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175th Anniversary Lecture - 'Chemistry at Huddersfield'

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175 Anniversary Lecture Dr Martyn Walker and Affiliate Professor of Chemistry Rob Brown Chemistry at Huddersfield

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Part One

An overview

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Founded 'for the classes of the community, with the advantages of instruction in the various branches of science and the useful arts'

First Annual Report Huddersfield Scientific and Mechanics' Institute 1825 (p.1)

'Indeed, the great object of the Committee has always been, to make the Institution subservient to the wants of the working classes, by placing the various branches of a solid and practical education within the reach of the humblest means'

Huddersfield Mechanics' Institute Report to the Yorkshire Union, 1850

Early developments

- First generation of engineers, often from humble backgrounds, developed skills through trial and error,
- The evolving middle classes had a fascination for philosophy (science), such as the Cast Iron Philosophers in the 1790s and the Lunar Society. Members included Matthew Boulton, James Watt and William Murdoch (pictured right).



There was clearly a need for technical education and training.

Beginnings of a Movement

- The Anderson Institution, Glasgow,
- Edinburgh School of Arts, opened in 1821,
- Glasgow Mechanics' Institute having separated from the Anderson Institution, was opened in 1823,
- London Mechanics' Institute, founded by Birkbeck (and Brougham), opened in 1823,

These early successes resulted in the Movement beginning to spread across the Britain.

Uncertain times.....?

- Lancaster, Leeds, Huddersfield and Manchester 1824,
- Birmingham and Bradford 1825,
- Sheffield 1832,
But.....
- Bradford closed and reopened in 1832,
- Huddersfield closed in 1826, then re-opened in 1841 as the Young Men's Mental Improvement Society and a year later became the Mechanics' Institute,
- Birmingham closed in 1840 and re-opened in the late 1840s.

Failure of the Movement

- The name 'mechanics' institute' put off the gentling masses attending,
- Public lectures were pitched at those who were well educated,
- Funded by the good intentions of the professional classes but who misunderstood the educational needs of the gentling masses.

- Nationally, mechanics' institutes were re-branding...some had closed and re-opened such as the one at Skipton,
- Others, notably Manchester, had had a lucky escape from closure through having a falling membership,
- Formation of several Mechanics' Institute Unions across the Country supported the Movement,
- Huddersfield became part of the Yorkshire Union of Mechanics' Institute Union in 1842.

Huddersfield Mechanics' Institute 1850

Huddersfield was the 10th largest Institute by membership in the country and second only to Leeds in Yorkshire.

1. Edinburgh	2,035
2. Leeds	1,852
10. Huddersfield	887

Huddersfield Female Institution 127

Ireland – The Great Famine 1845 -1852

Wales – Well-established Sunday schools



- ‘Our neighbours on the continent, especially France and Belgium, are fully sensible of the importance of these schools [technical education]...French designs are superior to English, and ...fetch more cash in the market’,
- Society of Arts and the Great Exhibitions,
- Royal Commissions on Technical Education.

- The 1851 Huddersfield *Report* made specific mention to the fact that chemistry was of 'great importance to manufacturers and to the arts of bleaching and dyeing, rendering the class 'a real and solid acquisition to the Institution',
- Chemistry was seen as 'of the highest importance in the district' (1861 Annual Report),
- Chemistry and the loom classes, which were 'nearly always filled with earnest students anxious to acquire a practical knowledge suited to the trade of the district' (1867 Report).

- Joseph Greenwood was the son of a handloom weaver and had had little formal schooling. However, he was greatly inspired as a result of reading Daniel Defoe's *Robinson Crusoe*, 'it opened up a world of adventure, new countries and peoples, full of brightness and change, an unlimited expanse'. Greenwood later wrote how 'renting an empty cottage' in Hebden Bridge 'with absolutely no furniture, we met and stood in a circle, one holding the candle while we deliberated and another wrote out the resolutions on paper'. A year later there were 131 members and the Institute had outgrown the original premises.
- Most institutes started in a similar way.

Chemistry in the locality

- At **Heckmondwike** in 1846, chemistry seems to have been very popular,
- **Honley** Institute in 1847 was offering chemistry,
- At **Milnsbridge** in 1867 Jarman, the chemistry teacher from the Huddersfield Institute, gave one of two lectures during the year on *Disinfectants*,
- The Committee at **Lindley** reported in 1873 'that the science class was well attended and students had been successful in the May examinations organised by the Science and Art Department, Whitehall, as was the practical chemistry class which made great use of the laboratory'.

- The **Brighouse** Institute Committee reported in 1874 that the chemistry classes were 'highly satisfactory and all students passed the laboratory practical and four gained Queen's Prizes'.
- The *Report* from **Shelley** in 1874 highlight that the chemistry class of 17 was taught by J. Allott, a science teacher from the Huddersfield Institute,
- In 1874, at **Heckmondwike**, as a result of a successful inspection, the Institute was able to introduce advanced subjects. A chemistry class was established with 21 students of whom 11 were entered for the examinations and 9 passed with 4 first class awards and 4 others obtained an grant for their laboratory practice.

- **Shelley** reported in 1876 that chemistry, magnetism and electricity classes were well attended and ‘the lessons were made interesting through practical illustrations, suitable chemicals and apparatus being provided’,
- **West Vale and Greetland** Committee reported in 1876 that all eight students in the chemistry class passed their examinations, with four firsts, including one student for his laboratory work. Another student, Frank Davies, gained a first class certificate for wool dyeing and a Queen’s Prize of £5.

- The Committee at **Lockwood** reported in 1877, that despite 'the great commercial depression' the Institute continued to be successful with a membership of 282 of which 91 were females. The most successful and popular subject was inorganic chemistry which the Committee had decided to offer at advanced level:

anxious to encourage the study of this useful science and, wishing to keep the young men connected with the Institution, we felt justified in going to the expense of the necessary apparatus.

Government takes control....

- Technical Instructions Act 1889 gave local authorities the power to levy a penny rate in order to provide technical courses, appoint teachers and provide grants to schools and mechanics' institutes.
- Tax on Spirits
‘To distil wisdom out of whiskey, genius out gin and capacity for business out of beer’,
- Education Act of 1902.