THE MONTH AT CALTECH

National Academy

DR. RICHARD M. BADGER, Professor of Chemistry, and Dr. Carl G. Niemann, Professor of Organic Chemistry, have been elected to the National Academy of Sciences. Their election brings the present Caltech staff membership in the Academy to twenty-five.

Professor Badger has principally been engaged in spectroscopic studies of complex molecules in the infrared, visible and ultraviolet regions. He is currently investigating the structures of compounds related to proteins. His early studies helped to establish the existence of the hydrogen bond, in which a hydrogen atom links two molecules or parts of the same molecule. He also formulated Badger's rule, expressing the relationship between the forces acting between two atoms and the distance separating them. The rule has been useful in chemical thermodynamics as well as in determining the structure of molecules.

During the second World War he worked on fundamental physical problems for the Manhattan District and investigated the properties of smokeless powder for the Navy Bureau of Ordnance. He also was engaged on projects for the Office of Scientific Research and Development and the Army Air Corps.

Professor Badger received his B.S. from Caltech in 1921, and has been a member of the faculty here since he received his Ph.D. in physical chemistry in 1924. After four years as a Research Fellow he spent a year at Goettingen and Bonn, Germany, as an International Research Fellow. On his return in 1929 he became an Assistant Professor of Chemistry, was promoted to Associate Professor in 1938 and to Professor in 1945. He is a member of the American Physical Society and of Sigma Xi.

Professor Niemann's research has primarily concerned the chemistry of natural products such as carbohydrates, amino acids and proteins, and fatty substances occurring in nerve tissue. He is now investigating the properties of proteolytic enzymes, some of which help break up proteins into their constituent amino acids, while others help form proteins from amino acids. He has synthesized and studied the structure of a compound whose activity resembles that of thyroxine, a product of the thyroid gland which controls metabolic rates in the body.

His work in the second World War dealt mainly with methods of identifying and anaylzing chemical warfare agents. He was in charge of a section of the National Defense Research Committee working on this problem at the Institute, was an investigator for the Committee on Medical Research and scientific advisor and consultant to the Office of Field Services, U.S.A., in the Southwest Pacific area. For his war work he received a presidential certificate of merit in 1948.

Professor Niemann received the Ph.D. degree at the University of Wisconsin in 1934, did further research there, at the Rockefeller Institute for Medical Research in New York and, as a Rockefeller Foundation Fellow, at the University College Hospital Medical School in London. He joined the Caltech faculty in 1937 as an Assistant Professor, became an Associate Professor in 1934 and Professor two years later.

He is a member of the American Chemical Society, American Society of Biological Chemists, Chemical Society of London, American Association for the Advancement of Science and Sigma Xi.

Institute Officials

GEORGE W. GREEN, Business Manager, has now been elected Comptroller of the California Institute of Technology, reporting to the Board of Trustees as the fiscal officer of the Institute. Herbert H. G. Nash, Assistant Secretary, has been elected Secretary of the Institute. In these positions the two men succeed the late Edward C. Barrett, who served the Institute as both Comptroller and Secretary for many years before his death last February.

George Green came to Caltech in 1947 as manager of the accounting office. He had been with the Price Waterhouse Company for ten years before joining the Institute staff, and during the last war he served as a Lieutenant in the U. S. Navy. He was appointed Business Manager of the Institute in 1948. He is a certified public accountant and a 1937 graduate of the University of California at Los Angeles, where he studied business administration.

Bert Nash came to Caltech in 1922 as chief accountant, from a similar position with the North Star Oil Company

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in Winnipeg, Canada. A native of England, he moved to Canada at an early age and served in the Canadian Army during the first World War. He became an American citizen in 1933. He had been Assistant Secretary of the Institute since 1935.

Guggenheim Fellows

FOUR CALTECH SCIENTISTS have been awarded research Fellowships by the John Simon Guggenheim Memorial Foundation.

Dr. Harrison Brown received a three-year Fellowship and Drs. Jerry Donohue, Kenneth W. Hedberg and Marguerite M. P. Vogt, one-year Fellowships.

The Caltech recipients were among the 191 persons announced by the Foundation last month as winners of its annual grants to further the development of scholars, writers, artists and composers who have demonstrated an unusual capacity for research or unusual creative ability in the arts.

Dr. Brown, who came to Caltech from the University of Chicago last year as Professor of Geochemistry, received his Fellowship for research combining techniques of radiation chemistry and geology in search of new information about the history and construction of the earth.

His program includes setting up a geological time scale based on studying isotopes of lead found in ancient rocks and on Carbon 14 dating techniques for events within the past ten thousand years. He will also study the influences of geologic processes on the changes of isotope ratios occuring in nature, and the distribution of common as well as trace elements in rocks and minerals.

Dr. Donohue, a Senior Research Fellow in Chemistry, received his Fellowship for a program concerning X-ray analysis of the structure of crystalline proteins. He plans to leave in September for a year's study of methods used to determine protein structures at the University of Cambridge and Oxford in England.

He has been at Caltech since 1943. He received his Ph.D here in 1947, and has been associated with Professors Linus Pauling and Robert B. Corey in research which has produced information on the configuration of several amino acid and protein molecules (E&S—October, 1951).

Dr. Hedberg, Research Fellow in Chemistry, was awarded a Fellowship for research on the structure of gas molecules, particularly some of the oxides of nitrogen. He intends to leave next September for a year's

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study of electron diffraction techniques used by Professors O. Hassel and Otto Bastiansen at the University of Oslo, Norway. In addition to the Guggenheim Fellowship, he has received a Fulbright Award for this purpose. Dr. Hedberg has been on the Caltech staff since he received his Ph.D. here in 1948.

Dr. Vogt, Gosney Research Fellow in Biology, was awarded her Fellowship for studies of the mechanism of genetic recombination in bacteria. Dr. Vogt received the M.D. degree in Berlin in 1937. She then spent a year in research on Drosophila at the Institute of Biological Physiochemistry in Paris and did research in physiological genetics at her father's Hirnforschungs Institute, in Neustadt, Germany, until 1950. Dr. Vogt came to Caltech in September, 1950, and has since been doing work in bacterial genetics.

National Science Foundation

EIGHTEEN GRADUATE students at the California Institute of Technology and a research fellow at the Mount Wilson and Palomar Observatories are to receive National Science Foundation Fellowships for 1952-53.

They were among 624 persons throughout the country who were approved for the awards by the National Science Board, of which Caltech President Lee A. DuBridge is a member. Of these, Dr. DuBridge noted, 34 selected Caltech as their intended place of study, establishing the Institute among the first four in popularity. It was outranked only by the University of Chicago, M.I.T. and Harvard.

Postdoctoral fellowships will go to Dan L. Lindsley, Atomic Energy Commission Fellow in Biology, who expects to receive his Ph.D. this year; and Dr. Malcolm P. Savedoff, National Research Council Fellow at the Mount Wilson and Palomar Observatories. Lindsley plans to study at Princeton University and Savedoff at the University of Leiden, the Netherlands.

Predoctoral fellowships go to 17 men, all of whom plan to remain at Caltech: Robert L. Metzenberg, Jr.—biology; James A. Ibers, Paul J. Shlichta, Gary Felsenfeld, Walter C. Hamilton, and Joseph Kraut—chemistry; Norman H. Brooks, and William V. Wright, Jr.—engineering; Clarence R. Allen—geology; Lee M. Sonneborn, George H. Trilling, Stanley A. Zwick, Michael Cohen, Roy W. Gould, Robert J. Mackin, Jr., Victor A. J. van Lint, and William D. Warters—physics.

The National Science Foundation's predoctoral fellowships pay tuition and basic stipends ranging from $1400 to $1700, plus dependency allowances. Its postdoctoral fellowships have basic stipends of $3000, plus dependency allowances.