

Cyril Stanley Smith's Translations of Metallurgical Classics

Martha Goodway

A remarkable contribution of Professor Cyril Stanley Smith was the translation of metallurgical classics into English from several languages – both ancient and modern.

The contributions of Cyril Stanley Smith to the science of nonferrous metallurgy and his historic involvement in the development of the atom bomb are well known. He also was signal in the development of the scholarly field known as the history of technology. Not only did he publish a number of books and papers on the history of metals and took part in founding the Society for the History of Technology (SHOT), he was responsible for more than doubling the number of metallurgical classics given definitive translation into English.

He had not prepared for the role of technical translator. His wife, Alice Kimball Smith, in oral history interviews made for Harvard University related how his interest had been sparked by one of her book catalogues. They married in 1931 and Alice enrolled in Yale University for a PhD in history. She was the only woman in the beginning class. One of her courses was with Wallace Notestein. She recalled that she “won a prize as the ranking first year graduate student in history. It was a hundred dollars to be spent on books if I came back the next year. Wallace Notestein suggested that I might use part of this for what he called a ‘rarish item,’ so I sent for catalogues in English History. But the dramatic effect of that prize was on Cyril’s career. He became fascinated by the book catalogues, found there were old treatises on metallurgy and bought some workshop notes by a sixteenth-century Italian, Vannoccio Biringuccio. He found someone to translate it into English, provided the editorial comment himself, and it was published in a beautifully designed edition by the



Martha Goodway studied metallurgy at MIT and Islamic history at Harvard. As an engineer she worked on the Polaris missile program, atomic testing and the development of transistors before her appointment as metallurgist of the Smithsonian Institution, where she is now emerita. She has served as President of the Historical Metallurgy Society, and is a Fellow of ASM International.

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Yale Press in 1942.” She added, “Cyril was becoming more and more interested in the history of metallurgy and spending more time in the Yale Library’s excellent Rare Book Room. The Depression was partly responsible for that. When men in the mill saw lights on in the labs at odd hours they thought workers there must be paid overtime, so the labs were locked up evenings and weekends. That helped Cyril discover the pleasures of historical research”. Cyril later confessed that he had “no training whatever as an historian. I came into the field simply by natural extension of my professional work as a metallurgist. I owe an immense debt to the Sterling Memorial Library at Yale, which I was able to use on weekends from 1928 to 1942, thanks to the shortened industrial work-week of the depression”.

At the time there were very few metallurgical treatises available in English translation. Among them were some metallurgical subjects reported by Pliny in his *Natural History*, first put into English in 1601 by Dr Philemon Holland. C R Ashbee’s translation of *The Treatises of Benvenuto Cellini on Goldsmithing and Sculpture* appeared in 1888. In 1923 Ross E Douglass and E P Mathewson, who described themselves as having done “many years’ professional work in South America” produced a translation of *El Arte do los Metales* by Alvaro Alonzo Barba, the first such text from the New World. It had been originally published in Madrid in 1640 and was subsequently banned by the Inquisition. Such translations were so uncommon that the *T’ien-Kung K’ai-Wu* of 1587 for example did not appear in English until 1966.

In 1912 President Hoover and his wife, Lou Henry Hoover, published their definitive translation of Agricola’s *De Re Metallica*. In doing so they had worked out a procedure for arriving at an authoritative translation in spite of the problems presented by the oftentimes archaic technical terminology of historical sources. Theirs was a team approach. Lou Henry Hoover, the Latin scholar, produced a provisional translation to English, then President Hoover, a mining engineer, supplied



the modern terminology and the technical commentary that no linguist could be expected to provide. Cyril adopted the same approach, pointing out that “Herbert Hoover’s translation of Agricola’s *De re metallica* was clearly the model for my first historical publication, the *Pyrotechnia* of Vannoccio Biringuccio in 1942.” As President Hoover had done, Cyril left the provisional translation to others, confessing that “Since I am a poor linguist, I have devoted much of my historical labour to the translation of significant sources, working in collaboration with people like Martha Gnudi, Anneliese Sisco and John Hawthorne, who knew their basic languages well and were willing to argue over the technical meaning of every phrase.” Evidently the arguments were fruitful. Books resulting from these collaborations, with Cyril’s insightful commentaries, include the following:

With Martha Teach Gnudi:

The *Pyrotechnia of Vannoccio Biringuccio*, New York 1942; reprinted Cambridge USA 1966, New York 2005.

With Anneliese G Sisco:

Bergwerck- und Probierebüchlein, New York 1949.

Lazarus Ercker’s Treatise on Ores and Assaying, translated from the German edition of 1580, Chicago 1951.

Réaumur’s Memoirs on Iron and Steel, Chicago 1956.

With John Hawthorne:

On Divers Arts: the Treatise of Theophilus, Chicago 1963, reprinted New York 1979.

Mappae Clavicula, A Little Key to the World of Medieval Techniques, Philadelphia 1974.

With Stefan Pluzczewski:

Walenty Rozdzienski, *Officina Ferraria*, a Polish poem of 1612 describing the noble craft of ironwork, edited also by Waclaw Rózanski, Cambridge USA and London 1976.

With Zenryu Shirakawa:

Masuda Tsuna, *KodoZuroku*, Illustrated Book on the Smelting of Copper, Norwalk CN 1983.

Since I am a poor linguist, I have devoted much of my historical labor to the translation of significant sources, working in collaboration with people like Martha Gnudi, Anneliese Sisco and John Hawthorne.. I have sought records of the role of metals in theory and practice anywhere throughout the whole human record, with a most unprofessional disregard for the historian’s usual concentration on one period and one place.

C S Smith



In addition to the above he edited a volume of selected translations, *Sources for the History of the Science of Steel 1532-1786*, Cambridge USA 1968, which includes several further collaborations:

With Anneliese G Sisco:

Extract from Mathurin Jousse, *La Fidelle Ouverture de l'Art de Serrurier*, La Flèche 1627.

With P Boucher:

Pierre Clément Grignon, *On the Metamorphoses of Iron*, Paris 1775.

Louis Bernard Guyton de Morveau, *On the Nature of Steel and Its Proximate Principles*, Paris 1786.

With J P Hickey:

Torbern Bergman, *A Chemical Essay on the Analysis of Iron*, Uppsala 1781.

With his daughter, Anne S Denman:

Charles Auguste Vandermonde, Claude Louis Berthollet, and Gaspard Monge, *On the Different Metallic States of Iron*, Paris 1786.

This is a very large body of work, and would have been enough to justify a lifetime spent solely on the history of technology. What motivated him to such a prodigious output? He gave an explanation, that “By 1935 I had learned for myself the historians’s prime rule, which is the same as the scientist’s, namely to work with real sources and to be fundamentally critical of all secondary works and accepted interpretations.” None of the common assumptions about early technology, neither the dismissive ‘but they could not do that then’ nor the romantic view of ‘secret recipes’ or ‘lost art,’ had any hold on him. He had great respect for our predecessors in the art and science of metallurgy. In these translations he shows us why.

Address for Correspondence

Martha Goodway

Archaeological

Metallurgist Emerita

Smithsonian Institution

MRC 534

Washington DC 20560, USA

Email:goodway@si.edu

