REPORT OF THE ANNUAL MEETING OF THE INSTITUTE

The fifth annual meeting of the Institute of Mathematical Statistics was held in Philadelphia, Pennsylvania, on December 27 and 28, 1939, in conjunction with the meetings of the American Statistical Association, the Econometric Society, and the American Sociological Society. The program for the meeting was arranged by Professor C. C. Craig.

On Wednesday morning, December 27, the Institute held a session devoted to contributed papers on *Statistical Theory* and *Methodology*. Professor P. R. Rider, President of the Institute, presided. At that time the following papers were presented:

1. *On the unbiased character of certain likelihood-ratio tests when applied to normal systems.*
   Joseph F. Daly, The Catholic University of America.
2. *The product seminvariants of the mean and a central moment in samples.*
   C. C. Craig, University of Michigan.
3. *A method for minimizing the sum of absolute values of deviations.*
   Robert Singleton, Princeton Local Government Survey.
4. *On certain criteria for testing the homogeneity of k estimates of variance.*
   C. Eisenhart and Frieda S. Swed, University of Wisconsin.
5. *On a test whether two samples are from the same population.*
   A. Wald and J. Wolfowitz, Columbia University and Brooklyn, New York.
6. *The power functions of certain tests of significance in harmonic analysis and lag correlation.*
   William G. Madow, Washington, D. C.
7. *Some theoretical aspects of the use of transformations in the statistical analysis of replicated experiments.*
   W. G. Cochran, Iowa State College.
8. *The standard errors of geometric and harmonic types of index numbers.*
   Nilan Norris, Hunter College.
9. *A study of R. A. Fisher's z distribution and the related F distribution.*
   L. A. Aroian, Hunter College.
10. *A note on the analysis of variance with unequal class frequencies.*
    Abraham Wald, Columbia University.
11. *An approach to problems involving disproportionate frequencies.*
    Burton D. Seeley, U. S. Department of Labor.

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

Immediately following the session just described, the Institute held its annual business meeting. At that time President Rider announced that the newly elected officers for the year 1940 are: President, S. S. Wilks, Princeton University; Vice-Presidents: C. C. Craig, University of Michigan, and A. T. Craig, University of Iowa; Secretary-Treasurer: P. R. Rider, Washington University.

At one o'clock on the same day, members of the Institute and their guests

attended the annual luncheon. At the luncheon, Professor B. H. Camp addressed the Institute on *Non-standard Deviations*.

On Wednesday afternoon, the Institute met jointly with the American Statistical Association for a program devoted to *Lag Effects in Statistics and Economics*. Professor J. D. Tamarkin presided and at this time the following papers were read:

1. *Lag effects in statistics and related problems.*
   A. J. Lotka, Metropolitan Life Insurance Company.
2. *Some methods in the analysis of lag effects.*
   H. T. Davis, Northwestern University.
3. *Lag effects in economics.*
   Charles F. Roos, Institute of Applied Econometrics, Inc.

A joint session with the Biometric Section of the American Statistical Association was held on Wednesday evening, Professor George W. Snedecor presiding. The papers presented at this session, which dealt with *Design and Analysis of Replicated Experiments*, were the following:

1. *Practical difficulties met in the use of experimental designs.*
   A. E. Brandt, Soil Conservation Service.
2. *Factorial design and covariance in the biological assay of vitamin D.*
   C. I. Bliss, Sandusky, Ohio.
3. *Combinatorial problems in the design of experiments.*
   Gertude M. Cox, Iowa State College.
4. *Experimental trials with balanced incomplete blocks.*
   W. J. Youden, Boyce Thompson Institute.

On Thursday afternoon the Institute held consecutively joint sessions with the American Sociological Society and the Econometric Society. At the first of these, Professor William F. Ogburn presided and the following program was presented:

1. *How the mathematician can help the sociologist.*
   Samuel A. Stouffer, University of Chicago.
2. *Some problems of combinations and permutations as they apply to a comprehensive classification of social groups.*
   George A. Lundberg, Bennington College.
   Discussion: C. C. Craig, University of Michigan.
             Philip M. Houser, U. S. Bureau of the Census.

At the second session the topic for discussion was *Recent Advances in Business Cycle Analysis* and these papers were given:

1. *Recursive methods in business cycle analysis.*
   Merrill M. Flood, Princeton Surveys.
2. *An appreciation of some recent mathematical business cycle theories.*
   Gerhard Tintner, Iowa State College.
3. *The statisticians' new clothiers.*
   Arne Fisher, Western Union Telegraph Company.

PAUL R. RIDER, *Secretary.*