

NOTES

A fund has been established to endow a scholarship at Newcomb College in memory of Marie J. Weiss.

The first two volumes of the Collected Mathematical Works of Harald Bohr have been published by the Danish Mathematical Society with the support of the Rask-Orsted Foundation and the Carlsberg Foundation; the third volume will appear shortly. The three volumes contain about 1000 pages each, and are edited by Erling Følner and Børge Jessen. They may be obtained, bound in buckram, at a total price of 110 Danish crowns (\$15.90), post free, from the Danish Mathematical Society, Institute of Mathematics, University of Copenhagen, Blegdamsvej 15, Copenhagen.

A conference on functions of a complex variable, with emphasis on topological methods, will be held from June 17 to June 30, 1953, in Ann Arbor under the auspices of the Department of Mathematics of the University of Michigan. About a dozen mathematicians from the United States and abroad will deliver invited addresses. There will also be opportunities for short contributed papers. The 1953 Summer Session at the University of Michigan will give special attention to complex variable theory in the form of courses and seminars. Information can be obtained by writing to Professor W. Kaplan, 274 West Engineering Building, Ann Arbor, Michigan.

The Fourth Symposium on Plasticity will be held at Brown University, Providence, Rhode Island, September 1–3, 1953. Persons interested in receiving further information should write to Professor H. J. Weiss, Graduate Division of Applied Mathematics, Brown University, Providence 12, Rhode Island.

Professor Otto Neugebauer of Brown University has been awarded the Dannie Heineman Prize of \$5000 for his book "The Exact Sciences in Antiquity."

Professor Lamberto Cesari of Purdue University has been awarded a National Science Foundation Grant.

Professor Claude Chevalley of Columbia University has been elected to membership in the National Academy of Sciences.

Professor Einar Hille of Yale University is on leave in France and has been awarded a Guggenheim Fellowship and a Fulbright Award.

Professor Witold Hurewicz of the Massachusetts Institute of Technology has been awarded a Fulbright Grant and is on leave of absence at the University of Paris.

Professor C. O. Oakley of Haverford College is on leave of absence and has received a Ford Foundation Grant.

Professor Moses Richardson of Brooklyn College has been awarded a Ford Foundation Fellowship and is on leave of absence at Princeton University.

Assistant Professor E. H. Spanier of the University of Chicago has been awarded a Guggenheim Fellowship.

Professor André Weil of the University of Chicago has been awarded a Guggenheim Fellowship.

Professor G. T. Whyburn of the University of Virginia has been awarded a Fund for the Advancement of Education Grant and is on leave of absence at Stanford University.

Dr. Benjamin Bernholtz of the University of Connecticut has accepted a position as mathematician with the Hydro-Electric Power Commission of Ontario, Toronto, Ontario, Canada.

Dr. A. A. Brown of the Operations Evaluation Group, Massachusetts Institute of Technology, has accepted a position as staff member with Arthur D. Little, Inc., Cambridge, Massachusetts.

Mr. B. M. Brown has accepted a position as applied science representative with the International Business Machines Corporation, New York, New York.

Professor R. H. Cameron of the University of Minnesota will be on leave of absence during the academic year 1953-1954 at the Institute for Advanced Study.

Dr. R. E. Carr of the North American Aviation Company has accepted a position as head of the Computer Operations Group, Jet Propulsion Laboratory, California Institute of Technology.

Visiting Associate Professor K. L. Chung of Cornell University has been appointed to an associate professorship at Syracuse University.

Professor J. A. Dieudonné of the University of Nancy is on leave of absence and has been appointed to a visiting professorship at Northwestern University.

Dr. D. L. Fuller of the General Aniline and Film Corporation has accepted a position as technical director with the American Cyanamid Company, New Orleans, Louisiana.

Mr. J. H. Hoelzer of Williams College has been appointed to an associate professorship at the Tennessee Polytechnic Institute.

Mr. O. H. Hoke of the Naval Air Test Center, Patuxent River, Maryland, has accepted a position as mathematician at the White Sands Proving Ground, New Mexico.

Mr. B. F. Howard of Johns Hopkins University has accepted a position as assistant research engineer with the Bendix Radio Corporation, Towson, Maryland.

Mr. C. Y. Lee of the University of Washington has accepted a

position as member of the technical staff with the Bell Telephone Laboratories, Inc., New York, New York.

Mr. W. E. Moore of Johns Hopkins University has accepted a position as mathematician with the Redstone Arsenal, Huntsville, Alabama.

Assistant Professor E. D. Nering of the University of Minnesota will be on leave of absence during the academic year 1953-1954 and has accepted a position at the Goodyear Aircraft Corporation, Litchfield Park, Arizona.

Associate Professor Ruth E. O'Donnell of Duquesne University has accepted a position as senior scientist with the Westinghouse Electric Corporation, Pittsburgh, Pennsylvania.

Mr. B. E. Owens of Yale University has accepted a position as assistant project engineer with the Sperry Gyroscope Company, Great Neck, New York.

Dr. L. G. Peck of the Los Alamos Scientific Laboratory is on leave of absence at the Institute for Advanced Study and New York University.

Associate Professor Murray Rosenblatt of the University of Chicago is on leave of absence at the Institute of Mathematical Statistics, Stockholm, Sweden.

Dr. W. J. Schart of the Consolidated Vultee Aircraft Corporation has accepted a position as design specialist with the Electronics Laboratory, Convair, San Diego, California.

Professor W. H. Sellers of Aldeson-Broadus College has accepted a position as flutter and vibration technician with Fairfield Aircraft, Hagerstown, Maryland.

Mr. David Singer of Corbett-Tinghir and Company, New York, has accepted a position as structural research engineer with the Armour Research Foundation, Illinois Institute of Technology.

Mr. Judson C. Smith of the University of Washington has accepted a position as mathematician at the Naval Ordnance Test Station, China Lake, California.

Assistant Professor C. T. Taam of the University of Missouri has been appointed to an assistant professorship at the Catholic University of America.

The following promotions are announced:

- A. F. Bausch, University of Chicago, to an assistant professorship.
- Raoul Bott, University of Michigan, to an assistant professorship.
- Harold Grad, New York University, to an associate professorship.
- Philip Hartman, Johns Hopkins University, to a professorship.
- Banesh Hoffmann, Queens College, to a professorship.

Eugene Isaacson, New York University, to an associate professorship.

Peter Lax, New York University, to an associate professorship.

W. W. Leutert, Ballistic Research Laboratories, to chief of the Computing Laboratory.

R. D. Murphy, Equitable Life Assurance Society of the United States, to President.

David Nelson, George Washington University, to an associate professorship.

I. E. Segal, University of Chicago, to an associate professorship.

H. N. Shapiro, New York University, to an associate professorship.

H. L. Turrittin, University of Minnesota, to a professorship.

The following appointments to instructorships are announced: University of Maryland: Mr. Sol Schwartzman; University of Nebraska: Mr. R. A. Moore, Dr. M. F. Ruchte; University of Oklahoma: Mr. D. W. DuBois; Pennsylvania State College Extension Center, Altoona, Pennsylvania: Mr. F. H. Pott; Tulane University of Louisiana: Mr. R. E. Allan, Dr. A. L. Shields; University of Wisconsin Extension Center, Wausau, Wisconsin: Mr. P. W. Gillett; Yale University: Dr. J. T. Schwartz.

Professor Emeritus H. C. Van Buskirk of the California Institute of Technology died on November 21, 1952 at the age of eighty years. He had been a member of the Society for thirty-one years.

The note concerning E. W. Barankin in the March issue of the Bulletin is in error, and should read as follows:

Associate Professor E. W. Barankin of the University of California, Berkeley, is on leave of absence and has accepted a position as Research Mathematician at the Institute for Numerical Analysis, National Bureau of Standards, Los Angeles, for the current academic year.

The following two hundred and seven doctorates, with mathematics, mathematical physics, or statistics as a major subject, were conferred during 1952 in universities in the United States and Canada. The university, month in which degree was conferred, minor subjects (other than mathematics), and title of the dissertation are given in each case if available.

I. T. A. C. Adamson, Princeton, June, *The cohomology structure of formations*.

José Adem Chahin, Princeton, June, *Iteration of the squaring operations in algebraic topology*.

A. C. Allen, Princeton, June, *Some theorems on harmonic functions and related topics*.

A. G. Anderson, Michigan, February, *The prediction of quantitative characteristics in polygenic systems.*

J. W. Armstrong, Purdue, June, minor in physics, *Lagrange and Hermite interpolation in several variables.*

E. L. Arnoff, California Tech., June, minor in physics, *Partial differential and difference equations.*

B. J. Ball, Texas, June, *Concerning continuous and equicontinuous collections of arcs.*

J. B. Bartoo, Iowa, June, minor in astronomy, *Certain theorems on order statistics.*

W. F. Bauer, Michigan, February, *Modified Sturm-Liouville problems and associated integral transforms.*

R. L. Beinert, Cornell, September, *Abstract parametrization of an elliptic curve.*

C. A. Bennett, Michigan, June, *Asymptotic properties of ideal linear estimators.*

Benjamin Bernholtz, California Tech., June, minor in physics, *Complex function theory for functions with arguments and values in locally convex linear topological spaces.*

R. L. Blair, Iowa, August, minor in astronomy, *Ideal lattices and the structure of rings.*

I. E. Block, Harvard, March, *Singular integrals and the decomposition of functions of summable square.*

E. K. Blum, Columbia, June, *Theory of analytic functions in Banach algebras.*

V. W. Bolie, Iowa State, March, minor in physics, *Periodic orbits in the neighborhood of libration points in certain rotating systems.*

W. W. Boone, Princeton, June, *Several simple, unsolvable problems of group theory related to the word problem.*

J. J. Brandstatter, California, Los Angeles, April, *The algorithm of Schwarz in the mathematical theory of elasticity of an anisotropic solid for doubly-connected domains.*

J. P. Brewster, Duke, June, minor in education, *Initial conditions for differential systems.*

J. A. Bronzo, Brown, May, *On the propagation of elastic waves into a semi-infinite solid.*

A. R. Brown, Jr., Yale, June, *Non-uniqueness of the initial value problem for a class of generalized heat equations.*

H. A. Brown, Chicago, August, *Two classes of non-normal operators.*

R. K. Brown, Rutgers, June, *Some mapping properties of the mean sums of power series and a problem in typically-real functions of order p .*

R. J. Buehler, Wisconsin, February, minor in physics, *On functions*

satisfying certain differential inequalities.

C. W. Burrill, Iowa, June, minor in astronomy, *Characterizing systems of continuous functions*.

D. W. Bushaw, Princeton, June, *Differential equations with a discontinuous forcing term*.

R. K. Butner, Iowa, June, minor in astronomy, *Polynomials associated with certain differential equations*.

R. K. Butz, Georgia, June, minor in physics, *The minimum function of a matrix B relative to a matrix A* .

Jean M. Calloway, Pennsylvania, June, *On the discriminant of arbitrary algebraic number fields*.

W. H. W. Chen, Washington, June, minors in electrical engineering and physics, *On the singular points of the homogeneous ordinary differential equation*.

Fred Chong, Iowa State, March, minor in physics, *Solutions by dual integral equations of mixed boundary value problems in elasticity*.

Joshua Chover, Michigan, June, *On homogeneous measure and operator decompositions of Hilbert space*.

I. J. Christopher, Oregon, June, *The asymptotic density of integers in more than one dimension*.

W. H. Clatworthy, North Carolina, August, *Partially balanced incomplete block designs with $r < k$* .

Haskell Cohen, Tulane, August, *Codimension*.

H. R. Coish, Toronto, June, *Theory of internal conversion—exact solution*.

H. S. Collins, Tulane, August, *Completeness and compactness in linear topological spaces*.

Paolo Comba, California Tech., June, minor in aeronautics, *Geometry of finite dimensional moment spaces and applications to orthogonal polynomials*.

R. M. Conkling, Florida, June, minor in education, *On metric algebras*.

K. L. Cooke, Stanford, January, *The asymptotic behavior of the solutions of linear and non-linear differential difference equations*.

B. V. Dean, Illinois, June, minor in electrical engineering, *Near rings and their isotopes*.

R. Y. Dean, California Tech., June, minor in physics, *Laplace transform in commutative Banach algebras*.

G. P. Dineen, Wisconsin, June, *The exponential function of a variable matrix*.

Jim Douglas, Jr., Rice, June, I. *Two equivalence methods for sequences of random variables*, II. *The expansion of measures in series of orthogonal measures*.

Lloyd Dulmage, Toronto, June, minor in relativity, *The relation between continuity and angle sum in hyperbolic geometry.*

L. K. Durst, California Tech., June, minor in physics, *Apparition and periodicity properties of equianharmonic divisibility sequences.*

Meyer Dwass, North Carolina, August, *On the large sample power of certain rank order tests.*

S. E. Dyer, Texas, June, *Certain conditions under which the sum of the elements of a continuous collection of continua is an arc.*

W. G. Dyer, Iowa State, December, minors in theoretical and applied mechanics, *Approximate solutions of boundary value problems by (1) minimization of least square error, by (2) use of finite difference.*

Victor Elconin, California Tech., June, minor in physics, *Transformation of linear spaces and linear operators by inverse reversion.*

J. W. Ellis, Tulane, August, *Complementary spaces of Cartesian products of groups and linear spaces.*

M. P. Emerson, Illinois, June, minor in education, *Dualities of modular lattices.*

J. C. English, Florida, August, minor in physics, *Stress concentrations in infinite orthotropic plates.*

E. R. Fadell, Ohio State, March, *Unessential identifications in singular homology theory.*

A. M. Feyerherm, Iowa State, July, *Distribution of Kronecker products.*

G. B. Findley, Florida, June, minor in physics, *The effect of certain types of small holes on the stresses in a uniformly loaded isotropic plate.*

W. T. Fishback, Harvard, March, *On the theorem of Bertini on the variable singular points of a linear system.*

R. C. Fisher, Kansas, October, minor in physics, *A study of line congruences by means of a modified tensor calculus.*

I. B. Fleischer, Chicago, August, *Locally symmetric spaces.*

Bernard Fleishman, New York, June, *On the periodic solutions to an initial-value problem for a Duffing-type non-linear wave equation.*

W. C. Foreman, Kansas, June, minor in physics, *Generalized vectors and the matrix equation $X^{(k)} = B$.*

J. F. Foster, Jr., Iowa, August, minor in astronomy, *A study of errors in visual methods of measurement of the velocities of meteors.*

K. A. Fowler, Michigan, February, *Investigations on finite groups of even order.*

N. S. Free, California, Berkeley, September, *On the embedding of Lipschitzian manifolds.*

J. E. Freund, Pittsburgh, August, *Some methods of estimating prior probabilities from heterogeneous populations.*

Morris Friedman, Chicago, December, *Problems in the calculus of*

variations for which the second variation vanishes.

K. D. Fryer, Toronto, June, *A class of permutation groups of prime degree.*

F. B. Fuller, Princeton, January, *The homotopy theory of coincidences.*

L. D. Gates, Jr., Iowa State, July, minor in physics, *Differential equations in the distribution of Schwartz.*

S. G. Ghurye, North Carolina, August, *Some problems in the theory of stochastic difference equations.*

F. J. Ginivin, Notre Dame, June, *Natural topologies in a group with applications in the Galois theory of infinite extensions.*

W. L. Gordon, Tulane, August, *On the coefficient group in cohomology.*

R. L. Graves, Harvard, March, *The Fredholm theory in Banach spaces.*

Franklin Graybill, Iowa State, June, *On quadratic estimates of variance components.*

L. W. Green, Yale, June, *Manifolds without conjugate points.*

Simon Gruenzweig, Pittsburgh, August, *Affine and non-affine projective transformations in four-space which leave invariant the family of surfaces representing regular functions of a complex variable.*

E. L. Griffin, Jr., Chicago, June, *On semifinite rings.*

W. C. Guenther, Washington, December, *On testing whether or not a given percentile of one distribution is less than or equal to a given percentile of another distribution.*

V. H. Haag, Pittsburgh, August, *On the summability of Fourier series by regular circle methods.*

Felix Haas, Massachusetts Tech., June, minor in physics, *Theorem about characteristics of differential equations on closed manifolds.*

G. J. Habetler, Carnegie, June, *"N+4" dimensional relativity.*

B. F. Hadnot, Georgia, August, minor in physics, *Summability of series of the form $\sum c_{ng}(s+n)$.*

Mary-Elizabeth Hamstrom, Texas, June, *Concerning webs in the plane.*

C. B. Hanneken, Illinois, October, minor in education, *Irreducible quintic congruences.*

C. D. Harris, Carnegie, June, *On the occurrence of unconstrained plastic flow in a Prandtl-Reuss and Mises bodies.*

R. M. Hayes, California, Los Angeles, June, *Iterative methods of solving linear problems on Hilbert space.*

Emilie V. Haynsworth, North Carolina, June, *Bounds for determinants with dominant main diagonal.*

D. G. Higman, Illinois, June, minor in philosophy, *Focal series in finite groups*.

A. T. Hind, Jr., Georgia, August, minors in physics and education, *Concerning the solution of certain partial difference equation boundary value problems and the convergence of approximate solutions of the vibrating membrane problem to its exact solution*.

W. M. Hirsch, New York, February, *On the maximum cumulative sum of independent random variables*.

J. H. Hornback, Illinois, February, minor in education, *Integral equations related to the representation of functions by potentials*.

H. M. Horwitz, Ohio State, December, *On the homotopy axiom in general cohomology theory*.

J. R. Jackson, California, Los Angeles, May, *Abstract function spaces and their homotopy theory*.

A. T. James, Princeton, October, *Group methods in normal multivariate distribution theory*.

T. A. Jeeves, California, Berkeley, June, *Identifiability and almost-sure estimability of linear structures in n -dimensions*.

W. E. Jenner, Michigan, June, *Block ideals and arithmetics of algebras*.

Hyman Kamel, Pennsylvania, February, *Relational algebra*.

S. T. Kao, Catholic, June, minors in physics and chemistry, *A further generalization of the theorem of Droz-Farny*.

A. F. Kay, Harvard, March, *Methods in the location of zeros of families of polynomials of unbounded degree in circles, sectors, and other regions*.

J. C. Kiefer, Columbia, May, *Contributions to the theory of games and statistical decision functions*.

L. A. Kokoris, Chicago, August, *New results in power-associative algebras*.

Adnah Kostenbauder, Syracuse, September, *Multiplicative semi-groups of continuous functions*.

Jack Kotik, Massachusetts Tech., February, minor in language, *Existence and uniqueness theorems for water waves*.

M. D. Kruskal, New York, February, *The bridge theorem for minimal surfaces*.

R. H. Kyle, Princeton, June, *Branched covering spaces and the quadratic forms of knots*.

Pedro Laborde-Montaner, New York, February, *On equivalent formulations of a generalized prime number theorem for arithmetic progressions*.

M. D. Lamoree, Purdue, June, minor in physics, *On the Bosanquet-*

Linfoot summability of the successively derived and conjugate Fourier series.

J. R. Larkin, Kansas, June, minor in physics, *Normal determinants and expansions in modified sequences.*

Solomon Leader, Princeton, June, *Set function spaces and orthogonal expansions of finitely additive set functions.*

P. J. Leah, Toronto, November, minors in quantum and statistical mechanics, *Multiplicators for moment sequences.*

L. M. LeCam, California, Berkeley, June, *On some asymptotic properties of maximum likelihood estimates and related Bayes' estimates.*

S. L. Levy, Brown, May, *The influence of magnetization on ultrasonic attenuation in some ferromagnetic single crystals.*

C. H. Lindahl, Iowa State, March, *Overlapping Pfaffians with application to utility theory.*

G. R. Livesay, Illinois, June, minor in philosophy, *An extension of the notion of unicoherence with an application to mappings of spheres.*

A. E. Livingston, Oregon, June, *Some Hausdorff means which exhibit the Gibbs' phenomenon.*

J. M. A. Maranda, McGill, October, *On p -adic integral representations of finite groups.*

E. W. Marchand, Rochester, June, *Spherical trigonometry in n -dimensional space.*

L. F. Markus, Harvard, March, *A topological analysis of differential equations in the large.*

E. W. Martin, Jr., Ohio State, August, *Representations of lattices.*

S. H. Maslen, Brown, May, *Supersonic conical flow.*

R. V. Mendenhall, Ohio State, June, *On Lebesgue measure and integration in an abstract space.*

M. R. Mickey, Jr., Iowa State, July, *An application of sequential tests to a problem of quality control.*

H. D. Mills, Iowa State, July, *Equivalent functions of strategies in the theory of games.*

J. C. Moore, Brown, May, *Some applications of homology theory to homotopy problems.*

J. T. Moore, Chicago, June, *Primary central division algebras.*

J. C. Morelock, Florida, August, minor in education, *Invariants with respect to special projective transformations.*

E. R. Mullins, Jr., Illinois, October, minor in philosophy, *A straight line plane with preassigned circles.*

W. M. Myers, Jr., Ohio State, March, *A functional associated with a continuous transformation.*

D. M. Nead, Indiana, June, minor in physics, *A theorem on the*

limit passage, viscosity $\mu \rightarrow 0$ heat conduction $K \rightarrow 0$, in the solutions of the equations of fluid flow.

Morris Newman, Pennsylvania, June, *A structure theorem for certain modular subgroups with applications to the construction of modular identities.*

T. A. Newton, Georgia, June, minor in philosophy, *A study of De La Vallée Poussin's theorem and polynomials associated with the Hölder mean.*

F. I. N. Niordson, Brown, May, *Transmission of shock waves in thinwalled cylindrical tubes.*

R. S. Novosad, Chicago, August, *Relations between homotopy and homology groups.*

E. E. Osborne, California, Los Angeles, June, *Systems of commuting matrices.*

R. H. Owens, California Tech., June, minor in physics, *An asymptotic study of a class of ordinary linear differential equations of the second order.*

W. L. Parker, California, Berkeley, June, *On uniquely solvable Boolean equations.*

F. P. Pedersen, Southern California, June, minor in physics, *On spaces with negative curvature.*

L. L. Pennisi, Chicago, June, *An indirect sufficiency proof for the problem of Lagrange with differential inequalities as added side conditions.*

C. M. Petty, Southern California, August, minor in philosophy, *Minkowski geometries.*

P. E. Pfeiffer, Rice, June, *Equivalence of measures on infinite product spaces.*

R. S. Pierce, California Tech., June, minor in physics, *Homomorphisms of function lattices.*

Pasquale Porcelli, Texas, May, *Concerning uniform completeness of sets of reciprocals of linear functions.*

L. E. Pursell, Purdue, August, minor in physics, *Some algebraic structures associated with smooth manifolds.*

Gustave Rabson, Michigan, February, *Fourier series on compact groups.*

Howard Raiffa, Michigan, February, *Arbitration schemes for generalized two-person games.*

F. B. Reis, Massachusetts Tech., February, minor in aeronautical engineering, *Studies of correlation and spectra in homogeneous turbulence.*

H. J. Reiter, Rice, June, *Investigations in harmonic analysis.*

H. G. Rice, Syracuse, January, *Classes of recursively enumerable sets and their decision problems.*

J. D. Riley, Kansas, June, minor in physics, *Contributions to the theory of functions of a bicomplex variable.*

Joan E. Robinson, Bryn Mawr, June, *Continuity of transformation groups in topological spaces.*

Hartley Rogers, Jr., Princeton, October, *Some results on definability and decidability in elementary theories.*

J. C. Rogers, Cornell, September, *Cross sections in fibre bundles.*

P. G. Rooney, California Tech., June, minor in physics, *Inversion and representation theorems for the Laplace transformation.*

W. L. Root, Massachusetts Tech., February, minor in electrical engineering, *H-systems and rings of operators.*

G. F. Rose, Wisconsin, February, *Jaskowski truth tables and their realizability.*

David Rosen, Pennsylvania, June, *A class of continued fractions associated with certain properly discontinuous groups.*

W. C. Royster, Kentucky, June, *Convexity and starlikeness of analytic functions.*

J. A. Schatz, Brown, May, *Representation of normed algebras with an involution.*

Samuel Schecter, Syracuse, June, *Boundary value problems for the minimal surface equation.*

D. R. Scholz, Washington University, June, *Some minimum problems in the theory of functions.*

Augusta L. Schurrer, Wisconsin, August, *On the locations of the zeros of the derivative of rational functions of distance polynomials.*

J. T. Schwartz, Yale, June, *Linear elliptic differential operators.*

W. R. Seugling, California, Los Angeles, January, *On the non-linear theory of elasticity.*

H. S. Shapiro, Massachusetts Tech., September, minor in language, *Extremal problems for polynomials and power series.*

V. L. Shapiro, Chicago, June, I. *Square summation and localization of double trigonometric integrals*, II. *Summability of double trigonometric integrals*, III. *Circular summability C of double trigonometric series.*

Henry Sharp, Jr., Duke, June, minor in physics, *Strongly homeomorphic imbedding of F-sigma sets in a subset of E_N .*

R. H. Shaw, George Washington, February, *On the proof of a theorem of Frobenius without the use of group characters.*

A. L. Shields, Massachusetts Tech., September, minor in language, *On additive properties of real numbers.*

R. J. Silverman, Illinois, June, minor in meteorology, *Invariant extensions of linear operators.*

R. O. Skinner, Carnegie, September, *On the quantization of interacting gravitational, electromagnetic and electron fields.*

Stephanie Sloyan, Catholic, June, minors in physics and education, *On the Kantor lines associated with a poristic system of simple cyclic quadrangles.*

K. W. Smillie, Toronto, June, minors in quantum and statistical mechanics, *A mathematical treatment of certain movements of fish—an application of the theory of Markov processes.*

N. E. Smith, McGill, May, *A statistical problem in the geometry of numbers.*

W. N. Smith, Wisconsin, February, *The expansion problem for second order differential systems of the mildly irregular type.*

W. L. Stamey, Jr., Missouri, June, *New metric properties of spherical and elliptic spaces.*

C. W. Steeg, Jr., Massachusetts Tech., February, minor in physics, *Three-dimensional aerodynamic trajectories.*

R. G. Stoneham, California, Berkeley, January, *Stresses in thick-walled cylinders.*

W. L. Strother, Tulane, May, *Continuity for multi-valued functions and some applications to topology.*

R. F. Tate, California, Berkeley, June, *Contributions to the theory of random numbers of random variables.*

J. S. Thale, Northwestern, June, *Univalence of continued fractions and Stieltjes transforms.*

W. R. Thickstun, Jr., Maryland, June, minor in physics, *A nozzle flow for a compressible fluid.*

G. H. M. Thomas, Wisconsin, June, *Simultaneous partitioning of two sets.*

D. J. Thompson, Iowa State, August, *A theory of sampling finite universes with arbitrary probabilities.*

F. B. Thompson, California, Berkeley, January, *Some contributions to abstract algebra and metamathematics.*

Lee D. Thompson, Indiana, September, minor in physics, I. *Converse of a well-known theorem on integral means*, II. *Conjugate classes of subharmonic functions.*

W. J. Thomsen, Iowa, June, minor in astronomy, *Calculations on the fall of large meteorites.*

W. V. Tilston, Toronto, November, minor in quantum mechanics, *Contributions to the theory of antennas.*

A. J. Tingley, Minnesota, December, minor in physics, *A gen-*

eralization of the Poisson formula for the solution of the heat flow equation.

H. E. Tinnappel, Ohio State, June, *On the topological index.*

Marvin Tomber, Pennsylvania, June, *Lie algebras of type F.*

C. K. Tsao, Oregon, June, *A general class of discrete distributions and mixtures of distributions.*

M. J. Walsh, Illinois, June, minor in philosophy, *The paracompactness of the CW-complex and gradient mappings in locally convex spaces.*

K. C. Walters, Florida, June, minor in education, *Effect of uniform displacement on the stress distribution of a wood plate.*

M. T. Wechsler, Michigan, June, *A characterization of certain topological spaces by means of their groups of homeomorphisms.*

Arnold Wendt, Wisconsin, June, *A generalization of a theorem in schlicht function theory.*

R. E. Wheeler, Kentucky, June, *A variable probability distribution function.*

Phillips Whidden, Carnegie, June, *On a criterion for measuring closeness of probability distributions.*

H. H. Wicke, Iowa, August, minor in astronomy, *The geometry of Hilbert space.*

R. A. Willoughby, California, Berkeley, January, *p-algebras.*

N. Z. Wolfsohn, Harvard, June, *On differentiable maps of Euclidean n-space into Euclidean m-space.*

K. G. Wolfson, Illinois, June, minor in physics, *An ideal theoretic characterization of the ring of all linear transformations.*

G. N. Wollan, Georgia, June, *On Euler methods of summability for double series.*

J. W. Wray, Illinois, February, minor in physics, *Non-analytic functions of a complex variable representable by Lebesgue-Stieltjes integrals with a Cauchy kernel.*

Morris Yachter, New York, February, *On the existence of periodic solutions of the differential equation: $\ddot{x} + f(x) = \epsilon f(x, \dot{x}, T, \epsilon)$.*

C. T. Yang, Tulane, May, *Equivalence of the Alexander-Kolmogoroff and Čech cohomology theories.*

K. T. Yen, Brown, May, *On the construction of high speed flows.*

J. W. Young, Florida, August, minor in education, *Non-classical orthogonal polynomials.*

The following doctorate was conferred in 1951, but was not included in the list in the preceding volume of this Bulletin (vol. 58, pp. 424-435).

R. W. Allen, St. Louis, June, *Compound statistical distribution functions.*