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ARTHUR WILLIAMS WRIGHT

1836-1915

BY

EDWARD S. DANA

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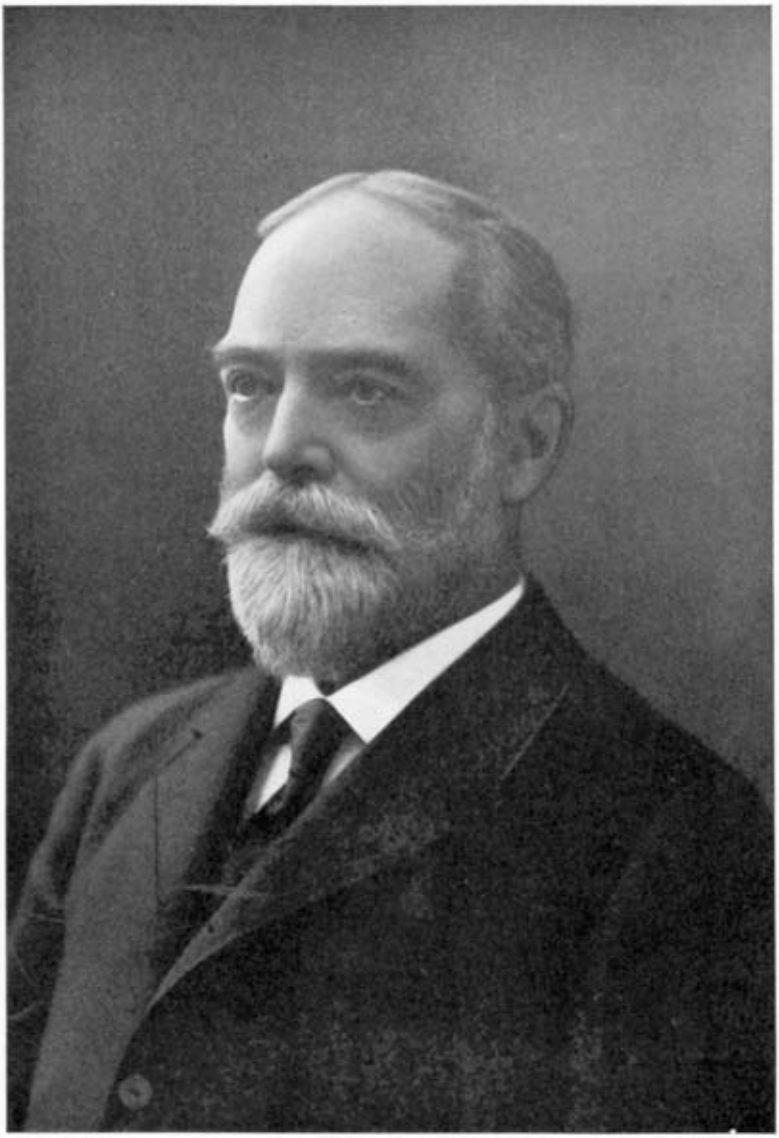

Arthur W. Wright

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The quiet life of a student of science often presents few incidents of striking prominence. As a college professor his first work is that of teaching—in a word, presenting to his students the essential principles of his subject and awakening their interest in them. Further, in order to keep in touch with the progress being made in his department, he must, in his free time, make a close study of the growing literature of his subject. This will also suggest to him the directions in which his own investigations can best be extended.

The many years that Professor Wright spent at Yale were lived essentially along these lines. He was a man of modest deportment, but cordial and pleasing approach. He was faithful to his students in the class and lecture-room, presenting his subject with the clear directness of a well-trained scientist. Of the scientific literature, which more and more crowded the library, he was ever a constant reader. Thus his mind became stored with the facts of his subject. Also, he was keen to note any signal steps of progress and to direct his experiments in that direction. His early study of Röntgen rays, noted later, illustrates this point. He was also the first in New Haven to set up a private telephone line between his home and the laboratory.*

While it cannot be claimed that Professor Wright opened up and developed any striking line of progress in physics, it is true that his many experimental investigations were important and all on a high level. Also, independent of this, it is interesting to note that his coming to Yale resulted in two important steps of progress for the University and for science as well. For this Wright should be long remembered. It seems well to explain these points in detail before considering the events of his life and the results of his work in the laboratory.

*The first commercial telephone exchange in the world was established in New Haven on January 28, 1878.

In the first place, it may be fairly said that Yale owes to Professor Wright the possession of a well-planned and fully equipped physical laboratory. It is probably true, also, that the Sloane Physics Laboratory, completed in 1883, was the first building in this country which was exclusively devoted to the work of modern physics. Further, this early laboratory led directly, as will be shown later, to the University Sloane Laboratory, opened in 1912, which in size, equipment, and endowment is all that a university laboratory should be. For this result, Yale certainly owes a large debt of gratitude to Professor Wright. This will be made clear by the explanation which follows.

The fact that the donors of the Physics Laboratory of 1883, Mr. Henry T. Sloane (Yale 1863) and his brother, Mr. Thomas C. Sloane (Yale 1868), were led to make this generous gift, is explained by the fact that they were close personal friends of Professor Wright. Also, it was due to the careful study given by Wright to the maturing of the plans that this laboratory, in arrangement and equipment, was fully up to the requirements of the time. In this building there were carried on for many years the instruction, study, and experiments of Professor Wright and his younger associates; also of Professor J. Willard Gibbs, who was appointed to the chair of mathematical physics in 1871. It is interesting to add that Mr. Thomas C. Sloane, who died in 1890, left as a bequest to the Sloane Laboratory the sum of $75,000, the income of which was to be used for research.

Much later, about 1908 or a little earlier, the subject of a new, much larger, and thoroughly modern, laboratory of physics, was raised by Mr. Henry T. Sloane. It was his wish, as it was that of the members of the faculty with whom he conferred (conspicuously Professor Bumstead) that in this new building the physics of all the departments of the university should be brought together. This plan was carried through and thus the first step, and that a vital one, was taken in uniting the work of the college with that of the Sheffield Scientific School and graduate school. The new Sloane Laboratory, it should be added, was the first of the group of university buildings erected on what is now known as the Pierson-Sage Square.

The funds needed for the construction and endowment of this new Sloane Laboratory were given by Mr. Henry T. Sloane and his elder brother, Mr. William D. Sloane. The cost of the building was $385,000, and an additional sum of $125,000 was given for endowment. The work of developing the plans was largely in the hands of the late Professor Henry A. Bumstead, who was also made the Director of the new laboratory in 1909. Professor Bumstead, it should be added, was a man of rare ability and attainments. His early death (December 31, 1929) was a great loss to his department and to Yale.

In another direction Wright's appointment as professor of physics marked an important step forward in the position of this subject. Until then, at Yale and at most other institutions in the country, the subject now known by the simple name of physics was included under the general head of natural philosophy. With this was commonly linked, in the title of the professor, either astronomy, mathematics, or chemistry, or two of these.

Thus Denison Olmsted (Yale 1813) was professor of mathematics and natural philosophy (also later of astronomy) from 1825 to 1859. His successor, Elias Loomis (Yale 1830), the astronomer and meteorologist, was professor of natural philosophy and astronomy from 1860 until 1889. Wright himself was tutor of natural philosophy in 1866-68, and in 1875 he was made professor of chemistry and molecular physics. Later, however, it was decided that in general one subject was all that a given professor should be asked to be responsible for, and in accordance with this, Wright ceased to teach chemistry in 1879. This was an important step in the handling of the sciences. More noteworthy than this is the fact that Wright's chair was the first in which the subject, hitherto vaguely defined as natural philosophy, was definitely called physics. In a word, Wright was the first professor of physics at Yale.

It may be added, however, that natural philosophy long held a place in the Yale Catalogue. It was altogether right that the chair of Professor Loomis should retain its original name of Munson professor of natural philosophy and astronomy from

1860 to 1889. But it was, however, strange that in 1879, several years after Wright was made professor of physics, an assistant professor of "natural philosophy" should have been appointed.

It is also interesting that, from the early days through 1872, the text book used was Olmsted's "Natural Philosophy." Even in 1872-73, when Ganot's "Physics" was named as the text book, the subject was still called natural philosophy in the Yale Catalogue. It was not until 1883 that physics fully took its place. This change is dwelt upon at some length because so intimately connected with the career of Arthur Wright.

A digression may be pardoned here, to make clear the place occupied by Wright in the wide development of science at Yale. The starting point is properly taken as 1802, when President Timothy Dwight appointed Benjamin Silliman (Yale 1796) professor of chemistry and natural history. Silliman was then a young man of twenty-three, planning for himself the career of a lawyer, which plan, however, he gave up when he decided to join the Yale faculty.

This step taken by President Dwight was especially noteworthy, because so far-reaching in its results and taken at so early a date. It is also interesting that it was made by a president who, although a Congregational clergyman (as were all the leaders of Yale from 1701 to 1899), had none of the feeling, which later developed here and there, that the teachings of science and those of religion were essentially more or less antagonistic.

The appointment of Silliman had a marked effect in increasing the prominence of science at Yale and also over the whole country. In the latter direction, the influence of the man himself was felt especially through his frequent lecture courses in many prominent cities. Having gained his scientific training chiefly abroad, the new professor assumed his duties at Yale. His laboratory was the Old Commons Hall of 1782, refitted for its new use in 1819. Silliman worked actively in chemistry until his retirement in 1853. His son, Benjamin Silliman, Jr., became his assistant in 1837 and later his successor, and carried on for a number of years the lectures in chemistry. In 1850, James D. Dana (Silliman's son-in-law) became professor of natural his-

tory and in 1864 professor of geology and mineralogy. Thus science developed at Yale.

In the meantime, the field of physical science, which opened with the work of Denison Olmsted and his successor, Elias Loomis, was firmly established by Wright, the department being named physics as has been already explained. Wright also gave at first, as had Silliman, Jr., lectures in chemistry. Silliman, Jr., and Norton, however, as early as 1847, gave instruction to students in applied chemistry with laboratory work. For this, at the outset, the early president's house of 1797-99 was used; the site of this building was that now occupied by Farnam Hall. This date of 1847 may be taken as that which marks the first of the successive steps which led up to the beginning of the Yale Scientific School. This school, founded by the intensive work of Brush, Norton, Brewer, and others, developed into an independent department of Yale, most important at home and in its influence on broad scientific instruction in the country. It became the Sheffield Scientific School in 1863, then named after its chief donor, Mr. Joseph E. Sheffield.

In the college, chemistry held but a small place from Silliman's time until the Kent Laboratory was built in 1887. This building was given up to other departments much later when the Sterling Chemistry Laboratory on the Pierson-Sage Square was completed. Here the work in chemistry of Sheffield Scientific School, the college, and the graduate school are united, as had been that in physics much earlier in the adjacent Sloane Physics Laboratory of 1912. With this second decisive step, the university development of Yale in science was fully established.

It is not amiss to state that Yale might have claimed to be a university very early, when the three departments of medicine, theology, and law were established in 1810, 1822, and 1824, respectively. The name, however, was not used until 1887, though the graduate school was established in 1847.

The life of Arthur Wright began at Lebanon, Connecticut, on September 8, 1836. His early ancestors on both sides were of good English stock, coming to New England in the very early years of the new Colony of Massachusetts. His father, Jesse

Wright, was a man of prominence in the state as a member of the Connecticut House of Representatives in 1839. Also in his native town of Lebanon he was Justice of the Peace and later (1840-42), Selectman. On this side the Wright family goes back through eight generations to Samuel Wright, who settled in Springfield in 1639. Arthur Wright's mother was Harriet Williams, the daughter of William Williams of Lebanon. Her earliest ancestor in this country was Robert Williams, who was born in England in 1593, but in 1637 made his home in Roxbury, Massachusetts.

Wright received his early education in Lebanon, but his special preparation for college he obtained principally from Bacon Academy, Colchester, and later at Kinne's private school in Canterbury, not far distant from his native town. He entered college in 1855 and through his course maintained an excellent rank as a scholar, obtaining at graduation in 1859 the stand of High Oration. He did especially well in Latin, also in mathematics and astronomy. Further than this, he stood well with his classmates on the personal side. His facility in music was a point in his favor, and gave him a place in several musical societies. His continued interest in music contributed much to his happiness throughout life.

The class of 1859 numbered at graduation 107 men. It was a notable company, including several who also attained positions of special prominence. The following deserve to be mentioned: John Haskell Hewitt, a student of the ancient languages and professor in Williams College from 1882 to 1909; Thomas Raynesford Lounsbury, who will be long remembered as professor of English in the Sheffield Scientific School; William Thompson Lusk, a prominent physician, connected with Bellevue Hospital from 1864 till his death in 1897; Eugene Schuyler, the diplomat, Consul General at Constantinople in 1878, and United States Minister to Roumania, Servia, and Greece from 1882-1884; also Joseph Hopkins Twichell, the distinguished clergyman and writer in Hartford, Connecticut.

After receiving his bachelor's degree, Wright continued his studies at Yale in the recently organized graduate school, where

he specialized in mathematics and science. In 1861, he and two others were the first to receive the degree of doctor of philosophy in the recently established department of philosophy and the arts. Wright's comrades in this honor were his classmate, Eugene Schuyler, spoken of above, and James Morris Whiton, Yale 1853, who was for years rector of the Hopkins Grammar School in New Haven, which was founded as early as 1860. During this period, Wright was assistant in the Yale College Library; also librarian of the Linonian Library from 1860-63.

Wright's connection with the Yale faculty began with his appointment as tutor in 1863. This name was that long used for an instructor, but practically dropped after 1905. A tutor in the early days, and down to 1880 or later, was usually called upon to teach one of the fundamental studies of the curriculum, Latin, Greek, or mathematics. As between several tutors appointed in a given year to teach one of the lower classes, the order of choice of subjects was made for each according to the year of his graduation. In other words, a junior tutor might find that the subject left for him was one in which he had only a minor interest. For example, of the tutors chosen from a class in the 1870's, one of these, though particularly proficient in Greek, was compelled, to his sorrow, to teach mathematics.

Wright was fortunate in this last particular, for he was tutor in Latin from 1863-66; this was a subject, as already stated, in which he had excelled when an undergraduate. In 1866 and 1867, he was tutor in natural philosophy. It is interesting also that, while tutor, being uncertain as to his future, he pursued the study of law and was admitted to the bar, though he never earned his living by actual law practice. This course was not exceptional, it was also true of Benjamin Silliman in 1801. The years 1868-69, Wright spent in Europe, continuing his life there as a student at the University of Heidelberg under Bunsen and Kirchhoff, and at Berlin under Hofmann and Magnus. Returning to this country, he continued his career as a teacher when made professor of physics and chemistry at Williams College in 1869; there he remained until 1872.

The year of 1872 stands out prominently in Wright's life, for after the three years at Williams College, he was called to Yale as professor. His title, as given in the Catalogue, was at first of chemistry and molecular physics. In 1876, this was changed to molecular physics and chemistry, which it remained until 1887, when the chemistry was dropped and his chair became that of experimental physics. He was, however, relieved from the teaching of chemistry for some years before 1887. His activity as professor of physics continued until 1906, when he became emeritus.

Wright's work at Yale as professor of physics was at first carried on in the aged laboratory already spoken of as used by Benjamin Silliman early in the century. This was a quaint structure, for the most part of one story only, with a long, sloping roof. The laboratory was planned chiefly for the lectures in elementary chemistry. There was one tier of steeply sloping seats for the Yale students, another small tier at right angles to the other and hence partly concealed, which was used in Silliman's time for privileged young ladies. This laboratory provided scant facilities for advanced work and original investigations. Its limitations were especially trying to Wright, the physicist, which makes it remarkable that he could have accomplished as much as he did, as shown in the bibliography of his papers, given later.

From this early Silliman laboratory, Wright moved to the Sloane laboratory in 1883, mentioned earlier, where all the problems of arrangement and equipment had been satisfactorily solved in advance by himself. His labors were increased, however, since for about ten years the lectures and the laboratory instruction were carried on by himself. In the early 1890's he was relieved of all but the instruction of special students in the laboratory. As already stated, he became emeritus in 1906. This event was determined by age, according to the custom adopted at Yale about this time.

Wright's personal life was that of a solitary bachelor at Yale from 1872 to 1875; during this interval he resided in the dormitory on the Yale Campus named Durfee College, after the donor,

Bradford Durfee (Yale 1867). After October 7, 1875, his life became a happier one, for on this date he was married to Miss Susan Forbes Silliman, the eldest daughter of Benjamin Silliman, Jr. Their life together continued until February 17, 1890, when Mrs. Wright died. His own death followed much later, on December 19, 1915.

The Wright's had three children: Susan Silliman Wright, now Mrs. Winchester Bennett; Dorothy Silliman Wright, Mrs. Edwin Pugsley; and Arthur Silliman Wright. These all reside in New Haven, and in the next generations there are (1932) nine grandchildren and two great-grandchildren.

It may be said in general that Wright's original work in science was for the most part in physics, although this was often allied with chemistry. It remains to present an account of its value and scope. This can best be done by quoting from a paper by his colleague, the late Professor Hastings, which was published in 1916. This gives an appreciative estimate as to the character of his work followed by an account of the more important of his investigations. The titles of the papers referred to are given in the Bibliography, which closes this notice.

It may be added here that Wright was much aided in the study of the literature of physics by his command of German, acquired when a student in Germany; also by his reading knowledge of Danish and Italian, which he gained by private study. In his experimental work, his skill in glass blowing was an important element.

Professor Hastings says: "His contributions are not merely important in substance; they are also characterized by unusual excellence of form and clarity of statement. His fertility in ideas, his full knowledge of the literature of his subject and, not the least, his rare manual dexterity, together enabled him to make a distinguished record as a physical investigator.

"An early paper, published in 1870, was entitled 'On a peculiar form of the discharge between the poles of the electrical machine.' This paper describes the glow produced upon the positive ball in an active electrical machine and the conditions under

which it may be produced. The striking fact that each portion of this luminous surface can be regarded as due to the effect of a point area on the negative ball, as proved by sharp geometric shadows formed by minute obstacles anywhere within the region between the conductors, is quite new and it affords a particularly beautiful method of determining the shape and position of the lines of force. This investigation was followed by another, 'On certain forms of the electrical discharge in air,' which contains extensions of experimental methods and results attaching to the positive glow described in the previous paper.

"A description of a simple apparatus for the production of ozone was followed by two studies of the chemical action of ozone. The first of these—'On the action of ozone upon vulcanized caoutchouc' (1872)—calls attention to the cause of the deterioration of the insulating properties of vulcanite and gave means of correcting the fault. The second paper is entitled, 'On the oxidation of alcohol and ether by ozone,' and is an application of his ozone apparatus to the chemical investigation indicated in the title.

"In the same year Professor Wright published two papers on the Zodiacal Light of Coggia's Comet. In the first of these papers the question of the polarization of the Zodiacal Light, even to a fair determination of the ratio of polarized light to unmodified light, seems to have been definitively settled by the skillful use of a polariscope of his own design. So, also, his second paper, on the spectrum of the Zodiacal Light, appears to have decided once for all a discussion which had occupied many observers.

"A series of five papers of great interest follow, on the gaseous contents of meteoric irons and stones. In the first of these he reviews the known results of the investigations upon the occluded gases of meteoric irons, quoting Professor Graham and Professor J. W. Mallett. In his own investigations, the material came, for the most part, from the collection in the possession of Yale University. His conclusions in this first paper were that no one of the several irons which he studied gave any spectroscopic evidences of unknown elements. The second paper is a

brief one upon the gases derived from the meteorite of February 12, 1875, presented as a note preliminary to a further study.

"In the following paper entitled 'Examination of gases from the meteorite of February 12, 1875,' Professor Wright gives a thorough review of the gaseous contents of this meteorite. It appears to be the first stony meteorite thus investigated and the results are of great importance; they not only show the presence of gases occluded in stony meteorites, but also prove that they are distinguished by having oxides of carbon as their characteristic gases, instead of hydrogen. He points out the bearing of these observations upon the peculiar spectra of comets and as a support of the meteoric theory of comets.

"In 1876 Professor Wright continued these important investigations, extending them to a considerable number of stony meteorites of known origin. The earlier conclusion that these stony meteorites are characterized by a large amount of occluded carbon compounds was abundantly verified, and the last paper contains a long discussion concerning the bearing of these observations on the current theory of comets. This terminates the series of papers on occluded gases in meteorites, but it is interesting to note that the mastery of the problems involved served him in an admirable piece of work five years later (1881). The paper—'On the gaseous substances contained in the smoky quartz of Branchville, Connecticut'—is sufficiently defined by its title, but the skill and success with which the investigation was carried out and the results presented make the article a model worthy of careful study.

"In 1877 Professor Wright published two important papers on the deposition of metallic films by the cathode discharge in exhausted tubes. A clear description of the technique of the process and of the physical properties of a large number of metals thus treated makes the papers of unusual interest. The intrinsic value of his method has proved so great that it is quite probable that the name of the author is more widely known from these scientific contributions than from any others published during his long and active life.*

*This important method of obtaining a metallic mirror was patented by another without his knowledge.

"In the foregoing review of the scientific work of Professor Wright there has been no effort to do more than sketch the contents of the papers of chief importance; a large number of notes and minor contributions to science have been passed over. It would hardly be just, however, to fail to note his activities in X-ray experiments. At a time when Röntgen's discovery was hardly more than a rumor and the greater number of physicists, perhaps somewhat skeptically, were awaiting more definite descriptions of methods and results, Professor Wright immediately applied the test of experiment and secured the first of these photographs made in this country. This showed in a very striking way his command of all the resources of his science at the time; nor did he stop with a mere verification of the most wonderful features of the phenomena. He made many studies of the nature of the radiations and their reactions on various forms of matter, but, like other contemporary investigations, the results were hardly more than negative and he published them only in a preliminary paper (1896) on the subject.

"This short review of the more important scientific work of Professor Wright, which was published and is attainable by everybody, does not by any means exhaust the list of his activities. His observations on the polarization of the solar corona made in Colorado on the occasion of the solar eclipse of July 29, 1878, were among the most important and conclusive up to that time. So, too, at a later date (1888) he aided the Government, as a member of a committee appointed by the National Academy of Sciences, in fixing the standards for polariscopic determinations of sugars at the national customhouses. This is interesting as having been one of the many occasions in which the Government has with profit turned to the National Academy for scientific advice. Another work of public character was performed in 1887, when he served as chairman of the committee of weighing on the Assay Commission to test the fineness of the gold and silver coins at the United States mint in Philadelphia. Further he was, from 1881 to 1886, an adviser of the Government Signal Service, but what he there accomplished has

not been specifically published, as far as known to the present writer.

"Of work, important, but of a different character from that already mentioned, were his labors on the two editions of Webster's Dictionary of 1864 and 1890. In the revision of 1864 he acted as general collaborator, assisting in the preparation of the manuscript for the press, the revision of definitions, especially those of scientific and technical subjects, and in reading the proofs. He also prepared for this edition the articles on 'Orthography' and the 'Rules' for spelling certain classes of words, and assisted in the revision of the list of 'Arbitrary Signs used in Writing and Printing.' In the edition of 1890 he gave his attention especially to the definitions in chemistry and physics. Professor Wright also prepared a series of summaries on 'Scientific Progress'."

Professor Wright's distinguished work in physics won for him wide recognition in scientific bodies. He was elected a member of the National Academy of Sciences in 1881; he was also made a Fellow of the Royal Astronomical Society of Great Britain in 1879; a member of the American Philosophical Society in 1896; of the Connecticut Academy of Sciences; the American Meteorological Society; the New York Academy of Sciences and other scientific bodies.

BIBLIOGRAPHY

The following bibliography includes Wright's most important scientific papers; those of 1870 and 1871 were published when a professor at Williams College:

1870

On a peculiar form of the discharge between the poles of the electrical machine; *Amer. Jour. Sci.* (2), vol. **49**, pp. 381-384.

1871

On certain forms of the electrical discharge in air; *ibid.*, (3), vol. **1**, pp. 437-443.

1872

On a simple apparatus for the production of ozone with electricity of high tension; *ibid.*, vol. **4**, pp. 26-29.

On the action of ozone upon vulcanized caoutchouc; *ibid.*, pp. 29-31.

1874

On the oxidation of alcohol and ether by ozone; *ibid.*, vol. **7**, pp. 184-189.

On the polarization of the Zodiacal Light; *ibid.*, pp. 451-459.

On the spectrum of the Zodiacal Light; *ibid.*, vol. **8**, pp. 39-46.

Polariscopic observations of Coggia's Comet; *ibid.*, pp. 156-157.

1875

Spectroscopic examination of gases from meteoric iron; *ibid.*, vol. **9**, pp. 294-302.

Preliminary note on an examination of gases from the meteorite of Feb. 12, 1875; *ibid.*, pp. 459-460.

Examination of gases from the meteorite of Feb. 12, 1875; *ibid.*, vol. **10**, pp. 44-49.

Images produced by lightning; *ibid.*, pp. 317-318.

1876

On the gases contained in meteorites; *ibid.*, vol. **11**, pp. 253-262.

On the gases contained in meteorites, 2d paper; *ibid.*, vol. **12**, pp. 165-176.

1877

On the production of transparent metallic films by the electrical discharge in exhausted tubes; *ibid.*, vol. **13**, pp. 49-55.

On a new process for the electrical deposition of metals, and for constructing metal-covered glass specula; *ibid.*, vol. **14**, pp. 169-178.

1880

Report on the polarization of the corona during the total solar eclipse of July 29, 1878. From Washington Observations, for 1876, Appendix III.

Reports on the total solar eclipses of July 29, 1878, and Jan. 11, 1880. Astronomical and Meteorological Observations made during the year 1876, at the U. S. Naval Observatory. Part II, appendix III, pp. 261-281. Washington, 4°.

1881

On the gaseous substances contained in the smoky quartz of Branchville, Conn. *Amer. Jour. Sci.*, vol. **21**, pp. 209-216.

The polarization of light from Comet B, 1881; *ibid.*, vol. **22**, pp. 142-144.

Polariscopic observations of Comet C, 1881; *ibid.*, pp. 372-374.

An apparatus for the distillation of mercury in vacuo; *ibid.*, pp. 479-484.

1888

Report on quartz plates used in determinations of sugar in the U. S. Custom Houses. As Chairman of the committee of the National Academy of Sciences; Rep't. Nat. Acad. Sci., pp. 39-45.

1890

The Zodiacal Light; *Forum*, vol. **10**, pp. 226-236.

1896

Cathode rays and their effects; *Amer. Jour. Sci.* (4), vol. **1**, pp. 235-244.

1898

The relation between structural and magneto-optic rotation (with D. A. Kreider); *ibid.*, vol. **6**, pp. 416-427.

1901

Spectrum of alternating current discharge studied with reference to its spectrum and especially the ultra-violet spectrum (with E. S. Downs); *ibid.*, vol. **12**, pp. 66-73.

In addition to his scientific papers, Wright also wrote a number of excellent biographical memoirs. Among these are to be mentioned:

Benjamin Silliman, Sr. (1779-1864), and his son, Benjamin Silliman, Jr. (1816-1885); these are published in volume 22 of the Ninth Edition of the Encyclopedia Britannica.

Alfred Marshall Mayer; *Amer. Jour. of Sci.*, vol. **4**, 1897.

Ogden Nicholas Rood; *ibid.*, vol. **15**, 1903.

Also for the National Academy of Sciences in 1911:

Benjamin Silliman, Sr. (1816-1885); and James Hammond Trumbull (1821-1897).

Another work of importance calling for much careful study is the "History of the Class of 1859 in Yale College. A Record of Fifty-Nine Years." This was prepared by him in 1914 as Class Secretary for the fifty-fifth reunion of the Class of 1859. As a matter of fact, no meeting was held, which gives all the more value to this volume of 288 pages.

It opens with an account of the semicentennial meeting in 1909 at which some twenty-four members were present. This was held at the house of Mr. Louis H. Bristol. Then follow the individual records of each member of the class, the graduates on pages 17-198, the nongraduates following on pages 199-248. The volume closes (pages 249-288) with a full and carefully prepared series of statistics of the class as to membership in the college societies, public honors, et cetera; also a list of the children and other similar matters of interest.

That the work involved much time and labor is at once obvious. Wright confesses this in the closing clause of his "Prefatory Note." This is worth quoting here entire since it shows also the rarely friendly character of the man. He says: "In conclusion, let me say that though the task of preparing the Record has been long and laborious, it has been most interesting, and the frequent communications to and from the members of the class a source of constant pleasure. If the result meets the approbation of my classmates it will bring great satisfaction to

"Yours most cordially, ARTHUR W. WRIGHT,
Class Secretary."

New Haven, September 1, 1914.

It is certainly remarkable that, at the age of seventy-eight years and only a year before his death, he was able to complete so large a work, and one calling for so much careful thought and labor.

ARTHUR WILLIAMS WRIGHT was certainly a rare man in character and in ability.