ISSN 2050-0432



COMMITTEE

Chairman:

Prof. John W Nicholson 52 Buckingham Road, Hampton, Middlesex, TW12 3JG [e-mail: jwni0 Tc 37 0 J4 BT 0.oBT 0.:s 0 J4o ET Q q 0.24 0 (

Historical Group

NEWSLETTER and SUMMARY OF PAPERS

Editor: Dr Anna Simmons

No. 84 Summer 2023

Registered Charity No. 207890

ROYAL SOCIETY OF CHEMISTRY HISTORICAL GROUP NEWS

From the Chair

Having introduced myself in the previous issue of the Newsletter, I thought it would be helpful to outline what I see as the way forward for the next stage in the evolution of the Group. First, I should say that I have no strong inclination to change anything very much. Our mix of topics for our twiceyearly one-day symposia continues to attract good numbers of participants, and our monthly webinars, initially developed in response to the Covid emergency, go from strength to strength under the wise leadership of Peter Morris. I certainly want all of these to continue much as they are.

However, we do face challenges. Like many organisations, the RSC is increasingly focussed on the issues of diversity and inclusion. The problem is that, by modern standards, history (including of chemistry) has not been very diverse or inclusive. We therefore have to be sensitive about how we reflect on the chemists and chemistry of earlier times. One thing that is likely to change going forward is to move away from symposia on this or that "great man of chemistry" and instead to concentrate on key developments in the subject. In that way, we hope to be able to highlight the co-operative nature of chemical research, and to identify the contribution of a more diverse range of chemists.

Despite this evolving emphasis, I have every intention of ensuring that our main activities continue as they have. This means the provision of interesting meetings and presentations on the history of chemistry, and the publication of our high-quality Newsletter. I want the committee to remain responsive to new ideas, so if there is something you would like to see us do, or if you have any suggestions of topics for future one-day meetings, please get in touch. My contact details are at the front of the Newsletter, and I would welcome any thoughts you may have.

John Nicholson

Six New Committee Members Elected in Our First Ever Ballot

I am delighted to say that six well-qualified candidates were elected in our recent ballot for new Historical Group committee members. They are:

• Anna Coyle who has retired from a career in science and compliance publishing, most recently at WoltersKluwer UK.

- Vincent Daniels who worked in conservation at the British Museum and the Royal College of Art.
- Andrea Gallio, a research associate in bioinorganic chemistry at the University of Bristol.
- Alice Halman who is a Senior Technical Advisor at Sellafield Ltd.
- Michael Leggett, a retired Standards Development Manager at the British Standards Institution, who is also on the council of the Society for the History of Astronomy.
- Michael Seery, Head of Digital Learning at Cardiff Metropolitan University.

We welcome them all most warmly and look forward to working with them to make the Historical Group attractive to members of the Royal Society of Chemistry and to introduce the public at large to the riches of the history of chemistry. This is the first major influx of new members to the committee for several years and in fact the largest increase in its membership in our long history as a group. It is particularly good that two of the new members (Alice Halman and Andrea Gallio) are early career members of the RSC. We can look forward to our fiftieth anniversary in 2025 knowing that the group is in good hands. Stanley spent thirty-seven plus years working at the Royal Society of Chemistry, during which time he held a variety of jobs under the title of International Affairs Officer, including Secretary of the Industrial Division and the International Committee, and he was responsible for all Endowed Lectureships and Prizes. On behalf of the RSC, he was a member of a small international delegation to visit UNESCO, Paris, in an attempt to persuade it to designate an International Year of Chemistry (IYC). This needed to be formally requested by a developing country and Stanley visited Ethiopia to ask its equivalent body to make the application. This eventually led to the UN designating 2011 as the IYC for which the RSC organised many events throughout the UK. Stanley was also Secretary of the RSC's IUPAC Committee, has been a Member of the Chilterns and Middlesex Section Committee for twelve years and a Trustee of the RSC Pension Fund Committee for seventeen years. He is the organiser of the Humphry Davy Lecture, whose speakers have included Helen Sharman. Pallab Ghosh and Sir Patrick Vallance. He was also a member of the Chilterns and Middlesex Section Committee that was awarded the 2020 Ins305 I05 (0) 3 1 Tf [(w) 120 (h) 124 (o) 1245 (t) 38 (d) 309 (w) 3 a(d) 21/4/2041 Å chemical information will be discussed. This will include analysis of the notebook practices of some famous chemists. More information will be provided in the next Newsletter. Please send offers of papers for presentation to Dr Helen Cooke, helen.cooke100@gmail.com.

Chemistry, History and Medicine - Wednesday 16 October 2024

Without chemistry's contributions to medicine, especially with respect to drug-discovery and development, life indeed would have remained, to use Thomas Hobbes' 1651 phrase, "Poor, brutish and short". Only a few effective medicaments were in use up to the mid-nineteenth century. These were mainly of natural origin such as: quinine as both a cure for (and a prophylactic against) malaria, castor oil as a purgative (and its cousin, the more mildly-acting senna, extracted from the shrub <u>Senna alexandrina</u>) and laudanum (an alcoholic tincture from opium poppies) to alleviate pain and induce euphoria. This meeting will consider how the development of chemistry in the nineteenth and twentieth centuries contributed to the amelioration of disease, and the prolonging of life.

- Among the topics to be included in the meeting to be held at Burlington House will be
- the discovery of insulin and the methods used over the last century to monitor its effectiveness in the treatment of diabetes, via glucose estimations in blood and urine
- the discovery of the drugs used to attack, cure and control the scourge of tuberculosis
- some aspects of the history of anaesthesia, with special reference to the early use of chloroform.

TRIBUTE TO JOHN GIBSON OBE (1938-2022)

Dr John Gibson FRSC OBE was a chemical engineer by training. He was born on 26 January 1938 in Darlington and he studied at Imperial College London, obtaining his first degree in 1961 and then a PhD in 1964, also at Imperial College. He was employed by the Chemical Society at Burlington House from 1966 to 1980 as Secretary, Scientific Affairs, and thereafter, with the founding of the Royal Society of Chemistry in 1980, he was appointed General Manager of Conferences and Awards. He was awarded the Order of the British Empire in 1998. We were very sad when we learned that John Gibson had passed away late last year. Subsequently we were asked to write a tribute to him for the RSC Historical Group; we were honoured to be asked so to do.

A tribute to John was published recently in the April 2023 edition of the RSC's quarterly magazine 'Voice' (page 13), with warm personal recollections given by Professors Duncan Bruce and David Grayson. Following this tribute, we agreed that it would be remiss not to remember John's very substantial contributions to the history of the RSC's formation and development. It was appropriate therefore that this should be done through a tribute from the Historical Group. In fact, John was a key player in managing and facilitating the historic changes which occurred in the late

as Duncan Bruce describes – I found I could rely absolutely on John Gibson

Helen Cooke, Fabio Parmeggiani and Nicholas L. Wood, "Analysis of a Seventeenth Century English Apothecary's Probate Inventory," *Pharmaceutical Historian*, 2023,

Special Issue: Gold and Mercury: Amalgamated Histories in Chemistry, Culture and Environment

Donna Bilak "Living Then and Now with Gold and Mercury".

Vincenzo Carlotta and Matteo Martelli, "Metals as Living Bodies. Founts of Mercury, Amalgams and Chrysocolla".

Donna Bilak and George Vrtis, "Environmental Alchemy: Mercury-Gold Amalgamation Mining and the Transformation of the Earth".

Sebastián Rubiano-Galvis, Jimena Diaz Leiva and Ruth Goldstein, "Amalgamated Histories: Tracing Quicksilver's Legacy Through Environmental and Political Bodies in Andean and Amazonian Gold Mining".

Peter Oakley, "Making Mercury's Histories; Mercury in Gold Mining's Past and Present".

Ambix, May 2023, volume 70, issue 2

Barry Sturman and David Garrioch, "Amateur Science and Innovation in Fireworks in Nineteenth Century Europe".

Peter Reed, "George E. Davis: Editing the Chemical Trade Journal, 1887–1906".

Megan Piorko, Sarah Lang and Richard Bean, "Deciphering the *Hermeticae Philosophaie Medulla:* Textual Cultures of Alchemical Secrecy".

Reviews: Special Focus: A Cultural History of Chemistry, Peter J.T. Morris and Alan Rocke (eds.).

Ambix Article Collection: Centres and Peripheries of Chymical Knowledge: Tracing Traditions of Alchemy and Chemistry in Eastern Europe

This collection of free access papers from *Ambix* celebrates the 13th International Conference on the History of Chemistry held in Vilnius, Lithuania. From the patronage networks of Rudolph II to the military campaigns of World Wars I and II, chymical knowledge was highly sought after in Eastern Europe, especially as a means to exert political power. The articles featured in this collection trace historical evidence of Eastern European chymical traditions, from a fourteenth-century Bohemian alchemical manuscript to twentieth-century global approaches to chemistry, to illustrate the mutual influence of Western and Eastern European chymical knowledge exchange. The insularity of Eastern European science before the establishment of the port of Archangel was not intentional but forced by feuding neighbouring lands. Ivan the Terrible attempted to create a Moscow medical school, but the Western European instructors he tried to bring in were blocked by the Danes and Swedes. The establishment of the port of Archangel in 1553 expedited cross

Ivoni de Freitas-Reis and Beatriz Gatti de Castro, "

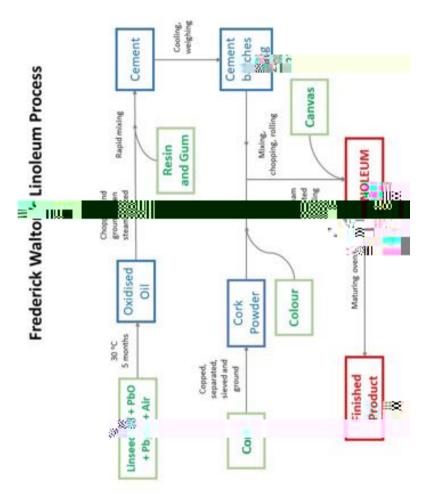
telling the story of these scientists and their peers, Jackson reveals organic synthesis as the ground chemists stood upon to forge a new relationship between experiment and theory—with far-reaching consequences for chemistry as a discipline. A review of this book will appear in a subsequent issue of the *Newsletter*.

Marco Beretta and Paolo Brenni, The Arsenal of Eighteenth Century Chemistry: The Laboratories of Antoine Laurent Lavoisier (1743-1794) (Leiden: Brill, 2022)

The substantial collection of Antoine Laurent Lavoisier's apparatus is not the only surviving collection of eighteenth-century chemical apparatus and instrumentation, but it is without question the most important. The present study provides the first scientific catalogue of Lavoisier's surviving apparatus. This collection of instruments is remarkable not only for the quality of many of them but, above all, for the number of items that have survived (ca. 600 items). Given such a wealth and variety of instruments,

densities this can be recalculated as 1.429 grams per dm³. Given that the molar volume = $M/^{6}$ normal density', we derive the ubiquitous volume of 22.4 dm³

ninety-four. Figure 1 shows a portrait photograph of Frederick, who was



With oils is seems to enter into peculiar combination which confer on them the property of drying rapidly on exposure to air.

Figure 2: Schematic Summary of Frederick Walton's Linoleum Process. Compiled by author from the handwritten notes.

drossing in the semi-metallic state, or in that of suboxide, may be wholly converted into litharge. When completely oxidised it forms a layer 2 ! to 3 in thick on the bed of the furnace. The powder is raked out into iron

- 2. Spelthorne Museum accession SMXSP 2015.257.14, part of a legacy collection (SM297) absorbed into the museum collection on its formation in 1980.
- 3. Ralph Parsons, From Floor to Ceiling: How One Man's Inventions Brought Fame to Staines and Sunbury (Staines: Spelthorne Museum, 1997).
- 4. Ralph Parsons, From Floor to Ceiling: How One Man's Inventions Brought Fame to Staines and Sunbury (Staines: Spelthorne Museum, 1997), 5.
- 5. Frederick Walton, "On the Introduction and Use of Elastic Gums and Analogous Substances", *Journal of the Society of Arts*, 1862, 10 (no. 489), 324–334. Available from http://www.jstor.org/stable/41323695.
- 6. Ralph Parsons, "Linoleum: A Chiswick Invention", Brentford & Chiswick Local History J(t) Bre

podcast hosts to register for an array of podcast apps. For premium content, which is early access to episodes plus supplemental sheets with diagrams of molecules and reactions, I use Patreon. Podcast hosting companies prefer if the series has a logo for visual appeal while potential listeners scroll through possible series, so I designed and created in Photoshop software a bold image of a conical flask pouring lurid green liquid into the title of the series [Figure 1].



Figure 1: Logo for "The History of Chemistry" podcast. Image copyright © 2022 by Stephen Cohen.

As to subject matter, I avoid almost entirely mathematics: the idea is to introduce a layperson to the grand ideas of chemistry and how they developed, not to teach the listener how to be a chemist, or do chemistry. As of this writing, I also have not used the word "mole." In my view, moles are not necessary for these grand ideas, and seem to give non-scientists anxiety in classroom settings. When I describe molecules, I use general terms, like "a benzene ring with a chlorine hanging off," and try to stay away from much jargon. My general tone is conversational, not formal, and I personally approach the subject as a non-expert in science history: my background is a PhD in physical chemistry. Having lived in Nottingham, England for a year in 1985–86 for postgraduate research at the University of Nottingham, I try

to be sensitive to variations in British versus American English. I avoid the Imperial System of units, and almost only use SI units. One exception is, for example, when talking about Eunice Foote's 1856 seminal report on the heat capacity of gases [6], she used Imperial measurements in her article, which I

- Electrically-conductive organic polymers
- Removal of "forever chemicals"
- Laboratory safety and Karen Wetterhan's legacy
- Chemistry deep in the Earth

Obviously, I am not an expert in most of the topics I discuss. My background is surface chemistry in the realm of physical chemistry, therefore the controversies over organic reaction mechanisms are doubtless out of my depth—and I often approach organic chemistry topics with much trepidation (as I did in my undergraduate years). Because my goal is to provide the overarching ideas rather than tiny details, all explained at the lay level, I feel my overall expertise in chemistry make a good background for compromise in presentation. I learn quite a lot as I write each episode. After writing a script, I often finding myself excitedly describing some oddity of that episode to my wife, who has a PhD in organometallic chemistry.

I don't hide my American accent, but neither do I emphasize it, nor do I promote a regional dialect (mine is largely Middle Atlantic). I speak slower, enunciate more

from the increasingly commercialised, competitive scientific publishing environment, internationalisation and digital technologies.

The book also covers other Royal Society publications, including the

Johan Alfredo Linthorst, *Research between Science, Society and Politics. The History and Scientific Development of Green Chemistry* (Utrecht: Eburon Academic Publishers, 2023). Illus., index. Pp. 269. 36.00 (softback). ISBN: 978-94-6301-434-2.

The development of green chemistry has acquired a considerable body of scholarship over many years, often under the heading of related terms, sustainable chemistry, environmental chemistry, clean technology, and "benign by design chemistry". Linthorst's book builds on his earlier research and addresses the research question: "how did environmental concerns and the public image of chemistry shape the emergence and (scientific) development of green chemistry in the USA, the UK and the Netherlands?" [1] The three countries were chosen because of the origin of green chemistry in the USA in the mid-1990s (from Linthorst's earlier work), the major interest in green chemistry in the UK, while the Netherlands is a continental European country that showed a growing interest. In advancing his analysis, Linthorst looks through the lens of the country's chemical societies, the American Chemical Society (ACS), the Royal Society of Chemistry (RSC) and the Royal Netherlands Chemical Society (KNCV).

The narrative is divided into six chapters. Chapter 1: Introduction – the Emergence of Green Chemistry; Chapter 2: Chemistry, Politics and Society - the Rise of Green Chemistry in the USA; Chapter 3: Recognition and

Institutionalization of Green Chemistry in the UK; Chapter 4: T()-108 (i)1 (n) -3 () -2 (r) - o in (p) 2 (t) -7 (3) -0108 (4) -3(o) 2 (c) 3 (i) 5 (e) 3 iSoci108 (i)1 (n) 2 ond o -3(l(e)(o8m BT 02

Peter J.T. Morris and Alan Rocke (general editors), *A Cultural History of Chemistry* (Bloomsbury: London, 2022). 6 vols. Illus., notes, bibliography, index. Pp. 1728. 6 volume hardback set, RRP £440. ISBN 978-1-4724-9453-9. Also available digitally as an annual subscription or for perpetual access.

A Cultural History of Chemistry is a most welcome addition to this Bloomsbury series which at present covers around forty diverse subjects ranging from animals to food, law, money, medicin and literary sources, ranging from Jacques-Louis David's portrait of Antoine and Marie-

species discovered in space. This talk described the origins and development of astrochemistry from the detection of the first molecules in space to the present day. Walsh described the unique chemistry that we now know happens in space, the current state-of-the-art observational facilities, and also how the co-development of laboratory astrophysics has accelerated the field and our understanding of chemistry in space.

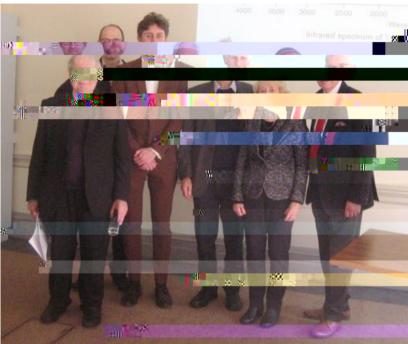
Putting the Chemistry Back into the History and Philosophy of Chemistry – Jeff Seeman (March 2023)

Some historians and philosophers of chemistry have recently displayed the tendency to omit the "chemistry" from their studies. In this presentation, Jeff Seeman provided

- 2. the application of antiseptic techniques to reduce the risk of infection from surgical operations (1867)
- 3. the discovery of penicillin (1928), later elaborated by Florey (1939-43).

Quite near the top of my list, possibly even at number 4, would be the

beads as early as 1881, the mistaken belief in the need for "washing"



Speakers at the Pot-Pourri meeting

The Discovery of Sodium Cromoglycate (Intal)

Robert Slinn

This talk covered the history of Fisons Pharmaceuticals Ltd (previously Benger's Ltd) and the discovery there in 1965 of the 'blockbuster' antiasthma drug Sodium Cromoglycate (INTAL), along with the story of one remarkable man, Dr Roger Altounyan, its discoverer. Roger, a physician and lifelong chronic asthma sufferer, discovered (together with Fisons Pharma researchers) the life-saving drug Sodium Cromoglycate following years of research at Benger's and Fisons Pharmaceuticals, which was then located in Holmes Chapel, Cheshire. Its chemical synthesis, structure and clinical ceremonial Great Hall. More information on the Society can be found at https://www.apothecaries.org/ and in Anna Simmons' talk "Pills, Powders and Purgatives: The story of how drugs from a London livery company were used throughout the world" on the RSCHG YouTube Channel.