REPORT OF THE ANNUAL MEETING OF THE INSTITUTE

The fourth annual meeting of the Institute of Mathematical Statistics was held in Detroit, Michigan, on December 27–29, 1938, in conjunction with the meetings of the American Statistical Association and the Econometric Society. The program for the meetings was arranged by Professors S. S. Wilks and B. H. Camp.

On Tuesday morning, December 27, the Institute held a session devoted to contributed papers with Professor B. H. Camp, president of the Institute in the chair. At that time the following papers were presented:

1. *Generalizations of the Laplace-Liapounoff Theorem.*
   W. G. Madow, Millbank Management Corporation, New York.
2. *The standard errors of the geometric and harmonic means.*
   Nilan Norris, Hunter College.
3. *Note on an integral equation in population analysis.*
   Alfred J. Lotka, Metropolitan Life Insurance Company, New York.
4. *Optimum fiducial regions for simultaneous estimation of several population parameters from large samples.*
   S. S. Wilks, Princeton University.
5. *A mathematical contribution to immigration assessment.*
   Churchill Eisenhart, University of Wisconsin.
6. *Contributions to the theory of statistical estimation.*
   A. Wald, Columbia University.
7. *On the hypotheses underlying the applications of statistical methods to routine laboratory analyses.*
   J. Neyman, University of California.
8. *Commodity transformations and matrices.*
   Harold Hotelling, Columbia University.
9. *Remarks on two methods of sample inspection.*
   E. G. Olds, Carnegie Institute of Technology.

Abstracts of these papers are given at the close of this report.

Immediately following the session just described, the Institute convened in business session. At that time President Camp announced that the newly elected officers for the year 1939 are: President, P. R. Rider, Washington University; Vice-Presidents, C. C. Craig, University of Michigan, and S. S. Wilks, Princeton University; Secretary-Treasurer, A. T. Craig, University of Iowa.

The annual luncheon of the Institute was held at one o'clock on the same day. At the luncheon, Dr. Walter A. Shewhart, of the Bell Telephone Laboratories addressed the Institute on "The Future of Statistics in Mass Produc-

tion." A summary of this address is included among the abstracts at the close of this report.

On Wednesday morning, December 28, the Institute and the Statistical Association held a joint session devoted to the teaching of Business Statistics. Professor T. H. Brown presided. The following papers constituted the program:

1. *The teaching of undergraduate students.*
   L. S. Kellogg, Ohio State University.
2. *The teaching of graduate students.*
   O. W. Blackett, University of Michigan.
3. *A bead-sampling machine for use in the class room.*
   Dickson H. Leavens, Cowles Commission for Research in Economics.

Discussion: Harry P. Hartkemeier, University of Missouri.
         Richard L. Kozelka, University of Minnesota.

On the afternoon of the same day, the Biometric Section of the Statistical Association and the Institute presented the following program on Statistical Methods in Genetics Problems with Professor Lowell J. Reed as chairman:

1. *Tests of simple Mendelian inheritance in randomly collected data of one and two generations.*
   Laurence H. Snyder and Charles W. Cotterman, Ohio State University.
2. *Statistical studies of the familial aspects of cancer in humans.*
   Herbert L. Lombard, Massachusetts State Department of Public Health.
3. *Application of the method of likelihood ratios to the testing of hypotheses of simple Mendelian inheritance.*
   S. S. Wilks, Princeton University.
4. *The application of statistical techniques to egg production data for the formulation of a breeding program.*
   W. C. Thompson, New Jersey Agricultural Experiment Station.

The Program Committees of the Institute and the Statistical Association arranged a joint session on Representative Sampling for Thursday afternoon, December 29. At that time the following papers were presented, with Professor Harold Hotelling presiding:

1. *On the mathematics of the representative method.*
   Allen T. Craig, University of Iowa.
2. *Application of the theory of sampling to large scale surveys and censuses.*
   Frederick F. Stephan, American Statistical Association.
3. *Further remarks on the mathematical aspects of representative sampling.*
   J. Neyman, University of California.

Discussion: Samuel A. Stouffer, University of Chicago.
         Churchill Eisenhart, University of Wisconsin.
         P. J. Rulon, Harvard University.

The final session of the meetings was held on Thursday evening. This was a joint session with the Econometric Society and was devoted to Mathematical

Statistics in Economics.   Professor Irving Fisher presided and the following papers were given:

1. *On the hypothesis of linearity of regression in economic research.*
   J. Neyman, University of California.
2. *The selection of variates for use in prediction.*
   Harold Hotelling, Columbia University.
3 *Decomposition of time series on the basis of non-correlation principle.*
   Wassily Leontief, Harvard University.

Discussion: William G. Madow, Millbank Management Corporation, New York.
             Gerhard Tintner, Iowa State College.

A. T. CRAIG, *Secretary.*