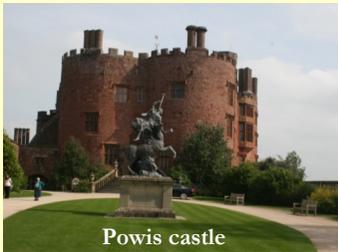


**Mapping the geological boundary at Welshpool:** by 1890 Morgan was able to show, using fossils, that the major geological boundary near Welshpool needed to be re-drawn. He presented a paper to the geological section of the annual meeting of the British Association, at Leeds. In particular he had established that the red rocks on which and of which Powis Castle was built, are not the top of the older Ordovician rocks, as the great geologist Murchison had asserted, but are the bottom of the younger Silurian rocks. He also drew attention to a major break in the geological succession between the two geological periods, something Murchison always denied. Morgan re-traced the boundary from south of Powis Castle, through Welshpool, past Guilsfield and up to Llanfyllin. The break between the two periods, Morgan said, could now be traced all the way back to Llandeilo and the geological maps had to be redrawn. Only an abstract of Morgan's paper is printed in the Leeds (1890) proceedings. Sadly none of his papers and maps were recovered after his death.



Powis castle

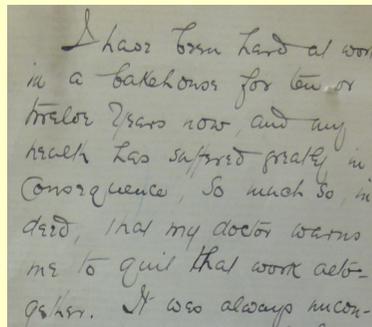


winning the Royal College Murchison Medal. In the summer of 1893 he was appointed to act as demonstrator in the laboratories during a course for teachers. Returning from college on the last day of this work his tuberculosis overcame him; he suffered a severe pulmonary haemorrhage. As so often with this condition, it was followed by an acute attack of pneumonia. He returned home to

**The Powysland Collection** of fossils began to be assembled in 1874 when the Powysland Club built a museum. Joseph Bickerton Morgan began working with Morris C. Jones, the curator, on the arrangement of geology specimens, adding many of his own. In 1888 the museum transferred to the Corporation of Welshpool and then Bickerton Morgan officially became honorary assistant curator, natural history. In the 1920s the geology collection numbered some 1500 specimens, largely fossils but including a few rocks and minerals. In 1962 the fossils were no longer on display, and the collection was sent on permanent loan to the geology department of the National Museum of Wales, where it is held in storage. The collection holds few of the specimens collected by Bickerton Morgan. Long before transfer to Cardiff some were gifted to or purchased by other collectors, and research is continuing to identify more of these.

Welshpool but later was admitted to the Royal National Hospital, Isle of Wight, where he began to recover, giving his family and friends hope that his life would be spared. But it was not to be. Haemorrhage of the lungs began again on 18 February 1894. Gradually he grew weaker and passed away peacefully two weeks later on 8 March. At his own request he was buried in the beautiful cemetery at Ventnor. We are left to wonder what this young man, with his enthusiasm, initiative and great promise, would have achieved had providence granted him another thirty years.

**Tuberculosis** was one of the great scourges of the 19th century. Three quarters of the population was infected with the disease and if the bacillus became active then death usually followed. At the end of the century around 40 percent of working class deaths in industrial areas were still due to tuberculosis. The bacillus was identified in 1882 but many doctors still thought the disease was hereditary or a weakness of the constitution, and that quiet and fresh air was the best cure. Morgan wrote to Lapworth in 1892 'I have been hard at work now for ten or twelve years in a bakehouse and my health has suffered greatly in consequence, so much so that my doctor warns me to quit that work altogether'.



**Mid Wales Geology Club**  
[www.midwalesgeology.org.uk](http://www.midwalesgeology.org.uk)



Affiliated

Mid Wales Geology is an amateur club with an interest in the earth sciences. Beginners are always welcome: contact Bill Bagley 01686 413967 or look at the website. Evening meetings are held monthly, usually on the third Wednesday, at Plas Dolerw, Milford Road, Newtown. Monthly guided field trips are held on Sundays.



LOTTERY FUNDED  
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Leaflet researched & designed by members of  
 Mid Wales Geology Club  
**Available in Welsh and English**  
 on the Club website

Part of  
 Welshpool's Geological Heritage Project

# Joseph Bickerton Morgan

## and the Powysland fossil collection

*A tale of unfulfilled promise  
 and tragic early death of a  
 Welshpool man*

*Believe me truly  
 Yours truly  
 J. Bickerton Morgan*

**Joseph Bickerton Morgan (1859-1894)** was born near Oswestry, the son of Arthur and Ann Morgan (née Bickerton), both from Montgomeryshire farming families. Joseph Morgan became an enthusiastic collector of shells and fossils, and from an early age he was a promising amateur geologist. A grocer's assistant, he played an active part in the original Powysland Museum, arranged its geological collection and made several important geological discoveries around Welshpool. He became an unusually young Fellow of the Geological Society and gained a scholarship to the then Royal College of Science, where he achieved remarkable distinction. Then, on the brink of his great ambition to be a professional geologist, this inspirational young man died of tuberculosis, at the tragically early age of 34.



30 Severn Street

Morgan's mother died of tuberculosis before he was two years old. He had a difficult start in life and we are told his health was always delicate. His father married again and Joseph and his elder sister were brought up by their stepmother, who was from a farming family at Llanrhaeadr-ym-Mochnant. We know from the census that by the time Joseph was twelve his father had left farming and

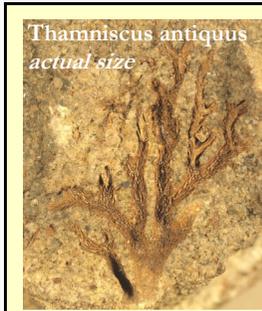
opened a grocery business at 27 Severn Street, Welshpool. The business soon moved to 30 Severn Street and this remained Morgan's home, although he may have lodged for a while at 21 Berriew Street. There was a small bakery at 30 Severn Street; evidence of the old bread ovens can still be seen in the offices of today's occupant. The census forms describe Morgan as an assistant grocer, and later as a baker, a trade he wrote in letters was un congenial and bad for his poor health.

**Morgan's correspondence with Charles Lapworth,**

soon to be the pre-eminent British geologist, began in 1882. Lapworth had become professor of geology at Birmingham University the previous year, after resolving the most important geological controversy of the time, by creating the Ordovician period, thus clearly identifying and differentiating these rocks worldwide from those above and below them. The Lapworth archives contain only ten letters from Morgan, though evidently there were more. Morgan sent many fossils specimens to Lapworth for identification, and took his advice on sites to visit. They shared an interest in the exact position of the boundary between the older Ordovician rocks and the younger Silurian rocks. Lapworth's support also helped to secure a scholarship for Morgan at the Royal College of Science.



Charles Lapworth



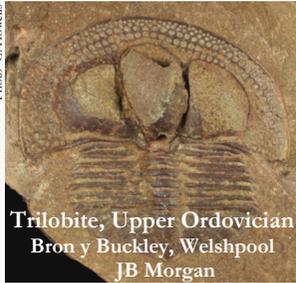
Thamniscus antiquus actual size

Photo C. Howells

**Morgan's best known finds** were bryozoans, tiny colonial fauna in the Welshpool seas. The branches house numerous minute creatures. The first of these discoveries was a *phyllopora* which he found in Lower Silurian rocks near Llanfyllin when he was twenty two years old. Believing it to be a new species he sent it first to Lapworth, who advised sending it to GR Vine, the leading authority on the subject. Soon

afterwards he found a new *thamniscus* in the volcanic ash of Middletown Hill, near Welshpool. George Vine presented a detailed account of both these perfect specimens in 1885 at the Geological Society. Morgan also published details in Montgomeryshire Collections. These specimens were exhibited in the old Powyland Museum but later were purchased by GJ Williams and, together with some other Morgan specimens, now reside in the Williams collection at the National Museum in Cardiff.

Photo C. Howells



Trilobite, Upper Ordovician Bron y Buckley, Welshpool JB Morgan

By his early twenties he was familiar with the rocks around Welshpool. He won first prizes for his fossil collections at National Eisteddfods in Cardiff and Caernarfon. He established contact with Charles Lapworth, professor of geology at Birmingham University, sending fossil specimens for identification, and taking advice on the best places to

look for fossils. Lapworth became a mentor to Joseph Morgan, helping and encouraging his research and academic ambition. Some of Morgan's letters to Lapworth are preserved at the Lapworth Museum, Birmingham University, and have been very useful in piecing together aspects of Morgan's life and character. When the Powysland Club built its museum on the Salop Road, Welshpool in 1874, Morgan began working with the curator Morris Jones on the arrangement and display of a large collection of fossils and shells, contributing many specimens from his own collection, described at the time as extensive. His geological studies and an interest in conchology (shells) led to five papers in *Montgomeryshire Collections*, the annual journal of the Powysland Club.



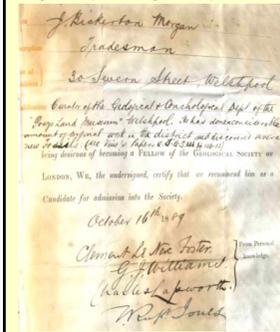
The first Powysland Museum

He became well known in palaeontological circles. His friends and correspondents included some important geologists of the day. He

continued to study the rocks within a few miles of Welshpool, paying special attention to an important boundary between two geological time periods. This boundary is found in many parts of the district, and marked by an abrupt change in the nature of the fossils, reflecting huge changes in the environment. Morgan was a particularly diligent and careful worker and is credited with finding several new species of fossil.

In 1889 He was elected to the Geological Society of London, with three Fellows of the Royal Society sponsoring his application. The following year he presented a paper at the annual meeting of the British Association at Leeds, with conclusions about the geological boundary in the region, not just near Welshpool but also further afield. It was his intention to continue the work but he never had the opportunity to do so. Only an abstract remains of his talk that day. The rest, including his maps, has been lost.

Image courtesy the Geological Society



**The Geological Society of London**

recognised Morgan's achievements in 1889, electing him a Fellow of the Geological Society, unusual for one so young and without a qualification. His election form states that 'be has done considerable original work in his district and discovered several new fossils'. His sponsors, men who who knew him well, included three Fellows of the Royal Society: Prof. Lapworth, Prof. T Rupert Jones, and Prof. Le Neve

Foster; two of them also became president of the Geological Society, as did his friend and colleague, WW Watts FRS. Morgan knew, and was respected by, the right people. The president of the Geological Society, Dr Henry Woodward FRS saw fit to mention his untimely demise in his anniversary address, another rare distinction for one so young. He described Morgan as 'an earnest student of nature with a deep interest in the geology of Wales'.

For several years Morgan had sought a way to end his work in the bakery and to become a professional geologist. Unlike some of his more fortunate friends, he had not received a formal scientific education. He was thirty and he wanted to study. In 1892 he won a free studentship at the Royal College of Science in London, a forerunner of Imperial College of Science and Technology. Here he was able to attend lectures by the eminent geologist JW Judd and to work in the laboratories. Normally a three-year course, he succeeded so well in one year that he came first in the final examinations,



Brachiopod shells Lower Silurian