

# Chemical Intelligence

Newsletter of The Society for the History of Alchemy and Chemistry  
No. 7 May 2012

**Ambix** celebrates its 75th anniversary this year, and major changes are afoot. In recent years, the history of alchemy and chemistry has gone from strength to strength, as evidenced by an increasing number of scholarly and public events; of new graduate students entering the field; and a steady increase in membership of SHAC. In this issue, a report by the first SHAC/CHF Rumford Fellow, the launch of the new Forum for the History of the Chemical Sciences, and the opening of a new Science Museum exhibition on alchemy all testify to the health of our field.

At 75, *Ambix* is poised to take advantage of these promising developments. From 2013, the journal will be published quarterly, allowing *Ambix* to showcase more of the high quality work currently being presented at academic meetings, and flowing from new research projects. An editorial change of guard will also see both *Ambix* and *Chemical Intelligence* enter 2013 with new Editors, new perspectives, and new chemistry. More details in section 6.1, below.

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## 1. Calendar

### 1.1 SHAC meetings

3 July            **SHAC Council Meeting**  
Birkbeck College, London

6–7 July        **SHAC General Meeting (Summer):**  
**'Sites of Chemistry in the Nineteenth Century'**  
*Institute for the History of Medicine and Science 'López Piñero', Valencia, Spain*

This is the second conference of the project *Sites of Chemistry, 1600–2000*, which deals with the multitude of sites, spaces and places where chemistry has been practiced since the beginning of the seventeenth century. It is part of a series of four annual conferences each devoted to a particular century. A final conference will be held in early 2015 to explore themes and developments over the whole period and on a broader comparative scale.

The focus of this second conference is on the variety of physical sites where chemistry was practiced in the nineteenth century. The main purpose is to analyze: first, who was practising chemistry in a particular site, where, how,

to what ends, and the physical, social, cultural and economic organization of these sites; and second, the wider social, economic, political and cultural contexts for the practice of chemistry through detailed examination of chemists' interactions, in and around these sites, with other actors.

There will be five sessions and papers will be available on the conference website from 31 May 2012.

### **Friday 6 July**

#### Session 1: Sites of expertise

- José Bertomeu (Spain), 'Courts and laboratories: Mateu Orfila (1787–1853) and nineteenth-century French toxicology'
- Darryl Brock (USA), 'The Confederate States Ordnance Laboratory: nitre, nationhood and sites of grey chemistry'
- Peter Morris (UK), 'Neither academic fish nor industrial fowl: the Laboratory of the UK Government Chemist at the end of the nineteenth century'
- Sacha Tomic (France) & Ximo Guillem (Spain), 'New sites for food quality surveillance in European centres and peripheries'

#### Session 2: Technical sites

- Anna Simmons (UK), 'Operators, ointments and ovens: the laboratories at Apothecaries' Hall, London, in the nineteenth century'
- Nicolas Coupain (Belgium), 'Sites of chemistry within the Solvay multinational group, 1860–1914'
- Muriel Le Roux (France), 'From science to industry: the sites of aluminium during the 19<sup>th</sup> century in France'
- Peter Reed (UK), 'Widnes: iconic chemical town and fit for nothing else?'

#### Session 3: Spatial interactions between teaching and research

- William Brock (UK), 'British school chemistry laboratories, 1850–1902'
- Christine Nawa (Germany), 'A refuge for inorganic chemistry: Bunsen's Heidelberg laboratory'
- Peter Ramberg (USA), 'Chemical research and instruction in Zürich, 1833–1872'
- Catherine Jackson (UK), 'Emil Fischer and the methodical production of genius'
- Catherine Kounelis (France), 'A municipal school for the teaching of chemistry: the Ecole de Physique et de Chimie Industrielles, in the shadow of the Pantheon'

### **Saturday 7 July**

#### Session 4: Sites in transit

- Roy MacLeod (Australia), 'Chemical colonialism and colonial chemistry: chemical sites and spaces in Australia, 1840–1914'
- Brigitte Van Tiggelen (Belgium), 'Implementing German laboratories in Belgium, 1861–1893'
- Danielle Fauque (France), 'The laboratories of chemistry in the New Sorbonne, Paris (1894)'

- Isabel Malaquias (Portugal), 'A place for chemistry in nineteenth-century Portuguese secondary schools education'

Session 5: Polycentric sites and the circulation of knowledge

- Leslie Tomory (Canada), 'Sites and audiences for William Henry's research into inflammable air, 1804–1821'
- Jenene Wiedemer (USA), 'Laughing gas: dislocating experiment and demonstration in nineteenth-century America'
- Ernst Homburg (Netherlands), 'Chemistry for the Working Class: European initiatives, 1800–1850'
- Luigi Cerruti (Italy), "'The laboratory is the most poetic of all Italy": Stanislao Canizzaro in Alessandria, 1851–1855'

Further information, including a registration form, is available on the website, [www.sitesofchemistry.org](http://www.sitesofchemistry.org).

8 December **SHAC General Meeting (Autumn) and AGM: 'What's the Matter? The Material Culture of Chemistry'**  
*Science Museum, London*

This day of talks, discussion and guided tours will explore the material aspects of the history of alchemy and chemistry. It includes tours of the Science Museum exhibitions 'Signs, Secrets, Symbols: An Illustrated Guide to Alchemy' and 'James Watt and our World.'

The SHAC Annual General Meeting will also take place at this event. The full programme will appear in the November issue of *Chemical Intelligence*.

## 1.2 SHAC-supported events

Summer 2012 **AD HOC: History of Chemistry Reading Group**

AD HOC started life in London in 2004 as a monthly reading and discussion group, organised by Hasok Chang. Parallel series of meetings are held at UCL and Cambridge. While our main focus is on history, we also pay attention to philosophical, sociological, public and educational dimensions of chemistry. Over the past years our meetings have been attended by a variety of scholars, ranging from advanced undergraduates to teaching staff in both science studies and chemistry, and often attracting visitors from other parts of the UK and abroad. Travel bursaries are also available for student participants. For more information, including the programme and details of readings, please visit our website, [www.hps.cam.ac.uk/adhoc](http://www.hps.cam.ac.uk/adhoc). To join the mailing list, please contact Stephanie Seavers, at [stephanie.seavers.09@ucl.ac.uk](mailto:stephanie.seavers.09@ucl.ac.uk).

### AD HOC (Cambridge)

*5pm–6.30pm (Mondays, fortnightly during term). Department of History and Philosophy of Science, Free School Lane, Cambridge CB2 3RH*

14 May 'Salt chemistry and early modern natural history'  
Anna Marie Roos (University of Oxford)

28 May 'White lead: the material culture of an "alchemical" pigment'  
Spike Bucklow (Hamilton Kerr Institute, Cambridge)

- 11 June 'Dealing with laboratories'  
Robert Anderson (Clare Hall, Cambridge)
- AD HOC (London)**  
*6pm–7.30pm (Tuesdays, monthly). Department of Science and Technology Studies, University College London, 22 Gordon Square, London, WC1E 6BT*
- 15 May 'Signs, Secrets, Symbols: An Illustrated Guide to Alchemy'  
*Science Museum, London*
- A visit to the new alchemy exhibition at the Science Museum. Includes a guided tour and discussion with the curatorial team and exhibition consultant, Jennifer Rampling (Cambridge). Details of the start time and meeting point will be circulated via the AD HOC mailing list.
- AD HOC London will also meet on 5 June, 3 July, 31 July and 4 September.
- February–  
May 2012 **Oxford Seminar in the History of Chemistry**  
*3pm–5pm. Various venues (see below)*
- The seminar is supported by the Maison Française d'Oxford, Oxford University History Faculty, the Centre for the History of Medicine, Oxford Brookes University and SHAC.
- 2 May 'Chemistry in Oxford at the end of the 17th Century'  
*History Faculty, George Street, Oxford, UK*
- Anna Marie Roos (Oxford University), 'The Learned Dr Plot (1640–1696), Philosophical Wine, and the Oxford Philosophical Society'
  - Marcos Martín-Torres (UCL), 'Doctor Plot's Pots: an Archaeological Insight into the Ashmolean Officina Chymica'
- 30 May 'Chemical Correspondences: Joseph Black and Michael Faraday'  
*History Faculty, George Street, Oxford*
- Robert Anderson (Clare Hall, Cambridge) and Frank James (Royal Institution, London), the editors of the letters of Black and Faraday respectively, will explore the chemical networks that can be reconstructed from their letters.
- 13 July '**Beyond Transmutation: The Goals of Early Modern Alchemy**'  
*9am–11.45am. Three Societies Meeting, Philadelphia, USA*
- SHAC-sponsored panel. For full details, see the entry for the Three Societies Meeting in section 1.3, below.
- 24 November '**Academic Chemistry and Artisanal Practices, 1600–1800**'  
*Maison Française d'Oxford, 2–10 Norham Road, Oxford, UK*
- This one-day colloquium will explore the reciprocal relationships between artisanal practices and chemistry: both the importance of artisanal practices for the construction of chemistry as a discipline and, conversely, the interactions between academic chemists, artisans and entrepreneurs in bringing about innovation and technological change. The discussions will centre on the work of Ursula Klein (Max Planck Institute, Berlin), who will present a paper, and will include contributions from Cesare Pastorino (Newton

Project, University of Sussex), Marie Thebaud-Sorger (École des hautes études en sciences sociales, Paris) and John Christie (Oxford).

### 1.3 Other activities worldwide

- May 2012     **Chemical Heritage Foundation Brown Bag Lectures**  
*12pm–1pm. Chemical Heritage Foundation, Philadelphia, USA*
- Brown Bag Lectures (BBLs) are a series of weekly, informal talks on the history of chemistry or related subjects, including the history and social studies of science, technology, and medicine. Based on original research (sometimes still in progress), these talks are given by local scholars for an audience of CHF staff and fellows and interested members of the public. The Brown Bag Lecture Series is a project of the Beckman Center for the History of Chemistry and the Othmer Library of Chemical History.
- 8 May        Benjamin Gross (CHF), 'Crystal Clear, Tritan Tough: A Case Study in Polymer Development'
- 23 May       **Chemical Heritage Foundation Fellow in Focus Lecture**  
*6pm. Chemical Heritage Foundation, Philadelphia, USA*
- Catherine Jackson (CHF), 'Beyond Genius, Before Theory: Recovering the Lost World of Practice in 19th-Century Chemistry'
- 2 May         **Memosciences: Programme Eléments d'histoire de la chimie: 'L'expérience dans les sciences et techniques médiévales'**  
*2pm–5pm. Mons, Grands Amphithéâtres, Belgium*
- Isabelle Draelants (CNRS, Univ. Nancy F), 'Le rapport à l'expérience dans les encyclopédies médiévales'
  - Nicolas Thomas (INRAP, Université Paris 1, F), 'Archéologie expérimentale: fondre le métal comme au moyen âge'
- 21–24 June 2012     **8th STEP (Science and Technology in the European Periphery) Meeting**  
*Mon-Repos Palace, Corfu (Greece)*
- The 8th STEP meeting is organized by the Philosophy and History of Science Department of the National and Kapodistrian University of Athens. Papers will be pre-circulated 40 days before the start of the meeting. Talks at the meeting will be short (10 minutes) and present only an outline of the argument developed in the pre-circulated paper in order to devote most of the time for commentary and discussion.
- Further details, including the programme, are available at the conference website: [http://step2012.phs.uoa.gr/step\\_2012.html](http://step2012.phs.uoa.gr/step_2012.html).
- 28–29 June     **Seventh UK Integrated HPS Workshop: 'History and Philosophy of the Sciences. The many ways of integrating HPS'**  
*Gavin De Beer Lecture Theatre, Anatomy Building, Gower Street, London WC1E 6BT*

This two-day workshop will investigate ways of integrating the history and philosophy of science, including a panel on 'History and Philosophy of Chemistry.' Organised by Michela Massimi and Chiara Ambrosio.

More information at the workshop website:

[http://www.ucl.ac.uk/sts/engage\\_academics/conferences/ihipsw2012](http://www.ucl.ac.uk/sts/engage_academics/conferences/ihipsw2012)

11–14 July  
2012

**Three Societies Meeting:**

**Seventh Joint Meeting of the BSHS, CSHPS, and HSS**

*Houston Hall, University of Pennsylvania, Philadelphia, USA*

The programme is now available for the 7th Joint Meeting of the History of Science Society, the British Society for History of Science, and the Canadian Society for the History and Philosophy of Science. In addition to many individual papers of interest, the programme includes four panels dedicated to the history of alchemy and chemistry:

**'Flows of Chemical Knowledge'**

*Thursday, 4pm–6pm.*

- Victor Boantza (University of Sydney) and Anna Marie Roos (University of Oxford), 'Chymistry and Censorship at the Early French Academy and Royal Society'
- Hsaio-Yun Cheng (National Tsing-Hua University, Taiwan), 'Alchemists in the United Kingdom in the 16th–18th Centuries: Social Networks and Transmission of Knowledge'
- James Sumner (University of Manchester), "'Strictly Chemical from Beginning to End": The Credibility of Chemistry in Treatises on Brewing across the Nineteenth Century'

**'What is the Object of the History of Chemistry?'**

*Friday, 9am–11.45am. Organised by the Chemical Heritage Foundation*

- John G. McEvoy (University of Cincinnati), "'Theory" and "practice" in the historiography of chemistry'
- Mi Gyung Kim (North Carolina State University), 'Stabilizing Chemical Objects'
- Jan Golinski (University of New Hampshire), 'Historiography and disciplinary identity: The case of Humphry Davy'
- Hasok Chang (University of Cambridge), 'History of chemistry: Benefits for chemical philosophy, science, and education'
- Chair: Carin Berkowitz (Chemical Heritage Foundation)

**'Transatlantic Reactions: Translating Chemistry Between Continents'**

*Friday, 4pm–6pm. Organised by the Forum for the History of the Chemical Sciences (FoHCS)*

- Donna Bilak (Bard Graduate Center, New York), 'Colonial chymistry: The case of John Allin, minister-physician in Woodbridge, New Jersey (1680–1683)'
- Stephen J. Weininger (Worcester Polytechnic Institute), 'Laboratory instruction in American land-grant colleges: A German import in a New World (1870–1914)'
- Yoshiyuki Kikuchi (Harvard University), 'Anglo-American connections in Japanese chemistry'

- David R. Singerman (MIT), 'Chemical control in the Atlantic sugar trade'
- Chair: Seymour Mauskopf (Duke University)

**'Beyond Transmutation: The Goals of Early Modern Alchemy'**

*Saturday, 9am–11.45am. Sponsored by the Society for the History of Alchemy and Chemistry (SHAC)*

- Jennifer Rampling (University of Cambridge), 'Medicine and the pursuits of alchemy'
- Tara Nummedal (Brown University), 'Alchemy and Christianity in the era of the Reformation'
- Glyn Parry (Victoria University of Wellington), 'The apocalyptic politics of early modern alchemy'
- Vera Keller (University of Oregon), 'The Three Societies: An alchemical agenda in the early Oxford, Royal, and Dublin Societies'
- Chair: Margaret Garber (California State University, Fullerton)

Further information, including the programme and details of registration and accommodation, is available at the conference website:

[http://hsonline.org/Meeting/3\\_Society.html](http://hsonline.org/Meeting/3_Society.html)

12–13 July **'The Reception of Newton': international conference**  
*Edward Worth Library, Dublin*

To mark Dublin City of Science 2012, the Worth Library is organising a two-day conference to explore the many facets of Isaac Newton's legacy. An early eighteenth century library belonging to a Dublin physician, Edward Worth (1678–1733), the Library and its holdings bears witness to the spread of Newtonianism in Ireland.

This international meeting includes several talks relevant to the history of chemistry:

- Anna Marie Roos (University of Oxford), 'Bryan Robinson (1680–1754), respiratory theories, and the atmospheric acids of Sir Isaac Newton'
- Lawrence Principe (Johns Hopkins University), 'Continental responses to Newtonian chemistry, real and imagined'
- Keynote: William R. Newman (Indiana University), 'A new look at Newton's alchemy'

Organised by Dr Elizabethanne Boran (Edward Worth Library) and Mordechai Feingold (Caltech). Further details at the conference website:

<http://www.edwardworthlibrary.ie/News-and-Events/Reception-of-Newton-conference-2012>.

Contact: Dr Elizabethanne Boran, [eaboran@tcd.ie](mailto:eaboran@tcd.ie).

28 September **Royal Society of Chemistry Historical Group:**  
**'Under the Influence: Famous Textbooks and their Authors'**  
*10am. Burlington House, London*

This one-day meeting of the RSC Historical Group is organised by Peter Morris. It explores the influence of some famous textbooks and the evolution of the chemistry textbook in physical, organic, inorganic and analytical chemistry in the mid-twentieth century, with a backwards glance at one of the most famous

popularisations of chemistry, Jane Marcet's *Conversations*. Speakers and provisional titles include:

- Peter Atkins (Oxford), 'The evolution of physical chemistry'
- Alan Dronsfield (Derby), 'The diffusion of mechanistic organic chemistry: the key textbooks'
- Bill Griffith (IC), 'Golden Jubilee: Cotton and Wilkinson's *Advanced Inorganic Chemistry*'
- Jeff Leigh (Sussex), 'Origins and significance of Jane Marcet's *Conversations on Chemistry*'
- Peter Morris (Science Museum), 'Finar and the revolution in organic chemistry textbooks'
- Duncan Thorburn Burns (Queens', Belfast), 'Arthur Israel Vogel (1905–1966): The man and his contributions to chemistry'

For further information please contact the RSCHG Secretary, Bill Griffith, at [w.griffith@ic.ac.uk](mailto:w.griffith@ic.ac.uk). Further details will be available on the RSCHG website nearer the time: <http://www.chem.qmul.ac.uk/rschg/>.

4–6 October **'Between Material Substances and Abstract Ideas: Chemists' Objects of Inquiry, 18th–21st Centuries'**  
*Chemical Heritage Foundation, Philadelphia, USA*

Organised by Ursula Klein (Max-Planck-Institute for History of Science, Berlin) and Carsten Reinhardt (Institute for Science and Technology Studies, University of Bielefeld)

Like other natural sciences, chemistry is concerned with material things and processes, in both nature and technology. Arguably, chemistry is even the material science par excellence, due to its longstanding emphasis on the central importance of stuff in all its variability. Furthermore, chemistry shares with physics and biology a tradition of theory-building, generalizing the phenomena being studied. Phlogiston, the molecule, and the chemical bond are but few examples of the theoretical concepts developed and used in chemistry. Historians, philosophers and chemists alike have observed a peculiar ambiguity, or imprecision, of chemical conceptions and theory-building. On the one hand, chemists feel the need for a unifying approach. On the other hand, they are fascinated by the enormous variety of phenomena, thrilled by the uniqueness of each substance and impressed by the peculiarity of every reaction. How did they do justice to both aspects of scientific reasoning?

We propose to study this major challenge for the chemists' approach at an intermediate level between abstract theory and the matériel of experiment. Middle-range theories, analogies, models, mental images, formulae, orderings of reactivities, and groupings of substances are among the chemists' objects of inquiry arising our interest. It is the aim of this conference to track down the history of such scientific concepts and objects and to contribute to the understanding of their working modes. How do they influence theory-building at its various levels? Can we discern different types of modelling applied? What is the role of the material productivity of chemistry, and how was synthesis affected by using models as blueprints?

In the *longue durée* from the eighteenth century until today, major shifts in the conceptions of chemists' objects of inquiry occurred. These shifts deeply

affected the relationship of theoretical, abstract concept formation and its ongoing experimental materialization.

In the eighteenth century, atoms and molecules were “hidden entities,” clearly belonging to the realm of chemical philosophy or speculative theory. In their experiments, chemists manipulated chemical substances, not molecules. Their intervening instruments—retorts, crucibles, reagents—did not engender signals or data that would have been distinctive for molecules rather than substances. Therefore we might state that eighteenth-century chemistry was, with respect to its experimental part, a science of material substances and their transformations. In its theoretical realm, highly speculative objects reigned: principles such as phlogiston, or abstract bodies such as atoms.

In the two centuries to follow, the theoretical entities crept toward the realm of the manipulable objects. In the nineteenth century, the onset of synthetic methods—and with them novel possibilities to manoeuvre atomic groupings and to identify functional groups in molecules—minimized the divide of theory and experiment, but did not make it disappear. Still, material agents and substances were the most important signs for the occurrence of reactions and the vindication of abstract structures. Models served as mediators between the two worlds of chemists' objects, the theoretical and imaginary on the one hand, and the experimental and sensual on the other.

In the twentieth century, the so-called instrumental revolution merged the material and conceptual dimensions of chemical analysis. The new physical, spectroscopic instruments of analysis were no longer materially productive. The results of the novel physico-chemical analysis were experimental signals (plots, graphs etc.), and not any more material substances (reaction products). Generally speaking, in the new type of physico-chemical analysis, the role played by material substances was reduced to constituting a target. In the 1990s, scanning tunnelling microscopy, it appears, finally transformed atoms into visible (and manipulable) things. Maybe as a consequence of this development, twentieth-century chemistry has often been presented as a molecular science. On the other hand, however, chemical synthesis gained even more prominence, and this retained a focus on the phenomenological level of material substances. Crucially, in the chemical industry, along with technical chemistry, chemical substances kept their importance. Most recently, the latter trend was reinforced by materials science and nanotechnology.

Thus, it seems, chemistry does not escape the materiality of its objects. In tracing through history how this served both representation and manipulation, we aim to study the various forms and levels of theory-building and modelling in chemistry. We wish to shed light on the connections of chemistry with other scientific fields and technology that have been made possible by conjointly using and developing such concepts and objects. Many of them have been subjected to research over decades, and even generations. Some of them have gone extinct, however. Through investigating their resilience, variability, and sometimes disappearance, we will contribute to understanding them better in historical and philosophical terms.

Participants include: Marco Beretta, Charlotte Bigg, John R.R. Christie, Michael Gordin, Mathias Grote, Ernst Homburg, Catherine Jackson, Jeremiah James, Ursula Klein, Seymour Mauskopf, Peter J. T. Morris, Mary Jo Nye, Peter Ramberg, Carsten Reinhardt, Alan Rocke, Klaus Ruthenberg, Stefano Salvia,

Robert Schombs, Thomas Steinhauser, Adam Toon, Anthony S. Travis, Brigitte Van Tiggelen, and Steve Weininger.

For further information, please contact Prof. Reinhardt at:  
[carsten.reinhardt@uni-bielefeld.de](mailto:carsten.reinhardt@uni-bielefeld.de)

4–7 October **Society for the History of Technology (SHOT) Annual Meeting**  
*Copenhagen Business School, Copenhagen, Denmark*

The special themes at this year's conference are 'Technology, sustainability, and environment', and 'Technology, East-West relations, and the Cold War.'  
Further information at: <http://www.historyoftechnology.org/shot2012cfp.html>.

1–3  
November **5th International Conference of the European Society for the History of Science: 'Scientific cosmopolitanism and local cultures: religions, ideologies, societies'**  
*National Hellenic Research Foundation / Marasleios Academy, Athens, Greece*

The programme includes two symposia on the history of alchemy and early chemistry:

**'Byzantine and post-Byzantine alchemy: principles, influences and effects'**

*Organised by Gianna Katsiampoura (Institute for Neohellenic Research), Jennifer Rampling (University of Cambridge) and Rémi Franckowiak (Université de Lille 3)*

**'Mechanism, embodiment and life: iatromechanism and chemistry in debate in early modern natural philosophy'**

*Organised by Charles T. Wolf (University of Ghent) and François Pépin (University of Paris-Nanterre)*

Further information is available from the conference website:  
<http://5eshs.hpdst.gr/program>

15–18  
November **History of Science Society Annual Meeting**  
*Sheraton San Diego Hotel and Marina, San Diego, USA*

The History of Science Society's Annual Meeting will be held jointly with the biennial meeting of the Philosophy of Science Association. Further details available at <http://www.hssonline.org/Meeting/index.html>.

22–28  
June 2013 **24th International Congress of History of Science, Technology and Medicine: 'Knowledge at Work'**  
*Centre for the History of Science, Technology and Medicine (CHSTM), University of Manchester, UK*

The history of alchemy and chemistry will be strongly represented at the International Congress of History of Science, Technology and Medicine, the largest event in the field, which takes place every four years. Recent meetings have been held in Mexico City (2001), Beijing (2005) and Budapest (2009). In 2013, the Congress will take place in Manchester, the chief city of Northwest England, and the original 'shock city' of the Industrial Revolution. Congress facilities will be provided by The University of Manchester, with tours and displays on local scientific, technological and medical heritage co-ordinated by

members of the University's Centre for the History of Science, Technology and Medicine.

See the conference website: <http://ichstm2013.com/>

22–24 August 2013 **9th International Conference on the History of Chemistry**  
*Uppsala, Sweden*

The provisional theme of the conference will be 'Chemistry in Material Culture', covering all aspects of chemistry and its engagement with material culture, including the chemistry of materials.

Further details, including the call for papers, will be included in the November issue of Chemical Intelligence. For enquiries, please contact Hjalmar Fors: [hjalmar.fors@idehist.uu.se](mailto:hjalmar.fors@idehist.uu.se).

## 2. Calls for papers

### New guidelines on proposing SHAC meetings

The Society normally holds two academic meetings per year, one in late spring/early summer, the other in the autumn. These meetings last for a whole day or half day. In order to assist forward planning, those wishing to organize a meeting within the Society's programme are asked to contact the Hon. Secretary for a preliminary discussion at least nine months before the date of the proposed meeting. Proposals will then be submitted to the next meeting of the Society's Council for approval (Council usually meets in February and June). Meetings do not have to be held in the UK.

It should be noted that this schedule applies only to the Society's own spring and summer meetings, and not to other meetings and events sponsored by SHAC as part of its annual Award Scheme.

1. After the preliminary discussion with the Secretary, meeting organisers should submit a form delineating the name, topic, organiser, proposed date(s) and description of the proposed meeting and its value to the field of the history of alchemy and chemistry (up to 400 words). Organisers are encouraged to involve postgraduate students in the creation and organisation of their meetings. We also encourage applications from chemistry historians who have previously not made contributions to SHAC meetings. The form will be available at:

[http://www.ambix.org/index.php?option=com\\_content&view=article&id=55&Itemid=30](http://www.ambix.org/index.php?option=com_content&view=article&id=55&Itemid=30).

2. Themes for SHAC meetings will be spread between historiographic, thematic, and chronological topics in an approximate three-year rolling cycle.

3. Every Council meeting, proposals will be discussed and chosen, and the meetings programme will be updated. SHAC will normally fund successful proposals for up to £300.

Please note that these guidelines apply only to the Society's own academic meetings, and not to events organised by other institutions, which the Society may sponsor as part of the annual SHAC Award Scheme.

For further details, please contact the Hon. Secretary, Dr Anna Marie Roos, at [anna.roos@history.ox.ac.uk](mailto:anna.roos@history.ox.ac.uk).

7–10 August 2012 **International Society for the Philosophy of Chemistry (ISPC) Summer Symposium**

*Katholieke Universiteit Leuven, Universiteitshal (Lakenhalle), Naamsestraat 22, B-3000 Leuven, Belgium*

The 2012 Summer Symposium is the continuation of the International Society for the Philosophy of Chemistry Summer Symposium 2011 organized in Bogota, Colombia at the Universidad de los Andes during 9–11 August 2011 (details at <https://sites.google.com/site/intsocphilchem2011/>). Previous conferences have been organized in Oxford (United Kingdom), Philadelphia (United States), and Coburg (Germany).

### **Conference Themes and Sessions**

The ISPC Summer Symposium 2012 aims to provide a forum for discussion about foundational, epistemological, methodological and ontological problems of chemistry and its subfields by bringing together leading researchers and young scholars from all over the world. In order to foster as much in-depth discussion and interaction as possible, the programme of the ISPC Summer Symposium 2012 will consist of eight plenary sessions, devoted to specific key topics within the field of the philosophy of chemistry.

Issues debated in the philosophy of chemistry emerge from three communities: chemists reflecting on the foundations of their science, philosophers of science investigating the nature and specifics of chemistry, and historians of chemistry making sense of the pathways to discoveries and the practices of chemistry in the past.

Each day will consist of one morning and one or two afternoon sessions crafted to tackle specific issues emerging from one of the three broad areas mentioned above – the foundations of chemistry, the philosophy of science or the history of chemistry – relevant to the philosophy of chemistry. The topics have been chosen to reflect aspects previously lacking scholarly attention and/or to address prominent issues for the foundations of chemistry.

Each day will be introduced by a keynote lecture from a leading expert. Prof. Paul Popelier (Manchester Interdisciplinary Biocenter), James Ladyman (University of Bristol) and Hasok Chang (Cambridge University) have already accepted to give lectures. The eight scientific sessions will include presentations based upon refereed abstracts selected by the scientific committee. Papers are invited on the following topics:

1. Atoms in Molecules
2. Reflections on Symmetry in Chemistry
3. The Nature of the Chemical Bond
4. The Role of Structure in Chemistry
5. Ethical Aspects of Chemistry
6. Philosophical Attitudes of Past Chemists
7. Sustainable Chemistry
8. The Social Perception and Understanding of Chemistry

NOTE: Since the International Conference on the Periodic System (organized by Julio Gutierrez, at [jgutierrezsamanez@yahoo.com](mailto:jgutierrezsamanez@yahoo.com)) will be held in Cusco (Peru) from 14–17 August 2012 (that is, four days after the ISPC Symposium), no sessions will be devoted to periodic system related issues.

### Practical Information

For more information about the ISPC Summer Symposium 2012, please consult the conference website: <https://sites.google.com/site/ispc2012/>. For all further queries, please do not hesitate to send us an e-mail at: [ISPCSS2012@gmail.com](mailto:ISPCSS2012@gmail.com). Details of venue (KU Leuven) are available at:

<http://www.google.com/url?q=http%3A%2F%2Fwww.kuleuven.be%2Fenglish&sa=D&sntz=1&usg=AFrqEzf5j1DX-IZ-1SHWUgXRxkYZsPSNeQ>

An optional excursion will be organized on Saturday 11 August 2012.

### Call for papers

Abstract submission via e-mail is preferred. The abstract, along with the presenter's name and contact information should be directed to: [ISPCSS2012@gmail.com](mailto:ISPCSS2012@gmail.com).

Submission deadline: **30 April 2012**.

Notification of acceptance: 15 May 2012.

The estimated time for lecturing is 25 minutes, plus 5 minutes for questions. Please write your abstracts bearing this time in mind. The final lecturing time will be announced after the abstract acceptance notification deadline (15 May 2012). All abstracts submitted via e-mail will be considered for acceptance to the ISPC Summer Symposium 2012 by the scientific committee. Abstracts will be evaluated on the strength of the one-page abstract, the experience of the speaker within the field, the completeness of the proposal, and its relevance to the meeting themes and sessions.

The Local Organizing Committee  
Pieter Thyssen, Brigitte Van Tiggelen, Arnout Ceulemans

14–17  
August  
2012

**International Conference on the Periodic System, including Scientific, Mathematical, Historical, Philosophical and Educational Aspects**  
*Cuzco, Peru*

There have been surprisingly few international conferences on the central icon of chemistry and indeed one of the most central icons in all of science – the periodic table. The first was held in 1969 in the Vatican as a celebration of the 100th anniversary of Mendeleev's first periodic table. Participants included such luminaries as the physicist John Wheeler. The proceedings were published in Verde (ed), *Atti del Convegno Mendeleeviano*, Accademia delle Scienze di Torino, Accademia Nazionale dei Lincei, Tornino – Roma, 15–21 Settembre, 1969, Torino, Vincenzo Bona, 1971.

The second was held in Banff, Canada, in 2003. The proceedings are published as two books edited by Rouvray and King: *The Periodic Table: Into the 21st*

*Century*, Research Studies Press, Baldock, England, 2004 and *The Mathematics of the Periodic Table*, Nova Science Publishers, New York, 2006.

The past few years have seen a revival in interest in the periodic table, at the scholarly as well as popular level. New scholarly books and special issues have appeared on the subject as well as the highly popular books by Sam Kean and Hugh Aldersey-Williams. Many websites feature alternative forms of the periodic table. The i-Pad application featuring the elements and the periodic table has been a great success. The time is ripe for a new meeting to bring together scholars and educators to discuss all aspects of the periodic table.

The meeting in Cusco, Peru, will be only the third such meeting. Articles will be published either as a book or as a special issue of the journal *Foundations of Chemistry*.

The conference will be to honour the memory of Dr. Oswaldo Baca Mendoza (Cusco, 1908–1962), author of a remarkable study and mathematical interpretation of the periodic system (1953).

The venue is located near the legendary archaeological wonder of Machu Pichu, to which a visit has been organized.

If you have any interest in attending please contact the organizers, who are currently investigating options for sponsorship of interested participants. The local organiser is Julio Gutierrez: [jgutierrezsamanez@yahoo.com](mailto:jgutierrezsamanez@yahoo.com).

25  
September

**3rd SHAC Postgraduate Workshop on the History of Alchemy and Chemistry: 'Representing Alchemy and Chemistry'**

*Department of History and Philosophy of Science, Free School Lane, Cambridge CB2 3RH, UK*

Full details in section 4.1, below.

## 3. Prizes, grants, fellowships

### 3.1 SHAC grants and prizes

#### **2012 Rumford Scholarship in the History of Alchemy or Chemistry: Call for Applications**

The Chemical Heritage Foundation (CHF) and the Society for the History of Alchemy and Chemistry (SHAC) are pleased to announce the second Rumford Scholarship. This annual award will enable the Rumford Scholar to travel to Europe in order to undertake original research in the history of chemistry or alchemy in libraries/archives/museum collections using their particular resources. The award may be held in any European country. The value of the award is £2300.

Applications are now open and application forms are available from:  
<http://www.chemheritage.org/research/fellowships-and-travel-grants/beckman-center-fellowships/index.aspx#FellowshipsandTravelGrants>

Eligibility: Applicants must be either doctoral students or have been awarded a doctorate within three years of 1 January of the year in which the application is

submitted. In addition, independent scholars and part-time or adjunct faculty at any point in their academic career are eligible to apply. Applicants must be normally resident in North America.

Outcomes: The scholar will give a talk at CHF about their work shortly after their return. Support to allow the scholar to travel to Philadelphia to do this will be available outside the funding of the scholarship. The scholar must submit a report of not less than 750 or more than 1500 words to CHF and SHAC within three months of carrying out the research, and a statement of account together with receipts. The report will be published in an appropriate form by the two organisations. The support of CHF and SHAC must be acknowledged in any publication arising from the research.

Closing date: **30 May 2012**.

The decision will be announced by 30 June 2012. The Scholar must take up the award within nine months of the date of its announcement. SHAC will use its best endeavours to facilitate access to collections, to assist in finding accommodation and to put the scholar in contact with other historians.

### **Society for the History of Alchemy and Chemistry Award Scheme 2012**

The Society for the History of Alchemy and Chemistry invites applications for its award scheme for 2012. Two types of award are available: support for research into the history of chemistry or history of alchemy by New Scholars and support for Subject Development of either history of chemistry or history of alchemy.

The **New Scholars Award** is open to postgraduate students (both masters and doctoral students) and those who have obtained a PhD within five years of 1 January of the year in which the application is made. Awards of up to £1000 will be made to cover research expenses, including travel, accommodation, subsistence, the reproduction of documents, and library fees. Applications may also include the costs of reproducing images for publication. The scheme will not fund the purchase of equipment or course fees.

In addition, postgraduate students only may apply for the costs of travel to conferences and accommodation, but only in order to give a paper. The scheme will not pay conference registration fees.

**Subject Development** awards of up to £1000 will be made to support activities including, but not limited to, seminars, workshops, colloquia, lecture series, conference sessions, conferences, exhibitions and outreach activities that support either the history of chemistry or history of alchemy as academic subjects. Please note that awards do not have to be held in the UK.

Only members of the Society, both those in the UK and those overseas, may apply. Members must be in good standing at the time of making an application, and, if successful, throughout the period of an award. For more information, and an application form, please contact the Hon Secretary to the Society, Dr Anna Marie Roos at [anna.roos@history.ox.ac.uk](mailto:anna.roos@history.ox.ac.uk).

Membership enquiries to the Hon Treasurer of the Society, John Perkins at [shacperkins@googlemail.com](mailto:shacperkins@googlemail.com).

Closing date for applications: **31 May 2012**.

For further information on the Society and its activities, including a list of previous holders of awards and their research topics, visit our website:  
[http://www.ambix.org/index.php?option=com\\_content&view=article&id=72&Itemid=45](http://www.ambix.org/index.php?option=com_content&view=article&id=72&Itemid=45).

### 3.2 Other prizes, grants and fellowships

#### **Paul Bunge Prize of the German Chemical Society / Gesellschaft Deutscher Chemiker 2011**

The Hans R. Jenemann Foundation has awarded the Paul Bunge Prize 2011 to Matteo Valleriani for his monograph *Galileo Engineer* (Springer, 2010). This prestigious prize honours outstanding publications dealing with the history of scientific instruments. The award was presented at a Lecture Meeting of the German Chemical Society in Rostock, Germany, on 14 September 2011. Dr Valleriani is a Permanent Research Fellow at the Max Planck Institute for the History of Science in Berlin, whose research focuses on ancient science and early modern science.

#### **Paul Bunge Prize 2013**

Closing date for nominations: **30 September 2012.**

The German Chemical Society (Gesellschaft Deutscher Chemiker) extends an invitation for international applications for the Paul Bunge Prize 2013, awarded by the Hans R. Jenemann Foundation, which is administered by the German Chemical Society and the German Bunsen Society for Physical Chemistry (Deutsche Bunsen-Gesellschaft für Physikalische Chemie). The prize is named after the most important designer of analytical, assay and high-performance precision balances in the second half of the nineteenth century, Paul Bunge.

The prize is endowed with 7500 Euro and honours outstanding publications in German, English or French in all fields of the history of scientific instruments. In addition to the scientific work, applications should also include a curriculum vitae and a list of publications. The Advisory Board of the Hans R. Jenemann Foundation will decide on the prize winner. The prize will be presented in March 2013 during the series of lectures of the GDCh history of chemistry group in Heidelberg.

Please submit your nominations and self-nominations by 30 September 2012, to:

Gesellschaft Deutscher Chemiker  
Barbara Köhler, [b.koehler@gdch.de](mailto:b.koehler@gdch.de)  
Varrentrappstr. 40–42  
60486 Frankfurt am Main  
Germany

Further details (in German):

[http://bunsen.de/bunsen\\_media/Downloads/Ausschreibungen+Preise/Ausschreibung+Bunge+Preis.pdf](http://bunsen.de/bunsen_media/Downloads/Ausschreibungen+Preise/Ausschreibung+Bunge+Preis.pdf)

#### **Travel grants, Chemical Heritage Foundation, Philadelphia**

The Beckman Center for the History of Chemistry at CHF offers grants to cover travel and accommodation expenses for researchers who wish to use its collections for short-term research (periods of up to one month) on the history of the chemical and

molecular sciences. Travel grant recipients have access to the collections of the Othmer Library and are encouraged to use CHF's oral history materials and its collection of art, artefacts, archives, and images. Travel grants are \$750 per week and are intended to help defray the costs of travel and accommodation.

Travel grant applicants must reside more than 75 miles from Philadelphia to be eligible. No more than one travel grant per person per fiscal year (1 July to 30 June) can be awarded. Grants must be taken within one year of the award or the grantee must request an extension or reapply.

There is no deadline for travel grant applications. Applications can be submitted at any time and are assessed by an internal CHF review committee. A travel grant application must contain:

- A research proposal that also details how the applicant will make use of CHF's collections (one page)
- A curriculum vitae (up to three pages)
- One reference letter (applicants are responsible for references submitting letters directly to CHF via the e-mail address below)

Travel grant applications must be submitted electronically, as Word or PDF files, to: [travelgrants@chemheritage.org](mailto:travelgrants@chemheritage.org).

## 4. SHAC Graduate Network

The SHAC Graduate Network aims to stimulate research into the history of alchemy and chemistry worldwide, by providing research training, grants and networking opportunities for postgraduate students and postdoctoral researchers working in these fields. As part of this scheme, postgraduates and early career researchers are eligible to apply for grants towards the cost of research (the **New Scholars** Award, section 3.1 above). The Society also organises an annual workshop for students and junior scholars, focusing on methods, sources and approaches in the history of alchemy and chemistry (see below for details of the 2012 event).

If you have any questions about the Graduate Network, and the opportunities available for students and early career researchers interested in the history of alchemy and chemistry, please contact SHAC's acting student representative, Jo Hedesan, at [georgianahedesan@yahoo.com](mailto:georgianahedesan@yahoo.com).

### 4.1 Graduate Network events

**25 September 2012**

**3rd SHAC Postgraduate Workshop on the History of Alchemy and Chemistry**

*Department of History and Philosophy of Science, Free School Lane, Cambridge CB2 3RH*

#### **'Representing Alchemy and Chemistry'**

The theme for the 2012 SHAC Workshop is 'Representing Alchemy and Chemistry.' We will explore associations between chemistry, representation, imagery and symbolism from a variety of periods and perspectives.

This international workshop, which is free of charge, is open to postgraduate students and early career researchers. Sessions will include keynote presentations from Dr

Spike Bucklow, Senior Research Scientist at the Fitzwilliam Museum, Cambridge and author of *The Alchemy of Paint* (2009), and Dr Chiara Ambrosio, Teaching Fellow in Philosophy of Science at University College London, a specialist in the relationship between art and science in the twentieth century. We also hope to include a special visit to the Fitzwilliam Museum, to examine the Museum's exquisite Ripley Scroll (an important early sixteenth-century alchemical scroll), introduced by Dr Jennifer Rampling, George Ripley scholar and Wellcome Trust Fellow in the Department of History and Philosophy of Science, Cambridge.

Travel bursaries are available to support attendance.

### Call for papers

We are now inviting 15-minute presentations on topics related to the theme 'Representing Alchemy and Chemistry' in any historical period. To participate in the panel, please submit an abstract of about 200 words by e-mail to Jo Hedesan, [georgianahedesan@yahoo.com](mailto:georgianahedesan@yahoo.com) by **30 June 2012**. Presenters should be current postgraduate students or junior researchers (within 3 years of completion of the PhD).

Topics might include:

- Alchemical and chemical symbolism and imagery.
- Spatial concepts of chemical ideas (e.g. the atom, the periodic table).
- Images of alchemy and chemistry in public culture.
- The relationship between alchemy / chemistry and the arts (e.g. literature, painting, film, music).
- The role of chemistry in the production of art (e.g. the creation of artistic materials such as paints and metals).
- Alchemy and chemistry as performance.
- Alchemy and chemistry as art (e.g. manuscript illumination, imagery, emblems).
- The use of chemistry in the preservation or study of art (e.g. archaeological or conservation methods).

For any further queries regarding the event, please contact the lead organiser, Jo Hedesan at [georgianahedesan@yahoo.com](mailto:georgianahedesan@yahoo.com).

## 5. Reports

### 5.1 SHAC events

**24 November 2011**

**SHAC General Meeting: 'Academics, Consultants, Industrialists and Government Chemists: The History of Chemists' Careers in England from 1880 to the 1970s'**

The Society for the History of Alchemy and Chemistry held its autumn meeting on Thursday 24 November 2011 at St Hugh's College, Oxford. The meeting, which was attended by around 20 participants, was preceded by the Society's AGM for 2010 and the presentation of the 2011 University of Oxford Undergraduate History of Chemistry Prize to Caroline Fargher.

The first paper, entitled 'The Changing Nature of Chemical Careers (1880s–1970s)', brought together research that Robin Mackie, Gerrylynn Roberts (Open University) and Anna Simmons (University College, London) had previously carried out on

chemists' careers in order to provide a framework for the meeting. The work was based on the Open University's project 'Studies of the British Chemical Community, 1881–1971.' At the heart of this project is the 'Chemists Database', which includes details of the lives of around 9,000 chemists, assembled from a wide range of sources such as obituaries, membership records of the three major British chemical institutions, the Chemical Society, the [Royal] Institute of Chemistry and the Society for Chemical Industry, and standard biographical works.

The social and economic historians David Vincent and Andrew Miles have described work histories of people in Britain in the nineteenth and early twentieth centuries. Chemists might be seen to fit most closely with their professional 'type.' However, many also share characteristics of the entrepreneurial 'type', through the establishment of businesses or small firms, and also the dynastic 'type', through the role of inheritance. As we move into the interwar years of the twentieth century, bureaucratic careers with attachment to academic or government institutions or to a large firm and where advancement is a matter of climbing a hierarchical ladder of posts become increasingly important. It is interesting to consider the individuals discussed in depth at this meeting – Henry Armstrong, William Crookes, William Nicol and Alfred Spinks – in these terms.

Data on the distribution of employment sectors from the 1880s to the 1970s shows that industry was consistently the largest sector of employment. The data also highlights the growth of academic employment and the decrease in the importance of consultancy, whilst government employment remained relatively stable. Multi-sector working was also highly characteristic of chemists' careers. To earn a living as a chemist in the nineteenth century, multi-sector working was almost essential, with around 70% working in more than one sector. For careers beginning from the interwar years onwards the figure was just under 50%.

A spell working abroad formed part of the careers of roughly 20% of Institute of Chemistry members born in Britain over the whole period investigated. Not surprisingly, the Dominions and Empire were the principal regions for overseas employment. However, apart from those whose careers commenced in the interwar years, the United States was also a major destination. For careers beginning in the final period, 1957–1971, posts in the Empire and Commonwealth countries became less frequent, while there was a marked shift to working in Europe. Mobility also occurred within the United Kingdom as chemists moved about, presumably for career advantage. Analysis of the individuals for whom there is data on at least 20 years of their career was carried out, with both mobility and stability within a single firm analysed. From this, four broad career patterns, two mobile and two stable, were identified. When career patterns were related to success, in government, success was linked to stability and to climbing a hierarchical ladder of posts. Meanwhile in academia, mobile career patterns were more likely to correlate with success. However, the most striking pattern appeared in industry. For those whose careers began in the interwar years, success was found via stable careers as bureaucratic careers were rewarded. However, those whose careers began after the Second World War found success with mobile careers.

For the founders of the Institute of Chemistry, the ideal type of a professional was the independent practitioner. However, such careers declined markedly over the twentieth century. Yet the ideal of knowledge-based professional independence remained central to the new career patterns that became increasingly common and contributed to chemists' success. Mobility required recognition that knowledge and skills were transferrable. Where choices existed mobility was preferred. Professional expertise, rather than organizational loyalty, was the key to success.

In the second paper, 'Contingent Careers: Armstrong, Crookes and Nicol', Professor William Brock of the University of Leicester examined the different career paths taken by three nineteenth-century British chemists. The organic chemist Henry Edward Armstrong (1848–1937) had what might be taken as a conventional academic career, namely initial training in England (under Hofmann at the Royal College of Chemistry) followed by postgraduate studies in Leipzig with Kolbe. Following part-time jobs at St Bartholomew's Hospital and the London Institution, and abortive attempts to obtain posts in Leeds, Cambridge and the Royal Institution, from 1879 until 1912 he taught at Finsbury Technical College and the Central Technical College in South Kensington (part of today's Imperial College). His research was in the field of organic chemistry, but he also made considerable efforts in encouraging chemistry teaching in schools. Outside academia he held many consultancies with dyestuffs companies, breweries and agricultural field stations. He spent his long retirement (1912–1937) engaged in popular journalism that was frequently highly critical (often amusingly so) of developments in twentieth-century chemistry. Curiously, it is for this work in retirement that he is best known today.

The chemical physicist Sir William Crookes (1832–1919) also studied chemistry at the Royal College of Chemistry, but did not go to Germany for further training. Despite his discovery of a new element (thallium) in 1861 and his FRS in 1863, he was never successful in gaining an academic appointment. He was forced instead to earn his livelihood by other means, turning to photographic and chemical journalism and chemical consultancy. He was the founder, owner and editor of the weekly *Chemical News* from 1859 and this became the basis of his financial success. All of his research (mainly in spectroscopy, cathode rays, radioactivity, etc) was done in a home laboratory and financed largely by him. The fact that he worked in trade and commerce rather than academia initially counted against him; but such was the significance of his experimental research that he was able to conquer this stigma by the 1880s. He ended up (in 1912) as President of the Royal Society.

Like Armstrong, the Scottish chemist William Walker James Nicol (1855–1929) initially had a conventional academic career path. He trained at Edinburgh with Alexander Crum Brown and with Hofmann in Berlin before becoming a chemistry lecturer at the University College in Bristol. In 1881 he joined William Tilden at Mason's College, Birmingham, and switched his research from organic to physical chemistry. He worked on the controversial nature of solutions, but was also renowned for his lecturing, mechanical and photographic skills. When the Birmingham chair of chemistry fell vacant in 1894, Nicol was the internal candidate. So great was his disappointment at not being appointed (the post went to Percy Frankland) that he abandoned chemistry completely at the age of 39. A lover of the countryside, he spent his long retirement unconventionally caravanning around the Highlands of Scotland. He and his wife lived like gypsies in caravans that Nicol built with his own hands, initially horse-drawn, and later motor-driven. Nicol is one of several nineteenth-century chemists who became "lost to chemistry", though his is an extreme example because his pockets were sufficiently deep from inheritances and photographic patents to allow him "the life of Riley." In generalizing from these three case histories, Prof. Brock drew attention to the ways in which parents, marriages and wives, inheritances, knowing the right people and networks, choice of research field, and the psychological factor of humiliation (or the fear of it), must all be considered in discussing career patterns.

The third paper was given by Sally Horrocks of Leicester University and was entitled 'Chemistry as a Career for Girls from World War II to the Sex Discrimination Act.' Dr Horrocks's paper explored why it was difficult for women to have the same type of careers in chemistry as men and the attitudes towards appropriate gender roles in

science. During the Second World War a widespread perception of a shortage of 'scientific manpower' existed. However, women scientists were not generally seen as a solution to this problem and Dr Horrocks related women's stories of frustration about how they were not employed in the war effort. Some women circumnavigated this problem by working as volunteers. Women were encouraged in certain roles, and the war brought some improvements as illustrated by the appearance of job advertisements for women chemists in *Chemistry and Industry*. Nevertheless, many women employees were hidden from view. At Tube Alloys at Oxford, almost all the laboratory assistants were women, but as they were not qualified chemists and were paid a weekly wage, rather than a salary, they did not appear in the list of staff published in the official history.

The perceived shortage of scientific manpower following the Second World War did not necessarily mean that the employment of women was seen as a solution. Dr Horrocks quoted from the *Girl Annual* of 1959 which did discuss a career in nuclear fusion for girls but concluded that "the career of the confidential secretary can be just as exciting as tearing atoms apart." This quote reflected a tendency in popular culture to suggest science was not a suitable career for women. The 1951 film *The Young Wives' Tale* echoed this sentiment, with the character of the young working mother employed in a chemical laboratory portrayed as efficient, controlled, constrained and unfeminine. There were, however, some positive portrayals of women working in industrial laboratories. Dr Horrocks showed a film from the Media Archive for Central England of the opening of a research laboratory for Birds' custard with its female chemist employees. Although there were efforts to promote opportunities for women in science and technology, both employers and women scientists shared assumptions of what women's roles in industry should be. Instead, what seemed a suitable solution to the perceived shortage of scientific manpower was for women to become science teachers and in turn educate more male scientists.

However, by the mid to late 1960s attitudes began to change. With the arrival of the contraceptive pill, the assumption that women would leave employment when married changed. The growth of comprehensive schools meant that more girls studied science at school than had previously occurred when they were educated in secondary moderns. Such changes contributed to an increase in the number of women studying science at university. A shift in popular culture was also evident. In the *Girl's World Annual* of 1970, welding and research in chemistry were considered as possible career options. The change in attitudes towards women was enshrined in the Sex Discrimination Act of 1975, but the change in the wider cultural climate had started before this date. Although some feminists argued that because the male/female employment split was not 50/50 such policy changes were a failure, it is vital to recognise that major changes had taken place. In 1979 there were ten times as many female engineering students as in 1969. Dr Horrocks concluded that rather than bemoaning the treatment of women chemists, it was important to look at the wider world of careers for women and to analyse the changes that occurred over a longer period.

In the final paper, Viviane Quirke of Oxford Brookes University spoke about 'From Chemistry, to Pharmacology, to Biotechnology: Alfred Spinks's career from wartime chemist to government advisor.' Alfred Spinks (1817–1982) occupies an important place in the history of British chemistry in the second half of the twentieth century. Not only did he help to shape the R&D strategy of Britain's largest chemical group, Imperial Chemical Industries (ICI), but he also advised the British government on research policy in the 1970s to early 1980s. In her paper, Dr Quirke examined the successive phases in Spinks's career, as he moved from ICI's Dyestuffs Division, where he was research chemist from 1942, to ICI's Pharmaceutical Division, where

he became head of the Division's new Pharmacology Section in 1953, and then to ICI's Main Board, where he was responsible for the R&D of the entire group from 1970 until his retirement in 1979. During this last phase of his career his advice went far beyond the group, as a member of the Advisory Board of Research Councils (ABRC) and founding member of the Advisory Council for Applied Research and Development (ACARD), culminating in his role as Chair of a Joint Working Party on Biotechnology (which produced the influential 1980 'Spinks Report'). These successive phases were linked not only to Spinks's changes in function, from bench chemist, to research manager, to Main Board member and government advisor, but also to changes in focus, from synthetic organic chemistry, to pharmacology, and later biotechnology and research policy. Spinks's career was therefore a multi-disciplinary as well as multi-phase career. In her concluding comments Dr Quirke argued that it illustrated a number of constants in successful twentieth-century chemical careers:

- The role of 'boundary' research areas where chemical knowledge and expertise have a significant part to play (in this instance pharmacology in the 1940s–50s).
- The enduring legacy of research networks (in this case Nottingham, ICI, Imperial College, Oxford).
- The importance of a reward system allowing a certain fluidity between academic and industrial careers.

Nevertheless, some distinguishing factors that set Spinks's career apart were also identified: his was an extraordinary career, tied to an extraordinary company – ICI – and to a particular time and place – Britain in the 1950s–1960s, where the legacy of wartime projects endured, whilst recognising the value of 'Blue Sky' research.

The meeting concluded with a lively discussion based around the question 'How did chemists' careers change over a century?'

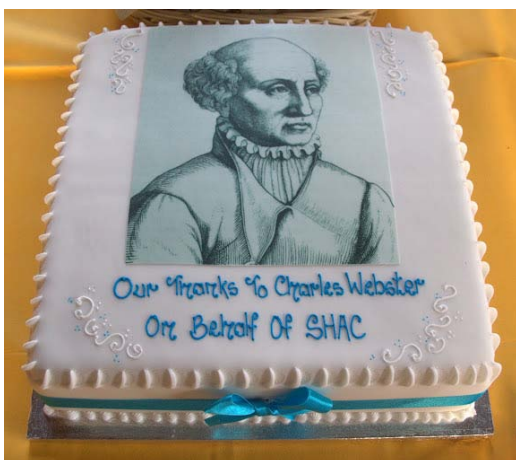
Anna Simmons  
(University College London)

## 6 March 2012

### Oxford History of Chemistry Seminar: Charles Webster on Paracelsus

On Tuesday 6 March 2012, Charles Webster presented his lecture: 'Paracelsus: Chemistry and Revolution', in the History Faculty Lecture Theatre at the University of Oxford. The lecture was sponsored by SHAC, chaired by Professor Pietro Corsi and organised by Dr Anna Marie Roos.

Charles Webster was senior research fellow at All Souls College and previously Reader in the History of Medicine and Director of the Wellcome Unit for the History of Medicine, University of Oxford. He is well known for his magisterial study of the Baconian tradition in seventeenth-century science, *The Great Instauration: Science, Medicine, and Reform, 1626–1660* (1975). In Oxford, he combined his work on early modern science and medicine with a parallel commitment to the history of the National Health Service. As the Official Historian of the NHS, Dr Webster produced a two-volume history of the organisation published in 1988 and 1996. His elegant and definitive analysis of the life and works of Paracelsus, *Paracelsus, Medicine, Magic and Mission at the End of Time* (2008), was shortlisted for the History of Science Society's Pfizer Prize.



In his talk, Dr Webster presented a close analysis of Paracelsus's observation of minerals and metallogenesis, with photographs of the actual mines that the chymist visited during the course of his investigations. Webster also delineated the important differences between Paracelsus and Paracelsianism, his work concentrating on delineating Paracelsus himself as a live and constructive force in specialised areas of natural philosophy. A lively question-and-answer session followed, chaired by Professor Pietro Corsi, and there was a well-attended reception in the History Faculty complete with a Paracelsus cake, which certainly contained salt, if not the other two components of the *tria prima*.

Additional photographs of the event may be found at: <http://tinyurl.com/869dvmp>

Anna Marie Roos  
(University of Oxford)

## 5.2 Reports on SHAC Subject Development Awards 2010–11

21–23 September 2011

### 'Alchemy and Medicine from Antiquity to the Enlightenment'

'Alchemy and Medicine from Antiquity to the Enlightenment' was the first international conference to focus on the complex relationships between medical and alchemical practice in the pre-modern world. It was organised by Jennifer Rampling, Lauren Kassell and Peter M. Jones (Department of History and Philosophy of Science, University of Cambridge) and sponsored by the Centre for Research in the Arts, Social Sciences and Humanities (CRASSH), with further support provided by SHAC, the Chemical Heritage Foundation, the Society for Renaissance Studies, the BSHS, and the Bibliographical Society. The meeting was held in the beautiful surroundings of Peterhouse, Cambridge, and attended by 110 participants from institutions worldwide, including many postgraduate students.

The conference opened on Thursday 22 September with 'Disciplinary identities I: Medical Practitioners as Alchemists'. This session began by discussing two medieval physicians-cum-chemists: the Persian polymath al-Rāzī (865–925) (Dr Bink Hallum, University of Warwick), and John Argentein (c.1443–1508), an English royal physician whose patients included the 'Princes in the Tower' (Peter Jones, King's College, Cambridge). Papers by Adeline Gasnier (Université de Tours) and Dr Hiro Hirai (Radboud University Nijmegen) then examined early modern polemical disputes

between proponents of orthodox medicine – particularly the medical Faculty of Paris – and defenders of *chymia* (chemical medicine).

The second panel considered 'Shared Materials, Practices and Apparatus'. Dr Andrew Cunningham (Cambridge) spoke on the alchemical and medical uses of mercury, while Valentina Pugliano (University of Oxford) showed how sixteenth-century Venetian apothecaries used their skill in distillation for both medical and alchemical pursuits. Finally, Donna Bilak (Bard Graduate Center, New York) introduced John Allin, a dissenting minister in Restoration England, forced to relocate his iatrochemical practice (and his laboratory) from Sussex to London, and finally to New England.

In the evening, a wine reception was held to commemorate the quatercentenary of the death of the Elizabethan astrologer, alchemist and medical practitioner Simon Forman (1552–1611), sponsored by The Casebooks Project. Dr Lauren Kassell (Cambridge) introduced the Forman celebrations. After, the 2011 Partington Prize was presented by John Perkins, Hon. Treasurer of the Society for the History of Alchemy and Chemistry. The Prize was accepted by two past recipients on behalf of the 2011 joint winners: William Newman on behalf of Evan Ragland (Indiana University), and Jennifer Rampling on behalf of Dr Marcos Martín-Torres (UCL).

The second day began with a session aimed at exploring links between 'Medicine, Alchemy and Patronage' at three sites: Tudor England (discussed by Dr Jennifer Rampling, Cambridge), imperial Prague (Dr Rafał Prinke, Eugeniusz Piasecki University, Poznań), and the Ottoman Empire (Tuna Artun, Princeton University). This was followed by a panel on 'Prolongation of Life', a theme addressed from three perspectives: Galenic medicine (Professor Nancy Siraisi, City University of New York), medieval elixir theory (Professor Chiara Crisciani, Università degli Studi di Pavia), and seventeenth-century Helmontian chymistry (Jo Hedesan, University of Exeter).

The afternoon session began with 'Disciplinary Identities II: The Transmutation of Chemical Medicine'. Professor William Newman (Indiana University) introduced Isaac Newton's little-known interest in chymical medicine. Eighteenth-century chemical explanations for physiological processes then provided the basis for papers by Cécilia Bognon-Küss (Université Paris I Panthéon-Sorbonne), on digestion, and Dr Emma Spary (Cambridge), on flavours.

Professor Bruce Moran (University of Nevada at Reno) delivered the keynote lecture, titled 'Scheide – Kunst: art and agency at the crossroads of early modern alchemy and medicine.' The lecture was followed by a lively roundtable session, chaired by Dr Lauren Kassell (Cambridge). Discussants considered the case for closer integration between histories of science, medicine and alchemy, and discussed how common themes and connections could be explored further in a planned edited volume, based on papers delivered at the conference. At the end of a long day, drinks were served in the Senior Common Room, before a candlelit banquet in the College's thirteenth-century dining hall.

The final day opened with a panel on 'Books, Recipes and Secrets', which examined the transmission of manuscript material from both alchemical and medical perspectives, asking how methodological approaches could be usefully shared both by historians of medicine and of alchemy. Dr Peter Grund (University of Kansas) traced the transmission of a popular medieval alchemical dialogue, Dr Elaine Leong (University of Warwick) demonstrated the 'tweaking' of medical recipes as a form of early modern knowledge production, and Dr Margaret Garber (California State University, Fullerton) traced how knowledge of the 'Alkahest' circulated in seventeenth-century journals.

The theme of transmission was continued in the next panel, which traced 'Transmission of Alchemical and Medical Knowledge' from Graeco-Roman Egypt to the Latin West, through close study of archival material. Some of the earliest known alchemical texts, the four books of Pseudo-Democritus, were discussed by Dr Matteo Martelli (Humboldt Universität zu Berlin). Dr Gabriele Ferrario (Taylor-Schechter Genizah Research Unit, Cambridge) then introduced a series of previously unknown, Judaeo-Arabic texts preserved in Cairo Genizah, possibly composed by a Jewish physician based in medieval Egypt. Dr Sébastien Moureau (Université de Nancy 2) traced connections between Arabic and Latin alchemical doctrines, and Dr Didier Kahn (CNRS, Paris) examined a Latin treatise variously attributed to John of Rupescissa, Hermes, and Paracelsus.



Lawrence Principe discusses chymistry at the Académie Royale des Sciences, chaired by Nancy Sirasi.



The conference poster, featuring images from the Fitzwilliam Museum's 'Ripley Scroll.'

The closing session, chaired by Professor Sirasi, took a wide angle view of 'Histories of Alchemy and Medicine.' Professor Michela Pereira (Università di Siena) spoke on 'Elixirs West and East', addressing connections (real or perceived) between Chinese and Western elixir theories, while Professor Lawrence Principe (Johns Hopkins University) considered conflicts and concordances between medical applications and chymical theories at the Académie Royale des Sciences. Finally, Professor John Christie (Universities of Oxford and Leeds) moved the discussion into the eighteenth and nineteenth centuries, by looking at "historical self-consciousness" in Enlightenment writings about chemistry.

The success of this very lively and stimulating meeting lay not only in its international and interdisciplinary programme, but also in its intergenerational appeal. The meeting was well attended by students and junior scholars, who had the opportunity to discuss their research with world experts in the history of alchemy and medicine. Plans are now underway to publish a volume of selected papers, in which the contributions of both established and junior scholars will be represented. The organisers are grateful to the Society for its generous support.

Jennifer Rampling  
(University of Cambridge)

### 5.3 Reports on SHAC New Scholars Awards 2011–12

#### Research Trip on J.B. Van Helmont at the Archbishopric Archives in Mechelen, Belgium

Jo Hedesan (PhD candidate, University of Exeter)

The Flemish physician and alchemist Jan Baptista Van Helmont (1579–1644) is mostly remembered today as one of the founders of modern chemistry and medicine. However, Van Helmont saw himself rather differently: he perceived his life as a mission to reform natural philosophy by incorporating it within a Christian framework. My PhD dissertation at University of Exeter concentrates on Van Helmont's grand unfinished project of creating a 'Christian Philosophy.'

As part of the work for my dissertation, I was eager to undertake research on the Van Helmont manuscripts that exist in the Archbishopric Archives in Mechelen, Belgium. It was the SHAC New Scholars Award that gave me the unique opportunity to examine three volumes containing Van Helmont's manuscripts and readings, confiscated by the Mechelen ecclesiastical court in March 1634 as part of a heresy trial that ended inconclusively in 1638. My work has concentrated on Volume 2 of the Archives, which comprises confiscated readings and several manuscripts by Van Helmont.

The incomplete 'Readings' section is invaluable in tracing Van Helmont's sources of thought. This is particularly important as his published masterpiece, *Ortus Medicinae* (1648), contains very few and carefully selected references to such classical authorities as Plato, Hippocrates, St Paul, or St Augustine. On the other hand, the Mechelen Readings reveal that Van Helmont drew on eclectic and often heterodox sources. These include Cornelius Agrippa's *De Peccato Originale*, Al Kindi's *De influentiis mundi inferioris*, the alchemical treatise *Mercurius Triumphans*, the *Theologia Germanica* (indexed by the Catholic Church), the medical astrology piece *Asterburden* from Hugh Platt, and the mystical theology of Johann Tauler. There is also an anonymous piece called 'Exterior Homo', which Van Helmont maintained it was a treatise sent by Marin Mersenne. In my opinion, this tract, which I will analyse further in the future, reveals uncanny resemblances with Van Helmont's own thought.

The 'Manuscripts' section contains various pieces composed by Van Helmont, some of which have been published by Corneille Broeckx in the 19th century. My attention concentrated on the unpublished 150 pages of manuscript which have previously been identified by Prof Robert Halleux (whom I have briefly consulted with in Liège) as 'Speculum Philosophicoiatricon.' I have found that this manuscript contains pieces written by different hands and in various states of composition and correction. About 30 pages have been rewritten in a calligraphic hand and marked as *Speculum Philosophicoiatron*, with the last 'o' written as the Greek letter  $\omega$ , and hence not Philosophicoiatricon. The contents seem similar to that of the *Ortus Medicinae*, with a similar focus on criticising Aristotle and Galen, but with much more weight given to 'divine' Hippocrates.

I will integrate many of the insights I have accumulated in Mechelen into my dissertation and future articles. For instance, I was able to determine that his intention of grounding philosophy in Christian thought had deep roots, albeit he did not express it as clearly as in *Ortus medicinae*. I am highly grateful to SHAC for allowing me the opportunity to delving into the Mechelen files.

Jo Hedesan

## Research in Athens and Bucharest on Greek chymical texts

Vangelis Koutalis (PhD candidate, University of Ioannina/Research Associate, University of Athens)

The objective of the proposed project was the transcription and study of two important manuscript primary sources, indicative of the emergence and dissemination of 'chymistry' in Greek-speaking communities during the eighteenth century. This gave me the opportunity to work full-time from August to September 2011, in order to transcribe a large section of a manuscript called 'Synopsis of Chymia', written by an anonymous Greek-speaking scholar, and preserved in the National Library of Greece (Athens, Ms 1113, ff. 1r–49v, dated back to the first half of the eighteenth century). This is, as far as we know, the first chymical treatise written in Modern Greek, and it is also noteworthy that it is not a translation, but an original work. No other codex preserved in Greek libraries contains this text, or a variation of it. The text itself includes parts copied verbatim, although without acknowledgement, from Nicolas Lemery's *Cours de Chymie*, but it also reveals the strong influence of Van Helmont's chymical philosophy. As a matter of fact, in the same codex, which contains the 'Synopsis of Chymia', there is a translation in Greek of a short tract, originally written by Van Helmont, against the rule of 'futile' logic ('Logica Inutilis', in idem, *Ortus Medicinae*, Amsterodami: apud Ludovicum Elzevirium, 1642, pp. 34–37). In both cases, the hand of the scribe seems to be the same.

After visiting Bucharest during September 2011, I also examined the copy of the Greek manuscript translation of Jean d'Espagnet's *Enchiridion Physicae Restitutae*, by the eighteenth-century Greek-speaking scholar Anastasios Pavassilopoulos (mid-seventeenth to mid-eighteenth century), which is preserved in the Library of the Romanian Academy, Bucharest (Ms 485, eighteenth-century, pp. 216–360). I fully transcribed a large section of it (the first 50 pages, pp. 216–266). This is the best preserved of the three surviving copies of the *Enchiridion's* Greek translation, and the most neatly written. Yet, it must be dated later than the other two copies (National Library of Greece, Athens, Ms 1331, date 1701, ff. 1r–98v, and Historical and Ethnological Society, Athens, Ms 34, date 1701). The content of the other texts which are included in the same codex (for instance, lessons in rhetoric) shows that the translation of the *Enchiridion* was used as an educational material, part of general philosophical lessons. The translation is both full and exact, a fact that may lead to the supposition that Papavassilopoulos, apart from using it as a textbook introduction to modern natural philosophy, also intended to publish it.

My work on Papavassilopoulos' translation will be presented to the symposium on 'Byzantine and post-Byzantine alchemy: principles, influences, and effects' organised by Gianna Katsiampoura (Institute for Neohellenic Research, National Hellenic Research Foundation), Jennifer Rampling (University of Cambridge), and Rémi Franckowiak (Université des Sciences et Technologies de Lille), during the 5th International Conference of the European Society for the History of Science, that will be held in Athens, from 1–3 November 2012. I have already submitted an abstract, under the heading of 'Cosmopoiesis as a chymical process: Jean d'Espagnet's *Enchiridion Physicae Restitutae* and its translation in Greek by Anastasios Papavassilopoulos', which has been accepted.

Vangelis Koutalis

## 5.4 Report of Rumford Scholar 2011

### Juan-Andres Leon

PhD Candidate, Department of the History of Science and Collection of Historical Scientific Instruments, Harvard University

I was deeply honoured to have been chosen as the first recipient of the Rumford Scholarship, a joint initiative of the Society for the History of Alchemy and Chemistry (SHAC) in Britain with the Chemical Heritage Foundation in the United States. This scholarship, instituted to help historians of chemistry from the United States to conduct research in Europe, aided me in both my dissertation research and professional development: Not only was I able to plan and conduct the last year of my research travel, I also received assistance from the SHAC, which mobilized its community of members and associates to help me navigate the world of industrial archives in Germany. In addition, I had the opportunity to give a presentation of my work at the Chemical Heritage Foundation in Philadelphia after my return on 10 April 2012. I greatly appreciated the friendly and insightful interactions that I experienced there, which consolidated what will remain a fruitful relationship for years to come.

In the last third of the nineteenth century, chemists were making their way into leadership positions in many important industries. In Germany, with its strong synthetic dye industry, men with scientific training in chemistry, and often a trail of patents and innovations, became factory managers and members of boards of directors. This happened in other industries too, where the knowledge and skills of a chemist were crucial for the modernization of their production, such as breweries, paper mills, beet sugar refineries and steel works to name a few. As a consequence of these developments, chemistry in Germany at the end of the nineteenth century was much more than a scientific discipline: it was a powerful network that encompassed university professors, industrial researchers, industrialists, political lobbyists and legal experts who all shared the distinct identity of scientists.

Historians of chemistry may be familiar with the some of the achievements of this closely-knit social group: the consolidation of Germany's dye industry as a world leader, for instance, and the subsequent establishment of the chemical industry as one of the most powerful political and economic actors in Germany in the twentieth Century. The direct impact of these chemists' philanthropy on the organization of scientific research in general is the subject of my forthcoming Ph.D. Dissertation, 'Citizens of the Chemical Complex', a work at the intersection of the history of science, social history, and business history.

My work focuses on the 'golden age' of German philanthropy, from around the unification of Germany in the 1870s, through the onset of the Great Depression and the end of the Weimar Republic in the early 1930s. During this period, a decisive development was the patronage of scientific research by powerful industrialists in several overlapping ways: as individuals, as members of civic associations, and as leaders of many of the largest German companies.

By their own account, German industrialists were inspired by developments in the United States, where scientific research and universities themselves were often the result of private initiatives. Crucially, however, German science philanthropy developed along completely different lines: rather than the donation of vast financial resources, the most important contributions by industrialists were through the mobilization of their social and cultural capital, deeply tied to the scientific world, and the world of chemistry in particular. In some scientific fields, the amateur scientific work of industrial chemists influenced the development of those disciplines; and even

in the applied sciences, it was often their initiatives that led to the creation of research institutes, rather than an existing industrial demand. My dissertation explores the motivations that led chemists and their allies in particular to not only sponsor but also actively participate in scientific research in fields outside of their direct professional interest, and the specific strategies used by them to create their private research systems. The dissertation then explores how these private initiatives interacted with the turbulent developments of the early 20th Century, as Germany passed through war, defeat, hyperinflation, economic boom and bust, and the rise of the radical Right.

Over the last three years, I have been conducting my dissertation research in libraries, state archives and industries in Germany. The fragmented documentary traces of many important figures for my research benefitted from multiple research visits to various institutions, complemented with their subsequent analysis and contextualization with material available in the United States. With the aid of the Rumford Scholarship, I was able to plan the last year of research travel, and the scholarship funded my last visit to Germany this past February, where I explored numerous new locations such as the company archives of Siemens, Linde and Zeiss, and the university archives in Heidelberg and Munich. I returned with novel questions to familiar sites, such as the Deutsches Museum in Munich and the BASF corporate archive in Ludwigshafen, and collected numerous visual materials to enrich my work.

Juan-Andres Leon

## 6. News and resources

### 6.1 SHAC news

#### Editor of *Ambix*

The Society for the History of Alchemy and Chemistry (SHAC) is pleased to announce that Dr Jennifer Rampling, Wellcome Trust Research Fellow at the University of Cambridge and member of Clare Hall, has been appointed Editor of its journal, *Ambix*. Dr Rampling will begin her service as Editor at the beginning of 2013. Dr Rampling's research specialism concerns interactions in the medieval and early modern period between alchemy, medicine and natural philosophy.

Dr Peter Morris, Keeper of Research Projects at the Science Museum, will remain editor during 2012, and then will serve as deputy editor for the next two years. The Council of SHAC thanks Dr Morris for his exceptional service as Editor of the journal for the past eleven years.

#### **Note from the Hon. Editor:**

I wish to thank the Editorial Board, Council and individual members of the Society for their advice and support over the last decade and more. I am grateful for the card and gift of a vintage port picked in the year I became Editor presented to me at the last meeting of Council to mark my forthcoming retirement. Jennifer Rampling has been an excellent Deputy Editor, and I am certain she is the right person to guide the journal through the changes that are likely to occur in academic publishing in the next decade. I will continue to work on *Ambix* and support Jennifer over the next two years as Deputy Editor.

Peter Morris

## Quarterly publication of *Ambix*

The Society for the History of Alchemy and Chemistry is delighted to announce that, from January 2013, its journal *Ambix* will be published quarterly. *Ambix* will be published in February, May, August and November each year.

*Ambix* has appeared three times a year since 1959; the size and spacing of previous volumes having been disrupted by World War II and its aftermath. The Society's decision to expand the journal reflects the very good health of the field in recent years, manifested by the number of papers submitted to *Ambix*, the growth in the number of younger scholars researching topics in the history of alchemy and chemistry, the increase in membership of the Society, and the number of high quality papers being offered to conferences – ranging from the recent 'Alchemy and Medicine' meeting in Cambridge, to the forthcoming '19th-Century Sites of Chemistry' conference in Valencia. The expansion will enable *Ambix* to publish two special issues per year, in addition to the current two regular issues: allowing for more even coverage of the full range of topics and time periods covered by the Society's remit.

Further information on the expansion will be circulated to all subscribers within the next few weeks. In the meantime, informal queries regarding special issues may be directed to the Editor-elect, Dr Jennifer Rampling, at [jmr82@cam.ac.uk](mailto:jmr82@cam.ac.uk). All other queries regarding submission to the journal should continue to be addressed to the Hon. Editor, Dr Peter Morris, at [Editor@ambix.org](mailto:Editor@ambix.org).

### ***Ambix*: forthcoming issues**

A special issue in July 2012, guest-edited by Anthony Travis, will commemorate the fiftieth anniversary of Rachel Carson's *Silent Spring* (1962). Contents include:

- Anthony S. Travis, Introduction: '*Silent Spring* at 50: Earth, Water and Air'
- Hannah Gay, 'Before and After *Silent Spring*: From Chemical Pesticides to Biological Control and Integrated Pest Management – Britain, 1945–80'
- Anthony S. Travis, 'Detecting Chlorinated Hydrocarbon Residues: Rachel Carson's Villains'
- Peter Reed, 'The Alkali Inspectorate 1874–1906: Pressure for Wider and Tighter Pollution Regulation'
- Rony Armon, 'From Pathology to Chemistry and Back: James W. Cook and Early Chemical Carcinogenesis Research'

### **Back issues of *Ambix* available in hard copy**

Back issues of *Ambix* since 2004 (Vol. 51) are available from the Treasurer at £5.50 per issue, as are copies of the Cumulated Index. Copies of the collection of papers from *Ambix*, edited by Allen Debus, *Alchemy and Early Modern Chemistry* (2004) are available at £7.50.

Contact: [shacperkins@googlemail.com](mailto:shacperkins@googlemail.com) or John Perkins, 19 Nethercote Road, Tackley, OX5 3AW, United Kingdom.

### **Back issues of *Ambix* available online**

Back issues of *Ambix* from Volume 1 (1937) have been digitised and are available to members of the Society to read or download from the IngentaConnect website. Access to them is via the 'Member's Services' page on the Society's website at [www.ambix.org](http://www.ambix.org). This page may be accessed from the home page via a username and

password which have been e-mailed to members. If you have any problems or wish to enquire about membership please contact the Hon. Treasurer, John Perkins, [shacperkins@googlemail.com](mailto:shacperkins@googlemail.com).

## 6.2 Other news

### Launch of the Forum for the History of the Chemical Sciences (FoHCS)

The Forum for the History of the Chemical Sciences (FoHCS) is a group of scholars and students whose aim is to promote research, education, and communication on the historical, social, and philosophical aspects of chemistry and related chemical sciences and technologies. FoHCS advances this goal by encouraging innovative research and teaching in the history of chemistry and the chemical sciences, improving the visibility of such research within the History of Science Society (HSS), fostering international communication and collaboration between individuals and institutions with an interest in chemical history, and identifying and creating new opportunities and resources for scholars who study the chemical sciences.

#### Origin and formation

Historians of chemistry played an important role in the early professional development of the history of science in the United States; however, until the 1990s, they had no grouping, formal or informal, within the History of Science Society. In that decade, with the support of the Beckman Center for the History of Chemistry (and then the Chemical Heritage Foundation), annual informal 'history of chemistry interest dinners' were initiated. Subsequently, other interest groups organized into 'forums' and 'caucuses.' In light of this, in 2011, the Secretary of the History of Science Society asked Sy Mauskopf, recently retired, if he would serve as the facilitator of such a group for historians of chemistry. Sy soon found willing colleagues, who formed into an 'organizing committee' (John Powers, Peter Ramberg and Alan Rocke).

A breakfast organizational meeting was advertised for the annual meeting of the History of Science Society (November 2011, Cleveland, Ohio). Much to the committee's surprise and delight, a large and enthusiastic group (about forty persons) assembled at an early hour on 5 November and quickly launched the Forum for the History of Chemical Sciences. It was agreed to retain the original organizing committee for the coming year (with the addition of volunteer graduate student, Sean Schifano). Robert Bud, Yoshi Kikuchi and Jennifer Rampling agreed to make up a 'program committee' to develop FoHCS-sponsored (or co-sponsored) sessions at relevant meetings in 2012. Finally, John Powers and Jeremiah James volunteered to write a proposal for submission to the History of Science Society Council to obtain official status.

#### Implementation and future prospects

The enthusiasm of the various volunteers produced quite rapid and prodigious results. A proposal has been submitted to the Secretary of HSS. The program committee has organized an inaugural FoHCS-sponsored session for the Three Societies Meeting in Philadelphia this July, titled 'Transatlantic Reactions: Translating Chemistry between Continents' (see section 1.3, above). Two sessions have been proposed for the next HSS Annual Meeting in San Diego: 'Chemistry and the Public Sphere: Moments of Transition' (sponsored by FoHCS) and 'Historicizing Rachel Carson: New Contexts for Understanding *Silent Spring*' (co-sponsored by FoHCS,

Earth and Environment Forum and Women's Caucus). Plans are afoot for a symposium at the 24th International Congress of History of Science, Technology and Medicine, to be held in Manchester in 2013, co-sponsored with SHAC and the Chemical Heritage Foundation.

We have a start-up list serve, which will be systematically expanded and utilized as a means of intercommunication and as a newsletter for members of FoHCS. As such, it will be coordinated with the already excellent service provided by CHEM-HIST. FoHCS seeks to establish and maintain relationships with other history of chemistry groups and organizations worldwide. Through the activity of Jennifer Rampling, this has already happened with SHAC. Moreover, members of the Division of the History of Chemistry (HIST) of the American Chemical Society are associated with FoHCS, and FoHCS is also in close touch with the Chemical Heritage Foundation. We plan outreach to other groups, such as the Working Party on History of Chemistry of the European Association for Chemical and Molecular Sciences and the Japanese Society for the History of Chemistry (Yoshi Kikuchi acting as our liaison here). There are plans for a general 'chemists' breakfast' at the annual HSS meeting, to take up both business and policy issues of FoHCS and to promote general social and intellectual interchange.

These are just some of the prospective activities. No doubt many others will be initiated in future years.

Seymour Mauskopf  
(Duke University)

## **Chemical Heritage Foundation**

### **25th anniversary of the Beckman Center for the History of Chemistry**

The year 2012 marks the 25th anniversary of the Arnold and Mabel Beckman Center for the History of Chemistry at CHF. Home to CHF's fellowship program, and the heart of academic programming within the organization, the Beckman Center has provided funding for almost 200 fellows working on the history of science, technology, medicine, and industry. Despite its relative youth, the Beckman Center is now the largest source of non-university based fellowships for historians of science in the United States.

Of the many Beckman Centers – centers for science- and medicine-related pursuits funded by the Arnold and Mabel Beckman Foundation – CHF's Beckman Center is the only one that takes history as its mission. As such, it provides support to scholars whose work addresses the relationships between science and society, focusing on issues of education, politics, and culture. This interdisciplinary work influences humanities scholarship more broadly, but also promises to powerfully and usefully inform the future of science: its ethics, its politics, and its social dimensions.

### **Appointment of first Beckman Center Distinguished Fellow**

Jan Golinski (University of New Hampshire) will join CHF this autumn as the Beckman Center's first Cain Distinguished Fellow. Professor Golinski is widely known for his scholarship on the history of eighteenth-century chemistry and also has recently published on the history of climate science. He has held fellowships at the Huntington Library and at the Dibner Institute for History of Science and Technology, MIT, among many others, and has received the University of New Hampshire Outstanding Faculty Award. His books include: *Science as Public Culture: Chemistry and Enlightenment in*

*Britain, 1760–1820; Making Natural Knowledge: Constructivism and the History of Science; The Sciences in Enlightened Europe* (edited with William Clark and Simon Schaffer); and *British Weather and the Climate of Enlightenment*.

### **Short and Long Term Fellowships 2012–2013**

The Chemical Heritage Foundation is pleased to announce the appointments of the Beckman Center Fellows for the academic year 2012–2013. CHF will welcome one Distinguished Fellow, 8 long-term fellows and 8 short-term fellows. Below are the fellows, their affiliations, and the title of their research topics.

Cain Distinguished Fellow (4 months in residence):

- Jan Golinski (University of New Hampshire)

Long-Term Postdoctoral Fellows (9 months in residence unless otherwise specified):

- Laura Ann Kalba (Smith College), Edelstein Fellow: 'Color in the Age of Impressionism: Technology, Commerce, and Art'
- Benjamin Gross (CHF), Cain Fellow: 'The Engineer's Toolkit: Passive Components and the American Electronics Industry'
- Mat Savelli (McMaster University, Canada), Haas Fellow: 'A Comparative History of Psychopharmaceutical Print Advertising'
- Adelheid Voskuhl (Harvard University), Doan Fellow (5 months): 'Engineering as Institution: Technical and Technocratic Elites in Germany and the US, 1870 to 1935'

Long-Term Dissertation Fellows (9 months in residence):

- Ian Beamish (Johns Hopkins University), Haas Fellow: 'Saving the South: Printing Agricultural Improvement in the American South, 1820–1865'
- Deanna Day (University of Pennsylvania), Price Fellow: '98.6: Fevers, Fertility, and the Patient Labor of American Medicine'
- Joel Klein (Indiana University), Edelstein Fellow: 'Chymistry, Corpuscular Medicine, and Controversy: The Ideas and Influence of Daniel Sennert (1572–1637)'
- David Singerman (MIT), Haas Fellow: 'An Empire of Purity: Making the Modern Sugar Market, 1875–1925'

Short-Term Fellows:

- Andrew Butrica (Independent Scholar), Doan Fellow (2 months): 'Jean-Baptiste Dumas: Promoter of Chemical Industry'
- Ari Gross (University of Toronto, Canada), Allington Fellow (3 months): 'Structure and Spatiality: Chemical Diagrams and Models and the Birth of Stereochemistry'
- Lijing Jiang (Arizona State University), Allington Fellow (2 months): 'Degeneration in Miniature: History of Cell Death and Aging Research in the Twentieth Century'
- Victoria Lee (Princeton University), Ulliyot Scholar (3 months): 'Synthetic Fermentation and Applied Biology in Japan, 1910–1960'
- Max Liboiron (New York University), Allington Fellow (2 months): 'Transforming Pollution: Ocean Plastics and Body Burdens'
- Catherine Price (Freelance Journalist), Société de Chimie Industrielle Fellow (3 months): 'Fortified: The Secret Science of Food'

- Ann Robinson (University of Massachusetts, Amherst), Herdegen Fellow (1 month): 'Creating a Symbol of Science: The Standard Periodic Table of the Elements'
- Ellan Spero (MIT), Allington Fellow (3 months): 'Production and Place, Textile Science and Education in a Technological Landscape'

### 6.3 Museums and archives

#### Science Museum, London:

#### 'Secrets and Symbols: An Illustrated Guide to Alchemy'

'Signs, Symbols, Secrets: An illustrated guide to alchemy' is a new exhibition featuring 20 rare books and 2 manuscripts from the Museum's Library & Archives collections alongside a newly discovered 'Ripley Scroll.' For the first time in 60 years, items from the Library & Archives take centre stage within a public exhibition.

Selecting material for the display was an exciting and enjoyable task for the content development team, who are all members of the Library & Archives staff. The decision to choose alchemy was based upon the desire to showcase the fine assortment of European alchemical works held within their collections, and to support the Museum's policy of highlighting lesser known works from the stored collections. Alchemy is also a timely choice for the Museum as academics are re-evaluating its practice within the context of the early development of modern sciences.



Science Museum librarians Cate Watson and Prabha Shah uncover the latest 'Ripley Scroll.'



Consultant Jennifer Rampling examines the Scroll in its custom-built case in the exhibition gallery.

The Library & Archives holds a wide collection of alchemy texts and manuscripts. Our first task was to look through these and narrow down a selection for display. There are a number of factors to take into account when choosing books for an exhibition. We looked first for images that would grab a visitor's attention – fortunately,

alchemical symbolism provides plenty of these! Once we had a broad selection of texts, the team started to carry out in-depth research on the books and images. We needed to check whether our selected books gave a proper representation of alchemical texts. Next we had to pick the most appropriate image to fit in with our exhibition narrative. Alchemical sequences, such as the '12 Keys of Basil Valentine', provided a multitude of beautiful images to choose from. It was so hard to choose, in fact, that we digitised the whole sequence and included it in the exhibition, along with images from the *Rosarium philosophorum*.

We wanted to explain alchemy to our visitors using the intriguing alchemical symbolism in our books and archives. However, decoding such symbolism was not always an easy task. Writing about the images was even more challenging, as we had to summarise the many layers of meaning in each image into a concise but clear exhibition label. Displaying the books and archives in the exhibition presented a special challenge. These are rare and valuable objects that require particular care for long term display. The cases had to have the correct humidity and light levels. The tight bindings of some of the books meant that they could not be fully opened. All of the books had to have custom built mounts to properly support them. The Ripley Scroll case was specially designed and built to display it.

The design of the exhibition manages to display and protect these objects whilst also providing large scale reproductions of the images for visitors to study in detail. Labels deconstruct these blown up images, enabling visitors to decode the symbolism and start to understand the underlying alchemical ideas. For instance, one of the unique manuscripts on display, *Le Trésor des Trésors*, is an eighteenth-century transcription of a work attributed to Nicholas Flamel, that explores the relationship between alchemy and astronomical influences through beautiful, hand-coloured, images.

Whilst researching the exhibition, the content team discovered that the Museum had an alchemical scroll listed in its collections. Cate Watson, one of the content development team, watched the scroll being unrolled from storage, and was amazed by the bright colours of the images and the intricate design. When she started to research the images she realised she had found a new Ripley scroll: "like finding a key to a puzzle." Ripley expert Dr Jennifer Rampling confirmed the identification. This scroll is now on display to the public for the first time, and is also the first Ripley scroll on long-term display.

The scroll, together with the other manuscripts and rare printed works, remain on display in a free exhibition that opened on 27 April 2012. It will run until April 2013 at the Science Museum, Exhibition Road, South Kensington, London, SW7 2DD.

David Dawson  
Stephanie Millard  
Cate Watson  
(Science Museum Library & Archives)

## **The Chemical Heritage Foundation, Philadelphia:**

### **'The Alchemical Quest'**

The Alchemical Quest, an exhibit featuring rare books of the golden age of alchemy from the sixteenth and seventeenth centuries drawn from the collections of the Othmer Library of Chemical History will run in the Hach Gallery at the Chemical Heritage Foundation from 2 July 2012 to 7 December 2012. The exhibit will challenge alchemy's occult reputation by illustrating its importance in early chemical industry

and pharmacology, while at the same time addressing the dream of transmutation pursued by natural scientists as respected as Sir Isaac Newton.

### **Museum collection**

The CHF has recently acquired, from the US National Urban Security Technology Laboratory, the steel radiation shield which was a vital component in the development of radiocarbon dating in 1949 by Willard Libby (1908–1980). The technique of measuring quantities of C14 in organic materials has been used very extensively since that time by archaeologists. Libby won the Nobel Prize in Chemistry for his discovery in 1960. For more details of the acquisition of this object, see the short video at: [www.youtube.com/watch?v=KdpasKqyGvc](http://www.youtube.com/watch?v=KdpasKqyGvc).

### **Lloyd Library and Museum (LLM), Cincinnati: LLM Acquires Lloyd Extractor: An Artefact Important to the History of Pharmacy and Business in Cincinnati**

LLM has recently acquired a significant piece of history: an extractor patented by its founder John Uri Lloyd. It was donated to LLM by AYSL Corporation through Albert Y. Leung, Ph.D. This particular unit has not only a long and interesting history, but also significantly touches upon the history of pharmacy, Cincinnati business, the University of Michigan, and Lloyd Brothers Pharmacists, Inc.

In 1904, John Uri Lloyd (JUL) filed his first patent on (what he named) the Concentrator for Solutions, the device that has since come to be known as Lloyd's Cold Still or Lloyd's Extractor. Pharmacists had long recognized that when heat was applied to plant extracts the efficacy of the products was diminished. In developing his concentrator and extractor, JUL adopted the then-novel principle of applying heat to the surface, rather than the bottom, of the liquid. Although methods for manufacturing drugs have changed throughout the years, contemporary herbalists often use JUL's method because it produces more effective products.

The Lloyd Extractor now on display at LLM has identifying copper plates that read: "Lloyd's Patent Extracting Apparatus patented March, 9, 1920-number 1332908-M[anufactured] by Brighton Copperworks, Inc., Cincinnati, Ohio, Coppersmiths & Engineers to the Chemical Industry." JUL's Extractor was first manufactured by F.C. Deckebach & Sons Company of Cincinnati, purchased by Brighton around 1934. In 1986 Brighton was sold to Trinity Industries, Inc.; and, in 2002, Enerfab, located at 4955 Spring Grove Ave, Cincinnati, acquired Trinity. Today, Enerfab makes containers and related products for the food and beverage industries, as well as the chemical and pharmaceutical industries. The Lloyd Extractor has found a most appropriate home at LLM: an artefact relevant to Cincinnati's pharmacy and business history.

Plans are underway to develop a permanent educational exhibit at LLM titled 'The History of Pharmaceutical Chemistry', which will display the Lloyd Extractor. In addition, the permanent exhibit will feature the Soxhlet Extractor, a donation from Research Triangle Institute of North Carolina, used by scientists in the 1960s to test and produce cancer-fighting agents from the Pacific Yew, *Taxus brevifolia*, which led to today's important anti-cancer medicine Taxol(r). Along with these two important extractors, the exhibit will include other pharmaceutical equipment from Lloyd Brothers, Pharmacists, Inc. and Benet's Pharmacy, a long-time Cincinnati establishment and compounding pharmacy that recently closed its business near Piatt Park and made a significant donation of artefacts and other materials to LLM from the pharmacy. The exhibit will culminate with the George Rieveschl, Jr. Research Center featuring books and artefacts once belonging to Rieveschl; as well as his research

papers on the development of Benadyl(r) from LLM's George Rieveschl, Jr. Papers. For more information, visit the Lloyd website at [www.lloydlibrary.org](http://www.lloydlibrary.org).

## 6.4 Publications

### The Correspondence of Michael Faraday

With the publication of the sixth and final volume of the correspondence of Michael Faraday earlier this year, Frank James, after twenty-five years, has brought together all of Faraday's extant letters. In total 5053 have been published of which nearly three quarters were previously unpublished. Much new light has been thrown on all aspects of Faraday's work including his lecturing where his *The Chemical History of a Candle* remains in print after 150 years.

But the major surprise uncovered by the letters was the amount of time and effort that Faraday devoted to the lighthouse service. It was, of course, known that Faraday held the position of scientific adviser to Trinity House from 1836, and later a similar role at the Board of Trade to work on colonial lighthouses. But his early biographers had minimised his involvement, preferring instead to concentrate on his scientific research. Thus when the papers of Trinity House became available for study in 1994, it was extraordinary to find that more than five hundred letters passed between Faraday and the Corporation between 1836 and 1867. In total roughly 17% of his extant letters after 1836 deal with lighthouse matters.

Much of this work was chemical in nature, continuing his role, and that of the Royal Institution, in providing scientific advice for the state and its agencies. Thus he analysed the drinking water used by lighthouse keepers and also ensured that the red and white lead used for painting the lighthouse exteriors had not been adulterated. The correspondence also reveals Faraday undertaking this kind of work in large number of other contexts such as analysing for contamination the oatmeal destined for convict convoys, as well as endless water and gunpowder analyses. It was doubtless his practical concerns that led to Faraday (part-time) appointment as Professor of Chemistry at the Royal Military Academy at Woolwich, a post he held from 1830 to 1851. Thus generations of officers of the Royal Artillery and the Royal Engineers learnt their chemistry from Faraday, though precisely how useful it was to them in their later careers remains unclear.

Although Faraday's research is now seen as concentrating chiefly on natural philosophy, he did make some significant contributions to chemistry in terms of discovering new substances (for example various carbon chlorides and what became known as benzene, though he did not do anything with it) and also in electro-chemistry where he established his two laws of electrolysis (a word he introduced into science along with others such as electrode, cathode, ion etc). However, the way in which Faraday pursued natural philosophy in his discoveries of electro-magnetic induction, the magneto-optical effect, diamagnetism and in formulating electro-magnetic field theory, can be seen as emerging from his chemical background. As the German organic chemist Justus Liebig put it: 'To physicists, who have approached physics by the road of chemistry, Faraday's memoirs sound like an admirably beautiful music.'

For further details, see: <http://www.theiet.org/resources/books/history/ccmfvi.cfm>

Frank James  
(The Royal Institution of London)

## 7. Membership

### Subscription reminder

The Hon. Treasurer would be grateful to receive dues from those members who have yet to pay their subscription for 2012. The rates and methods of payment are available on the SHAC website at:

[http://www.ambix.org/index.php?option=com\\_content&view=article&id=33&Itemid=32](http://www.ambix.org/index.php?option=com_content&view=article&id=33&Itemid=32)

### New members

The Society for the History of Alchemy and Chemistry warmly welcomes the following new members:

Richard Ashrowan	Edinburgh School of Art
Nick Best	Indiana University, PhD student
Donna Bilak	Bard Graduate Center, New York
Katherine Allen	Oxford University
Joe Cambray	Providence, Rhode Island, USA
Andrew Ede	University of Alberta
Catherine Jackson	London
John Lamming	Delaware, USA
Thomas Le Roux	Oxford, Maison Francaise/Paris, EHESS
John Norris	Brno
Ignacio Pascual-Valderrama	Consejo Superior de Investigaciones Cientificas, Madrid
John Stewart	University of Oklahoma

### Joining SHAC

The Society for the History of Alchemy and Chemistry has a longstanding tradition in the field, organising colloquia, publications and promoting the interdisciplinary study of the history of alchemy and chemistry from its early beginnings to the present. The Society offers support to its members, including an award scheme, regular meetings and events, graduate network, and the triennial Partington prize for original academic writing on any aspect of the history of alchemy and chemistry. It offers a forum for advertising forthcoming events, both within the United Kingdom and internationally, and its website provides a portal to resources relating to the history of alchemy and chemistry.

Members receive the Society's journal *Ambix*, the leading scholarly journal in the field of history of alchemy and chemistry. *Ambix* is published by Maney Publishing and appears three times a year (quarterly from 2013). Members will also receive the Society's newsletter, *Chemical Intelligence*, twice yearly.

Application forms and membership information may be found on the Society's website, <http://www.ambix.org/>, under 'Membership'.

For all membership questions, please contact the Hon. Treasurer:

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## Further Intelligence

For queries regarding the content of *Chemical Intelligence*, or to suggest material for inclusion in future issues, please contact the Editor:

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