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COLLECTION ON ELLEN SWALLOW RICHARDS

Manuscript collection - MC 659

EXTENT

0.6 cubic feet

PHYSICAL DESCRIPTION

2 manuscript boxes, 1 oversize folder

ACCESSION NUMBERS

1980-20, 2007-167

PROVENANCE

This collection was assembled by the staff of the Institute Archives. Some publications were originally in the MIT Libraries. In 2008 materials previously in MC 305 and MSC 84 were consolidated into collection MC 659. A copy of the Massachusetts chlorine map made at the State Library and donated to the Archives in 2007 was also added to the collection.

CONDITIONS GOVERNING ACCESS

There are no restrictions on access to this collection. Some items are fragile and copying may be restricted. Consult an archivist for more information.

4/14/08

BIOGRAPHY

Ellen Henrietta Swallow Richards, 1842-1911, attended Vassar College, receiving a Bachelor of Science degree in 1870. Subsequently she applied for admission to MIT and in January 1871 became the first female student to attend MIT, earning a Bachelor of Science degree in 1873 in chemistry. She also earned in 1873, the degree of Master of Arts, from Vassar College. In 1910, Smith College conferred the honorary degree Doctor of Science on Ellen Swallow Richards.

The text of her MIT thesis "Notes on some sulpharsenites and sulphantimonites from Colorado" can be found at: <http://dspace.mit.edu/handle/1721.1/29221>

The following obituary and tribute published in 1911 in the MIT alumni magazine, *Technology Review*, provide further details about her life and achievements.

Ellen Henrietta Richards, A.M., Sc.D.: A biographical sketch of her life—Her remarkable career and her many public activities

The death of Mrs. Ellen H. Richards, on the thirtieth of March, occasioned a sense of personal loss to an unusually large number of friends, acquaintances and co-laborers in widely different walks of life. For nearly forty years a participant in the work of the Institute of Technology, she had become a prominent and most active figure among its corps of instructors; her scientific work had gained for her a wide acquaintance among various scientific organizations, local and national; her social service and interest in all that pertained to the higher education of women and to the betterment of living conditions for all had made her a leader whom thousands had learned to respect and were glad to follow.

Mrs. Richards was born at Dunstable, Mass., in 1842, the daughter of Peter and Fanny G. Swallow. She entered Vassar College in due course and was graduated in 1870, having devoted much time to astronomy as a pupil of Prof. Maria Mitchell. She soon afterward connected herself with the Massachusetts Institute of Technology, turned her attention to chemistry, and was graduated from that course in 1873, with the degree of Bachelor of Science. While the reasons for the selection of chemistry as a field for her later work are not accurately known, a memorandum which was apparently made by her indicates that it was because she felt that greater opportunities for effective service to her fellow beings were open in that than in other fields and this probably represented the first, and possibly unconscious, leaning toward public service which later manifested itself in so large a measure.

The marriage of Miss Ellen Swallow to Prof. Robert H. Richards, in 1875, marks the beginning of that mutually sympathetic and hospitable home life which has been generously shared with hundreds of Institute students and other friends for more than a quarter of a century.

During the period from 1873 to 1884, Mrs. Richards was active in various fields. A part of her time was given to teaching, but much of it was devoted to the assistance of Profs. John M. Ordway and William Ripley Nichols. The former maintained an active practice

as consulting expert in technical chemistry, while the latter had gained an enviable reputation as an authority in matters of water supplies. It was also during this period that the Women's Laboratory was established to afford better opportunities for the scientific education of women. It was housed in a portion of a one-story structure located between the present sites of the Rogers and Walker Buildings, and later removed when the Walker Building was erected. This laboratory was established largely through the instrumentality of Mrs. Richards in enlisting the financial support necessary for it, hers was the guiding hand in its management, and hers the leading spirit in this, as in other subsequent movements of similar import.

Her association with Professor Ordway laid the foundation for her later service (1884-1894) as chemist to the Manufacturers Mutual Fire Insurance Co., in which she did much interesting work bearing upon the danger from spontaneous combustion of various oils in commercial use. It also gave her an appreciation of technical problems which added much to her efficiency as a teacher. Her work in sanitary chemistry with Professor Nichols was destined to be of still more significance, for, in 1887, the State Board of Health of Massachusetts began a comprehensive survey of the water supplies of the State which involved a series of problems for the solution of which she was especially well prepared. This work was under the immediate supervision of Dr. Thomas M. Drown, but the success of the undertaking, now a classic of its kind, was in no small measure due to the enthusiasm, energy, experience and insight with which Mrs. Richards threw herself into the work of devising methods, recording results and organizing assistance. Over twenty thousand samples of water were examined under her supervision, a record never approximated before that time, the results of which made possible generalizations of lasting value, not only to this community, but to the world. Mrs. Richards was chemist to the Board of Health from 1872 to 1875 and water analyst from 1887 to 1897.

Mrs. Richards also found time to take an intelligent and helpful interest in the professional work of Professor Richards and some of her earliest published work associated itself with the mineral industries. She was elected to membership in the American Institute of Mining Engineers, a distinction conferred upon only one other woman. She received the degree of Master of Arts from Vassar College in 1873, and her large circle of friends was greatly pleased by the deserved recognition on the part of Smith College in the conferring upon her of the honorary degree of Doctor of Science, in 1910. She was also for many years a member of the Board of Trustees of Vassar College.

In 1884 Mrs. Richards was appointed instructor in Sanitary Chemistry at the Institute of Technology, a position which she held at the time of her death. For many years she directed the entire instruction in the chemistry of air, water and foods, for chemists, biologists and sanitary engineers, and only relinquished the chemistry of food supplies when the pressure of other affairs made this necessary. Her service as an instructor was helpful and inspiring, and the extent of her personal and financial sacrifice for her pupils and for the increase of the effectiveness of her laboratory will probably never be adequately known or appreciated. She also maintained an extensive private practice in sanitary chemistry for many years and acted in an advisory capacity for a very large number of public and private institutions. Her publications relating to sanitation have been numerous and varied, and she maintained active membership in, and participated in

the meetings of local and national societies dealing with water supplies and public health problems.

All of this would seem a sufficient achievement for even a busy life, but there still remains what may possibly be regarded as the most important aspects of Mrs. Richards' life work, namely, her leadership in matters pertaining to home economics and to the education of women. Preeminently a successful organizer, she gave more and more time and attention in recent years to problems relating to the conservation of human life and energies and the uplift of her fellow beings. With extraordinary energy and tireless activity, she traveled from one end of the country to the other, lecturing, teaching and, when necessary, pleading in behalf of the causes which were so dear to her. In this work she was highly successful, not only in the attainment of immediate benefits, but in the inspiration of others to foster and continue the enterprises which she inaugurated. It is gratifying to note that plans are already on foot to bring together a memorial fund to be known as the Ellen H. Richards Research Fund, the proceeds to be used for the promotion of advanced work in Sanitary Chemistry, in recognition of her labor and self-sacrifice. Her writings upon household economics and kindred topics include numerous books of recognized value, a large number of papers read before gatherings of the most varied character, and many magazine articles.

Her death occurred at her home at Jamaica Plain, after a brief illness. She literally spent the last remnants of her strength in public service, never fully recovering from the strain of her last public speech in behalf of better standards of living.

A powerful leader, a wise teacher, a tireless worker, of sane and kindly judgment, Mrs. Richards has taught and inspired thousands to carry forward the movements which she has inaugurated. Her associates and co-laborers necessarily mourn their loss and miss her leadership, but they will best express their appreciation of her life and its far-reaching influence by increased activity in behalf of those phases of human progress and betterment for which she sacrificed herself so freely.

H. P. TALBOT, '85.

Technology Review, volume 13, pp. 365-373.

SCOPE AND CONTENT NOTE

This collection is assembled from various documents and publications donated or located in the MIT Libraries and in the Institute Archives. It includes both material by Ellen H. Swallow Richards and material about her, including many memorials and tributes. The location of a larger set of Ellen H. Richards correspondence and papers is unknown, although there is documentation of her student years and service to Vassar in the Vassar College Archives. Information about the Women's Laboratory at MIT, 1876-1883, can be found in collection AC 298 in the MIT Institute Archives. Descriptions of mining summer field work with her husband, Robert Richards, can be found in the *MIT Catalog*, in the 1870s and 1880s, and in a collection of his papers, MC 116.

RELATED MATERIAL

MIT Institute Archives and Special Collections, *Women's Laboratory records*, AC 298

MIT Institute Archives and Special Collections, *Robert Richards papers*, MC 116

MIT Institute Archives and Special Collections, book collection

MIT Institute Archives and Special Collections online exhibit

<http://libraries.mit.edu/archives/exhibits/esr/index.html>

MIT Museum, *Photograph Collection*

Massachusetts State Library, *State Board of Health Reports*

Cornell University Library, Division of Rare and Manuscript Collections, *Guide to the American Association of Family and Consumer Sciences records*, collection 6578

Smith College, Sophia Smith Collection, *Ellen Swallow Richards papers*, MS 130

Vassar College Archives and Special Collections, *Ellen Swallow Richards Papers*

Container	Contents
1	Bibliography
1	Copy of B.S. Thesis, Massachusetts Institute of Technology, 1873
1	<p>Presentations and Publications by Ellen H. Swallow Richards</p> <p>1875, "Analysis of Samarskite from a New Locality." Proceedings of the Boston Society of Natural History, vol. 17, pp. 424-428.</p> <p>1878 November, with Alice W. Palmer. "Notes on Antimony Tannate." No. II. <i>American Journal of Science and Arts</i>, vol. 16. (3).</p> <p>1880, "Paper on the Adulterations of Groceries." Report of the Massachusetts State Board of Health, I (Supplement) pp. 55-56.</p> <p>1882, <i>First Lessons in Minerals</i>. Boston.</p> <p>1888 August, "Sanitary Science in the Home." <i>Journal of the Franklin Institute</i>.</p> <p>1889, July, "Domestic Economy in Public Education." Educational monograph published by the New York College for the Training of Teachers, vol. 2, no. 4.</p> <p>1890 August, with Mary Hinman Abel. "The Right Application of Heat to the Conversion of Food Material." paper read at meeting of the American Association for the Advancement of Science.</p> <p>1890 September, with Edwin O. Jordan. "Investigations upon Nitrification and the Nitrifying Organism." Report of the Massachusetts State Board of Health on Water Supply and Sewage, Pt. II, p.864.</p> <p>1890, with Lottie A. Bragg. "The Distribution of Phosphorus and Nitrogen in the Products of Modern Milling." Reprinted from <i>Technology Quarterly</i>, vol. 3, no. 3, p. 246.</p> <p>1890, "The Relation of College Women to Progress in Domestic Science." Paper presented to the Association of Collegiate Alumnae.</p>

Container	Contents
1	<p>Presentations and Publications by Ellen H. Swallow Richards (continued)</p> <p>1890, foreword to <i>The Story of the New England Kitchen</i>, by Mary Hinman Abel. Boston.</p> <p>1891 December, "An Apparatus for Determining the Liability of Oils to Spontaneous Combustion." <i>Technology Quarterly</i>, vol. 4, no. 4, p. 346.</p> <p>1893 October, "Carbon Dioxide as a Measure of the Efficiency of Ventilation." <i>Journal of the American Chemical Society</i>, vol. 15.</p> <p>1893, "Dietaries for Wage-Earners and Their Families." 17th Report of the State Board of Health of New Jersey.</p> <p>1894 April, with Elizabeth Mason. "The Effect of Heat upon the Digestibility of Gluten." Reprinted from <i>Technology Quarterly</i>, vol. 7, no. 1, p. 63</p> <p>1894, with Marion Talbot. "Food as a Factor in Student Life." Chicago: University of Chicago Press.</p> <p>1896 March, with George William Rolfe. "Reduction of Nitrates by Bacteria and Consequent Loss of Nitrogen." <i>Technology Quarterly</i>, vol. 9, no. 1.</p> <p>1897, "Municipal Responsibility for Healthy School-houses." <i>Transactions of the American Public Health Association</i></p> <p>1897, "The Science of Nutrition."</p> <p>1898, "Domestic Science as a Synthetic Study for Girls." <i>Proceedings of the National Educational Association</i>.</p> <p>1898, "The Urgent Need of Sanitary Education in the Public Schools" by Mrs. Ellen H. Richards before the American Public Health Association at a meeting held in Ottawa, September 27-28. <i>Transactions of the American Public Health Association</i>, vol. 24.</p>

Container	Contents
1	<p>Presentations and Publications by Ellen H. Swallow Richards (continued)</p> <p>1899, "University Laboratories in Relation to the Investigation of Public Health Problems and to Commercial Work." <i>Transactions of the American Public Health Association</i>, vol. 25. Columbus, Ohio.</p> <p>1901 September, "The Significance of the Presence and Amount of Carbon Di-oxide in Potable Waters." Proceedings of the Twenty-ninth Annual Meeting, American Public Health Association, Buffalo, N.Y.</p> <p>1901 November, "Notes on the Potable Waters of Mexico." <i>Transactions of the American Institute of Mining Engineers</i>.</p> <p>1902 December, "Alum in Walter. A. H. Low's Modification of the Logwood Test." Reprinted from <i>Technology Quarterly</i>, vol. 15, no. 4.</p> <p>1904 September, with Lily Miller Kendall. "Permanent Standards in Water Analysis." Reprinted from <i>Technology Quarterly</i>, vol. 17, no. 3.</p> <p>1906, "Wanted, A Test for 'Man Power.'" <i>Clarkson Bulletin</i>, vol. 3, no. 3.</p> <p>1906, with Charles W. Moulton. "Ten Years' Experience with Broad Irrigation at Vassar College," read before the Sanitary Section of the Boston Society of Civil Engineers, March 7, 1906. <i>Journal of the Association of Engineering Societies</i>, vol. 36, no. 4.</p> <p>1906, Good Luncheons for Rural Schools without a Kitchen Boston. Whitcomb & Barrows.</p> <p>1907 "Air Supply Examination." <i>Papers and Reports of the American Public Health Association</i>, vol. 32, pt. 2.</p> <p>1908 September, with E. Marion Wade, Royce W. Gilbert, Carl E. Hanson, and James M. Talbot. "Methods of Testing the Efficiency of Ventilation." <i>Technology Quarterly</i>, vol. 21, no. 3.</p>

Container	Contents
1	<p>Publications about Ellen H. Swallow Richards</p> <p>1910 December 31, "Women of the Hour," by Caroline L. Hunt. <i>La Follette's Weekly Magazine</i>, vol. 2, no. 52, cover and pp 10-11.</p> <p>1911 October, Memorial Number, <i>The Journal of Home Economics</i>, vol. III, no 4.</p> <p>1912, "Ellen H. Richards, Scientist, Author, Teacher, Apostle of the Art of Right Living: Life-Sketch for Home Economics Day," by Caroline L. Hunt.</p> <p>1913, The Ellen H. Richards Memorial Home Economics Calendar. American Home Economics Association.</p> <p>1929 June, "In Memory of Ellen H. Richards," <i>Journal of Home Economics</i> vol. 21, no. 6.</p> <p>1933 August, "Values for Which Mrs. Ellen H. Richards Stood," by Alice G. Bryant, read at the Ellen H. Richards Memorial Day, December 2, 1931, at the Massachusetts Institute of Technology Women's Association. <i>The Medical and Professional Women's Journal</i>.</p> <p>1941 April, Announcement of the establishment of the Ellen H. Richards Institute at the Pennsylvania State College</p> <p>1941 April, "The Ellen H. Richards Institute," by Pauline Mack. Reprinted from <i>Journal of Home Economics</i>, vol. 33, no. 4.</p> <p>1945 March, "Ellen H. Richards, 1842-1911." <i>Cenco News Chats</i>, no. 48.</p>
2	Correspondence to Ellen H. Swallow Richards about the proposed Harvard-MIT alliance, December 1904
2	Microfilm of two scrapbooks about the proposed Harvard-MIT alliances of 1897 and 1905
Oversize folder	State Board of Health Map of the State of Massachusetts Showing Normal Chlorine, 1890 (color reproduction)