NATIONAL ACADEMY OF SCIENCES
OF THE UNITED STATES OF AMERICA
BIOGRAPHICAL MEMOIRS
VOLUME XVIII—FOURTEENTH MEMOIR

BIOGRAPHICAL MEMOIR

OF

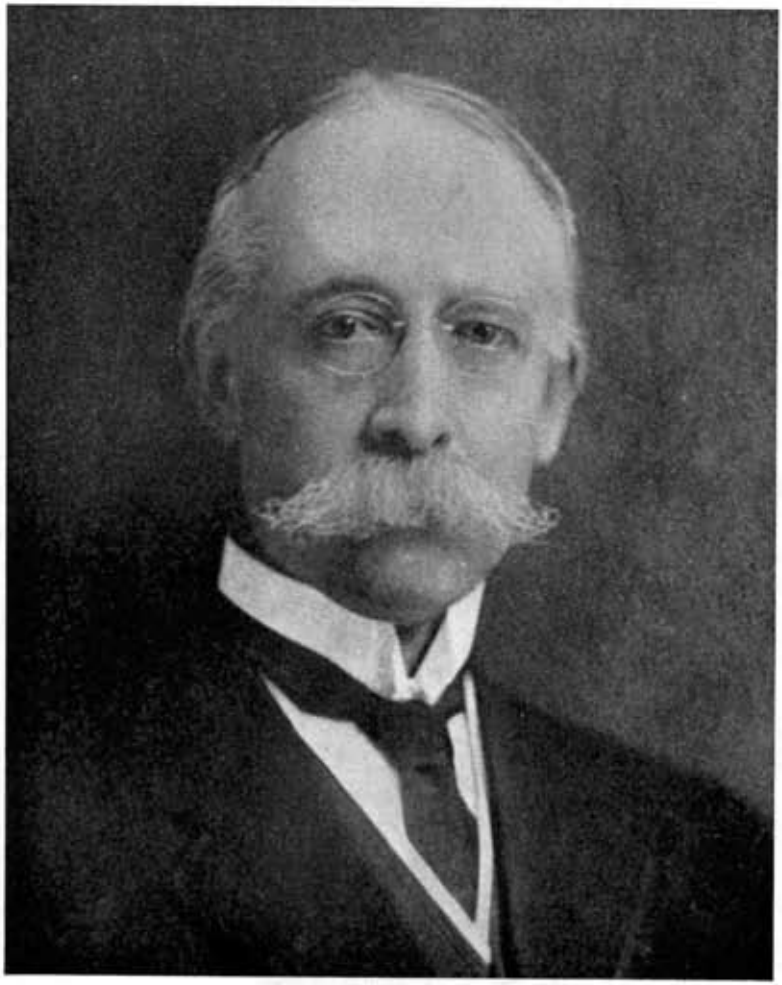
ARTHUR GORDON WEBSTER

1863–1923

BY

JOSEPH S. AMES

PRESENTED TO THE ACADEMY AT THE ANNUAL MEETING, 1937



Arthur Gordon Webster

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Arthur Gordon Webster was born at Brookline, Mass., on November 28, 1863, and died at Worcester, Mass., on May 15, 1923. The outstanding dates in his scientific life are not numerous, because he was connected for so many years with one institution, Clark University of Worcester. He received his bachelor's degree from Harvard in 1885 and was awarded in the following year a Parker Fellowship, which carried him abroad. He spent part of this time at the University of Berlin, where he received the degree of doctor of philosophy, in 1890. He returned immediately to Clark University as docent in physics, which position he held for two years. Following this, he was assistant professor until 1900, when he was elected professor of physics, upon the transfer of Michelson to Chicago. This position he held until his death. He was awarded the Elihu Thompson prize in physics in 1895, the award being given for his experimental researches on the Period of Electrical Oscillations. In 1903 he was elected president of the American Physical Society, having been a member of its Council from the foundation of the Society. In the same year he was elected a member of the National Academy of Sciences.

He was the son of William Edward and Mary Shannon Davis Webster, and on October 8, 1889, he married Elizabeth Munroe Townsend of Syracuse, N. Y. Professor Webster was extremely interested in the meetings of the National Academy, but especially, I think, in those of the American Physical Society, a group which he was influential in forming. All those who were present at the meetings of the latter Society during its first years will remember with great pleasure the personal interest shown by Professor Webster, not alone in the papers, but in the speakers. In his early days at Harvard, and later at the

University of Berlin, he developed and exhibited those traits which endeared him to a whole generation of students of physics. His outstanding characteristics were, undoubtedly, his versatility, his personality, and his competence in his chosen field of work.

His versatility was as great as that of any man of his age. He was a skilled musician, and an artist, gifted in the use of brush and pencil. He was also a natural-born linguist, who found all languages easy, including even modern Greek. I remember meeting him in the fall of 1886, as we were standing outside the door leading to the study of the great Helmholtz. He was carrying on an animated conversation in German with some students of that nationality who were standing with us, and I shall never forget his astonishment when I addressed him as a fellow American. He asked me how I knew he was an American and I told him that while his German was perfect, he had forgotten to dress the part, and I advised him to look at the heels of his shoes.

Webster's personality was most striking and, although he was prompted to speak in regard to almost every paper which was read before the Physical Society, his comments were always friendly, inspiring, and sympathetic. No one ever had the idea that Webster was trying to display his own knowledge. It was difficult at times for the presiding officer to induce him to confine his remarks to the subject of the paper, but what he had to say was always of great interest and often of importance. He was vividly alive to and most interested in every new development in physics. Mathematics to him was always comparatively easy and of the greatest interest. The subject of mathematics appealed to him largely as a means by which he could understand more clearly and explain more completely the physical ideas which were continually rising in his mind. His main purpose in learning the new branches of mathematics as they were successively developed was to help him formulate his own physical problems in such a way that they could be solved. He was a skilled experimentalist, but the mathematical side of the subject

always appealed to him strongly. No one of his time possessed anything like the power which he had of formulating a physical problem in mathematical language. He was taught at Harvard and Berlin and Paris to believe that the mathematical mode of approach was essential in all fields of physics, and his ability was mostly shown in the prosecution of this line of thought. His work in physics was concerned in the main with what one would now-a-days call the classical problems. He was more interested in the problems dealing with sound and sounding instruments than almost any other subject, and his researches, both theoretical and experimental, were of marked importance.

Webster's contributions to physics and mathematics are well illustrated by the bibliography of his publications appended to this sketch. His books were all notable and were extremely successful. He was a born teacher and expounder and was able to enliven all subjects in physics with the magic touch of humor and wit. No subject was ever dull as it was considered by him. It would not be fair to say his treatises were profound, but they did represent perfectly the knowledge of his time and gave evidence of extremely careful preparation by a man who was master of his subject and fully familiar with all the writings on the subject under discussion. His original contributions were varied and interesting. He never approached an experimental problem without marked improvement both in apparatus and method. His researches may truly be called distinguished, and his contributions to knowledge have stood the test of time and later observations. As has been said before, he was able to formulate problems in such a way as would make them amenable to mathematical discussion, and he was, therefore, led to conduct his experiments along lines which would lead to not alone an increased knowledge of facts, but also have a bearing upon theory and future development of the science. He was as much interested in what one may properly call the engineering side of his subject as in the purely physical one, and his ability was so great that there was no practical field in which he could not venture with great profit to all concerned.

When he was a boy, even before he went to college, his father had fitted up for him a quite good laboratory at home, and both here and in the physics laboratory at Harvard he soon became skilled in experimentation. When he studied at Harvard he became attracted by the mathematical sciences and learned in an extremely short time a fundamental basis for all his future work. He took advantage to the full of the opportunities offered there for optional studies and courses and few men have ever gone to Europe so well prepared to continue their studies. His versatility was so great and his interest in all that made up life was so intense that he did not find it easy to prepare a dissertation for his doctor's degree. He made a profound impression upon all his associates and fellow students and he was in all respects outstanding in a large group of men. As has been noted before, he was always attracted to what one may call engineering problems. His knowledge of dynamics and of electricity was so fundamental, almost intuitive, that his advice in all the practical applications of these subjects was eagerly sought. His suggestions were inspiring and useful.

Webster possessed a very true appreciation of his own great ability, and this appreciation was entirely free from any feeling or any thought of jealousy. He had, as has been said, a really profound knowledge of both physics and mathematics and was extremely helpful in making suggestions for advances in these fields. His comments on the work of others were always constructive and encouraging. It has sometimes been thought that his understanding of physics was not such as would lend itself to an appreciation of the more modern problems. He lived at a time when the new physics, dealing with our knowledge of atomic structure and our theoretical knowledge of wave mechanics, were practically unknown. His concepts of fundamental work were largely mathematical and no one can tell today how his ability would have developed.

Shortly after Webster's death in May, 1923, a university meeting in honor of his memory was called at Clark University. At this meeting President Atwood presided and there were

addresses given by students and friends who had known him well. A full account of the meeting, together with addresses and letters, was published in Volume 7 of the Publications of the Clark University Library, March, 1924. Appended to that, as there is also to this sketch, is an extremely accurate bibliography prepared by the assistant librarian of Clark University. This list of papers and books is the best illustration one could wish of Webster's interest in physical matters and of his great ability as a physicist.

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