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"If we would be truly successful, let us strive to perform well the work which we find ourselves capable of doing. . . . The labor may not seem to others great or important, but, if it is that for which we are fitted, it is as great for us as is the noted man's work for him; and it will hold a place as true and complete in the grand whole of the world's toil as the work of him who wins a nation's applause and honor. Its right to that place comes not from the greatness of the work or the renown of the worker . . . it comes from perfection and completeness and though the worker may be unnoticed and unknown, the work will stand in its place bringing forth its own results as the years go by."

The occasion was the annual joint meeting of the Chrestomathian and Calocagathian literary societies of Grinnell College on May 2, 1879. These were literary societies which each spring united in presenting one of the intellectual events of the year in the form of a meeting to which college and townspeople were invited. The orator selected for this occasion was Will Noyes, a member of the Chrestomathian society and a senior who had entered as a freshman almost directly from a one-room country school. It must have been a thrilling occasion for this serious-minded student when he arose to deliver his oration on "Success." Quite unconsciously, perhaps, he

outlined a philosophy of life which was to be a guiding principle through many years of busy and useful activities. Few young people have faced life's opportunities with a purpose more definite, more sincere, or more forgetful of self; and very few careers have measured up so completely and with such steadfastness of purpose to the high ideals and lofty purposes of youth as is abundantly evident in the life of William Albert Noyes.

In March, 1633, the good ship *Mary and John* sailed from the Thames River carrying a considerable group of "non-conformists" who were leaving the religious intolerance of Old England in the hope of finding more friendly surroundings in the newly discovered refuge called New England. Among these Puritans was a youth of 18, Nicholas Noyes; he was accompanied by his brother James and his cousin Rev. Thomas Parker. The party landed first at Ipswich, but a year later proceeded to Newbury, Massachusetts. Tradition says that when the company finally sailed up the Parker River, Nicholas Noyes was the first to leap ashore. In May, 1637, he walked 40 miles to Cambridge to qualify as a voter. In 1640, he married Mary Cutting, who was brought before the court in 1652 for the extravagance of wearing a silk hood and scarf. The charges were withdrawn on proof that her husband's estate was worth at least two hundred pounds. Nicholas held many offices of

trust and honor, being deacon to the First Parish (1633) and upon four occasions serving as deputy to the General Court in Boston. His descendants continued for six generations to take a prominent part in the civic and religious activities at Newbury and Abington. Then Spencer W. Noyes, with his wife, Mary Packard Noyes, and their three young children moved to Iowa and settled on a farm near Independence. Here William Albert Noyes, the youngest member of the family, was born on November 6, 1857.

The early life of the young boy was typical of the pioneer life in many an American home. He early showed signs of an inquiring mind. It was his custom in district school to finish his tasks quickly, then listen intently to the recitations of the older pupils. The investigative spirit was early in evidence. He was fond of experimenting with the utensils and equipment to be found about a farm home and would become so absorbed in his work that he frequently failed to notice that he was being observed. When the quiet was finally broken by the question "What are you doing, Willie?" he generally, startled, replied simply, "Oh!" So the expression "Willie's Oh's" came to be used as a family synonym for the contraptions which were constructed in youthful adventures into research.

Early in life he had resolved to prepare himself for college, although most of his preparations came from his own efforts, without the aid of a tutor. He was first attracted by the classics. His elder sister, Hannah, taught him the elements of Latin and he learned the Greek alphabet one day while cutting corn. He also found great interest in the sciences, especially Physics and Chemistry. He recalled the first experiment which he saw in Physics, when as a small boy his mother burned a scrap of paper in a wine glass, then pressed the palm of her hand over the glass and lifted it by means of the pressure of the air. His father had a copy of "Elements of Chemistry" by J. L. Comstock, M.D., published in 1831 at Hartford, Conn. This book fascinated the young boy and among the treasured mementos in Professor Noyes' library is this same volume, yellow with age and well worn with use. He soon began to experiment for himself, and with the aid of material from the village drug store began his experimental career in chemistry.

The Noyes' family life was ideal. Albert Shaw, a classmate and for 46 years the distin-

guished editor of *The Review of Reviews*, writes:¹ "I remember well the parents of Will and Hannah Noyes. They lived in Grinnell and were very plain and unpretentious people. But the elder Noyes was a man of great mental force, with a thirst for knowledge that I could hardly fail to remember. His wife, the mother of the family, was a woman of rare devotion and sympathetic understanding. His sister (Hannah) was more than an ordinary scholar. She was a woman of brilliant intellect and remarkable attainments. She married Charles Davidson, a scholarly graduate of Grinnell. Besides their literary and scientific interests . . . (the Noyes family) were loyal and faithful members of their church. This family interest in scholarship, and its harmonious atmosphere, goes a long way toward explaining the formative influences that shaped the career of W. A. Noyes. There was an unselfish and idealistic outlook upon life and the world at large in the very atmosphere that Hannah and Will Noyes breathed in their youth."

At length with the aid of three months in Iowa Academy at Grinnell, Will Noyes was admitted to Iowa College, now known as Grinnell College. He took the classical course because it was considered the best and strongest. "He spent four years in the study of Latin and Greek and took all the French and German which the courses permitted. He never regretted the time spent in the study of languages in which he excelled. He was so preëminently a student that he had little time for extracurricular activities." But during his student days the students in his class were allowed to compete for two prizes offered independently by the Early English Text Society of England and an English Shakespeare Society. The Early English prize was won by Will Noyes and the Shakespeare prize by Albert Shaw.

As the course was then arranged, it included Chemistry in the Junior year, but Will Noyes was permitted to attend the lectures in Chemistry and to work in the laboratory. Dr. Shaw writes: "His interest in Chemistry was stimulated by a professor named Herrick, who had come from the East as a disciple of the new atomic theories expounded by Professor Cooke and others. His mind was naturally scientific, in its quest for precise and accurate knowledge. Also he had infinite patience. Thus, while other students were seeking recreation, Noyes was regularly at work in

(1) From a letter by Dr. Albert Shaw dated November 30, 1942.

the chemical laboratory. I think he must have worked very often as much as sixteen hours out of the twenty-four. But he enjoyed it; and although he was slight and rather pale-looking, he had inherited a wiry and unbreakable constitution." Another classmate, H. W. Magoun, Belmont, Massachusetts, says: "Noyes was a natural linguist with a good memory for words. . . . He stood well in his Greek classes although Professor Avery was a terror to half the class. Noyes . . . found the sciences easy. He got his recreation in the scientific courses." During his last two years in Grinnell he spent his leisure hours in the chemical laboratory studying qualitative and quantitative analysis.

Edward B. Howell, also a classmate, and a successful attorney of Los Angeles says: "I became acquainted with Mr. Noyes in the chemical laboratory of the college. I greatly admired his skillful and diligent work. He spent many more hours than I in the laboratory, working by himself without an instructor and doubtless solving many problems in chemical analysis without aid. . . . (His) work was largely done at night when he had the entire college laboratory all to himself."

The cost of the college education was met by teaching for three or four months each winter in a district school. During these months, he kept up with his college classes by evening study and maintained his position among the first two or three in a class which had an unusual number of distinguished members. The extra work which he did permitted him to qualify in both the classical and scientific courses, so he was granted both the A.B. and the B.S. degrees in June, 1879, at the end of four years. "I can assure you that he was abundantly entitled to both degrees. I do not know of any other Grinnell student at any time, who earned two degrees simultaneously" (Shaw).

The following year he taught thirty hours per week in the Academy of the College and during his spare time did advanced work, mainly in analytical chemistry. In the fall of 1880, the second year after graduation, he was given charge of the department of chemistry for one term while Professor Herrick was absent on leave. In 1882, Grinnell College awarded Mr. Noyes the A.M. degree.

In January, 1881, William Noyes entered Johns Hopkins University and, because of the excellence of his analytical work, he was permitted to begin his thesis work promptly. This was carried out

under the personal supervision of Professor Remsen, who was then studying the protective influence of adjacent groups in the benzene ring upon the oxidizing action of reagents like chromic acid. The paper published in the *American Chemical Journal*, Vol. IV, page 1 (June, 1882) seems to be part of the thesis prepared by Mr. Noyes. He was granted the Ph.D. degree in June, 1882, a year and a half after his first enrollment. The preparation of an acceptable doctor's thesis in so short a time is in itself an Herculean task, but this was not the only accomplishment of this brief period, for he studied experimental physics under Professor Rowland at the time that the first successful Rowland grating was being completed. During the summer of 1881, Mr. Noyes made 400 water analyses for Professor Mallet of the University of Virginia, who was studying the connection between water supply and disease for the then-existent National Board of Health. Part of the apparatus used in this work was constructed by Mr. Noyes, who received the generous sum of \$100 for his summer's work. In the fall of 1881, Albert Shaw, his Grinnell classmate, went to Hopkins and roomed with Mr. Noyes. One of his courses was in International Law, based on a German textbook. Mr. Shaw at first had much difficulty with the German, of which he knew little. But Mr. Noyes, with his love of the languages, found time to help and undoubtedly at the same time absorbed an interest in the organization of world peace and "the substitution of orderly processes of peace and justice for war and force."

Years afterward, Dr. Remsen, then President of Johns Hopkins, visited on the campus of the University of Illinois. He was asked: "How did it happen that Noyes got his Ph.D. in such a short time?" President Remsen replied: "Has there been any objection?" This reply was both typical of President Remsen and indicative of the high esteem which he had for Professor Noyes.

The fall of 1882 found Dr. Noyes at the University of Minnesota where he was called "Instructor" but in reality his time was largely spent in analytical work for the Minnesota Geological Survey. He gave one short course in Organic Chemistry toward the close of the year and began research upon the oxidation of benzene derivatives with potassium ferricyanide. In 1883 he assumed the duties of Professor of Chemistry at the University of Tennessee. He remained there

three years, which were pleasant and successful with some time for continuing his research. He began work at the Rose Polytechnic Institute, Terre Haute, Indiana, in the fall of 1886. Here he spent 17 years during part of which he taught all the courses in a four year curriculum of Chemistry. The seniors in this curriculum were required to present a thesis based on original research. Several of these were published in the *American Chemical Journal* and later Professor Noyes said that three or four of these were among his most important researches in Chemistry. Here also he became interested in the hydrogen-oxygen ratio and made some preliminary publications. He became convinced that such a fundamentally important value required a careful and complete restudy and quietly awaited the opportunity to begin. This opportunity came in 1903 with the invitation to become the first chief chemist of the newly organized Bureau of Standards. Here he was relieved of teaching routine, and eventually was provided with adequate laboratory facilities and associates among whom were C. E. Waters, J. R. Cain and H. C. P. Weber. Their first undertakings were the standard methods of analysis in conjunction with a Committee of the American Chemical Society; then followed the methods of steel analysis which later developed into the Bureau's Standard Samples which have been of such great importance in the teaching of analytical chemistry in all the laboratories of the world. Dr. Noyes undertook for his own research, the study of the hydrogen-oxygen ratio. He consulted many times with Professor Morley, whose patience, skill and perseverance in years of effort upon this important constant of nature had achieved an accuracy seldom if ever equalled anywhere. Dr. Noyes, with careful attention to the corrections which were necessary in any method, obtained a value which differed from Professor Morley's by about one part in 5000. No greater tribute to Dr. Noyes' accuracy can be paid than to call attention to the fact that the present international value is almost exactly the value that he obtained. With Dr. Weber, he determined the atomic weight of chlorine and did preliminary work on the atomic weight of bromine. Another outstanding contribution from the Bureau at this time was the publication of the standard specifications for chemicals.

In 1907, Dr. Noyes was invited to become the Director of the Chemical Laboratory at the Uni-

versity of Illinois and commissioned by President James "to build a strong graduate department of Chemistry." He found a department which was ripe for growth. The preceding Head of the Department, Professor Arthur W. Palmer, had been a student at Illinois, had taken his Ph.D. at Harvard and had worked with Victor Meyer in Göttingen and Hoffman in Berlin. He had brought with him from eastern colleges and from Europe the best traditions of the leading laboratories, and began to inspire the spirit of research among his colleagues and students. He reorganized the courses of study and systematized the plan of instruction. His death in 1904 was a severe loss to the young department of chemistry. When Professor Noyes arrived in 1907, there was a small but capable and loyal staff among whom were H. S. Grindley, Professor of General Chemistry, S. W. Parr, Professor of Applied Chemistry, and Edward Bartow, Professor of Sanitary Chemistry. The entire teaching staff numbered 11 and there were 17 graduate students. At the time of Professor Noyes' retirement in 1926, the staff had increased to 25 and the number of graduate students was 114. But more important by far than the mere growth in numbers was the new spirit which was in evidence. This may perhaps best be expressed by the number of contributions to human knowledge. During the period from 1870-1903, there was on an average one publication a year; from 1904-1906, there was an average of 15 and during the time when Professor Noyes served as Director (1907-1926) the number of publications averaged nearly 44 per year. Not only did Professor Noyes stimulate original investigation both by precept and example, he maintained to an amazing degree an atmosphere of friendly coöperation among his growing staff. A candidate for appointment was scrutinized with conscientious care for his knowledge of chemistry, his success as a teacher, his interest in research and his personality. During these years of steady growth, the predominating influence at all times was the inspiring leadership of the Director of the Laboratory whose resourcefulness, energy, patience and unceasing effort became an inspiration to staff and student alike. Material factors in building up friendship and a coöperative spirit among the faculty and students were the weekly Journal Meetings at which the members of the department made reports on advancements in their lines of special interest; the monthly lunch-

eons of the faculty where reports of progress on research problems were made and friendly criticisms and suggestions received; and the Chemistry Club which provided for students and faculty members alike frequent opportunities for scientific growth and social enjoyment. These organizations were indebted to Professor Noyes for council, encouragement, and even for their very existence.

In 1917, Professor Noyes became the first secretary of the Illinois State Board of Natural Resources and Conservation and continued to serve as secretary of this important body until his death. In 1942, the Johns Hopkins Chemical Alumni honored Professor Noyes by selecting his name to designate a collection of books to be presented to the departmental library. This collection was the second of a series, selected to honor distinguished Hopkins chemists. The first was dedicated to Ira Remsen. Professor Noyes was also a charter member of the American Committee for Democracy and Intellectual Freedom and "up to the very last days before his death took an active part in the work" of this organization.

Professor Noyes was the recipient of many other honors. In addition to the degrees already mentioned from Grinnell and Johns Hopkins, he received the Ph.D. from Munich in 1889, the honorary degree of LL.D. from Clark in 1909, Chem. D. from Pittsburgh in 1920 and Sc.D. from Grinnell in 1929, the fiftieth anniversary of his graduation. He was a fellow in the American Academy of Arts and Sciences, and a member of the American Philosophical Society, the National Academy of Sciences, the American Chemical Society in which he served as Editor, Secretary and President, the American Association for the Advancement of Science (Secretary C-1890 and Vice President in 1896); he was a charter member of the Indiana Academy of Science, and its President in 1894; a member of the Illinois Academy of Science, the Society of Chemical Industry, Deutsche Chemische Gesellschaft, Société Chimie Industrielle, and he was a frequent delegate to international gatherings of scientists both in this country and in Europe. He and Dr. Weber were awarded the Nichols medal in 1908; he received the Willard Gibbs medal in 1920 and the Priestley medal of the American Chemical Society in 1935. In 1926, he became Emeritus Professor of Chemistry. On November 5, 1937, the staff of the Chemistry Department of the University of Illinois united in celebrating Professor Noyes'

eightieth birthday. Upon this occasion was presented to him a parchment scroll signed by his colleagues of the teaching staff; there were also extended greetings from the Chemistry Department of Ohio State University and from his associates and former students from many widely-scattered localities. On May 13, 1939, at a University Convocation at the University of Illinois, the Chemical Laboratory was rededicated and named "The William Albert Noyes Laboratory of Chemistry." This was the second university building to be named in honor of a man who was still living.

During all the years of his active service, Professor Noyes carried a heavy load of teaching or administrative duties but he always found some "spare time" for research. His scientific publications include one paper from Minnesota, four from Tennessee, 49 from Rose Polytechnic, one from Munich, four from Johns Hopkins, nine from the Bureau of Standards and 86 from the University of Illinois. These 154 papers reveal a wide range of interest: inorganic, analytical, sanitary, organic and physical. The most numerous publications are those upon the oxidation of benzene derivatives, atomic weight of hydrogen and chlorine, methods for the determination of titanium, and of phosphorus, sulfur and manganese in steel, the structure of camphor, hydrolysis of maltose, dextrin, and acetamide, valence especially of nitrogen, and the electronic theory. In addition to these papers which were based upon his own investigations and those of his students, he made many contributions from his rich experiences in the fields of chemical education, analytical practices and sanitary procedure. He wrote biographies of Ira Remsen, S. W. Parr, Alexander Smith, Edward Bartow, E. W. Washburn and Julius Stieglitz. Numerous book reviews bore evidence of his wide reading interest and keen appreciation of the work of others. He wrote occasionally on patriotic, philosophical and religious topics and during the period following 1912 he was deeply concerned with matters of international peace. He had warm friends in both Germany and France and he was deeply distressed because of the bitterness which had grown up between them. He felt that scientists, accustomed to the recognition of truth and the appreciation of honest effort, ought to find a common ground for mutual understanding. He wrote and spoke earnestly for peace, disarmament and good

will. Some of the topics of his pamphlets show the breadth of his understanding and the earnestness of his effort to abolish war. "Building for Peace," "International Understanding," "War or Peace," "Laissez Faire or Cooperation," "International Backgrounds," "Who have paid the cost of War?" "Science in place of War," and many others. He carried on an extensive correspondence with the scientific leaders of many nations and the publications of many of these letters show the intense and increasing determination and earnestness with which he approached the involved international situation.

Professor Noyes was the author of a series of well-known textbooks. His "Qualitative Analysis," which has gone through seven editions, has been widely used in college circles. "Textbook of Chemistry," "College Textbook of Chemistry," "Laboratory Exercises," "Organic Chemistry," and "Organic Chemistry for the Laboratory" are also widely known. With his son, William Albert Noyes, Jr., he was joint author of a popular science book entitled "Modern Alchemy."

Professor Noyes made frequent trips to Europe. These were busy occasions for extending his acquaintance among scientific men and enlarging his horizon of chemical knowledge. During the year 1888-89, he spent considerable time at Munich working with Adolf Baeyer upon the derivatives of succinic acid. Summer European tours were usually the occasion for attending scientific meetings or international congresses, or traveling about from place to place visiting with leaders in the scientific world. One can well imagine that the conversation upon these visits was serious—the structure of an organic compound, the application of a recent theory to familiar phenomena, the best means of keeping European and American chemistry in step and, later, how science might be employed to save nations from the wastefulness and bitterness of war and to establish a relationship leading to permanent peace.

In 1893, while teaching at Rose Polytechnic, Professor Noyes joined the American Chemical Society, then a young organization which in 1890 boasted of having 256 members. He remained an active member of the society during the remainder of his life and undoubtedly some of his most valuable contributions were made through the medium of this society. He held various offices in the local sections to which he was attached; during the years 1903-07 he served as secretary of the

society when much of the business responsibility rested with him. Records show that in 1907 with a total income of \$33,275 and a membership of 3361, the per capita cost was \$8.10 with a surplus at the end of the year of \$6,026. During the year 1920, he served as President of the Society. His greatest contributions, however, were in an editorial capacity. From 1902 to 1917, he was editor of the *Journal of the American Chemical Society*. This Journal had been combined in 1893 with the *Journal of Analytical Chemistry* and Edward Hart had served as the capable editor of the combined publication until 1902. This combination was an important step in the unification of American Chemical interests. This was a period of great growth in the society. In 1900 there were 1715 members with a total income of \$10,190.87; in 1917 there were 10,504 members and an income of \$196,210.57. In 1900, the Journal printed 105 articles, covering 820 pages; in 1917 there were 257 articles occupying 2756 pages. As the editorial burden grew, Professor Noyes was given more and more help from his able group of associate editors. But he always took his responsibilities seriously and never planned to relieve himself of his share of the burden. During his service as editor he made it a practice to read every paper which was accepted for publication. He was fond of saying that he was probably the only person who read every word printed in the Journal. Dr. H. C. P. Weber gives us a vivid picture of Professor Noyes' method of working at the Bureau of Standards: "I was working in the same laboratory as Professor Noyes, his office being in an adjoining room. His combustion (for the H:O ratio) all in glass would be going, or the mercury pump would be evacuating the system, while he was in the adjoining room attending to correspondence or editing and reading proof of the *Journal of the American Chemical Society*. Invariably, however, he would pop out of his office at the right time, turn off a couple of stopcocks, switch the current on or off and return to his letters and proof." In January, 1914, the Journal absorbed the *American Chemical Journal* which had been founded by Ira Remsen and edited by him through 35 years. "That Journal contributed much toward the development of chemistry in America and to the recognition of the work of American Chemists abroad" (THIS JOURNAL, 42, 2101 (1920)). This combination also did much to unify American chemical efforts.

Another illustration of Professor Noyes' ability to concentrate on important tasks under adverse circumstances is shown by an incident which occurred in Montreal in the summer of 1923. He was on his way to Europe and had engaged passage on an English boat. Arriving at the dock early, his party was refused permission to go aboard because, as the guard said: "The bloke who takes the tickets ain't 'ere yet." Professor Noyes had a pocket full of proof which he was anxious to correct before leaving the country, so he sat upon a suit case at the wharf and read proof on "Thermodynamics and the Free Energy of Chemical Substances" by G. N. Lewis and Merle Randall. As a result, the corrected proof was completed and mailed back to the publishers when the boat touched at Quebec.

Beginning in 1897, the *Journal of the American Chemical Society* had included in its pages a "Review of American Chemical Research." This effort met a cordial reception and the reviews grew to considerable volume. In 1902, W. A. Noyes became editor of this department and it soon became evident to him and to others that a more comprehensive review was needed. Plans began to be discussed for the establishing of an Abstract Journal which would cover the developments in chemistry in all phases and in all lands. It was felt that the undertaking was too expensive for the American Chemical Society alone. Accordingly efforts were made to interest the Chemical Society of England and the Society of Chemical Industry (London) in such a venture. On July 14, 1905, W. A. Noyes representing the American Chemical Society met representatives of these groups in London and outlined the plan of coöperation. Members of the English societies recognized the need of such a publication, but were unwilling to raise the dues of their societies or to exchange abstracts with the American Society. As a consequence of this failure to find a satisfactory means of coöperation, the American Chemical Society decided to publish its own Abstract Journal. The dues were raised from five to eight dollars, all members of the society were to receive the publication which was to abstract all chemical literature, including papers in industrial chemistry. There was an enormous amount of work involved in getting this project under way. Dr. C. E. Waters writes: "Dr. Noyes spent a great deal of time in 1906 on the preliminaries for starting *Chemical Abstracts*. He was the Editor

but he had to find all the assistants and get them to work. My job consisted in correcting the proof at night and this might almost as well have been left undone because of the carelessness of the printers. Mistakes pointed out on the galley proof might be corrected, but the chances were that other mistakes were made in the same lines, so the net result is that the first volume is full of typographical errors. Dr. Noyes refused to become excited over misprints and could not be persuaded to admit that in the names of French journals "e," "è," "é," are different letters. He said he was satisfied if the printer put "e" for all three." Professor Noyes established *Chemical Abstracts* on a firm basis and sent it on its way to become one of the most outstanding scientific publications of the world. He continued to serve as Editor until 1909.

Following the appearance of *Chemical Abstracts*, there was additional rapid growth in the American Chemical Society and the great expansion in its varied interests led to other developments in its policy of publication. The great desire of the leaders was to hold all chemical interests together in a single society. Dr. Noyes contributed definitely to this program, both by influence and by leadership. The industrial chemists were demanding greater recognition than was possible in the *Journal of the American Chemical Society*, so a committee was appointed to consider the founding of a magazine devoted to the interests of chemical engineers and manufacturing chemists. Professor Noyes was a member of this committee which recommended the publication of the *Journal of Industrial and Engineering Chemistry*. The first number appeared in January, 1909. Although Professor Noyes never held an editorial position upon the staff of this Journal, he was certainly very helpful to the first editors, W. D. Richardson and M. C. Whitaker. Later Professor Noyes led in the organization of both *Chemical Monographs* (1919) and *Chemical Reviews* (1924). He was the first editor of both publications. He continued to direct the latter until 1926, and was editor of the former until the time of his death. It is evident from these long and efficient periods of service that Professor Noyes had a profound influence upon the publications of the American Chemical Society—an influence which not only has contributed to the present exalted position of the Society but which will continue to be felt through the years to come.

On December 24, 1884, W. A. Noyes married Flora Collier (deceased), a former Grinnell student who had lived at Villisca, Iowa. Three children were born to them while they were living in Terre Haute. Ethel and Helen died in early childhood. William Albert Noyes, Jr., is now the successful head of the Department of Chemistry at the University of Rochester and since 1939 he has been editor of *Chemical Reviews*. On June 18, 1902, W. A. Noyes, Sr., married Mattie Elwell (deceased) of Minneapolis. Charles Edward Noyes was born in Baltimore in 1904. He is now Acting Director of the Civilian Relations Division of Civilian Requirements of the War Production Board. A great-niece of Mrs. Noyes, Hermoyne Potter Noyes, was adopted and lived with the family in Urbana for about three years. In 1915, Professor Noyes married Katharine Macy, daughter of the late Jesse Macy, Grinnell's distinguished Professor of Political Science. Richard Macy Noyes, born in Champaign, Illinois, in 1919, received his Ph.D. at the California Institute of Technology and is now doing research in the chemical laboratory in Pasadena. Henry Pierre Noyes was born in Paris in 1923. He graduated from Harvard in 1943 and is now at the Radiation Laboratory at the Massachusetts Institute of Technology.

To those who have been privileged to work day by day with Professor Noyes, he will be remembered particularly for his untiring devotion to his tasks, his simplicity of life, his fairness to all, and his devotion to the cause of peace. His deep religious nature is indicated by his life-long membership in and his devoted service to the Congregational Church. He was, for many years, Chairman of the Committee on Student Relations of the First Congregational Church of Champaign-Urbana. He took an active part in planning the building of the present church edifice, which serves both cities as well as the student body of the University. He was always mild of speech, but he left no uncertainty as to his meaning. "A truly great man is always gentle and kind." His intimates declare that the most violent expletive

which he was ever heard to use was "Oh pshaw." This was reserved for the occasions when a flask broke or an accident destroyed the patient work of weeks. But no one who knew him attempted to take advantage of his mild manner for upon occasion, his eyes would flash and he would defend his viewpoint with skill, courage, and fearlessness. He was a giant in debate and unafraid to face any adversary, so long as he believed that truth and right were on his own side. He could enjoy a joke, but he seldom made one. He found no interest in sports, although he once took part in a Faculty-Chem. Club baseball game. It is reported that he stood in right field with his hands in his pockets and once when a ball came his way he was looking in another direction and did not see it. He retained a remarkable degree of interest in persons he had known and worked with. For many years when his friends were numerous and widely scattered, he wrote a weekly "Family Letter" in which events of domestic concern were narrated. Carbon copies were distributed to members of the family and immediate friends. As indicative of the steadfastness of his friendship, we may notice that one copy of this letter went commonly to his boyhood chum, Wellington L. Borst, who had remained on a farm at Independence and later removed to California. Their letters show a rare depth of a long continued friendship, in spite of the fact that their paths had diverged so widely.

Even though Professor Noyes' life was an unusually busy and fruitful one, he was never too busy to help a student or a staff member who might seek his advice. No greater tribute can be paid to his memory than is found in the love and esteem of his colleagues and in the high attainments of his students, many of whom have already reached important positions of leadership in the chemical world. These now remain behind to carry on the work which was so dear to his heart. "If we would be truly successful, let us strive to perform well the work which we find ourselves capable of doing. . . . The work will stand in its place bringing forth its own results as the years go by."

SCIENTIFIC PUBLICATIONS OF WILLIAM ALBERT NOYES

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