

THE APRIL MEETING IN CHICAGO

The three hundred fifty-ninth meeting of the American Mathematical Society was held at the University of Chicago on Friday and Saturday, April 14–15, 1939. This was the largest spring meeting in Chicago in the history of the Society, the attendance being about two hundred fifty including the following one hundred seventy-seven members of the Society:

A. A. Albert, J. V. Atanasoff, W. L. Ayres, I. A. Barnett, Walter Bartky, E. F. Beckenbach, J. H. Bell, S. F. Bibb, K. E. Bisshopp, G. A. Bliss, Morris Bloom, Henry Blumberg, L. M. Blumenthal, M. G. Boyce, Richard Brauer, J. L. Brenner, F. L. Brooks, O. E. Brown, P. B. Burcham, R. S. Burington, L. E. Bush, W. H. Bussey, H. H. Campaigne, E. W. Chittenden, R. V. Churchill, M. D. Clement, Max Coral, J. J. Corliss, A. R. Crathorne, E. L. Crow, D. R. Curtiss, H. T. Davis, J. E. Davis, W. M. Davis, Douglas Derry, L. E. Dickson, W. J. Dixon, J. M. Dobbie, J. L. Doob, R. H. Downing, D. M. Dribin, R. J. Duffin, J. J. Eachus, M. C. Eide, Churchill Eisenhart, C. G. Erickson, H. P. Evans, C. J. Everett, H. S. Everett, L. R. Ford, Bernard Friedman, Morris Friedman, D. G. Fulton, H. L. Garabedian, B. E. Gatewood, H. A. Giddings, H. H. Goldstine, G. D. Gore, Cornelius Gouwens, L. M. Graves, Louis Green, F. L. Griffin, L. W. Griffiths, P. R. Halmos, W. L. Hart, Olaf Helmer, M. R. Hestenes, T. H. Hildebrandt, J. J. L. Hinrichsen, D. L. Holl, A. S. Householder, D. H. Hyers, M. H. Ingraham, Dunham Jackson, S. B. Jackson, E. D. Jenkins, R. N. Johanson, Chosaburo Kato, R. B. Kershner, P. W. Ketchum, J. M. Kinney, S. C. Kleene, C. F. Kossack, W. C. Krathwohl, A. C. Ladner, E. P. Lane, R. E. Langer, C. G. Latimer, R. A. Leibler, D. C. Lewis, W. C. McDaniel, C. C. MacDuffee, Ralph Mansfield, H. W. March, Morris Marden, R. G. Mason, A. E. May, J. R. Mayor, A. N. Milgram, W. E. Milne, U. G. Mitchell, W. L. G. Mitchell, M. G. Moore, C. W. Moran, E. J. Moulton, F. H. Murray, Tadasi Nakayama, Albert Neuhaus, C. V. Newsom, E. A. Nordhaus, M. J. Norris, M. A. Norval, Rufus Oldenburger, L. F. Ollmann, R. S. Park, G. A. Parkinson, J. F. Paydon, E. R. Peck, G. H. Peebles, Sam Perlis, R. S. Phillips, G. B. Price, Tibor Radó, G. Y. Rainich, E. D. Rainville, R. B. Rasmusen, W. T. Reid, C. E. Rickart, F. D. Rigby, R. F. Rinehart, D. H. Rock, W. H. Roever, W. E. Roth, R. G. Sanger, Max Sasuly, A. C. Schaeffer, I. J. Schoenberg, G. E. Schweigert, W. T. Scott, C. E. Sealander, C. G. Shover, H. A. Simmons, C. B. Smith, F. C. Smith, W. N. Smith, E. S. Sokolnikoff, I. S. Sokolnikoff, R. H. Stark, R. C. Stephens, B. M. Stewart, Otto Szász, H. P. Thielman, R. M. Thrall, L. W. Tordella, Leonard Tornheim, H. C. Trimble, A. R. Turquette, E. H. Umberger, E. P. Vance, V. J. Varino, J. I. Vass, H. E. Vaughan, R. W. Wagner, H. S. Wall, J. A. Ward, L. E. Ward, K. W. Wegner, M. E. Wescott, F. J. Weyl, G. W. Whaples, L. R. Wilcox, F. B. Wiley, K. P. Williams, L. A. Wolf, M. C. Wolf, Y. K. Wong, F. E. Wood.

On Friday morning there were two sections, Algebra, Professors I. A. Barnett and C. G. Latimer presiding; and Analysis, Professor I. S. Sokolnikoff presiding. On Friday afternoon Professor M. H. Ingraham gave the Symposium Lecture on *Rational methods in matrix equations*. Professor L. E. Dickson presided at this lecture. On Satur-

day morning there were again two sections, Analysis with Professor Dunham Jackson presiding, and Geometry and Topology with Professor E. W. Chittenden presiding.

On Friday afternoon after the Symposium Lecture the ladies of the Department of Mathematics of the University of Chicago served tea in the Commons Room of Eckhart Hall.

There was a dinner for members and guests on Friday evening with an attendance of one hundred thirty-eight. Professor C. C. MacDuffee of the University of Wisconsin acted as toastmaster and called on Professor Richard Brauer of the University of Toronto and Professor F. L. Griffin of Reed College, who brought greetings to the group from the Canadian and Pacific Coast mathematicians. He then called on Professor L. E. Dickson who is retiring from the staff at the University of Chicago at the end of the year. Professor Dickson spoke of the pressing need of readable mathematical books in English.

Titles and cross references to the abstracts of the papers read at this meeting follow below. Papers numbered 1 to 9 were read before the Algebra section, papers 10 to 20 before the section for Analysis Friday morning, papers 21 to 31 before the Analysis section Saturday morning, and papers 32 to 42 before the section for Geometry and Topology. Papers 43 to 57 whose abstract numbers are followed by *t*, were read by title. Mr. Yuan Lay was introduced by Professor G. Y. Rainich, Dr. A. E. Heins by Professor William Marshall, Mr. Fulton Koehler by Professor Dunham Jackson, Mr. M. H. Heins by Professor J. L. Walsh. Paper 6 was read by Professor Rainich, 7 by Dr. Duffin, 15 by Dr. Beckenbach, 21 by Professor Barnett, 22 by Dr. Scott, 39 by Mr. Reichelderfer.

1. J. A. Ward: *Theory of analytic functions in linear associative algebras*. Preliminary report. (Abstract 45-5-252.)

2. C. G. Latimer: *The complete solution of certain Diophantine equations*. (Abstract 45-5-200.)

3. D. M. Dribin: *Class field theory of solvable algebraic number fields*. (Abstract 45-5-173.)

4. H. C. Trimble: *On the ring of matrices commutative with a given matrix*. (Abstract 45-3-148.)

5. R. M. Thrall: *Trilinear forms and determinantal manifolds*. Preliminary report. (Abstract 45-5-243.)

6. Yuan Lay: *On the imbedding of the skew part into an associative algebra*. (Abstract 45-5-201.)

7. R. J. Duffin and A. C. Schaeffer: *A problem in metric diophantine approximation*. (Abstract 45-3-136.)

8. Douglas Derry: *On finite abelian p -groups*. I. (Abstract 45-3-135.)
9. H. H. Campaigne: *Product hypergroups*. (Abstract 45-5-167.)
10. A. E. Heins: *The solution of the discrete equation of heat conduction*. (Abstract 45-5-184.)
11. H. W. March: *Infinite plane strip of orthotropic material under a concentrated load*. (Abstract 45-5-206.)
12. W. C. McDaniel: *The deflection of an orthotropic plate*. Preliminary report. (Abstract 45-5-207.)
13. Walter Bartky: *Solution of systems of differential equations by definite integrals*. (Abstract 45-5-158.)
14. R. V. Churchill: *On an extension of the Sturm-Liouville development*. (Abstract 45-5-168.)
15. E. F. Beckenbach and Maxwell Reade: *A characterization of plane isothermic maps*. (Abstract 45-5-159.)
16. E. D. Rainville: *Linear operational equations and the Laplace transformation*. (Abstract 45-5-226.)
17. Fulton Koehler: *Orthogonal polynomials on certain algebraic curves*. (Abstract 45-5-198.)
18. G. H. Peebles: *The boundedness of certain systems of orthogonal functions*. (Abstract 45-5-219.)
19. Dunham Jackson: *Orthogonal polynomials on curves of the second degree*. (Abstract 45-5-192.)
20. J. L. Doob: *The law of large numbers for continuous stochastic processes*. (Abstract 45-5-171.)
21. I. A. Barnett and Otto Szász: *On a certain Diophantine equation*. (Abstract 45-5-156.)
22. W. T. Scott and H. S. Wall: *Power series in which each exponent is at least twice the preceding*. (Abstract 45-5-237.)
23. R. S. Phillips: *Integration in a convex linear topological space*. (Abstract 45-5-220.)
24. Olaf Helmer: *A theorem of the Picard type*. (Abstract 45-5-186.)
25. L. M. Graves: *The Weierstrass condition for multiple integral problems of the calculus of variations*. (Abstract 45-3-138.)
26. M. R. Hestenes: *On the first necessary condition for minima of double integrals*. (Abstract 45-7-269.)
27. M. G. Moore: *On fundamental systems of solutions for linear difference equations*. (Abstract 45-5-213.)
28. W. T. Reid: *A note on the Du Bois-Reymond equations in the calculus of variations*. (Abstract 45-5-230.)
29. H. H. Goldstine: *Minimum problems in the functional calculus*. (Abstract 45-5-178.)

30. Otto Szász: *On the order of the partial sums of Fourier power series.* (Abstract 45-5-242.)
31. A. C. Schaeffer: *The Fourier-Stieltjes coefficients of a function of bounded variation.* (Abstract 45-3-145.)
32. F. J. Weyl: *Exponential curves.* (Abstract 45-5-253.)
33. R. B. Kershner: *Ergodic curves.* (Abstract 45-5-197.)
34. L. F. Ollmann: *On joining finite subsets of a planar Peano space by simple closed curves.* (Abstract 45-3-143.)
35. H. E. Vaughan: *Locally peripherally compact spaces.* (Abstract 45-5-244.)
36. Tibor Radó: *On cyclic elements.* (Abstract 45-5-223.)
37. G. E. Schweigert: *A note on the limit of orbits.* (Abstract 45-5-236.)
38. E. P. Vance: *Generalizations of non-alternating and non-separating transformations.* (Abstract 45-3-149.)
39. Tibor Radó and P. V. Reichelderfer: *Some properties of continuous transformations in the plane.* (Abstract 45-5-224.)
40. L. R. Wilcox: *A theorem on curves in a projective space.* (Abstract 45-5-255.)
41. G. D. Gore: *Transformations for two classes of surfaces.* (Abstract 45-5-179.)
42. A. N. Milgram: *Partially ordered sets; bounds and mappings.* (Abstract 45-7-272.)
43. R. E. O'Connor: *Quadratic and linear congruence.* (Abstract 45-3-142-t.)
44. Morgan Ward and R. P. Dilworth: *Evaluations over residuated structures.* (Abstract 45-1-106-t.)
45. Morgan Ward: *A characterization of Dedekind structures.* (Abstract 45-1-100-t.)
46. C. C. Camp: *A multiple series expansion.* Preliminary report. (Abstract 45-5-166-t.)
47. A. A. Aucoin and W. V. Parker: *Diophantine equations whose members are homogeneous.* (Abstract 45-5-154-t.)
48. E. D. Rainville: *Linear partial differential operators and the Laplace transformation.* (Abstract 45-5-227-t.)
49. E. D. Rainville: *Relations among certain operators of class three.* (Abstract 45-5-228-t.)
50. R. S. Phillips: *On additive set functions.* (Abstract 45-5-221-t.)
51. M. H. Ingraham: *An algorithm for the solution of the unilateral matrix equation.* (Abstract 45-5-191-t.)
52. Marie M. Johnson: *An extension of a covariant differentiation process.* (Abstract 45-5-193-t.)

53. V. W. Adkisson: *Plane peanian continua with homeomorphisms extendible in the sense of Antoine.* (Abstract 45-5-152-t.)

54. M. H. Heins: *Extremal problems for functions analytic and single-valued in a doubly connected region.* (Abstract 45-5-185-t.)

55. L. M. Blumenthal: *Metric methods in determinant theory.* (Abstract 45-5-163-t.)

56. M. R. Hestenes and H. H. Goldstine: *The condition of Mayer for the problem of Bolza in the calculus of variations.* (Abstract 45-5-187-t.)

57. C. F. Kossack: *The existence of collectives in abstract space.* (Abstract 45-5-199-t.)

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Associate Secretary