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From the Editor

Welcome to the summer 2011 RSCHG Newsletter, which marks thirty years since the first one was published in June 1981. Continuing one of the themes of the International Year of Chemistry and commemorating the hundred years since she won the Nobel Prize for Chemistry, much of this issue is devoted to Marie Curie. Bill Griffith has written about her discoveries, while Geoff and Marelene Rayner-Canham explore her image and its effect on our perceptions of her life and work. Geoff and Marelene have also contributed some further insights into Ida Freund, who appeared in the last newsletter, focussing on her fervent opposition to the teaching of domestic science to girls in the place of academic science. Bill Griffith has written a short review

This matter is urgent

for tea and coffee will now be a feature of Burlington House meetings, we hope at least for the foreseeable future, not to have to factor in any costs for the use of Burlington House premises.

and, in 1911, authored a lengthy two-part denunciation in the feminist publication, *The Englishwoman* (5). She contended:

It was erroneous to think that through the study of the scientific processes underlying housecraft and especially cookery, you can teach science, that is, give a valuable mental training which should enable the pupils in after life to judge whether an alleged connection between effect and cause has been established or not.

An Editorial in the *Journal of Education* supported her position (6):

Staveley Chemicals grew up and evolved with headquarters in Staveley, Derbyshire, an area rich in natural resources. It was these resources, and, in particular, coal and iron ore, which records show were being used on the site as far back as the seventeenth century. The Staveley forge and furnace was one of the earliest iron making sites in North East Derbyshire and was undoubtedly the forerunner of the subsequent continuous industrial activity at St

“The Railway Chemists 1830-1923,” John Hudson, *Manchester Memoirs*, 2010, **147**, 42-52. From the very early days of railways, chemists were employed in the industry. Initially they worked as consultants, but from the mid-1860s the larger railway companies opened their own chemical laboratories and employed their own chemists on a full-time basis. This paper provides a brief overview of the activities of chemists in the railway industry up to 1923, when the myriad of railway companies then in existence were amalgamated into four large groups.

“History and Development of Alcoholic Beverages,” John Hudson, Chapter 1.2 (pp. 12-41) in vol. 1 of *Handbook of Alcoholic Beverages, Technical, Analytical and Nutritional Aspects*, A.J. Buglass (ed.), (Wiley: Chichester, 2011).

This so-called *Handbook* is a two-volume work of 1167 pages which gives a comprehensive description of the science and technology involved in the contemporary production and analysis of alcoholic beverages. John Hudson’s chapter provides an historical account of alcoholic beverage production and analysis. The treatment is inevitably brief, but reference is made to the work of many well-known scientists (e.g. Lavoisier, Liebig, Pasteur, Carlsberg, Sørensen, etc.), and the impact of the introduction of new technologies such as steam power and refrigeration is discussed. The analytical methods described range from those of the ale conner, who, wearing a pair of leather breeches, sat in a pool of ale on a wooden settle for half an hour to see if his breeches stuck to the settle, to site-specific natural isotopic fractionation NMR.

“Classic Kit.” This is Andrea Sella’s monthly column in *Chemistry World*.

A collection of his columns can be found at:

<http://solarsaddle.wordpress.com/classic-kit-chemical-apparatus-cm> BT 37.24000037 0 0 17. 37 0 0(-) Tme

Centenary of Marie Curie's Nobel Prize for Chemistry

From Polonium to Curium: a Celebration of the Chemistry of Marie Curie

This UNESCO International year of Chemistry is dedicated to female chemists and happily coincides with the centenary of the award of her second Nobel Prize, that for chemistry, to Marie Curie (1867-

The subsequent early history of polonium is confused. In a paper of 1902, which they must subsequently have regretted, they wrote “polonium is a species of active bismuth; it has not been proved that it contains a new element” (8) – they did not then realise that, unlike radium, polonium has a short half-life. Earlier that year, Rutherford and Soddy had clarified related problems in their clearer understanding of the nature of radioactivity (9). Friedrich Giesel (1852-1927) in Braunschweig and Willy Marckwald (1864-1942) in Berlin attempted to isolate polonium between 1899 and 1906. Marckwald isolated a material which he at first called *radiotellurium* from elemental bismuth in a purified pitchblende solution (10). This evinced a protest from Marie Curie (11) who said that Marckwald had misunderstood her (in the quotation above in (8)). Finally Marckwald agreed (12) that ‘radiotellurium’ and polonium were identical, quoting, in English, *Romeo and Juliet* (act 2, sc. 2, l. 43):

What’s in a name

Two post-Curie elements.

Francium, element 87. This was discovered by an ex-student of Marie, Marguerite Perey (1909-1975) at the *Institut du Radium* in 1939. She

26.G. T. Seaborg, *Chem. Eng. News*, 1945, **23**, 2190.

See *(3) and *(4) for English translations.

Bill Griffith
Imperial College London

Some Thoughts on Marie Curie, Double Nobel Laureate

The year 2011 has been designated the International Year of Chemistry, the year being chosen to coincide with the one hundredth anniversary of the awarding of the Nobel Prize in Chemistry to Marie Curie for her discovery of the element radium. Others have summarized her life and work, while we thought it interesting to focus on the image of Marie Curie and the effect of the image on perceptions of her life and work.

Often believed to be of French heritage, in fact Marie Sklodowska was Polish and very proud of her Polish ancestry. In fact, she insisted on Polish governesses for her two children and the first element that the Curies discovered was named polonium in honour of her native land. To her adopted country of France, Marie Curie was an object of suspicion not only because, in addition to being a woman in a male preserve, she was a 'foreigner' during a xenophobic era and also an avowed atheist in a very Catholic country. This last point played a significant role in her failure to garner sufficient votes to win membership of the Académie des Sciences (1).

Recently there has been an interest in the research work during the later years of Marie Curie's life. J.L. Davis has studied Marie Curie's research school, that is, the large group of young researchers who worked with her between 1907 and 1914 (13). Many of these researchers were women, the most prominent role being played by the Norwegian chemist, Ellen Gleditsch (14). In fact, in addition to many French women scientists working with Curie, young women came from Britain, Romania, Poland, Hungary, Canada, and Sweden, to undertake research with "the renown Madame Curie." (15) It is not often realized that between 1906 and 1934, 25-30% of the workers in the Curie laboratories were women (16).

It would appear that, at the time, Marie Curie's story fired the enthusiasm of some girls for a future in chemistry. As illustration, an article in a 1904 issue

19. It is interesting that Marie Curie's name should be used in the title of a recent book on women in science: L.E. Hall, *Who's Afraid of Marie*

professionally to visit Georgia during the Cold War in 1983, incredibly the layout of the same historic room seemed almost unchanged. In 1918-

University of Manchester); he was later Senior Lecturer and retired in 1982. Former colleagues recalled how GJK, supervising the analytical unit at UMIST, had nurtured the talent of a skilled analyst refugee Experimental Officer of Yugoslav/Russian extraction, Vassili (Basil) Manohin. They published several papers together, 1956-1971 (including two in German), and GJK ultimately ensured Manohin's funeral in the Greek Orthodox tradition. Kakabadse's final research on the continuous determination of trace elements of water in solvents was with Manohin's successor, Dr Roger Perry, who was encouraged by GJK to expand the analytical unit to analyse for forty-five elements in research materials produced within the Department.

All four of GJK's children are graduates, AK and Mario with Ph.Ds. AK is a Professor of International Management Development at Cranfield School of Management. Mario, with degrees in each of Politics, Administration and Policy, is with the World Trade Organisation. Lydia, a classical musician qualified in accountancy and law, works in corporate law. Juliet, who spent some time in Russia, has two children but teaches Russian part-time. Unhappily, Elfriede Kakabadse is now seriously ill. GJK was born into and remained in the Russian Orthodox Church. He died suddenly (so that former colleagues were unaware) of liver failure at Timperley, Manchester in October, 2002, and was buried in the Greek Orthodox tradition

One hopes that this memoir provides some recognition of the remarkable history of a gentle man who provided considerable service to chemists and chemistry. I am especially grateful for the memories of Professor Andrew Kakabadse, and also for those of Ms Lydia Kakabadse and nine surviving former colleagues (one in Croatia and several in their eighties) at Leeds and Manchester.

Emeritus Professor Derry W. Jones
Chemistry and Forensic Sciences
University of Bradford

The photograph of George Kakabadse is reproduced with permission from Prof. Andrew Kakabadse.

The Moissan-Stock-Emeléus connection

At first glance one might think that the famous German boron hydride chemist Alfred E. Stock (1876-1946) is the odd man out where the above trio of inorganic specialists is concerned. It is not so, of course, since at the turn of the nineteenth century Stock spent time in Paris with Moissan and

later (1927) acted as mentor in Karlsruhe to the young Dr Harry Julius Emeléus from London (Imperial College). These connections enabled Emeléus (1903-93) to remark in post-WW2 years, that is, once he had established himself as a leading UK fluorine chemist, that his 'academic ancestry' included Moissan.

Moissan-Stock

Stock is remembered chiefly for his work during the period 1910-1936 on hydrides of boron and silicon, and for the development of high-vacuum apparatus which made that work possible. His doctorate from the University of Berlin (1899) was based on studies in analytical and organic chemistry under Oskar Piloty (Adolf von Baeyer's son-in-law), and he was sent to Moissan's laboratory by von Baeyer's brilliant ex-student Emil Fischer, top dog of the time in Berlin and architect of a new chemical institute large enough to house 250 people [when opened in 1900, this was 'the largest chemical laboratory suite in the world' (see W.H. Brock's *The Fontana History of Chemistry*, 1992, p.428)]. Apparently, Fischer was so impressed by Stock's reputation as an experimentalist that he decided to have him trained as an inorganic chemist in a French school of excellence, then to set him up in Berlin to help with the "rebuilding of inorganic chemistry in Germany" (see E.K. Mellon, *J.Chem.Ed.*, 1977, **54/4**, 211-213).

Stock was introduced to boron chemistry by Moissan. Their papers on boron silicides appeared in *Compt. rend.*, **131**, 139 and *Ann. Chim. Phys.*, (7),

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he attended Hastings Grammar School. With the aid of an entrance scholarship, he went up to London in 1921 to read Chemistry at the Imperial College of Science and Technology; that led to work in H.B. Baker's laboratory on the luminescent oxidation of phosphorus, the award of a PhD (1926), a year with Stock (1927), a DSc degree (1929), a Commonwealth Fund Fellowship doing photochemistry with H.S. Taylor in the US at Princeton University (1929-1931), an Assistant Lectureship at Imperial College (1931; salary £300 per annum) and, eventually, his move to Cambridge.

Acknowledgement: My thanks go to Darren Ragheb of Chemistry Innovation at The Heath, Runcorn, for permission to reproduce this article from *Fluorine Technology/Fluorum Bulletin* No. 43 (2007).

Eric Banks

RSC NATIONAL HISTORICAL CHEMICAL LANDMARKS

Chemical Landmark plaque for Unilever

The presentation took place in the Unilever Port Sunlight Research and Development Laboratory on Wednesday 30 March 2011, to mark the centenary of their first R & D laboratory. After a buffet lunch, guests and research workers assembled in the main hall, and three speeches preceded the presentation.

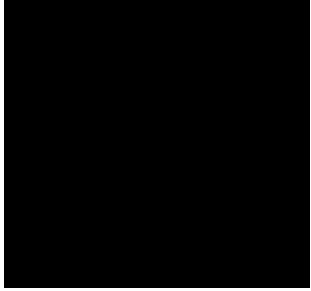
Dr Mike Parkington, the Laboratory Director, said that this event celebrated one hundred years of the first purpose-built R & D laboratory at Port Sunlight. The original structure (the 'Flatiron' building), though much changed inside, is still in use and was built by William Hesketh-Lever (1851-1925, first Viscount Leverhulme) in 1911. There are some 750 R&D workers at Port Sunlight, including 200 PhD employees, constituting an international workforce. Many well-known Unilever brands, particularly detergents, soaps, hygiene and hair-care products were developed there. Professor Geneviève Beaver, the Chief R&D Officer, said that some 2 billion people worldwide used Unilever products. There is a considerable challenge for the firm to optimise existing products and develop new ones; research facilities were second to none in the laboratories with cutting-edge facilities.

Professor Paul O'Brien, Vice-President of the RSC and Professor of Inorganic Materials at Manchester University, thanked Unilever for hosting the event. The RSC Chemical Landmark Scheme was first introduced in 2001 and officially recognises historical sites in the UK where a significant chemical discovery or research has taken place. In this International Year of

Chemistry 2011 several plaques will be awarded in recognition of the importance of chemistry and the chemical sciences in meeting the challenges of every-day life. There are currently over 47,000 RSC members and the thirty-five Local Sections in the UK are encouraged to nominate historical sites for awards.

Paul thanked the Liverpool Local Section which started the nomination process for the Unilever Laboratory in 2007. The RSC had collaborated with Unilever in significant projects in recent years, including: their sponsorship of the RSC Team work in Innovation award given to reward and promote

The plaque was unveiled at 14.00 by Baroness Kay Andrews, Chair of English Heritage, who spoke briefly about Ramsay; Dr Celina Scott, vice-Chair, described the English Heritage plaque scheme, and Prof. Alwyn Davies, FRS talked about Ramsay's career and his celebrated cycle rides



In 1910, the world standard for measuring amounts of radioactivity was the Curie unit. After her 1911 Nobel Prize in Chemistry, Marie fought for the creation of the Institut du Radium in Paris, just completed before the First World War. During that war, she and her daughter Irène developed mobile X-Ray units on the front lines, helping to save many thousands of lives through accurate pre-surgical diagnosis for the wounded soldiers. After the war, together with Dr Régaud, she contributed to the development of radiotherapy methods and instruments. In 1921 she traveled to the US to collect 1 gram of radium donated by American women, returning in 1929 to receive a cheque from President Hoover for purchase of another gram, which

form. In 1917, Rutherford 'split' the nitrogen nucleus using α -particles.
After his return to Cambridge to succeed J.J. Thomson as Cavendish

science, and then there is always the chance that a scientific discovery may become like the radium a benefit for humanity.

The meeting concluded at 17.20, and was followed by a splendid reception sponsored by the RSC.

Alan Dronsfield and Bill Griffith

FORTHCOMING MEETINGS

Royal Society of Chemistry Historical Group Meetings

Dyes in History and Archaeology 30

This is a joint meeting with the RSC Historical Group, 12-15 October 2011.

The DHA meeting this year, in association with the Historical Group, will take place in Derby at the newly built eight million pound University of Derby Enterprise Centre on 12-15 October 2011. The format will be the same as in previous years. The Wednesday evening reception is followed by two days of oral presentations and posters and the Saturday excursion is to Matlock Bath for the Heights of Abraham, then coach transfer to Masson Historic Textile Mill Museum for a guided tour. The legendary conference banquet will take place on the Thursday in a former police station (Cathedral Quarter Hotel).

Viviane Quirke, “From Chemistry, to Pharmacology, to Biotechnology: Alfred Spinks’s trajectory from wartime chemist to government advisor.”

For further information on the meeting please contact Dr Anna-Marie Roos on anna.roos@history.ox.ac.uk

A registration form will also be available on SHAC’s website: www.ambix.org

Meeting Fee: £10 for SHAC members, £15 for non-members.

NEWS FROM THE AMERICAN CHEMICAL SOCIETY – DIVISION OF THE HISTORY OF CHEMISTRY

Message from Tom Strom, HIST Division Chair

This is my first report to you as HIST Chair. It is an honour to serve you as Chair, as it has been an honour to previously serve you as Chair-Elect. I joined HIST in 1990, when I realized that HIST didn’t have the boring sessions that the other divisions did. I seem to have backed into HIST governance through arranging a history-based symposium at the Southwest Regional ACS meeting held in Fort Worth in 2004. After that I served as a resource for other chemists who were interested in arranging a chemical history session at an ACS regional meeting. Next I arranged a HIST symposium on “Landmark Stable Free Radicals of the Twentieth Century” for the Chicago ACS meeting in 2007. Somehow in 2008 I got elected to the position of Chair-Elect, and now here I am. The main impression that

this continuing effort. Thanks again for the opportunity to serve HIST the past two years.

Jan Hayes

American Chemical Society – Division of the History of Chemistry

Offerings are subject to change. Please also check the HIST website - <http://www.scs.uiuc.edu/~mainzv/HIST/index.php> for updates.

San Diego, 25-29 March 2012

General Papers and HIST Tutorials. (Seeking contributors) Seth C.