DR. ALFRED NEWTON RICHARDS

. . . Some Observations

REMARKS MADE AT A DINNER

IN HONOR OF

ALFRED NEWTON RICHARDS

GIVEN TO A GROUP OF HIS FRIENDS

BY THE BOARD OF DIRECTORS

OF MERCK & CO., INC.

AT THE PHILADELPHIA CLUB,

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PRINCIPAL ADDRESS

REMARKS BY VANNEVAR BUSH

I first became well acquainted with Newton Richards when I told him that President Roosevelt wished to name him to head the medical war research effort. I cannot give his reply verbatim for, even under this mild provocation, he became profane. But he took the job and handled it well. Medical men, American and British, worked together in harmony throughout the war, and this did not happen automatically.

It was not due to any profound organizational skill on Newton's part; in fact I think that whole subject is one he never studied. We all know of his rugged common sense, his innate modesty, and his refreshing sense of humor. But there was something more. Everyone trusted him, completely and without reservation. He radiated integrity, scientific and of the garden variety. One example of this is that appropriations committees of Congress, after just a brief acquaintance, would give him anything he asked for without question. They responded to his directness, his healthy philosophy, and his utter honesty.

I cannot refrain from one anecdote in this connection. At one of the hearings a congressman asked, "Doctor, will all these things you are working on tend to lengthen the span of human existence?" The war had been going on for a long time, and we were all getting to be a bit frazzled. "God forbid," said Richards, right into the official record.

The same qualities are responsible for the fact that Newton has a host of friends. Not just casual ones – devoted friends, of widely diverse backgrounds and interests. It is not because he pampers them – he sometimes tells them plain truths in a salty fashion.

The occasion that resulted in this little publication was one where many of his friends gathered to express their devotion to him. We reminisced. Some of us made speeches, and two of them are included. But, primarily, we tried to convey to Newton our sincere devotion. I can express our feelings very briefly. We love our old friend, and all he stands for.

REMARKS BY JOHN T. CONNOR

Long ago in the year of our Lord 1930, two men of imagination met to discuss an idea. The idea was to establish a Department of Pharmacology within an industrial research laboratory that would attract young and outstanding scientists, and provide for them a suitable environment with facilities for carrying on pure research in the fields of medicinal chemistry and pharmacology.

A young businessman, George W. Merck, was one of the two, and the other was the pharmacologist, Alfred Newton Richards, whom we honor this evening.

Mr. Merck had been discussing the possibility of expanding the Company's research program with George W. Perkins, then executive vice president of Merck, and with Dr. Randolph Major, who had come from Princeton the year before to head the Company's chemical research laboratory. His momentous meeting with Dr. Richards resulted from those discussions.

At the time of the meeting, George Merck was the new president of Merck & Co., Inc., a firm with family traditions dating back to 1668 in the field of medicinal chemistry. Dr. Richards was already well established as head of the Department of Pharmacology at the University of Pennsylvania, where several of his scientific peers have since said that he brought more scientific prestige to the University than any man since Benjamin Franklin.

The idea of creating such an industrial laboratory and manning it with dedicated scientists presented a real challenge. Research, as

conducted in ivy-covered university laboratories, was poles apart from the research then being done in commercial laboratories. Academic scientists generally considered medical research to be their exclusive prerogative. And their professional standard bearer, the American Society for Pharmacology and Experimental Therapeutics, would not even admit to membership anyone regularly employed by industry. But in Dr. Richards, Mr. Merck found at least one pre-eminent American scientist, who, while dedicated to basic research in academic institutions, was not only willing but eager to stand up against the Society's prejudice and do what one influential and persuasive man could to build a bridge to the industrial realm.

Dr. Richards' long career as a research counsellor and advisor for Merck officially began in 1931, when the chemical research department was expanding rapidly. New laboratories were required. With Dr. Richards' help a new building was planned which included not only expanded chemical research laboratories, but also (as an adjunct), a small pharmacology laboratory.

Then came the important step of finding the right man to head up the pharmacological research laboratory. Because of the Society's by-laws, Dr. Richards was unable to find a qualified pharmacologist in this country. And so he turned to Europe, and asked for the assistance of Dr. Hans Horst Meyer, the distinguished Viennese pharmacologist, who persuaded his colleague, Dr. Hans Molitor, to come to America in 1932 "for one year" to put the new Merck pharmacology department into operation. (He's still here!)

The new building was dedicated in 1933, at which time the pharmacology department was incorporated separately, as the Merck Institute for Therapuetic Research, an independent non-profit organization.

Dr. Richards persuaded his close friend, Sir Henry Dale, to come from England to be the principal speaker at the dedication ceremonies, and the presence of the scientist known as "The Pope of Pharmacology" lent instant and lasting prestige to the new research laboratories.

In helping to set up the administrative structure of the Merck Institute, Dr. Richards drew upon his association and familiarity with the Rockefeller Institute, whose by-laws served as a blueprint

for those of the Merck Institute. Notably, a board of outside advisors was a prominent feature of the Rockefeller organizational plan. Correspondingly, such a board became an important part of the Merck Institute organization, and Dr. A. N. became the keystone of the Institute's Board of Advisors. In that capacity he always pressed for emphasis on basic research, insisting on adequate facilities for it which meant, inevitably, an adequate budget. He was a minority of one on more than one occasion, but his persistence usually brought the rest of the Board around to his way of thinking. Merck's tremendous progress through research is more than adequate testimony for the validity of his farsighted proposals.

During the difficult early years, Dr. Richards participated in the formulation of Merck's whole new research plan. Even more important, he helped to attract to Rahway some of the finest research men, either as consultants or as regular staff members, including some people present this evening.

Dr. A. N. was then, as now, a man of high courage, as well as having great prestige among his professional peers. It took all his finest qualities to be willing to announce to the American Society for Pharmacology that he was serving as official consultant to our industrial research laboratories. But in his own good time Dr. Richards persuaded the Society of the scientific value of industrial research as it was being carried on in the new Merck laboratories, and after a time the by-laws of the Society were liberalized so as to permit membership from this new field. Thus, through his good offices, more than those of any other one man, industrial medical research won professional recognition.

The story of Dr. Richards' accomplishments as Chairman of the Committee of Medical Research (CMR), within Dr. Bush's office of Scientific Research and Development, is for others to tell. As a quick personal note, however, I'd like to say that one of my biggest worries as General Counsel of OSRD was that our honored guest this evening would set his office on fire because of his habit of trying to keep four or five cigarettes burning at the same time in various parts of the room. During that war period, his association with Merck continued as penicillin, Compound E (later cortisone), and other important developments took place, but in those days he was technically on "the other side of the fence".

After the war Dr. Richards became a member of Merck's Board of Directors in 1948, taking the place of Dr. Henry Drysdale Dakin on the Board, and it was natural for Mr. Merck to ask him to chair the Scientific Committee of the Board when it was established in 1949. He remained as Chairman during the existence of that Committee for several years until it was discontinued following the Sharp & Dohme merger when he and the other members, Dr. Bush and Messrs. Kerrigan, Zinsser, and Merck concluded that "it had served its purpose".

During all his years as consultant at Merck, Dr. Richards made regular visits to Rahway, usually every week. Yet he never had an office of his own at the laboratories. Perhaps the explanation is that he was always on the go, wandering endlessly from one laboratory to the next, encouraging the young scientists with whom he was just as much at home as with the venerable members of the Board of Directors.

The laboratory people regarded him as one of them. He was close to the man at the bench. He was always available for consultation and could most often be found in discussion perched on a high stool next to a laboratory bench.

It would be impossible to single out any one of Dr. Richards' many accomplishments as his greatest contribution to Merck and Company. His long career must be viewed as a whole, for his primary contribution was the unfailing inspiration he gave to the entire research staff. Just to be in his presence in the laboratories was to feel the stimulation of his great mind. He always exerted tremendous scientific influence. His devotion to research and to the people in the laboratories was a wonderful and never-to-be-forgotten force for good. It brought to the Company and to the world progress in pharmacology and related aspects of medical research that might have been considered impossible only a few years ago.

His long connection with Merck and Company all began with his friendship with George Merck. That friendship strengthened through the years, as the two men went through problems of war and peace, laboratory research and government service together. It continued after the war, especially in the Scientific Committee, until George Merck's death late in 1957. And then another long

friendship continued as Dr. V. Bush succeeded Mr. Merck as Chairman of the Board.

This brings the A. N. Richards record with Merck pretty much up to date, but by means of a necessarily hasty sketch. What has unfolded from those first discussions with George W. Merck in 1930 is a saga which has done much to bring about a historic partnership among industry, academic institutions and the government — all dedicated to the science of medicine. In reviewing the association of Alfred Newton Richards with Merck and Company, one is conscious at all times of his interlocking relationship with university laboratories, with government agencies and with industrial research.

He is a man who has been living at least three full lives for more years than he wants to remember. All in all, he personifies the magnificent accomplishments of a lifetime equivalent to about two hundred years for normal men of a truly great scientist and human being.

In closing, Dr. A. N., may I just say: We thank you for all you've done for us — and for humanity. God bless you!

ADDRESS BY DR. ALFRED N. RICHARDS

Revised notes made by A. N. Richards on May 25, 1959, to guide him in his speech at the dinner at the Philadelphia Club that night.

Dr. Bush, Mr. Connor, Dr. Bronk, Mr. Gadsden, Mr. Kline, Mr. Boyer, Members of the Board of Directors of Merck & Co., Fellow members of the Board of Scientific Advisors of the Merck Institute, Officers and members of the staff of the Merck Laboratories, Colleagues in the University of Pennsylvania — *te salutamus.*

I have listened with grateful but incredulous appreciation to the over-generous words which have been spoken in your hearing, for I know that what I have received from my association with the Merck Company has been vastly greater than anything I may have contributed to it. I am not conscious of any unusual merit which might justify what has been said. Indeed in the days which have passed since this party was designed, I have found myself wishing that it might have been planned only as an occasion for the pleasures of good food and wine shared in good company. Yesterday there sprang into my mind the remark attributed to a noble lord of the British Empire – "What I like about the Order of the Garter is that there's no damned merit connected with it."

What I shall now have to say will relate to events and persons with which or with whom, because of my age, no one else here, with one possible exception, could possibly have been personally familiar; they concern the closing years of the 19th and the first decade of this 20th century.

The person first in my mind is a college teacher, whose encouragement and help more than 60 years ago were determining factors in the direction of my life since then: Russell H. Chittenden, Professor of Physiological Chemistry at Yale from 1882 to 1922. He was the first to develop that science in this country, for two generations he was its personification and his laboratory was its American fountainhead. In his person and in his work he represented precision, accuracy and elegance of technique: he made his students want to learn how to learn.

In my senior year, 1897 (that was the year Dr. Bronk was born), while I was taking his course, he asked me what I was proposing to do the following year. I said I didn't know; my hope to study medicine had to be given up for lack of funds. He said, "Why not come back here for a graduate year; I can get a scholarship which will cover your tuition." I agreed enthusiastically; found ways of earning the rest of my needs and proceeded to enter upon what I look back on as the happiest and most instructive year of my life. As undergraduates in laboratory work we had been told what to do and how to do it; as graduates, we were given tasks of both research and training, and were left to ourselves to learn how they were to be done. That, I think, was the beginning of any independence of thought or action which I may have since developed.

Toward the close of that year – spring of 1898, Chittenden was asked by the President of Columbia University to reorganize the department of chemistry in the College of Physicians and Surgeons. He agreed to serve as visiting lecturer and as director of a small group who moved from New Haven to New York to do the work of the department. That group was an instructor, one of Chittenden's recent Ph.D.'s, and two younger assistants. I was one of those assistants and got a salary of $800.

I was allowed to work for the degree of Ph.D. and got it at the end of the third year, 1901; spent three more years in the same department. Altogether I spent ten years beginning in 1898 in New York. In retrospect I think of them as the years in which experimental science in relation to the advance of medicine germinated and in New York took root.

At first one was conscious of the small number of persons in the medical faculty who showed interest in experimental research. For

example, in 1899 six people were found in New York who shared an interest in physiological chemistry: calling themselves the Society of Physiological Chemists, they agreed to meet regularly for discussion of recent literature; in the following six years their number increased to thirty-five.

With the turn of the century, however, things began to happen which I am sure justify the term *crucial* as applied to the decade 1900-1910; I have never ceased to be thankful to Chittenden for the chance which he gave me to share in it and in a small way to be an active part of it.

Let me enumerate the items.

The Rockefeller Institute. In the spring of 1901, I was called into the office of the Professor of Pathology, Dr. T. Mitchell Prudden, and was informed in a mystifying sort of way that an organization was being formed which would be called Rockefeller Institute for Medical Research. John D. Rockefeller had been made to recognize the gaps in medical understanding and the paucity of therapuetic resources and had determined to do something about it. He had appointed a group of six trustees, who were to study needs and possible ways of meeting them; they were given $200,000 with which to start work while more advanced plans were being developed. That money was to be used at once to create a group of scholarships and fellowships, to be assigned to promising candidates. The trustees were William H. Welch, Theobald Smith, Herman Biggs, T. Mitchell Prudden, L. Emmett Holt, and Christian A. Herter, the last three all of New York. (Dr. Herter was the uncle of the present Secretary of State.)

Dr. Prudden discovered that one of my interests was related to subjects on which Dr. Herter was working; so he gave me an introduction to Dr. Herter and urged me to go to see him. That I did; as a result I was given one of the Rockefeller Institute scholarships, agreeing to take part in Dr. Herter's investigative program.

My association with Dr. Herter which then began and continued until his death in 1910 I regard as one of the greatest privileges of my life. It gave me not only stimulating scientific guidance but friendly intimacy with a mature man, one of the most cultured and broadly educated physicians of his time. He had an extraordinary vision of the part which science – particularly chemical science –

would play in the future of medicine. He maintained a research laboratory in his own home, originally designed for study of problems arising from his own practice, later devoted to fundamental investigations in chemistry and bacteriology. He was Professor of Pathological Chemistry at the University and Bellevue Medical School and his published lectures constituted the first book on that subject in this country. In 1905 he was joined by H. D. Dakin, whose scientific career for the following forty-five years was achieved in the Herter laboratory and whose influence is still strongly felt in the Merck Company.

In 1903, President Butler of Columbia appointed Herter to the post of Professor of Pharmacology and Therapeutics in the College of Physicians and Surgeons. At Herter's request I was appointed to serve under him as Instructor, with the task of inaugurating a course of laboratory exercises in Pharmacology for students. Herter spent a year of preparation abroad with Paul Ehrlich and Hans Meyer. I spent two summer months in Schmiedeberg's Institute in Strassburg and half of the rest of the year as voluntary assistant to George B. Wallace, who, a year before, had established New York's first Department of Pharmacology at the University and Bellevue School and who became my most intimate friend.

The promised financial support for the new department did not materialize and the installation of a laboratory for teaching and research in pharmacology upon which Dr. Herter had set his heart had to be postponed. From then on the only responsibility of his professorship which he accepted was that of a weekly lecture. I was allowed to use the physiological laboratory for an elective course to twenty-four second year students and was given one small room in which to pursue my own experimental interests. After three years of this improvisation, my course was made compulsory in the curriculum for all second year students and I was given $500 with which to equip a students' laboratory.

Dr. Herter retained his professorship until his death in 1910, I left New York in 1908 to take the professorship of Pharmacology in the Northwestern University Medical School in Chicago.

I have said that I regarded events in the first decade of this century as crucial in the development of the sciences related to medicine in this country. I have already talked about five of those events

which took place in New York: (1) Chittenden's reorganization of the Department of Medical Chemistry of the College of Physicians and Surgeons; (2) Herter's development of Pathological Chemistry at the Bellevue School and his subsequent introduction of Pharmacology into the medical curriculum of Columbia; (3) Herter's personal influence together with that of his laboratory, especially with Dakin, upon the medical climate of New York; (4) the inception of the Rockefeller Institute; (5) the initial introduction of pharmacology into New York schools through the creation of professorships at Bellevue and Columbia.

Now let me proceed, more briefly, I hope, with the rest of my list.

(6) In 1902, the second of the great Rockefeller philanthropies came into being – the General Education Board – which in succeeding decades was to pour scores of millions into the schools in which medical science was to flourish.

(7) In 1903, Dr. S. J. Meltzer, a New York physician who practiced medicine nine months of each year and did physiological investigations in the Swiss University of Bern during the other three months created almost singlehandedly the Society for Experimental Biology and Medicine. That organization provided an informal forum for the presentation of results of work in progress; its Proceedings were a medium for prompt and brief publication. Originally a New York group, it has become national in scope and includes nineteen sections in other regions. Its Proceedings is now in its one-hundredth volume.

(8) In 1904 the Rockefeller Institute emerged from its preliminary phase of scholarships and fellowships into the beginnings of its permanent form. Simon Flexner, Professor of Pathology at the University of Pennsylvania, was elected Director and moved to New York; a building at Lexington Avenue and 50th Street was rented and transformed into temporary laboratories; the first members other than Flexner were Opie, Noguchi, Levene and Meltzer. In 1908 the staff moved into the first unit of the present Institute at 66th Street and York Avenue. In 1910 its second unit, the Rockefeller Hospital, a monument to Christian Herter's conviction that

the Institute must include a place for the scientific study of disease in human patients, was opened for occupancy by staff and patients under the directorship of Rufus Cole.

(9) In 1905 Graham Lusk, Professor of Physiology at the University and Bellevue Medical School, with the backing of a dozen of his friends, inaugurated the Harvey Society "for the diffusion of medical sciences by public lectures, given by those who devote their time to experimental work". Now, after fifty-four years, they continue to be enthusiastically received though the need which was responsible for their inception is no longer so acute.

Though he was not a physician, Lusk exerted enormous influence upon the medical thought of his time in New York. He was thoroughly trained in the science of nutrition and as Professor of Physiology, first at the University and Bellevue School, later at Cornell, became the greatest authority of his time on human nutrition and the energy requirements of man. He made all of New York conscious of calories by inducing Childs' chain restaurants to print the caloric values of the food items on their menus.

(10) In 1905 the Journal of Biological Chemistry was founded by Dr. Herter. Now in its 234th volume it has become the most influential medium of biochemical publications in the world. As already mentioned, it was in 1905 that Dakin began his career in the Herter laboratory.

(11) In 1906 the American Society of Biological Chemists was formed; Professor Chittenden was its first president. The list of 81 charter members has now grown to be more than 1,200.

(12) In 1907 the American Society of Pharmacology and Experimental Therapeutics was formed and two years later the Journal, now in its 129th volume, began publication.

(13) In 1909 Cornell University established its medical school in New York City with four full years of instruction centering at 477 First Avenue, and its chief clinical facilities at the Bellevue and the New York Hospitals.

The quality of its faculty and staff placed it at once among the most advanced of this country's schools.

(14) In 1910 Abraham Flexner's celebrated report on Medical Education in the United States was published. Its thoroughness, the justice of its criticisms, its exposures of shams, low standards and

scandalous weaknesses pointed the way and excited the efforts which have led to the elimination of bad and the betterment of good schools of this country.

In no other locality than New York did so many projects having permanent influence upon the advance of medicine get started during the decade I have tried to survey. Taken together they seem to me to have constituted an impetus, truly explosive, to the tremendous developments which have occurred in the fifty years since. Thus they have a basic connection with the enlightened policy of the Merck Company which Mr. Merck and his fellow directors adopted and put into effect in the years following his accession to the presidency – a policy of active partnership with medical leaders in the advancement of their science through creative research.

In 1930 I was proud to be asked to help in the development of that policy: I am still more proud to have been admitted to Mr. Merck's friendship and that of his associates; and now, of his and their successors. I am deeply grateful for this evening's unforgettable evidence of those friendships.

Whenever I read or think of the inscription which you have been told is to be attached to my portrait, I shall remember a frank remark made to me more than fifty years ago by Dr. Christian Herter, shortly after Dakin began to work with him (perhaps it would be wise to substitute it for the one you have heard). "Richards," he said, "you've got a pretty good mind, but Dakin is a genius".

Alfred Newton Richards, Emeritus Professor of Pharmacology of the University of Pennsylvania, is one of the world's outstanding pharmacologists.

The son of a Presbyterian minister, he was born in Stamford, N. Y. on March 22, 1876. A graduate of Yale – where he managed a student eating club to help defray his expenses – he holds a Ph.D. degree from Columbia and a number of honorary degrees from colleges in the United States and abroad.

While at Yale, his work with Professor R. H. Chittenden in the Sheffield Scientific School laboratory excited his interest in physiological chemistry and physiology and helped to determine his choice of career.

He taught at Columbia and Northwestern before joining the

University of Pennsylvania where he was a member of the faculty from 1910 to 1946 and Vice-President for Medical Affairs from 1939 to 1948.

Dr. Richards served as a major in Chemical Warfare Service in World War I and worked in England with Sir Henry H. Dale at the National Institute for Medical Research in London. During World War II he was one of what the *New York Times* called "the 'Big Six' in America's scientific high command".

As Chairman of the Committee on Medical Research of the Office of Scientific Research and Development, he helped to take penicillin out of the stage of limited use in the research laboratory and make it available for widespread use in the Armed Forces by securing the manufacturing facilities of several pharmaceutical and chemical firms.

Within a period of three years, his organization of research in the use of penicillin, sulfa, and plasma changed or modified the whole practice of medicine. Improved methods of blood transfusion, more efficient measures against infectious diseases, more effective insecticides, and increased knowledge of aviation medicine resulted from the work of his agency. In recognition of his contributions, he was awarded the Medal for Merit by President Truman in 1946 and named Commander of the Order of the British Empire by King George VI in 1948.

A director of Merck & Co., Inc. from 1948 to 1959 and Chairman of the Scientific Committee of the Board during the entire period of that committee's existence (1948-1956), Dr. Richards continues his long association with the company as a Scientific Advisor to the Merck Institute for Therapeutic Research. His service to the Institute actually antedates its founding, since his advice was responsible for the decision of Merck & Co., Inc. that a pharmacology laboratory should be added to its research organization, as well as for the selection of its first director. With Dr. William B. Castle and Dr. Henry D. Dakin, he served on the Institute's first Board of Scientific Advisors.

During his lifelong occupation with pharmacological research, Dr. Richards has worked in many fields. Particularly outstanding were his contributions to the knowledge of the action of chloroform and histamine and his pioneering research on kidney function.

The distinctions and honors conferred upon him are too numerous to be given in detail. In addition to academic degrees and wartime awards, he has received the William Wood Gerhard Gold Medal, the Kober Medal of the Association of American Physicians, the Keyes Medal of the American Association of Genito-Urinary Surgeons, the John Scott Medal, the New York Academy of Medicine Medal, the Lasker Award, the Philadelphia Bok Award and others.

He holds active and honorary memberships in more than a dozen medical and other scientific societies, and was President of the National Academy of Sciences from 1947 to 1950.

MERCK & CO., INC., RAHWAY, NEW JERSEY