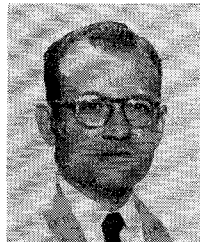


Contributors

W. P. Ayres, for a photograph and biography please see page 268 of the October, 1957, issue of these TRANSACTIONS.



Morris E. Brodwin (A'49-M'55) was born in New York, N. Y., on July 14, 1924. He received the B.S. degree in electrical engineering from the University of Nebraska in 1947. In 1951, he received the M.S. degree and in 1957, the Dr. Eng. degree from The Johns Hopkins University, Baltimore, Md.



M. E. BRODWIN

He was a member on the staff of the Martin Company for nine months in 1948. In October, 1949, he joined the Radiation Laboratory of The Johns Hopkins University. He is presently research scientist in charge of microwave research at the Radiation Laboratory.

Dr. Brodwin is a member of Sigma Xi and Pi Mu Epsilon.



H. J. Carlin (M'47-SM'50-F'56) was born in New York, N. Y., on May 1, 1917. He attended Columbia University, receiving



H. J. CARLIN

the B.S. degree in 1938, and the M.S. degree in 1940. In 1947 he was awarded the D.E.E. degree from Polytechnic Institute of Brooklyn.

Dr. Carlin was with Westinghouse from 1940-1945. In the latter part of 1945, he joined the Polytechnic Institute of Brooklyn, where

he now holds the position of research professor and associate director of the Microwave Research Institute. His major work has been in the fields of microwave devices and network theory.

He is a member of the AAAS, Tau Beta Pi, Sigma Xi, and Eta Kappa Nu.



Seymour B. Cohn (S'41-A'44-M'46-SM'51) was born in Stamford, Conn., on October 21, 1920. He received the B.E. degree in electrical engineering from Yale Uni-

versity in 1942. The M.S. degree in communication engineering, in 1946, and the Ph.D. degree in engineering sciences and applied physics, in 1948,



S. B. COHN

were awarded by Harvard University. From 1942 to 1954, he was employed as a special research associate by the Radio Research Laboratory of Harvard University, also representing that Laboratory as a technical observer with the U. S. Army Air Force in the Mediterranean Theater of Operations. Dr. Cohn worked at Sperry Gyroscope Co. from 1948 to 1953, where he held the position of research engineer in the Microwave Instruments and Components Department.

Since February, 1953, Dr. Cohn has been with the Stamford Research Institute as head of the Microwave Group, and since 1957 as manager of the Antenna Systems Laboratory.

He is a member of Tau Beta Pi and Sigma Xi.



R. E. Collin, for a photograph and biography please see page 219 of the July, 1957, issue of these TRANSACTIONS.



Alexander L. Cullen (M'56) was born in Lincoln, England, on April 30, 1920. He studied electrical engineering at Imperial College, London, England, and in 1940, joined the staff of the Radio Department of the Royal Aircraft Establishment, Farnborough, where he worked on radar.



A. L. CULLEN

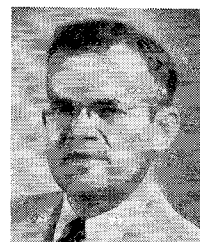
In 1946, Professor Cullen joined the staff of University College, London, England, as lecturer in electrical engineering, where he collaborated with Professor H. M. Barlow in microwave research and in writing a textbook on "Microwave Measurements."

In 1955, he was appointed to the Chair of Electrical Engineering in the University of Sheffield.

Prof. Cullen is an Associate Member of the IEE, and is a member of several committees connected with work in the microwave field.



Glenn F. Engen was born in Battle Creek, Mich., on April 26, 1925. He received the B.A. degree in physics and mathematics from Emmanuel Missionary College, Berrien Springs, Mich., in June, 1947. He has



G. F. ENGEN

done graduate work at the Universities of Michigan, Maryland, and Colorado. After employment with the U. S. Naval Ordnance Laboratory and The Johns Hopkins University Applied Physics Laboratory, he joined the National Bureau of Standards in 1954. His present work is in the field of microwave power measurement techniques and standards.

Mr. Engen is a member of the Boulder Branch of RESA.



Alan L. Helgesson was born in Gary, Ind., on March 28, 1933. He received the B.S. degree in electrical engineering from the California Institute of Technology, Pasadena, Calif., in 1955



A. L. HELGESSON

and the M.S. degree from Stanford University, Stanford, Calif., in 1957.

He has been a member of the technical staff at Bell Telephone Laboratories and a part-time assistant instructor in the mathematics department of Ohio State University. Since June, 1956, he has been an engineer at the Sylvania Microwave Physics Laboratory engaged in the study of microwave ferrite devices and dielectric loaded waveguide. At present, he is on leave of absence at the Massachusetts Institute of Technology where he is studying for the Sc.D. degree.

Mr. Helgesson is a member of Tau Beta Pi.



J. C. Helmer was born in Evanston, Ill., on November 18, 1926. He received the B.S. degree in mathematics from Lawrence College in 1950, the M.S. degree in physics from the California Institute of Technology in 1952, and the Engr. and Ph.D. degrees in electrical engineering from Stanford University in 1954 and 1957, respectively.

At various times Dr. Helmer has worked

as a computer engineer for Northrop Aviation Corp. and Bendix Aviation Corp. in Los Angeles, Calif., and as a microwave engineer for Bell Telephone Laboratories. From 1953 to 1956, he was a research assistant at the Hansen Laboratories at Stanford University. Since August, 1956, he has been a member of the research staff of Varian Associates.



J. C. HELMER

and Sigma Xi.



Allan V. James (S'51-A'56) was born in Kingston, Jamaica, British West Indies, on March 23, 1913. He attended elementary and high schools in Brooklyn, N. Y. During 1946 and 1947, he served in the U. S. Army as a radar repairman with the Signal Corps. He received the B.S. degree in electrical engineering from the Milwaukee School of Engineering in 1950, and the M.S. degree in electrical engineering from the Polytechnic Institute of Brooklyn in 1956.

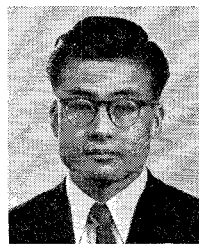


A. V. JAMES

Mr. James was employed by the Polytechnic Institute of Brooklyn, Microwave Research Institute, from 1951 to 1956, where he designed several bolometric and calorimetric power meters for operation in the microwave region. He is presently employed as microwave design engineer by the Polytechnic Research and Development Company.



Kaneyuki Kurokawa was born on August 14, 1928, in Tokyo, Japan. He received the B.S. degree in electrical engineering from the University of Tokyo in 1951. Since then, first as a graduate student and later as an assistant of the university, he has been engaged in research on microwave measurements. In 1954, he participated in the Foreign Student Summer Project held at the Massachusetts Institute of



K. KUROKAWA

Technology. Mr. Kurokawa became an assistant professor of the University of Tokyo in August, 1957.

He is a member of the Institute of Electrical Engineers of Japan and the Institute of Electrical Communication Engineers of Japan.



Katsu Matsumaru (A'55) was born on May 30, 1913, in Tokyo, Japan. He was graduated from Tokyo University with the B.S. degree in 1939.



K. MATSUMARU

From 1940 to 1943, he served as an assistant at Tokyo University and later, from 1944-1951, he served in the same capacity at the Tokyo Institute of Technology.



In 1951, Mr. Matsumaru joined the Radio Development Section of the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation in Tokyo, Japan, where he has participated in the microwave research program.



L. MILOSEVIC

Ljubimko Milosevic was born in Zajecar, Yugoslavia, on June 23, 1916. He was graduated from Faculté Technique of Belgrade University in 1939. He attended the Sorbonne (Études Supérieures des Sciences Physiques) in Paris, and was graduated in 1940. In 1943, he was graduated from École Nationale Supérieure des Télécommunications. He joined the Compagnie Française Thomson-Houston in

Paris in 1943, and was in charge of electroacoustics studies until 1949. He then was put in charge of hf heads studies in the vhf research laboratory. He is, at present, head of high-power radar development in the division Matériel Électronique.

Mr. Milosevic is a member of the Société des Radio Électriciens.



Frederic R. Morgenthaler (S'55-M'57) was born in Shaker Heights, Ohio, on March 12, 1933. He was associated with Bell Telephone Laboratories, New York, N. Y., and Murray Hill, N. J., from 1953 to 1955 as a cooperative course student and received the

degrees of S.B. and S.M. in electrical engineering in 1956 from the Massachusetts Institute of Technology, Cambridge, Mass.



F. MORGENTHALER

Mr. Morgenthaler presently is on active duty as a Lieutenant in the United States Air Force and is stationed at the Antenna Laboratory, Electronics Research Directorate, Air Force Cambridge Research Center, Bedford, Mass. He is currently engaged in the study of microwave properties of solid state materials.

He is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.



John A. Morrison was born in Beckenham, Kent, England, on June 10, 1927. He received the B.Sc. (Special) Mathematics degree from the University of London in 1952. He did his graduate study at Brown University, Providence, R. I., receiving the Sc.M. degree in 1954 and the Ph.D. degree in applied mathematics in 1956.



J. A. MORRISON

Dr. Morrison has been at Bell Telephone Laboratories, Murray Hill, N. J., since February, 1956, where he has been mainly concerned with electromagnetic theory.

Dr. Morrison is a member of Sigma Xi.



Marcel W. Muller (SM'57) was born in Vienna, Austria, on November 1, 1922. He received the B.S. degree in electrical engineering in 1949 and the A.M. degree in physics in 1952 from Columbia University, New York, N. Y., and the Ph.D. in physics in 1957 from Stanford University, Stanford, Calif.



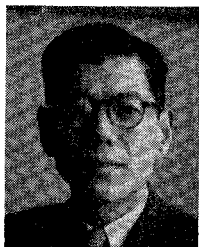
M. W. MULLER

Since 1952, he has been a research engineer at Varian Associates, where he has engaged in research on microwave electronics and physics.

Mr. Muller is a member of the American Physical Society, Sigma Xi, and Tau Beta Pi.



Sogo Okamura (A'52-M'57) was born in Mie Prefecture, Japan, on March 18, 1918. He graduated from the Tokyo Imperial University (now the University of Tokyo) in 1940, and received the Doctor of Engineering degree from the same university in 1951.



S. OKAMURA

He was appointed an instructor in the Electrical Engineering Department of the Tokyo Imperial University in 1940. During World War

II, he served as a naval officer and was engaged on the microwave radar at the Naval Technical Research Institute in Tokyo.

After the war he was appointed an assistant professor in 1947, and became a professor in 1951, at the University of Tokyo.

Awarded a scholarship by the British Council, he studied at University College, London, from 1953 to 1954. He has been lecturing on electrical engineering subjects and is now working on microwave electronics.

Dr. Okamura is a member of the Institute of Electrical Engineers of Japan, the Institute of Electrical Communication Engineers of Japan, the Physical Society of Japan, the Institute of Illuminating Engineers of Japan, and the Institute of Television Engineers of Japan. He is also a member of the National Committee of URSI.



B. Rogal was born in Kielce, Poland, on April 9, 1920. During World War II, he served as a signals officer. After the war he obtained the B.Sc. (Hons) degree in electrical engineering at the University of London.



B. ROGAL

He joined Wayne-Kerr Laboratories, Ltd., in February, 1950, as a development engineer and has been engaged on work in uhf and vhf bands.

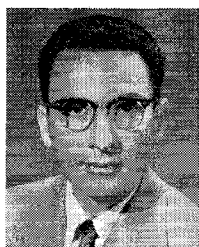
Since 1952, his main interest has been in the microwave field where he has worked on a number of high precision measuring instruments. In April, 1956, he was appointed chief engineer of Wayne-Kerr.

Mr. Rogal is a graduate member of the Institute of Electrical Engineers, England.



Bernard M. Schiffman (S'51-A'53) was born on December 5, 1915, in New York, N. Y. He received the B.S. degree in electrical engineering in 1952 from the State University of Iowa. He did graduate work at the Polytechnic Institute of Brooklyn and Stanford University. From 1941 to 1945, he served in the U. S. Army. During part of

this period, he was a radio technician in the Signal Corps. From 1946 to 1951, Mr. Schiffman was a junior civil engineer with the City of New York. From 1952 to 1954, he was employed by the Hazeltine Electronics Corp. in a radar indicator development group. In 1954, he joined the Sylvania Electronic Defense Laboratory, where he worked on transmitter development and in the microwave group.



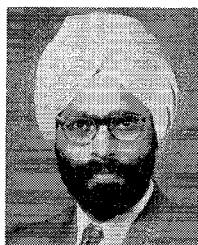
B. M. SHIFFMAN

In July, 1956, he joined the staff of the Stanford Research Institute, where he has been engaged in microwave circuit research and development.

Mr. Schiffman is a member of Eta Kappa Nu and RESA.



Amarjit Singh (SM'56) was born on November 19, 1924, in Ramadas, Punjab, India. He received the Master's degree in physics from Punjab University in 1945. That same year he received a Government of India scholarship for study in the United States. He received the Master of Engineering Science degree in 1947 and the Ph.D. degree in 1949 from Harvard University, Cambridge, Mass.



A. SINGH

From 1949 to 1953, Dr. Singh was lecturer in radio physics at the University of Delhi.

In 1953 he became a member of the Scientific staff of the National Physical Laboratory of India, leading a project on microwave tubes, and in 1956 he became Senior Scientific Officer. Dr. Singh joined the Central Electronics Engineering Research Institute in 1957. He now holds the position of Assistant Director.



Jadwiga Smolarska was born on July 2, 1931, in Cracow, Poland. She began her engineering studies at the Gliwice Polytechnical College and later transferred to the Wroclaw Polytechnical College where she obtained an electrical engineering certificate in 1954. In 1956, she received the M.Sc. degree from the Warsaw Polytechnical College.



J. SMOLARSKA

The material for Miss Smolarska's article is derived from her diploma work which was done at the In-

stitute of Basic Technical Problems of the Polish Academy of Science in the Department of Communications Theory, where she has been employed since 1956 on waveguide theory research.



Max Sucher was born in Poland in 1913. He received the B.S. degree in physics from Brooklyn College, Brooklyn, N. Y., in 1933 and the M.S. degree in physics from Brooklyn Polytechnic Institute, Brooklyn, N. Y., in 1947.



M. SUCHER

From 1936 to 1938, Mr. Sucher was with the National Bureau of Standards and from 1940 to 1946, with the Bureau of Ships of the Navy Department. From 1946 to 1947, he served as a research fellow in the physics department of Brooklyn Polytechnic Institute, joining the staff of the Polytechnic Research and Development Company in 1947. Since 1950 he has been with the Microwave Research Institute of Brooklyn Polytechnic Institute as a research associate and project engineer.

Mr. Sucher is a member of the American Physical Society and Sigma Xi.



L. O. Sweet (S'51-A'53) was born in Brooklyn, N. Y. on October 19, 1929. He received the B.E.E. degree from the College of the City of New York in 1951 and the M.E.E. degree from the Polytechnic Institute of Brooklyn in 1952. He was at the Microwave Research Institute of Brooklyn Polytech from 1951 to 1953 and from 1955 to 1956. While there, he worked on the development of micro-



L. O. SWEET

wave power standards. From 1953 to 1955, he served as a lieutenant in the United States Air Force and was engaged in the airborne testing and evaluation of bombing and navigation systems.

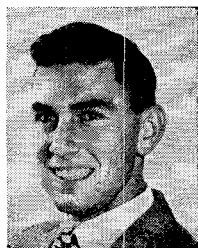
He joined the engineering staff of the Polytechnic Research and Development Company in 1956 and is presently concerned with the development of microwave components.

Mr. Sweet is a member of Sigma Xi.



P. H. Vartanian (S'52-M'56-SM'56) was born in Rochester, N. Y., on June 14, 1931. He received the Bachelor of Science degree in

electrical engineering in 1953 from the California Institute of Technology, Pasadena, Calif., and the Master of Science degree from



P. H. VARTANIAN

Radiological Defense Laboratory on radia-

Stanford University, Stanford, Calif., in 1954.

At Stanford he was a Tau Beta Pi Fellow and later a research assistant at the Electronics Research Laboratory. In 1951 and 1952 Dr. Vartanian worked part-time at the United States Naval

tion detectors. In 1954, he joined the Electronic Defense Laboratory of Sylvania Electric Products Inc., Mountain View, Calif., where he was engaged in research on microwave ferrites.

In 1956, he received the Ph.D. degree in electrical engineering at Stanford University under the Honors Cooperative Program.

During that same year, Dr. Vartanian assisted in the formation of the Microwave Engineering Laboratories, Incorporated, Palo Alto, Calif., where he is presently engaged in research and development on solid-state components.

Dr. Vartanian is a member of Tau Beta Pi and RESA.

Réné Vautey was born in Paris, France, on April 29, 1929. He was graduated from the École Nationale Supérieure des Télécommunications in 1953.



R. VAUTEY

In 1954, Mr. Vautey joined the Compagnie Française Thomson-Houston in Paris, France, where he is, at present, in charge of microwave research and development in the division Matériel Électronique.

