

**SOCIETY FOR THE HISTORY
OF ALCHEMY AND CHEMISTRY**

Postgraduate Workshop on the History of Alchemy and Chemistry

Keynes Library, Birkbeck College

Saturday 26 October 2013

‘Alchemy and Chemistry in Context’

Programme

10.00–10.30 Registration and Refreshments

10.30–10.45 Introductions

10.45–11.45 Alchemy in Context

Chair: Dr Jennifer Rampling (University of Cambridge)

1. **Hilde Norrgrén** (University of Oslo): ‘John Dee’s Astrological Alchemy’
2. **Agnieszka Rec** (Yale University): ‘Alchemy at the Cracow Academy: Adam of Łowicz and BJ 5465’

11:45-12:00 Short Break

12:00-13:00 Keynote Lecture 1: ‘Alchemical Context and Early Modern Textualities’

Dr Stephen Clucas (Birkbeck College, University of London)

13.00–14.00 Lunch (provided by SHAC)

14.00–15.00 Chemistry in Context

Chair: John Christie (University of Oxford)

1. **Rachel Dunn** (University of Durham): ‘Chemistry and Education: Representation in the Teaching of John Dalton’
2. **Corinna Guerra** (Istituto Italiano per gli Studi Storici, Naples): ‘In Case of Eruption? Enjoy the Natural Laboratory of the Kingdom of Naples!’

15.00–15.30 Tea and Coffee Break

15.30 – 16:30 Keynote Lecture 2: ‘But What Is a Context, Actually? Critical Illustrations from the History of 18th Century Chemistry’

Prof John Christie (University of Oxford)

16.30–17.30 Roundtable Discussion and Conclusions

ABSTRACTS

Hilde Norrgrén (University of Oslo) – ‘John Dee’s Astrological Alchemy’

In the alchemical tradition astrological influence was believed to play an important part in the development of metals inside the earth. Consequently it also had significance for the alchemical process. The positions of the heavenly bodies at the time of the initiation of the process were considered important for a successful result.

One of Avicenna’s (c. 980-1037) influential criticisms of alchemy was that the astrological conditions for the generation of gold and silver in the earth could not be known. The infinite number of possible constellations of the heavenly bodies meant that these conditions could not be recreated, and the effects of astrological influence on sublunary matter could not be known.

This problem is addressed by the English alchemist, astrologer, and mathematician John Dee in his *Propaedeumata Aphoristica* (1558/68). Here he outlines a method of quantifying and analysing astrological influence and its effect on alchemical change.

Dee’s method of quantification uses principles from Galenic medicine, and provides an example of the interaction of alchemical theory with both astrology and medicine.

Both as a work that endeavours to solve a central problem in the theory of alchemy, and as an example of early attempts to establish quantitative knowledge about material change, *Propaedeumata Aphoristica* deserves more attention than it has hitherto had.

Agnieszka Rec (Yale University) - Alchemy at the Cracow Academy: Adam of Łowicz and BJ 5465

The fifteenth and early sixteenth centuries witnessed the flowering of the Cracow Academy as that institution grew famous for its contributions to mathematics and astrology and other disciplines. There were even rumours that the medical faculty lectured on alchemy. Although these rumours are almost certainly false, alchemy was known and practiced there at the time.

In this paper I will discuss a particular Polish alchemist: Adam of Łowicz (d. 1514), student, professor of medicine, and sometime rector of the Cracow Academy. Adam’s alchemical activities survive today in the form of an alchemical treatise, *Fundamentum scientiae nobilissimae secretorum naturae*, composed during his student days. The text is preserved in a single copy in BJ 5465, a lengthy alchemical miscellany itself supposedly compiled by Adam. I will examine both this text and its manuscript to uncover the theories and techniques available to a Polish alchemist working at the end of the fifteenth century. In doing so I hope to shed light on the beginnings of alchemy in Poland, particularly in the context of the Cracow medical faculty.

Rachel Dunn (University of Durham) - Chemistry and Education: Representation in the Teaching of John Dalton

In this paper I will discuss representation in early nineteenth-century chemistry with reference to the teaching of John Dalton. Dalton is of interest to pedagogical research as he spent the majority of his life as a teacher, primarily in the north west of England. By setting my discussion in the context of his teaching, I will explore the changing demographic of Dalton's private pupils and his work teaching chemistry to medical students.

The focus of the talk will be on the design and implementation of Dalton's atomic symbols. I will first examine the individual symbols presented in *A New System of Chemical Philosophy* (1808-1827) and attempt to categorize them according to design.

The discussion will then shift to the two-dimensional representations of compounds Dalton drew using his individual symbols. In creating these compounds he assumed the simplest possible formulae, e.g. water as a binary compound, OH, rather than, as we now know, H₂O. Essentially, Dalton had to make assumptions as to the numbers of atoms that combined to form each compound. I will examine the ways in which he manipulated the symbols, looking at his spatial arrangements to suggest he was one of the earliest stereochemists. In doing this, the posters and handbills he employed as pedagogic tools will be presented. Finally, I will draw conclusions to show that his visual thinking was apparent in his symbols.

Corinna Guerra (Istituto Italiano per gli Studi Storici, Naples, University of Bari) – In Case of Eruption? Enjoy the Natural Laboratory of the Kingdom of Naples!

Chemistry in the eighteenth century was a new scientific discipline which was able to remedy problems of society and mankind. However, every region had special chemical issues linked with its chemical specificity.

This paper should contribute to our understanding of the double role of a volcano as a place for the practice of chemistry and as for chemical discoveries. In fact, Vesuvius was a kind of a natural, open-air, chemical laboratory, above all in a place like Naples, where there were no laboratories for students. Thus, many scientists tried to take advantage of its gases to have the opportunity to study spontaneous chemical reactions. At the same time, by reflecting on the debate over the nature of Vesuvius' ash, in which many chemists of the Kingdom of Naples (i.e. Southern Italy) were engaged, we can appreciate that the incentive for doing chemical analysis of this long inexplicable phenomenon created knowledge of substances and allayed people's fears.

The case study shows, using Latin, French and Italian primary sources, the clear interactions between chemists, government and their physical territory: the natural frame of their chemical knowledge and practice.