

## ELEVENTH ANNUAL LIST OF PAPERS

READ BEFORE THE AMERICAN MATHEMATICAL SOCIETY AND  
SUBSEQUENTLY PUBLISHED, INCLUDING REFERENCES  
TO THE PLACES OF THEIR PUBLICATION.

- AMES, L. D. Evaluation of Slowly Convergent Series. Read Apr. 26, 1902. *Annals of Mathematics*, 2d ser., vol. 3, No. 4, pp. 185-192; July, 1902.
- BLACK, C. W. M. The Parametric Representation of the Neighborhood of a Singular Point of an Analytic Surface. Read Aug. 20, 1901. *Proceedings of the American Academy of Arts and Sciences*, vol. 37, No. 11, pp. 281-330; Jan., 1902.
- BLISS, G. A. The Problem of the Calculus of Variations when the End Point is Variable. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 132-141; Jan., 1902.
- BÔCHER, M. On Certain Pairs of Transcendental Functions whose Roots Separate each other. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 423-436; Oct., 1901.
- On Wronskians of Functions of a Real Variable. Read Aug. 20, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 2, pp. 53-63; Nov., 1901.
- On the Real Solutions of Systems of Two Homogeneous Linear Differential Equations of the First Order. Read Dec. 27, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 196-215; April, 1902.
- BOLZA, O. New Proof of a Theorem of Osgood in the Calculus of Variations. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 422-427; Oct., 1901.
- Proof of the Sufficiency of Jacobi's Condition for a Permanent Sign of the Second Variation in the so-called Isoperimetric Problems. Read (Chicago) March 29, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 305-311; July, 1902.
- BROMWICH, T. J. P.A. The Infinitesimal Generators of Parameter Groups. Read April 26, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 9, pp. 375-386; June, 1902.
- On the Parabolas (or Paraboloids) through the Points Common to Two Given Conics (or Quadrics). Read April 26, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 9, pp. 386-388; June, 1902.
- BROWN, E. W. Modern Methods of Treating Dynamical Problems and in Particular the Problem of Three Bodies. Read August 21-24, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 3, pp. 103-113; Dec., 1901.
- On the Small Divisors in the Lunar Theory. Read Feb. 22, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 159-185; April, 1902.

- CURTISS, D. R. Note on the Sufficient Conditions for an Analytic Function. Read April 26, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 8, pp. 329-331; May, 1902.
- DICKSON, L. E. Theory of Linear Groups in an Arbitrary Field. Read Aug. 20, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 363-394; Oct., 1901.
- The Configurations of the 27 Lines on a Cubic Surface and the 28 Bitangents to a Quartic Curve. Read Aug. 20, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 2, pp. 63-70; Nov., 1901.
- Representation of Linear Groups as Transitive Substitution Groups. Read (Chicago) April 6, 1901. *American Journal of Mathematics*, vol. 23, No. 4, pp. 337-377; Oct., 1901. See, also, The Groups of Steiner in Problems of Contact, *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 38-45; Jan., 1902.
- On the Group Defined by Any Given Field by the Multiplication Table of Any Given Finite Group. Read (Chicago) March 29, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 285-301; July, 1902.
- The Groups of Steiner in Problems of Contact (Second Paper). Read Feb. 22, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 377-382; July, 1902.
- DUNKEL, O. Some Applications of Green's Theorem in One Dimension. Read Feb. 22, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 7, pp. 288-292; April, 1902.
- EISENHART, L. P. Lines of Length Zero on Surfaces. Read Dec. 28, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 6, pp. 241-243; March, 1902.
- Note on Isotropic Congruences. Read Dec. 28, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 7, pp. 301-303; April, 1902.
- Conjugate Rectilinear Congruences. Read Oct. 26, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 354-371; July, 1902.
- EMCH, A. Note on Congruences of Twisted Curves. Read (Chicago) Dec. 27, 1900. *The University of Colorado Studies*, vol. 1, No. 1, pp. 29-32; Jan., 1902.
- Some Applications of the Theory of Assemblages. Read Dec. 28, 1901. *Mathematical Gazette*, vol. 2, No. 33, pp. 173-175; May, 1902.
- EPSTEEN, S. Proof that the Group of an Irreducible Linear Differential Equation is Transitive. Read Dec. 28, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 6, pp. 239-241; March, 1902.
- FIELDS, J. C. The Riemann-Roch Theorem and the Independence of the Conditions of Adjointness in the case of a Curve in which the Tangents at the Multiple Points are Distinct from one another. Read Aug. 19, 1901. *Journal für reine und angewandte Mathematik* (Crelle), vol. 124, No. 3, pp. 179-201; March, 1902.

- FITE, W. B. Concerning the Class of a Group of Order  $p^m$  that contains an Operator of Order  $p^{m-2}$  or  $p^{m-3}$ ,  $p$  being a Prime. Read Dec. 28, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 6, pp. 236-239. March, 1902.
- On Metabelian Groups. Read Aug. 26, Dec. 28, 1899, and Feb. 23, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 331-353; July, 1902.
- GRANVILLE, W. A. Invariants of Some  $m$ -gons under Certain Projective Lie Groups in the Plane. Read April 27, 1901. *Annals of Mathematics*, 2d ser., vol. 3, No. 1, pp. 43-44; Oct., 1901.
- HANCOCK, H. On Primary Prime Functions in Several Variables, and a Generalization of an Important Theorem of Dedekind. Read Dec. 28, 1900. *American Journal of Mathematics*, vol. 24, No. 1, pp. 39-60; Jan., 1902.
- HASKINS, C. N. On the Invariants of Quadratic Differential Forms. Read Aug. 20, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 71-91; Jan., 1902.
- HATHAWAY, A. S. Quaternions and Fourfold Space. Read (Chicago) Dec. 27, 1900. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 46-59; Jan., 1902.
- HAWKES, H. E. Estimate of Benjamin Peirce's Linear Associative Algebra. Read Feb. 23, 1901. *American Journal of Mathematics*, vol. 24, No. 1, pp. 87-95; Jan., 1902.
- On Hypercomplex Number Systems. Read June 28, 1900. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 312-330; July, 1902.
- HUNTINGTON, E. V. A Complete Set of Postulates for the Theory of Absolute Continuous Magnitude. Read Feb. 22, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 264-279; April, 1902.
- Complete Sets of Postulates for the Theories of Positive Integral and Positive Rational Numbers. Read Feb. 22, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 280-284; April, 1902.
- Simplified Definition of a Group. Read Feb. 22, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 7, pp. 296-300; April, 1902.
- A Second Definition of a Group. Read April 26, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 9, pp. 388-391; June, 1902.
- and WHITTEMORE, J. K. Some Curious Properties of Conics Touching the Line Infinity at One of the Circular Points. Read Oct. 26, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 3, pp. 122-124; Dec., 1901. Cf. p. 419; June, 1902.
- HUTCHINSON, J. I. On a Class of Automorphic Functions. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 1-11; Jan., 1902.
- KASNER, E. The Algebraic Potential Surfaces. Read April 27, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 6, pp. 243-248; March, 1902.

- KEYSER, C. J. Concerning the Angles and the Angular Determination of Planes in 4-Space. Read April 26, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 8, pp. 324-329; May, 1902.
- LEHMER, D. N. Constructive Theory of the Unicursal Cubic by Synthetic Methods. Read (San Francisco) May 3, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 372-376; July, 1902.
- LEMOINE, E. Note sur la Construction approchée de  $\pi$  de Mr. George Peirce. Read Aug. 20, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 4, pp. 137-148; Jan., 1902.
- LOVETT, E. O. On Geometry of  $n$  Dimensions. Read Oct. 27, Dec. 28, 1900, Feb. 23, April 27, 1901. *Journal de Mathématiques*, 5th ser., vol. 7, no. 3, pp. 259-303; Jan., 1902.
- Contact Transformations between the Fundamental Elements of Space. Read Oct. 27, Dec. 28, 1900; Feb. 23, 1901. *Annali di Matematica*, 3d ser., vol. 7, no. 1, pp. 39-98; Jan., 1902.
- MCCLINTOCK, E. On the Nature and Use of the Functions employed in the Recognition of Quadratic Residues. Read Dec. 27, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 92-109; Jan., 1902.
- MCDONALD, J. H. The Reduction of Hyperelliptic Integrals of Genus Two to Elliptic Integrals by a Transformation of Order Four. Read (Chicago) April 6, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 437-458; Oct., 1901.
- METZLER, W. H. On Certain Aggregates of Determinant Minors. Read April 27, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 395-403; Oct., 1901.
- MILLER, G. A. Groups defined by the Orders of Two Generators and the Order of their Product. Read Aug. 20, 1901. *American Journal of Mathematics*, vol. 24, No. 1, pp. 96-100; Jan., 1902.
- On the Abelian Groups which are Conformal with Non-Abelian Groups. Read Oct. 26, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 4, pp. 154-156; Jan., 1902.
- Determination of All the Groups of Order  $p^m$ ,  $p$  being any Prime, which Contain the Abelian Group of Order  $p^{m-1}$  and of Type  $(1, 1, 1, \dots)$ . Read (San Francisco) May 3, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 9, pp. 391-394; June, 1902.
- MOORE, E. H. On the Theory of Improper Definite Integrals. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 459-475; Oct., 1901.
- On the Projective Axioms of Geometry. Read Dec. 28, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 142-158; Jan., 1902.
- MORITZ, R. E. A Generalization of the Process of Differentiation. Read (Chicago) Dec. 28, 1899. *American Journal of Mathematics*, vol. 27, No. 3, pp. 257-302; July, 1902.

- MOULTON, F. R. A Simple Non-Arguesian Geometry. Read (Chicago) Jan. 2, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 192-195; April, 1902.
- NEWSON, H. B. On the Group of 216 Collineations of the Plane. Read (Chicago) April 14, 1900. *Kansas University Quarterly*, ser. A, vol. 10, No. 1, pp. 13-32; Jan., 1901.
- On the Product of Linear Substitutions. Read (Chicago) Jan. 3, 1902. *Annals of Mathematics*, 2d ser., vol. 3, No. 3, pp. 147-148; April, 1902.
- PELL, A. Some Remarks on Surfaces whose First and Second Fundamental Forms are the Second and First respectively of Another Surface. Read Aug. 20, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 1, pp. 27-28; Oct., 1901.
- PORTER, M. B. On Linear Homogeneous Finite Difference Equations, with Applications to Certain Theorems of Sturm. Read Feb. 23, 1901. *Annals of Mathematics*, 2d ser., vol. 3, No. 2, pp. 55-70; Jan., 1902.
- PRINGSHEIM, A. Ueber die Anwendung der Cauchy'schen Multiplikationsregel auf bedingt convergente oder divergente Reihen. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 404-412; Oct., 1901.
- Ueber den Goursat'schen Beweis des Cauchy'schen Integralsatzes. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 413-421; Oct., 1901.
- ROEVER, W. H. Brilliant Points and Loci of Brilliant Points. Read Feb. 22, 1902. *Annals of Mathematics*, 2d ser., vol. 3, No. 3, pp. 113-128; April, 1902.
- SCHOTTENFELS, I. M. Upon the Non-Isomorphism of two Simple Groups of Order  $8! / 2$ . Read Aug. 20, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 1, pp. 25-26; Oct., 1901.
- SCOTT, C. A. A recent Method for Treating the Intersections of Plane Curves. Read Dec. 27, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 216-263; April, 1902.
- SLOCUM, S. E. The Symbols of the Infinitesimal Transformations which Generate the Parameter Groups corresponding to all possible Types of Structure of Two, Three and Four Parameter Complex Groups. Read Oct. 26, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 4, pp. 156-168; Jan., 1902.
- Note on the Transformation of a Group into its Canonical Form. Read Dec. 28, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 7, pp. 280-288; April, 1902.
- SNYDER, V. On the Forms of Quintic Scrolls. Read Feb. 22, 1902. *Bulletin of the American Mathematical Society*, vol. 8, No. 7, pp. 293-296; April, 1902.
- STECKER, H. F. On the Determination of Surfaces Capable of Conformal Representation upon the Plane so that the Geodetic Lines shall be represented by a Prescribed System of Plane Curves. Read Aug. 19, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 12-22; Jan., 1902.

- Concerning the Elliptic  $\wp (g_2; g_3; z)$ -Functions as Coördinates in a Line Complex, and certain Related Theorems. Read Oct. 26, 1901. *Bulletin of the American Mathematical Society*, vol. 8, No. 4, pp. 148–153; Jan., 1902.
- STOLZ, O. Zur Erklärung der Bogenlänge und des Inhaltes einer krümmen Fläche. Read Oct. 26, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 23–37; Jan., 1902.
- Nachtrag zum Artikel: “Zur Erklärung der Bogenlänge, u. s. w.” Read (Chicago) March 29, 1902. *Transactions of the American Mathematical Society*, vol. 3, No. 3, pp. 302–304; July, 1902.
- VAN VLECK, E. B. A Proof of the Convergence of the Gaussian Continued Fraction for  $F(a, \beta + 1, \gamma + 1, x)/F(a, \beta, \gamma, x)$ . Read Aug. 20, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 476–483; Oct., 1901; and *Annals of Mathematics*, 2d ser., vol. 3, No. 1, pp. 1–18; Oct., 1901.
- On the Zeros of Fundamental Integrals of Regular Linear Differential Equations of the Second Order, with a Determination of the Number of Imaginary Roots of the Hypergeometric Series. Read Oct. 26, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 110–131; Jan., 1902.
- WESTLUND, J. Note on Multiply Perfect Numbers. Read (Chicago) Jan. 3, 1902. *Annals of Mathematics*, 2d ser., vol. 3, No. 4, pp. 161–163; July, 1902.
- WHITE, H. S. Note on a Twisted Curve connected with an Involuition of Pairs of Points in a Plane. Read (Chicago) Jan. 2, 1902. *Annals of Mathematics*, 2d ser., vol. 3, No. 4, pp. 149–153; July, 1902.
- WHITTEMORE, J. K. See HUNTINGTON, E. V.
- WILCZYNSKI, E. J. Invariants of Systems of Linear Differential Equations. Read Oct. 27, 1900. *Transactions of the American Mathematical Society*, vol. 2, No. 1, pp. 1–24; Jan., 1901.
- Geometry of a Simultaneous System of Two Linear Homogeneous Differential Equations of the Second Order. Read April 27, 1901. *Transactions of the American Mathematical Society*, vol. 2, No. 4, pp. 343–362; Oct., 1901.
- Reciprocal Systems of Linear Differential Equations. Read Oct. 26, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 1, pp. 60–70; Jan., 1902.
- YOUNG, J. W. On the Holomorphisms of a Group. Read Dec. 28, 1901. *Transactions of the American Mathematical Society*, vol. 3, No. 2, pp. 186–191; April, 1902.