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REPORT OF THE NEW YORK MEETING OF THE INSTITUTE

The twelfth Annual Meeting of the Institute of Mathematical Statistics was held in New York City on December 27-30, 1949. Headquarters were at the Biltmore Hotel where most of the sessions were held; one or more of the sessions were held at the Hotel Commodore, the McAlpin Hotel, and the Governor Clinton Hotel. The meeting was held in conjunction with the Annual Meeting of the American Statistical Association, the American Association for the Advancement of Science, the American Mathematical Society, the Econometric Society, the Psychometric Society, the Mathematical Association of America, the Association for Computing Machinery, and the American Psychological Association. The following 214 members of the Institute attended:

F. S. Acton, P. H. Anderson, R. L. Anderson, T. W. Anderson, H. E. Arnold, K. J. Arnold Max Astrachan, R. R. Bahadur, E. W. Bailey, T. A. Bancroft, W. D. Baten, E. E. Blanche, C. I. Bliss, R. C. Bose, A. H. Bowker, R. A. Bradley, Dorothy Brady, A. E. Brandt, I. D. J. Bross, T. H. Brown, O. P. Bruno, P. T. Bruyere, R. W. Burgess, J. M. Cameron, B. H. Camp, E. W. Cannon, S. D. Canter, Bernard Carol, O. S. Carpenter, Maria Castellani, Jack Chasgan, Randolph Church, Edmund Churchill, W. G. Cochran, A. C. Cohen, Jr., R. H. Cole, E. P. Coleman, F. G. Cornell, Jerome Cornfield, C. C. Craig, M. T. Crapsey, J. F. Daly, D. A. Darling, Besse B. Day, F. R. Del Priore, W. E. Deming, Philip Desind, W. J. Dixon, C. W. Dunnett, Solomon Dutka, P. S. Dwyer, Benjamin Epstein, W. D. Evans, W. T. Federer, William Feller, J. W. Fertig, Leon Festinger, C. H. Fischer, J. C. Flanagan, M. M. Flood, L. R. Frankel, N. M. Franklin, H. A. Freeman, Bernard Friedman, Melitta L. Garbuny, E. F. Gardner, M. A. Geisler, H. H. Germond, Leon Gilford, Abraham Golub, William Gomberg, C. H. Graves, S. W. Greenhouse, J. A. Greenwood, Evelyn S. Grossman, H. T. Guard, Carl Hammer, E. C. Hammond, H. H. Harman, T. E. Harris, Boyd Harshbarger, H. L. Harter, W. A. Hendricks, L. H. Herbach, J. L. Hodges, Jr., Wassily Hoeffding, Helen M. Humes, Harold Hotelling, Cuthbert Hurd, H. M. Hughes, W. R. Hydeman, S. M. Ikh-tiar-ul-Mulk, S. I. Isaacson, Marcus Jacobs, W. W. Jacobs, J. E. Jackson, Carol M. Jaeger, J. B. Jeming, R. J. Jessen, H. L. Jones, Alice S. Kaitz, W. C. Kalinowski, Leo Katz, R. D. Keeney, B. F. Kimball, Leslie Kish, Lila F. Knudsen, Paul Koditschek, C. F. Kossack, K. H. Kramer, R. R. Kuebler, Jr., S. M. Kwerel, R. B. Ladd, Marguerite Lehr, F. C. Leone, Joseph Lev, Howard Levene, G. J. Lieberman, Julius Lieblein, S. B. Littauer, Simon Lopata, Irving Lorge, E. D. Lowry, L. H. Madow, W. G. Madow, Benjamin Malzberg, Joseph Mandelson, E. S. Marks, Margaret P. Martin, J. W. Mauchly, P. J. McCarthy, Margaret Merrell,

Albert Mindlin, P. D. Minton, Robert Mirsky, A. M. Mood, Doris N. Morris, R. H. Morris, Dorothy J. Morrow, J. W. Morse, J. E. Morton, Judith Moss, R. G. Moss, Frederick Mosteller, C. M. Mottley, Hugo Muench, L. F. Nanni, Doris Newman, G. E. Noether, M. L. Norden, J. A. Norton, Jr., H. W. Norton, E. G. Olds, P. S. Olmstead, A. L. O'Toole, W. R. Pabst, Jr., R. E. Patton, Katherine Pease, G. W. Petrie, B. E. Phillips, E. W. Pike, Aditya Prakash, Frank Proschan, J. E. Raup, L. J. Reed, J. S. Rhodes, P. R. Rider, H. G. Romig, Norman Rudy, Marion M. Sandomire, F. E. Satterthwaite, Mary Ann Savas, M. A. Schneiderman, Samuel Schweid, O. A. Shaw, G. D. Shellard, W. A. Shewhart, S. S. Shrikhande, Harry Shulman, I. H. Siegel, Rosedith Sitgreaves, G. W. Snedecor, Herbert Solomon, D. E. South, Mortimer Spiegelman, R. G. D. Steel, J. R. Steen, Arthur Stein, Joseph Steinberg, F. F. Stephan, A. I. Sternhell, J. S. Stock, J. G. Strieby, J. V. Sturtevant, W. R. Thompson, L. J. Tick, Gerhard Tintner, M. M. Torrey, J. W. Tukey, G. W. Tyler, S. A. Tyler, Uttam Chand, D. F. Votaw, Jr., Helen M. Walker, W. A. Wallis, Samuel Weiss, E. L. Welker, D. R. Whitney, Frank Wilcoxon, R. I. Wilkinson, S. S. Wilks, C. P. Winsor, M. A. Woodbury, Holbrook Working.

The opening session on Tuesday, December 27, 9 A. M., held jointly with the American Statistical Association and the American Mathematical Society, was devoted to *Operations Research*, with Professor J. Steinhardt, Operations Evaluation Group, Massachusetts Institute of Technology presiding. The following papers were presented:

1. *Topics on the Methodology of Operations Research*. B. O. Koopman, Columbia University.
2. *Some Applications of the Mathematical Theory of Games*. G. E. Kimball, Columbia University.
3. *Theory of Games*. L. Gillman, Operations Evaluation Group, Massachusetts Institute of Technology.
4. *Development of Theories of Action*. Ellis Johnson, Operations Research Office. The Johns Hopkins University.
5. *Some Industrial Applications of Operations Research*. A. A. Brown, Operations Evaluation Group, Massachusetts Institute of Technology.

At the second session, held jointly with the American Statistical Association, at 2:30 P. M. on the opening day, Professor M. Loeve, University of California, gave a special invited address entitled, *Fundamental Limit Theorems in Probability*. The discussion was presented by Professor Will Feller of Cornell University and Professor H. E. Robbins of the University of North Carolina. Professor Abraham Wald of Columbia University served as chairman.

The first contributed papers session was held on the same day at 4:00 P. M., with Professor W. D. Baten of Michigan State College and Michigan Agricultural Experiment Station as chairman. The following papers were presented:

1. *The Asymptotic Distribution of the Extremal Quotient*. E. J. Gumbel, New York, and R. D. Keeney, Metropolitan Life Insurance Company, New York.
2. *A Second Formula for Partial Sums of Hyper-geometric Series Having the Unit as Fourth Moment*. Hermann von Schelling, Naval Medical Research Laboratory, New London, Connecticut.
3. *A Coverage Distribution*. Herbert Solomon, Office of Naval Research, Washington, D. C.
4. *The Problem of the Greater Mean*. R. R. Bahadur and Herbert Robbins, University of North Carolina.

5. *Some Extensions of Bayes' Theorem*. F. C. Leone, Case Institute of Technology.
6. *On Optimum Selections from Multinormal Populations*. Z. W. Birnbaum and D. G. Chapman, University of Washington.

On Wednesday morning, December 28, at 10:00 A. M. a session on *Cybernetics* was held jointly with the American Statistical Association and the American Mathematical Society. The following papers were given:

1. *Technique of Multiple Prediction*. Norbert Wiener, Massachusetts Institute of Technology.
2. *Stochastic Problems in Neurophysiology*. Walter Pitts, Massachusetts Institute of Technology.
3. *Information Theory*. Claude Shannon, Bell Telephone Laboratories.

with discussion by Professor J. L. Doob, University of Illinois, Professor Mark Kac, Cornell University, and Professor L. J. Savage, University of Chicago. Professor Jerzy Neyman, University of California was Chairman of the session.

The session on *Review of Statistical Methodology* was held jointly with the American Statistical Association at 2:00 P. M., Wednesday, December 28, with Professor W. A. Wallis, University of Chicago, as chairman. The two papers presented were: *Review of Statistical Methodology in Agriculture and Related Fields*, by Professor W. T. Federer, Cornell University and *Recent Developments in Statistical Methodology in Social Science*, by Professor Frederick Mosteller, Harvard University; discussion followed by Professor L. J. Savage of the University of Chicago.

The second session of contributed papers was held jointly with the American Statistical Association and the Econometric Society on Thursday, December 29, at 10:00 A. M., with Professor H. T. Davis of Northwestern University presiding. The following papers were presented:

1. *Simple Regression Analysis with Autocorrelated Disturbances*. Howard Jones, Illinois Bell Telephone Company.
2. *Application of Sequential Sampling Method to Check the Accuracy of a Perpetual Inventory Record*. Joseph Jeming, New York City.
3. *A Test of Klein's Model III for Changes of Structure*. Andrew Marshall, Rand Corporation.
4. *Application of the Theory of Extreme Values to Economic Problems*. S. B. Litterauer, Columbia University and E. J. Gumbel, New York City.
5. *Bias Due to the Omission of Independent Variables in Ordinary Multiple Regression Analysis*. T. A. Bancroft, Iowa State College.
6. *Estimating Parameters of Pearson Type III Populations from Truncated Samples*. A. C. Cohen, Jr., University of Georgia.
7. *The Circular Normal Distribution*. E. J. Gumbel, New York City.

The third session of contributed papers was held at 2:00 P. M. on Thursday, December 29, with Professor L. C. Aroian of Hunter College as Chairman. The following papers were presented in person or by title as indicated:

1. *Treatment of Attenuation Problems by Random Sampling*. H. Kahn and T. Harris, The Rand Corporation.
2. *On the Existence of Nearly Locally Best Unbiased Estimates*. Herman Rubin, Stanford University.

3. *The Experimental Evaluation of Multiple Definite Integrals*. George Tyler, Naval Electronics Laboratory, San Diego, California.
4. *Tests of Fit of a Cumulative Distribution Function Over Partial Range of Sample Data*. Bradford Kimball, New York State Department of Public Service, New York City.
5. *Large Sample Tests for Comparing Percentage Points of Two Arbitrary Continuous Populations*. A. W. Marshall and John Walsh, The Rand Corporation.
6. *On the Distribution of Wald's Classification Statistics*. Harman L. Harter, Michigan State College.
7. *Analysis of Extreme Values*. W. J. Dixon, University of Oregon.
8. *A Note on the Variance of Truncated Normal Distributions*. (By title) A. C. Cohen, Jr., University of Georgia.
9. *Some Comments on the Efficiency of Significance Tests*. (By title) John Walsh, The Rand Corporation.
10. *Some Estimates and Tests Based on the Smallest Values in a Sample*. (By title) John Walsh, The Rand Corporation.

The subject of the next session, 4:00 P. M. Thursday, December 29, was the *Review of Stochastic Processes from the Point of View of Mathematical Statistics*. This session was held jointly with the American Statistical Association, Professor C. C. Craig of the University of Michigan presiding. Two papers were given, one by Professor A. B. Mann of the National Bureau of Standards, Ohio State University and the University of California; and the second by Professor John Tukey, Princeton University.

On Friday, December 30, at 9:00 A. M. a session on *Statistical Methods in Astronomy* was held jointly with the American Statistical Association and Section D of the American Association for the Advancement of Science. Professor Walter Bartky of the University of Chicago, Chairman of the session, opened the meeting with introductory remarks on *Astronomical Problems Requiring Statistical Methods*. The following papers were presented:

1. *The Nearby Stars*. Peter Van De Kamp, Swarthmore College.
2. *Corrections to Observed Frequency Distributions*. Bart J. Bok and J. K. De Jonge, Harvard University.
3. *The Problem of Selective Identifiability of Binaries*. Elizabeth Scott, University of California.
4. *Multivariate Periodogram Analysis and Detection of Variable Stars*. Harold Hotelling, University of North Carolina.

These papers were discussed by Professor Jerzy Neyman, University of California.

The session on *Discriminant Functions in Education* was held jointly with the American Statistical Association, the American Psychological Association and the Psychometric Society. Professor T. W. Anderson of Columbia University gave an invited address on *Classification by Multivariate Measures*, followed by discussion by Professors J. C. Flanagan of the University of Pittsburgh and John Carroll of Harvard University. Professor Robert Thorndike of Columbia University presided.

The final session of the meeting was devoted to *Computation* and was held jointly with the American Statistical Association and the Association for Computing Machinery. Professor Harold Hotelling of the University of North Carolina serving as Chairman. The following papers were given:

1. *Idiosyncrasies of Automatically-sequenced Digital Computing Machines.* Ida Rhodes, National Bureau of Standards.
2. *Problem Solving on Large-Scale Automatic Calculating Machines.* W. D. Woo, Harvard University.
3. *A Statistical Application of the UNIVAC.* John Mauchly, Eckert-Mauchly Computer Corporation.

These papers were discussed by James McPherson, Bureau of the Census and Emil Schell, Office of the Air Comptroller.

Meetings of the Council were held on Tuesday, December 27, at 12:00 Noon, Professor Jerzy Neyman presiding and again on Thursday, December 29, at 12:00 Noon, Professor J. L. Doob presiding. The Business Meeting was held on Wednesday, December 28, Professor Jerzy Neyman presiding. The report of this meeting is given elsewhere in this issue.

S. B. LITTAUER,
Associate Secretary

**MINUTES OF THE ANNUAL MEMBERSHIP MEETING, NEW YORK,
DECEMBER 28, 1949**

The meeting was called to order at 4:30 P.M. by President Jerzy Neyman. The annual reports of the President, Editor, and Secretary-Treasurer were read. They are printed elsewhere in this issue.

It was moved by Harold Hotelling that the front cover of the *Annals* in the future shall bear the additional notation that it was edited during the years 1938-1949 by S. S. Wilks. Motion was seconded and carried unanimously.

The tellers reported the election of the following officers:

President-Elect	P. S. Dwyer
Members of the Council for 1950-1952	David Blackwell
	W. G. Madow
	Frederick Mosteller
	L. J. Savage

Meeting was adjourned at 5:15 P.M.

CARL H. FISCHER
Secretary

REPORT OF THE PRESIDENT OF THE INSTITUTE FOR 1949.

I wish to begin my Report by welcoming the newly elected Fellows, Doctors Z. W. Birnbaum, D. J. Finney, H. O. Hartley, Wassily Hoeffding, Michel Loève, Edward Paulson and S. N. Roy. In addition, a hearty welcome is due to Dr. G. W. Brown who was elected last year, but inadvertently omitted in the published list. The election to the fellowship is a mark of recognition on the part of the Institute. At the same time, I am sure the Institute has reason to be proud of having among its fellows such distinguished scholars as are now added to the list.