

## **Where are the Mechanics Museums?**

**Paper given at Mechanics Worldwide 09 at the Bath Royal Scientific and Literary Institution, 26th September 2009**

When I started work in 2002 on the collections which had been created by mechanics institutes, including trying to understand the uses to which these collections had been put, I was under the impression that in my wanderings and peregrinations I would come across a number of intact mechanics museums, or failing that, remnants of them. The paper which I read for Mechanics Worldwide<sup>1</sup> at the Prahan Mechanics Institute in 2004 considered the establishment of these museums in the context of eighteenth century precursors, which were of a somewhat different type. At the end of my paper I mentioned the Wagner Free Institute of Science in Philadelphia, which still has a collection, and which I was starting to explore, and I thought I would come across others which I would be able to investigate. I have to admit that I have been disappointed. that I have only managed to trace three collections which remain in anything like their original nineteenth century state. In this paper today I shall be talking about these collections, and suggesting reasons why so few are still with us. You might ask, why would you expect to find any at all? Well, there are several reasons for my early naive optimism. First of all, there was once a great number of mechanics institutes, schools of arts, lyceums, and the like: several thousand in Australia, more than one thousand in the British Isles, and at least as many in North America. Secondly, there are plenty of records of the existence of mechanics museums in annual reports, and if there was a museum, then almost certainly there would be a designated curator, either honorary or salaried, to care for the collection. Thirdly, lots of libraries with nineteenth century accumulations of books do survive. Most of the members of the Association of Independent Libraries (in the UK and Ireland) have rich collections of Victoriana, and some of them have collections which go back considerably further. If the books survive, why don't the things? And finally, there are plenty of museums, or remnants of museums, of other kinds which survive from the early nineteenth century and even earlier.

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<sup>1</sup> [Christine Worthington ed] *Buildings, Books and Beyond: Mechanics Worldwide Conference 2004* second edition (Melbourne 2004) 31-41.

I am going to come back to these questions at the end of my talk. What I thought I would do is describe three collections which are still to be found in their original institutions. In order of creation, these are the collection now in the Workingmen's Institute in New Harmony, Indiana, the museum of the Wagner Free Institute of Science in Philadelphia, and the Burke Museum at Beechworth in the State of Victoria, Australia. These museums date from approximately 1824, 1847 and 1863 respectively. So let us start with New Harmony. This is a small town which was established in 1814 as a utopian community by a peripatetic German religious group led by the charismatic leader, Father Georg Rapp, a Lutheran radical. The town is situated on the banks of the Wabash River in the south-west corner of Indiana. The nearest place of any size in the region is Evansville. The Harmonists, under Rapp, need not concern us too much because it is their departure which is of most interest. In early 1825, the Welsh industrialist, Robert Owen, who had established the utopian industrial town of New Lanark south of Glasgow, arrived at New Harmony. He was looking for a site to continue developing his social ideas, and he purchased Harmonie, as it was then called, from the Rappites, together with 20,000 acres of land, for \$125,000.

Robert Owen's hopes were not realised, and he stayed for only three years at what was now renamed New Harmony, returning to Scotland in June 1827. However, four of Owen's sons and a daughter stayed on, and all became significant figures in the New World.<sup>2</sup> Though there is no direct evidence to link Owen with the introduction of a mechanics institute, it is very likely that he was the inspiration for the introduction of adult education in the community. The locally published magazine, *The Disseminator*, has a piece for 26 April 1826 which reads:

"At present, the large room which extends from front to rear of the house is occupied by the Society for MUTUAL INSTRUCTION as a Lecture-Room...The Society of Mutual Instruction is composed of a number of persons, principally operatives, who reside in

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<sup>2</sup> Donald F Carmony and Josephine M Elliott 'New Harmony, Indiana: Robert Owen's Seedbed for Utopia' *Indiana Magazine of History* 76 (1980) 161-261; Janet R Walker *Wonder Workers on the Wabash* (New Harmony 1999).

Harmony. It is a mechanic's institution; It differs only in name, - its object and means being exactly the same as the mechanic's institutions of this country and Europe, namely: to communicate a general knowledge of the arts and sciences to those persons who have hitherto have been excluded from a scientific or general education by the erroneous and narrow-minded policy of colleges and public schools, who have invariably endeavored to confine learning to the few rich, so they might tyrannize over the uneducated many."<sup>3</sup>

The evidence which survives at New Harmony is mainly of physical demonstration apparatus and natural history specimens, and when I saw these in 2005 some were exhibited but most were stored on the top floor of the Workingmen's Institute, a rather fine building of 1838. There is no reason, however, why the collection should not have been started earlier than this in another building. In fact, the collection is as likely as not to have been created by William Maclure, a Scotsman who in 1824 travelled with his large collection of apparatus and specimens down the Ohio River with Owen in a boat called *The Philanthropist*, which because of the heavyweight intellectuals on board, was referred to colloquially as *The Boatload of Knowledge*. It was Maclure who took over the responsibility for education at New Harmony, and letters reveal that he donated his collection to the Working Men's Institute.<sup>4</sup> So what does the collection comprise today?

Mostly, it is demonstration apparatus for mathematics and physics teaching, some of it quite simple, such as abacuses, and a calculator for determining the angles of triangles. There are also electrical machines, an armillary sphere designed for schools, air pumps, a whirling table, and so on. As with most collections of this date, some of the more refined items are of European origin, but there is also evidence of the embryo American instrument making trade, and Josiah Holbrook of Boston is clearly an influence<sup>5</sup>. A number of items were donated by one of Robert Owen's sons, Richard, who was professor of natural science at Indiana University, Bloomington, and it is therefore unlikely that

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<sup>3</sup> This passage has been abstracted from a transcription of the original; it is found in Thomas James de la Hunt *History of the New Harmony Workingmen's Institute* (Evansville IN 1927) 121.

<sup>4</sup> de la Hunt, *op cit* 3, letter WMI to Maclure, 34.

<sup>5</sup> Josiah Holbrook (1788-1854), Yale graduate, educator, founder of lyceum movement, and scientific

they were used for teaching at New Harmony, at least in the earlier days.

Amongst the scientific instruments survives a remarkable object which is connected with Owen's educational philosophy. It is possibly unique. It is a brass instrument called the "Scale of Human Faculties" consisting of ten brass strips on each of which is engraved one of following the qualities Self-Attachment, Affection, Judgement, Imagination, Memory, Reflection, Perception, Excitability, Courage, and Strength. A visitor to New Harmony in 1826, Prinz von Sachsen Weimar Eisenach, explained: "Mr Owen showed me two interesting objects of his invention; one was a plate,... according to which...each child could be shown his capabilities, and upon which after a mature self-examination, he can discover what progress he has made...Each scale is divided up into one hundred parts...A slide that can be moved up or down shows the measure of the qualities therein specified each one possesses or believes himself to possess."<sup>6</sup> Perhaps the most museum-orientated collection surviving at New Harmony are the minerals. An interesting comment is made in a letter to Maclure of March 1839: "A taste for useful reading seems to increase with the facilities and we feel very desirous to hear of the arrival at New Orleans of our books from London. The Sunday evening meetings have been well attended, and on occasion of Geological lectures, crowded."

About 700 miles east-north-eastwards from New Harmony lies the museum of the Wagner Free Institute of Science in the run-down suburb of North Philadelphia. This is a pleasing neo-classical building of mid-nineteenth century date. It bears the name of its founder, William Wagner.<sup>7</sup> Wagner was born in 1796, of German ancestry, and was a solid middle class Philadelphian citizen. He spent his early years as a trader in the East Indies and later settled down and set himself up in the lumber and coal trade, becoming quite wealthy. Natural History for him was a lifelong passion, and he was particularly interested in shells and fossils, making and publishing new discoveries. He sold his business in 1840. Travelling to Europe, he made a point of visiting museums, and he was particularly attracted by the Jardin des Plantes in Paris. On his return, he purchased an

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instrument maker. Editor of *Scientific Tracts* (Boston 1830-1832) and *Family Lyceum* (Boston 1832-1833).

<sup>6</sup> Douglas G Ellson and Elizabeth Cox Ellson *The Psychological Bulletin* **50** (1953) 383-384.

<sup>7</sup> Richard B Westbrook *In Memoriam William Wagner* (Philadelphia 1885).

estate on the edge of the city, and it was here that his institute and museum were developed for "The Free dispersion of scientific knowledge among the Citizens of his native City." To quote from his diary, "The beauty and magnificence of the Specimens thus displayed soon attracted the attention of the learned and scientific...each one expressing his surprise and astonishment that such a fine collection should be buried [sic] comparatively unknown, and many using [sic] their utmost efforts to influence him to deliver a Course of Public Lectures on those valuable and interesting Subjects."<sup>8</sup>

Wagner needed little encouragement, giving his first lecture series, on conchology, in the winter of 1851. From then on, he adopted the soubriquet 'Professor', and over the next two years, Wagner developed courses dealing with geology, mineralogy, chemistry, and metallurgy, which were advertised in local newspapers. He also continued to collect specimens on a large scale, both personally on field trips, and through dealers. In May 1855 he formally handed over his collection to trustees, which was described at the time as comprising:

"280,000 Specimens of Minerals collected from all parts of the inhabitable earth.

250,000 Specimens of Geology and Organic remains of rare value to the Students.

200,000 Specimens of recent Shells, for the purpose of comparison with extinct genera, found in the various strata of the earth's crust.

Professor Wagner's Library, Philosophical Apparatus, extensive assortments of Diagrams illustrating Geological phenomena, Maps and Cabinet Cases."

The building which survives to the present day was built between 1859 and 1865. It incorporated a library, classrooms, a lecture theatre and a large museum hall for natural history on the upper level. After Wagner died in 1885, the building was remodelled and the museum was reorganised under the supervision of Joseph Leidy, who was professor of anatomy at the University of Pennsylvania and also President of the Academy of Natural Sciences. It is this reorganised display which largely survives to the present day. Though Leidy lived until only 1891, it was he who moved the Institute to the forefront of scientific scholarship and museum practice. The museum's arrangement closely followed

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<sup>8</sup> Wagner Free Institute of Science, William Wagner MS Annals, f2.

the Zoological Museum of the Jardin des Plantes in Paris. Concerning a cabinet of philosophical instruments, the position today is rather sad. It is clear that the Wagner Institute once possessed a large collection: in September 1868 there is a record of "a great many Philosophical Instruments have been made and purchased". Most of these are now lost, stolen or strayed. There are remnants of an orrery, electrical machine parts, an anamorphic mirror, an induction coil, and perhaps one hundred other bits and pieces, most incomplete and poorly preserved. The library function of the Wagner Institute took on an enhanced role at the turn of the twentieth century, it playing a large part in the provision of a public library system when the new wing constructed in 1901 became Branch Number One of the Free Library of Philadelphia. The spirit of William Wagner's vision continues to the present day, with adult evening classes in sciences still being offered at introductory college level.

The third collection is the Australian one. I had been told in Melbourne about the collection at Beechworth, some hours drive away. When Jim Lowden heard that I wanted to go there to see it for myself, he immediately offered to give me a lift. Beechworth is a small town some 110 miles north-east of Melbourne. Its development arose because of local gold deposits. In 1856 the Beechworth Young Men's Association was established, and two years later this became the Athenaeum Hall and Public Library. Lectures were started at an early stage, the minute book recording that on 13th December 1859 "The Rev Mr Jackson delivered a lecture on the "Geology of the Beginning" " while "On Tuesday 20th, The Rev Mr Jackson finished his lecture on the "Geology of the Beginning" (we may just hope that Mr Jackson's lecture didn't go on for a whole week).<sup>9</sup> A meeting of subscribers took place on 7th May 1861. The minutes record "The President stated that the object for which the present meeting had been confirmed had been concerned viz. to consider the propriety of forming a Museum...". This was agreed and a week later the committee agreed to spend £20 on the project.. The next year a building was started and it was agreed that £80 in the Burke Fund should be spent on this purpose. The fund had accumulated in memory of the explorer Robert O'Hara Burke, of Burke and

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<sup>9</sup> Burke Museum, Beechworth, MS 'Beechworth Athenaeum [sic] Minutes of Subscribers & Records of

Wills expedition fame, who had been superintendent of Police at Beechworth from 1854 to 1858. The museum was thereafter named the Burke Museum, the title being retained to the present day.

The museum rapidly developed collections in the usual random way, nearly all material being donated, and therefore reflecting the enthusiasms of the Athenaeum members. Not surprisingly, there was much material relating to the locality - the flora and fauna, and especially geology. A surprisingly large number of objects which we would now term ethnographic were donated, with collections from the Solomon Islands, Samoa and New Caledonia. There was an interesting group of eight human skulls, from China, India, South Africa and Australia, an attempt to discriminate physiognomically between races of native peoples. A few items were purchased - in 1866 there is a record "Anticipating that the Museum may derive advantage from the Intercolonial Exhibition [which opened in Melbourne that year] the Committee voted the sum of £20 towards procuring and preparing specimens of Natural History which shall, after the exhibition, become permanently the property of the Institution."<sup>10</sup> The museum as it remains today has a nineteenth century feel to it, though doubtless it has been changed around many times since its inception. What is interesting, and important, is that the museum has preserved in its archives many of the hand-written labels which doubtless accompanied the specimens when they were first displayed. There is also a manuscript catalogue of natural history specimens, and lists of coins which were donated. The museum was a serious attempt to provide the local public with a source of learning through the medium of material culture though there is a somewhat depressing record by the President, T S Cope, who reported: "the Committee cannot but remark their astonishment and regret that so few of the working miners living around Beechworth avail themselves of the privileges of the institution."<sup>11</sup> .

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Lectures' (covering period 13 December 1859 to 27 January 1910).

<sup>10</sup> MS Minutes of Subscribers *op cit*, f86. This is from an undated newspaper cutting which has been inserted in the 'Report for the year ending 31 May 1866'.

<sup>11</sup> This passage is taken from an undated newspaper cutting (possibly extracted from the *Ovens and*

Having considered three of the most complete existing museums, I now want to make some general remarks. First, why do so few museums of the mechanics institute movement survive? There is no doubt that they were a significant expense for their mother institution, and many of them were struggling to survive without having the financial drag of running a museum. A warning was given in 1856 by the Yorkshire Union of Mechanics' Institutes in its handbook: "General Museums occupy so much space for the proper display of a collection, and incur so much expense in the fitting of cases, that they require to be commenced with great circumspection."<sup>12</sup> Those institutes which did have collections sometimes had to dispose of them. A particular sad case was that of the Salisbury Mechanics Institution. After a struggle - powerful church interests were against its foundation in the first place - it was launched in February 1833.<sup>13</sup> It started off enthusiastically, with weekly lectures on scientific subjects, though initially the lack of a collection proved to be a hindrance. Later that year, the committee purchased "a complete Electrical Apparatus" and an "Air-Pump and Receiver", and more was bought later. The library had grown inexorably, numbering 1000 books, and well used by the subscribing working classes at a cost of 4s 0d per year. Financial problems really set in by 1840, indicative of this kind of institution which depended on subscriptions from its working and lower middle class membership. It had to leave its premises, and sell its library and other assets. These included its museum, advertised for sale in the *Salisbury Journal* on 21 December 1840. It didn't achieve a sale - perhaps other local mechanics institutes were wary of taking on this poison chalice - and in November 1841 the prize items - the air pump and the electrical machine - were offered for sale by lottery.

In England and Wales, a solution to the museum problem lay with the establishment of municipal museums. The Museums Act of 1845 permitted local authorities with a population of at least 10,000, to levy a ½d. on the rates for the establishment of public museums of art and science. They were allowed to levy an admission charge of up to 1d.

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*Murray Advertiser*).

<sup>12</sup> W H J Traice *Handbook of Mechanics Institutions* (London 1856) 28.

<sup>13</sup> Monte Little *Salisbury Mechanics Institution, 1833-41* Wiltshire Monographs No.2. Wiltshire Library & Museum Service (Trowbridge 1982).

per person. The first corporation to take advantage of this was Canterbury, which in 1847 purchased the museum and library of the local Philosophical and Literary Institution. Warrington, in Lancashire, followed next, when in 1848 it rented premises to display the museum presented by the Warrington Natural History Society, and with it the books of the Warrington Subscription Library. The Town Clerk proudly announced: "We have a skilled naturalist who is competent to stuff and prepare specimens, and he and his family act also as librarians...We pay the curator a salary, which secures the services of all his family." Salford did more or less the same thing, combining museum and library in a building in Peel Park in 1850.

We might ask why it is that some of the subscription libraries, if not their museums, have survived to the present. It may be that there was a continuing demand for book borrowing, while lecture series, with which the specimens and instruments were closely associated, tailed off. Perhaps the existence of printed library catalogues provided the book collections with greater permanence. I have never come across a single published mechanics museum catalogue. But while no substantial part of any mechanics museum in this country still exists, at least, in the institution which created it, it is possible that small remnants of collections may still be found. Active though the Association of Independent Libraries is, it has to be admitted that proportionally, not very many of the subscription libraries, mechanics institutes, athenaeums, and the like, **have** actually survived, if you consider how many there were before the various Public Library Acts of the mid- to late-nineteenth century. So obviously, their collections will have vanished, too. Most will have been disposed of without fuss, though I suspect that some of the brass instruments may have been disposed of unofficially and that the shiny air pumps we see being sold at auction today started their working lives in mechanics institutes. If a lot of work were done in local authority museum archives, we might be able to attach mechanics' provenances to some of the material in the museums. Finally, it is usual for museums to incorporate newly acquired natural history specimens into their own series, which is how much significant material gets "lost".

Let us briefly return to New Harmony, the Wagner, and to Beechworth. How is it that museums are still there? I would suggest because they are in small, remote places. Not so Philadelphia, I hear you say. I would respond by saying that North Philadelphia is oddly remote. It is not where the middle classes or tourists venture. The Wagner Institute is probably disregarded by its local poor population. For others who might have their greedy eyes on its assets, its survival may be helped by its immediate neighbour, a very large police station. Another Philadelphian institution offers parallels. Those of you who have heard of the Barnes Foundation will know that this is an eccentric art gallery of first-rate French Impressionist paintings (it has 181 Renoirs) and African objects in a poor suburb called Lower Merion. The collection has been there since 1922, in its original form. Lately there has been great pressure to relocate it to smart, downtown Philadelphia and overturn Albert C Barnes' wishes.<sup>14</sup> This is now likely to happen, and the museum may well lose its charm, if not its content. There can be no contest that New Harmony and Beechworth are small and remote. The former has a population of only 916. To get to it you need your own car, or take a taxi from Evansville Airport. Of course, one could simulate Owen's and Maclure's trip on the Ohio and Wabash Rivers and drift downstream on a new *Boatload of Knowledge*. Getting to Beechworth from Melbourne, and returning on the same day, is a long car ride.

I believe that these museum survivals are of very great importance in understanding the ordering of knowledge and the development of public education in the nineteenth century. They are very vulnerable. We must be aware of the financial pressures threatening our independent museums today, and the social pressure to modernise them (and often to dumb them down to infantile levels). Perhaps the solution is the establishment of a Society for the Protection of Historical Museums.

Robert G W Anderson

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<sup>14</sup> John Anderson *Art Held Hostage: the Battle over the Barnes Collection* (New York 2003).