

## THE APRIL MEETING IN CHICAGO

The three hundred sixth regular meeting of the Society was held at the University of Chicago on Friday and Saturday, April 14-15, 1933. About one hundred twenty persons attended the meetings, among whom were the following ninety members of the Society:

A. A. Albert, R. P. Baker, R. H. Bardell, R. W. Barnard, Walter Bartky, E. F. Beckenbach, M. M. Beenken, S. F. Bibb, G. D. Birkhoff, G. A. Bliss, Henry Blumberg, J. W. Bower, H. R. Brahana, L. E. Bush, W. D. Cairns, R. D. Carmichael, J. E. Case, E. W. Chittenden, A. B. Coble, R. P. Conkling, Max Coral, Byron Cosby, D. R. Curtiss, L. E. Dickson, Arnold Emch, H. S. Everett, Cornelius Gouwens, C. H. Graves, L. M. Graves, L. W. Griffiths, W. W. Hart, M. L. Hartung, M. R. Hestenes, E. H. C. Hildebrandt, T. H. Hildebrandt, J. J. L. Hinrichsen, T. F. Holgate, M. H. Ingraham, Dunham Jackson, J. M. Kinney, W. C. Krathwohl, C. C. Krieger, A. C. Ladner, E. P. Lane, R. E. Langer, M. I. Logsdon, E. B. Lytle, C. C. MacDuffee, W. D. MacMillan, H. F. MacNeish, Wilhelm Maier, Morris Marden, William Markowitz, A. E. May, J. R. Mayor, C. N. Moore, T. W. Moore, E. J. Moulton, Rufus Oldenburger, Gordon Pall, G. A. Parkinson, E. D. Pepper, H. P. Pettit, E. C. Pixley, H. H. Pixley, Tibor Radó, W. T. Reid, R. G. D. Richardson, H. L. Rietz, W. H. Roever, W. E. Roth, R. G. Sanger, Henry Schultz, E. B. Skinner, H. E. Slaught, Burke Smith, A. A. Stafford, R. C. Stephens, V. B. Teach, H. P. Thielman, W. J. Trjitzinsky, P. L. Trump, H. L. Turrittin, E. B. Van Vleck, Oswald Veblen, K. W. Wegner, F. B. Wiley, K. P. Williams, Y. K. Wong, F. E. Wood.

A meeting of the Council was held on Friday afternoon in Room 316, Eckhart Hall. The Secretary announced the election of the following persons to membership in the Society:

Professor George Allen Baker, Shurtleff College;  
Professor Willard Alger Ballou, Junior College of Connecticut;  
Mr. William Gerard Banks, Jr., Centenary College;  
Mr. Louis Baron, Washington Square College, New York University;  
Mr. Robert Eugene Basye, University of Texas;  
Mr. Paul Anthony Benitz, Hunter College;  
Professor William Beverley, Lafayette College;  
Mr. Ernest Arthur Birkinshaw, Brandon College;  
Professor Paul Boeder, Susquehanna University;  
Professor Fannie W. Boyce, Wheaton College;  
Mr. Carl Benjamin Boyer, Brooklyn College;  
Mr. A. Day Bradley, Hunter College;  
Miss Georgia Alberta Lee Caldwell, Spelman College;

Mr. Irval W. Carter, Stanford University;  
Rev. James Edward Case, St. Louis University;  
Sister Catherine Marie, College of Mount St. Vincent;  
Mr. Si-Ping Cheo, University of Michigan;  
Mr. Walter Barton Coleman, Lehigh University;  
Dean Samuel Henry Cook, Berry College;  
Professor Mary Jane Cox, Hollins College;  
Mr. Laurence Lolin Cruise, Rochester Junior College;  
Professor Walter Hampton Dabney, Alcorn Agricultural and Mechanical College;  
Professor Anthony Davidson, Wilberforce University;  
Professor Charlotte Isabel Davison, Wilson College;  
Mr. Daniel B. DeLury, University of Saskatchewan;  
Mr. Reginald Horton Downing, West Virginia University;  
Professor Martin Linnaeus Drum, Bucknell University;  
Professor Janet C. Durand, Beaver College;  
Professor Charles R. Eason, Shaw University;  
Dr. Robert Lewis Echols, College of the City of New York;  
Professor G. Dan Estes, Arkansas State Teachers College, Conway;  
Sister Esther Maria Kenna, College of St. Elizabeth;  
Mr. Nicholas Fattu, Itasca Junior College;  
Mr. James Sutherland Frame, Harvard University;  
Mr. Alan Stuart Galbraith, Harvard University;  
Professor Theodore Whidden Gibson, Long Island University;  
Professor Thomas Edward Gilmer, Hampden-Sydney College;  
Professor Jekuthiel Ginsburg, Yeshiva College;  
Mr. James Bonaparte Greeley, 2d, Polytechnic Institute of Brooklyn;  
Dr. Joseph A. Greenwood, Duke University;  
Mr. Samuel L. Greitzer, Bronx, New York City;  
Mr. Morris Halperin, Brooklyn, N. Y.;  
Professor Olan Harvey Hamilton, San Antonio Junior College;  
Mr. Charles Henry Harrington, Glendale Junior College;  
Professor Anthony Keith Hinds, Western Carolina Teachers College;  
Professor George Maceo Jones, Howard University;  
Mr. John Dennis Keyes, Montana School of Mines;  
Mr. Earl James Kilcullen, St. Joseph's College;  
Dr. Edmund Chester Klipple, University of Texas;  
Dr. Cypra Cecilia Krieger, University of Toronto;  
Professor Cornelius Lanczos, Purdue University;  
Mr. Elihu Lazarus, New York City;  
Miss Alice Katharine Leon, Adelphi College;  
Mr. Louis Augustine McCoy, Roxbury Memorial High School for Boys;  
Professor Marshall Jefferson McNeal, Randolph-Macon College;  
Mr. Julian Dassy Mancill, University of Alabama;  
Mother Marie Kernaghan, Maryville College;  
Professor Malcolm Ray Marsh, College of Mines and Metallurgy, El Paso, Texas;  
Sister Mary Charlotte Fowler, Nazareth Junior College;

Sister Mary Domitilla Thuener, Villa Madonna College;  
 Sister Mary Nicholas Arnoldy, Marymount College;  
 Mr. Edward L. Mayo, Joliet High School and Junior College;  
 Professor Eugene R. Mittinger, John Carroll University;  
 Mr. Sidney Neuman, New York City;  
 Mr. Thomas Nicholson, Brooklyn College;  
 Professor Robert Earl Norris, Milwaukee State Teachers College;  
 Professor Nicholas M. Oboukhoff, Oklahoma Agricultural and Mechanical College;  
 Mr. Nathan Grier Parke, III, Princeton;  
 Professor Swen Franklin Parson, Northern Illinois State Teachers College;  
 Mr. Arthur Sylvester Peters, New York University;  
 Professor Maximilian Philip, College of the City of New York;  
 Mr. Richard S. Pieters, Princeton University;  
 Professor Zareh M. Pirenian, University of Florida;  
 Dr. Francis Regan, St. Louis University;  
 Professor William Henry Robinson, Joseph K. Brick Junior College;  
 Professor Lucile LeeOlene Rorex, Mountain Home College;  
 Mr. Clarence Ross, Junior College, Yakima, Wash.;  
 Mr. John Barkley Rosser, Princeton University;  
 Mr. Norman Norris Royall, Jr., Georgia School of Technology;  
 Mr. Henry Scheffé, University of Wisconsin;  
 Professor Raymond Francis Schnepp, St. Mary's University of San Antonio;  
 Mr. George Earl Schweigert, Johns Hopkins University;  
 Major Charles H. Sheffield, Marion Institute;  
 Professor George Llewellyn Shue, Montana School of Mines;  
 Professor Paul Ira Speicher, Albright College;  
 Mr. George Walter Streator, Bennett College for Women;  
 Professor Philip Mayfield Sunday, Jr., Jarvis Christian College;  
 Professor William D. Tallman, Montana State College;  
 Dean George Leward Washington, Technical College, Agricultural and Technical College, Greensboro, N. C.;  
 Professor Martha North Watson, Greenville Woman's College;  
 Mr. Howard B. Waxwood, Jr., Straight College;  
 Professor Eugene Paul Wigner, Institut für theoretische Physik der Technischen Hochschule, Berlin, Germany;  
 Mr. Jack Wolfe, Brooklyn College;  
 Professor Harvey Austice Wright, Transylvania College;  
 Professor Cyprian Yahner, St. Vincent College;  
 Miss Ruth Lu Tet Yap, University of Hawaii;

As Nominees of the University of Michigan:

Mr. Bassford C. Getchell, Ann Arbor;  
 Mr. Thomas N. E. Greville, Ann Arbor;  
 Mr. Kenneth B. Leisenring, Ann Arbor;  
 Mr. Franklin C. Smith, Ann Arbor;

As Nominees of the University of Pennsylvania:

Mr. Bernard B. August, Philadelphia;  
Mr. Richard Pennington Bailey, University of Pennsylvania;  
Mr. Irwin Biser, Philadelphia;  
Mr. Philip Maclasky, Drexel Institute.

The Secretary announced that the following persons had entered the Society under a reciprocity agreement:

Professor Corradino Mineo, University of Palermo, Palermo, Italy;  
Professor Leonida Tonelli, University of Pisa, Pisa, Italy.

At the meeting of the Council held on April 14, it was decided to omit the Christmas meeting in Chicago for 1933. The date of the Thanksgiving meeting in Cincinnati was set for December 1-2, 1933, and that of the 1934 spring meeting in Chicago for April 6-7, 1934.

It was announced that the Committee on the Bôcher Prize consists of Professors G. D. Birkhoff, chairman, R. D. Carmichael, and J. D. Tamarkin, and that President Coble has chosen to act with himself as Honorary Committee on Entertainment of Guests at the Summer Meeting, Professors D. R. Curtiss and E. B. Van Vleck together with the consuls of Hungary and Italy resident in Chicago.

The Editorial Committee of the Colloquium Publications reported that it has accepted a volume by Professor J. H. M. Wedderburn on *The Theory of Matrices*.

A committee was appointed consisting of Professors R. W. Barnard, E. W. Chittenden, L. M. Graves, T. H. Hildebrandt, and M. H. Ingraham to bring out the work of the late Professor E. H. Moore on *General Analysis*; it is expected that the committee will issue this in sections, one section to appear shortly.

On Friday afternoon there was a meeting in memory of Professor E. H. Moore at which the following of Professor Moore's former students addressed the Society:

Professor G. A. Bliss, *E. H. Moore—a biographical sketch*;  
Professor L. E. Dickson, *Professor Moore's work in theory of groups and algebra*;  
Professor Oswald Veblen, *Professor Moore's work on foundations*;  
Professor E. W. Chittenden, *The introduction to general analysis*;

Professor T. H. Hildebrandt, *General analysis and integral equations*;

Professor M. H. Ingraham, *The algebraic ground work for general analysis*;

Professor R. W. Barnard, *The second general analysis theory of E. H. Moore*.

Mrs. Moore was in attendance at this meeting.

On Saturday morning Professor C. C. MacDuffee delivered a Symposium Lecture on *Matrices with elements in a principal ideal ring*.

On Friday evening members and their guests attended a dinner at Judson Court. President A. B. Coble was toastmaster. Secretary R. G. D. Richardson spoke of the present state of the Society. Professor H. S. Everett described plans for the Summer Meeting. Professor Felix Bernstein gave a short talk in which he compared E. H. Moore with Klein and Hilbert. In the concluding address Professor Enrico Bompiani expressed his pleasure at being in Chicago again. Ninety-five people attended this dinner.

Professors G. A. Bliss and Dunham Jackson presided at the Friday morning session, and President A. B. Coble presided on Friday afternoon, Saturday morning, and Saturday afternoon.

Titles and cross-references to the papers (other than invited addresses) read at this meeting follow below; papers whose abstract numbers are followed by the letter *t* were read by title. Professor Collins was introduced by Professor Ingraham, Mr. Steenrod by Professor R. L. Wilder, Mr. Nathan by Professor I. A. Barnett, Dr. Akeley by Professor Maier, and Mr. Alden by Professor F. R. Bamforth.

1. *On the isoperimetric inequality*, by Professor Tibor Radó and Dr. E. F. Beckenbach. (Abstract No. 39-3-114.)

2. *Geometry of two-component spinors*, by Professor Oswald Veblen. (Abstract No. 39-5-125.)

3. *A note on the problem of Bolza in the calculus of variations*, by Professor G. A. Bliss and Dr. M. R. Hestenes. (Abstract No. 39-5-123.)

4. *An inverse problem in differential equations*, by Professor R. E. Langer. (Abstract No. 39-5-126.)

5. *On a resolution of linear differential systems*, by Professor

I. S. Sokolnikoff and Dr. E. S. Sokolnikoff. (Abstract No. 39-5-127-t.)

6. *On the invariance of a generalized Gramian under the group of linear functional transformations of the third kind*, by Dr. H. P. Thielman. (Abstract No. 39-5-128.)

7. *Note on (1, 2) algebraic correspondences*, by Professor Theodore Bennett. (Abstract No. 39-5-129-t.)

8. *On an involutorial Cremona transformation in  $S_r$* , by Professor Arnold Emch. (Abstract No. 39-5-130.)

9. *A generalization of the Steiner and Veronese surfaces*, by Mr. J. R. Mayor. (Abstract No. 39-5-132.)

10. *Sufficient conditions for the problem of Lagrange in the calculus of variations*, by Dr. M. R. Hestenes. (Abstract No. 39-5-124.)

11. *Symmetric monoids and cones of higher order in  $S_3$* , by Professor Arnold Emch. (Abstract No. 39-5-131-t.)

12. *Contributions to the theory of transformations of nets in a space  $S_n$* , by Professor V. G. Grove. (Abstract No. 39-5-133-t.)

13. *An unused system of coordinates in analytic geometry*, by Professor J. V. Collins. (Abstract No. 39-3-115-t.)

14. *Finite arc-sums*, by Mr. N. E. Steenrod. (Abstract No. 39-3-122-t.)

15. *The topology of (path) surfaces*, by Dr. C. B. Morrey, Jr. (National Research Fellow). (Abstract No. 39-5-134-t.)

16. *An analytic characterization of surfaces of finite Lebesgue area, (II)*, by Dr. C. B. Morrey, Jr. (National Research Fellow). (Abstract No. 39-5-135-t.)

17. *Applications of the automorphs of sums of three squares to regularity of ternary quadratic forms*, by Dr. Gordon Pall. (Abstract No. 39-5-136.)

18. *On the relations between sums of three and four squares*, by Dr. Gordon Pall. (Abstract No. 39-5-137.)

19. *On the rational solutions of the matrix equations  $P(X) = A$* , by Professor M. H. Ingraham. (Abstract No. 39-3-116.)

20. *On universal sets of positive ternary quadratic forms*, by Professor A. A. Albert. (Abstract No. 39-5-139.)

21. *The convergence of series of orthogonal trigonometric sums*, by Professor Dunham Jackson. (Abstract No. 39-5-141.)

22. *On criteria for Fourier constants of  $L$  integrable functions*, by Professor C. N. Moore. (Abstract No. 39-5-142.)

23. *The existence of an extremum in problems of Mayer*, by Professor L. M. Graves. (Abstract No. 39-3-119.)

24. *Lamé's functions and Lucas' numbers*, by Professor Wilhelm Maier. (Abstract No. 39-5-143.)

25. *Further mean-value theorems*, by Professor Morris Marden. (Abstract No. 39-5-144.)

26. *Regular infinitesimal transformations in a composite function space*, by Mr. D. S. Nathan. (Abstract No. 39-3-120.)

27. *An invariantive characterization of Riemannian geometries*, by Dr. E. S. Akeley. (Abstract No. 39-5-147.)

28. *Towards a unification of the arithmetic of quadratic forms*, by Dr. Gordon Pall. (Abstract No. 39-5-138-t.)

29. *A note on the Dickson theorem on universal ternaries*, by Professor A. A. Albert. (Abstract No. 39-5-140-t.)

30. *The application of the theory of admissible numbers to time series with constant probability*, by Dr. Francis Regan. (Abstract No. 39-3-118-t.)

31. *On continued fractions which represent meromorphic functions*, by Professor H. S. Wall. (Abstract No. 39-5-145-t.)

32. *Expansions of two arbitrary analytic functions in series of rational functions*, by Dr. P. W. Ketchum. (Abstract No. 39-5-146-t.)

33. *Solution of  $f(x, y)\partial z/\partial x + g(x, y)\partial z/\partial y = 0$  in a neighborhood of a singular point*, by Mr. H. H. Alden. (Abstract No. 39-3-117-t.)

34. *Linear transformations in a composite function space*, by Mr. D. S. Nathan. (Abstract No. 39-3-121-t.)

M. H. INGRAHAM, *Associate Secretary*