

British Chemist Henry E. Roscoe's Unintended Contribution to Korean Chemistry in 1907

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ABSTRACT: Chemistry was almost exclusively the product of Western culture until the 20th century, and it was in the early 20th century that chemistry was introduced as a new type of learning within Korea. The work of a British chemist, Henry E. Roscoe, was unintentionally introduced into Korean education in 1907. We briefly explore how chemistry knowledge was accepted in Korea by tracing the publication process and lineage of Hong's *Chemistry Textbook*.

KEYWORDS: General Public, History/Philosophy, Textbooks/Reference Books

How did scientific study of chemistry spread to Korea? We discover one answer to this question by following the publication process of Hong's *Chemistry Textbook*.

■ INPYO HONG'S CHEMISTRY TEXTBOOK

Inpyo Hong was a Korean government scholarship student. He majored in applied chemistry at the Technical School in Japan from 1896 to 1901. He took an active part in teaching at the Korean national school upon his return to Korea after 1901. Hong was a teacher in Nongsanggong hakkyo (a specialized school of manual labor) in 1904, and in 1906, he went to Yukgunmukan hakkyo (a military academy).¹ Given his education, Hong was presumably influenced by Japanese chemistry textbooks. In fact, it seems likely that he translated one of the chemistry textbooks he learned from in Japan into a Korean-language version during the years he taught chemistry.

Among the many microfilms of old books in the Korean Educational Development Institute, we found a book called Hong's *Chemistry Textbook*. We could not find any information about the original text or the origins of the publication, except that the translator was Inpyo Hong. Fortunately, we identified the information about the book's publication through the official Korean catalog of curriculum books.² This *Chemistry Textbook* was not sold commercially, but was only used at Posung School, a private middle school, and was published in 1907. This book described chemical phenomena in regard to everyday life experiences, as well as experimental explanations. Everyday life experiences formed the context for the experiments as well. The textbook explained the 15 nonmetallic elements, 25 metallic elements, and organic chemistry topics, such as carbon compounds, aromatic compounds, and organic acids.

■ TAKAMATSU'S CHEMISTRY TEXTBOOK

At the University of Tsukuba Library in Japan we found a work called *Chemistry Textbook*, Volumes 1 and 2, which was compiled by Toyokichi Takamatsu. This appeared to be the original text that Hong had translated, as the body of Takamatsu's book matched exactly with Hong's version.

Takamatsu was a professor in the Department of Applied Chemistry when the Imperial University opened in March 1886. He had earned a bachelor's degree in science and a doctorate in engineering.

Takamatsu's *Chemistry Textbook*, published by the Japanese Ministry of Education, was intended for a normal school (a term used for educational institutions that trained graduates to become teachers).³ Parts one and two of the first volume were published on February 5, 1890, and April 10, 1891, respectively. The second volume was published on April 23, 1894. It was used in middle schools and normal schools. It was known as the first type of writing format to be juxtaposed horizontally among the Japanese science textbooks, which followed the traditional East Asian scripts that were written vertically.⁴ The following sources were compiled in a list in the introductory remarks of Takamatsu's textbook, published in 1890.

- Roscoe's *Chemistry* (Science Primer)
- Roscoe's *Lessons in Elementary Chemistry*
- Williamson's *Chemistry for Students*
- Gill's *Chemistry for Schools*
- Reynolds's *Experimental Chemistry*
- Remsen's *Introduction to the Study of Chemistry*
- Remsen's *Organic Chemistry*
- Eliot and Storer's *Elementary Manual of Chemistry*
- Clarke's *Elements of Chemistry*
- Kolbe's *Inorganic Chemistry*
- Richter's *Anorganische und Organische Chemie*
- *Journal of Related Chemistry*
- Chemistry lecture notes from the lessons of Professor A. W. Hofmann in the University of Berlin

The contents and formation of Takamatsu's *Chemistry Textbook* were similar to those of Roscoe's. We hypothesized that Takamatsu referred to Roscoe's chemistry due to its foremost listing.

CHEMISTRY, A TEXTBOOK BY HENRY E. ROSCOE

Henry E. Roscoe was a Fellow of the Royal Society. He was a professor of chemistry at Owens College and later at London University.⁵ He knew many of the leading chemists of his day and wrote well about them. His first chair was as Frankland's successor in Manchester, which he held from 1857 until 1885, when he became a member of parliament.⁶ His published books include *Chemistry: Science Primer and Lessons in Elementary Chemistry* (Macmillan and Company). The latter is particularly representative of the textbook at the time.⁷ Roscoe played a leading role in the science popularization movement in England. He made an effort to impart academic knowledge and exploratory science to the general public. Mendeleev wrote that Roscoe justified the application of the periodic law to chemical actuality as the true confirmers of the periodic law.⁸ Roscoe joined with Huxley and Tyndall, who endeavored to popularize science and presented "science lectures for the people", a prevalent movement that was followed by further involvement in the "penny science lecture" in 1866 and *Experiment by Pupil: Series of Shilling Science Primers for the School* in 1869.^{9,10} In the preface of *Lessons in Elementary Chemistry*, Roscoe states:¹¹

I have endeavored to arrange the most important facts and principles of Modern Chemistry in a plain but precise and scientific form, suited to the present requirements of elementary instruction.

We can sense Roscoe's attempt to disseminate knowledge of chemistry by making it accessible, not only to the academic minds but also to the general public so that it would reach the masses.

CONCLUSION

Until the 20th century, the study of science was largely centered in Western cultures. Formal studies of science were introduced and conveyed as "the new learning" in Korea in the early 20th century. However, this new knowledge in Korea was channeled through translated books from China and Japan, and taught by missionaries.

Hong's version was a close translation of Takamatsu's textbook, which was similar to Roscoe's textbook. Hong's *Chemistry Textbook* was published only for educational purposes and used in Posung, a private middle school, beginning in 1907. Therefore, Roscoe's promotion of chemistry with its specific approach to learning, even though unintended, blossomed in the classrooms of a middle school in Korea by way of Japan.

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Notes

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