydney 1893 AUSTRALASIAN BUILDER HENDERSON (A.)-Modern pam. sm. 80. Sydney 1894

BABCOCK (C.) M.A., Hon. Corr. Member-Van Betat (H.) - Greek lines. 80. Boston 1893

BAKER (A.) R.C.A., Fellow-St. Silin church.

pam. 80. BARRY (J. W.) M.Inst.C.E., Hon. Associate - The Tower la. 80. Lond. 1894 Bridge.

BARTH_LEMY (A.)-L'organisation des arts.

pam. 8o. Chartres 1893 BATSFORD (B. T.)—Palliser, Palliser, & Co.—Commonsense school architecture. la. 40. N. York 1889

PATSFORD (B. T.) the Publisher Hamus (T.)—Three periods of English architecture. la. 80. Lind, 1894 Hellyer (S.S.) - Plumber and sanitary houses.

5th ed. la. 8o. Lond. 1893 Marstand (E.) - Rules affecting building in London.

mo. Lond. 1893 Spiers (R. P.) Orders of architecture. 2nd ed.

fo. Lond. 1893 80. Lond. 1893 STOCK (C. II.) - Shoring. 2nd ed. See Prentice (A. N.)

BAYNE (R. R.) Associate - British Columbia - Institute of Architects: professional practice.

pam. fo. BEAZELEY (A.) M.Inst.C.E.-FARRELL (J.)-Pyrimont 120. Lond. 1860 asphalte. Wilson (J. V.)—Lubrication. pam. 8o. Lond. 1893 BELCHER (J.) Fellow-London-Institute of Chartered

Accountants. fo. L nd. 1893 BELTRAMI (L.) Hon. Corr. Member—Castello di Milano.

Fumagalli (C.)—Castello Malpaga. la. 80. Milan 1893 Milan-Restauro dei piloni nel duomo.

la. 40. Milan 1893 BERLIN ARCHITEKTEN VEREIN-FRITSCH (K. E. O.) -Kirchenbau des Protestantismus. sm. fo. Berlin 1893 BOLTON (A. T.) Associate, Soane Medallist 1893—Report of tour. MS. fo. [Lond. 1894] BOMBAY GOVERNMENT -- Archæological survey of Western India: Progress report 1891-92.

pam. fo. Poona 1892 BONI (G.) Hon. Corr. Member—The Roman marmorarii.

pam. 80. Rome 1893 pam. fo. Rome 1894 Duonio di Parenzo. BOROUGH SURVEYOR, STOCKPORT-House drainage.

pam. fo. [Stockport] 1894

BULS (C.)-Esthétique des villes.

pam. la. 80. Brussels 1893 pam. la. 80. Brussels 1893 Pèlerinage d'Olympie. BUMPUS (Messrs.) the Publishers-Heaton (J. A.)-Furniture and decoration in England. la. fo. Lond. 1889 BUTLER (Rev. M. R.)—BYRNE (P. J.)—Hints on villas, pam. 12o. Bristol -

CAROE (W. D.) M.A., F.S.A., Fellow = CAROE (W. D.) & Gordon (E. J. A.) - Sefton. la. 8o. Lond. 1893 CATES (Arthur) Past Vice-President - BEACHCROFT (R. M.)

Overcrowded London. pam. 8o. [Lond.] 1893 BUDA-PESTH - Magyar Hirlap.

pam. 8o. Buda-Pesth 1894

Kresz (G.) - Voluntary Salvage Society. pam. 80. Buda-Pesth 1894

CONGRESS OF HYGIENE & DEMOGRAPHY-List of mempam. 80. Buda-Pesth --bers. Order of the lectures. pam. sm. 80. Buda-Pesth 1894 Journal. Nos. 1, 2, 4 8.

pams. la. 40. Buda-Pesth 1894 CAVANAGH (M. F.) Associate - Adelande—South Australian Institute of Architects: Rules.

pam. 80. Adelaide 1886 pam. fo. _ General conditions of contract.

CHANCELLOR (F.) F.S.I., Fellow-Felsted Natural History Society: report. pam. So. Chelmsford 1894 CAWSTON (A.) Associate Street improvements in Lon-

4o. Lond. 1893 CHAPMAN & HALL, Ltp. (Messrs.) the Publishers-HATTON (R. G.) - Elementary design.

sm. 8o. Lond. 1894 sm. 8o. Lond. 1894 RYAN (C.) - Egyptian art. CLOQUET (L.) Principes du beau. pam. 80. Ghent 1894 COLE (G. A. J.) F.G.S.—Irish building stones.

pam. So. Dublin 1893 COLE (R. Langton) Associate British Almanac & Comsm. 8o. Lond. 1893 par on 1894.

COOKL (W. G.) Associate - Parochial rating. 120.

CORDER (J. S.) - Christchurch or Withepole House.

sq. fo. Ipswich 1893 CORNISH (J. E.) the Publisher-Chowther (J. S.)-Manchester cathedral. fo. Manch. 1893

CROSBY LOCKWOOD & SON (Messrs.) the Publishers-ALLEN (J. P.) - Building construction. So. Lond. 1893 PRICE AND PRICE-BOOK—Builder's and contractor's (Lockwood's). sm. 80. Lond. 1894 sm. 8o. Lond. 1893 SUTCLIFFE (G. L.)—Concrete. TARN (E. W.) - The mechanics of architecture. 2nd ed.

sm. So. Lond. 1894 DELANO (W. H.) Assoc. M.Inst.C.E.—Asphalt and bitusm. So. Lond. 1893

men. DEPARTMENT OF REVENUE & AGRICULTURE, CAL-CUTTA-Taw Sein-Ko-Kalyani inscriptions of Dhampam. la. 40. Bombay 1893 macheti.

EDITORS AND PROPRIETORS-American Architect. (Imperfect.) 1893-94 1893-94 Architect. 1893-94 Architect. Builder & Decorator. (Imperfect.) 1893-94 Architectural Record. 1893-94 Architecture & Building. 1893-94 Australasian Builder. (Imperfeet.) 1893-94

British Architect.

EDITORS (AND DRODDIETORS (Associated))	HADDIS (T.) Follow Cruston Anditorium
EDITORS AND PROPRIETORS (continued)— Builder. 1893-94	HARRIS (T.) Fellow—Chicago—Auditorium. ob. fo. ———
Builders' Reporter. 1893–94	HEBB (J.) Fellow—Architecture—Miscellaneous pam-
Building & Engineering Journ. (Imperfect.) 1893–94 Building News. 1893–94	phlets. (1 vol.) 80. v.p. 1833-61 Boxi (G.)—The Roman marmorarii. pam. 80. Rome 1893
California Architect. 1893–94	Boricheski (C.)—La maison de l'homme.
Canadian Architect & Builder. 1893–94	pam. sm. 80. Paris 1888
Construction Moderne. 1893–94 Contract Journal. 1893–94	Herz (M.)—La polychromie en Égypte. pam. 80. Cairo 1893
Engineering Record. 1893–94	LITTLEHALES (H.)—Romsey Abbey.
Estates Gazette. 1893-94	pam. sm. 80. Romsey 1886
Fireman. 1893–94 Furniture & Decoration. (Imperfect). 1893–94	Robinson (W.)—Holborn to the Strand. pam. 40. Lond. 1893
Gaceta de Obras Públicas. (Imperfect.) 1893–94	Soc. for Prot. of Anc. Bldgs.—Report.
Indian Engineer. 1893-94	sm. 80. Lond. 1893
Industries & Iron. (Imperfect.) 1893–94 Inland Architect. 1893–94	Art of leaving things alone. pam. sm. 8o. Lond. —— Treatment of wall-surfaces. pam. sm. 8o. Lond. ——
Irish Builder. 1893–94	Westminster Abbey. pam. sm. 8o. Lond. ——
Journal of Decorative Art. 1893–94	HENDRICKS & Co. (Messrs.) the Publishers—Architects'
Machinery Market. 1893–94 Notes & Queries. 1893–94	&c. directory of America. la. 80. N. York 1893, 1894 HERMANT (A.) Hon. Corr. Member—L'architecte devant
Plumber & Decorator. 1893–94	le code civil. 80. Paris ——
Recueil d'Architecture. 1893-94	HERTS (H. B.)—CHICAGO—World's Exposition: Art port-
Semaine des Constructeurs. 1893–94 Surveyor. 1893–94	folio. pam. ob. la. 8o. Chicago —— HILL (G.)—Modern office buildings. pam. la. 8o. N. Y. 1893
EGYPTIAN GOVERNMENT—Cairo—Concours pour	HIRTH (Herr G.) the Publisher—Der Formen Schatz.
l'érection d'un musée. pam. 80. Cairo 1894	1893, parts 2, 3, 6-12; 1894, parts 1-9.
ELECTRICAL INSTALLATION Co. Ltd.—Electric light and power. pam. 8o. Lond. —	la. 4o. Munich 1893–94 HOEPLI (U.)—Arte Italiana. Vol. iii. No. 1. fo. Milan 1894
EMDEN (T. W. L.)—Betterment. pam. 12o. Lond. 1894	HUDSON (A. A.)—Law of building and engineering con-
ENGINEER (THE) the Publisher—Turr (J. E.)—The	tracts. la. 80. Lond. 1891
Tower Bridge. 40. Lond. 1894 FAIJA (H.) M.Inst.C.E., Hon. Associate—Portland cement.	Legal advice to engineers, architects, &c. pam. sm. 80. Lond. 1892
pam. fo. Lond. 1893	INDIA OFFICE—India—Cunningham (Sir A.)—Mahâbodi.
STEPHENS (F. G.)—Normandy. 80. Lond. 1865	la. 4o. Lond. 1892 Epigraphia Indica. Parts 12 & 13. la. 4o. Lond. 1892–93
FALKENER (E.)—Games ancient and oriental. 80. Lond. 1892	Maisey (F. C.)—Sánchi. la. 40. Lond. 1892
FERREE (B.)—Architectural education for America.	INGELOW (B.) Fellow – Murray (J. A. H.)—New English
pam. la. 80. N. York 1894 pam. la. 80. N. York 1894	Dictionary. Parts 7 & 8; vol. iii. 2 parts. la. 4o. Lond. 1891–93
High building. la. 80. N. York 1894	INSTITUTE OF CHARTERED ACCOUNTANTS—
CLOQUET (L.)—Mélanges. pam. 40. Ghent 1894	Belcher (J.) - Institute of Chartered Accountants.
FLETCHER (Prof. B.) Fellow—London—King's College— Index to classes. pam. 80. Lond. 1894	fo. Lond. 1893 INSTITUTION OF CIVIL ENGINEERS—Anderson (W.)
Syllabus. pam. 80. Lond. 1894	—Interdependence of abstract science and engineering.
FLETCHER (B. F.) Associate, Godwin Bursar 1893—	pam. 8o. Lond. 1893
Godwin Bursary: Chicago Exposition. Text MS. fo. [Lond.] 1893	Hopkinson (J.)—Relation of mathematics to engineering. pam. 80. Lond. 1894
Illustrations 4 books la. fo. v.p. v.d.	International Maritime Congress—Report &c.
FLOWER (L.) Major—River Lea. pam. 80. Lond. 1893	la. 80. Lond. 1893
FOLCKER (E. G.)—Engelska papperstapeter. pam. 40. Stockholm 1893	JOASS (J. J.) Pugin Student 1893—Report of tour. MS. 40. ——- 1893
FROWDE (H.) the Publisher—Galton (Sir D.)—Healthy	JOHNSON (W. E.) Associate—Architectural Associa-
hospitals. 80. Oxford 1893	TION—Brown Book. pam. sm. 80. Lond. 1861
Oxford — Archæologia Oxoniensis: supp. to part 2; parts 3 & 4. 80. Oxford 1893-94	JONES (H. C.) & WALLACE (G.)—London streets &c. Bill: abstract of clauses. pam. 8o. [Lond.] 1894
GOVERNMENT OF INDIA—Epigraphia Indica. Parts	KEGAN PAUL, TRENCH, TRÜBNER & Co. Ltd.
14 & 15. la. 40. Calcutta 1892 Taw Sein-Ko—Archæological tour through Ramannadesa.	(Messrs.) the Publishers—Sedding (J. D.)—Art and handicraft. 80. Lond. 1893
pam. la. 40. Bombay 1893	handicraft. 80. Lond. 1893 KEITH (J.) Assoc. M.Inst.C.E.—Houses of Parliament,
Po: u: daung inscription. pam. la. 40. Bombay 1893	heating and ventilation, pam. la. 80. Lond. 1894
GOVERNMENT OF N.W. PROVINCES & OUDH— N.W. Prov. & Oudh—Progress reports of archeo-	LANCIANI (R.) Hon. Corr. Member—Pagan and Christian Rome. 40. Lond. 1892
logical survey (17 W. A. 93.) and of epigraphical &c.	LISBON REAL ASSOCIAÇÃO DOS ARCHITECTOS E
branches $(\frac{4018}{2020}$ W. A. 92.). 2 pams. fo. Roorkee 1893	ARCHEOLOGOS PORTUGUEZES GOODOLPHIM
GRIFFIN & Co. Ltd. (Messrs.) the Publishers—Dowsing (H. J.)—Electrical engineers' price-book.	(C.)—Biografia do J. P. N. da Silva. pam. sq. fo. Lisbon 1894
sm. 8o. Lond. 1893	LONDON COUNTY COUNCIL—District surveyors: report
GRIGGS (W.) the Publisher—Journal of Indian Art. Nos. 43-48. sq. fo. Lond. 1893-94	on monthly returns. (217.) pam. fo. Lond. 1894
Nos. 43-48. sq. fo. Lond. 1893-94 HANSARD (O.) Fellow—Moore (N.)—St. Bartholomew the	London Building Act 1894. (12.) Royal Assent copy. fo. Lond. 1894
Great. sm. 80. Lond. 1892	LONGMANS, GREEN, & CO. (Messrs.) the Publishers—
PHILLIPS (F. P.)—Stoke d'Abernon. 80. [Lond.] 1892	Webb (S. & B.)—Trade unionism. 80. Lond. 1894

READE (T. M.) F.G.S., Assoc. M.Inst.C.E., Fellow-Cool-LUCAS (C.) Hon. Corr. Member-Caisse de défense pam. 80. Paris 1894 ing and shrinking globe. pam. 8o. Lond. 1894 mutuelle. Continental growth. MACMILLAN & Co. (Messrs.) the Publishers-Clark pam. So. Lond. 1894 L'pool 1893 (T. M.)—Building superintendence. 12th ed. pam. 80. 40. N. York 1894 High-level shelly sands. pam. 8o. Lond. 1893 sm. 8o. Lond. 1893 pam. 8o. Lond. 1893 LETHABY (W. R.)—Leadwork. Mountain ranges. REFORM CLUB Library catalogue. la. 80. Lond. 1894 MADRAS GOVERNMENT-Archæological survey: South REICHENSPERGER (A.) Hon. Corr. Member-Zeitschrift Indian inscriptions. Vol. ii. part 2. für christliche kunst. Vol. vi. No. 12. la. 40. – Madras 1892 Rea (A.)—Madras archieological survey: reports. (542, sm. fo. Düsselderf 1894 pams. fo. Madras 1893-94 REID (A. H.) Fellow-Johannesburg-S. African Assoc. of 543, 500, 501 Pub.) MELDAHL (F.) Hon. Corr. Member—Charlottenborg. Engineers and Architects-Proceedings and by-laws. pams. 80. Johannesburg 1893 pam. 40. Copenhagen 1892 pam. 80. Johannesburg 1894 Historische formen der holzbaukunst. Annual report. pam. sm. 80. Vienna 1892 REMINGTON & Co. Ltd. (Messrs.) the Publishers Marmorkirken i Köbenhavn. pam. la. 80. Stockholm 1893 Tollemache (B. L.)-Diderot on art and style. pain, la. 80. Stockholm 1893 Norges stavkirker. sm. 8o. Lond. 1893 RIVINGTON, PERCIVAL & Co. (Messrs.) the Publishers Dahlerup (V.) & Others - Tegninger af ældre Nordisk architektur. S. 1. la. fo. Copenhagen 1879 -Lo TIE (W. J.) - Inigo Jones and Wren. Коси (O. V.) & Others - Tegninger af acldre Nordisk 40. Lond. 1893 la. fo. Cop nhagen 1880 architektur. S. 2. SAINTENOY (P.) Notes de voyage. Holm (II. J.) - Bornholms ældgam le kirkebygninger. la. 80. Brussels 1894 la. fo. Copenhagen 1878 Loë (A. de & Saintenov (P.) - Le Sénéca-berg de Borght. Studierejser af kunstakademiets elever. Parts 1 & 2. pam. 8o. Brussels 1893 la. fo. Copenhagen 1887 SAVERY (C. E.) - Church architecture in England. MIDDLETON (G. A. T.) Associate Surveying and sursm. 80. Lond. 1893 veying instruments. sm. 80. Lond. 1894 SCHWANN (Herr L.) the Publisher—Zeitschrift für christ-MÜNTZ (E.) Member of the Institut de France, Hon. Corr. liche kunst. Vol. vii. Nos. 1-6. sm. fo. Düsselderf 1894 SCOTT (W.) LLDOUX (C. N.)-L'architecture. Vol i. Member -- Renaissance Française. pam. la. 80. Paris 1890 pam. la. 80. Paris 1892 la. fo. Paris 1804 SEAGER (S. H.) Assignate - Christenurch N.Z.-Pro-La bibliothèque Lesoufaché. pam. 11. 80. Paris 1893 Mosaïque chrétienne. spect is of a book of art. pani. 80. Christchurch 1894 pam. la. 80. Paris 1890 SIMPSON (W.) R.I., Hon. Ass clate-Tower of Babel and Tapisseries des Gobelins. Paris Congrès International des Architectes: catalogue Birs Nimroud. pam. 80. Lond. — SOANE MUSEUM (Trasfers of)—Parworth (W.) pam. 80. Lond. de portraits d'architectes. 1m. 85. Paris 188.) MURRAY (J.) the Publisher Fenct son (J.) History of Ceneral description of museum. architecture. 3rd ed. 2 vols. 80. L m l. 1893 1 am. sm. So. Lond. 1893 PAPWORTH (W.) Fellow-Lorge Qualvor Coronan -SPON (Messes, D. & F. N.) the Publishers - Architects' & Transactions. Vol. vi. parts 1-3. sm. fo. Margate 1893 si. So. Lond. 1894 para, sm. fo. Marcate 1893 SPRANGE (W.) - B we book of 1 hotographers. St. John's Card. 12mo. Lond. 1893 PATENTS (Commissioners of) - Patents for Inventions -STEHLIN-BURCKHARDT (J. J.) - Architectonische mit-Abridgments of specifications. 134 parts. 80. Lond. 1893-94 sp. fo. Stuttgart 1893 STONE (P. G.) I d' - Gorn church and priory. PAUL (R. W.) -Vanishing London. In. do. Lond. 1894 PENROSE (F. C.) M.A., Past Vice-President Orientations la. 80. Goring 1893 pam. la. 40. Low l. 1893 SUTTON & Co., Lo. (Messrs.) the Publishers-Fletss of Greek temples. (0) = Designs for church embroidezy. Vol. i. No. 1. PERRY (J. T.) Associate - Chronology of architecture. So. In nd. 1893 45. Lond. 1894 S HINGE & ART DITALT HIM S. Kensington Studies from Carter (H. J.) - Atlas to geological papers on Western ob. fo. B mb ; 1857 the Mos ams: Wool-carving; ed. by E. Rowe. Part 5. India. Lassex (C.) Greek and Indo-Scythian kin's in Bectria la. fo. Lond. 1889 SWILLT & MAXWELL, Lib. (Messrs.) the Publishers -So. Calcut a 1840 BANKS (c.) -The law of support. TARN (E. W. M.A. - Light. Palladio (A.) First book of architecture. (W nts la. 80. Lond. 1894 pp. 173 d 231.) 40. L r l. 1708 s n. S). Lond. 1892 jan. 40. Nurerd ri REINDEL (A.) Bildwerke. sm. 80. Lond. 1892 sm. so. Lond. 1893 Seely (J. B.) Elora. So. Lovi. 1824 Urnam (E.) - Sacred and historical books of Ceylon. 3 TAYLOR (A. T.) Fell : - MONTBEAL - McGill University: Engineering & Physics buildings. 80. L n l. 1833 VIGNE (G. T.) - Travels in Kashmir &c. 2 vols. ob. fo. [Montreal, 1893 TOMALIN (H. F.) F.G.S., M.Inst.C.E., Fellow-CEYLON-So. Land. 1842 PERRY (J. T.) & REED (F. H.) Associates London-New Archaological survey. 5th report. pam. fo. Colombo 1893 40. Lon '. 1881' N. wing, University College. TRANSACTIONS. REPORTS AND PROCEEDINGS OF PLANAT (P.)-Encyclopédie de l'architecture. Vol. vi. la. 80. Paris 1893 part 2. SOCIETIES, &c. pam. 80. -AMSTERDAM-Architectura et Amicitia. - Architectura. POPE (T. S.)—Baptismal fonts. fo. Am t. 1893-94 POWELL (A. H.) Owen Jones Student 1893-Report of MS. fo. ____ 1893 - De Architect. PRENTICE (A. N.) Associate, the Author, and BATSFORD fo. Amst. 1893-94 (B. T.) the Publisher - Renaissance architecture in Maatschappij tot Bevordering der Bouwkunst.la. fo. Lond. 1893 Afbeeldingen van oude bestaande gebouwen. Spain. PROPERTY PROTECTION SOCIETY—BAUMANN (A. A.) la. fo. Amst. 1893 No. 34. Bouwkundig -Betterment, Worsement, and Recoupment. Weekblad. fo. Amst. 1893-94 sm. 80. Lond. 1894

FRANSACTIONS, REPORTS AND PROCEEDINGS OF SOCIETIES, &c. (continued)—	TRANSACTIONS, REPORTS, AND PROCEEDINGS OF SOCIETIES, &c. (continued)—
ASSOCIATED ARCHITECTURAL SOCIETIES.—Reports and	Glasgow (continued)—
Papers. Vol. xxi. part 2. 80. Lincoln 1892	Glasgow & West of Scotland Technical College
Berlin—Architekten-Verein.—Entwürfe 1893, 1894.	—List of prizes awarded.
la. fo. Berlin 1893–94	pam. sm. 80. Glasgow 1894
Katalog der bibliothek:	Philosophical Society.—Proceedings. Vol. xxiv. 80. Glasgow 1893
nachtrag Nos. 6 & 7. pams. la. 80. Berlin 1893-94	ITHACA, U.S.A.—Cornell University.—Library Bulletin.
Zeitschrift für bauwesen.	Nos. 33–36. la. 80. Ithaca 1893–94
fo, Berlin 1893–94	Leeds & Yorkshire Architectural Society.—
Königliche Technische Hochschule Woh-	President's Address. pam. 80. Leeds 1898
nungs-hygiene in beziehung zur luft.	Leicester - Free Public Library Annual report.
pam. la. 80. Berlin 1894	pam. 80. Leieester 1894
Boston, U.S.A.—Massachusetts Institute of Technology.	Leicester & Leicestershire Society of Architects.
—Annual catalogue. pam. 80. Boston 1894	Report No. 21. 80. Leieester 1894
Technology	Lewes — Sussex Archæological Society. — Collections.
Quarterly. Vol. v. No. 4; vol. vi. Nos. 1-4;	Vol. xxxix. 80. Lewes 1894
vol. vii. No. 1. 4o. Boston 1893-94 Bradford—Free Public Library.—Annual report.	Lille—Société Régionale des Architectes du Nord de la France.—L'architecture et la costruction. Vol.
	i. Nos. 1 & 2; iii. Nos. 6-12; iv. Nos. 1-6.
pam. 80. Brussels—Académie Royale.—Annuaire.	sm. fo. Lille 1891–94
sm. 80. Brussels 1892, 1893	Liverpool—Free Public Library.—41st annual report
Bulletins, S. 3, Vols,	pam. 80. L'pool 1894
xxiixxv. 80. Brussels 1891-93	Polytechnic Society.—Journal. 80. L'pool 1893
Société Centrale d'Architecture de Belgique.—	London—Architectural Association.—A. A. Notes.
L'Émulation 1893, Nos. 4-12; 1894, Nos. 1-6.	la 80 Lond 1992 04
la. fo. Brussels 1893–94	Brown Book.
Bulletin de la	pam. sm. 8o. Lond. 1893
situation. pam. 80. Brussels 1894	Sketch Book.
Société d'Archéologie de Bruxelles.—Annuaire.	la. fo. Lond. 1893-94
pam. 8o. Brussels 1894 Annales.	City of London College.—Calendar. 80. Lond. 1893
Annales.	Clerks of Works Association.—Journal, Vols.
Vol. vii. parts 3 & 4; viii. parts 1–3.	iiv., x la. 80. Lond. 1883-91, 1893-
la. 80. Brussels 1893-94	Imperial Institute.—Year book. la. 80. Lond. 1894 Institute of Chemistry of Great Britain and
CHATHAM — Royal Engineers Institute. — Occasional	Ireland.—Register. pam. 80. Lond. 1893
Papers. Vol. xix. 80. Chatham 1893 1892. 80. Chatham 1893 1892. 80. Chatham 1893	Institution of Civil Engineers.—Brief subject-
1892. 80. Chatham 1893	index Min. Proc. vols. lixcxiv.
Chicago — American Institute of Architects. — 26th an-	pam. 80. Lond. 1893
nual convention. pam. sq. mo. N. York 1893	List of Members.
Christiania—Norsk Ingeniör- & Arkitekt-Forening.—	pam. 8o. Lond. 1893, 1894
Norsk teknisk tidsskrift. Vol. x. Nos. 5 & 6;	— Minutes of Pro-
xi.; vol. xii. Nos. 1 & 2.	ceedings. Vols. cxiicxviii, 80. Lond. 1893-94
40. Christiania 1892–94	Institution of Mechanical Engineers.—Proceed
Colchester—Essex Archeological Society.—Transac-	ings. 80. Lond. 1893-94
tions. N.S. Vol. iv. part 4; vol. v. part 1.	Iron & Steel Institute.—Journal.
80. Colehester 1893–94	80. Lond. 1893-94
COPENHAGEN—Kongelige Kunstakademi.—Aarsberetning.	List of members.
pams. 80. Copenhagen. 1893, 1894 Denver, U.S.A.—Architectural Sketch Club.—Exhibition	pam. 80. Lond. 1893 Photographic Society of Great Britain.—Journal
catalogue. pam. la. 80. Denver 1893	de transactions 80 Lord 1803 04
Devonport—Association of Surveyors of the R.E. Estab-	
lishment &c.—Occasional papers. 80. Devonport 1894	& transactions. 80. Lond. 1893–94
Dublin-Royal Dublin Society.—Scientific transactions.	Royal Geographical Society. — Geographical
Vol. iv. No. 14; vol. v. Nos. 1-4.	Journal. la. 80. Lond. 1893-94
40. Dublin 1892-93	Royal Institution.—List of members.
Scientific proceedings.	pam. 80. Lond. 1893
Vol. vii. No. 5; vol. viii. Nos. 1 & 2.	Proceedings. No. 87,
80. Dublin 1892–93	80. Lond. 1894
Royal Society of Antiquaries of Ireland.—	Royal Society.—Proceedings. 80. Lond. 1893-94
Journal. 5th S., vol. iii.; iv. Nos. 1 & 2.	Sanitary Institute.—Journal. Vol. xv. parts
la. 80. Dublin 1893–94	1 & 2. 80. Lond. 1894
Edinburgh—Architectural Association.—Transactions. Vols. ii. Nos. 3 & 4. 80. Edinb. 1893-94	Transactions. Vols. xiii. &
Vols. ii. Nos. 3 & 4. 80. Edinb. 1893-94 University of Edinburgh.—Calendar and Sup-	xiv. 8o. Lond. 1893 ————————————————————————————————————
plement. sm. 80. Edinb. 1893–94	gress. pam. 80. L'pool 1894
Glasgow — Architectural Association. — Sketch Book.	Society of Antiquaries.—Archæologia. Vol. liii.
Vol. iv. fo. Glasgow 1894	part 2. la. 40. Lond. 1893
Annual report.	Index of archæological
pam. 80. Glasgow 1894	papers. pam. 80. Lond. 1893
Glasgow & West of Scotland Technical College.	Proceedings.
—Calendar. sm. 80. Glasgow 1893-94	80. Lond. 1893

TRANSACTIONS, REPORTS, AND PROCEEDINGS OF SOCIETIES, &c. (continued)— London (continued)— Society of Architects Founded 1884.—Proceedings. Vol. v. No. 12. 80. Lond. 1893—94 Society of Arts.—Journal. la. 80. Lond. 1893–94 Society of Biblical Archæology.—Proceedings. 80. Lond. 1893–94 ————————————————————————————————————	TRANSACTIONS, REPORTS, AND PROCEEDINGS OF SOCIETIES, &e. (continued)— PARIS—Caisse de Défense Mutuelle.—Annuaire. pam. 80. Paris 1894 ———————————————————————————————————
Journal. Vol. xiii. No. 2; vol. xiv. No. 1. sm. fo. Lond. 1893-94 plementary papers. No. 1. fo. Lond. 1892 Surrey Archaeological Society. — Collections. Vol. xii. part 1. 8o. Lond. 1894 Surveyors' Institution. — Forestry collection: catalogue. pam. 8o. Lond. 1894 Library catalogue. 3rd ed. 8o. Lond. 1893 ———————————————————————————————————	Architects.—Catalogue of 2nd exhibition. pam. sq. mo. St. Louis 1894 St. Peterseurg—Society of Architects.—Zodchi. 40. St. P'burg 1893 Subrey Archeological Society.—Collections. Vol. xi. part 2. So. Lond. 1893 Sydney, N.S.W. — Architectural Association. — Brown Book. pam. 80. Sydney 1892 Toronto—Engineering Society.—Papers read. No. 6. pam. 80. Toronto 1893 Vienna—Österreichischer Ingenieur. u. Architekten-Verein.—Register Zeit- u. Wochenschrift 1881— 91. pam. la. 40. Vienna 1893
Vol. x. la. 80. Lyons 1892 Madrid Sociedad Central de Arquitectos. — Revista. Año xx. Nos. 6-12; año xxi: Nos. 1, 3-9. sm. fo. Madrid 1893-94 ————————————————————————————————————	Verzeichnis der mitglieder. pam. 80. Vienna 1894 Zeit- schrift. la. 40. Vienna 1893-94 Washington—Smithsonian Institution.—Report 1891. 80. Wash. 1893 Yourshire Archeological Society.—Journal Nos. 48- 50. la. 80. Lond. 1839-94 UNWIN (W. C.) B.Sc., F.R.S., M.Inst.C.E., Hon. Associate—Development and transmission of power. 80. Lond. 1894 Boston, U.S.A.—Massachusetts State Board of Health.
MARGATE Lodge Quatuor Coronati. St. John's Card. sm. fo. Margate 1892 - Transactions. Vol. v. parts 1-3. sm. fo. Margate 1892 MONTREAL Canadian Society of Civil Engineers. Annual report (2). pams. So. Montreal 1893, 1894 - Charter de. pam. 8o. Montreal 1893 - Transactions. Vol. vi. part 2; vol. vii. parts 1 & 2.	23rd and 24th annual reports. 8o. Boston 1892, 1893 WADMORE (J. F.) Associate—Thomas Smythe, of Westenharger. 8o. Lond. 1887 WALLEN (F.) Associate—Met. Bldg. Act: Remarks on Smith v. Legg. pam. 8o. Lond. 1893 WALTER SCOTT, Ltd. (Messrs.) the Publishers—Moore (G.)—Modern painting. 8m. 8o. Lond. 1893 WEBB (W. A.) Associate—Restoration of St. Mary Overie. pam. la. 8o. Lond. 1893 WELCH (C.) F.S.A.—Guildhall library.
Newcastle-on-Tyne Northern Architectural Association.—Annual report. pam. 80. Newccn-Tyne 1894 North of England Institute of Mining & Mechanical Engineers. Annual report (2). pams. 80. Newcon-Tyne 1893, 1894 Strata of Northumberland and Durham. Part S. T. 80. Newcon-Tyne 1894 Transactions. 80. Newcon-Tyne 1893 New York—Columbia College.—Course in architecture. pam. 80. N. York 1894 Museum of Art.—Class in architectural drawing. pam. 80. N. York 1894 Palermo—Collegio degli Ingegneri ed Architetti.—Atti 1892, No. 3; 1893, Nos. 1 & 2. la. 80. Palermo 1892-93	The Monument. WHITE (William H.) Fellow & Secretary—Plumming— List of plumbers registered. pam. 120. Lond. 1894 Raschdorff (J. C.)—Technische Hochschule zu Berlin— Baukunst der Renaissance: Entwürfe von Studirenden. Royal Academy—Catalogue. pam. 80. Lond. 1894 WHITTAKER & Co. (Messrs.) the Publishers—Lodge (O. J.) —Lightning conductors. sm. 80. Lond. 1892 WILLETT (J. R.)—Heating and ventilation of residences. pam. 80. Chicago 1893 WILLIAMS (R.) Associate—London rookeries. pam. 40. Lond. 1893 More light and air for Londoners. pam. 40. Lond. 1894 WILLIAMS & NORGATE (Messrs.) for the Publishers—Condeixa (Vicomte de)—Le monastère de Batalha. sq. fo. Paris 1892

WOODS (J. E.) Fellow—Ventilation of buildings. pam. 8o. Adelaidc [1893] WORTHINGTON (L.)—Associate, Godwin Bursary Holder 1892—Godwin Bursary Report 1892. MS. fo. sm. 8o. Lond. 1893 Dwellings of the people. Total: - Volumes (exclusive of Periodicals, Reports and Transactions of Societies, and Parts of Works issued in a serial form now in progress) 105; Pamphlets 100. Trade Lists. ADAMS & Co.—Sanitary fittings. la. 4o. [Lond.] 1893 BATSFORD (B. T.) the Publisher—FAWKES (F. A.) — Architectural joinery. fo. Lond. -BEAZELEY (A.) M.Inst.C.E.—Bowes Scott & Western— Grease trap. fo. Lond. 1893 Maughan's Geyser Co. Ltd.-Geysers. 8o. Lond. 1894 BÖNTEN (H. & F.)—Wrought-iron mouldings. la. fo. [Lond. 1893] CRITTALL & Co. - Door and electric light furniture &c. 4o. Lond. CROMPTON & FAWKES-Horticultural buildings. fo. Lond. [1894] DOULTON & Co.—" Metallo-Keramic" joint. 4o. Lond. [1894] ELLISON (J. E.)—Ventilators. 4o. [Lceds] 1893 FARMILOÈ (F. & W.)—Builder's sundries. 80. Lond. 1894 HAIGH & Co. Ltd.—Steam engines, &c. 40. Oldham 1893 HARTLEY & SUGDEN Ltd.—Boilers. 80. Halifax 1893 KERSHAW & Co.—Ventilators, &c. 4o. Lancaster 1893 STANLEY (W. F.)—Mathematical instruments. 8o. Lond. 1893 STREET BROTHERS-RENTON GIBBS & CO. LTD. - Hot-80. L'pool water heating apparatus. TOTAL:-15. PURCHASES. Books, Pamphlets, &c. ALBERTI (L. B.) - L'art de bien bastir. fo. Paris 1553 ALLGEMÈINÉ BAUZEITUNG—(In progress.) fo. Vicnna 1893-94 ATHENÆUM (THE)—(In prog.). 40. Lond. 1893–94 AUFLEGER (O.) & TRAUTMANN (K.)—Hofkirche zu Fürstenfeld. la. fo. Munich 1894 BARBARO (D.)—Perspettiva. fo. Venice 1568 BECKER (W. A.) - Charicles. 8th ed. sm. 8o. Lond. 1889 Gallus. 10th ed. sm. 8o. Lond. 1891 CAMPAN (J. van)—Stadt Huys van Amsterdam. fo. Amst. 1664-68 CAUMONT (A. DE)-Rapport verbal fait à la Société Française d'Archéologie. 8o. Paris 1863 CHATEAU (T.)-Technologie du bâtiment. 2 vols. 8o. Paris 1863-66 CLERMONT ()—La geometrie pratique de l'ingenieur. 4o. Paris 1723 COLLOT (P.)-Pieces d'architecture. (Title and 27 shcets.) sm. fo. Paris 1633 CROMWELL (T. K.) - Excursions in Kent. 8o. Lond. 1822 DIETRICHSON (L.) & MUNTHE (H.)—Holzbaukunst

Norwegens.

DOHME (R.)—Geschichte der deutschen baukunst.

GUÉRINET (A.)-Musée du Trocadéro. fo. Paris -

la. fo. Berlin -

GYFFORD (E.)—Designs for cottages and villas.

HARTEL (H.)-Altäre u. kanzeln.

FALKE (J. von)—Mittelalterliches holzmobiliar.

FORSYTH (J.)—Mural and other monuments.

[GARNIER (C.)]—Le cercle de la librairie &c.

Anvers. fo. Berlin **1893** sm. fo. Berlin 1887 fo. Vienna 1894 la. 4o. Lond. 1863 pam. la. 8o. Paris 1881 GOLDICUTT (J.)—Antiquities of Sicily. sq. fo. Lond. 1819 (C. 7259.) la. 4o. Lond. 1806

7425-i.)

JAMESON (Mrs. A.)—History of Our Lord. New ed. sq. 8o. Lond. 1892 2 vols. Legends of the monastic orders. New ed. sq.8o. Lond. 1891 Sacred and legendary art. New ed. 2 vols. sq. 8o. Lond. 1892 LACHER (K.)-Kunstbeiträge aus Steiermark. fo. Frankf.-o/M. 1893 LACHÈZ (T.)—Enseignement de l'architecture. 8o. Paris 1868 LE MUET (P.)-Traicté des cinq ordres d'architecture. sm. 4o. Paris 1647 LEROY (C. F. A.) - Traité de stéréotomie. Text 4o. Paris 1862 Plates fo. Paris 1862 LONDON COUNTY COUNCIL—By-laws under Public pam. fo. Lond. 1893 Health Act 1891. (104.) Report to special committee on technical education. fo. Lond, 1892 Return. (164.) MARSH (F. T.)—Hospital of St. Wulstan. fo. Lond. 1894 la. 4o. Worcester 1890 NOHL (H.)--Index Vitruvianus. 8o. Leipzig 1876 NORMAND (C. J. P.)—Vignole des architectes. Part 1. 4o. Paris 1827 PALLADIO (A.) - I qvattro libri dell' architettvra. sm. fo. Venice 1616 PASPATES (A. G.)—Palace of Constantinople. 8o. Lond. 1893 PAUKERT (F.)—Zimmergotik in Deutsch-Tirol. *fo. Leipzig 1892–94 PERRAULT (C.) - Ordonnance des cinq especes de colonnes. fo. Paris 1683 PERROT (G.) & CHIPIEZ (C.)—Histoire de l'art. Vol. vi. la. 8o. Paris 1894 PEWTNER (W.)—Comprehensive specifier. Lond. 1870 sm. 80. PFNOR (R.) —Architecture, &c., époque Louis XVI. la. fo. Paris 1885 Architecture et décoration au palais de Fontainebleau. la. fo. Paris 1885 RICHARDSON (C. J.)—The Englishman's house. 2nd ea. 8o. Lond. [1871] RIOU (S.)—The Grecian orders of architecture. 8o. Lond. 1768 ROGET (P. M.) - Thesaurus. New ed. 8o. Lond. 1892 ROOSES (M.) & KRIÉGER (B.)—Musée Plantin-Moretus à la. fo. *Paris* [1893] SKEAT (W. W.)—English dictionary, with supplement. 4o. Oxford 1882-84 SMITH (R. M.) & PORCHER (E. A.) - Cyrene. fo. Lond. 1864 STUART (J.) & REVETT (N.)—Antiquities of Athens. sq. mo. Lond. 1837 fo. Lond. 1872 SUTTON (F. H.)-Church organs. VITRUVIUS—De architectura. 8o. Leipzig 1867 WOLFF (C.)—Der kaiserdom in Frankfurt am Main. sm. fo. Frankfort 1892 Total:—Volumes (exclusive of Periodicals and Parts of Works issued in a serial form now in progress) 50; Pamphlet 1. Parliamentary Papers. BUILDING SOCIETIES—Building Societies (No. 2) Bill: report. (297.) fo. Lond. 1893 CITY & TOWN - Improvements (Betterment): report from select committee, proceedings, evidence, and appendix. (159.) to. Lond. 1894 LONDON—Gresham University: report of commissioners.

fo. Lond. 1894

fo. Lond. 1894

- draft charter. (C. 7425.)

appendix & index. (C.

METROPOLIS London streets & buildings Bill 1894. (12.) fo. Lond. 1894

METROPOLITAN WATER SUPPLY Maps and plans to report of royal commission. (C. 7172. iv.)

fo. Lond. 1893 SCIENCE & ART DEPARTMENT S. Kensington - Calendar, history, and regulations. (C. 7214.)

80. Lond. 1893

40th report: and supplement. (C. 6905, 6905 I.) 80. Lond. 1893

Technical education and county authorities: return. (C. 7112.) fo. Lond. 1893 VALUE & VALUATION—Valuation (Metropolis) Bill 1893. (Bill 79.) to. Lond. 1893

TOTAL: -12.

Drawings

Chalons-sur-Marne - École d'arts et métiers. C. E. Isala. fo. Paris 1841-59

Total: 1 vol.



THE LOAN LIBRARY.

_ta | tons : 7th June 1893 | 29th September 1894.

Donations.

BEAZELEY (A.)—M.Inst.C.E. Hill (G.) Modern office buildings. pani, la. 80. N. York 1893 Brown (R.) Practical perspec-KING (C. R. B.) Associate la. 40. Lond. 1835 KING (Z.) Fellow Middleton (G. A. T.) House drainage. So. Lond. 1892 MARSLAND (E.) Rules affecting building in London. mo. Lond. 1893 TURNER (E.) Fellow Hints to househunters and householders. 2nd ed. sm. 80. Lond. 1884 WALLEN (F.) Associate Met. Bldg. Act: Remarks on Smith v. Legg. pam. 8o. Land. 1893 WILLIAMS (R.) Associate More light and air for Londoners. pam. 4e. Lond. 1894 Total:—Volumes 1; Pamphicts 3.

Purchases.

FERGUSSON (J.) - Handbook of architecture. 2nd ed. (2 copies.) So. Lond. 1859 History of architecture. 3rd ed. 2 vols. So. Lond. 1893 FLETCHER (B.) - Quantities. 5th ed. sm. 80. Lond. 1888 sm. 80. Lond. 1893 Valuations and compensations. LOCAL GOVERNMENT BOARD-Knight's annotated bye-laws. 4th ed. la. So. Lond. 1893 PALEY (F. A.) - Gothic mouldings. 5th ed. 80. Lond. 1891 PEWTNER (W.)—Comprehensive specifier. sm. 8o. Lond. 1870 Total: Volumes 9.

MEMBERS ELECTED 1893-94.

Fellows (12).

FRANCE: Charles (Bradford). "BAILEY: Thomas Jerram.
"ARBER: William Henry.

SIMPSON: Benjamin Ferdinand (Newcastle).

SMITHEM: Charles James.

"NASH: Walter Hilton.
"OSBORNE: John Perrins (Birmingham).

BATTERBURY: Thomas.

BROWN: Walter Talbot (Pugin Student 1877) (Wellingborough).

JENKINS: David (Qualified for Assoc. 1888) (Llandilo).

NAYLOR: John Reginald (Derby).

MITCHELL: Arnold Bidlake (Qualified for Assoc. 1886; Soane Medallist 1885; Inst. Medallist 1886).

* An asterisk prefixed to a name indicates previous membership in the Class of Associates.

Associates (70).

WHITCOMBE: Charles Arthur Ford (Qualified 1893).

WHITE: John (Qualified 1893). Glasgow.

WATKINS: William Gregory (Probationer 1890, Stn. dent 1890, Qualified 1893), Lincoln.

CROUCH: Henry Arthur (Qualified 1893), Brisbane. BALFOUR: Robert Snekleton (Qualified 1893; Inst.

Medallist 1892; Pagin Student 1894). MORRICE: Arthur George (Qualified 1893).

RIX: Reginald Arthur (Qualified 1892). EARLE: Frank (Qualified 1893), Hull.

SKINNER: Edward (Qualified 1893), Ceylon.

ROCHE: Cecil Stuart (Qualified 1893). KENNEDY: David William (Qualified 1892).

CUMMINGS: Erskine Seaton (Qualified 1892).

INGLIS: John Alexander Russel (Qualified 1893), Edinburgh.

KEMPSON: Charles (Qualified 1893), Leicester. BARNES: Harry (Qualified 1893, Sunderland.

MOWLEM: John Ernest (Qualified 1893), Swanage.

DEARDEN: Henry (Qualified 1893), Batley. WETENHALL: Edward Box (Qualified 1893).

BARROW: Ernest Robert (Qualified 1893; Ashpitel

ASHFORD: William Henry (Qualified 1893), Rhayader.

SHEPPARD: Arthur William (Qualified 1893). LANDER: Harold Clapham (Probationer 1890, Student

1892, Qualified 1893).

SMITH: David Forbes (Qualified 1893), Kircaldy. BARLOW: William Tillott (Qualified 1893).

HALSALL: Francis Peter (Qualified 1893), Southport.

NIELD: George Ernest (Qualified 1893). EARNSHAW: John Robert (Qualified 1893), Man-

chester. KENDALL: Franklin Kave (Probationer 1890, Student

1892, Qualified 1893). BACON: Roger Francis (Probationer 1889, Student 1891,

Qualified 1893), Reading. JONES: Harry Evan (Qualified 1893).

LITTLE: John Rennison (Qualified 1893), Bolton.

FORGE: Arthur James (Qualified 1893).

LISHMAN: Frank (Qualified 1893). MORGAN: Arthur Hill (Qualified 1893), Hoole.

SALIER: Douglas George (Qualified 1893), Tasmania.

HOUSTON: John Lloyd (Qualified 1893). TREW: George Harry Mael (Qualified 1893).

JONES: John Humphreys (Qualified 1892).

NEWNHAM: John (Qualified 1893).

CHILDS: William John (Qualified 1893), New Zealand.

BROWN: Alfred Kirk (Qualified 1893), Hull.

HAYWOOD: Charles Spencer (Qualified 1893), Accring-

LEWIS: William Arthur (Qualified 1893).

SARGANT: Lionel Edgar Alfred (Qualified 1892).

BISHOP: Thomas Handy, jun. (Qualified 1894), Leighton

COLLINS: Lewis Eric George (Qualified 1894).

FOGERTY: John Frederick (Qualified 1894), Bourne-

STEDMAN: Arthur (Qualified 1894), Towcester.

THICKPENNY: Thomas Edward, jun. (Qualified 1894), Bournemouth.

ABSOLOM: Charles Cyril (Qualified 1894).

HILL: George Smith (Qualified 1894; Inst. Medallist

1893), Glasgow.
PICTOR: Arthur John (Qualified 1894), Barnstaple.
BEDINGFIELD: Ralph Waldo (Probationer 1890, Stu-

dent 1891, Qualified 1894), Leicester. COATES: Frederick Ernest (Qualified 1894), Sunder-

land.

JACOB: Louis (Qualified 1894).

LOCHHEAD: James (Qualified 1894), Glasgow. GLASSON: Arthur Henry Wharton (Qualified 1894).

PRATT: George Percy (Qualified 1894).

BEWES: Anstis George (Qualified 1894). DUTCH: Leonard Harris (Qualified 1894), Manchester. MAXWELL: Joseph Charlton (Qualified 1894), North Shields.

TYLEE: Edward (Probationer 1891, Student 1893, Qualified 1894).

FAIRWEATHER: John (Qualified 1894), Glasgow.

FORD: Solomon (Qualified 1894).

MACKINNON: Arthur Hay Livingstone (Qualified 1894), Aberdeen.

ANDERSON: John (Qualified 1894), Aberdeen. SUTHERLAND: George (Qualified 1894), Elgin.

EASDALE: Robert Andrew (Qualified 1894), Castleford. PHILLIPS: James St. John (Probationer 1889, Student 1892, Qualified 1894), Belfast.

COUSSENS: Henry Walter (Probationer 1891, Student 1892, Qualified 1894), Hastings.

Honorary Associates (2).

ELMORE John Oliver Surtees, Assoc.M.Inst.C.E. (Kapurthala, India).

BRAMBLE: James Roger, F.S.A. (Somerset).

Hon. Corresponding Member.

LANCIANI: The Commendatore Rodolfo (Rome), D.C.L Oxon, Correspondant of the Institut de France.











