THIRTY-EIGHTH ANNUAL LIST OF PAPERS

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

ADAMS, C. R. On the linear ordinary q-difference equation. Read April 6, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 195–205; April, 1929.

—— On the linear partial q-difference equation of general type. Read Sept. 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 360–371; April, 1929.

—— Note on integro-q-difference equations. Read March 29, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 861–867; Oct., 1929.

ADAMS, R. B. On the approximate solution of Fredholm's homogeneous integral equation. Read May 1, 1926. *American Journal of Mathematics*, vol. 51, No. 1, pp. 139–148; Jan., 1929.

ALBERT, A. A. On the group of the rank equation of any normal division algebra. Read Dec. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 14, No. 12, pp. 906–907; Dec., 1928.

—— On the structure of normal division algebras. Read Dec. 27, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 322–338; April, 1929.

—— The rank function of any simple algebra. Read March 30, 1929. *Proceedings of the National Academy of Sciences*, vol. 15, No. 4, pp. 372–376; April, 1929.

—— A determination of all normal division algebras in sixteen units. Read April 6, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 253–260; April, 1929.

—— On the rank equation of any normal division algebra. Read Dec. 27, 1928. *This Bulletin*, vol. 35, No. 3, pp. 335–338; May-June, 1929.

ALLEN, E. S. On certain power series with positive coefficients. Read Dec. 27, 1922. *Iowa State College Journal of Science*, vol. 2, No. 4, pp. 253–262; 1928.

—— La seconde période du jeu de cloche et marteau. Read (Southwestern Section) Nov. 29, 1924. *L'Enseignement Mathématique*, vol. 27, Nos. 4–6, pp. 305–314; Feb., 1929.

ALTSHILLER-COURT, N. Some tetrahedral complexes. Read (Southwestern Section) Dec. 1, 1928. *American Mathematical Monthly*, vol. 35, No. 9, pp. 467–471; Nov., 1928.

ANDERSON, N. L. An extension of Maschke's symbolism. Read (Southwestern Section) Nov. 27, 1926. *American Journal of Mathematics*, vol. 51, No. 1, pp. 123–138; Jan., 1929.

ARCHIBALD, R. G. The impossibility of a separation of types of linear odd divisors of binary quadratic forms. Read Feb. 25, 1928. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 12–22; Dec., 1928.

AYRES, W. L. Continuous curves which are cyclicly connected. Read Dec.

28, 1927. *Bulletin International de l'Académie Polonaise des Sciences et des Lettres, Classe des Sciences Mathématiques et Naturelles*, (A), 1928, Nos. 4–5, pp. 127–142; April–May, 1928.

—— Concerning subsets of a continuous curve which can be connected through the complement of the continuous curve. Read Sept. 9 and Oct. 29, 1927. *American Journal of Mathematics*, vol. 50, No. 4, pp. 521–534; Oct., 1928.

—— On continuous curves having certain properties. Read (Southwestern Section) Nov. 26, 1927. *Proceedings of the National Academy of Sciences*, vol. 15, No. 2, pp. 91–94; Feb., 1929.

—— On simple closed curves and open curves. Read (Southwestern Section) Nov. 26, 1927. *Proceedings of the National Academy of Sciences*, vol. 15, No. 2, pp. 94–96; Feb., 1929.

—— Conditions under which every arc of a continuous curve is a subset of a maximal arc of the curve. Read Sept. 6, 1928. *Mathematische Annalen*, vol. 101, Nos. 2–3, pp. 194–209; April, 1929.

—— Concerning the arc-curves and basic sets of a continuous curve, second paper. Read (San Francisco Section) June 2, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 595–612; July, 1929.

—— Continuous curves in which every arc may be extended. Read Dec. 27, 1928. *This Bulletin*, vol. 35, No 6, pp. 850–858; Nov.-Dec., 1929.

—— On continua which are disconnected by the omission of any point and some related problems. Read April 7, 1928. *Monatshefte für Mathematik und Physik*, vol. 36, No. 1, pp. 135–148; 1929.

—— Über Verallgemeinerungen des Jordanschen Kontinuums. Read Dec. 27, 1928. *Monatshefte für Mathematik und Physik*, vol. 36, No. 2, pp. 301–304; 1929.

BARNETT, I. A. On a relation between conformal and projective groups in function space. Read Dec. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 2, pp. 96–98; Feb., 1929.

BASOCO, M. A. On certain Fourier series expansions of doubly periodic functions of the third kind. Read (San Francisco Section) Oct. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 8, pp. 668–672; Aug., 1929.

BECKENBACH, E. F. An inequality for definite Hermitian determinants. Read Feb. 23, 1929. *This Bulletin*, vol. 35, No. 3, pp. 325–329; May–June, 1929.

BELL, E. T. The χ functions of Glaisher and class numbers. Read (San Francisco Section) April 4, 1925. *Messenger of Mathematics*, new ser., vol. 54, No. 648, pp. 186–188; April, 1925.

—— Modular equations and quadratic forms. Read (San Francisco Section) Oct. 25, 1924. *Bulletin of the Calcutta Mathematical Society*, vol. 16, No. 2, pp. 71–78; Sept., 1925.

—— On certain functions of two variables and their integrals related to the Bessel coefficients. Read (San Francisco Section) Oct. 25, 1924. *Philosophical Magazine*, (7), vol. 1, No. 2, pp. 304–312; Feb., 1926.

—— Modular Bernoullian and Eulerian functions. Read (San Francisco

Section) June 12, 1926. *University of Washington Publications in Mathematics,* vol. 1, No. 3, pp. 1–7; June, 1926.

—— Sur la notion de l'arithmétique générale. Read Jan. 1, 1926. Printed in *In Memoriam N. I. Lobatschevskii,* vol. II, Kasan, 1927; pp. 135–136.

—— Note on the quaternary quadratic identity of Hermite. Read (San Francisco Section) April 7, 1928. *American Mathematical Monthly,* vol. 35, No. 2, p. 76; Feb., 1928.

—— Outline of a theory of arithmetical functions in their algebraic aspects. Read (San Francisco Section) Oct. 27, 1928. *Journal of the Indian Mathematical Society,* vol. 17, No. 11, pp. 249–260; Oct., 1928.

—— Invariant sequences. Read (San Francisco Section) Oct. 27, 1928. *Proceedings of the National Academy of Sciences,* vol. 14, No. 12, pp. 901–904; Dec., 1928.

—— On certain finitely solvable equations between arithmetical functions. Read (San Francisco Section) Oct. 27, 1928. *American Journal of Mathematics,* vol. 51, No. 1, pp. 47–50; Jan., 1929.

—— A class of polynomials and rational functions in four variables. Read Dec. 31, 1928. *American Journal of Mathematics,* vol. 51, No. 3, pp. 329–344; July, 1929.

—— Certain invariant sequences of polynomials. Read (San Francisco Section) Oct. 27, 1928. *Transactions of this Society,* vol. 31, No. 3, pp. 405–421; July, 1929.

—— A partial isomorphism between the functions of Lucas and Weierstrass. Read Dec. 31, 1928. *This Bulletin,* vol. 35, No. 3, pp. 321–325, and No. 4, p. 498; May-June and July-Aug., 1929.

—— An interpretation of certain decomposable algebraic forms as functions of divisors. Read (San Francisco Section) Oct. 27, 1928. *Annals of Mathematics,* (2), vol. 30, No. 3, pp. 429–440; Aug., 1929.

—— Non-existence theorems on the number of representations of arbitrary odd integers as sums of $4r$ squares. Read June 20, 1929. *This Bulletin,* vol. 35, No. 5, pp. 695–700; Sept.-Oct., 1929.

BENTON, T. C. On continuous curves which are homogeneous except for a finite number of points. Read Oct. 29, 1927, and Oct. 27, 1928. *Fundamenta Mathematicae,* vol. 13, pp. 151–177; 1929.

BERNSTEIN, B. A. Irredundant sets of postulates for the logic of propositions. Read (San Francisco Section) June 2, 1928. *This Bulletin,* vol. 35, No. 4, pp. 545–548; July-Aug., 1929.

BERRY, A. C. The Fourier transform theorem. Read Dec. 27, 1928. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology,* vol. 8, No. 2, pp. 106–118; July, 1929.

BESICOVITCH, A. S. On the fundamental geometrical properties of linearly measurable plane sets of points. Read Sept. 9, 1927. *Mathematische Annalen,* vol. 98, Nos. 3–4, pp. 422–464; Nov., 1927.

BIRKHOFF, G. D. Divergente Reihen und singuläre Punkte gewöhnlicher Differentialgleichungen. Read Dec. 1, 1928. *Sitzungsberichte der Preussischen Akademie der Wissenschaften,* 1929, No. 11, pp. 171–183; May, 1929.

BIRKHOFF, G. D., and SMITH, P. A. Structure analysis of surface trans-

formations. Read Oct. 30, 1926, and April 7, 1928. *Journal de Mathématiques*, (9), vol. 7, No. 4, pp. 345–379; 1928.

BLICHFELDT, H. F. The minimum value of quadratic forms and the closest packing of spheres. Read March 28, 1919. *Mathematische Annalen*, vol. 101, No. 4, pp. 605–608; May, 1929.

BLUMENTHAL, L. M. On definite algebraic quadratic forms. Read Dec. 28, 1927. *American Mathematical Monthly*, vol. 35, No. 10, pp. 551–554; Dec., 1928.

BRAND, L. The role of direction in the variations of a definite integral in space. Read April 16, 1927. *This Bulletin*, vol. 35, No. 4, pp. 565–570; July-Aug., 1929.

BRAY, H. E. Functions of *écart fini*. Read May 7, 1927. *American Journal of Mathematics*, vol. 51, No. 1, pp. 149–164; Jan., 1929.

BROWNE, E. T. Involutions that belong to a linear class. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 483–492; Nov., 1928.

BUCHANAN, H. E. Periodic orbits of three finite masses about the equilateral triangle points. Read Sept. 9, 1927. *American Journal of Mathematics*, vol. 50, No. 4, pp. 613–626; Oct., 1928.

BURINGTON, R. S., and HOLT, H. K. Canonical forms of plane cubic curves under euclidean transformations. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 52–60; Dec., 1928.

CAJORI, F. Ciruelo on the names "arithmetical" and "geometrical" proportions and progressions. Read (San Francisco Section) Oct. 30, 1926. *Isis*, vol. 10, No. 2, pp. 363–366; June, 1928.

—— Early history of partial differential equations and of partial differentiation and integration. Read (San Francisco Section) April 7, 1928. *American Mathematical Monthly*, vol. 35, No. 9, pp. 459–467; Nov., 1928.

—— A revaluation of Harriot's *Artis analyticae praxis*. Read (San Francisco Section) April 7, 1928. *Isis*, vol. 11, No. 2, pp. 316–324; Dec., 1928.

—— A history of mathematical notations. Read (San Francisco Section) April 5, 1919, (San Francisco Section) Oct. 23, 1920, Dec. 29, 1920, (San Francisco Section) April 8, 1922, and (San Francisco Section) April 5, 1924. Chicago, Open Court, 1928, 1929. 2 volumes. 16+451 +18+367 pp.

—— Controversies on mathematics between Wallis, Hobbes, and Barrow. Read (San Francisco Section) Oct. 27, 1928. *Mathematics Teacher*, vol. 22, No. 3, pp. 146–151; March, 1929.

—— Sir Isaac Newton's edition of Varen's geography. Read (San Francisco Section) Oct. 27, 1928. *Mathematical Gazette*, vol. 14, No. 200, pp. 415–416; April, 1929.

CALUGARÉANO, G. Les fonctions polygènes comme intégrales d'équations· différentielles. Read Feb. 23, 1929. *Transactions of this Society*, vol. 31, No. 2, pp. 372–378; April, 1929.

CAMP, B. H. The multinomial solid and the chi test. Read Dec. 29, 1926. *Transactions of this Society*, vol. 31, No. 1, pp. 133–144; Jan., 1929.

CAMP, C. C. Devices for computing the rates together with a statistical study of building and loan associations. Read Dec. 28, 1927. *Journal of the American Statistical Association*, new ser., vol. 23, No. 164, pp. 411–416; Dec., 1928.

CAMPBELL, A. D. Plane cubic curves in the Galois fields of order ρ^n, $\rho > 2$. Read Dec. 29, 1929. *Messenger of Mathematics*, new ser., vol. 58, No. 3, pp. 33–48; July, 1928.

—— Note on the Plücker equations for plane algebraic curves in the Galois fields. Read Dec. 1, 1928. *This Bulletin*, vol. 34, No. 6, pp. 718–720; Nov.-Dec., 1928.

—— Note on linear transformations of n-ics in m variables. Read Aug. 29, 1929. *This Bulletin*, vol. 35, No. 5, pp. 691–694; Sept.-Oct., 1929.

CAMPBELL, G. A. The practical application of the Fourier integral. Read Sept. 6, 1928. *Bell System Technical Journal*, vol. 7, No. 4, pp. 639–707; Oct., 1928.

CAMPBELL, J. W. Catenary problems in mechanics. Read (San Francisco Section) June 2, 1928. *Proceedings and Transactions of the Royal Society of Canada*, (3), vol. 22, Section III, pp. 353–357; Jan., 1928.

CARPENTER, A. F. Complete systems of invariants and covariants for triads of ruled surfaces. Read (San Francisco Section) June 18, 1927. *Tôhoku Mathematical Journal*, vol. 30, Nos. 3–4, pp. 286–300; Feb., 1929.

—— Tetrads of ruled surfaces. Read (San Francisco Section) June 2, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 523–528; July, 1929.

CARSON, J. R. The asymptotic solution of an operational equation. Read Aug. 30, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 782–792; Oct., 1929.

CHITTENDEN, E. W. On general topology and the relation of the properties of the class of all continuous functions to the properties of space. Read Dec. 28, 1923, April 15, 1927, and April 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 290–321; April, 1929.

COBLE, A. B. Algebraic geometry and theta functions. Read Dec. 29, 1923, Dec. 28, 1927, and Sept. 4–6, 1928. *American Mathematical Society Colloquium Publications*, vol. 10; 1929. 8+282 pp.

CONDON, E. U. Quantum mechanics of momentum space. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 467–474; April, 1929.

COOLIDGE, J. L. The heroic age of geometry. Read Dec. 28, 1928. *This Bulletin*, vol. 35, No. 1, pp. 19–37; Jan.-Feb., 1929.

COPELAND, A. H. Admissible numbers in the theory of probability. Read Oct. 29, 1927. *American Journal of Mathematics*, vol. 50, No. 4, pp. 535–552; Oct., 1928.

CURTISS, D. R. Classes of diophantine equations whose positive integral solutions are bounded. Read Dec. 28, 1927. *This Bulletin*, vol. 35, No. 6, pp. 859–865; Nov.-Dec., 1929.

DAVIS, D. R. The inverse problem of the calculus of variations in space of $(n+1)$ dimensions. Read (San Francisco Section) June 2, 1928. *This Bulletin*, vol. 35, No. 3, pp. 371–380; May-June, 1929.

DAVIS, H. T., and HUFFORD, M. E. Diffraction of light by a circular open-
ing and the Lommel wave theory. Read April 6 and Sept. 6, 1928.
Physical Review, (2), vol. 33, No. 4, pp. 589–597; April, 1929.

DAUS, P. H. Normal ternary continued fraction expansions for cubic
irrationalities. Read Sept. 18, 1923. *American Journal of Mathematics*,
vol. 51, No. 1, pp. 67–98; Jan., 1929.

DICKSON, L. E. Quadratic functions or forms, sums of whose values give
all positive integers. Read April 6, 1928. *Journal de Mathématiques*,
(9), vol. 7, No. 3, pp. 319–336; 1928.

—— Universal quadratic forms. Read Dec. 31, 1928. *Transactions of this
Society*, vol. 31, No. 1, pp. 164–189; Jan., 1929.

—— The forms $ax^2+by^2+cz^2$ which represent all integers. Read Dec. 31,
1928. *This Bulletin*, vol. 35, No. 1, pp. 55–59; Jan.-Feb., 1929.

DINES, L. L. The resultant of two power series in two variables. Read
Sept. 6, 1928. *American Journal of Mathematics*, vol. 51, No. 3, pp.
349–362; July, 1929.

DORROH, J. L., and ROBERTS, J. H. On a problem by G. T. Whyburn.
Read (San Francisco Section) June 2, 1928. *Fundamenta Mathe-
maticae*, vol. 13, pp. 58–61; 1929.

ELLIOTT, W. W. Green's functions for differential systems containing a
parameter. Read Dec. 27, 1928. *American Journal of Mathematics*,
vol. 51, No. 3, pp. 397–416; July, 1929.

EMCH, A. Triple and multiple systems, their geometric configurations and
groups. Read Sept. 8, 1926, and April 6, 1928. *Transactions of this
Society*, vol. 31, No. 1, pp. 25–42; Jan., 1929.

—— On the mapping of the quadruples of the involutorial G_4 in a plane
upon a Steiner surface. Read Feb. 23, 1929. *This Bulletin*, vol. 35,
No. 3, pp. 381–390; May-June, 1929.

EVANS, G. C. Discontinuous boundary value problems of the first kind for
Poisson's equation. Read Sept. 9, 1927. *American Journal of Mathe-
matics*, vol. 51, No. 1, pp. 1–18; Jan., 1929.

FÉRAUD, L. Sur quelques applications des systèmes pfaffiens. Read March
30, 1929. *Comptes Rendus de l'Académie des Sciences*, vol. 188, No. 18,
pp. 1144–1146; April 29, 1929.

FORD, L. R. On motions which satisfy Kepler's first and second laws. Read
Dec. 29, 1925. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 549–
554; Nov., 1928.

—— The limit points of a group. Read Dec. 28, 1927. *Transactions of this
Society*, vol. 31, No. 4, pp. 821–828; Oct., 1929.

FORSYTH, C. H. Monthly items of secular trend corresponding to known
yearly items. Read Oct. 29, 1927. *Journal of the American Statistical
Association*, new ser., vol. 23, No. 163, pp. 296–300; Sept., 1928.

—— The yield of a dividend-paying venture. Read Dec. 28, 1926. *Giornale
di Matematica Finanziaria*, vol. 10, No. 6, pp. 255–259; Dec., 1928.

FORT, T. Generalized factorial series. Read Feb. 25, 1928. *Transactions of
this Society*, vol. 31, No. 2, pp. 233–240; April, 1929.

FRANKLIN, P. Approximation theorems for generalized almost periodic

functions. Read Dec. 28, 1927. *Mathematische Zeitschrift*, vol. 29, No. 1, pp. 70–86; Aug. 14, 1928.

—— A set of continuous orthogonal functions. Read Dec. 28, 1927. *Mathematische Annalen*, vol. 100, Nos. 4–5, pp. 522–529; Dec., 1928.

—— Classes of functions, orthogonal on an infinite interval, having the power of the continuum. Read Dec. 28, 1927. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 1, pp. 74–79; April, 1929.

—— Almost periodic recurrent motions. Read Dec. 28, 1927. *Mathematische Zeitschrift*, vol. 30, No. 3, pp. 325–331; June, 1929.

—— Equimomental systems. Read Dec. 27, 1928. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 2, pp. 129–140; July, 1929.

FRINK, O. An algebraic method of differentiation. Read Oct. 29, 1927. *American Mathematical Monthly*, vol. 36, No. 5, pp. 264–267; May, 1929.

FRY, T. C. The use of continued fractions in the design of electrical networks. Read Dec. 1, 1928. *This Bulletin*, vol. 35, No. 4, pp. 463–498; July-Aug., 1929.

GARVER, R. Sur le nombre π. Read May 7, 1927. *Mathesis*, vol. 41, No. 9, pp. 411–413; Nov., 1927.

—— Sur les transformations homographiques. Read (San Francisco Section) Oct. 27, 1928. *Mathesis*, vol. 42, No. 4, pp. 163–165; April, 1928.

—— A proof of a theorem of Brioschi. Read Dec. 27, 1928. *Messenger of Mathematics*, new ser., vol. 58, No. 2, pp. 24–26; June, 1928.

—— Two notes on cyclic cubics. Read (San Francisco Section) Oct. 27, 1928. *American Mathematical Monthly*, vol. 35, No. 8, pp. 435–436; Oct., 1928.

—— Sur l'équation du troisième degré. Read May 7, 1927. *Mathesis*, vol. 42, No. 8, pp. 344–346; Oct., 1928.

—— A solution of the quartic equation. Read Oct. 27, 1928. *American Mathematical Monthly*, vol. 35, No. 10, pp. 558–560; Dec., 1928.

—— Quartic equations with certain groups. Read (San Francisco Section) Oct. 27, 1928. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 47–51; Dec., 1928.

—— On the removal of four terms from an equation by means of a Tschirnhaus transformation. Read Dec. 27, 1928. *This Bulletin*, vol. 35, No. 1, pp. 73–78; Jan.-Feb., 1929.

—— Linear fractional transformations on quartic equations. Read (San Francisco Section) Oct. 27, 1928. *American Mathematical Monthly*, vol. 36, No. 4, pp. 208–212; April, 1929.

GEHMAN, H. M. On extending a continuous (1-1) correspondence (second paper). Read Oct. 29, 1927. *Transactions of this Society*, vol. 31, No. 2, pp. 241–252; April, 1929.

—— On extending a correspondence in the sense of Antoine. Read Dec. 28, 1927. *American Journal of Mathematics*, vol. 51, No. 3, pp. 385–396; July, 1929.

GLENN, O. E. On the generalization of the algebra of the theory of numbers.

The invariancy of infinite series. Read April 15 and Oct. 29, 1927, and Feb. 25, 1928. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 459–482; Nov., 1928.

GOUDSMIT, S. A. Quantum mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 523–524; April, 1929.

GRAUSTEIN, W. C. Note on a certain type of parabola. Read April 6, 1928. *This Bulletin*, vol. 35, No. 6, pp. 819–822; Nov.-Dec., 1929.

GRIFFITHS, L. W. Representations of integers in the form $x^2+2y^2+3z^2+6w^2$. Read April 6, 1928. *American Journal of Mathematics*, vol. 51, No. 1, pp. 61–66; Jan., 1929.

GRONWALL, T. H. The number of arithmetical operations involved in the solution of a system of linear equations. Read March 30, 1929. *American Mathematical Monthly*, vol. 36, No. 6, pp. 325–327; June-July 1929.

GROVE, V. G. Nets with equal W invariants. Read Sept. 8, 1927. *Transactions of this Society*, vol. 31, No. 4, pp. 845–852; Oct., 1929.

—— Contributions to the general theory of the transformations of nets. Read Sept. 6, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 853–860; Oct., 1929.

HARDY, G. H. An introduction to the theory of numbers. Josiah Willard Gibbs Lecture. Read Dec. 28, 1928. *This Bulletin*, vol. 35, No. 6, pp. 778–818; Nov.-Dec., 1929.

HARKIN, D. C. The abstract identity of modular systems and ideals. Read Dec. 27, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 205–216; April, 1929.

HASKELL, R. N. A note on Stieltjes integrals. Read May 7, 1927. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 543–548; Nov., 1928.

HAZLETT, O. C. Homogeneous polynomials with a multiplication theorem. Read Dec. 29, 1926. *Transactions of this Society*, vol. 31, No. 2, pp. 223–232; April, 1929.

HEDRICK, E. R., and INGOLD, L. Conjugate functions in three dimensions. Read April 19, 1924. *Journal de Mathématiques*, (9), vol. 7, No. 4, pp. 409–416; 1928.

HEINEMAN, E. R. Generalized Vandermonde determinants. Read Sept. 9, 1927. *Transactions of this Society*, vol. 31, No. 3, pp. 464–476; July, 1929.

HICKEY, D. M. The equilibrium point of Green's function for an annular region. Read Oct. 29, 1927. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 373–383; Aug., 1929.

HICKSON, A. O. An application of the calculus of variations to boundary value problems. Read April 6, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 563–579; July, 1929.

HILL, L. S. Cryptography in an algebraic alphabet. Read Oct. 29, 1927. *American Mathematical Monthly*, vol. 36, No. 6, pp. 306–312; June-July, 1929.

HILLE, E., and TAMARKIN, J. D. On the characteristic values of linear integral equations. Read April 6, 1928. *Proceedings of the National Academy of Sciences*, vol. 14, No. 12, pp. 911–914; Dec., 1928.

—— On the summability of Fourier series. Read Sept. 7, 1928. *Proceedings of the National Academy of Sciences*, vol. 14, No. 12, pp. 918–921; Dec., 1928.

—— On the summability of Fourier series. Second note. Read Dec. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 1. pp. 41–42; Jan., 1929.

HOFMANN, L. On a certain metric aspect of plane projective transformations. Read Oct. 27, 1928. *This Bulletin*, vol. 35, No. 3, pp. 391–400; May-June, 1929.

HOLLCROFT, T. R. Limits for multiple points and curves of surfaces. Read Dec. 28, 1927. *Tôhoku Mathematical Journal*, vol. 30, Nos. 1–2, pp. 115–129; Sept., 1928.

—— Limits for double points of surfaces. Read Sept. 8, 1927. *Journal für die reine und angewandte Mathematik*, vol. 159, No. 4, pp. 255–264; Oct., 1928.

—— Multiple lines with fixed coincident tangent planes. Read Sept. 6, 1928. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 451–456; Aug., 1929.

—— Multiple points of algebraic curves. Read June 20, 1929. *This Bulletin*, vol. 35, No. 6, pp. 841–849; Nov.-Dec., 1929.

HOLT, H. K. See BURINGTON, R. S.

HOTELLING, H. Stability in competition. Read April 6, 1928. *Economic Journal*, vol. 39, No. 153, pp. 41–57; March, 1929.

HUFFORD, M. E. See DAVIS, H. T.

HUNTINGTON, E. V. Tables of Lagrangean coefficients for interpolating without differences. Read April 28, 1923. *Proceedings of the American Academy of Arts and Sciences*, vol. 63, No. 11, pp. 421–437; March, 1929.

HUTCHINSON, J. I. Properties of functions represented by the Dirichlet series $\sum (av+b)^{-s}$, or by linear combinations of such series. Read Sept. 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 322–344; April, 1929.

INGOLD, L. See HEDRICK, E. R.

JACKSON, D. The human significance of mathematics. Read Dec. 29, 1927. *American Mathematical Monthly*, vol. 35, No. 8, pp. 406–411; Oct., 1928.

—— The relation of statistics to modern mathematical research. Read Dec. 28, 1928. *Science*, new ser., vol. 69, No. 1777, pp. 49–54; Jan. 18, 1929.

—— A note on closest approximation. Read April 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 215–221; April, 1929.

JEFFERY, R. L. The sequence of functions which define a definite integral containing a parameter. Read Sept. 7, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 311–321; April, 1929.

—— The existence of the Lebesgue-Stieltjes integral. Read Sept. 7, 1928. *This Bulletin*, vol. 35, No. 3, pp. 357–362; May-June, 1929.

JERBERT, A. R. Triads of plane curves. Read (San Francisco Section)

June 18, 1927. *American Journal of Mathematics*, vol. 51, No. 1, pp. 99–108; Jan., 1929.

JONES, B. W. The number of representations by certain positive ternary quadratic forms. Read Dec. 31, 1928. *American Mathematical Monthly*, vol. 36, No. 2, pp. 73–77; Feb., 1929.

KELLOGG, O. D. On bounded polynomials in several variables. Read Feb. 28 and Sept. 11, 1925. *Mathematische Zeitschrift*, vol. 27, No. 1, pp. 55–75; Aug., 1927.

—— Singular manifolds among those of an analytic family. Read March 29, 1929. *This Bulletin*, vol. 35, No. 5, pp. 711–716; Sept.-Oct., 1929.

KELLOGG, O. D., and VASILESCO, F. Contribution à l'étude de la capacité et de la série de Wiener. Read Dec. 27, 1928. *Comptes Rendus de l'Académie des Sciences*, vol. 188, No. 2, pp. 135–139; Jan. 7, 1929.

KEMBLE, E. C. The pendulum problem in the wave mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 503–508; April, 1929.

KENNARD, E. H. Uses and defects of the wave equation. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 495–498; April, 1929.

KETCHUM, P. W. A complete solution of Laplace's equation by an infinite hypervariable. Read Sept. 7, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 179–188; April, 1929.

KOOPMAN, B. O. On the singularities of linear partial differential equations. Read Oct. 27, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 687–693; Oct., 1929.

KORMES, M. On basis-sets. Read May 3, 1924. New York, Zincograph Company, 1928. 20 pp.

LANE, E. P. On the contact of a quartic surface with an analytic surface. Read March 29, 1929. *American Journal of Mathematics*, vol. 51, No. 3, pp. 431–438; July, 1929.

—— On the fundamental transformation of surfaces. Read Dec. 31, 1928. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 457–470; Aug., 1929.

LANGER, R. E. The boundary problem associated with a differential equation in which the coefficient of the parameter changes sign. Read Sept. 8, 1927. *Transactions of this Society*, vol. 31, No. 1, pp. 1–24; Jan., 1929.

—— The asymptotic location of the roots of a certain transcendental equation. Read March 30, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 837–844; Oct., 1929.

—— The expansion problem in the theory of ordinary linear differential systems of the second order. Read Sept. 7, 1928, and Aug. 29, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 868–906; Oct., 1929.

LATIMER, C. G. On forms which repeat under multiplication. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 61–65; Dec., 1928.

—— On the prime ideals of the general cubic Galois field. Read Dec. 28, 1927. *American Journal of Mathematics*, vol. 51, No. 2, pp. 295–304; April, 1929.

LEFSCHETZ, S. Duality relations in topology. Read Feb. 25, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 4, pp. 367–369; April, 1929.

LEHMER, D. N. On the congruences connected with certain magic squares. Read (San Francisco Section) April 7, 1923, and (San Francisco Section) June 12, 1926. *Transactions of this Society*, vol. 31, No. 3, pp. 529–551; July, 1929.

LITTAUER, S. B. On a theorem of Jacob. Read Dec. 27, 1928. *Journal of the London Mathematical Society*, vol. 4, No. 3, pp. 226–231; July, 1929.

LOTKA, A. J. The progeny of a population element. Read May 7, 1927, and Sept. 7, 1928. *American Journal of Hygiene*, vol. 8, No. 6, pp. 875–901; Nov., 1928.

LUBBEN, R. G. Separation theorems with applications to questions concerning accessibility and plane continua. Read Sept. 10 and Dec. 29, 1925, and Feb. 27, 1926. *Transactions of this Society*, vol. 31, No. 3, pp. 503–522; July, 1929.

McCOY, N. H. On commutation rules in the algebra of quantum mechanics. Read March 30, 1929. *Proceedings of the National Academy of Sciences*, vol. 15, No. 3, pp. 200–202; March, 1929.

—— On commutation formulas in the algebra of quantum mechanics. Read March 30, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 793–806; Oct., 1929.

McEWEN, G. F. Methods of estimating the significance of differences in or probabilities of fluctuations due to random sampling. Read Dec. 31, 1919. *Bulletin of the Scripps Institution of Oceanography*, technical series, vol. 2, No. 1, pp. 1–137; 1929.

MACDUFFEE, C. C. An introduction to the theory of ideals in linear associative algebras. Read Sept. 9, 1926. *Transactions of this Society*, vol. 31, No. 1, pp. 71–90; Jan., 1929.

—— On the independence of the first and second matrices of an algebra. Read March 30, 1929. *This Bulletin*, vol. 35, No. 3, pp. 344–349; May-June, 1929.

MACKIE, E. L. The Jacobi condition for a problem of Mayer with variable end points. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 393–410; Aug., 1929.

MANNING, W. A. A theorem concerning simply transitive primitive groups. Read April 6, 1928. *This Bulletin*, vol. 35, No. 3, pp. 330–332; May-June, 1929.

—— The degree and class of multiply transitive groups, II. Read (San Francisco Section) Oct. 27, 1928, and Dec. 31, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 643–653; Oct., 1929.

MARDEN, M. Zero-free regions of linear partial fractions. Read Oct. 27, 1928. *This Bulletin*, vol. 35, No. 3, pp. 363–370; May-June, 1929.

MICHAL, A. D. The group manifold of finite continuous point and functional transformation groups. Read Sept. 7, 1928. *Proceedings of the National Academy of Sciences*, vol. 14, No. 9, pp. 746–754; Sept., 1928.

—— Affinely connected function space manifolds. Read Oct. 29, 1927.

American Journal of Mathematics, vol. 50, No. 4, pp. 473–517; Oct., 1928.

MILES, E. R. C. Boundary value problems for functions of a single layer. Read April 7, 1928. *Transactions of this Society*, vol. 31, No. 1, pp. 190–203; Jan., 1929.

MILNE, W. E. On the degree of convergence of the Gram-Charlier series. Read March 30 and June 21, 1929. *Transactions of this Society*, vol. 31, No. 3, pp. 422–443; July, 1929.

—— On the degree of convergence of expansions on an infinite interval. Read Aug. 27, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 907–918; Oct., 1929.

MOORE, L. T., and TRACEY, J. I. Covariant conditions for multiple roots of a binary form. Read Feb. 25, 1928. *American Journal of Mathematics*, vol. 51, No. 1, pp. 42–46; Jan., 1929.

MOORE, R. L. Concerning triodic continua in the plane. Read Dec. 28, 1927. *Fundamenta Mathematicae*, vol. 13, pp. 261–263; 1929.

—— Concerning upper semi-continuous collections. Read April 7, 1928. *Monatshefte für Mathematik und Physik*, vol. 36, No. 1, pp. 81–88; 1929.

MOORE, T. W. Extended results in elimination. Read April 7, 1928. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 92–100; Dec., 1928.

MORSE, M. The critical points of functions and the calculus of variations in the large. Read April 6, 1928. *This Bulletin*, vol. 35, No. 1, pp. 38–54; Jan.-Feb., 1929.

—— Singular points of vector fields under general boundary conditions. Read Sept. 11, 1925, and Sept. 6, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 165–178; April, 1929.

—— The foundations of the calculus of variations in the large in m-space (first paper). Read April 6, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 379–404; July, 1929.

MURNAGHAN, F. D. On the energy of deformation of an elastic solid. Read April 7, 1928. *Proceedings of the National Academy of Sciences*, vol. 14, No. 11, pp. 889–891; Nov., 1928.

—— The operator H in Schrödinger's equation. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 465–466; April, 1929.

—— Modern hydrodynamical theory, with special reference to aeronautics. Read Oct. 29, 1927. *This Bulletin*, vol. 35, No. 3, pp. 294–318; May-June, 1929.

NEELLEY, J. H. Concerning covariants of the rational plane quartic curve with compound singularities. Read April 6, 1928. *This Bulletin*, vol. 35, No. 1, pp. 67–72; Jan.-Feb., 1929.

—— Effects of the oscnode upon covariant forms of the rational plane quartic curve. Read Sept. 6, 1928. *This Bulletin*, vol. 35, No. 4, pp. 571–575; July-Aug., 1929.

NOWLAN, F. S. Arithmetics of rational division algebras of order 9. Read (San Francisco Section) June 18, 1927. *Transactions of the Royal Society of Canada*, (3), vol. 21, Section III, pp. 185–221; May, 1927.

NYSWANDER, J. A. A direct treatment of systems of linear differential

equations whose coefficients have uniform singularities. Read Dec. 31, 1926. *American Journal of Mathematics*, vol. 51, No. 2, pp. 247–264 ; April, 1929.

OPPENHEIM, A. The approximate functional equation for the multiple theta-function and the trigonometric sums associated therewith. Read Dec. 29, 1927. *Proceedings of the London Mathematical Society*, (2), vol. 28, Nos. 6–7, pp. 476–480, 481–483; Sept. and Nov., 1928.

ORE, O. Abriss einer arithmetischen Theorie der Galoisschen Körper. (Erste Mitteilung.) Read Dec. 28, 1927. *Mathematische Annalen*, vol. 100, Nos. 4–5, pp. 650–673; Dec., 1928.

OSGOOD, W. F. Maxime Bôcher. Read Dec. 28, 1928. *This Bulletin*, vol. 35, No. 2, pp. 205–217; March-April, 1929.

PATTERSON, B. C. The differential invariants of inversive geometry. Read May 1, 1926. *American Journal of Mathematics*, vol. 50, No. 4, pp. 553–568; Oct., 1928.

PENNELL, W. O. A generalization of Heaviside's expansion theorem. Read (Southwestern Section) Nov. 26, 1927. *Bell System Technical Journal*, vol. 8, No. 3, pp. 482–492; July, 1929.

PERKINS, F. W. A note on certain continuous non-differentiable functions. Read Sept. 6, 1928. *This Bulletin*, vol. 35, No. 2, pp. 239–247; March-April, 1929.

PETERSON, T. S. A class of invariant functionals of quadratic functional forms. Read April 7, 1928. *American Journal of Mathematics*, vol. 51, No. 3, pp. 417–430; July, 1929.

PIERCE, T. A. Symmetric functions of n-ic residues (mod p). Read March 30, 1929. *This Bulletin*, vol. 35, No. 5, pp. 708–710; Sept.-Oct., 1929.

PIERPONT, J. El rigor matemático. Pasado y presente. Traducción de M. Alvarez Aguirre. Read Dec. 28, 1927. *Revista Matemática Hispano-Americana*, (2), vol. 3, No. 7, pp. 181–192, and No. 8, pp. 208–216; Sept. and Oct., 1928.

—— A note on Foucault's pendulum. Read Feb. 23, 1929. *American Mathematical Monthly*, vol. 36, No. 3, pp. 161-162; March, 1929.

—— On the motion of a rigid body about a fixed point in space of constant curvature. Read Dec. 28, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 287–294; May-June, 1929.

—— On the attraction of spheres in elliptic space. Read March 29, 1929. *This Bulletin*, vol. 35, No. 3, pp. 351–356; May-June, 1929.

—— Foucault's pendulum in elliptic space. Read Feb. 23, 1929. *Transactions of this Society*, vol. 31, No. 3, pp. 444–447; July, 1929.

PORITSKY, H. On certain oscillation theorems. Read Dec. 27, 1928. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 441–450; Aug., 1929.

RAINICH, G. Y. The role of groups in a physical theory. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 519–521; April, 1929.

—— Über die analytischen Funktionen auf einer Minimalfläche. Read Oct. 25, 1924. *Mathematische Annalen*, vol. 101, Nos. 2–3, pp. 386–393; April, 1929.

RANUM, A. Twisted curves classified as to their osculating and quasi-osculating spheres. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 445–458; Nov., 1928.
—— The singular points of analytic space-curves. Read Dec. 27, 1915. *Transactions of this Society*, vol. 31, No. 1, pp. 145–163; Jan., 1929.
—— Spheres osculating a curve and quasi-osculating another curve. Read Dec. 28, 1927. *Mathematische Annalen*, vol. 101, No. 1, pp. 147–160; March, 1929.
—— On spherical quasi-spherical curves. Read Dec. 28, 1927. *Annali di Matematica*, (4), vol. 6, Nos. 3–4, pp. 283–316; March-July, 1929.
RICHMOND, D. E. A new proof of certain relations of Morse in the calculus of variations in the large. Read Sept. 7, 1928. *This Bulletin*, vol. 35, No. 2, pp. 248–258; March-April, 1929.
RIDER, P. R. Moments of moments. Read Dec. 29, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 5, pp. 430–434; May, 1929.
RITT, J. F. Algebraic combinations of exponentials. Read Feb. 23, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 654–679; Oct., 1929.
—— On the zeros of exponential polynomials. Read Oct. 27, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 680–686; Oct., 1929.
ROBERTS, J. H. See DORROH, J. L.
ROBERTSON, H. P. On the relativistic cosmology. Read Oct. 29, 1927. *Philosophical Magazine*, (7), vol. 5, No. 31, pp. 835–848; May, 1928.
—— Harmonic analysis and the quantum theory. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 535–537; April, 1929.
ROBERTSON, H. P., and WEYL, H. On a problem in the theory of groups arising in the foundations of infinitesimal geometry. Read June 21, 1929. *This Bulletin*, vol. 35, No. 5, pp. 686–690; Sept.-Oct., 1929.
ROOS, C. F. A general problem of minimizing an integral with discontinuous integrand. Read April 16, 1927. *Transactions of this Society*, vol. 31, No. 1, pp. 58–70; Jan., 1929.
ROWE, C. H. A kinematical treatment of some theorems on normal rectilinear congruences. Read Aug. 30, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 919–930; Oct., 1929.
RUPP, C. A. The equation of the V_{n-1}^{n-1} in S_n. Read Dec. 27, 1928. *This Bulletin*, vol. 35, No. 3, pp. 319–320; May-June, 1929.
—— An extension of Pascal's theorem. Read April 6, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 580–594; July, 1929.
RUTLEDGE, G. Fundamental table for Lagrangean coefficients. Read Dec. 27, 1928. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 1, pp. 1–12; April, 1929.
—— Limiting values of Lagrangean coefficients. Read Dec. 27, 1928. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 1, pp. 13–17; April, 1929.
—— The basic power series of interpolation. Read August 29, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 807–820; Oct., 1929.
RUTT, N. E. Concerning the cut points of a continuous curve when the

arc curve, AB, contains exactly N independent arcs. Read May 7, 1927. *American Journal of Mathematics*, vol. 51, No. 2, pp. 217–246; April, 1929.

SCHOONMAKER, H.   Non-monoidal involutions having a congruence of invariant conics. Read Oct. 29, 1927. *American Journal of Mathematics*, vol. 51, No. 3, pp. 439–464; July, 1929.

SCHWATT, I. J.   The summation of a general type of Fourier's series. Read Dec. 29, 1920, and Dec. 29, 1926. *Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig*, vol. 80, No. 4, pp. 251–272; April, 1928.

SERGHIESCO, S.   Sur le nombre des racines communes à plusieurs équations simultanées. Read April 6, 1928. *Comptes Rendus de l'Académie des Sciences*, vol. 186, No. 4, pp. 211–213; Jan. 23, 1928.

—— Sur le nombre des racines communes à plusieurs équations simultanées. Read Dec. 27, 1928. *Comptes Rendus de l'Académie des Sciences*, vol. 188, No. 7, pp. 479–482; Feb. 11, 1929.

SHARPE, F. R.   The problem of plane involutions of order $t > 2$. Read Sept. 8, 1927, and Sept. 6, 1928. *American Journal of Mathematics*, vol. 50, No. 4, pp. 627–635; Oct., 1928.

SHEFFER, I. M.   A proof of the fundamental theorem of algebra. Read Sept. 6, 1928. *This Bulletin*, vol. 35, No. 2, pp. 227–230; March-April, 1929.

—— Systems of linear differential equations of infinite order, with constant coefficients. Read Dec. 28, 1927, and Sept. 7, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 250–264; April, 1929.

—— Expansions in generalized Appell polynomials, and a class of related linear functional equations. Read Sept. 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 261–280; April, 1929.

—— Systems of infinitely many linear differential equations of infinite order, with constant coefficients. Read Sept. 7, 1928. *Transactions of this Society*, vol. 31, No. 2, pp. 281–289; April, 1929.

SHOHAT, J. A. (CHOKHATE, J.).   Sur la meilleure approximation des fonctions mesurables et bornées à l'aide des polynomes ou des sommes trigonométriques. Read Nov. 30, 1928. *Comptes Rendus de l'Académie des Sciences*, vol. 187, No. 20, pp. 875–878; Nov. 12, 1928.

—— On some properties of polynomials. Read April 11, 1925. *Mathematische Zeitschrift*, vol. 29, No. 5, pp. 684–695; April, 1929.

—— On a certain formula of mechanical quadratures with non-equidistant ordinates. Read March 29, 1929. *Transactions of this Society*, vol. 31, No. 3, pp. 448–463; July, 1929.

SILVERMAN, L. L., and TAMARKIN, J. D.   On the generalization of Abel's theorem for certain definitions of summability. Read Feb. 26, 1927. *Mathematische Zeitschrift*, vol. 29, Nos. 2–3, pp. 319–334; Dec. 15, 1928.

SIMMONS, H. A.   On a cyclo-symmetric diophantine equation. Read Sept. 6, 1928. *American Mathematical Monthly*, vol. 36, No. 3, pp. 148–155; March, 1929.

SLATER, J. C.   Physical meaning of wave mechanics. Read Dec. 31, 1928.

Journal of the Franklin Institute, vol. 207, No. 4, pp. 449–455; April, 1929.

SLOTNICK, M. M.   Semi-parallel transformations of lines of curvature. Read Sept. 6, 1928. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 188–194; Dec., 1928.

SMITH, P. A.   See BIRKHOFF, G. D.

SNYDER, V.   The problem of the cubic variety in S_4.   Read Aug. 29, 1929. *This Bulletin*, vol. 35, No. 5, pp. 607–642; Sept.-Oct., 1929.

STONE, M. H.   Certain integrals analogous to Fourier integrals. Read Sept. 9, 1926. *Mathematische Zeitschrift*, vol. 28, No. 5, pp. 654-676; July, 1928.

—— Linear transformations in Hilbert space.   I. Geometric aspects. Read Oct. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 3, pp. 198–200; March, 1929.

—— Linear transformations in Hilbert space: II. Analytical aspects. Read Oct. 27, 1928. *Proceedings of the National Academy of Sciences*, vol. 15, No. 5, pp. 423–425; May, 1929.

STRUIK, D. J., and VALLARTA, M. S.   Statistical interpretation of various formulations of quantum mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 499–502; April, 1929.

SULLIVAN, C. T.   The determination of plane nets characterized by certain properties of their Laplace transforms.   Read Dec. 27, 1928. *This Bulletin*, vol. 35, No. 4, pp. 549–552; July-Aug., 1929.

SUSCHKEWITSCH, A.   On a generalization of the associative law.   Read Oct. 27, 1928. *Transactions of this Society*, vol. 31, No. 1, pp. 204–214; Jan., 1929.

SWANN, W. F. G.   Wave mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 457–464; April, 1929.

SWIFT, E.   Canonical forms for ordinary homogeneous differential equations of the second order with periodic coefficients. Read Dec. 29, 1926. *American Journal of Mathematics*, vol. 50, No. 4, pp. 591–612; Oct., 1928.

TAMARKIN, J. D.   See HILLE, E., SILVERMAN, L. L.

TAYLOR, J. H.   An application of tensor analysis to the first variation of an integral. Read Dec. 31, 1926. *This Bulletin*, vol. 35, No. 2, pp. 231–236; March-April, 1929.

THOMAS, J. M.   Riquier's existence theorems. Read Sept. 7, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 285–310; April, 1929.

TRACEY, J. I.   See MOORE, L. T.

TRJITZINSKY, W. J.   Functions with assigned initial values. Read Feb. 25, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 189–204; April, 1929.

UHLENBECK, G. E.   The kinetic method in statistical mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 539–542; April, 1929.

USPENSKY, J. V.   On Gierster's classnumber relations.   Read Sept. 9, 1927. *American Journal of Mathematics*, vol. 50, No. 1, pp. 93–122; Jan., 1928.

—— On the number of representations of integers by certain ternary quadratic forms. Read Sept. 9, 1927. *American Journal of Mathematics*, vol. 51, No. 1, pp. 51–60; Jan., 1929.

VALLARTA, M. S. See STRUIK, D. J.

VANDIVER, H. S. An extension of the Bernoulli summation formula. Read Sept. 9, 1927. *American Mathematical Monthly*, vol. 36, No. 1, pp. 36–37; Jan., 1929.

—— Summary of results and proof concerning Fermat's theorem (third note). Read Sept. 9, 1927. *Proceedings of the National Academy of Sciences*, vol. 15, No. 1, pp. 43–48; Jan., 1929.

—— Algorithms for the solution of the quadratic congruence. Read Sept. 11, 1925. *American Mathematical Monthly*, vol. 36, No. 2, pp. 83–86; Feb., 1929.

—— A theorem of Kummer's concerning the second factor of the class number of a cyclotomic field. Read March 30, 1929. *This Bulletin*, vol. 35, No. 3, pp. 333–335; May-June, 1929.

—— On a theorem of Kummer's concerning power characters of units in a cyclotomic field. Read Sept. 9, 1927. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 487–491; Aug., 1929.

—— On Fermat's last theorem. Read Dec. 27, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 613–642; Oct., 1929.

VANDIVER, H. S., and WAHLIN, G. E. Algebraic numbers, II. Read Sept. 9, 1926. *National Research Council Bulletin*, No. 62; Feb., 1928.

VAN VLECK, E. B. On the location of roots of polynomials and entire functions. Read March 29, 1929. *This Bulletin*, vol. 35, No. 5, pp. 643–683; Sept.-Oct., 1929.

VAN VLECK, J. H. The statistical interpretation of various formulations of quantum mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 475–494; April, 1929.

VASILESCO, F. See KELLOGG, O. D.

WAHLIN, G. E. See VANDIVER, H. S.

WALL, H. S. On the Padé approximants associated with the continued fraction and series of Stieltjes. Read April 16, 1927. *Transactions of this Society*, vol. 31, No. 1, pp. 91–116; Jan., 1929.

—— On extended Stieltjes series. Read Dec. 31, 1928. *Transactions of this Society*, vol. 31, No. 4, pp. 771–781; Oct., 1929.

WALSH, J. L. Note on the expansion of analytic functions in series of polynomials and in series of other analytic functions. Read Sept. 7, 1928. *Transactions of this Society*, vol. 31, No. 1, pp. 53–57; Jan., 1929.

—— On approximation by rational functions to an arbitrary function of a complex variable. Read Dec. 27, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 477–502; July, 1929.

—— The approximation of harmonic functions by harmonic polynomials and by harmonic rational functions. Read Feb. 23, 1929. *This Bulletin*, vol. 35, No. 4, pp. 499–544; July-Aug., 1929.

WEATHERBURN, C. E. On curvilinear congruences. Read Oct. 29, 1927. *Transactions of this Society*, vol. 31, No. 1, pp. 117–132; Jan., 1929.

WEISNER, L. On m-dimensional cross ratios. Read May 7, 1927. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 440–444; Nov., 1928.

WEYL, H. The problem of symmetry in quantum mechanics. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 509–518; April, 1929.

—— On the foundations of general infinitesimal geometry. Read June 21, 1929. *This Bulletin*, vol. 35, No. 5, pp. 716–725; Sept.-Oct., 1929.

—— See ROBERSTON, H. P.

WHELAN, R. A. Approximate solutions of certain general types of boundary value problems from the standpoint of integral equations. Read Sept. 7, 1928. *This Bulletin*, vol. 31, No. 1, pp. 105–122; Jan.-Feb., 1929.

WHYBURN, G. T. Concerning the complementary domains of continua. Read Feb. 26, 1927. *Annals of Mathematics*, (2), vol. 29, No. 4, pp. 399–411; Nov., 1928.

—— Concerning collections of cuttings of connected point sets. Read April 6, 1928, and (San Francisco Section) June 2, 1928. *This Bulletin*, vol. 31, No. 1, pp. 87–104; Jan.-Feb., 1929.

—— On regular points of continua and regular curves of at most order n. Read (Southwestern Section) Dec. 1, 1928. *This Bulletin*, vol. 35, No. 2, pp. 218–224; March-April, 1929.

—— Concerning irreducible cuttings of continua. Read May 7 and Dec. 28, 1927. *Fundamenta Mathematicae*, vol. 13, pp. 42–57; 1929.

—— Local separating points of continua. Read Oct. 27, 1928. *Monatshefte für Mathematik und Physik*, vol. 36, No. 2, pp. 305–314; 1929.

WHYBURN, W. M. On the fundamental existence theorems for differential systems. Read Dec. 28, 1927. *Annals of Mathematics*, (2), vol. 30, No. 1, pp. 31–38; Dec., 1928.

—— On related difference and differential systems. Read Sept. 9 and Dec. 31, 1926. *American Journal of Mathematics*, vol. 51, No. 2, pp. 265–286; April, 1929.

—— Non-isolated critical points of functions. Read Dec. 27, 1928. *This Bulletin*, vol. 35, No. 5, pp. 701–708; Sept.-Oct., 1929.

WIDDER, D. V. On the expansion of analytic functions of the complex variable in generalized Taylor's series. Read Sept. 9, 1927. *Transactions of this Society*, vol. 31, No. 1, pp. 43–52; Jan., 1929.

—— An inequality related to one of Hilbert's. Read Dec. 27, 1928. *Journal of the London Mathematical Society*, vol. 4, No. 3, pp. 194–198; July, 1929.

—— A generalization of Dirichlet's series and of Laplace's integrals by means of a Stieltjes integral. Read Feb. 25, 1928, and March 29, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 694–743; Oct., 1929.

WIENER, N. Harmonic analysis and the quantum theory. Read Dec. 31, 1928. *Journal of the Franklin Institute*, vol. 207, No. 4, pp. 525–534; April, 1929.

—— Hermitian polynomials and Fourier analysis. Read Dec. 27, 1928. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 1, pp. 70–73; April, 1929.

—— Harmonic analysis and group theory. Read March 30, 1929. *Journal of Mathematics and Physics of the Massachusetts Institute of Technology*, vol. 8, No. 2, pp. 148–154; July, 1929.

—— A type of Tauberian theorem applying to Fourier series. Read Oct. 27, 1928. *Proceedings of the London Mathematical Society*, (2), vol. 30, No. 1, pp. 1–8; Aug. 22, 1929.

WILDER, R. L.   Concerning zero-dimensional sets in euclidean space. Read April 15, 1927. *Transactions of this Society*, vol. 31, No. 2, pp. 354–359; April, 1929.

—— Characterizations of continuous curves that are perfectly continuous. Read June 21, 1929. *Proceedings of the National Academy of Sciences*, vol. 15, No. 7, pp. 614–621; July, 1929.

WILLIAMS, K. P.   The symbolic development of the disturbing function. Read April 7, 1928. *American Journal of Mathematics*, vol. 51, No. 1, pp. 109–122; Jan., 1929.

—— A generalization of the Cauchy-Riemann equations. Read Dec. 1, 1928. *Annals of Mathematics*, (2), vol. 30, No. 2, pp. 206–210; April, 1929.

WILLIAMSON, J.   Note on the simultaneous system of two quadratic quaternary forms. Read Dec. 27, 1928. *Journal of the London Mathematical Society*, vol. 4, No. 3, pp. 182–183; July, 1929.

WILSON, N. R.   On finding ideals. Read Sept. 6, 1928. *Annals of Mathematics*, (2), vol. 30, No. 3, pp. 411–428; Aug., 1929.

WILSON, W. A.   On irreducible cross-cuts of plane simply connected regions. Read Sept. 6, 1928. *American Journal of Mathematics*, vol. 51, No. 1, pp. 19–30; Jan., 1929.

—— Some properties of multi-coherent continua. Read Oct. 27, 1928. *This Bulletin*, vol. 35, No. 1, pp. 78–86; Jan.-Feb., 1929.

—— Certain problems related to the cutting of a simply connected plane region by a continuum. Read Oct. 27, 1928. *Transactions of this Society*, vol. 31, No. 3, pp. 552–562; July, 1929.

—— On linear upper semi-continuous collections of bounded continua. Read Feb. 23, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 829–836; Oct., 1929.

WOOD, F. E.   Similar-perspective triangles.   Read Dec. 27, 1924. *American Mathematical Monthly*, vol. 36, No. 2, pp. 67–73; Feb., 1929.

—— Cubics whose (Hessian)^n's are themselves.   Read Dec. 31, 1928. *This Bulletin*, vol. 35, No. 2, pp. 225–227; March-April, 1929.

ZARISKI, O.   The problem of existence of algebraic functions of two variables possessing a given branch curve. Read Dec. 27, 1928. *American Journal of Mathematics*, vol. 51, No. 2, pp. 305–328; April, 1929.

ZIPPIN, L.   A study of continuous curves and their relation to the Janiszewski-Mullikin theorem. Read Oct. 27 and Dec. 1, 1928, and March 30, 1929. *Transactions of this Society*, vol. 31, No. 4, pp. 744–770; Oct., 1929.