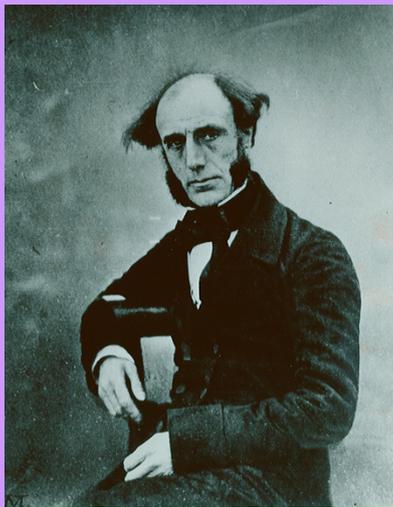
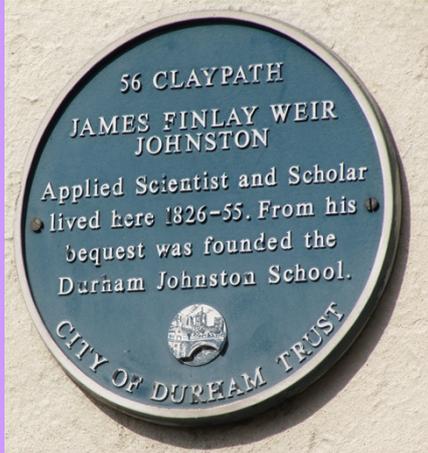


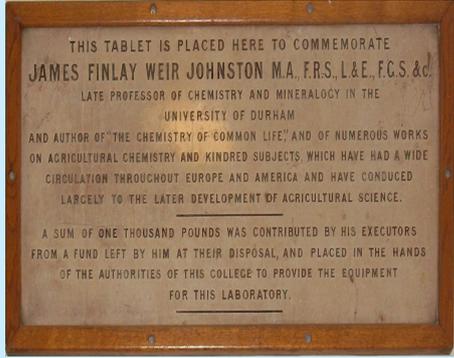
CHEMISTRY IN AND AROUND DURHAM UNIVERSITY BEFORE 1924

DURHAM	JOHNSTON BRITAIN	NEWCASTLE UPON TYNE
<p>1657 Oliver Cromwell, Lord Protector, introduces legislation to create a new university at Durham that will include a <i>Laboratory for Chymical Experiments</i> and examine theories conflicting with venerable philosophical concepts. The universities at Oxford and Cambridge oppose the legislation; Cromwell dies in 1658; his initiative founders</p>		
		<p>1793 Literary and Philosophical Society is founded. [Lit & Phil]</p>
	<p>1815 An Apothecaries Act requires the training of surgeons and their apprentices to include instruction in chemistry.</p>	
	<p>1819 James Finlay Weir Johnston [JFWJ; born in 1796 (September 13) at Paisley, eldest son of James, a Kilmarnock merchant] is awarded the first of many prizes (Greek, Ethics, Mathematics and Natural Philosophy) by Glasgow University while working, mostly as a tutor, to fund concurrent study at the University. M.A. Philosophy 1826. <i>The photograph of JFWJ (left) dates from about 1850.</i></p>	<p>1825 Lit & Phil. meeting rooms are completed at the foot of Westgate Road.</p>
	<p>1826 Sets up home in Durham at 56 Claypath. In July, opens a private academy in Saddler Street to teach reading, writing, arithmetic, Greek, Latin, French, Mechanics, Chemistry and Botany.</p>	
	<p>1829 On February 13 marries Susan Ridley (1777-1862); her Northumberland family's landowning income supports them comfortably.</p>	
	<p>1829-1830 Closes his academy. Travels to Stockholm to work with Jöns Jacob Berzelius (1779-1848), esteemed for isolating silicon</p>	

	and devising the familiar symbols for elements and their compounds. Convinces JJB that paracyanogen is an isomer of cyanogen. Moves to Kobenhavn for meetings with Oersted (magnetic effect of electric current) and Zeise (xanthate compounds). In Germany, attends the 1830 meeting of German men of science and begins a campaign to improve science in Britain.	
	1831 Attends the inaugural meeting (York) of the British Association for the Advancement of Science [BAAS] (now the British Science Association); promotes BAAS in Edinburgh.	
1832 On July 4, Parliament, prompted by Durham clerics (Charles Thorp, Archdeacon; William van Mildert, Bishop), creates Durham University to the [DU]. Thorp head DU as Warden. JFWJ is appointed to the lectureship in chemistry and mineralogy (£50 per year + a share of fees taken at his lectures).	1832 Is elected Fellow of the Royal Society of Edinburgh (January 16). Returns to Sweden to probe with JJB the arrangement of atoms in compounds. Learned journals begin to publish significant experimental-chemistry research by JFWJ (1832-1853).	1832 Classes in medicine begin in Pilgrim Street at Bell House. Among the eight students is John Snow, esteemed later as an anaesthetist and the identifier (1854) of the source of cholera epidemics.
1833 DU awards JFWJ a readership, acknowledging his research publications.		1833 JFWJ delivers his first course of lectures at the Lit. & Phil.
	1834 Is contracted by the London Lead Company to deliver lectures and practical work for its employees at Middleton-in-Teesdale. Fellow, Geological Society, 1836.	1834 Newcastle upon Tyne School of Medicine and Surgery [NTSMS] is founded. Chemistry is taught by medics or geologists at a City Road site, now Manors Station.
1837 DU adopts JFWJ's 3-year programme leading to the graduate-level qualification of civil engineer. First intake 1838, Jan. A pass in each of 3 final-year papers is needed; paper 2, examined by JFWJ, covers chemistry, mineralogy and geology.	1837 Is elected Fellow of the Royal Society of London (June 15).	1837 BAAS, meeting in Liverpool, hears JFWJ deliver an influential commissioned report summarising known relationships among crystal habit, chemical structure and chemical/physical properties. A year later he hosts a highly regarded meeting at Newcastle.
1840 DU's first graduation of civil engineers (4)		
1841 DU adopts JFWJ's suggested optional subject -		

chemistry applied to the Arts - for the B.A. degree.		
1842 DU civil-engineer graduates' qualifications not accepted by the engineering profession; graduates hired pay apprenticeship fee and serve time; no graduates from the programme after 1844.	1842 <i>Elements of agricultural chemistry and geology</i> is published - a successor to Humphry Davy's book (1813). Is elected to the council of the Chemical Society (now the Royal Society of Chemistry); serves until 1845.	
	1844 Becomes lecturer and chemist to the Highland and Agricultural Society of Scotland at Edinburgh; has a paid assistant and the courtesy title of professor; serves until 1849. <i>A catechism of agricultural chemistry and geology</i> is published.	
1847 JFWJ, commissioned by the City of Durham amid cholera epidemics, recommends widespread sanitation changes.		
1848 JFWJ teaches agricultural chemistry at Gilesgate in the Anglican men's teacher-training college (Bede College from 1886) until 1852.		1848 Thomas Richardson Ph.D., [TR], born 1816, a prominent Tyneside manufacturing and analytical chemist, becomes the chemistry lecturer at NTSMS.
	1849 As the invited guest of New York State Agricultural Society, lectures in U.S.A. (September, October); concurrently tours New Brunswick (3200 km), sponsored by its lieutenant governor, and reports (December 21) on its geology and agricultural potential. Returns to U.S.A. for 4 months.	
	1851 <i>Notes on North America-agricultural, economic and social</i> is published.	
		1852 School of Medicine and Surgery becomes Newcastle-upon-Tyne College of Medicine associated with DU; tuition moves to the foot of Westgate Road, next to Lit. & Phil.; labs at Station Hotel site. North of England Institute of Mining & Mechanical Engineers [NEIMME] is founded.

1853 JFWJ promotes Durham School of Art's evening-class instruction in technical drawing and design for ages 12 upward; gives free public demonstration lectures in Durham Town Hall.		
	1854 Completes <i>The Chemistry of Common Life</i> (published 1856), an internationally acclaimed book.	
	1855 Dies September 18 in 56 Claypath after a short illness.	
1856 DU appoints Thomas Richardson (see 1848-1867 NEWCASTLE) as JFWJ's successor; by 1862 he gives no undergraduate lectures at Durham.		1856 Algernon Freire-Marreco [AFM], born 1837, ends 2 years studying chemistry at the College.
		1859 AFM becomes TR's assistant.
1862 DU commissions a review of its effectiveness after enrolment declines for 4 years; Warden Thorp dies; a need for chairs in chemistry, geology and mining is accepted; £1500 per year is set aside for them.	1862 On the death of Susan Johnston, JFWJ's literary-educational-scientific trust is enabled; in the following 25 years £3861 is released, all as small grants.	
1865 DU appoints a lecturer in civil engineering for 3 years; admissions to a School of Physical Sciences are sought; DU awards AFM hon. M.A. 1866 TR is elected Fellow of the Royal Society (London and then Edinburgh)		
1867 DU science/engineering admissions founder; DU appoints AFM reader in chemistry (no undergraduate contact).		1867 TR dies suddenly. AFM succeeds him as the College chemistry lecturer; serves 4 years.
	1870 In Britain and Ireland, primary education becomes compulsory.	1870 College becomes DU College of Medicine; moves to Northumberland Road.
1871 DU Senate authorises the Warden (William Charles Lake, Dean of Durham) to negotiate transfer of support for science and engineering to Newcastle		1871 Lake meets industrialists, medics and engineers - including William George Armstrong, Kt, FRS - they establish Newcastle upon Tyne College of Physical Science [NTCPS], with chairs in chemistry, geology, mathematics, physics. DU provides 5 years' funding for two chairs and ten scholarships

		@ £20 (£1000 per year in all). AFM becomes the chemistry professor. The College opens to students on October 1
		1872 NEIMME meeting rooms are completed on the site formerly for College of Medicine lectures. NTCPS rents College's labs at Station Hotel site and uses NEIMME cellars for lectures.
		1882 AFM dies; Peter Philips Bedson (1853-1943) D.Sc., FIC, succeeds him.
		1883 NTCPS attains full collegiate status, becoming Durham College of Science [DCS]; Bedson is DU's first professor of chemistry; he serves until 1921.
		1887 DU's first bachelor of science graduates from a 3-year study programme.
	1888 JFWJ's trust funds the equipping of the coeducational, state-of-the-art Johnston chemical laboratory at DCS for undergraduates (£1000).	1888 DCS moves to its new two storey accommodation off Barras Bridge with a 100-place chemical laboratory on the first floor at the southeast end. [The accommodation became the northeast range of a 4-range building now known as the Armstrong Building.]
	1899 JFWJ's trustees, forced in 1892 by the Charity Commission to release the remaining funds, make grants in 1898 to DCS (£300 over 5 years as a research scholarship), to NEIMME (£100) and to the DU College of Medicine (£230). The rest, £4200, goes to found the Johnston Technical School in Durham at the foot of South Street. The School opens in 1901.	
	1902 An Education Act promotes the foundation of secondary grammar schools and hence the need for more graduate teachers.	
		1904 The College is renamed Armstrong College.
		1915 Graduation of DU's first B.Sc. with honours in chemistry

1921 DU obtains funding from Durham County Council to set up a Department of Pure Science at Durham; the Government adds £5000 yearly until 1926.	1921 An Education Act, adding to one in 1918, empowers local authorities to fund the training of more teachers in universities and to fund research at universities.	1921 Walter Norman Haworth (1883-1950) D.Sc. succeeds Bedson as head of chemistry; serves until 1925; designs the Dawson Building for DU science at Durham.
1923 DU starts to create the Dawson Building in May; it opens in 1924 on October 2		

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[This six-page chronological note was prepared in August 2011 by Euan Ross at the request of Durham University Chemistry Department for the following month's reunion of Durham chemists. (Note updated August 2013).]