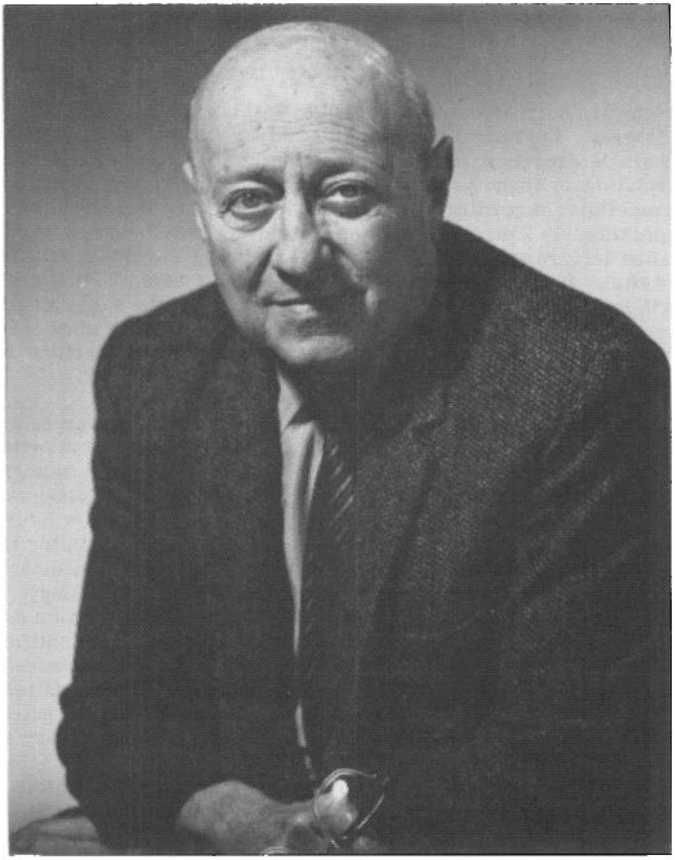
# R. W. GERARD

Born October 7, 1900 - Died February 17, 1974



Ralph Waldo Gerard was one of the leading physiologists of his time, but he was also much more. He was a great generalist, an inspiring and many-faceted teacher and a significant achiever in an incredible number of areas, scientific and otherwise. The prodigiousness and breadth of his interests and productive contributions - to the neural sciences as both investigator and teacher, to philosophical aspects of science, to the articulation of positions and ideas in various areas, to the organization and administration of scientific societies and journals and to government - would be difficult to match. Gerard fortunately completed, shortly before his death, the selection of his own papers and his commentaries on them, for their forthcoming publication by Futura Press in four volumes; these deal with 1) nerve metabolism and function, 2) central nervous system-

electrophysiological and biochemical, 3) clinical and behavioral sciences, and 4) philosophy, education, and science and society. In the commentary related to his papers on the biology of imagination, in the last volume, Gerard noted that he "likes to think of man's imagination as the culminating effluorescence of the process of evolution up to the present time." This predilection for imagination characterized Gerard's own activities in general.

Gerard's experimental and theoretical contributions in his main field of interest, the neural sciences, cannot be detailed here. Paradoxically, the single experimental piece of work which has had perhaps the most revolutionary impact was a technical one, namely, the introduction of the intracellular recording microelectrode (with Ling and Graham). (The approximately 25th anniversary of this event is to be noted by a special invited lecture at the forthcoming International Physiological Congress in India). In addition to research papers, a stream of Ph.D's issued forth from Gerard's lab, which included many of the subsequently leading neural scientists*. An additional large number of more advanced colleagues who achieved international stature also spent variable periods of time in his labs, gaining from contact with Gerard's intellect*.

In a broader sense Gerard was a teacher of a much larger group of neural and other scientists. In his more general papers and review articles he articulated, with an elegance of language, the general biological and philosophical positions in the field, and he often pointed with great insights to future directions of investigations and discoveries. His bibliography includes 69 review type articles and nine books. Of the latter his favorite was the first one, "Unresting Cells," which provided an almost poetic yet scientifically valid and stimulating introduction to cell biology. Gerard also served on the editorial boards of 16 journals. In addition many of us had the privilege of hearing him speak "on his feet" at scientific sessions and otherwise; he could quickly analyze and integrate the proceedings and issues and extemporaneously express his thoughts on the matters at hand with lucidity, verve and meaningfulness. He could instantly produce one or more relevant stories from a seemingly inexhaustible memory storehouse.

Ralph Gerard's intellectual brilliance was in evidence at an early age. He entered the University of Chicago at 14 and achieved the Ph.D. at 21 and the M.D. at 24. During this time he managed to include a year (1921-22) as Professor and Chairman of the Department of Physiology, Biochemistry and Pharmacology at South Dakota University. Gerard came into neurophysiology when he accepted a National Research Council Fellowship (1925-1927) to work with A.V. Hill in London and Otto Meyerhof in Berlin. He returned to the University of Chicago in 1927 as Assistant Professor of Physiology (Associate Professor, 1929; Professor, 1942) and here the major part of his neurophysiological work was conducted. In 1952 he became Director of Laboratories at the University of Illinois Neuropsychiatric Institute. In 1954 the University of Chicago also made him perhaps the world's first Professor of Behavioral Sciences. Gerard's mounting interest in the latter field led him to help in founding the Mental Health Research Institute at the University of Michigan in 1955.

* Listed at the end of this article.

Gerard served governmental activities in a variety of ways but perhaps the greatest impact this service had was his role in the establishment of the "peer review" system in allocation of grants and contracts for research. As chairman of the first such panel established by the Office of Naval Research in 1946, the Physiology panel, most of the policies and mechanics of the peer review system used today were explored. Assistant Secretary for Health, Charles Edwards of the Department of Health Education and Welfare recently said the "peer review system is one of the most remarkable accomplishments in the history of science administration."*

In the last phase of his active career he concentrated on education; he helped to organize the newly forming Irvine campus of the University of California, beginning in 1963-64, and became its first Dean of the Graduate Division until his retirement in 1970. Even in this phase Gerard did not abandon his love of the neural sciences; he initiated the activities, under the auspices of the National Academy of Sciences, which led to the founding of the highly successful Society for Neuroscience. He was made Honorary President of this Society from its inception and until his death. He had already been President of the American Physiological Society in 1951 and the Society of Biological Psychiatry in 1967. Among many other honors, he was elected in 1955 to membership in the National Academy of Sciences and in the American Academy of Arts and Sciences.

During his term as President of the American Physiological Society Gerard instituted a number of innovations. Because of his desire to involve the membership, especially younger members, in Society activities and governance, he proposed and obtained Council approval that a series of standing committees reporting to Council be established. This committee activity is still an important part of Society management.

Also a "Survey of Physiological Sciences" was initiated with support from the National Science Foundation which achieved a mid century review of the status of physiology and physiologists in the setting of science in general**.

The many who were privileged to know Ralph Gerard personally will not forget his exciting presence, his super-alert mind, his lively wit and sense of humor, his affectionate charm. His large observant eyes and his shiny top (bald at an early age) combined to give him a striking appearance in spite of his short stature. Ralph Gerard was an elitist; he was excited by creativity and discovery, he respected excellence in others, he expected recognition for his own contributions, and he "did not suffer fools easily." Yet he wanted and needed to give and to receive affection. This was given by many of his colleagues and disciples, but above all by his dear "Frosty." He had married Frosty (the former Leona Bachrach

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* Drug Research Reports, Vol. 17, No. 10. 1974.

** Gerard, R.W. Mirror to Physiology. Washington, D.C.: American Physiological Society, 1958.

Chalkley) in 1955, following the death of his first wife, Margaret, who was herself a prominent neural scientist. Ralph Gerard made life more worthwhile for many of us; we shall miss him deeply.

Among the Neurophysiologists who initiated their educational and research experiences in the field with Dr. Gerard

L. G. Abood
L. L. Boyarsky
V. B. Brooks
R. A. Cohen
R. W. Doty
H. H. Dubner
A. E. Edisen
G. Falk
K. Frank
J. Graham (Pool)
H. P. Jenerick
B. Libet
G. N. Ling
W. H. Marshall
S. Ochs
F. F. Offner
H. M. Serota
E. Sigg
M. L. Silver
O. Sugar
J. M. Tobias
R. D. Tschirgi

Among those who worked in his laboratories as more advanced colleagues

B. W. Agranoff
A. Arvanitaki
T. H. Chang
T. P. Feng
S. S. Fox
A. Geiger
R. S. Geiger
S. Gelfan
H. K. Hartline
E. G. Holmes
K. Koketsu
S. W. Kuffler
J. Magnes
H. W. Magoun
H. McIlwain
J. G. Miller
M. Monnier
Y. Oomura
R. F. Pitts
D. Y. Solandt
S. F. Takagi
R. E. Taylor
G. Wald
J. Z. Young
A. Yuwiler

Ben Libet and Orr E. Reynolds

A "RALPH WALDO GERARD READING ROOM" is being established in a Neurosciences Wing at the University of California, Irvine, for the use of graduate and undergraduate research students as well as the faculty. It will house literature chiefly in the scholarly areas to which Dr. Gerard was devoted, and will include materials from his library. Contributions, tax-deductible, should be made out to the "U.C.I. Foundation in Memory of R. W. Gerard" and sent to this Foundation, c/o Dean of the Biological Sciences Division, University of California, Irvine, California 92664.