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Historical Group

NEWSLETTER
and
SUMMARY OF PAPERS

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RSC Historical Group Newsletter No. 86 Summer 2024

Contents

for the winter 2025 issue will be **Frida 6 December 2024**. Please send your contributions to a.simmons@ucl.ac.uk as an attachment in Word. As ever, I am indebted to Gerry Moss for his assistance in pagination and production and to Alice Halman for all her help as membership secretary.

Group members should receive an e-alert from the RSC informing them when the latest newsletter is available, but for the record the Newsletter appears twice each year – usually in January and July. It is often available online before official notification is sent out by the RSC, so please look out for the newsletter on both the RSC and Queen Mary Historical Group websites: http://www.rsc.org/historical or https://rschg.qmul.ac.uk. We'll also be using the Group's new LinkedIn page managed by Andrea Gallio to

The RSC Historical Collection is an extensive range of historical items including books, journals, letters, lecture notes, pamphlets, monographs and magazines. The collection covers the evolution of the chemical sciences from the sixteenth to the twentieth century and includes publications from the Royal Society of Chemistry and its precursor societies. Society publications include *Chemistry in Britain*, and there are also Council minutes, lists of Fellows and annual reports. Historical books, papers and letters owned by the RSC include the Nathan Collection, the Davy Bookcase and a collection of manuscript letters written to Chemical Society officials.

ROYAL SOCIETY OF CHEMISTRY HISTORICAL GROUP MEETINGS AND ONLINE LECTURES

Chemistr , Medicine and Histor

This one-day in-person mee

TRIBUTES

Alw n Davies (13 May 1926 – 1 September 2023) [1], [2]

and skid-greasing" (as he put it in a letter to Clara Craver) through the rest of 1981 that led ACS leadership to join Penn in creating the new Center for History of Chemistry. He was present at the creation – and remained a steadfast and loyal supporter of SHI throughout its evolution over the next forty years, serving on the Board of Directors (of both the Chemical Heritage Foundation and its successor, the Science History Institute), the Heritage Council (now Affiliates Council), Othmer Giving Society, and Bolton Society. He was serving as a member of the SHI Collections Committee at the time of his death.

Ned Heindel was born on 4 September 1937 in Red Lion, Pennsylvania, and graduated from Red Lion High School. He then pursued the study of chemistry at Lebanon Valley College (B.S., 1959); the University of Delaware (Ph.D. in organic chemistry, 1963); and Princeton University, where he completed a postdoctoral fellowship with Professor E. C. Taylor. Following his postdoc, Ned held a series of teaching positions at the University of Delaware – Wilmington, Ohio University, and Marshall University, before moving to Lehigh University in 1966, where he spent the rest of his highly productive career in teaching and research. Ned's manifold contributions to the life of chemistry through teaching and research are covered well in the memoirs written by friends and colleagues at the time of his death in 2023 (see References). He was an enthusiastic and energetic participant in the life of the chemistry profession beyond Lehigh. As noted above, he became President of the American Chemical Society in 1994, following decades of engagement on the ACS Board and Council, as well as its Division of the History of Chemistry (which he served as Chairman).

Ned also had a lifelong and eclectic interest in history – not just the history of chemistry, pharmacy, and medicine, but also local history, Pennsylvania Dutch folklore and books of secrets, and patent medicines. He published a number of books on these subjects and was a frequent contributor to *Pennsylvania Folklife* and *The Pastfinder*, the magazine of the William Township Historical Society. He was a stalwart supporter of the Northampton Country Historical and Genealogical Society in Easton, Pennsylvania (and its Sigal Museum). His interest in the environment and culture of Northampton Country led to an important role in conservation – together with his wife, Linda, Ned donated the Hexenkopf Ridge, the Hexenkopf Rock, and the surrounding seventy-seven acres of land to the county in 2020 for a nature preserve.

One of the last times I saw him, Ned gave me a copy of his latest book, on the patent medicine purveyor, “Money” Munyon, whose life and work he had studied for decades. He had a twinkle in his eye as he described some of Munyon’s schemes and you could tell that Ned’s interest in history was motivated by his interest in his fellow humans. Like all of his friends and colleagues, I miss Ned and I’m grateful for his friendship and support over the years. And for his central role as one of the team of believers that led to

Historical Group newsletter. My nominations for this accolade are *The Pictorial Encyclopaedia of Scientific Knowledge*

Terada Takako lists sixteen

How Cr stallograph Helped to Win the Nobel Pri e for Vitamin C

Introduction

All new crystallographic research carried out is built upon what others have done in the past. Crystallographers should realise this and feel that they are not alone but have inherited the developments of the field's pioneers. All of this starts with the Braggs, father and son, William Henry (1862-1942) and William Lawrence (1890-1971). After twenty-three years in Australia, the father, William Henry, brought his family to England in 1908 and occupied the Cavendish Chair in Physics at the University of Leeds from 1909-1915 [1]. William Lawrence entered Trinity College Cambridge in 1909. It is reputed that he thought out the basis of Bragg's Law whilst strolling by the

Cox was able to assist Wardlaw and his inorganic chemistry colleagues in the development of X-ray powder diffraction techniques and introduce single-crystal studies with rotation cameras. A highlight of these X-ray studies of inorganic substances was the study of Magnus' green salt, known since 1828, with empirical formula $PtCl_2.2NH_3$, reported by Cox, Wardlaw and co-workers in 1932 [8]. The complex was found to crystallise in a tetragonal form implying 4-fold symmetry, immediately suggesting a structure of square planar units of $Pt(NH_3)_4$ and $PtCl_4$. The arrangement of these units in the crystal was inferred. The 1932 discovery of the square planer units (ions) was confirmed by American workers in 1957 [9], by which time crystallographic methods had been advanced producing fuller structural details.

Wardlaw took his acquired crystallographic experience to Birkbeck College, London, becoming Professor of Physical Chemistry, where he remained until he retired twenty years later.

molecule must be less than 0.5b (3.16Å) which is less than the 4-

20. J. Hvoslef, *Acta Cryst*

figures, all books contain informative appendices: a CV; a chemistree (information about the school authors taken from the school they formed); excerpts from original notebooks and similar documents (as facsimiles); a list of the authors' publications; a list of useful links; and a name index.

What Has B

2. A.J. Rocke, *Nationalizing Science, Adolphe Wurtz and the Battle for French Chemistry* (Cambridge, MA, USA: The MIT Press, 2001).
3. A.J. Rocke,

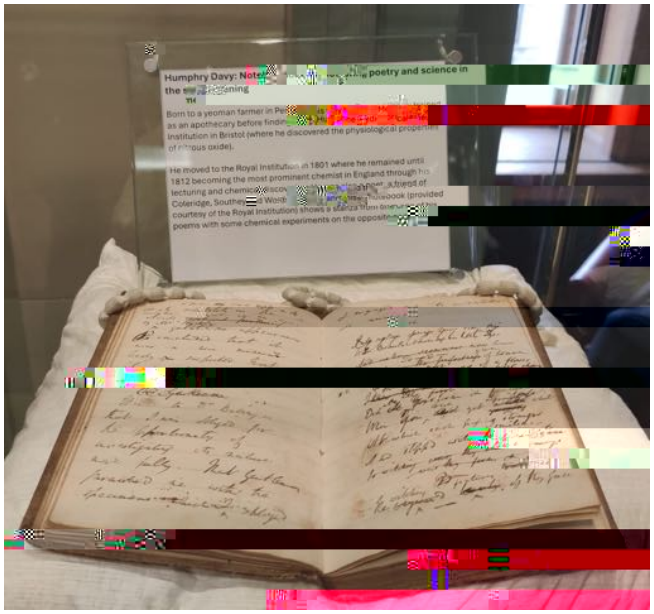
BOOK REVIEWS

Magdolna Hargittai. *Meeting the Challenge: Top Women in Science.* (Oxford University Press, 2023). ISBN 9780197574751. £22.99. Pp. 296.

In the preface to *Meeting the Challenge: Top Women in Science* it is stated that the "volume introduces successful women scientists from the past and the present, from different parts of the world and in different fields. … Taken together, they demonstrate that despite the obsolete attitude that 'science is not for women,' women can and do succeed in science, even if this success often requires courage and perseverance". The book features fascinating summaries of the lives and achievements of over 120 female

conference on the relations between the history and philosophy of science held at the University of Minnesota in 1969 and posed a radical alternative to the views held by the other participants. Part III focusses on his writing on science in America and part IV on dissecting the discipline, exploring his contributions to the historiography of science, which, as Thackray comments, stemmed from a desire to “stir up trouble or perhaps encourage people to think”. Part V is a collection of his editorials from *Isis* and *Osiris*, which provided a forum addressing the discipline worldwide. The next two sections focus on the community of scholars that Thackray created at Penn’s novel Department of History and Sociology of Science. This includes biographies of a number of his PhDs, followed by reflections from his former students, including Robert Bud, David Philip Miller and Ruth Barton. The eighth part contains a biography of Thackray and a CV, which notes his link to the Royal Society of Chemistry as a Fellow and a Chartered Chemist, amongst many other memberships, appointments and accolades.

Such a volume of collected writings invites comparison with the *Variorum Collected Studies* series, which brings together a selection of articles by a leading authority on a particular subject. Whilst a number of key figures in



Humphry Davy’s Notebook show

history, philosophy and psychology of science, especially the work of David Gooding and Ryan Tweney.

Notebooks as Laboratories: The notebooks of Linus Pauling

Kostas Gavroglu (University of Athens)

From the end of the nineteenth century, chemistry and chemists were confronted with two mysteries and one lethal threat. The first mystery was argon. How could one conceptualise a chemical element which does not react with any other element? The inertness of argon called for a radical re-conceptualization of what a chemical element is, that is an element which was inert and could not react with any other element. That was the first mystery. The second mystery was the covalent bond, the fact that the hydrogen molecule was diatomic. How could electrically neutral atoms form a diatomic molecule? It was clear that the laws of electrodynamics were not valid in small distances or, something peculiar was happening to the electromagnetic forces at the atomic level.

By 1927, quantum mechanics resolved the two mysteries. It showed that the reactivity of chemical elements and their molecular structure depends on the electron configurations in the various orbitals and that such a schema, also, allowed for non-reactivity. Argon's inertness could now be understood, and the covalent bond could be explained.

In a couple of years an old ghost appeared in a new form and came to haunt the chemists. It was a threat that threatened the very existence of chemistry and chemists. Might it be the case, that chemistry was after all, a branch of physics? Such worries were not new and chemists had already been living in an uncertain state of self-identity, especially since the last decade of the nineteenth century. Was quantum mechanics an all embracing theory for both physical as well as chemical phenomena? Paul Dirac (1902-1984), one

arguably even greater issue that vital pieces of contextual information are not captured at all.

the importance of chemical

3. Undertook research with R. Bunsen, A.W. von Hoffman, V. Markovnikov [Russian]

4. Co-developed a famous biochemical equation [Canadian]

5. In her classic book, wrote: "…perhaps bacteria may tentatively be regarded as biochemical experimenters …" [British]

6. Encouraged Dorothy Hodgkin to pursue crystallography. [British]

7. Synthesized effective compound against Hansen's Disease [American]

8. Isolated first effective anti-fungal [American]

9. First X-ray photo of DNA. [British] (no, not RF)

10. Constructed gas chromatograph [German]

11. Isolated anti-malarial using ancient Chinese recipe [Chinese]

12.

into the “fimplicit” module of MATLAB on his or her PC and thereby generate a plot with little further ado.

Michael Jewess, “An Equation for the ‘Weather Glass’”, *Physics Education*, 2024, **59**, 035006.

The accompanying figure shows a “weather glass” sold today as a decorative scientific ornament. Indoors at fairly constant temperature, it functions well as a barometer, the water in the neck of the swan rising if atmospheric pressure falls, as air in the headspace of the body of the swan expands – and conversely, if atmospheric pressure rises. (Note that the beak of the swan has an opening.) But from the early seventeenth century to the second half of the nineteenth century, such devices, in plainer forms, were important portable practical weather-forecasting devices, latterly including temperature compensation. The mercury-containing Torricellian barometer of 1644 was minimally temperature-sensitive, but was a metre tall, heavy, and difficult to move around. The *Physics Education* article shows how a physics or chemistry student can model a weather glass using only an A-Level knowledge of the ideal gas laws, of saturated vapour pressure, and of hydrostatics.

Maria Fiammetta Iovine, “A Very ‘Distilled’ Emblem in Baroque Rome: Natural Philosophy, Alchemy, and Atomism in the Academy of the Umoristi”.

Marco Berretta, “Lavoisier and the History of Chemistry”.

, vol. 49, number 1, 2024

William B. Jensen, “Ask the Historian”.

Marlene Rayner-Canham and Geoff Rayner-Canham, “The Matilda Effect:

The Society for the History of Chemistry wishes to announce that the Morris Award for 2024 has been given to

Proposal Guidelines:

The programme committee especially encourages the