THE APRIL MEETING IN CHICAGO

The four hundred sixteenth meeting of the American Mathematical Society was held at the Museum of Science and Industry, Chicago, Illinois, on Friday and Saturday, April 26–27, 1946. The attendance was about one hundred eighty, including the following one hundred fifty-four members of the Society:

A. A. Albert, E. S. Allen, E. W. Anderson, T. W. Anderson, B. H. Arnold, W. L. Ayres, Reinhold Baer, F. E. Baker, R. H. Bardell, Walter Bartky, G. E. Bates, H. W. Becker, J. H. Bell, P. O. Bell, S. F. Bibb, K. E. Bisshopp, H. L. Black, L. M. Blumenthal, D. G. Bourgin, R. H. Bruck, G. S. Bruton, E. L. Buell, R. H. Cameron, R. E. Carr, P. W. Carruth, W. B. Caton, E. W. Chittenden, R. V. Churchill, R. H. Cole, B. H. Colvin, Max Coral, J. J. Corliss, V. F. Cowling, M. M. Day, John DeCicco, Bernard Dimsdale, William H. Durfee, W F. Eberlein, Samuel Eilenberg, Martinus Esser, H P. Evans, H. S. Everett, G. M. Ewing, W. A. Ferguson, L. R. Ford, J. S. Frame, Evelyn Frank, M. R. Freundlich, J. W. Givens, E. L. Godfrey, H. H. Goldstine, L. W. Griffiths, V. G. Grove, V. C. Harris, W. L. Hart, G. E. Hay, C. T. Hazard, A. E. Heins, E. D. Hellinger, R. G. Helsel, M. R. Hestenes, Edwin Hewitt, E. H. C. Hildebrandt, D. L. Holl, B. E. Howard, H. K. Hughes, H. D. Huskey, T. J. Jaramillo, A. W. Jones, F. B. Jones, G. K. Kalisch, L. H. Kanter, Wilfred Kaplan, Irving Kaplansky, William Karush, J. L. Kelley, L. M. Kelly, Fred Kiokemeister, L. A. Knowler, Joseph Landin, E. P. Lane, R. E. Langer, C. G. Latimer, W. G. Leavitt, R. A. Leibler, Harry Levy, A. O. Lindstrum, M. I. Logsdon, A. T. Lonseth, Eugene Lukacs, C. C. MacDuffee, Saunders MacLane, W. S. Massey, A. E. May, E. J. Mickle, A. N. Milgram, H. J. Miser, C. W. Moran, E. J. Moulton, M. E. Munroe, S. B. Myers, August Newlander, C. V. Newsom, E. A. Nordhaus, Rufus Oldenburger, Isaac Opatowski, F. W. Owens, L. J. Paige, Gordon Pall, P. M. Pepper, H. P. Pettit, H. H. Pixley, A. L. Putnam, Tibor Radó, E. D. Rainville, Maxwell Reade, W. T. Reid, Haim Reingold, R. B. Rice, E. H. Rothe, J. M. Sachs, M. A. Sadowsky, R. G. Sanger, A. T. Schafer, R. D. Schafer, O. F. G. Schilling, G. E. Schweigert, M. E. Shanks, Seymour Sherman, H. A. Simmons, G. W. Smith, W. S. Snyder, Andrew Sobczyk, R. D. Specht, Abraham Spitzbart, C. E. Springer, N. E. Steenrod, R. R. Stoll, E. B. Stouffer, T. T. Tanimoto, H. P. Thielman, T. Y. Thomas, E. P. Vance, H. S. Wall, C. P. Wells, M. E. Wescott, A. L. Whiteman, L. R. Wilcox, R. L. Wilder, J. E. Wilkins, G. S. Young, J. W. T. Youngs, Oscar Zariski, Daniel Zelinsky.

On Friday and Saturday mornings, by invitation of the Committee for Invited Addresses at Western Sectional Meetings, Professor O. F. G. Schilling gave the Symposium lectures, under the title *Ideal theory on open Riemann surfaces*. The presiding officers at these sessions were Professors A. A. Albert and Saunders MacLane.

Sessions for the reading of short papers were held on Friday morning, with Professor Tibor Radó presiding, on Friday afternoon, with Professor C. C. MacDuffee presiding, and on Saturday morning, with Professor W. T. Reid presiding.

Titles and cross references for the abstracts of papers read at the

meeting follow below: Papers 1 to 7 were read Friday morning, 8 to 17, Friday afternoon, and 18 to 24, Saturday afternoon. Papers 25 to 59, whose abstract numbers are followed by the letter *t*, were read by title. Paper 6 was read by Professor Schweigert, 12 by Professor MacLane, and 19 by Professor Cameron. Professor L. K. Hua was introduced by Professor A. A. Albert.

1. R. L. Wilder: *Certain topological properties in the large and their applications.* (Abstract 52-5-217.)

2. J. W. T. Youngs: *The topological theory of Frêchet surfaces (2-cell case).* (Abstract 52-5-221.)

3. R. G. Helsel: *A theorem on surface area.* (Abstract 52-5-203.)

4. G. S. Young: *Interior and border transformations on surfaces.* (Abstract 52-5-220.)

5. N. E. Steenrod: *Extensions of maps and products of cocycles.* (Abstract 52-5-212.)

6. G. E. Schweigert and G. S. Young: *Remarks concerning invariants for certain finite transformations.* (Abstract 52-5-211.)

7. E. H. Rothe: *Gradient mappings in Hilbert space.* (Abstract 52-5-162.)

8. Lois W. Griffiths: *Linear homogeneous diophantine equations.* (Abstract 52-5-118.)

9. H. W. Becker: *Combinatory interpretations of Bell's numbers.* (Abstract 52-5-106.)

10. Irving Kaplansky: *On a problem of Kurosh and Jacobson.* (Abstract 52-5-122.)

11. Grace E. Bates: *Free loops and nets and their generalizations.* (Abstract 52-5-105.)

12. Samuel Eilenberg and Saunders MacLane: *Cohomology theory in abstract groups.* IIa. *Kernels and three-dimensional cohomology.* (Abstract 52-5-113.)

13. A. W. Jones: *Semimodular finite groups and the Burnside basis theorem.* (Abstract 52-5-120.)

14. F. B. Jones: *A characterization of a plane semi-locally-connected continuum.* (Abstract 52-3-101.)

15. Harry Levy: *The projective geometry of Riemannian spaces of two dimensions.* (Abstract 52-5-190.)

16. M. R. Hestenes: *An alternate sufficiency proof for the normal problem of Bolza.* (Abstract 52-7-233.)

17. Edwin Hewitt: *On rings of continuous functions.* Preliminary report. (Abstract 52-5-207.)

18. P. O. Bell: *Power series expansions for the equations of a variety in hyperspace.* (Abstract 51-9-173.)

19. R. H. Cameron and W. T. Martin: *The behavior of measure and measurability under change of scale in Wiener space.* (Abstract 52-5-140.)

20. J. E. Wilkins: *A note on the general summability of functions.* (Abstract 52-5-172.)

21. Maxwell Reade: *On averages of Newtonian potentials.* (Abstract 52-5-160.)

22. Wilfred Kaplan: *Qualitative analysis of physical systems.* (Abstract 52-5-176.)

23. W. F. Eberlein: *Wave equation in a stratified medium.* (Abstract 52-5-175.)

24. Andrew Sobczyk: *Stabilization of carrier-frequency servomechanisms.* (Abstract 52-5-180.)

25. A. A. Albert: The *Wedderburn principal theorem for Jordan algebras.* (Abstract 52-5-103-*t.*)

26. Reinhold Baer: *Absolute retracts in group theory.* (Abstract 52-5-104-*t.*)

27. H. W. Becker: *The general theory of rhyme.* (Abstract 52-5-107-*t.*)

28. R. H. Bing: *Converse linearity conditions.* (Abstract 52-5-136-*t.*)

29. L. M. Blumenthal: *Superposability in elliptic spaces.* (Abstract 52-7-250-*t.*)

30. D. G. Bourgin: *Approximate isometries.* (Abstract 52-5-138-*t.*)

31. W. B. Caton: *An inequality for analytic functions which are represented by their Fourier-Laguerre series.* (Abstract 52-5-141-*t.*)

32. John DeCicco: *Geodesic perspectivities upon a sphere.* (Abstract 52-5-183-*t.*)

33. Samuel Eilenberg and Saunders MacLane: *Cohomology theory in abstract groups.* IIb. *Group extensions with a non-abelian kernel.* (Abstract 52-5-114-*t.*)

34. Samuel Eilenberg and Saunders MacLane: *Cohomology theory in abstract groups.* III. *Non-associative systems and cohomology.* (Abstract 52-5-115-*t.*)

35. Arnold Emch: *Dissection of two equivoluminal parallelotops into two finite series of equal numbers of congruent pieces in ordinary and higher Euclidean spaces.* (Abstract 52-5-184-*t.*)

36. Evelyn Frank: *The location of the zeros of polynomials with complex coefficients.* (Abstract 52-3-67-*t.*)

37. R. A. Good: *On the theory of clusters.* (Abstract 52-5-117-*t.*)

38. M. R. Hestenes: *Theorem of Lindeberg in the calculus of variations.* (Abstract 52-5-152-*t.*)

39. L. K. Hua: *Geometries of matrices.* III. *Fundamental theorems in*

the geometries of symmetric matrices. (Abstract 52-5-119-*t.*)

40. G. B. Huff: *An arithmetic characterization of proper characteristics of linear systems.* (Abstract 52-5-186-*t.*)

41. G. B. Huff: *Rational-distance sets in the plane.* (Abstract 52-5-208-*t.*)

42. R. E. Johnson and Fred Kiokemeister: *The endomorphisms of the total operator domain of an infinite module.* (Abstract 52-3-57-*t.*)

43. Edward Kasner and John DeCicco: *Conformal perspectivities upon a sphere.* (Abstract 52-5-188-*t.*)

44. Edward Kasner and John DeCicco: *The distortion of angles in general cartography.* (Abstract 52-5-189-*t.*)

45. Fred Kiokemeister: *A note on the Schmidt-Remak theorem.* (Abstract 52-5-123-*t.*)

46. Fred Kiokemeister: *A theory of normality for quasigroups.* (Abstract 52-5-124-*t.*)

47. Fred Kiokemeister: *Reducibility in a class of homogeneous polynomials.* (Abstract 52-5-125-*t.*)

48. M. E. Munroe: *A second note on weak differentiability of Pettis integrals.* (Abstract 52-5-157-*t.*)

49. Isaac Opatowski: *Average duration of transition in Markoff chains.* (Abstract 52-5-198-*t.*)

50. George Piranian: *A summation matrix with a governor.* (Abstract 52-5-159-*t.*)

51. Ida Roettinger: *On certain finite integral transformations.* (Abstract 52-5-177-*t.*)

52. R. D. Schafer: *Equivalence in a class of division algebras of order* 16. (Abstract 52-5-127-*t.*)

53. A. R. Schweitzer: *Sums and products of ordered dyads in the foundations of algebra.* I. (Abstract 52-5-128-*t.*)

54. A. R. Schweitzer: *Sums and products of ordered dyads in the foundations of algebra.* II. (Abstract 52-5-129-*t.*)

55. Bernard Vinograde: *Sfield (division ring) composites.* (Abstract 52-5-134-*t.*)

56. H. S. Wall: *Bounded J-fractions.* (Abstract 52-5-170-*t.*)

57. R. L. Wilder: *A generalization of local co-connectedness and its applications.* (Abstract 52-5-216-*t.*)

58. R. L. Wilder: *Concerning generalized n-cells.* (Abstract 52-5-218-*t.*)

59. R. L. Wilder: *Homology groups of perfectly normal spaces.* (Abstract 52-5-219-*t.*)

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Associate Secretary