

**30. An Experimental Method for Obtaining Random Digits and Permutations.**

J. E. WALSH, U. S. Naval Ordnance Test Station, China Lake.

This paper presents an easily applied method for obtaining small numbers of random binary digits and random permutations. The procedure consists in flipping ordinary minted coins and combining the results of the flips in an appropriate manner. Digits and permutations obtained according to the method of this paper can be considered sufficiently random for any practical application. It appears likely that these digits and permutations are much more nearly random than most of those now available in printed tables. Moreover, any possibility of bias from misuse of tables is avoided. The method presented is particularly suitable for use with respect to experimental designs. Only a few random permutations are ordinarily required for a given experimental design.

**31. Distribution of Canonical Partial Correlations.** S. N. ROY, University of North Carolina.

By certain general arguments the distribution of canonical partial correlations in random samples of size  $n + 1$  from a  $(p + q + r)$  variate normal population ( $p \leq q, p + q + r \leq n$ ) can be shown to be of the same form as that of canonical correlations in random samples of size  $n + 1 - r$ , and involves as parameters (on the non-null hypotheses) the  $p$  roots (all lying between 0 and 1) of the equation in  $\theta$ .

$$|\theta(\Sigma_{11} - \Sigma_{12}\Sigma_{22}^{-1}\Sigma'_{12}) - (\Sigma_{12} - \Sigma_{13}\Sigma_{33}^{-1}\Sigma'_{23})(\Sigma_{22} - \Sigma_{23}\Sigma_{33}^{-1}\Sigma'_{23})^{-1}(\Sigma'_{12} - \Sigma_{23}\Sigma_{33}^{-1}\Sigma'_{13})| = 0,$$

where the population co-variance matrix  $\Sigma$  (supposed to be p.d.) is partitioned in the same manner as the sample covariance matrix  $S$  of Abstract 17.

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In the abstract "On judging all contrasts in the analysis of variance" by Henry Scheffé (*Annals of Math. Stat.*, Vol. 23 (1952), p. 477) the equation  $\Sigma_1^k c_i = 0$  was printed incorrectly (due to a compositor's error) as  $\Sigma_1^k c_i \theta_i = 0$  on line 5.

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**NEWS AND NOTICES**

*Readers are invited to submit to the Secretary of the Institute news items of interest*

**Personal Items**

Mr. Fred C. Andrews has been appointed a Research Associate in the Applied Mathematics and Statistics Laboratory, Stanford University, Stanford, California.

Edward W. Barankin, Assistant Professor at the Statistical Laboratory, University of California, Berkeley, has been promoted to Associate Professor. For the academic year 1952/53, Dr. Barankin will be on leave, working at the Institute for Numerical Analysis, Los Angeles.

Z. W. Birnbaum, who has been on leave from the University of Washington for the academic year 1951-1952 and had a visiting professorship in the Department of Statistics at Stanford University, has returned to resume his duties at the University of Washington.

Dr. K. A. Bush, formerly Associate Professor of Mathematics at State Uni-

versity of New York, Champlain College, has accepted an appointment as Assistant Professor of Mathematical Statistics at the University of Illinois.

Charles W. Dunnett, who has been granted a leave as Biometrician for the Food and Drug Laboratories, Ottawa, Canada, has joined the Department of Mathematics, Cornell University for the academic year 1952-3.

Franklin Graybill has recently received his Ph.D. degree from Iowa State College and accepted a position at Oklahoma Agriculture and Mechanical College as Assistant Professor of Mathematics and Associated Statistician to the Agriculture Experiment Station and Research Foundation.

John Gurland, formerly with the Cowles Commission and the Committee on Statistics at the University of Chicago, has joined the staff of the Statistical Laboratory at Iowa State College in Ames.

Wayne W. Gutzman is on leave of absence from the University of South Dakota since being recalled for active duty in the United States Navy and is a Lieutenant Commander and acting Officer-in-Charge of the Computation Ballistics Department of the Naval Proving Ground, Dahlgren, Virginia.

Harman L. Harter, for the past three years an Assistant Professor of Mathematics at Michigan State College, has accepted a position as a Mathematical Statistician at Wright Air Development Center, Wright-Patterson Air Force Base, Dayton, Ohio.

Harry M. Hughes, Instructor at the Statistical Laboratory, University of California, Berkeley, has been promoted to Assistant Professor.

T. J. Jaramillo, formerly Actuary of the Philippine-American Life Insurance Company of Manila, has been appointed as Senior Scientist of the Division of Engineering Mechanics Research of the Armour Research Foundation of the Illinois Institute of Technology, Chicago.

Robert H. Matthias has accepted a position in the Research Division, Electrochemicals Department of E. I. duPont de Neman Co., Niagara Falls.

Lincoln E. Moses has accepted a joint appointment at Stanford University, California, as Assistant Professor in the Department of Statistics and Assistant Professor of Public Health and Preventive Medicine in the Medical School.

Bruce D. Mudgett is now Emeritus Professor of Economics of the University of Minnesota and is residing at Thetford, Vermont.

T. Ellison Neal, formerly statistician for the Textile Division of the U. S. Rubber Company, has joined the staff of the Research Department of the newly formed Chemstrand Corporation at Decatur, Alabama.

B. E. Phillips, since the termination of the research phase of the Parsons-Aerojet Company work at Air Force Missile Test Center, Cocoa, Florida, has been transferred to the Facilities Operation Division of the Ralph M. Parsons Company, Frederick, Maryland.

John Schmid, Jr., resigned from the Board of Examiners of Michigan State College to accept a position as research psychologist with the Research Services Division of the Human Resources Research Center at Lackland Air Force Base, San Antonio, Texas.

Benjamin J. Tepping during the academic year 1952-53 will be on leave as statistician in the Bureau of the Census and will be Visiting Lecturer in the Department of Mathematics and Research Associate in the Survey Research Center, University of Michigan.

Dr. Milton E. Terry has resigned his position as Associate Professor of Statistics at the Virginia Polytechnic Institute and has accepted an appointment as Statistician at the Bell Telephone Laboratory, Murry Hill, New Jersey.

Chia Kuei Tsao has accepted a position as instructor in the Department of Mathematics, Wayne University.

Dr. John E. Walsh, formerly a Consultant with the Census Bureau, is now with the Central Evaluation Group—Code 0110, U. S. Naval Ordnance Test Station, Inyokern, China Lake, California.

Lowell A. Woodbury will be employed for the next two years by the Atomic Bomb Casualty Commission at Hiroshima, Japan, as Chief Biostatistician.

### **Sidney B. Clark**

Sidney B. Clark, member of the Institute for six years, died of a heart attack in Washington, D. C., at the age of 33. He received his B. A. degree at George Washington University. At the time of his death Mr. Clark was a statistician in the National Production Authority. He had been a statistical consultant in the Bureau of Agricultural Economics of the Department of Agriculture and had been employed earlier in other government agencies.

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The Educational Testing Service is offering for 1953-54 its sixth series of research fellowships in psychometrics leading to the Ph.D. degree at Princeton University. Open to men who are acceptable to the Graduate School of the University, the two fellowships each carry a stipend of \$2,500 a year and are normally renewable. Fellows will be engaged in part-time research in the general area of psychological measurement at the offices of the Educational Testing Service and will, in addition, carry a normal program of studies in the Graduate School. Competence in mathematics and psychology is a prerequisite for obtaining these fellowships. The closing date for completing applications is January 16, 1953. Information and application blanks may be obtained from: Director of Psychometric Fellowship Program, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

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Three \$4000 post-doctoral fellowships in statistics are offered for 1953-54 by the University of Chicago. The purpose of these fellowships, which are open to holders of the doctor's degree or its equivalent in research accomplishment, is to acquaint established research workers in the biological, physical, and social sciences with the crucial role of modern statistical analysis in the planning of experiments and other investigative programs and in the analysis of empirical data. The development of the field of statistics has been so rapid that most cur-

rent research falls far short of attainable standards, and these fellowships (which represent the third year of a five-year program supported by The Rockefeller Foundation) are intended to help reduce the lag by giving statistical training to scientists whose primary interests are in substantive fields rather than in statistics itself. The closing date for applications is February 1, 1953; instructions for applying may be obtained from the Committee on Statistics, University of Chicago, Chicago 37, Illinois.

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### New Members

*The following persons have been elected to membership in the Institute*

(May 31, 1952 to August 29, 1952)

- Boggs, Arthur B.**, M.A. (University of Michigan), Graduate Student, Department of Mathematics, Michigan State College, 136 Albert Avenue, East Lansing, Michigan.
- Borden, Nathan B.**, M.S. (University of Michigan), Graduate Student, University of Michigan, 1925 Winston Avenue, Louisville 5, Kentucky.
- Broderick, Timothy S.**, M.A. (Trinity College, Dublin), Professor of Mathematics, Trinity College, Dublin, St. Kevin's, Sorrento Road, Dalkey, Co. Dublin, Ireland.
- Eckler, A. Ross**, M.A. (Princeton), Graduate Student and Assistant, Mathematics Department, Princeton University, 225-C King Street, Princeton, New Jersey.
- Herd, G. Ronald**, M.A. (Kansas University), Chief Statistician and Supervisor of Statistics Department, Aeronautical Radio, Inc., Military Tube Project, 469 Hampton Court, Tyler Gardens, Falls Church, Virginia.
- Hossain, Khondkar Manwar**, M.A. (Dacca University, Pakistan), Research Student in Statistics, London School of Economics and Political Science, Pigeon Hole "H", Research Common Room, London School of Economics and Political Science, Houghton Street, Aldwych, W.C. 2, England.
- Khamis, Salem H.**, Ph.D. (University of London), Statistician, United Nations, New York, Statistical Office, United Nations, P.O.B. 20, Grand Central Post Office, New York, N. Y.
- LeCam, Lucien M.**, Ph.D. (University of California), Instructor, University of California, Department of Mathematics, Statistical Laboratory, University of California, Berkeley 4, California.
- Morris, Leo E.**, M.S. (University of Washington, Seattle), Analytical Statistician, Quality Evaluation Laboratory, U. S. Naval Ammunition Depot, Bangor, Washington, 2013 Parkside Drive, Bremerton, Washington.
- Parzen, Emanuel**, M.A. (University of California), Research Assistant in Mathematics, University of California, Department of Mathematics, University of California, Berkeley 4, California.
- Ransom, William E.**, B.S. (University of Illinois), Statistician, Evaluation and Quality Control Branch, Ordnance Ammunition Center, Joliet, Illinois, 1606 New Lenox Road, Joliet, Illinois.
- Rowan, Michael B.**, A.B. (George Washington University), Graduate Student, 358 N. Washington Street, Falls Church, Virginia.
- Rutledge, Robert W.**, B.S. (Sydney), Head Chemist, Pyrmont Distillery, c/o The Colonial Sugar Refining Company, Ltd., Pyrmont Distillery, Pyrmont, New South Wales.
- Sarhan, Ahmed E. E.**, B.S. (Fonad I University, Cairo), Statistician, Medical Research Laboratories, Cairo, 1 Clydesdale Rd., Hoylake, Cheshire, England.

- Storer, Robert L.**, B.S. (University of Nebraska), Statistician, Chief, Evaluation and Quality Control Branch, Ordnance Ammunition Center, 718 John St., Joliet, Illinois.
- Wormleighton, Ralph**, M.A. (Toronto), Defence Research Service Officer, C.A.R.D.E., P.O. Box 1427, Quebec, P.Q., Canada.
- Zindler, Hans-Joachim**, Diplom-Mathematiker (University of Göttingen), Scientific Assistant, State Office for Automotive Vehicles, (24 b) Flensburg, Jurgensgaarderstr. 57 British Zone, Germany.

## REPORT OF THE EAST LANSING MEETING OF THE INSTITUTE

The fifty-third meeting and the fourteenth summer meeting of the Institute of Mathematical Statistics was held in East Lansing, Michigan, at Michigan State College on September 2-5, 1952. The meeting was held in conjunction with meetings of the Mathematical Association of America, the American Mathematical Society, the Econometric Society, and the Pi Mu Epsilon fraternity. Two sessions were co-sponsored by the Econometric Society, and three sessions were co-sponsored by the American Meteorological Society and by the American Geophysical Union. The following 119 members of the Institute attended:

O. P. Aggarwal, G. E. Albert, C. B. Allendoerfer, R. L. Anderson, T. W. Anderson, K. J. Arnold, J. L. Bagg, W. D. Baten, R. E. Bechhofer, M. H. Belz, T. A. Bickerstaff, Allan Birnbaum, David Blackwell, C. R. Blyth, R. C. Bose, G. W. Brier, J. C. Brixey, G. W. Brown, J. H. Bushey, Enrique Cansado, Osmer Carpenter, R. H. Cole, T. F. Cope, A. H. Copeland, E. L. Cox, J. W. Coy, C. C. Craig, D. A. Darling, W. J. Dixon, J. L. Doob, P. S. Dwyer, Benjamin Epstein, H. P. Evans, Evelyn Fix, E. A. Fosler, J. S. Frame, D. A. S. Fraser, Bernard Friedman, J. E. Garrett, H. M. Gehman, M. A. Girshick, R. K. Haddad, S. T. Hadden, P. C. Hammer, M. H. Hansen, T. E. Harris, M. H. Henry, G. R. Herd, Clifford Hildreth, J. L. Hodges, Jr., Wassily Hoeffding, R. G. Hoffman, R. V. Hogg, Jr., W. C. Hood, Harold Hotelling, H. S. Houthakker, C. C. Hurd, P. K. Ito, W. W. Jacobs, T. A. Jeeves, W. H. Jones, Leo Katz, S. H. Khamis, W. M. Kincaid, L. A. Knowler, T. C. Koopmans, William Kruskal, H. G. Landau, L. M. LeCam, E. L. Lehmann, G. J. Lieberman, G. F. Lunger, H. B. Mann, F. J. Massey, Jr., J. W. Mauchly, K. O. May, D. M. Mesner, Robert Mirsky, F. C. Mosteller, C. J. Nesbitt, Jerzy Neyman, M. L. Norden, E. G. Olds, Ingram Olkin, Richard Otter, James Pachares, Emanuel Parzen, G. B. Price, Mina Rees, P. R. Rider, F. D. Rigby, D. D. Rippe, Murray Rosenblatt, S. N. Roy, Herman Rubin, David Rubinstein, R. I. Savage, Henry Scheffé, E. D. Schell, Elizabeth Scott, Esther Seiden, L. D. Simmons, W. B. Simpson, Rosedith Sitgreaves, Arthur Stein, C. M. Stein, I. M. Steinberg, Zenon Sztatowski, W. F. Taylor, H. C. S. Thom, F. H. Tingey, Leo Tornqvist, C. K. Tsao, A. W. Tucker, J. W. Tukey, D. F. Votaw, Jr., Allen Wallis, J. Ernest Wilkins, Jr., B. J. Winer, M. A. Woodbury.

The meeting opened on Tuesday, September 2, at 10:00 A.M. with a session on *Stochastic Phenomena in Medicine*. The chairman was Professor Frederick Mosteller, Harvard University, and the following papers were given:

1. *Some Stochastic Procedures Applied to Data on Tuberculin and Histoplasmin Skin Tests*. William F. Taylor, School of Aviation Medicine, Randolph Field.
2. *Further Contributions to the Theory of Contagion*. Grace E. Bates, Mount Holyoke College and University of California. (Read by Evelyn Fix, University of California.)

3. *An Application of Markov Processes to Problems of Incidence and Epidemiology of Mental Disease*. Andrew Marshall and Herbert Goldhamer, Rand Corporation. (Presented, in outline, by T. E. Harris, Rand Corporation.)

At 2:00 P.M. on the same day a session on *Recent Developments in Measurement in the Social Sciences* was held with Professor Leo Katz, Michigan State College, as chairman. The following papers were given:

1. *Testing Organization Theories*. M. M. Flood, Rand Corporation.
2. *Asymptotic Distributions of Estimates for Latent Structure Analysis*. T. W. Anderson, Columbia University.
3. *Problem of Social Choice and Individual Values*. Leo A. Goodman, University of Chicago.

Discussion was by Professor John W. Tukey, Princeton University, and Professor Max A. Woodbury, University of Pennsylvania.

A session of contributed papers was held at 10:15 A.M. on Wednesday, September 3, with Professor Leo A. Goodman, University of Chicago, as chairman. The following papers were delivered:

1. *An Extension of Massey's Distribution of the Maximum Deviation between Two Sample Cumulative Step Functions. Preliminary Report*. Chia Kuei Tsao, Wayne University.
2. *Polynomial Correlation Coefficients*. W. D. Baten and J. S. Frame, Michigan State College.
3. *Truncated Poisson Distributions*. Paul R. Rider, Wright-Patterson Air Force Base and Washington University.
4. *Frequency Distributions for Functions of Rectangularly Distributed Random Variables*. Stuart T. Hadden, Socony-Vacuum Laboratories, Paulsboro, New Jersey.
5. *On Truncated Rules of Action. Preliminary Report*. Benjamin Epstein, Wayne University.
6. *The Distribution of the Difference of Two Independent Chi-Squares*. James Pachares, University of North Carolina.
7. *Partially Balanced Designs with Two Plots Per Block*. R. C. Bose, University of North Carolina, and K. R. Nair, University of North Carolina and Forest Research Institute, Dehradun, India.
8. *Minimax Sampling and Estimation in Finite Populations*. Om Prakash Aggarwal, Stanford University.
9. *Some Two-Sample Tests on the Exponential Distribution. Preliminary Report*. (By title.) Benjamin Epstein and Chia Kuei Tsao, Wayne University.
10. *Efficiency of Estimators of the Mean of an Exponential Distribution Based Only on the  $r$ th Smallest Observation in an Ordered Sample*. (By title.) Benjamin Epstein, Wayne University.
11. *On the Theory of Systematic Sampling. III*. (By title.) William G. Madow, University of Illinois.
12. *The Power of Some Service Tests*. (By title.) Leo A. Goodman, University of Chicago.

A Special Invited Paper was given by Professor Harold Hotelling, University of North Carolina, at 2:00 P.M. on September 3. The title of Professor Hotelling's address was *Distribution of Quadratic Forms*. Professor P. S. Dwyer, University of Michigan, presided.

A session on *Recent Developments in Estimation and Hypothesis Testing in the*

*Nonparametric Case* was held at 3:00 P.M. on September 3 with Professor W. J. Dixon, University of Oregon, as chairman. The following papers were presented:

1. *The Power of Nonparametric Tests*. Erich L. Lehmann, University of California, Berkeley.
2. *The Power of Certain Nonparametric Tests*. Wassily Hoeffding, University of North Carolina.
3. *Nonparametric Theory: Confidence Regions and Tests for Location and Scale Parameters*. D. A. S. Fraser, University of Toronto.

Discussion was by Professor J. W. Tukey, Princeton University, and Mr. I. R. Savage, National Bureau of Standards.

The three sessions of Thursday, September 4, dealt with problems of *Cloud Seeding* and were co-sponsored by the American Meteorological Society and the American Geophysical Union. The morning session, held at 9:30 A.M., was entitled *Cloud Seeding: The Problem* and had as its chairman Professor Harold Hotelling, University of North Carolina. The following papers were given:

1. *Cloud Seeding; a Problem of National Importance*. R. R. Reynolds, Division of Water Resources, Sacramento.
2. *Physical Basis of Cloud Seeding*. H. G. Houghton, Department of Meteorology, Massachusetts Institute of Technology.
3. *The Physics of Cloud Seeding and the Results of Laboratory Experiments*. Vincent J. Schaefer, General Electric Company, Schenectady.

The afternoon session began at 2:00 P.M. and was a *Review of Already Published Evaluations of Cloud Seeding Experiments*. The chairman was Dr. Howard T. Orville, Bendix Aviation Corporation, and the following papers were given:

1. *Evaluation of the Bishop Creek, California, Cloud Seeding Tests*. Ferguson Hall, Scientific Services Division, Weather Bureau.
2. *Methods of Evaluating the Effects of Periodic Silver Iodide Seeding*. Irving Langmuir, General Electric Company, Schenectady.
3. *Progress of Cloud Seeding Analysis in Oregon*. Robert T. Beaumont, Bureau of Soil Conservation, Medford, Oregon.
4. *Some Pitfalls Encountered in Certain Current Methods of Evaluation*. T. A. Jeeves, L. LeCam, E. L. Scott, University of California, Berkeley.
5. *An Approach to the Evaluation of Results of Rainmaking, A Progress Report*. C. E. Buell, University of New Mexico.

In the evening, at 7:00 P.M., a session was held with the title *Proposed Statistical Methodology and Round Table Discussion*. The chairman was Professor Henry Scheffé, Columbia University, and the following papers were given:

1. *On Proposed Statistical Methodology*. J. Neyman, University of California, Berkeley.
2. *Methods of Evaluating Cloud Seeding Operations*. Herbert C. S. Thom, Weather Bureau and Cornell University.
3. *Statistical Problems Encountered in the Analysis of Cloud Seeding Experiments*. Glenn W. Brier, Statistical Section, Weather Bureau.

Each of the three Cloud Seeding sessions was followed by a discussion.

On Friday, September 5, at 10:00 A.M. a second session of contributed papers was held with Professor C. C. Craig, University of Michigan, presiding. The following papers were presented:

1. *A Minimal Essentially Complete Class of Tests of a Simple Hypothesis Specifying the Mean of a Unit Rectangular Distribution.* Allan Birnbaum, Columbia University.
2. *Application of Random Walk Theory to a General Class of Sequential Decision Problems. Preliminary Report.* G. E. Albert, University of Tennessee.
3. *Nonparametric Comparisons of Populations When Data Are Collected in Homogeneous Groups.* Frank J. Massey, Jr., University of Oregon.
4. *On the Reduced Moment Problem.* Salem H. Khamis, Statistical Office, United Nations.
5. *Canonical Partial Correlations.* S. N. Roy and J. Whittlesey, University of North Carolina.
6. *A Useful Transformation in the Case of Canonical Partial Correlations.* S. N. Roy, University of North Carolina.
7. *Uniform Convergence of Distribution Functions.* Emanuel Parzen, University of California, Berkeley.
8. *Statistical Aspects of a Linear Programming Problem.* D. F. Votaw, Jr., Yale University.
9. *Maximum Likelihood Estimators and A Posteriori Distributions.* (By title.) J. Wolfowitz, Cornell University.
10. *Estimates and Asymptotic Distributions of Certain Statistics in Information Theory. Preliminary Report.* (By title.) John P. Hoyt, U. S. Naval Academy. Introduced by S. Kullback.
11. *On Testing One Simple Hypothesis against Another.* (By title.) Lionel Weiss, University of Virginia.
12. *Extreme Value Theory for  $m$ -dependent Stationary Sequences of Continuous Random Variables.* (By title.) Geof. Watson, University of Melbourne.
13. *Sequential Tests and Estimates for Comparing Poisson Populations.* (By title.) Allan Birnbaum, Columbia University.
14. *Sequential Decision Problems in the Stationary Case.* (By title.) J. Kiefer, Cornell University.
15. *Random Functions Satisfying Certain Linear Relations. II.* (By title.) Sudhish G. Ghurye, University of North Carolina.
16. *Optimal Designs for Estimating Parameters. Preliminary Report.* (By title.) Herman Chernoff, Stanford University.
17. *The Distribution of the  $n$ th Variate in Certain Chains of Serially Dependent Populations.* (By title.) L. V. Toralballa, Marquette University. Introduced by Joseph Talacko.
18. *An Experimental Method for Obtaining Random Digits and Permutations.* (By title.) J. E. Walsh, U. S. Naval Ordnance Test Station, China Lake.
19. *Distribution of Canonical Partial Correlations.* (By title.) S. N. Roy, University of North Carolina.

At 2:00 P.M. on Friday, September 5, a session on the *Comparison of Experiments* was held with the co-sponsorship of the Econometric Society. The chairman was Professor M. A. Girshick, Stanford University, and the following papers were presented:

1. *Equivalent Methods of Comparison.* David H. Blackwell, Howard University.
2. *Approximate Comparison of Experiments.* Charles Stein, University of Chicago.

At 3:00 P.M. on Friday, September 5, the final session of the meeting was held. This session was one of invited papers, and its chairman was Professor J.



Neyman, University of California, Berkeley. The invited addresses and discussions were the following:

1. *Estimates of Bounded Relative Error in Particle Counting*. (Based on joint work of M. A. Girshick, H. Rubin, and Rosedith Sitgreaves.) Rosedith Sitgreaves, Stanford University.
2. *Multiple Comparison Procedures in the Analysis of Variance*. Henry Scheffé, Columbia University.  
Discussion: Robert Bechhofer, Cornell University, and J. W. Tukey, Princeton University.
3. *Topics in Stationary Time Series*. (Based on joint work with Murray Rosenblatt.) Ulf Grenander, University of Stockholm and University of Chicago.  
Discussion: Murray Rosenblatt, University of Chicago.

The Council met at 8:00 P.M. on Tuesday, September 2, and a Business Meeting was held at 9:00 A.M. on Wednesday, September 3. At both of these meetings Professor M. A. Girshick presided. A banquet was held on the evening of September 3, and an I.M.S. party on the evening of September 4.

WILLIAM KRUSKAL  
*Associate Secretary*

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### PUBLICATIONS RECEIVED

- Anuario Estadístico de España*, (Instituto Nacional de Estadística), Presidencia del Gobierno, Madrid, 1951, xlv + 1258 pp.
- Anuario Estadístico de España (Edición Manual)*, (Instituto Nacional de Estadística), Presidencia del Gobierno, Madrid, 1952, lvii + 896 pp.

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### INSTITUTIONAL MEMBERS

- The following are Institutional Members of the Institute for the year 1952:
- INTERNATIONAL BUSINESS MACHINES CORPORATION, New York  
 UNIVERSITY OF NORTH CAROLINA, INSTITUTE OF STATISTICS, Chapel Hill, North Carolina  
 PRINCETON UNIVERSITY, DEPARTMENT OF MATHEMATICS, SECTION OF MATHEMATICAL STATISTICS, Princeton, New Jersey  
 PURDUE UNIVERSITY LIBRARIES, Lafayette, Indiana  
 RAYTHEON MANUFACTURING COMPANY, 148 California Street, Newton 58, Massachusetts  
 UNIVERSITY OF CALIFORNIA, STATISTICAL LABORATORY, Berkeley, California  
 UNIVERSITY OF ILLINOIS, PERIODICAL DIVISION, Urbana, Illinois