NEWS AND NOTICES

Readers are invited to submit to the Treasurer of the Institute news items of interest

Personal Items

Dr. Edward Batschelet has been appointed Ordinary Professor in the Department of Mathematics at Catholic University of America, Washington, D. C.

Professor James Chung, Department of Mathematics, University of Toronto, passed away suddenly last November.

C. Philip Cox, formerly of the N.I.R.I., Shinfield, England, has joined the staff of the Statistics Department, Iowa State University, as Associate Professor.

Leo A. Goodman, Professor of Statistics and Sociology at the University of Chicago, has returned to his position there, after having spent 1960–61 as visiting Professor of Mathematical Statistics and Sociology at Columbia University.

T. N. E. Greville has accepted a position as Vice President of the S. A. Miller Company, Consulting Actuaries, Washington, D. C.

Dr. Dewey L. Harris, has been appointed Assistant Professor in the Department of Statistics, Iowa State University.

Vincent Hodgson completed his doctorate at the London School of Economics and has been appointed Assistant Professor in the Department of Statistics at the Florida State University, Tallahassee.

Dr. Donald Hotchkiss has been named Assistant Professor, Department of Statistics, Iowa State University.

Professor Truman L. Kelley, retired, died, May 1961.

Eugene H. Lehman, Jr. has joined C-E-I-R, Beverly Hills, California. His doctorate was conferred by North Carolina State College last year.

Professor E. G. Olds of the Carnegie Institute of Technology, died suddenly last October.

Professor I. Olkin of the University of Minnesota has been appointed to a professorship at Stanford University.

Dr. G. P. Patil of the University of Michigan has been appointed Assistant Professor at McGill University, Montreal.

Mr. N. U. Prabhu is presently a Reader in Mathematical Statistics at the University of Western Australia, Nedlands. He was formerly Head of the Statistics Department, Karnatak University, India.

Dr. J. N. K. Rao, Department of Statistics, Iowa State University, has been promoted to the rank of Assistant Professor.

M. M. Vartak recently received his Ph.D. from the University of Bombay for his thesis "On some applications of the Kronecker product of matrices to statistical designs".

New Members

The following persons have been elected to membership in the Institute

Chan, Man Wai, M.S., (Stanford University); Graduate Student, Department of Statistics, Stanford University; *139 Goodyear Street, San Jose 10, California.*

Croteau, Andre M., (Universite de Montreal); Assistant Research Officer, *National Research Council, Ottawa, Ontario, Canada.*

Fischer, Gay A., B.A., (Oberlin College, Ohio); Computer Programmer/Student, *Applied Mathematics and Statistics Laboratories, Stanford University.*

Garza-Hernandez, Tomas, M.S., (Cornell University); Statistician, C-E-I-R de Mexico, S.A., *Paseo de la Reforma 116-1001, Mexico 6, D. F.*

Ghosh, Bashkar K., Ph.D., (University of London); Assistant Professor, *Department of Mathematics, Lehigh University, Bethlehem, Pennsylvania.*

Gorfinkal, Martin, M.S., (Stanford University); Mathematical Statistician, *Stanford Research Institute, Menlo Park, California.*

Grassau, Erika, Ph.D., (Universidad de Chile); Profesora Educational Statistics and Head, *Instituto de Investigaciones Estadisticas, Universidad de Chile, Santiago.*

Hall, Kenneth M., M.S., (San Jose State College, California); Mathematical Statistician, Sylvania Electric Products, Inc., P. O. Box 188, Mountain View, California; *251 Carmelita Drive, Mountain View.*

Kovner, Jacob L., Ph.D., (Syracuse University); Mathematical Statistician, *Rocky Mountain Forest and Range Experimental Station, Fort Collins, Colorado.*

Linamegi, Edmonts G., Student, University of Michigan; *916 Maple Row, Elkhart, Indiana.*

Luby, Donald D., E.E., (Stanford University); Project Engineer, *Philco Corporation Western Development Laboratories, 3875 Fabian Way, Palo Alto, California.*

McGuire, Milton R., M.S., (Stanford University); Advanced Systems Engineer, Lockheed Missiles and Space Company, Sunnyvale, California; *549 Papal Way, San Jose 28, California.*

Martin, Wyatt L., Jr., B.I.E., (Georgia Institute of Technology); Planning Engineer, Statistical Quality Control, Western Electric Company, 800 Chatham Road, Winston-Salem, North Carolina; *P. O. Box 158, Winston-Salem.*

Maurer, Nancy J., A.B., (Stanford University); Graduate Student, Stanford University; *480 Del Medio, Apt 3, Mountain View, California.*

Milch, Paul R., B.S., (Brown University); Graduate Student, Stanford University; *281 Mallorca Way, San Francisco 23, California.*

Miller, Hilton D., M.A., (University of Cambridge, England); Lecturer in Statistics, *Birkbeck College, London.*

Muhs, Mabel E., B.S., (Stanford University); Graduate Student, Stanford University; *664 College Avenue, Palo Alto, California.*

Phillips, Robert D., M.S., (Oklahoma State University); Senior Associate Analyst, IBM Corporation, Federal Systems Division, 7220 Wisconsin Avenue, Bethesda 14, Maryland; *Apt W1046, 1011 Arlington Boulevard, Arlington, Virginia.*

Schleifer, Jr., Arthur, D.B.A., (Harvard University); Associate Professor of Business Administration, *Dartmouth College, Hanover, New Hampshire.*

Selliah, Jegadevan B., B.Sc., (University of Ceylon); Graduate Student, Stanford University; *714 Santa Ynez, Stanford, California.*

Sewell, Wade P., M.S., (University of Illinois); Economist, *Cornell Aeronautical Laboratory, Inc., 4455 Genessee Street, Buffalo 21, New York.*

Srivastava, Muni S., M.Sc., (Lucknow University, India); Graduate Student, *Department of Statistics, Stanford University.*

Stone, Charles J., Ph.D., (Stanford University); Instructor, *Department of Mathematics, Princeton University.*

Terzaghi, Helen Jean, M.A., (University of Oregon); Graduate Student, *Department of Statistics, Stanford University.*

Wang, Peter C., B.A., (Pacific Lutheran College, Parkland, Washington); Research Associate, *Department of Mathematics, Wayne State University, Detroit 2, Michigan.*

ANNALS INDEX

The Institute, with the support of the National Science Foundation, is having prepared an index to the first thirty-one volumes of the *Annals*. This work is being conducted at the University of Minnesota and will be completed in early 1962. The index will contain a list of all articles, notes, and abstracts, along with citations made to them by subsequent reviewers and researchers. Special sections of the index will be devoted to the literature cited by authors in the *Annals*, an index of the substantive material in the *Annals*, and an index of the news items in the *Annals*.

ABSTRACTS OF STATISTICAL COMPUTER ROUTINES

"Abstracts of Statistical Computer Routines" by Alanen, Andrew, Leone and Qureishi has been completed in November, 1961. This includes over 450 abstracts of Statistical Computer Routines. The classification follows that of the *International Journal of Abstracts: Statistical Theory and Methods*. This publication is an outgrowth of some of the work of the Mathematical Tables Committee of the Institute of Mathematical Statistics, and was sponsored (in part) by the National Science Foundation. Copies of the Abstracts are available by writing to the Computing Center, Case Institute of Technology, Cleveland 6, Ohio. The cost is $3.00 per copy.

NEW U. S. GOVERNMENT POLICY ON PAGE CHARGES

A new policy designed to help scientific journals meet their costs in publishing research results has been adopted by the U. S. Federal Council for Science and Technology. Under the policy, which has been followed by some Government agencies in the past and is now standard for all, page charges for publication of scientific research results in scientific journals will be budgeted for and paid as a necessary part of research costs under Federal grants and contracts.

Scientific policy representatives of Federal agencies that make up the Council established four criteria for honoring page charge bills submitted by journal publishers: (1) The research papers report work supported by the Government. (2) The charges are levied impartially on all research papers published by the journal, whether by non-Government or by Government authors. (3) Payment of such charges is in no sense a condition for acceptance of manuscripts by the journal. (4) The journals involved are not operated for profit.

As previously announced (*Annals* **31** 552, **31** 1244, **32** 936), the *Annals* has instituted a page charge system. The Editorial Staff is in no way involved with the charges, which are handled by the Treasurer of the Institute.

STOCHASTIC ANALYSIS GROUP

At a one-day colloquium held in Oxford, England, on December 20, 1961, the twenty participants agreed to form a Stochastic Analysis Group with the following objects: (i) to promote the study of those branches of pure mathematics having application to statistical science; (ii) to promote cooperation between the mathematical and statistical communities in the British Isles. At this inaugural meeting papers were read by S. J. Taylor (Sample paths of stable processes), J. F. C. Kingman (Skeletons), S. Orey (Semi-Markov processes), J. G. Mauldon (Extreme points of sets of doubly-stochastic matrices), D. Williams (Random time substitution in denumerable Markov processes), and D. Vere-Jones (Recent advances in the U.S.S.R.).

The Group hopes to hold similar meetings about once every six months. Information about its activities can be obtained by applying to the Chairman (Prof. G. E. H. Reuter, Department of Mathematics, The University, Durham, England) or to the Secretary (Mr. D. G. Kendall, Magdalen College, Oxford, England).

SYMPOSIUM ON MATHEMATICAL PROGRAMMING

A symposium on mathematical programming is to be held at the University of Chicago, June 18–22, 1962, sponsored jointly by the Graduate School of Business, University of Chicago, the Association for Computing Machinery, and USAF Project RAND. The Symposium is intended to cover both the theoretical and practical aspects of linear programming and its extensions. Among the topics to be discussed will be mathematical programming in economic theory and industrial planning, discrete programming, non-linear programming, solution techniques for programming problems, network flow problems, and stochastic programming. Papers are invited in all of these and related areas of mathematical programming. Abstracts of 200–300 words should be submitted by March 23, 1962. Papers to be considered, and inquiries regarding the program, should be directed to the Program Chairman, Dr. Philip Wolfe, The RAND Corporation, 1700 Main Street, Santa Monica, California. Regarding registration, for which a modest fee will be charged, and all other matters, direct inquiries to the Symposium Coordinator, Professor Robert L. Graves, Graduate School of Business, University of Chicago, Chicago 37, Illinois.

INTERNATIONAL CONGRESS ON INFORMATION PROCESSING

A second international congress on information processing is to be held in Munich, August 27 to September 1, 1962, under the sponsorship of the International Federation of Information Processing Societies. The purpose of the forthcoming conference is to exchange information among the information technologists of all countries, thus promoting the information-processing sciences

throughout the world. The congress will feature numerous technical sessions in which the present status and new developments in the data processing field will be reported by the specialists involved, together with an extensive exhibit of new equipment from all over the world. United States arrangements are being handled by the American Federation of Information Processing Societies. Further information may be obtained from Mr. Charles W. Adams, 142 The Great Road, Bedford, Massachusetts.

EXPANDED PROGRAM AT FLORIDA STATE UNIVERSITY

Beginning in September 1962, the Department of Statistics at the Florida State University will expand its graduate program to offer the Ph.D. in statistics. The curriculum will include advanced work in statistical inference and decision theory, stochastic processes, advanced probability, multivariate analysis, operations research, special topics in biometry, theory of general linear hypotheses, nonparametric statistics and sequential analysis. The present program leading to the Master of Science degree will be modified to permit both the thesis and non-thesis types of programs.

The new program will be assisted through the recent addition to the staff of Dr. Vincent Hodgson from the London School of Economics and Political Science. Dr. Hodgson joins Drs. Ralph A. Bradley, Frank Wilcoxon, Richard G. Cornell and S. K. Katti in the Department of Statistics. Facilities have been greatly improved through completion of a new mathematical sciences building, which houses an IBM 709 computer for research use.

The Department has a limited number of teaching and research assistantship available. Proposals for three-year graduate fellowships are pending and such fellowships should be available for graduate students entering the new program in September. Interested students are invited to write to Dr. R. A. Bradley, Department of Statistics, the Florida State University, Tallahassee, Florida for further information.

SUMMER OFFERINGS IN STATISTICS AT IOWA STATE UNIVERSITY

The Department of Statistics at Iowa State University will offer six applied courses in statistical theory and methods in its two 1962 summer sessions. These courses are planned primarily for graduate students or research workers with limited mathematical backgrounds who wish to use statistical techniques intelligently for application to other fields. In addition, a course on special topics in theoretical or applied statistics may be studied at the graduate level. Senior staff members will be available during most of the summer for consultations on research or special problems. Students may register for either or both of the six-week summer sessions: June 5–July 12 and July 13–August 18. Courses will be offered in statistical methods, statistical theory, experimental designs (first session), and survey designs (second session).

NEW DEPARTMENT AT SOUTHERN METHODIST UNIVERSITY

Southern Methodist University announces the opening of a new Department of Mathematical and Experimental Statistics and Statistical Laboratory in the Graduate School. Faculty members include Drs. Paul D. Minton and Vanamamalai Seshadri, assisted part-time by Mr. Del West and Mr. Mack Usher. Coursework leading to the degree of Master of Science will be offered, including courses in mathematical statistics, experimental statistics, probability, sampling theory and design of experiments. Departmental assistantships are available. For further information, write to Dr. Paul D. Minton, Department of Mathematical and Experimental Statistics, Southern Methodist University, Dallas 22, Texas.

IMS FELLOWS—1961

The following individuals have recently been elected as Fellows of the Institute of Mathematical Statistics.

ROBERT E. BECHHOFER
PAUL MEIER
GOTTFRIED E. NOETHER
LEOPOLD KARL SCHMETTERER
LAJOS TAKÁCS
B. L. VAN DER WAERDEN

DOCTORAL DISSERTATIONS IN STATISTICS, 1961

Listed below are doctorates conferred during 1961 in the United States and Canada for which the dissertations were written on topics in statistics or related fields. The university, major subject, and the title of the dissertation are given in each case. Readers are invited to notify the Editor of any omissions from the list.

Mir Maswood Ali, University of Toronto, major in mathematics, "Contributions to linear order estimation of scale location parameters".

Alfred G. Aswad, University of California, Berkeley, major in statistics, "Some statistical problems arising in a certification procedure".

Om Parkash Bagai, University of British Columbia, major in mathematics, "Multiple comparison methods and certain distributions arising in multivariate statistical analysis" (1960).

Lloyd Franklin Bell, Stanford University, major in statistics, "A mathematical theory of guarantee policies".

Simeon M. Berman, Columbia University, major in mathematical statistics, "Limiting distribution of the maximum term in sequences of dependent random variables".

Beliyar R. Bhat, University of California, Berkeley, major in statistics, "Bayes sequential tests in Markov chains".

John William Bishir, North Carolina State College, major in experimental statistics, "Two problems in the theory of stochastic branching processes".

Richard Park Bland, University of North Carolina, major in statistics, "A minimum average risk solution to the problem of finding the largest mean".

W. Blischke, Cornell University, major in biostatistics, "Unbiased estimators for mixtures of distributions".

S. Blumenthal, Cornell University, major in industrial engineering, "Contributions to the theory of the two-sample problem".

David Ross Brillinger, Princeton University, major in mathematics, "Asymptotic means and variances in the k-dimensional case".

George Thomas Bryant, Harvard University, major in engineering, "Stochastic theory of queues applied to design of impounding reservoirs".

Donald Smiley Burdick, Princeton University, major in mathematics, "Stage by stage modification of polynomial estimators by the jackknife method".

Dale Edward Cooper, North Carolina State College, major in experimental statistics, "Available soil moisture as a stochastic process".

Klaus H. Daniel, University of California, Berkeley, major in statistics, "A delivery-lag inventory model with an emergency provision".

Alfred Descloux, University of North Carolina, major in statistics, "On the covariance between the number of offered and the number of overflow requests in systems with limited capacity".

Donald Eugene Farrar, Harvard University, major in economics, "The investment decision under uncertainty: Portfolio selection".

Polly Feigl, University of Minnesota, major in biostatistics, "Design considerations for the postoperative evaluation of analgesic drugs".

Dorian Feldman, University of California, Berkeley, major in statictics, "Contributions to the 'Two-Armed Bandit' problem".

Narayan C. Giri, Stanford University, major in statistics, "Minimax property of certain multivariate test statistics".

Arnold F. Goodman, Stanford University, major in statistics, "The application of nonparametric techniques to some statistical problems of industry".

Jack Hachigian, University of Indiana, major in mathematics, "Some further results on functions of Markov processes".

James C. Hickman, State University of Iowa, major in mathematics, "On random sets, derived from a subsample, for statistics based on the entire sample".

Bruce Marvin Hill, Stanford University, major in statistics, "A test of linearity versus convexity of a median regression curve".

Donald Lee Inglehart, Stanford University, major in statistics, "Contributions to the mathematical theory of inventory and production control".

Thomas Rhinehart Konsler, North Carolina State College, major in experimental statistics, "A quantitative analysis of the growth and regrowth of a forage crop".

Eugene H. Lehman, Jr., North Carolina State College, major in experimental statistics, "Estimation of the scale parameter in the Weibull distribution using samples censored by time and by number of failures".

Roger McCullough, Iowa State College, major in statistics, "Testing equality of means under variance heterogeneity".

Kulendar Majumdar, Purdue University, major in mathematical statistics, "Asymptotic expansions for the deviation between two empirical distribution functions".

Wadie Faltas Mikhail, University of North Carolina, major in statistics, "On the monotonocity and admissibility of some tests in multivariate analysis".

Piotr W. Mikulski, University of California, Berkeley, major in statistics, "Some problems in the asymptotic theory of testing statistical hypotheses".

Robert Gerard Miller, Harvard University, major in statistics, "An application of multiple discriminant analysis to the probabilistic prediction of meteorological conditions affecting operational decisions".

S. S. Mitra, University of Washington, major in mathematics, "Asymptotic rate of convergence for stochastic processes with stationary independent increments".

Wrudhula Krishna Murthy, University of North Carolina, major in statistics, "On the general renewal process".

Peter Gabriel Neumann, Harvard University, major in applied mathematics, "Efficient error-limiting variable-length codes".

Marcel Fernand Neuts, Stanford University, major in statistics, "Games on the unit-square with discrete payoff".

Peter E. Ney, Columbia University, major in mathematical statistics, "Some contributions to the theory of cascades".

Jose Nieto de Pascual, Iowa State College, major in statistics, "Theory of minimum variance estimation with applications".

Manibhai Sukhabhai Patel, University of North Carolina, major in statistics, "Investigations on factorial designs".

Jonnagadda N. K. Rao, Iowa State College, major in statistics, "Sampling procedures involving unequal probability selection".

Ester Samuel, Columbia University, major in mathematical statistics, "On the compound decision problem in the nonsequential and sequential case".

Lawrence Alan Shepp, Princeton University, major in mathematics, "Recurrent sums of random variables".

Gordon R. Sherman, Purdue University, major in statistics, "Combinatorial scheduling: On finding a partition of a finite set which maximizes a set function".

Shobh N. Singh, University of California, Berkeley, major in statistics, "The chance mechanism of variation in the number of children born to a couple".

Selig Starr, George Washington University, major in statistics, "Some algebraic aspects of the analysis of variance".

Charles Joel Stone, Stanford University, major in statistics, "A representation for diffusion processes".

Lakshmi Venkataraman, Columbia University, major in mathematical statistics, "Probability investigation of a single server queueing process with Poissonian input and batch service".

Francis Wall, University of Minnesota, Major in biostatistics, "Biostatistical linear models in longitudinal medical research."

James Stanley Williams, North Carolina State College, major in experimental statistics, "An evaluation of the worth of some selection indices".

Atholl L. Wilson, University of California, Berkeley, major in statistics, "An approach to n-person games".

Ramzy Mohamed Zaki, North Carolina State College, major in experimental statistics, "Applications of linear programming techniques to some problems of production planning over time".

REPORT OF THE URBANA, ILLINOIS MEETING OF THE INSTITUTE OF MATHEMATICAL STATISTICS

The eighty-eighth meeting of the Institute of Mathematical Statistics, the 1961 Central Regional Meeting, was held at the University of Illinois, Urbana, Illinois, on November 24–25, 1961.

By invitation of the Committee on Special Invited Papers, the Institute was addressed by J. L. Doob of the University of Illinois on "Application of probability to analytic function theory."

Seventy-four people, including fifty-eight members of the Institute, registered for the meeting. The program was as follows:

FRIDAY, November 24, 1961

8:30–9:30 a.m.—Contributed Papers I

Chairman: D. M. ROBERTS, University of Illinois.

1. *The Bivariate Chi Distribution*, P. R. KRISHNAIAH, PETER HAGIS, JR., AND LEON STEINBERG, Remington Rand UNIVAC.
2. *Estimation of Variance Components in the Two-Way Classification, Eisenhart's Model II* (Preliminary Report), LEONE Y. LOW, University of Illinois.
3. *Group-Screening with More than Two Stages*, M. S. PATEL, Purdue University.

10:00–11:50 a.m.—Probability Theory

Chairman: M. KATZ, University of Chicago.

1. *Ergodicity and Information Theory*, J. H. ABBOTT, University of New Mexico.
2. *Some Limit Theorems for Random Sums*, P. BILLINGSLEY, University of Chicago.
3. *On Some Problems in Linear and Nonlinear Prediction*, J. R. BLUM, Sandia Corporation.

1:30–2:50 p.m.—Statistical Theory

Chairman: C. R. BLYTH, University of Illinois.

1. *On n-Stage Schemes*, J. ROSENBLATT, University of New Mexico.
2. *On the Asymptotic Efficiency of Estimates*, R. R. BAHADUR, University of Chicago.

3:00–3:40 p.m.—Monte Carlo Methods

Chairman: R. V. HOGG, University of Iowa.

1. *Generating Random Variables with Specified Distributions*, H. RUBIN, Michigan State University.

4:00–5:00 p.m.—Special Invited Paper

Chairman: J. R. BLUM, Sandia Corporation.

Application of Probability to Analytic Function Theory, J. L. DOOB, University of Illinois.

SATURDAY, November 25, 1961

8:30–10:20 a.m.—Probability Theory

Chairman: MRS. S. C. MOY, Wayne University and University of Illinois.

1. *Truncation, Tail Probabilities and Sharp Inequalities for the Univariate Normal Distribution*, O. WESLER, University of Michigan.
2. *Fluctuation Theory*, M. DWASS, University of Minnesota.
3. *Exponential Convergence Rates for the Law of Large Numbers*, L. E. BAUM, M. KATZ, AND R. R. READ, University of Chicago.

10:30–11:50 a.m.—Contributed Papers II

Chairman: O. WESLER, University of Michigan.

1. *Admissibility of the Optimal Invariant Estimate for a Translation Parameter under Absolute Error Loss Function*, MARTIN FOX AND HERMAN RUBIN, Michigan State University.
2. *On the Efficiency of Optimum Nonparametric Procedures in the Two Sample Case*, P. W. MIKULSKI, University of Illinois.
3. *On the Resolution of Statistical Hypotheses*, ROBERT V. HOGG, University of Iowa.
4. *Some New Incomplete Factorial Designs*, STEPHEN R. WEBB, University of Chicago (introduced by W. Kruskal).

1:20–3:10 p.m.—Statistical Theory

Chairman: P. W. MIKULSKI, University of Illinois.

1. *Estimation in the Balanced Incomplete Block Design*, V. SESHADRI, Southern Methodist University.
2. *Testing Equality of Means after a Preliminary Test of Equality of Variances*, J. GURLAND AND R. S. MCCULLOUGH, University of Wisconsin and Iowa State University.
3. *Duels as Limits of Game Iterations*, H. T. DAVID AND A. LIPIS, Iowa State University.

3:30–4:30 p.m.—Contributed Papers III

Chairman: H. T. DAVID, Iowa State University.

1. *Estimating the Parameters of Negative Exponential Populations from One or Two Order Statistics*, H. LEON HARTER, Aeronautical Research Laboratory, Wright-Patterson Air Force Base.
2. *Limiting Behavior of a Sequence of Density Ratios*, SUNARDI WIRJOSUDIRDJO, Bandung Institute of Technology.
3. *Variance of a Random Sum of Random Variables* (Preliminary Report), R. A. WIJSMAN, University of Illinois.

Contributed Papers Presented by Title

1. *Completeness and the Existence of Unbiased Tests*, C. B. BELL, San Diego State College and the University of Washington.
2. *Unbiased Estimation of Probability Densities* (Preliminary Report), S. G. GHURYE AND INGRAM OLKIN, University of Minnesota and Stanford University.
3. *A* $3(2^{s-1})$ *Design of Resolution V*, PETER W. M. JOHN, University of California, Davis.
4. *A Generalized Partially Balanced Association Scheme*, J. N. SRIVASTAVA, University of North Carolina.

PUBLICATIONS RECEIVED

JAKOBSON, ROMAN, ed. (1961). *Structure of Language and its Mathematical Aspects*. Proceedings of Symposia in Applied Mathematics 12, American Mathematical Society, Providence. 279 pp. $7.80.

SHISKIN, JULIUS (1961). *Signals of Recession and Recovery; an Experiment with Monthly Reporting*. Occasional Paper No. 77, National Bureau of Economic Research, New York. 191 pp. $3.00.

VADJA, S. (1961). *Mathematical Programming*. Addison-Wesley, Reading, Mass. 310 pp. $8.50.

Funds for Research and Development in Industry: Report on a 1958 Survey (1961). National Science Foundation, Washington, D. C. 119 pp. 65¢.

Selected Translations in Mathematical Statistics and Probability, Vol. 1 (1961). Institute of Mathematical Statistics and American Mathematical Society, Providence. 306 pp. $4.80.