# THE APRIL MEETING IN CHICAGO

The three hundred forty-ninth meeting of the Society was held at the University of Chicago on Friday and Saturday, April 8–9, 1938. The attendance included the following one hundred thirty-six members of the Society:

E. S. Akeley, Leon Alaoglu, A. A. Albert, G. E. Albert, C. B. Allendoerfer, W. L. Ayres, R. W. Babcock, R. H. Bardell, I. A. Barnett, R. C. F. Bartels, Walter Bartky, S. F. Bibb, G. A. Bliss, Henry Blumberg, C. P. Brady, H. R. Brahana, J. L. Brenner, L. E. Bush, W. H. Bussey, H. H. Campaigne, R. D. Carmichael, C. R. Cassity, R. V. Churchill, W. W. S. Claytor, L. W. Cohen, Max Coral, J. J. Corliss, A. P. Cowgill, H. B. Curtis, D. R. Curtiss, W. M. Davis, L. E. Dickson, J. M. Dobbie, J. L. Doob, Ben Dushnik, J. M. Earl, Arnold Emch, H. P. Evans, H S. Everett, L. R. Ford, Bernard Friedman, H. L. Garabedian, H. A. Giddings, J. W. Glover, H. H. Goldstine, G. D. Gore, Cornelius Gouwens, L. M. Graves, L. W. Griffiths, M. B. Haberzetle, P. R. Halmos, W. L. Hart, M. R. Hestenes, T. H. Hildebrandt, J. J. L. Hinrichsen, Václav Hlavatý, D. L. Holl, Ralph Hull, D. H. Hyers, M. H. Ingraham, Dunham Jackson, S. B. Jackson, E. D. Jenkins, Fritz John, M. L. Kales, Chosaburo Kato, I. F. Keeler, R. B. Kershner, J. M. Kinney, W. C. Krathwohl, A. C. Ladner, R. E. Langer, C. G. Latimer, Sam Legvold, R. A. Leibler, M. I. Logsdon, A. C. Lunn, Saunders MacLane, P. T. Maker, Dorothy Manning, W. A. Manning, Ralph Mansfield, H. W. March, Morris Marden, J. R. Mayor, C. W. Mendel, A. N. Milgram, W. L. Mitchell, M. G. Moore, C. W. Moran, D. C. Morrow, E. J. Moulton, I. K. Murray, A. L. Nelson, I. M. Niven, E. A. Nordhaus, E. N. Oberg, G. A. Parkinson, Sam Perlis, H. P. Pettit, G. B. Price, E. D. Rainville, W. C. Randels, W. T. Reid, P. G. Robinson, W. E. Roth, E. H. Rothe, R. G. Sanger, A. C. Schaeffer, M. E. Shanks, C. G. Shover, D. R. Shreve, H. A. Simmons, W. G. Simon, Burke Smith, E. R. Smith, F. C. Smith, S. S. Smith, E. S. Sokolnikoff, I. S. Sokolnikoff, Otto Szász, H. P. Thielman, R. M. Thrall, Leonard Tornheim, W. J. Trjitzinsky, J. I. Vass, H. E. Vaughan, R. W. Wagner, F. P. Welch, R. L. Wilder, F. B. Wiley, K. P. Williams, H. E. Wilson, L. A. Wolf, M. C. Wolf, F. E. Wood.

The Friday morning session was in three sections, the first devoted to Geometry, the second to Applied Mathematics and Algebra, and the third to Analysis. On Friday afternoon Professor C. G. Latimer, of the University of Kentucky, delivered the Symposium Lecture on *The arithmetics of generalized quaternions*. A general session was held on Saturday morning.

The dinner was held at Judson Court on Friday evening and was attended by ninety-five persons. Professor E. J. Moulton, of Northwestern University, acted as toastmaster. Professor G. A. Bliss, of the University of Chicago, spoke of the coming International Congress of Mathematicians and called on Professor Václav Hlavatý, of the Karl University of Prague, for a few remarks. Professor Dunham Jackson, of the University of Minnesota, told of the arrangements for

the Semicentennial of the Society. Professor M. H. Ingraham, of the University of Wisconsin, as retiring secretary of the meeting, expressed the appreciation of the Society for the hospitality of the University of Chicago and the excellent local arrangements made by Dr. R. G. Sanger during the past ten years.

On Friday morning Professor W. H. Bussey presided in the section for Geometry, Professor M. H. Ingraham in the section for Applied Mathematics and Algebra, and Professor R. E. Langer in the section for Analysis. Professor A. A. Albert presided at the Symposium Lecture. At the general session on Saturday morning Professors G. A. Bliss and T. H. Hildebrandt presided.

Titles and cross references to abstracts of papers presented at this meeting are given below. Papers numbered 1 to 9 were read before the section for Geometry, those numbered 10 to 21 before the section for Applied Mathematics and Algebra, those numbered 22 to 32 before the section for Analysis, and those numbered 33 to 43 before the general session. Papers numbered 44 to 51, whose abstract numbers are followed by the letter *t*, were read by title. Dr. J. W. T. Suckau was introduced by Professor Tibor Radó, Dr. Olaf Helmer by Professor A. A. Albert, and Dr. R. J. Duffin by Dr. A. C. Schaeffer. Paper number 2 was read by Professor Ford, 11 by Professor Sokolnikoff, 32 by Dr. Schaeffer, 38 by Dr. Claytor, and 41 by Dr. Randels.

1. *The maps determined by the principal curves associated with five and six points in the plane*, by C. R. Cassity. (Abstract 44-3-137.)

2. *The isotenic circle*, by J. W. Hahn and L. R. Ford. (Abstract 44-5-204.)

3. *New properties of cubic surfaces*, by Arnold Emch. (Abstract 44-3-141.)

4. *An indicatrix for Riemann spaces*, by C. B. Allendoerfer. (Abstract 44-5-169.)

5. *The four-vertex theorem on the sphere*, by S. B. Jackson. (Abstract 44-5-219.)

6. *Theory of the topological order in some linear topological spaces* (preliminary report), by E. H. Rothe. (Abstract 44-5-257.)

7. *Concerning continuous linear orders*, by Ben Dushnik. (Abstract 44-5-193.)

8. *Note on ergodic curves*, by R. B. Kershner. (Abstract 44-5-229.)

9. *A lemma on squares*, by J. W. T. Suckau. (Abstract 44-5-267.)

10. *Saint-Venant's flexure problem for a regular polygon* (preliminary report), by R. C. F. Bartels. (Abstract 44-5-175.)

11. *Thermal stresses in elastic plates*, by I. S. Sokolnikoff and Elizabeth S. Sokolnikoff. (Abstract 44-5-266.)

12. *Generating functions associated with stochastic processes*, by E. S. Akeley. (Abstract 44-5-281.)

13. *Integral functions with coefficients in a given field* (preliminary report), by Olaf Helmer. (Abstract 44-5-212.)

14. *Apolarity of trilinear forms and pencils of bilinear forms*, by R. M. Thrall. (Abstract 44-3-159.)

15. *On the continuity of certain matrix functions* (preliminary report), by R. W. Wagner. (Abstract 44-5-275.)

16. *Integral sets of quaternion algebras over a function field*, by Leonard Tornheim. (Abstract 44-5-270.)

17. *On the representation of periodic residue systems modulo m*, by E. D. Rainville. (Abstract 44-5-252.)

18. *The properties of finite hypergroups*, by H. H. Campaigne. (Abstract 44-5-183.)

19. *Structure elements of quasi-groups*, by R. J. Duffin. (Abstract 44-5-192.)

20. *Two new universal Waring theorems*, by Mary B. Haberzetle. (Abstract 44-5-203.)

21. *A Waring problem*, by I. M. Niven. (Abstract 44-5-246.)

22. *A generalized Lambert series*, by J. M. Dobbie. (Abstract 44-3-139.)

23. *The convergence of polynomials on an infinite interval*, by J. M. Earl. (Abstract 44-5-194.)

24. *A Tauberian theorem related to Leroy summability*, by M. L. Kales. (Abstract 44-5-227.)

25. *Weak convergence of linear functionals*, by Leon Alaoglu. (Abstract 44-3-135.)

26. *A generalization of the problem of Bolza in the calculus of variations*, by H. H. Goldstine. (Abstract 44-5-200.)

27. *The inequalities of Morse when the maximum type is at most three*, by R. H. Bardell. (Abstract 44-5-174.)

28. *A note on convex functions*, by Bernard Friedman. (Abstract 44-5-198.)

29. *A mean value theorem for second order linear differential equations with constant coefficients*, by Fritz John. (Abstract 44-5-224.)

30. *Summability of expansions in solutions of differential equations*, by M. G. Moore. (Abstract 44-5-240.)

31. *Non-linear singular differential equations containing a parameter*, by F. P. Welch. (Abstract 44-3-163.)

32. *On some inequalities of S. Bernstein and W. Markoff on the derivatives of polynomials*, by A. C. Schaeffer and R. J. Duffin. (Abstract 44-5-258.)

33. *On the units of indefinite quaternion algebras*, by Ralph Hull. (Abstract 44-5-217.)

34. *On cyclic algebras*, by A. A. Albert. (Abstract 44-3-136.)

35. *On the matrix equation $TA = BT$*, by M. H. Ingraham. (Abstract 44-5-218.)

36. *Transcendence degrees and p-bases in terms of non-modular lattices*, by Saunders MacLane. (Abstract 44-3-149.)

37. *The boundary problem of linear differential systems in the complex domain*, by R. E. Langer. (Abstract 44-5-285.)

38. *Homogeneous locally connected continua*. I, by W. S. Claytor and R. L. Wilder. (Abstract 44-5-186.)

39. *A theory of critical points of functions in the calculus of variations*, by M. R. Hestenes. (Abstract 44-5-213.)

40. *On Fourier series with restricted coefficients*, by Otto Szász. (Abstract 44-5-269.)

41. *On summability by Riesz means*, by H. L. Garabedian and W. C. Randels. (Abstract 44-5-199.)

42. *Maximal orders in rational cyclic algebras of composite degree*, by Sam Perlis. (Abstract 44-5-286.)

43. *The group of automorphisms of the abelian group of order $p^{nr}$ and type $(r, r, \cdots, r)$*, by J. L. Brenner. (Abstract 44-5-181.)

44. *On volumes bounded by cylindrical surfaces*, by J. D. Mancill. (Abstract 44-3-151-$t$.)

45. *A note on the asymptotic Waring problem for homogeneous polynomial summands*, by Harold Chatland. (Abstract 44-3-138-$t$.)

46. *Concerning R. L. Moore's Axiom 5*, by F. B. Jones. (Abstract 44-3-146-$t$.)

47. *Sums of nth powers in fields of prime characteristic*, by Leonard Tornheim. (Abstract 44-5-271-$t$.)

48. *A note on normal division algebras of prime degree*, by A. A. Albert. (Abstract 44-5-168-$t$.)

49. *Axioms for lattices connected with dependence relations*, by Saunders MacLane. (Abstract 44-5-234-$t$.)

50. *Derived periodic residue systems modulo p*, by E. D. Rainville. (Abstract 44-5-251-$t$.)

51. *A note on cubic graphs*, by E. W. Miller. (Abstract 44-5-238-$t$.)

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W. L. AYRES,
*Associate Secretary*

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