

# ASSOCIATION for the IMPROVEMENT of GEOMETRICAL TEACHING.

THE TWENTY-FIRST MEETING of the ASSOCIATION for the IMPROVEMENT of GEOMETRICAL TEACHING was held at UNIVERSITY COLLEGE on 19th January 1895, D. R. WORMELL, President of the Association, in the chair.

The following Report of the Council was read and adopted :—

COUNCIL MEETINGS have been held on 27th October 1894; 18th January 1895. The Council is glad to be able to state that the establishment of the *Gazette* has attracted the favourable consideration of a large number of mathematical teachers, and has received an amount of support sufficient to encourage it to recommend the Association to continue it for another year. In order, however, to render the *Gazette* a financial success the sale would have to be much larger than it is at present. The Council therefore wishes to impress on members of the Association the importance of doing all that lies in their power to increase the circulation of the journal of which they are the proprietors. Only in this way can its continued existence be assured. The help of mathematical tutors in making the existence of the *Gazette* known to their more advanced students is especially requested, as it is believed that many of these would be glad to become subscribers if they were aware of its existence.

The thanks of the Association are due to Dr. Furnivall for the proof copies of *The Craft of Nombrynge*, circulated among the members, and to all those who have helped to establish the *Gazette*.

The Council proposes that the subscription for 1895 shall be 7s. 6d., and hopes to be able to propose a further reduction next year. It has been necessary to raise the price of the *Gazette* to 1s. to non-members, the matter being increased to twelve pages.

The following Officers and Council were elected for the current year :—

*President*—J. Larmor, M.A., D.Sc.

*Vice-Presidents*—R. B. Hayward, M.A., F.R.S.; R. Levett, M.A.; Professor G. M. Minchin, M.A.; R. Tucker, M.A.

*Treasurer*—Professor A. Lodge, M.A., Englefield Green, Surrey.

*Honorary Secretaries*—R. Holmes, M.A., The Avenue, St. Margarets, Twickenham; C. Pendlebury, M.A., 53 Gunterstone Road, West Kensington, W.

*Other Members of the Council*—Mrs. Bryant, D.Sc.; C. V. Coates, M.A.; H. D. Ellis, M.A.; W. J. Greenstreet, M.A.; G. Heppel, M.A.; Professor W. H. H. Hudson, M.A.; E. M. Langley, M.A.; Rev. J. J. Milne, M.A.

*Auditor*—Professor M'Leod.

The following new members were elected :—

Miss M. E. Rickett; Messrs. G. H. Bryan, M.A.; F. J. Butt; W. Gallatly, M.A.; J. H. Hooker, M.A.; T. H. Kirby, B.A.; R. F. Muirhead; T. W. Palmer, M.A.

After the elections Mr. E. M. Langley gave some geometrical notes and Mr. G. E. Heppel gave a paper on *Algebra in Schools*. After an adjournment Dr. Larmor took the chair, and papers were read by Rev. C. Taylor, D.D. (*The A.I.G.T. Syllabus of Geometrical Conics*) and Rev. J. J. Milne (*The Conics of Apollonius*), and Professor A. Lodge gave some notes on Mensuration.

# MESSRS. MACMILLAN & CO.'S MATHEMATICAL BOOKS.

## ARITHMETIC.

- Rules and Examples in Arithmetic.** By Rev. T. DALTON. With Answers. 2s. 6d.
- Arithmetic in Theory and Practice.** By J. BROOKSMITH. 4s. 6d. Key, 10s. 6d.
- Arithmetic for Beginners.** By J. and E. J. BROOKSMITH, B.A. 1s. 6d. Key, 6s. 6d.
- Arithmetic for Schools.** By Rev. J. B. LOCK, M.A. New Edition, revised and enlarged, 1894. 4s. 6d.
- Arithmetic for Beginners.** A School Class-Book of Commercial Arithmetic. By the same. 2s. 6d.—Key, 8s. 6d.
- Arithmetical Exercises and Examination Papers.** By H. S. HALL, M.A., and S. R. KNIGHT, B.A. With or without Answers. 2s. 6d.
- Exercises in Arithmetic for the Use of Schools.** Containing more than 7000 Original Examples. By S. PEDLEY. 5s. Also in Two Parts. 2s. 6d. each.
- Arithmetic for Schools.** By BARNARD SMITH. 4s. 6d.—Key, 8s. 6d.
- Arithmetic for Schools.** By the same. Revised by W. H. H. HUDSON, M.A., 4s. 6d.
- Higher Arithmetic and Elementary Mensuration.** By P. GOYEN. 5s. Key, 10s. net.

## ALGEBRA.

- Elementary Algebra for Schools.** By H. S. HALL, M.A., and S. R. KNIGHT, B.A. 3s. 6d. With Answers, 4s. 6d. Key, 8s. 6d.
- Algebra for Beginners.** By the same. 2s. With Answers, 2s. 6d.
- Algebraical Exercises and Examination Papers.** To accompany the above. By the same. With or without Answers. 2s. 6d.
- Higher Algebra.** A Sequel to "Elementary Algebra for Schools." By the same. Third Edition. 7s. 6d. Key, 10s. 6d.
- Rules and Examples in Algebra.** By Rev. T. DALTON, M.A. Part I.—New Edition. 2s. Part II., 2s. 6d. Key to Part I., 7s. 6d.
- Elementary Algebra.** By C. SMITH. 4s. 6d. Key, 10s. 6d.
- A Treatise on Algebra.** By the same. 7s. 6d. Key, 10s. 6d.
- Algebra.** For the Use of Colleges and Schools. By ISAAC TODHUNTER, F.R.S. New Edition. 7s. 6d. Key, 10s. 6d.
- The Principles of Elementary Algebra.** By N. F. DUPUIS, M.A. 6s.

## TRIGONOMETRY.

- Elementary Trigonometry.** By H. S. HALL, M.A., and S. R. KNIGHT, B.A. 4s. 6d. Key, 8s. 6d.
- Trigonometry for Beginners,** as far as the Solutions of Triangles. By Rev. J. B. LOCK, M.A. 2s. 6d. Key, 6s. 6d.
- Elementary Trigonometry.** By the same. 4s. 6d. Key, 8s. 6d.
- Higher Trigonometry.** By the same. 4s. 6d. Both Parts complete in one vol., 7s. 6d.
- The Trigonometry of One Angle.** By the same. 2s. 6d.
- Trigonometry for Beginners.** By I. TODHUNTER, F.R.S. 2s. 6d. Key, 8s. 6d.
- Plane Trigonometry.** By the same. 5s. New Edition, revised by R. W. HOGG, M.A. 5s. Key, 10s. 6d.
- A Treatise on Spherical Trigonometry.** By I. TODHUNTER. 4s. 6d.
- A Treatise on Spherical Trigonometry.** By W. J. M'CLELLAND, M.A., and T. PRESTON, M.A. 8s. 6d. Or in Two Parts. Part I., 4s. 6d.; Part II., 5s.
- Elements of Trigonometry.** By R. LEVETT and C. DAVISON. 6s. 6d. Or in Two Parts, 3s. 6d. each.
- Examples for Practice in the Use of Seven-Figure Logarithms.** By JOSEPH WOLSTENHOLME, D.Sc. 5s.

## ANALYTICAL GEOMETRY.

- An Elementary Treatise on Trilinear Co-Ordinates, The Method of Reciprocal Polars, and the Theory of Projectors.** By N. M. FERRERS. 6s. 6d.
- Conic Sections.** By C. SMITH. Seventh Edition. 7s. 6d. Key, 10s. 6d.
- Geometrical Conics.** By C. SMITH. 6s.
- Elementary Treatise on the Geometry of Conics.** By A. MUKHOPADHYAY, M.A. 4s. 6d.
- An Elementary Treatise on Solid Geometry.** By C. SMITH. 9s. 6d.
- The Elements of Solid Geometry.** By R. B. HAYWARD, M.A. F.R.S. 3s.
- Solid Geometry.** By P. FROST, D.Sc. Third Edition. 16s.
- Modern Plane Geometry.** By Rev. G. RICHARDSON, M.A., and A. S. RAMSEY. 3s. 6d.
- Plane Co-Ordinate Geometry.** By I. TODHUNTER. 7s. 6d. Key, 10s. 6d.
- Examples of Analytical Geometry of Three Dimensions.** By the same. 4s.

## HIGHER PURE MATHEMATICS.

- The Differential Calculus.** An Elementary Treatise. By J. EDWARDS. 14s.
- Differential Calculus for Beginners.** By the same. 4s. 6d.
- A Treatise on Differential Equations.** By A. R. FORSYTH, M.A. 14s.
- Introduction to Quaternions.** By P. KELLAND and P. G. TAIT. 7s. 6d.
- Geometry of Position.** By R. H. GRAHAM. 7s. 6d.
- Differential and Integral Calculus.** By A. G. GREENHILL. 10s. 6d.
- A Treatise on the Differential Calculus.** By I. TODHUNTER, F.R.S. 10s. 6d. Key, 10s. 6d.
- A Treatise on the Integral Calculus and its Applications.** By the same. 10s. 6d. Key, 10s. 6d.
- An Elementary Treatise on the Theory of Equations.** By the same. 7s. 6d.
- An Elementary Treatise on Curve Tracing.** By P. FROST, D.Sc. 12s.

## PROBLEMS AND QUESTIONS IN MATHEMATICS.

- Army Preliminary Examination, 1886-93,** Specimens of Papers set at the. With Answers to the Mathematical Questions. Subjects: Arithmetic, Algebra, Euclid, Geometrical Drawing, Geography, French and English Dictation. 3s. 6d.
- Sandhurst Mathematical Papers,** for admission into the Royal Military College, 1881-89. Edited by E. J. Brooksmith, B.A. 3s. 6d.
- Woolwich Mathematical Papers,** for admission into the Royal Military Academy, Woolwich, 1880-90 inclusive. By the same. 6s.
- Weekly Problem Papers.** By Rev. J. MILNE, M.A. 4s. 6d. Solutions, 10s. 6d.
- Companion to "Weekly Problem Papers."** By the same. Crown 8vo. 10s. 6d.
- A Collection of Elementary Test Questions in Pure and Mixed Mathematics.** By JAMES R. CHRISTIE, F.R.S. 8s. 6d.
- Mathematical Problems.** By JOSEPH WOLSTENHOLME, D.Sc. 18s.

MACMILLAN AND CO., LONDON.