## TWENTY-FOURTH ANNUAL LIST OF PAPERS

## READ BEFORE THE AMERICAN MATHEMATICAL SOCIETY AND SUBSEQUENTLY PUBLISHED, INCLUDING REFERENCES to the places of their publication.

Alexander, J. W., II. A proof of the invariance of certain constants of analysis situs. Read Sept. 8, 1913. Transactions of the American Mathematical Society, vol. 16, No. 2, pp. 148-154; April, 1915.
Archibald, R. C. Euclid's Book On Divisions of Figures ( $\pi \in \rho i=\delta \iota \alpha \iota \rho \bar{\epsilon} \sigma \epsilon \omega \nu$ $\beta_{1} \beta \lambda i o \nu$ ) with a restoration based on Woepcke's text and the Practica Geometriæ of Leonardo Pisano. Read April 25, 1914. Cambridge, University Press, $1915.8+88 \mathrm{pp}$.
Barus, C. The mathematician in modern physics. Read Sept. 8, 1914. Science, new ser., vol. 40, No. 1038, pp. 721-727; Nov. 20, 1914.
Bateman, H. The quartic curve and its inscribed configurations. Read Feb. 22, 1913. American Journal of Mathematics, vol. 36, No. 4, pp. 357-386; Oct., 1914.
—— The structure of the æther. Read Feb. 28, 1914. Bulletin of the American Mathematical Sociely, vol. 21, No. 6, pp. 299-309; March, 1915.

- The mathematical analysis of electrical and optical wave-motion on the basis of Maxwell's equations. Read (Chicago) April 29, 1911 and Feb. 22, 1913. Cambridge, University Press, 1915. 6+159 pp.
Bauer, G. N., and Slobin, H. L. Algebraic and transcendental numbers. Read (Chicago) Dec. 27, 1913. Rendiconti del Circolo Matematico di Palermo, vol. 38, No. 3, pp. 353-356; Nov.-Dec., 1914.
Bell, E. T. An arithmetical theory of certain numerical functions. Part 1. Read Oct. 26, 1912 and (San Francisco) May 22, 1914. University of Washington Publications (Science), 1915. 47 pp .
Bernstein, B. A. A complete set of postulates for the logic of classes expressed in terms of the operation "exception," and a proof of the independence of a set of postulates due to Del Ré. Read (San Francisco) Oct. 25, 1913. University of California Publications in Mathematics, vol. 1, No. 4, pp. 87-96; May 15, 1914.
Birkhoff, G. D. An elementary double inequality for the roots of an algebraic equation having greatest absolute value. Read April 24, 1915. Bulletin of the American Mathematical Society, vol. 21, No. 10, pp. 494-495; July, 1915.
Blichfeldt, H. F. A new principle in the geometry of numbers, with some applications. Read (San Francisco) April 12, 1913. Transactions of the American Mathematical Society, vol. 15, No.3, pp. 227235; July, 1914.
Bliss, G. A. A note on symmetric matrices. Read (Chicago) April 10, 1914. Annals of Mathematics, ser. 2, vol. 16, No. 1, pp. 43-44; Sept., 1914.
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—— Generalizations of geodesic curvature and a theorem of Gauss concerning geodesic triangles. Read April 28, 1906. American Journal of Mathematics, vol. 37, No. 1, pp. 1-18; Jan., 1915.
- A note on functions of lines. Read (Chicago) Dec. 28, 1914. Proceedings of the National Academy of Sciences, vol. 1, No. 3, pp. 173-177; March, 1915.
Bliss, G. A., and Underhill, A. L. The minimum of a definite integral for unilateral variations in space. Read (Chicago) Dec. 27, 1913. Transactions of the American Mathematical Society, vol. 15, No. 3, pp. 291-310; July, 1914.
Bôcher, M. On a small variation which renders a linear differential system incompatible. Read April 25, 1914. Bulletin of the American Mathematical Society, vol. 21, No. 1, pp. 1-6; Oct., 1914.
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Cajori, F. The history of Zeno's arguments on motion: phases in the development of the theory of limits. Read Sept. 9, 1913 and (Chicago) April 11, 1914. American Mathematical Monthly, vol. 22, No. 1, pp. 1-6; Jan., 1915: No. 2, pp. 39-47; Feb., 1915: No. 3, pp. 77-82; March, 1915: No. 4, pp. 109-115; April, 1915.
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Carmichael, R. D., and Mason, T. E. Note on the roots of algebraic equations. Read (Chicago) April 10, 1914. Bulletin of the American Mathematical Society, vol. 21, No. 1, pp. 14-22; Oct., 1914.
Chittenden, E. W. The converse of the Heine-Borel theorem in a Riesz domain. Read (Chicago) April 11, 1914. Bulletin of the American Mathematical Society, vol. 21, No. 4, pp. 179-183; Jan., 1915.
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Coble, A. B. Restricted systems of equations (second paper). Read Dec. 31, 1913. American Journal of Mathematics, vol. 36, No. 4, pp. 395-418; Oct., 1914.
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