

THE ANNUAL MEETING IN NEW ORLEANS

The thirty-eighth Annual Meeting of the American Mathematical Society was held at New Orleans, Louisiana, from Monday to Thursday, December 28–31, 1931. The meeting opened on Monday morning with a general session of the Society devoted to mathematical statistics, followed in the afternoon by sectional sessions. At the close of these, a meeting of the Council was held. There being no quorum at the meeting of the Board of Trustees announced for the same afternoon, the Board adjourned to meet in New York City on January 2.

On Tuesday morning, at a joint session with the American Physical Society, Professor G. D. Birkhoff spoke on *Stability and instability of physical systems*, and Dr. W. F. G. Swann on *The significance of the fundamental concepts of modern atomic theories*. The lecture by Professor Birkhoff will appear in an early issue of this Bulletin.

On Tuesday afternoon, at a joint session with the American Physical Society and Section A of the American Association for the Advancement of Science, Professor G. A. Bliss delivered his address as retiring vice-president of Section A, entitled *The calculus of variations of the quantum theory*. This was followed by the ninth Josiah Willard Gibbs Lecture, delivered by Professor P. W. Bridgman, and entitled *Statistical mechanics and the second law of thermodynamics*. Both of these lectures will appear in full in early issues of this Bulletin.

The annual business meeting of the Society, on Wednesday morning, preceded a general session devoted to papers on analysis. Wednesday afternoon was devoted to an excursion to the old French quarter of New Orleans. The annual dinner was held at the Patio Royale Restaurant on Wednesday evening, one hundred eighty being present and President Eisenhart acting as toastmaster; other speakers at the dinner were Professors H. E. Buchanan, Dunham Jackson, C. G. Latimer, Tibor Radó, and H. E. Slaughter.

At the joint session of the Society and the Mathematical Association of America, on Thursday morning, Professor E. R. Hedrick delivered his retiring address as President of the

Society, entitled *Non-analytic functions of a complex variable*, and, at the request of the Mathematical Association, Professor R. D. Carmichael spoke on *Some researches in the theory of numbers*.

At the session on Wednesday morning, the Cole Prize in the Theory of Numbers was awarded to Professor H. S. Vandiver, of the University of Texas, for his several papers on Fermat's last theorem published in the Transactions of the American Mathematical Society and the Annals of Mathematics during the last five years, with special reference to a paper entitled *On Fermat's Last Theorem*, which appeared in volume 31 of the Transactions. Professor Vandiver then presented a résumé of this work.

The attendance included the following one hundred twenty-six members:

V. W. Adkisson, N. L. Anderson, B. M. Armstrong, C. S. Atchison, R. W. Babcock, E. A. Bailey, F. R. Bamforth, E. T. Bell, B. A. Bernstein, G. D. Birkhoff, G. A. Bliss, L. M. Blumenthal, H. E. Bray, H. E. Buchanan, W. D. Cairns, R. D. Carmichael, H. C. Carter, J. W. Cell, Jacques Chapelon, L. W. Cohen, J. B. Coleman, L. P. Copeland, A. T. Craig, D. R. Curtiss, H. T. Davis, C. H. Dix, B. F. Dostal, Otto Dunkel, W. L. Duren, Nat Edmonson, L. P. Eisenhart, G. C. Evans, G. W. Evans, B. F. Finkel, T. M. Focke, L. R. Ford, Tomlinson Fort, H. H. Germond, F. J. Gerst, Michael Goldberg, W. L. Hart, J. O. Hassler, E. R. Hedrick, D. M. Hickey, Einar Hille, Charles Hopkins, H. M. Hosford, J. C. Hughes, C. A. Hutchinson, Louis Ingold, M. H. Ingraham, Dunham Jackson, R. L. Jackson, B. W. Jones, F. W. Kokomoor, Alfred Korzybski, H. W. Kuhn, C. G. Latimer, F. A. Lewis, R. G. Lubben, Dorothy McCoy, E. J. McShane, L. A. MacColl, Israel Maizlish, A. J. Maria, T. E. Mason, E. D. Meacham, W. L. Miser, C. N. Moore, T. W. Moore, E. M. Morenus, Richard Morris, A. B. Morton, T. A. Mossman, E. J. Moulton, C. O. Oakley, J. O. Osborn, F. W. Owens, W. V. Parker, C. G. Phipps, Tibor Radó, S. E. Rasor, S. W. Reaves, D. P. Richardson, R. G. D. Richardson, H. L. Rietz, W. M. Rust, R. G. Sanger, I. J. Schoenberg, H. E. Schoonmaker, William Sell, F. R. Sharpe, C. R. Sherer, W. A. Shewhart, H. A. Simmons, T. M. Simpson, Edmond Siroky, H. E. Slaught, M. M. Slotnick, C. D. Smith, C. E. Smith, Herman L. Smith, Virgil Snyder, M. C. Spencer, R. C. Stephens, R. W. Stokes, W. F. G. Swann, J. L. Synge, J. D. Tamarkin, J. M. Thomas, J. F. Thomson, H. W. Tyler, H. S. Vandiver, R. W. Veatch, Oswald Veblen, M. E. G. Waddell, J. H. Weaver, W. P. Webber, J. H. M. Wedderburn, F. M. Weida, M. J. Weiss, K. P. Williams, H. A. Wilson, W. H. Wilson, Kathryn Wyant, Zarmair Zakarian.

The following were elected to Sustaining Membership:

The University of Chicago;

Members of the Department of Mathematics, George Washington University.

The following persons were elected to membership in the Society:

Mr. John Landes Barnes, Princeton University;
Professor James Holley Bartlett, Jr., University of Illinois;
Mr. James Francis Butler, St. Ignatius High School, Chicago;
Mr. Joseph Canning, Helena, Montana;
Professor Fitzhugh L. Carmichael, Denver School of Commerce;
Professor John Wesley Cell, Southern Methodist University;
Mr. Mannis Charosh, New Utrecht High School, Brooklyn;
Professor Lena Rachel Cole, Central Normal College, Danville, Indiana;
Mr. José Isaac Corral-Alemán, Director de Montes y Minas de la República de Cuba;
Mr. Rustom D. Dalal, Bombay, India;
Mr. Jared William Davis, Dorchester High School for Boys, Dorchester, Massachusetts;
Mr. Francis George Dressel, Duke University;
Mr. Edward Mark Everts, patent attorney, New York City;
Mr. Howard Gray Funkhouser, Columbia University;
Mr. Arthur Haas, Thomas Jefferson High School, Brooklyn;
Mr. Richard Charles Hildner, Ohio State University;
Dean Clarence Francis Holmes, Texas College;
Lieutenant Colonel Harris Jones, United States Army, professor of mathematics, United States Military Academy, West Point;
Mr. Howard Scholl Kaltenborn, Carnegie Institute of Technology;
Dr. Egbert R. van Kampen, Johns Hopkins University;
Professor A. Collins Ladner, Denison University;
Mr. Walter S. Lawton, Philadelphia;
Mr. Franklin Stuart Lerch, Union College;
Mr. Daniel Boone Lloyd, Syracuse University;
Dr. Donald L. McDonough, Drexel Institute;
Dr. William Markowitz, Pennsylvania State College;
Mr. Francis Philip Nash, Groton School;
Miss Marie Margaret Ness, University of Minnesota;
Dean Olaf Morgan Norlie, Hartwick College;
Mr. Jonathan Pickett, Realitos, Texas;
Professor Herbert ReBarker, East Carolina Teachers College;
Miss Mary Sophia Sabin, Point Loma, California;
Dean Richard E. Scammon, University of Minnesota;
Mr. Robert Elliott Street, Rensselaer Polytechnic Institute;
Professor Althéod Tremblay, Laval University;
Miss Alice Willard Turner, Wheaton College;
Mr. Emil Fridstein Vaage, American Telephone and Telegraph Company, New York City;
Mr. Henry Walther, Bell Telephone Laboratories, New York City;
Professor Charles H. Wheeler, University of Richmond;

As Nominees of Members of the Department of Mathematics of the University of Wisconsin: Mr. Ray Moltzner Ely, Mr. Albert E. May, Mr. Eugene A. Rasor, Reverend Robert Albert Sromovsky, Miss Louise A. Wolf;

As Nominees of the University of Michigan: Mr. John R. Abernethy, Mr. Clevoe D. Jones, Mr. Henry Van Engen.

The ordinary membership in the Society is now 1883, including 84 nominees of sustaining members and 83 life members. There are also 22 sustaining members. The total attendance of members at all meetings in 1931 was 837; the number of papers read was 374; the number of members attending at least one meeting, 578.

At the annual election, which closed on December 30, and at which 230 votes were cast, the following officers and members of the Council were elected:

Vice-Presidents, Professors E. W. Chittenden and H. H. Mitchell.

Secretary, Dean R. G. D. Richardson.

Treasurer, Professor G. W. Mullins.

Associate Secretaries, Professors M. H. Ingraham and T. M. Putnam.

Member of the Editorial Committee of the Bulletin, Professor W. R. Longley.

Member of the Editorial Committee of the Transactions, Professor J. D. Tamarkin.

Member of the Editorial Board of the American Journal of Mathematics, Professor A. B. Coble.

Member of the Editorial Committee of the Colloquium Publications, Professor R. L. Moore.

Members of the Council, Professors C. R. Adams, T. R. Holcroft, C. C. MacDuffee, W. E. Milne, and E. H. Moore, to serve three years; Professor Arnold Emch, to serve two years.

The reports of the Treasurer and of the auditors (Professor H. W. Reddick and Mr. J. J. Tanzola) showed a balance of \$5303.02, exclusive of the balances in the Bulletin, Transactions, Colloquium, Journal, Library, and special funds. The Society's Endowment Fund, invested in securities of par value \$76,000, yielded in 1931 a net income of \$3529.53; sustaining memberships for the year amounted to \$2715. The amount received

from sales of the Society's publications was \$9994.29. During the year special contributions from members were received to the amount of \$325. The trustees adopted a budget for 1932 showing estimated expenditures and receipts as \$40,569.13 and \$38,174.13 respectively.

The President and Secretary were requested to solicit special contributions to help balance the budget for 1932.

The Librarian reported that the Library of the Society now has 7480 books. A new catalogue has been prepared, and has already appeared as supplement to the January number of this Bulletin.

The following appointments were reported: as tellers for the election at the annual meeting, Professors A. B. Morton and P. A. Smith; as an additional member of the Committee on the Semi-Centennial, Professor G. W. Mullins; as representative on the National Research Council for the period beginning July 1, 1932, and to succeed Professor James Pierpont, Professor A. B. Coble; as the committee on nomination of the Gibbs Lecturer for 1933, Professors Oswald Veblen (chairman), A. B. Coble, J. L. Coolidge, F. D. Murnaghan, and K. P. Williams; as committee on arrangements for the annual meeting of 1932, Professors J. R. Kline (chairman), M. S. Knebelman, Richard Morris, R. G. D. Richardson, and H. P. Robertson; as representatives on the Council of the American Association for the Advancement of Science, Professors Louis Ingold and M. H. Ingraham; as the nominating committee, Professors R. L. Moore (chairman), T. H. Hildebrandt, Solomon Lefschetz, W. A. Manning, and Virgil Snyder.

The Society passed votes of thanks to Professor Nola Lee Anderson, Professor H. E. Buchanan, Dean Pierce Butler, President Albert B. Dinwiddie, Professor William Duren, Professor Anna Many, Professor R. L. Menuet, and Professor Marie Weiss for their efficient work in making local arrangements for the meeting of the Society.

A resolution of appreciation of the work of Professor J. W. Young as chairman of the committee on funds, and of sympathy in his illness, was passed by the Council and also by the mathematicians at the joint dinner.

The annual meeting of the Society for 1932 was fixed for De-

ember 28–30, 1932, at Atlantic City and Princeton University. The tenth Josiah Willard Gibbs Lecture will be delivered at Atlantic City.

Titles and cross-references to the abstracts of papers read at the regular sessions follow below. Mr. Fischer was introduced by Professor Rietz, and Dr. Hopf by Professor Tamarkin. The papers whose abstract numbers are followed by the letter t were read by title.

General Session, Statistics, Monday Morning.

1. *On the Lexis theory and the analysis of variance*, by Professor H. L. Rietz. (Abstract No. 38–1–7.)

2. *A modification of Stirling's formula arising from an asymptotic evaluation of the Wallis integral*, by Professor H. H. Germond. (Abstract No. 38–1–4.)

3. *Another coefficient of linear correlation between two variables*, by Professor J. B. Coleman. (Abstract No. 38–1–5.)

4. *On certain non-normal correlation surfaces*, by Mr. C. H. Fischer. (Abstract No. 38–1–6.)

5. *The simultaneous distribution of mean and standard deviation in small samples*, by Dr. A. T. Craig. (Abstract No. 38–1–8.)

6. *A closed expression approximating to the value of the probability integral*, by Professor H. H. Germond. (Abstract No. 38–1–9– t .)

7. *On the correlation between certain averages*, by Dr. A. T. Craig. (Abstract No. 38–1–10– t .)

8. *Frequency laws showing stability with reference to the geometric mean and other means*, by Professor E. L. Dodd. (Abstract No. 38–1–11– t .)

9. *Distributions of certain statistics in matched pairs of samples from a normal bi-variate population*, by Dr. S. S. Wilks (National Research Fellow). (Abstract No. 38–1–12– t .)

10. *Determination of characteristic functions of quadratic statistics by determinants*, by Dr. S. S. Wilks (National Research Fellow). (Abstract No. 38-1-13-t.)

11. *A generalized error function*, by Mr. Albert Wertheimer. (Abstract No. 38-1-14-t.)

Section I, Algebra and Geometry, Monday Afternoon.

12. *On the class number of an abelian field*, by Professor C. G. Latimer. (Abstract No. 38-1-15.)

13. *On the reduction of positive quaternary quadratic forms* (preliminary communication), by Professor B. W. Jones. (Abstract No. 38-1-16.)

14. *Two involutorial transformations, of orders 11 and 9, associated with null reciprocities*, by Professors Hazel E. Schoonmaker and Virgil Snyder. (Abstract No. 37-11-404.)

15. *The quartic space involutorial transformations with a double conic*, by Dr. L. A. Dye and Professor F. R. Sharpe. (Abstract No. 38-1-17.)

16. *On fundamental transformations of surfaces*, by Dr. M. M. Slotnick. (Abstract No. 38-1-18.)

17. *Isometric properties of projective transformations* (preliminary communication), by Professor L. R. Ford. (Abstract No. 38-1-19.)

18. *The isoperimetric problem for polyhedra*, by Mr. Michael Goldberg. (Abstract No. 37-11-403.)

19. *On the isodynamic points of four spheres*, by Professor Nathan Altshiller-Court. (Abstract No. 38-1-20-t.)

20. *Semi-linear equations. Part II: Irregular polygons*, by Professor C. O. Oakley. (Abstract No. 38-1-21.)

21. *Generalizations of the author's earlier results relative to the diophantine equation $\sum(1/(x_1x_2 \cdots x_r)) = b/a$* , by Professor H. A. Simmons. (Abstract No. 38-1-55.)

22. *Apolarity in the Galois fields of order 2^n* , by Professor A. D. Campbell. (Abstract No. 38-1-23-t.)

23. *Normal division algebras of degree 2^s over an algebraic field*, by Professor A. A. Albert. (Abstract No. 38-1-24-t.)

24. *Partitionment of representations in indefinite binary quadratic forms*, by Dr. Gordon Pall. (Abstract No. 38-1-25-t.)

25. *A class of universal functions*, by Dr. Gordon Pall. (Abstract No. 38-1-26-t.)

26. *Properties of highly composite numbers*, by Professor R. G. Archibald. (Abstract No. 38-1-27-t.)

27. *A type of conformality in three dimensions*, by Professor I. M. Sheffer. (Abstract No. 38-1-28-t.)

28. *A new set of independent postulates for the algebra of logic*, by Professor E. V. Huntington. (Abstract No. 38-1-54-t.)

Section II, Applications, Point Sets, and Foundations, Monday Afternoon.

29. *The apsides of general dynamical systems*, by Professor J. L. Synge. (Abstract No. 38-1-29.)

30. *A discontinuous dynamics*, by Dr. C. H. Dix. (Abstract No. 38-1-30.)

31. *On the time-average theorems in dynamics*, by Dr. Eberhard Hopf. (Abstract No. 38-1-31.)

32. *A complete characterization of proper pseudo d -cyclic sets of points*, by Dr. L. M. Blumenthal. (Abstract No. 38-1-32.)

33. *Continuous transformations of abstract spaces*, by Dr. Rothwell Stephens. (Abstract No. 38-1-33.)

34. *A non-aristotelian system and its necessity for rigor in mathematics and physics*, by Mr. Alfred Korzybski. (Abstract No. 38-1-34.)

35. *Thermostatic control*, by Professor J. L. Synge. (Abstract No. 38-1-35-t.)

36. *Generalizations of time in dynamics*, by Dr. C. H. Dix. (Abstract No. 38-1-36-t.)

37. *Some additions to the theory of combinatorics*, by Dr. H. B. Curry (National Research Fellow). (Abstract No. 38-1-37-t.)

38. *On the decomposability of closed sets into a countable number of simple sets of various types*, by Dr. G. T. Whyburn. (Abstract No. 37-11-405-t.)

39. *On sets of constant dimension*, by Professor R. G. Putnam. (Abstract No. 38-1-38-t.)

40. *Conditions that a graph have a dual*, by Dr. Hassler Whitney (National Research Fellow). (Abstract No. 38-1-39-t.)

41. *Basic graphs*, by Dr. Hassler Whitney (National Research Fellow). (Abstract No. 38-1-40-t.)

42. *A set of topological invariants for graphs*, by Dr. Hassler Whitney (National Research Fellow). (Abstract No. 38-1-41-t.)

43. *Characteristic functions and the algebra of logic*, by Dr. Hassler Whitney (National Research Fellow). (Abstract No. 38-1-42-t.)

44. *The problem of the sheet*, by Dr. D. G. Bourgin. (Abstract No. 38-1-53-t.)

General Session, Analysis, Wednesday Morning.

45. *Divergent series and singular points of ordinary differential equations*, by Professor F. R. Bamforth. (Abstract No. 38-1-43.)

46. *On the semi-continuity of double integrals in the calculus*

of variations, by Dr. E. J. McShane (National Research Fellow). (Abstract No. 37-7-254.)

47. *A functional equation involving well known special cases*, by Professor W. H. Wilson. (Abstract No. 38-1-44.)

48. *A singular case of the Laplace differential equation of infinite order*, by Professor H. T. Davis. (Abstract No. 38-1-45.)

49. *Pfaffian systems of species one*, by Professor J. M. Thomas. (Abstract No. 38-1-46.)

50. *A generalization of Weierstrass's and Fekete's mean-value theorems*, by Professor Morris Marden. (Abstract No. 38-1-47-t.)

51. *Concerning a certain class of linear inequalities connected with the theory of completely monotonic functions*, by Dr. I. J. Schoenberg. (Abstract No. 38-1-48.)

52. *A type of non-absolutely convergent integral*, by Professor L. W. Cohen. (Abstract No. 38-1-49.)

53. *Note on the stereographic definition of plurisegments on the hypersphere*, by Professor Nat Edmonson. (Abstract No. 38-1-50.)

54. *On Riesz and Cesàro methods of summability*, by Dr. R. P. Agnew (National Research Fellow). (Abstract No. 38-1-51-t.)

55. *Note on Perron's solution of the Dirichlet problem*, by Dr. Hassler Whitney (National Research Fellow). (Abstract No. 38-1-52-t.)

TOMLINSON FORT,
Associate Secretary