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The Pattern of the Past—Updated 2020

S ome 6 years ago we established a website for the history of neutron scattering: http://neutronsources.org/ about/history.html. Some of the articles were described in my earlier columns NN **25**(2), 39 (2014) and NN **27**(4) 29 (2016). The website also includes all the obituaries since the beginning in 1989, courtesy of the publisher, Taylor & Francis.

We have continued to add articles. Here I will highlight a few of them, but not all, and, once again, make a plea to make sure that the history of your favorite neutron source is represented. Many of these articles were first published in *Neutron News* or other journals such as *Physics in Perspective*.

In **Asia** we have acquired an article by *Margaret Elcombe* on the HFAR at ANSTO.

In Europe we have filled in, thanks to Mike Hutchings, much of the gap that existed over the early history of Harwell. Two articles in this context are worth mentioning, first the "Anecdotal Autobiography" by Peter Schofield (1929–2018), and, second, the tribute to the early pioneering work of Terry Willis (1927–2018), especially on uranium dioxide and its complicated phase diagram. Terry also ran the world's first neutron school at Oxford in 1966, which continues to this day. Schofield's article contains salutary observations on the attempt at Harwell in the 1970s to encourage industry to sponsor neutron scattering-perhaps the first attempt in this long-sought dream.

The <u>ILL</u> had its 50th anniversary in 2017, and proceedings of the meeting are on the website, along with a brilliant historical article by a professional, *Denis Guthleben* (CNRS). Both the French and translated (by *Ron Ghosh*) versions are available, and they are most illuminating.

From <u>Petten</u>, we have an article by *Bob van Laar and Henk Schenk* on the origins of the Rietveld Method, throwing new light on one of most heavily cited methodologies in neutron scattering.

In North America, Jeremy Rumsey has given us a new look at the early history of ORNL in a very readable article. From NIST we have an article by Jack Rush (1936-2017) on the vagaries of how the US has made decisions on major neutron facilities in the last 50 years; tellingly he calls it "A Cautionary Tale". This is amplified (if indeed it needs any) by the article by Peter Bond on the 50th anniversary in 1997 of BNL and the political machinations that led (sadly) to the closing of the HFBR. Talk of closing brings me to the article by Daniel Banks on the NRU reactor (1957-2018) and its history at Chalk River National Laboratory in Canada.

Where Are the Gaps?

There is, as yet, nothing on the pioneering work, especially on pulsed sources, from Japan, and I am hopeful that will come soon. The Korean Institute might want to think about contributing a retrospective, as the Hanaro reactor has been operational since 1996.

In **Europe**, the major gaps are certainly <u>Munich</u> (started in 1957) and <u>ISIS</u> (started in 1985) at the Rutherford Laboratory. In both cases, articles are in progress. There is at least one article already on both, but from the early days. A draft article about <u>Risö</u> National Laboratory (1960–2001) should be ready for publication soon.

Still missing are any substantial accounts of <u>Jülich</u> (1962–2006), <u>HZB</u> Berlin (1958–2019), <u>Delft</u> (1963–), and <u>LLB</u> (1980–2020), although most have at least one entry on the site. The closing of the reactors at HZB and LLB marks a sad date and deserves mention in *Neutron News*. LLB will continue to be a hub for French neutron activities.

Meanwhile I have no contacts in Norway or Sweden, where the facilities at <u>Kjeller</u> (1967–2018) and <u>Studsvik</u> (1960–2005), respectively, are already closed.

In the US, <u>Los Alamos</u> has had neutron scattering facilities for a long time, and we are hoping to get an article on the spallation source, which started in 1977.

And on <u>China</u> and <u>Russia</u> we really have nothing at all, so if there are any contacts there, or people who can help with contacts, I would like to hear from them! An article on the early days of Dubna, Russia (from their website) has just been posted.

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