

REPORT ON THE CLEVELAND MEETING OF THE INSTITUTE

A meeting of the Institute of Mathematical Statistics was held in Cleveland, Ohio, Thursday to Sunday, January 24–27, 1946 in conjunction with the Annual Meetings of the American Statistical Association and the Econometric Society. The following 115 members of the Institute attended the meeting:

Beatrice Aitchison, Armen A. Alchian, Franz L. Alt, Richard L. Anderson, Kenneth J. Arnold, Max Astrachan, George J. Auner, Kenan Y. Bal, Walter Bartky, William D. Baten, Harold R. Bellison, Archie Blake, Chester I. Bliss, Albert H. Bowker, T. H. Brown, Robert W. Burgess, Oscar K. Buros, Irving W. Burr, Burton H. Camp, C. West Churchman, William G. Cochran, Edward P. Coleman, Francis G. Cornell, Jerome Cornfield, Donald R. G. Cowan, Dudley J. Cowden, Gertrude M. Cox, John H. Curtiss, Joseph F. Daly, Cuthbert Daniel, Besse B. Day, Walter L. Deemer, Jr., Daniel B. DeLury, W. Edwards Deming, Bernard Dempsey, Paul S. Dwyer, Churchill Eisenhart, Mary L. Elveback, Benjamin Epstein, Wilmoth D. Evans, Carl H. Fischer, Irving Fisher, T. N. E. Greville, Trygve Haavelmo, Clausin D. Hadley, Margaret J. Hagood, K. W. Halbert, Morris H. Hansen, Boyd Harshbarger, Byron R. Hayden, Harold Hotelling, Earl E. Houseman, Leonid Hurwicz, William Hurwitz, Calvin J. Kirchen, Lila F. Knudsen, Hendrik S. Konijn, Tjalling Koopmans, Morton Kramer, Anita R. Kury, Robert Ladd, Dickson H. Leavens, Roy Leipnik, E. Vernon Lewis, Eugene Lukacs, Henry B. Mann, George F. T. Mayer, Edward C. Molina, Alexander M. Mood, Margaret Moore, Joseph E. Morton, Frederick C. Mosteller, Charles McC. Mottley, Paul M. Neurath, Horace W. Norton, Edwin G. Olds, Paul S. Olmstead, Guy H. Orcutt, James G. Osborne, Russell F. Passano, Paul Peach, Alice E. Andrews Priestley, James Rafferty, Sophie Rakesky, Charles F. Roos, A. C. Rosander, Herman Rubin, Phillip J. Rulon, Marion M. Sandomire, Franklin E. Satterthwaite, Esther Schaeffer, Edward M. Schrock, David H. Schwartz, G. R. Seth, Lawrence W. Shaw, Jack Sherman, Walter A. Shewhart, Walt R. Simmons, Leslie E. Simon, John H. Smith, J. R. Steen, Joseph Steinberg, Henry W. Steinhaus, J. W. Sullivan, Zenon Szatrowski, Benjamin Tepping, John W. Tukey, Helen M. Walker, W. Allen Wallis, A. E. R. Westman, S. S. Wilks, Elizabeth W. Wilson, Charles P. Winsor, Gerald N. Winston, Theodore O. Yntema.

The first session of the meeting was held jointly with the American Statistical Association on Thursday afternoon on *Numerical Solution of Regression Equations*, under the chairmanship of Dr. W. E. Deming of the Bureau of the Budget. The following papers were presented:

1. *A Machine for Determination of Correlation and Regression Coefficients.*
Dr. Guy Orcutt, Massachusetts Institute of Technology
2. *A Square Root Method for the Solution of Regression Equations.*
Mr. D. B. Duncan, Royal Australian Air Force
3. *Error Control in Matrix Calculation.*
Dr. F. E. Satterthwaite, Aetna Life Insurance Company
4. *The Compact Computation of Canonical Correlations.*
Professor P. S. Dwyer, University of Michigan.

On Friday, a symposium, consisting of a morning and an afternoon section, was held jointly with the Econometric Society and the American Statistical Association on *Estimating Relations from Nonexperimental Observations*. Dr.

Mordecai Ezekiel acted as chairman of the morning session and Dr. R. L. Anderson was chairman of the afternoon session. Of the following four papers, the first two, were presented in the morning and the last two in the afternoon:

1. *The Economist's Problem of Statistical Inference.*
Professor J. Marschak, Cowles Commission
2. *Prediction and Structural Estimation.*
Mr. Leonid Hurwicz, Cowles Commission
3. *Iterative Computation Methods in Estimating Simultaneous Relations.*
Dr. T. Koopmans, and Mr. Roy B. Leipnik, Cowles Commission
4. *Multivariate Analysis in Economies.*
Professor Gerhard Tintner, Iowa State College

On Friday afternoon a session on *Experimental Designs and their Analysis* was held jointly with the Biometrics Section of the American Statistical Association under the chairmanship of Professor Gertrude Cox of North Carolina State College. The following papers were presented:

1. *On the Uses of Orthogonal Functions in the Analysis of Incomplete Latin Squares.*
Professor D. B. DeLury, Virginia Polytechnic Institute
2. *Use of Adjusting Factors in the Analysis of Data with Disproportionate Subclass Numbers.*
Professor R. E. Patterson, Texas A. and M. College
3. *Selection of Sample Size for Detecting Treatment Differences.*
Professor A. M. Mood, Iowa State College
4. *Rectangular Lattices.*
Professor Boyd Harshbarger, Virginia Agricultural Experiment Station

On Saturday, a two-session symposium was held jointly with the Econometric Society and the American Statistical Association on *Sampling in the Social Sciences*. Professor Arnold J. King of Iowa State College acted as chairman for the morning session and Professor S. S. Wilks of Princeton University presided in the afternoon. The following seven papers were presented, of which the first three were presented in the morning and the remainder in the afternoon:

1. *Problems and Methods of a Sample Survey of Business.*
Mr. M. H. Hansen, Bureau of the Census
2. *Problems of Area Sampling in Agriculture.*
Mr. J. R. Goodman, Bureau of the Census, and Mr. E. E. Houseman, Bureau of Agricultural Economics
3. *Problems of Area Sampling in Population.*
Mr. B. J. Tepping and Mr. J. S. Steinberg, Bureau of the Census
4. *The Problems of Non-Response.*
Mr. W. N. Hurwitz, Bureau of the Census
5. *Systematic Sampling and its Relation to Other Sampling Designs.* (Read by Title.)
Mrs. Lillian H. Madow, Washington
6. *Relative Accuracies of Systematic and Stratified Random Sampling for a Specified Class of Populations.*
Professor W. G. Cochran, Iowa State College

7. *On the Design of a Sample of Dealers' Inventories.*

Dr. W. E. Deming, Bureau of the Budget and Dr. Willard Simmons, Office of Price Administration

On Sunday, a symposium was held jointly with the American Statistical Association on *Acceptance Sampling* under the chairmanship of Professor John W. Tukey of Princeton University. The morning session of the symposium was devoted to acceptance sampling by attributes and the afternoon session to acceptance sampling by variables. The following program was presented at the morning session:

Papers:

1. *Prewar Developments.*

Mr. Paul Peach, North Carolina State College

2. *Wartime Developments.*

Professor E. G. Olds, Carnegie Institute of Technology

Prepared Discussion by:

Mr. H. R. Bellinson, Army Ordnance Department

Mr. D. H. Schwartz, Quartermaster Corps

Professor Walter Bartky, University of Chicago

In the afternoon session the following program was presented:

Papers:

1. *Lot Quality Measured by Average or Variability.*

Lt. Commander J. H. Curtiss, Bureau of ships

2. *Lot Quality Measured by Proportion Defective.*

Mr. W. A. Wallis, Columbia University

Prepared Discussion:

Mr. E. M. Schrock, Army Ordnance

Professor A. M. Mood, Iowa State College

Professor K. J. Arnold, University of Wisconsin

Lt. Commander J. F. Daly, Bureau of ships

Dr. A. E. R. Westman, Ontario Research Foundation

A business meeting of the Institute was held at 5 p.m. on Saturday afternoon at which time reports were made by the President, Secretary-Treasurer, Editor and Chairman of the Committee on Development. These reports are all printed in the current issue of the *Annals*.

PAUL S. DWYER,
Secretary.