Historical Metallurgy Committee
Fathi Habashi
The Historical Metallurgy Committee of MetSoc

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FOUNDATION OF THE COMMITTEE

- The Historical Metallurgy Committee was founded in 1978 during the mandate of the then CIM President Peter Tarassoff to provide a forum for the Metallurgical Society members interested in the history of metallurgy and to promote the recording of Canadian achievement.
- At that time Tarassoff was Director of Noranda Technology Center at Pointe Claire, Quebec.

One of the first initiatives of the Committee was to sponsor a section in the CIM Bulletin entitled Historical Metallurgy Notes to publish articles on the history of metallurgy.

Phillip J. Mackey of Noranda Research Center was nominated as Committee Chairman.

First Committee meeting

- In early 1979, Phillip J. Mackey contacted potential members of the Committee by calling a meeting at Noranda Headquarters in Toronto.
- The meeting was attended by about 15 persons among whom were Ursula M. Franklin, Norman R. Ball, John E. Dutrizac, Susan Zador, and Fathi Habashi.

Editors of Historical Metallurgy Notes

- In 1981 Mackey delegated editing the Historical Metallurgy Notes to Arthur D. Dunn, a retired metallurgist in Ottawa.
- William M. Williams from McGill University undertook the editorial work in 1982.
- In 1985 Michael L. Wayman from the University of Alberta took over.
Over the years, the history of Canadian metallurgical installation, anniversaries of certain metallurgical events, history of metallurgy in the great empires, biographies and obituaries of distinguished metallurgists and mining engineers, and book reviews were published.

**All That Glitters**

In 1989 a compilation of selected articles from the first ten years of the Historical Metallurgy Notes was edited by Michael L. Wayman and published by the Metallurgical Society as a book under the title *All That Glitters: Readings in Historical Metallurgy*.

- The volume of 200 pages contained 26 articles directly related to Canadian metallurgical history and 17 articles of general interest.
- The title of the book was taken from Shakespeare’s *Merchant of Venice* “All that glitters is not gold”.

**Committee chairpersons**

- Phillip J. Mackey was succeeded in 1982 by Weldon J. Thoburn, Vice President at Hatch Associates in Toronto.
- He was succeeded in 1986 by Susan Zador, Consultant at Bereskin & Parr in Toronto.
- In May 1991 the Board of Directors nominated Fathi Habashi to chair the Historical Metallurgy Committee.

**Historical Metallurgy Lecture**

- I gave the first Historical Metallurgy Lecture at the Conference of Metallurgists in August 1991 in Ottawa.
- It was entitled, “History and the Metallurgy Curriculum” in which I showed the importance of history in teaching metallurgy.

From left: F. Habashi, S. Zador, and P. Tarassoff.

From left: H. McQueen, A. Dunn, J.-P. Drolet, and F. Habashi
Since then the Historical Metallurgy Lecture became a regular feature of the COM [Table 1].

To make sure that the delegates can have the chance to participate without missing the technical sessions it was decided to deliver the lecture during lunch hour.

When this experiment succeeded to attract a large crowd, the Board replaced the lunch box by an open buffet. As a result, the number of participants grew from about 30 to over one hundred.

At the early lectures it was common to see CIM President, CIM Executive Director, and MetSoc President among the audience.

Table 1- Speakers at luncheons

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1991</td>
<td>Ottawa</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>History and the Metallurgy Curriculum</td>
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<td></td>
<td></td>
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<td>Quebec City</td>
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<td>1992</td>
<td>Edmonton</td>
<td>William J. Yurko</td>
<td>Alberta Oil Sands</td>
<td>Alberta Oil Sands</td>
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<td>1993</td>
<td>Quebec City</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>Discovery and Industrialization of the Rare Earths</td>
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<td></td>
<td></td>
<td></td>
<td>Quebec City</td>
<td></td>
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<tr>
<td>1994</td>
<td>Toronto</td>
<td>E.J. Rehder</td>
<td>Former MetSoc President</td>
<td>Archaeology and Metallurgy</td>
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<tr>
<td>1995</td>
<td>Vancouver</td>
<td>Marilyn Mullan</td>
<td>Curator, Britannia Mine</td>
<td>The Story of British Columbia Mine - Britannia</td>
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<td>1996</td>
<td>Montreal</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>The First School of Mines and their Role in Developing the Mineral and Metallurgical Industries</td>
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<td>Quebec City</td>
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<tr>
<td>1997</td>
<td>Sudbury</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>Presentation of 2 historical films with comments:</td>
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<td>Quebec City</td>
<td>- Galaxy of the Elements</td>
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<td>- Mendeleev</td>
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<td>- Gmelin</td>
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<td>1998</td>
<td>Calgary</td>
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<td>Laval University</td>
<td>Zinc - The metal from the East</td>
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<td>1999</td>
<td>Quebec City</td>
<td>Marc Vallières</td>
<td>Laval University</td>
<td>Quebec’s Mineral Industry in Historical Perspective</td>
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<td>2000</td>
<td>Ottawa</td>
<td>John E. Udd</td>
<td>CANMET, Ottawa</td>
<td>A Century of Achievement. The Development of Canada’s Mineral Industry</td>
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<td>Toronto</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>The Seven Metals of Antiquity</td>
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<td>2002</td>
<td>Montreal</td>
<td>Hugh J. McQueen</td>
<td>Concordia University</td>
<td>The Historic Saint Lawrence Bridges</td>
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<td></td>
<td></td>
<td>Montreal</td>
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<td>2003</td>
<td>Vancouver</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>The Social Responsibility of Scientists</td>
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<td>2004</td>
<td>Hamilton</td>
<td>Fathi Habashi</td>
<td>Laval University</td>
<td>An Illustrated History of Metallurgy</td>
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<td>2005</td>
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<td>Hugh J. McQueen</td>
<td>Concordia University</td>
<td>Modern History of Pipe Manufacture</td>
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<td>Montreal</td>
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<td>2006</td>
<td>Montreal</td>
<td>Reginald Auger</td>
<td>Laval University</td>
<td>Martin Frobisher’s Sixteenth Century Mining Venture</td>
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<td>Quebec City</td>
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<tr>
<td>2007</td>
<td>Toronto</td>
<td>W. Joseph Schlitt</td>
<td>President, Hydrometal</td>
<td>The History of Copper</td>
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COMPENDIUM OF HISTORICAL METALLURGY NOTES

► The first act taken by F. Habashi as Chairman was to compile all the articles so far published in the CIM Bulletin in a Compendium to be made available on Internet.

► Fran Ballard at CIM office in Montreal undertook this effort and the Compendium was published in 1992 and is being updated regularly on the web site: http://www.wepapers.com/Papers/51113/HISTORICAL_METALLURGY_NOTES

► I also found that since most of the articles were written by myself then there was no need to have another person acting as editor and the editorial staff of CIM in Montreal was good enough to fulfill this job.

LIBRARY OF THE SEMINAR OF QUEBEC

■ In April 1993 I participated in a committee to evaluate the collection of the rare books of the Seminaire de Quebec that dates back from 1678.

■ As a result of the recommendations submitted to the Government of Quebec the Seminaire obtained a subvention of $ 1 050 000 to upgrade the Library.

■ Now the Library is an excellent place for rare books that includes original editions of famous metallurgy books such as an original copy of the Latin edition of Agricola’s De Re Metallica first published in 1556 and many others.

■ A selection of the books were published by the writer in Chemistry in Canada in 1975 and a shortened version in CIM Bulletin in 1982.
HISTORY OF METALLURGY

In 1994 I proposed to the Board of Directors to edit a book to be entitled *History of Metallurgy* composed of articles selected from the four-volume comprehensive work *History of Technology* published in the 1950s by Oxford University Press and to publish it through CIM. The proposal was not approved on the basis of financial risk. As a result, I got permission from Oxford University Press and had the book published on my own in the same year and it received wide acceptance.

FORGES SAINT MAURICE

Location of Forges Saint Maurice
The only metallurgical operation in New France and the first in Canada was the Forges du Saint-Maurice located on the bank of Saint Maurice River near Trois Rivières, half way between Québec City and Montréal.

The Forges operated for a century and half from 1733 to 1883.

In 1973 the Government of Québec transferred administration of the site to the Federal Government so that it could be developed as a national historic park for Canada’s first metallurgical operation. Immediately thereafter, archaeologists excavated the deserted region.

The artifacts they unearthed were cleaned and prepared for use in interpreting the history of the Forges.

I visited the site in 1973 and collected few slag samples, iron objects, and ore lumps to show to my students at Laval University.

A display window was devoted for this collection to enhance the importance of history among young people.

Later, when the site was developed and became accessible to visitors I took my students for a visit.

A blast furnace model (complete with water wheel and air bellows operated by a water current) has been constructed to explain to visitors how iron was produced two hundred years ago.
Forges Saint Maurice

Exhibition

On the initiative of the Historical Metallurgy Committee, an exhibition composed of 10 large panels was borrowed from Parks Canada and displayed during the Conference of Metallurgists in 1994 in Toronto. After the conference it was exposed at the Department of Mining and Metallurgy at Laval University.

From left: Dean André Cardinal
**Industrial Heritage Landmark**

Again at the initiative of the Historical Metallurgy Committee, the Canadian Institute of Mining, Metallurgy, and Petroleum recognized in 1996 the Forges Saint Maurice as a Canadian Industrial Heritage Landmark. A ceremony at the Forges was held and plaque was dedicated to Parks Canada. The ceremony was part of the Conference of Metallurgists that was held in Montreal.

**CHEMICAL HERITAGE FOUNDATION**

- In September 1979 in Washington, DC, I witnessed the creation of a Center for the History of Chemistry to collect and preserve material related to the history of chemistry as proposed by the Chairman of the History of Chemistry Division of the American Chemical Society.
- The Center was established in January 1982 by the American Chemical Society and the University of Pennsylvania in Philadelphia, and was supported by an advisory board consisting of academic and industrial leaders in the chemical community and by a Council of Friends.
- The immediate goal of the Center was to locate, catalog, preserve, publicize, and make available the historical records that illuminate the development of chemistry, chemical engineering, and the chemical industry.
- In 1984, the American Institute of Chemical Engineers joined as a partner and this was followed later by many other organizations.
- In 1987, the Center received a $2 million challenge grant from the Arnold and Mabel Beckman Foundation to be matched 1 to 1.
- It was matched in 1988 with the help of the American Chemical Society. Arnold Beckman who invented the electronic pH meter, is well known to chemists.
- Later other donations followed, e.g., $6 million from Donald F. Othmer.
- In the same year, the Chemists’ Club in New York donated 40 000 volumes to the library.
- This was immediately followed by numerous donations of books of historical interest. In the summer of 1991, the National Foundation for History of Chemistry changed its name to the Chemical Heritage Foundation.

**A model for Canada**

- The Foundation has demonstrated that it has an important role to play in documenting and interpreting the human achievements of the chemical sciences and industries.
- It is evident that the past must be preserved, deployed, and made known.
- It is time that a Canadian Mineral Heritage Foundation be created. Philanthropy, efficiency, and devotion can bring Canadian mineral history to life.

Chemistry is Electric

- In 1997 the Foundation created an exhibition entitled “Chemistry is Electric” to celebrate 200 years the discovery of electric current by Alessandro Volta.
- The exhibition was composed of 12 panels 100 x 75 cm each. They were borrowed and presented at the Conference of Metallurgists at Hilton Hotel in Quebec City, August 22-24, 1999.
- The exhibit then moved to the Department of Mining and Metallurgy at Laval University August 25 and 26 before returning it to Philadelphia.
- A booklet with the same title was obtained from the Foundation and displayed at the meetings.
- The panels discussed the kite experiment of Benjamin Franklin, the first battery by Volta, the links between electricity and chemistry established by Humphry Davy, then Faraday’s electrolytic laws.
- Other topics included were: electroplating and electrowinning, the production of aluminum, the production of chlorine from brine, the electric arc furnace, corrosion and corrosion prevention, batteries and fuel cells, semiconductors and superconductors, and finally a panel discussed biology and medicine.
- The exhibition had a high educational value from the historical point of view.

CULTURAL HERITAGE IN GEOCIENCES, MINING, METALLURGY, AND ARCHAEOLOGY

- At the initiative of the Historical Metallurgy Committee, the Ninth International Conference on Cultural Heritage in Geosciences, Mining, Metallurgy, and Archaeology took place at Laval University in September 2007.
- An excursion was organized to Forges Saint Maurice.
- The proceedings were edited by R. Auger, L. Turgeon, and F. Habashi, and published by Centre interuniversitaire d'études sur les lettres, les arts et les traditions, known as CELAT, Université Laval.

Cultural Heritage Symposium. From left: Donata Brianta [Italy], Ezio Vaccari [Italy], Fathi Habashi, Christopher Hauser [Austria]
In 1997 the chairman presented a paper at the Canadian Science and Technology Historical Association in Kingston entitled, “The Historical Metallurgy Committee of the Canadian Institute of Mining, Metallurgy, and Petroleum”. It was published by the Engineering Institute of Canada, as Working Paper 4/1997, pp. 18–28.

At the initiative of the Historical Metallurgy Committee, the 16th Conference of the Canadian Science and Technology Historical Association was held September 25-27, 2009 at Laval University in Quebec City. The meeting was hosted jointly by the Institute for Cultural Heritage and by the Department of Mining, Metallurgical, and Materials Engineering, both at Laval University.

The Conference Program Committee included papers on general subjects relating to the history of science, technology, and medicine in Canada. I presented a paper entitled, “The Beginning of Metallurgical Research in Canada” and I launched the book Chemistry and Metallurgy in the Great Empires.
HISTORY OF CIM

On the occasion of the 100th anniversary of CIM, Peter Tarassoff convened the chairman of the Historical Metallurgy Committee and Jean-Paul Drolet Past President of CIM and few other senior members of CIM for a meeting at CIM Headquarters in Montreal in 1997 to plan for publishing a book on the history of CIM. A professional historian was hired and the book was carefully examined by the chairman during the preparation of the manuscript. “Pride and Vision. Institute of Mining, Metallurgy, and Petroleum 1898–1998, by E. Tina Crossfield,” was published by CIM in 1998.

HISTORY OF THE METALLURGICAL SOCIETY

  - “The Conference of Metallurgists of Canada — 50 Years Old,” pp. 3–17

PROMOTING HISTORY OF TECHNOLOGY IN EDUCATION

- I suggested to the President of the Metallurgical Society in 2008 that the CIM should recommend to mining, metallurgy, and geology professors in Canadian Universities to include historical facts in their lectures.
- This will help students get oriented historically in their profession.
- There is nothing original in this proposal -- the American Chemical Society has already, in 1983, recommended in its Guidelines for Undergraduate Education that courses in chemistry should incorporate a historical perspective as well as references to current developments.
- Unfortunately no response was received.

BIOGRAPHICAL DICTIONARY OF CANADIAN METALLURGISTS

- As Chairman, I proposed to the members of the Committee in February 2008 to consider editing a Biographical Dictionary of Canadian Metallurgists.
- Noting that the multi-volume work Canadian Biography is mainly about statesmen, military personnel, politicians, and some famous medical doctors, but hardly mining and metallurgical engineers are mentioned. I therefore, thought that CIM was the organism that should care about this problem.
- Few responses were received but they were positive.
- However, the project did not move further at the level of MetSoc Board of Directors.
- It is believed that this project is necessary to keep record of the history Canadian metallurgical industry through identifying the people who built it.
- In the US there is the comprehensive multi-volume work entitled American Men and Women of Science is certainly a model for our project but devoted only to metallurgists.
► Unfortunately, there is a flaw in this collection: when a person passes away he or she is removed from the books hence it is not possible to know the date of death of an individual.
► The proposed dictionary is thought to be not about contemporary individuals.

SUMMARY

► The Historical Metallurgy Committee strived during its short existence to promote the importance of history of mining and metallurgy through lectures, publications, and exhibits.
► To have an insight into the future we should also look at the past.
► I was chairman for 22 years from 1991 to 2012.
► In 2013 MetSoc President asked me to stay for another year till he finds a new Chairman.
► End of 2013 Dr. Sam Marcuson accepted to take over.
► The Romans honoured one of their gods named Janus for whom the month of January is named.
► He was represented by a head with two faces back to back: one looking at the past and the other looking to the future

“Auch Geschichte einer Wissenschaft ist Wissenschaft selbst”
Goethe