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Bert Hall

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Bref, si on peut reprocher à Gilles Deschênes de ne pas être à jour sur certains aspects de l'historiographie, on ne saurait nier ses connaissances, probablement uniques, sur les moulins à vent du Québec. Il réussit à bien les transmettre et à nous communiquer son enthousiasme. On peut le remercier de cette contribution.

SYLVIE DÉPATIE

Université du Québec à Montréal

***Chemistry and Metallurgy in the Great Empires.* By Fathi Habashi.** (Saint Foy, QC: Métallurgie Extractive Québec, 2009. 236 p., ill. (chiefly col.), maps (chiefly col.). ISBN 978-2-922686-03-6 \$70).

Those who work in materials science, and especially metallurgists, are apt to think that the historical significance of their subject is underappreciated—and they have a point. Few of us bother to reflect on how new alloys make possible everything from jet aircraft to bicycles, and most of us are completely unaware of the intellectual effort that went into the common plastic bags and wrappers that enclose our everyday purchases—to take but two examples. Fathi Habashi, Professor Emeritus of Extractive Metallurgy at Laval University, seems bent on single-handedly redressing this imbalance. Beginning in the 1980s, while continuing to publish in extractive and alloy metallurgy, he launched a series of historical articles on the history of metals, their extraction and refining. In 1994, his *History of Metallurgy* appeared, followed by a parade of other titles in the history of metallurgy, mining and metallurgical education. Few scholars have attained his breadth of knowledge and coverage in the history of our fumbling efforts to understand and control the materials we find in the earth's crust.

Chemistry and Metallurgy in the Great Empires consists mainly of articles Habashi published originally in the *CIM* (Canadian Institute of Mining and Metallurgy) *Bulletin*, supplemented by article-length chapters written specially for this volume and meant to give a degree of unity to the exposition. The book is focused rather tightly on metals and metallurgy; most of the “chemistry” in Habashi's title is in fact, metallurgical in character. The original black-and white illustrations have been replaced by colour plates for the most part. Pagination remains separate, meaning each article (now a chapter) begins anew with page 1; unfortunately, this makes cross-references all but impossible, and the absence of an index compounds the problem. The effect is very choppy, something like reading Wikipedia, but without the hyperlinks.

Whether “Great Empires” constitutes a good framework for any discussion of the history of metals and metallurgy remains an open question. Historians of science and technology for the most part think of their subject as transcending cultural and linguistic boundaries, and although some recent work suggests early ethno-metallurgy may have produced differing results in different times and places, most of Habashi’s topics do not fit that model. The upshot is like trying to understand great and sweeping changes only by reading small-town newspapers focused on the local-interest angle.

The other way the link between empire and metals might be viewed is by trying to account for imperial successes as being based on superior metal-extractive skills; seeing the Spanish New World Empire as based on the mercury amalgamation process for extracting silver, for example. But Habashi really does not try to make such arguments. The result is an encyclopedic survey without any real thematic arguments, a collection of facts, some interesting, some less so, but with few connecting threads.

This is a misfortune, in that one can make case after case for the historical importance of metals and chemicals. Most of us carry “dollars” in our pockets, a linguistic reflection of the late medieval *Thaler* coins made of lead-liquation process silver, a subject Habashi ignores. Likewise, the importance of cast iron cannon firing cast iron cannonballs using gunpowder made from artificially extracted and purified saltpeter seems important enough to merit some ink, but again Habashi pays little or no attention.

In summary, Fathi Habashi’s *Chemistry and Metallurgy in the Great Empires* is both too broadly superficial and simultaneously too tightly focused on small events to give either the specialist or the beginning student much satisfaction. It is useful as a repository of small-scale, detailed bits of historical information, but these are buried in a work whose organization makes the reader have to prospect for even such nuggets of valuable facts.

BERT HALL
University of Toronto