Meteore, 3 ; Elem. d. höh. Geodäsie, 1 ; Sem. ; Astr. Beobachtung a. d. Instrum. der Sternwarte.— WEBER : Diff. u. Integralrechn., 4 ; Th. d. ellipt. Funkt., 4 ; Math. Obersem., 2. — ROTH : Alg. Analysis u. Determinanten, 3; Analyt. Geom. d. Raumes, 2; Gewöhnl. Diff. gleichgn. — WISLICENUS : Abriss d. neuern Geschichte d. Astronomie, 1 ; Anweisung zu den einfachsten kalendarischen Rechnungen, 1 ; Die Beschaffenheit unserer Nachbarwelten in gemeinverständlicher Darst. 1 ; Besprechung d. neuestern liter. Erscheinungen auf. astron. Gebiete. — DISTELI : Analyt. Geom. d. Ebene, 3 ; Graph. Statik, 2 ; Ueb., 2 ; Ueb. des math. Sem. (untere Abtg.), 2. — EPSTEIN : Differentialgeometrie (Th. de Raumkurven u. Flächen), 3.

Stuttgart. (*Kgl. Techn. Hochschule,* Beginn 12 Okt.). — Mathem. u. Mechanik. — BRETSCHNEIDER : Niedere Math. — HOHENNER : Trigonom. ; Katastermessungen ; Markscheidekunst. — HOHENNER U. HEER : Plan-u. Geländezeichnen. — ROTH : Niedere Analysis. Schattenkonstr. u. Beleuchtungskunde. — REUSCHLE : Kurvendiskussion ; Analyt. Geom. d. Ebene u. d. Raumes ; Neuere analyt. Geom. d. Ebene u. d. Raumes ; Diff.-u. Integralrechn., Sem.—WÖLFFING : Funktionenth., I; Diff. u. Integralrechn. — MEHMKE : Darst. Geom. ; Reine Mechanik ; Sem. — HAMMER : Prakt. Geom. ; Ausgleichungsrechn. ; Höh. Geodäsie ; Barom. Höhenmessen, Astron. Zeit. u. direkte geogr. Orstsbest.— AUTENRIETH : Techn. Mechanik.

Tübingen. (*Universität,* 16 Okt. ; 14 März).— V. BRILL : Einf. in die höh. Mathematik, 4; Th. d. Alg. Kurven, 3 ; Sem., 2. — STAHL : Höh. Analysis, II, 4 ; Part. Diff. gleichgn., 3 ; Sem., 2. — MAURER : Ellipt. Funkt., 2 ; Ueb., 1 ; Darst. Geom., II, 1 ; Ueb., 2 ; Sphär. Trigonom., 1 ; Ueb., 1.

Würzburg. (*Universität*). — PRYM : Diff. gleichgn. m. Einl. i. d. höh. Analysis, 5 ; im Unterseminar ; Uebgn. z. Diff.-rechn., 2 ; im Obersem ; Ausgew. Kap. d. höh. Mathem., 2. — SELLING : Integration d. gewöhnl. Diff. gleichgn., 4 ; Mechanik, 4 ; Th. d. Planetenbewegungen, 3 ; Bescheibende Astronomie, 1. — ROST : Analyt. Geom. d. Raumes, 4 ; Einf. in die Analyt. Geom. d. Ebene, 4 ; Im Untersem.; Ueb. aus. d. analyt. u. synth. Geom., 2 ; Elem. d. Determinantenth., 2. — (Weitere Vorlesungen ü. Math. werden später noch. besonders augekündigt).

ILES-BRITANNIQUES

Aberdeen. *University.* Mathematics Professor; G. PIRIE. Lecturer. GOODWILLIE. There will be three mathematical classes : the Graduation Class; the Intermed. Honours Class; the Honours Class.

Aberyswyth. *University College of Wales* (15 th. sept. 1903-21 st June 1904). — Lectures in Mathematics pure and applied. Professor :

R.-W. Genese ; Lecturer : W.-J. Johnston ; Assistant Lecturer : J. I. Walley.

Pure Math. Matriculation Class (5 hours a week). — Intermediate Course (4 h. a week). — Ordinary Course : Algebra, Trigonometry, Geometrie, Coordinate Geometry, Diff. and Integral Calculus (4 h. a. week). — Special Course : Algebra, Spherical Trigonometry, Geometry, Coordinate Geometry, Diff. Calculus, Integral Calculus, Elementary Differential Equations ; a course of not less than 80 lectures.

Applied. Math. Matriculation Class (2 h.). — Intermediate Course (2 h.). — Ordinary Course : Kinematics, Kinetics, Statics, Hydrostatics, Astronomy ; a course of not less than 80 lectures. — Special course : Particle Dynamics, Analytical Statics, Dynamics, Hydrostatics ; 80 lectures.

Math. pure and applied. Honours Course.

Exercices Classes.

Bangor. *University College of North Wales* (Oct. 1 st 1903-June 28 th 1904).—Professor : G. H. Bryan; Assistant Lecturer : Harold Hilton.

I. *Intermediate Course* (Pure Mathematics) ; 3 h.

II. *Final Courses.* A. Pure Mathematics : Ordinary (Arts) Course, Algebra et Trigonometry, Geometry, Diff. et Int. Calculus ; 3 h. — Special (Arts) Course, Algebra, Pure and Coord. Geometry, Diff. et Int. Calculus, Elementary Diff. Equations, Spherical Trigonometry, 3 h.— B. Applied Mathematics : Ordinary (Arts) course, Kinetics, Statics, Plane Astronomy, 3 h. — Special (Arts) course, Analytical Statics, Dynamics, Hydrostatics, 3 h.

III. Honours Course (Pure et Applied Mathematics).

Brecon. *University of Wales.* — *Pure Mathematics.* I. Intermediate Course. II.— Special Course : Pure et Coord. Geom. ; Diff. a. Integral Calculus ; Elem. Diff. Equations, High., Algebra, Spher., Trigonom. III. Final Course.

Applied Mathematics. Ordinary Course : Kinetics, Statics, Hydrostatics, Plane Astronomy. — Special Course : Analyt. Statics, Hydrostatics, Dynamics of Particle, Dynamics. — Final Course.

Bristol. *University College* (6 Oct. 1903-20 June 1904). Mathematics. Professor : R. Barrell ; Lecturer : L. Watkin.

Matriculation Course, 3 h. — Elementary Course for first Year Engineering Students, 3 h. — Intermediate Course, 3 h. — Calculus for Engineering Students, 3 h.— Advanced Course, 4 h.— Special advanced Course, 2 h. : Rigid Dynamics, High. Calculus, Differential Equations or other branches of High. Mathematics. — Special Course for Woman, 2. — Exercise Classes.

Mixed Mathematics Mathematical Course : Statics, Dynamics and Hydrodynamics. — Advanced Course : Analytical Statics, Dynamics, Hydrodynamics, Astronomy.

Belfast. *Quee'ns College* (Oct. 20, 1903-June 11, 1904). — Lectures in Pure Mathematics, three Years ; Professor : Alf. CARDEW-DIXON. — Civil Engineering (3 years) ; Prof. Maurice F. FITZ GERALD.

Birmingham. *University* (Oct. 5 1903 ; June 30, 1904). — Professor : R. S. HEATH ; Lecturer : C. T. PREECE.

Pure Mathematics. Preliminary Course, 4 h. — University Courses : I (4 h.), Algebra, Trigonometry, Geometry ; II (4 h.), Algebra, Trigonometry, Geometry, Diff. Calculus, Int. Calc. ; III (4 h.), Anal. Geometry, Diff. Calc., Int. Calc., Diff. Equations.

Applied Mathematics. University Courses : I (4 h.), Statics, Dynamics, Hydrostatics ; II (4 h.), Statics, Dynamics of a Particle, Rigid Dynamics, Hydrostatics.

Higher Mathematics. Classes will le arranged in more advanced mathematics, if sufficient demand for such instruction is forthcoming.

Cambridge. *University.* — Lectures proposed by the Special Board for Mathematics ; in three terms: I, the Michaelmas Term begin oct. 15 ; II, the Lent Term, January 18 ; III, the Easter Term, April 25.

FORSYTH : Partial Diff. Equations (I et II, 3 h.) ; Calculus of Variations (I), 2. — DARWIN : Theory of Potential and Attractions (I), 3 ; Figure of the Earth and Precession (II), 3. — R. S. BALL : Planetary Theory (1), 3 ; Application of Geometry to Dynamics (II), 3. — LARMOR : Electrodynamics (I et II), 3 ; Elementary Mathematical Physics (II), 3 ; The theory of Gases and Molecular Statistics of Energy (III), 3. — HINKS (for Prof. Darwin on and Prof. sir R. S. Ball) : Demonstrations in Practical Astronomy (I et II), 2 ; Observatory, Prac. Work. (I et II). — THOMSON : Properties of Matter (I), 2 ; Electromagnetic Waves (I), 2 ; Electricity and Magnetism (II et III), 2 ; Discharge of Electricity through Gases (II), 2. — A. B. PEACE : Heat et Heat Engines (I), 3. — HOBSON : Spher. et Cylindrical Harmonies (I), 3 ; Sound and vibrations (II), 3. — RICHMOND : Analytical Geom. of Curves (I), 3 ; Analyt. Geom. of 3 dimensions, proj. properties (II), 3. — BAKER : Elem. Theory of Funktions (I et II), 3 ; Theory of Groups (III), 3 ; Solid Geometry (for Part. I), I, 3 ; Analysis (for Part. II et III), 3. — MACDONALD : Waves (especially waves of Light (I), 3 ; Hydrodynamics. — MOLLISON : Th. of Potential a. Electrostatics (III), 3. — HERMAN : Hydromechanics (for Part. I), II, 3 ; (for Part. II), II, 3. — MATHEWS : Alg. Functions (Elem.), I ; Th. of Alg. Numbers (II et III), 3. — WHITEHEAD : Appl. of Symbolic Logic to Cantor's theory of Aggregate (I et III) ; Non-Euclidean Geometry (III). — BERRY : Ellipt. Functions (I et II), 3. — BENNETT : Linear a. Quadratic Complexes (II), 3. — MUNDRO : Hydrodynamics et Sound (for Part. I), I, 3. — WHITTAKER : The Diff. Equations of Applied Mathematics (I), 2 ; General Dynamics (II). — GRACE : Invariants and Geometrical Applications.

Dundee, *University College, University of St Andrews.* — Professor : STEGGALL; Assistant Lecturer : NORRIE. — *Pure Mathematics.* Junior Class. Ordinary Class. Junior Hon. Class. ; Senior Hon. Class. — *Applied Mathematics.* General Class. Advanced Class.

Durham. *University.* — Honour Mathematical Lectures, in 3 terms (I, II and III). Professor SAMPSON : *First Year*, I Algebra, 3 ; II Trigonometry, 3 ; III Analyt. Conic Sections, 3. *Second Year*, I Calculus, 3 ; II Dynamics, 3 ; III Solid Geometry, 3. *Third Year*, I Calculus, 2 ; II Dynamics, 2 ; III Solid Geometry, 2. *Second and Third Years*, I Optics, 2 ; II Astronomy, 2 ; III Revision, 2.

Lecturer HEAWOD. *First Year*, I Geometry, 3 ; II Dynamics, 3 ; III Newton. *Second and Third Years*, I Hydrostatics, 2 ; Statics, 1; II Examples of Integral Calculus, 2; Statics, 1; III Differential Equations ; Papers, 1.

Edinburgh. *University.* — Prof. CHRYSTAL : Sen. Mathematics. — Prof. CHRYSTAL et Chas. TWEEDIE : Mathem., Intermediate Hon.; Advanced Honours, 3. — HORSBURGH : Mathem. Int. Course Honours, pratical Division. — MAC GREGOR : Natural Philosophy ; Thermodynamics. — KNOTT : Dynamics, 3 ; Applied Mathem.

Glasgow. *University.* — JACK : Mathematics, 3 ; Math. Honours (Interm.), 3 ; in Advanced, 3. — GRAY : Natural Philosophy ; Higher Mathem. A. B. ; BECKER : Astronomy.

Liverpool. *University.* — Mathematics. Professor : F. S. CAREY : Assistant Lecturer : SHARPE et HUDSON.

Pure Mathematics. Preliminary Course, 3. — Int. Course, 3. — Final et First Year Honours Course, Elem. of the inf. Calculus, with applications of the properties of conic sections, 3. — Final et second Year Honours Course, Diff. a. Integral Calculus, diff. equations, with analyt. plane et solid geometry, 3. — Third Year Honours Course, Diff. Equat., higher pl. et solid Geometry, definite integrale, finite differences. — Advanced Course ; th. of functions, elliptic functions.

Applied Mathematics. Interm. and First Year Honours Course, Statics, Dynamics, Hydrostatics, 3. — Final et second Year Honours Course, Analyt. Statics, Hydrostatics, dynamics of a particle et elementary rigid dynamics, 3. — Third Year Honours Course Rigid dynamics et hydrodynamics, Attractions et theory of waves, 3.

London. *University College.* — Mathematics. Professor : HILL ; Assistants : HARRIS, FILON.

Lower Junior Class (*Harris*), 3. — Junior Class (*Hill*), 5. — Senior Class (*Hill* and *Filon*), First Year's Course : Algebra, Plane Trigonom., Geom. Conics, 2 ; second Year's Course : Elem. proj. Geometry, Geom. Drawing, Plane Coordinate Geometry, 2 ; First Year's Course : Diff. et Integr. Calc., 2; Second Year's Course : id. 1 ; Spherical

Trigonom. — Higher Senior Class, HILL : Th. of Functions, 1 ; Algebra of Quantics, 1. — FILON : Ellipt. Functions, 1 ; Diff. Equat., 1 ; Discontinous Functions with Applic. to Math. Physics, 1 ; Diff. Equat., 1.

Applied Math. and Mechanics. Prof. K. PEARSON ; Assistant : FILON, Kinematics, Statics, Dynamics, Hydrostatics, Astronomy.

Newcastle-upon-Tyne. *The Durham College of Science.* Mathematics. Professor : H. P. GURNEY. Assistant Prof. : JESSOP. G. W. CAUNT, W. M. DAVIDSON.

Nottingham. *University College.* — Mathematics and Physics. Professor : W. H. HEATON. Lecturers in Mathematics : TAYLOR, BARTON, SHAW, ERSKINE, MURRAY, MORLEY, NEWTON.

Pure Mathematics. Lower Junior Course, 3 ; Higher Junior Course, 3 ; Lower Interm. Course, 2 ; Interm. Course, 2 ; Lower Senior Course, 5 ; Higher Senior Course, 4. — Exercice Classes. Mathematics for Engineering Students, 5. — Mixed Mathem.

Oxford. *University.* — Lecture List for Michaelmas Term 1903. — Mathematics. — ELLIOT : Th. of Numbers, 2 ; Infinite Series and Products, 1. — TURNER : Elem. Math. Astronomy, 2 ; Practical Work (with Plummer). — ESSON : Analytic Geometry of Plane Curves, 2 ; Synth. Geometry of Plane Curves, 1. — LOVE : The Mechanics of Deformable Bodies, 2 ; Problems in. Applied Mathem., 1. — HASEFOOT : Algebra, 2. — LEUDESDORF : Proj. Geometry, 3. — JOLLIFFE : Analyt. Geometry, 3. — RUSSELL : Diff. Calculus, 7. — Mc NEILE : Curve Tracing, 1. — PEDDER : Problems in Pure Math., 1. — SAMPSON : Higher Solid Geom., 2. — CAMPBELL : Diff. Equations, 2.— THOMPSON : Integral Calculus, 2. — HAYES : Analyt. Statics, 3. — DIXON : Hydrostatics, 2. — GERRANS : Adv. Rigid Dynamics, 2. — KIRKBY : Attractions et Electrostatics.

Reading. *University College.* — Mathematics. Professor : A. L. BOWLEY. Assistant Lectures : H. KAPMAN. — First Year Course (A) and (B). — Second Year Course (A) and (B). — Advanced Conics.

Sheffield. *University College.* — Mathematics. Professor : A. H. LEAHY. Lecturer; H. G. DAWSON. — LEAHY : Analysis ; Elem. Dynamics, Elem. Hydrostatics ; Optics ; Astronomy. — DAWSON : Geometry ; Elem. Mechanics ; Elem. Hydrostatics. — Spherical Harmonic Analysis. — Higher Classes for Honour Degrees in Mathematics.

St-Andrews (*University of*). United College of St-Salvator and St-Leonard. — Mathematics. Professor : LANG. There are four Math. Classes : Junior Class, Tutorial Class, Ordinary Class, Honours Class (Jun. and Sen.).

Southampton. *Hartley University College*. Mathematics. Professor : Hudson ; Assistant Lecturer : Cowlishaw.

Pure Mathematics. Lower Junior Class, 5 ; Junior Class A, 4 ; B, 5. — Interm. Class 5. — Senior Class, 5 ; Higher Algebra, Trigonom., Pure Geom., Analyt. Geom., Elem. Diff. and Int. Calculus. — Higher Senior Class.

Mixed Mathematics. Junior Class ; Introductory Mechanics and Hydrostatics, 3.— Interm. Class, 2 ; Elem. Statics and Kinetics of Particles et Rigid Bodies , Elem. Hydrostatics. — Senior Class, 2 ; Kinetics and Statics of Particles et Rigid Bodies. Stat. of Incompressible Fluids. Elem. Statics of Elastic Fluids et Solids. Optics and Astronomy.

SUISSE

Basel. (*Universität*). — H. Kinkelin : Diff. u. Int. rechn., I, 3 ; Analyt. Geom., 3 ; Diff. gleichgn., 3 ; Uebg. im math. Sem., 2. — K. Von der Mühll : Analyt. Mechanik mit Uebgn., 4 ; Ueber einz. Kapitel d. Math.-phys., 4 ; Math. phys. Uebgn., 2. — R. Flatt : Pädagog. Sem. math.-nat. Abtlg., 3.

Bern. (*Universität*). — Graf : Besselsche Funkt. m. Rep., 3 ; Ellipt. Funkt. m. Rep., 3 ; Diff. gleichgn., 2 ; Diff. u. Int. rechnung, 2 ; Renten-u. Versicherungsrechn., 2. — Graf u. Huber : Math. Sem., 2. — Graf u. Moser : Math.-versicherungsw. Sem., 1. — Ott : Int. rechn., 2 ; Analyt. Geom., II, 2 ; Analyt. Mech., 2. — Huber : Bahnbestimmung der Planeten u. Kometen, 2 ; Fourier'sche Reihen u. Integralen. Anw. auf d. Phys., 2. — Benteli : Darst. Geom., Kurven, Strahlenflächen, reg. Polyeder, 2 ; Ueb., 2 ; Prakt. Geom., 1 ; Konstruktive Perspektive, 1 ; Rotationsflächen, 1. — Moser : Ausgew. versicherungswl. Kap.; Elem. d. Wahrscheinlk.-rechn. u. d. Lebensversicherungsmathematik, 1. — Crelier : Einl. in d. synth. Geom., 2 ; Chap. choisis de Géométrie, 2.

Genève. (*Université*, 15 oct. ; 22 mars). — C. Cailler : Calcul diff. et int., 3 ; Exerc., 2 ; Mécanique rat., 3 ; Exerc., 2 ; Conférences d'Analyse sup., 2. — H. Fehr : Algèbre, 2 ; Géométrie analyt., 2 ; Exercices, 2 ; Courbes planes, 1 ; Séminaire de Géom. sup., 1. — R. Gautier : Astronomie générale, 2 ; Météorologie, 2. — J. Lyon : Déterminants, 1. — D. Mirimanoff : Equations de la Phys. math., 2.

Lausanne. (*Université*). — Amstein : Calcul diff. et int., 6 h.; II, 2 h.; Exercices, I, 2 h.; II, 1 h.; Elém. de Calc. diff. et intégral (cours destiné aux étudiants en sc. nat., 3 ; Théor. des fonctions, 3. — Joly : Géométrie desc., I, 5; Epures, 1 ap.-m.; Géom. analyt., 2 ; Géom. de Posit., 2; Courbes planes, 2.— Mayor : Mécanique rat., 5 ; Exerc., 1 ; Phys. math., 2 ; Statique graphique, I, 2 ; II, 2 ; Epures, 1 ap.-m. —