

## REPORT OF THE CHICAGO MEETING OF THE INSTITUTE

The Sixth Annual Meeting of the Institute of Mathematical Statistics was held at the Stevens Hotel, Chicago, Thursday to Saturday, December 26 to 28, 1940 in conjunction with the meetings of the American Statistical Association, the Econometric Society, and the American Marketing Association. The following fifty members of the Institute attended the meeting:

H. E. Arnold, C. S. Barrett, A. G. Brooks, R. W. Burgess, A. G. Clark, A. C. Cohen, Jr., W. G. Cochran, A. T. Craig, C. C. Craig, B. B. Day, W. E. Deming, J. L. Doob, P. S. Dwyer, Churchill Eisenhart, J. W. Fertig, P. G. Fox, Hilda Geiringer, E. J. Gumbel, Myron Heidingsfield, Harold Hotelling, Leo Katz, J. F. Kenney, L. F. Knudsen, Alma Kohl, T. Koopmans, D. H. Leavens, Ida Levin, G. A. Lundberg, S. N. Lyttle, W. G. Madow, Ralph Mansfield, G. F. T. Mayer, J. R. Miner, E. C. Molina, C. R. Mummery, J. I. Northam, E. G. Olds, P. S. Olmstead, A. L. O'Toole, J. A. Pierce, Wilhelm Reitz, P. R. Rider, M. M. Sandomire, L. W. Shaw, W. A. Shewhart, F. F. Stephan, S. A. Stouffer, A. G. Swanson, S. S. Wilks, M. O. Woodbury.

The opening session, on Thursday afternoon, was devoted to contributed papers in probability and statistical methodology. The Chairman was Professor S. S. Wilks of Princeton University, and the following papers were presented:

1. *On the Calculation of the Probability Integral on Non-Central  $t$  and an Application.*  
C. C. Craig, University of Michigan.
2. *Effective Methods of Graduation.*  
Max Sasuly, Office of the Actuary, Social Security Board.
3. *On Some New Results in the Sampling of Discrete Random Variables.*  
William G. Madow, Bureau of the Census.
4. *On the Use of Inverse Probability in Sample Inspection.*  
W. Edwards Deming and W. G. Madow, Bureau of the Census.
5. *On a Convergent Iterative Procedure for Adjusting a Sample Frequency Table when Some of the Marginal Totals are Known.*  
F. F. Stephan, Cornell University, and W. Edwards Deming, Bureau of the Census.
6. *The Return Period of Flood Flows.*  
E. J. Gumbel, New School for Social Research, New York City.
7. *A Note on the Power of a Sign Test.*  
W. M. Stewart, University of Wisconsin.
8. *A New Explanation of Non-Normal Dispersion.*  
Hilda Geiringer, Bryn Mawr College.

Abstracts of these papers follow this report.

On Friday morning a session was held jointly with the American Marketing Association on *The Theory and Application of Representative Sampling*. Under the chairmanship of Professor Theodore H. Brown of Harvard University, the following papers were presented:

1. *Background and Method.*  
F. F. Stephan, Cornell University.

2. *Application to Marketing Problems.*  
Archibald M. Crossley, New York City.
3. *Application to Agricultural Problems.*  
Arnold J. King, Iowa State College.

The afternoon session on Friday was held jointly with the American Statistical Association and Econometric Society on *The Analysis of Variance*. The chair was held by Professor P. R. Rider of Washington University and the following papers were presented:

1. *The Relation Between the Design of an Experiment and the Analysis of Variance.*  
A. E. Brandt, Soil Conservation Service.
2. *The Underlying Principles of the Analysis of Variance and Associated Tests of Significance.*  
Churchill Eisenhart, University of Wisconsin.
3. *The Applications of the Analysis of Variance to Non-Orthogonal Data.*  
W. G. Cochran, Iowa State College.

Discussion:

- Gertrude M. Cox, North Carolina State College.  
John F. Kenney, University of Wisconsin Extension Division.  
W. Edwards Deming, Bureau of the Census.

On Saturday morning and afternoon, sessions were held with the American Statistical Association on *Collection and Use of Statistics for Quality Control in National Defense Industries*. At the morning session the following papers were given, with Dr. C. W. Gates of the Western Electric Company in the chair:

1. *Report on the Quality Control Program of the American Standards Association.*  
John Gaillard, Western Electric Company.
2. *Sample Verification in the Administration of the Population Census.*  
W. Edwards Deming, Bureau of the Census.
3. *The Importance of the Statistical Viewpoint in High Production Manufacturing.*  
P. L. Alger, General Electric Company. (Read by C. Eisenhart.)
4. *On the Initiation of Statistical Methods for Quality Control in Industry.*  
Leslie E. Simon, Aberdeen Proving Ground.

At the afternoon session the following papers were presented under the chairmanship of Dr. John Johnston of the United States Steel Corporation:

1. *The Place of Statistical Analysis in Ferrous Metallurgy.*  
E. M. Schrock, Jones and Laughlin Steel Corporation.
2. *Statistical Methods in the Production and Inspection of Cast Iron Pipe.*  
J. T. MacKenzie, American Cast Iron Pipe Company.
3. *Applications of Statistical Methods to Metallurgy.*  
R. B. Mears, Aluminum Company of America.

Discussion:

Churchill Eisenhart, University of Wisconsin.

The annual business meeting of the Institute was held on Thursday afternoon after the session on probability and statistical methodology, with the President presiding.

The Secretary-Treasurer read the financial report for 1940.

The Editor of the *Annals of Mathematical Statistics* reported on the progress of the *Annals* during 1940. It was stated that manuscripts worthy of publication were now being submitted at a rate that would justify the publication of a 500-page annual volume. To make this amount of publication self-supporting upon the expiration of the Rockefeller grant in June, 1941, it was pointed out that another 150 new subscriptions would have to be obtained during 1941. Judging from the rate at which subscriptions had been coming in during the past two years such an increase was considered entirely feasible with the cooperation of the members of the Institute. Various methods of effecting this increase were discussed at the meeting and suggested for the consideration of the Board of Directors.

On behalf of the Board of Directors the President made the following report:

1. The Report of the War Preparedness Committee, approved in preliminary form at the Hanover meeting, had been preprinted and some of the preprints had already been distributed.

2. Arrangements had been made with the Executive Officer of the National Roster of Scientific and Specialized Personnel to send the statistics check list to all members of the Institute who are not members of the American Statistical Association.

3. That preprints of the pamphlet on *The Teaching of Statistics*, including an address by Professor Harold Hotelling, discussion by Dr. W. E. Deming and the resolutions on the teaching of statistics adopted by the Institute at the Dartmouth meeting had been produced and distributed.

4. That application<sup>1</sup> had been made to the Executive Committee of the American Association for the Advancement of Science through the Permanent Secretary for admission to the status of an affiliated society in the Association.

It was announced that through the annual election, carried out by mail ballot, the following officers were elected for 1941 (all names being those proposed by the Nominating Committee):

President: Professor Harold Hotelling

Vice-Presidents: Professor A. T. Craig

Professor H. C. Carver

Secretary-Treasurer: Professor E. G. Olds

The annual luncheon was held at noon on Friday with the President-Elect presiding. Short talks were made by Dr. E. J. Gumbel, Dr. T. Koopmans and Professor S. S. Wilks, while the annual luncheon address was delivered by Professor P. R. Rider.

P. R. RIDER,  
*Secretary-Treasurer.*

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<sup>1</sup> This application was approved by the Executive Committee of the A.A.A.S. at its December 1940 meeting.