# TWENTY-THIRD ANNUAL LIST OF PAPERS 

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

Bauer, G. N., and Slobin, H. L. Some Transcendental Curves and Numbers. Read (Chicago) March 21, 1913. Rendiconti del Circolo Matematico di Palermo, vol. 36, No. 3, pp. 327-332; Nov.-Dec., 1913.
Beetle, R. D. A Formula in the Theory of Surfaces. Read Feb. 28, 1914. Annals of Mathematics, vol. 15, No. 4, pp. 179-183; June, 1914.

Bennett, E. R. Simply Transitive Primitive Groups whose Maximal Subgroup Contains a Transitive Constituent of Order $p^{2}$, or $p q$, or a Transitive Constituent of Degree 5. Read Sept. 12, 1911. American Journal of Mathematics, vol. 36, No. 2, pp. 134-136; April, 1914.
Birkhoff, G. D. Quelques Théorèmes sur le Mouvement des Systèmes Dynamiques. Read Sept. 14, 1909. Bulletin de la Société Mathématique de France, vol. 40, No. 4, pp. 305-323; 1912.

A Theorem on Matrices of Analytic Functions. Read Sept. 13, 1911. Mathematische Annalen, vol. 74, No. 1, pp. 122-133; June, 1913.

Note on the Gamma Function. Read April 26, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 1, pp. 1-10; Oct., 1913.

On a Simple Type of Irregular Singular Point. Read Sept. 13, 1911. Transactions of the American Mathematical Society, vol. 14, No. 4, pp. 462-476; Oct., 1913.

The Generalized Riemann Problem for Linear Differential Equations, and the Allied Problems for Linear Difference and $q$-Difference Equations. Read April 26, 1913. Proceedings of the American Academy of Arts and Sciences, vol. 49, No. 9, pp. 521-568; Oct., 1913.

- Démonstration du dernier Théorème de Géométrie de Poincaré. Read Oct. 26, 1912. Bulletin de la Société Mathématique de France, vol. 42, No. 1, pp. 1-12; 1914.
Buss, G. A., and Wiley, F. B. A Method of Subdividing the Area Enclosed by a Plane Curve, with an Application to Cauchy's Theorem. Read (Chicago) March 22, 1913. Bulletin of the Scientific Laboratories of Denison University, vol. 17, No. 11, pp. 374 ff; May, 1914.
Bôcher, M. Applications and Generalizations of the Conception of Adjoint Systems. Read April 26, 1913. Transactions of the American Mathematical Society, vol. 14, No. 4, pp. 403-420; Oct., 1913.

The Infinite Regions of Various Geometries. Read Sept. 8, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 4, pp. 185200; Jan., 1914.
On Gibbs's Phenomenon. Read (Chicago) March 22, 1913. Journal für die Reine und Angewandte Mathematik, vol. 144, No. 1, pp. 41-47; Jan., 1914.
Bolza, O. Über den "Anormalen Fall" beim Lagrangeschen und Mayerschen Problem mit gemischten Bedingungen und variablen Endpunkten. Read Sept.8, 1913. Mathematische Annalen, vol. 74, No. 3, pp. 430-446; Oct., 1913.

Bussey, W. H. The Tactical Problem of Steiner. Read Sept. 8, 1913. American Mathematical Monthly, vol. 21, No. 1, pp. 3-12; Jan., 1914.
Camp, B. H. A Method of Extending to Multiple Integrals Properties of Simple Integrals. Read Feb. 22, 1913. Mathematische Annalen, vol. 75, No. 2, pp. 274-289; April, 1914.
Carmichael, R. D. On Transcendentally Transcendental Functions. Read (Chicago) April 5, 1912. Transactions of the American Mathematical Society, vol. 14, No. 3, pp. 311-319; July, 1913.
——On the Impossibility of Certain Diophantine Equations and Systems of Equations. Read (Chicago) March 21, 1913. American Mathematical Monthly, vol. 20, No. 7, pp. 213-221; Sept., 1913.
——On the Numerical Factors of the Arithmetic Forms $\alpha^{n} \pm \beta^{n}$. Read Dec. 31, 1912. Annals of Mathematics, vol. 15, Nos. 1-2, pp. 30-70; Sept.-Dec., 1913.

On Certain Diophantine Equations having Multiple Parameter Solutions. Read (Chicago) March 21, 1913. American Mathematical Monthly, vol. 20, No. 10, pp. 304-307; Dec., 1913.

- On Non-Homogeneous Equations with an Infinite Number of Variables. Read Dec. 31, 1912. American Journal of Mathematics, vol. 36, No. 1, pp. 13-20; Jan., 1914.
_ Some Theorems on the Convergence of Series. Read Sept. 8, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 5, pp. 225233; Feb., 1914.
Chittenden, E. W. Relatively Uniform Convergence of Sequences of Functions. Read (Chicago) March 22, 1913. Transactions of the American Mathematical Society, vol. 15, No. 2, pp. 197-201; April, 1914.
Clements, G. R. Implicit Functions Defined by Equations with Vanishing Jacobian. Read April 28, 1911, and Oct. 26, 1912. Transactions of the American Mathematical Society, vol. 14, No. 3, pp. 325-342; July, 1913.
—— Singular Point Transformations in Two Complex Variables. Read April 28, 1911. Annals of Mathematics, vol. 15, No. 1, pp. 1-19; Sept., 1913.

Coble, A. B. Restricted Systems of Equations. Read Dec. 31, 1913. American Journal of Mathematics, vol. 36, No. 2, pp. 1.67-186; April, 1914.

Coolidge, J. L. .Congruences and Complexes of Circles. Read Dec. 30, 1913. Transactions of the American Mathematical Society, vol. 15, No. 1, pp. 107-134; Jan., 1914.
Dickson, L. E. Proof of the Finiteness of Modular Covariants. Read (Chicago) March 22, 1913. Transactions of the American Mathematical Society, vol. 14, No. 3, pp. 299-310; July, 1913.

On the Rank of a Symmetrical Matrix. Read (Chicago) March 22, 1913. Annals of Mathematics, vol. 15, No. 1, pp. 27-28; Sept., 1913.
$\square$ Finiteness of the Odd Perfect and Primitive Abundant Numbers with $n$ Distinct Prime Factors. Read Dec. 31, 1912. American Journal of Mathematics, vol. 35, No. 4, pp. 413-422; Oct., 1913.

Linear Associative Algebras and Abelian Equations. Read (Chicago) April 4, 1906, and Dec. 27, 1913. Transactions of the American Mathematical Society, vol. 15, No. 1, pp. 31-46; Jan., 1914.

- On Invariants and the Theory of Numbers. Read (Chicago) March 22, 1913, and Sept. 10-12, 1913. The Madison Colloquium Lectures, pp. 1-110; New York, 1914.
Dodd, E. L. The Error-Risk of Certain Functions of the Measurements. Read (Southwestern Section) Nov. 30, 1912. Monatshefte für Mathematik und Physik, vol. 24, Nos. 3-4, pp. 268-276; July, 1913.
—— A Justification of Empirical Probability based upon an Undetermined a priori Probability. Read (Chicago) March 21, 1913. Giornale di Matematiche, vol. 51, No. 5, pp. 257-263; Sept.-Oct., 1913.
——The Error Risk of the Median Compared with that of the Arithmetic Mean. Read April 26, 1913. Bulletin of the University of Texas, Scientific Series, No. 27; March 15, 1914.
Dresden, A. On the Second Variation, Jacobi's Equation and Jacobi's Theorem for the Integral $\int F\left(x, y, x^{\prime}, y^{\prime}\right) d t$. Read (Chicago) Dec. 29, 1911. Annals of Mathematics, vol. 15, No. 2, pp. 78-83; Dec., 1913.
Eells, W. C. Number Systems of the North American Indians. Read (San Francisco) Oct. 25, 1913. American Mathematical Monthly, vol. 20, Nos. 9-10, pp. 263-272 and 293-299; Nov.-Dec., 1913: also in briefer form under the title: On Formation and Use of Numerals in Indian Languages of North America, Bibliotheca Mathematica, ser. 3, vol. 13, No. 3, pp. 218-222; July, 1913.
Eiesland, J. A. On the Algebraic Curves of a Tetrahedral Complex and the Surfaces Conjugate to it. Read Jan. 1, 1913. Rendiconti del Circolo Matematico di Palermo, vol. 36, No. 2, pp. 233-275; Sept.-Oct., 1913.

Eisenhart, L. P. Certain Continuous Deformations of Surfaces Applicable to Quadrics. Read Jan. 1, 1913. Transactions of the American Mathematical Society, vol. 14, No. 3, pp. 365-402; July, 1913.

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Evans, G. C. The Cauchy Problem for Integro-Differential Equations. Read Sept. 8, 1913. Transactions of the American Mathematical Society, vol. 15, No. 2, pp. 215-226; April, 1914.
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-_ On Constrained Motion. Read (Chicago) Dec. 27, 1913. American Journal of Mathematics, vol. 36, No. 1, pp. 21-30; Jan., 1914.
Fine, H. B. An Unpublished Theorem of Kronecker respecting Numerical Equations. Read Dec. 30, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 7, pp. 339-358; April, 1914.

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Frechet, M. Sur les Classes V Normales. Read April 26, 1913. Transactions of the American Mathematical Society, vol. 14, No. 3, pp. 320324; July, 1913.
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Glenn, O. E. The Symbolical Theory of Finite Expansions. Read April 28, 1911, and (Chicago) March 22, 1913. Transactions of the American Mathematical Society, vol. 15, No. 1, pp. 72-86; Jan., 1914.

A Translation Principle connecting the Invariant Theory of Line Congruences with that of Plane $n$-Lines. Read Sept. 9, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 5, pp. 233-238; Feb., 1914.
Graves, G. H. Complete Linear Systems of Algebraic Curves of Least Order of Genera Three and Four. Read Oct. 25, 1913. Author's Dissertation, $25 \mathrm{pp} . ;$ Lancaster, 1914.
Gronwall, T. H. Ueber die Laplacesche Reihe. Read Sept. 11, 1912. Mathematische Annalen, vol. 74, No. 2, pp. 213-270; Aug., 1913.
—— On the Summability of Fourier's Series. Read Feb. 22, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 3, pp. 139146; Dec., 1913.

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Hedrick, E. R. A Direct Definition of Logarithmic Derivative. Read (Southwestern Section) Nov. 30, 1912. American Mathematical Monthly, vol. 20, No. 6, pp. 185-187; June, 1913.
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- Note on the Fredholm Determinant. Read Dec. 30, 1913. Bulletin of the American Mathematical Society, vol. 20, No. 8, pp. 406-408; May, 1914.
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- The Algebra of Abu Kamil. Read Sept. 12, 1911. American Mathematical Monthly, vol. 21, No. 2, pp. 37-48; Feb., 1914.
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- On the Asymptotic Solutions of Linear Differential Equations. Read Jan. 2, 1913, and (Chicago) March 21, 1913. American Journal of Mathematics, vol. 36, No. 2, pp. 151-166; April, 1914.
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