



## **From the Editor**

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hierarchical links from an individual researcher to their PhD supervisor, chemists will be able to trace their chemical heritage through history to the forefathers of modern chemistry. *Chemistry Connections* will map how great scientists have transferred their findings and knowledge to their successors perpetuating the chemical sciences. With the International Year of Chemistry taking place in 2011, this project is an ideal opportunity to preserve and promote the story of chemistry.

*Chemistry Connections* will be constructed from a series of records each representing an individual researcher. The database will be hosted by *MyRSC*, the RSC's online professional networking tool. Whilst *Chemistry Connections* will be accessible to anyone interested in the history of chemistry, only those who are members of *MyRSC* will be able to create and edit records. Connecting the database to *MyRSC* will also enable the collected records to serve an additional purpose as a focused networking tool. In the longer term, we envisage that *Chemistry Connections* will provide a useful resource for aspiring scientists, encouraging career development and further education.

To ensure *Chemistry Connections* is a success from the start we wish to

*You should get a screen that says “Welcome Historical Group”. Click on the “Proceed to requested content option”, and the article should download.’*

Alan Dronsfield  
University of Derby

## **ROYAL SOCIETY OF CHEMISTRY HISTORICAL GROUP**

### **RSCHG Meetings: 2010 and 2011**

**2010:** We had two meetings, one so well attended that we had to turn away non-RSCHG members, and another joint meeting which was also well attended.

**The Rise and Fall of ICI:** Friday 19 March 2010; a one-day meeting at Burlington House organised by Jack Betteridge and Bill Griffith. For a report see the August 2010 *N(A)* 8 (o) -166.91800 0 0 m BT 41 0 0 41g400.58 (a) -7

Please keep in mind the following criteria for nominees:

The prize may be given to either (1) a monograph that contributes to our bibliographical knowledge of chemistry and related sciences technologies, or industries, in the tradition inaugurated by Henry Carrington Bolton and

**The European Association for Chemical and Molecular Sciences**  
(EuCheMS)

For more information, see: <http://www.euchem.org/>

**The Society for the History of Alchemy and Chemistry**

[www.ambix.org](http://www.ambix.org)

For details of how to join the Society, please see the on-line form (follow the links from the main page), or contact the Treasurer and Membership Secretary: John Perkins, 19 Nethercote Road, Tackley, Oxfordshire, OX5 3AW. ([shacperkins@googlemail.com](mailto:shacperkins@googlemail.com)).

**The Society for the Propagation of the Music of the Chemist**







Freund's approach to teaching chemistry was certainly experimentally based, though she had little patience with Henry Armstrong's heuristic approach that pupils should discover chemistry like front-line researchers. According to Freund: "[This] would have us believe that in the course of some couple of hours' work the average pupil can definitely correlate an observed effect with its cause, can discover the nature of a chemical relationship, or can prove a law" (6).



By permission of Newnham College Archives, Cambridge

Instead, Freund advocated the approach favoured by Wilhelm Ostwald in which: "The main facts of chemistry are dealt with in the form of a dialogue between a teacher and a pupil. The method is heuristic in its truest ... sense, but there is ... no pretence about what the pupil really accomplishes for himself and what is done for him. Thus in the investigation of the effect of varying pressure on the volume of a definite quantity of air ... the results [are] recorded in tabular form:

*Pupil:* What is the use of that?

*Teacher:* I want to show you *how to discover a law of nature*. And when, after a number of explanations ... and trials, the relation  $pV = \text{constant}$  has been formulated:

*Teacher:* Right. Now you ha

course a hoax. In 1907 she urged them to go to the lab to study again the lives of certain chemists. They found large boxes of lovely chocolates ... with a different life-history and picture of some famous chemist in each. In my year we were requested to go and make a further study of the 'Periodic Table of the Elements.' We found a very large board with the Table set out. The divisions across and down were made with Edinburgh Rock, numbers were made of chocolate, and the elements were iced cakes each showing its name

(This article first appeared in *Education in Chemistry* in September 2004 and is reproduced by kind permission of the authors and the publishing department of the RSC.)

Thus, object B was possibly our oldest specimen – being a natural crystalline sample of salt, the like of which man could have noticed and used from distant antiquity and wondered what could account

Some of those discoveries include *Viagra*, the drug used to treat erectile dysfunction; *Istin*, the world's leading treatment for hypertension and angina; *Diflucan* and *Vfend*, which treat life-threatening systemic fungal infections and, more recently, *CelsSenti*, a promising advance in the war against Aids/HIV, as well as *Dectomax*, which treats parasites in cattle.

In making the award, the RSC said: "Such discoveries are only possible by ensuring the highest level of research and development excellence. The long and consistent track record of the Pfizer, Sandwich, site is fully worthy of recognition under the Royal Society of Chemistry Chemical Landmark Award Scheme." Dr Simon Campbell, who only a week earlier had been designated as thirty-first in the *Times*' "Eureka list of the 100 most important people in science", is a former research leader at Pfizer and a past president of the RSC. He said: "I am very pleased Pfizer has received such a well deserved Landmark. This award recognises the innovation and dedication of thousands of Pfizer scientists in the discovery and development of

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Their findings were published in *Materials Research Bulletin* 1980, **15**, 783-789. The report concluded with the statement that “Further characteristics of the intrinsic and extrinsic properties of this new system are being made.” Little did they envisage that thirty years later that almost everyone from five years upwards would have an application of their work in their pockets: the ubiquitous mobile phone, powered by a rechargeable lithium-ion battery.

John B. Goodenough received a B.S. in Mathematics from Yale University in 1944 and a PhD in Physics in 1952 from the University of Chicago. During his early career he was a research scientist at MIT’s Lincoln Laboratory as part of an interdisciplinary team developing random access magnetic memory. During the late 1970s and early 80s he continued his career at the Inorganic Chemical Laboratory, Oxford, where he identified and developed  $\text{Li}_x\text{CoO}_2$  as the cathode material of choice for the lithium-ion rechargeable battery. Although the Sony Corporation is responsible for the commercialisation of the device (first marketed in 1991) he is widely credited for its original identification and development. At present he is working at the University of Texas, Austin, where he is developing a new class of iron phosphate materials to replace the more costly cobalt components in rechargeable batteries.

The Historical Group was represented at the Award by Bill Griffith and Alan Dronsfield.

Alan Dronsfield

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paper world still play in today's electronic environment. Real and potential changes concerning e-journals, e-books, and databases, are driven by opportunities provided by technology, and by changed user perception and behaviour. Compared to other sciences, however, the present system of chemical literature and its major players (such as abstraction services) are rather conservative, and dominated by commercial interests.

After lunch in the Chemistry Centre (during which time Prof. David Phillips, the new RSC President, welcomed guests), the sessions continued with Diana Leitch as chairman.

**Dr Phil McHale** (Executive Director, Enterprise Information, CambridgeSoft Corporation, USA); *Chemical Structures*

Representations of chemical structures, whether hand-drawn on a napkin, displayed on a screen or printed in a journal or patent, provide a *lingua franca* for chemists, and the language of chemical structures has evolved to keep pace with our increasing understanding of the nature of bonds and the spatial arrangements of atoms within molecules. Some early dialects such as linear formulae only conveyed partial information, and the apparently complete descriptions afforded by linear notations were reserved for the cognoscenti and spoken by very few practising chemists. The talk surveyed this evolution in handling structures and illustrated how parallel developments in structural representation, technology (graphics t

within our grasp. There is a lot of it – from a connected world in which there are more chemists alive today creating more data than ever existed in history. Capturing, processing, semantifying, searching and displaying the information we need – on demand, will need technology, ideas and new approaches to open information. The problems to solve are both technical and social. Future chemists will view chemistry differently – as we view the alchemists as distinct in their objectives and philosophy compared to today’s scientists. The next generation of chemical tools will need to better reflect the experimental data they attempt to capture, and the abstractions made in today’s systems will disappear as computer and human evolution converges.

A lively discussion followed. Diana then brought the meeting to a close and thanked all the speakers for an excellent series of presentations. Prof. Alan Dronsfield (University of Derby and Chairman of the RSCHG) thanked Diana for all the tireless work she had put into a very rewarding day. The meeting ended at 17.15.

Bill Griffith

## **SHAC Anniversary Meeting**

On 19 November 2010 the Society for the History of Alchemy and Chemistry (SHAC) held a meeting at the Royal Institution to celebrate the seventy-fifth anniversary of the founding of the Society. Around seventy people attended the meeting not only from the UK but from as far afield as Montreal, Norway, Germany, Italy and the USA. It was a wonderful occasion to meet up with colleagues from past SHAC, RSCHG and EuCheMS Working Party on History of Chemistry meetings and from the Chemical Heritage Foundation.

The afternoon session was based around the theme “The History of the History of Chemistry.” Papers were given by Bill Brock (University of Leicester) on “Exploring early modern chymistry: the first decade of the Society for the History of Alchemy and Chemistry” which contained some fascinating revelations from the Society’s archives, which have recently been deposited at the Museum of the History of Science in Oxford. Frank James (Royal Institution) then spoke on “The Two Cultures and the history of chemistry.” Marcos Martínón-Torres (University College London) spoke on “Recent Developments in the history of alchemy.” The final paper in this session was by Marco Beretta (University of Bologna) on “The changing role of history in the identity of continental chemistry.”

After tea, Hasok Chang (University of Cambridge) chaired a panel discussion with Maurice Crosland (University of Kent), David Knight (University of Durham) and Colin Russell (Open University) entitled “The Good Old Days?” Following a reception in the Royal InstitutionMuseum,





The work presented and discussed at each annual conference will provide the opportunity to explore and compare (both geographically and



**Hazardous Chemicals: Agents of Risk and Change (1800-2000)**

Conveners: Deutsches Museum Research Institute; Department of History, Maastricht University; and Rachel Carson Center for Environment and Society

Location: Deutsches Museum, Munich, Germany

Date: 27-29 April 2012

The 7<sup>th</sup> Laboratory History Conference will be organized in Leuven (Belgium) from 6-8 June 2011. This conference is the first Laboratory History Conference to be staged in Europe. Earlier conferences have been organized in Baltimore (2009) and Brookhaven (2010). Host of the conference is the *Research Unit Cultural History after 1750* at K.U. Leuven (<http://www.arts.kuleuven.be/culturalhistory/>).

The aim of the conference is to investigate the history of the modern laboratory in relation to its institutional environment, ranging over national styles of research, different disciplines and both formal and informal functions. We welcome contributions that address such topics as the early modern laboratory; the laboratory in the colonial and developing world; field stations, observatories, research vessels and other non-traditional laboratories; the practice of testing, measuring and quality control; biomedical laboratories and clinics; virtual laboratories and the cultural representation of the laboratory. We are also interested in papers that discuss strategies for documenting the history of the laboratory, such as oral sources, archives, photography, and 'born digital' records.

The deadline for papers has already passed on 15 January 2011. Acceptance of the papers will be announced in early February.

For further information please contact Prof. Geert Vanpaemel or Eline Van Assche at [labhist7@arts.kuleuven.be](mailto:labhist7@arts.kuleuven.be).

**Renewing the Heritage of Chemistry in the 21<sup>st</sup> Century: Conversations on the Preservation, Presentation and Utilization of Sources, Sites and Artefacts**

**A Symposium of the Commission on the History of Modern Chemistry (CHMC) [1] in Conjunction with the IUPAC-UNESCO International Year of Chemistry, 2011**

We invite all those interested in the heritage of chemistry in the twentieth and twenty-first centuries, including historians, chemists, archivists, museum curators, librarians, and industrial archaeologists, to join us in Paris on 21-24

By 20 February submitters will receive notification by email as to the committee's decisions.

**Symposium costs:** Registration fees: 200 Euros (including a reception on the evening of 21 June, and lunches on 22 and 23 June). **The conference dinner** on the evening of Thursday, 23 June, will be paid for separately (cost to be determined).

Further information and particulars about registration and methods of