



John Tyndall

Scientist / Engineer / Mountaineer / Controversialist



LEIGHLINBRIDGE, CO. CARLOW, IRELAND
THE BIRTHPLACE OF JOHN TYNDALL

Early Life and Education

John Tyndall was born in Leighlinbridge Co. Carlow, on the 2nd August 1820 and as he said himself '*under a modest Irish roof*'. Tyndall's were descendents of small farmers who came from Gloucestershire towards the end of the 17th century. His father, a shoe repairer and agent for the local landlord, joined the Royal Constabulary on its formation. The young Tyndall attended school in Leighlinbridge and made his first contact with teacher, John Conwill. On the promotion of his father to the rank of sergeant he was transferred to Numev six kilometres away but continued to send young John to school in Leighlinbridge.

Following a 5 year spell in Numev he was transferred again, this time to Castle Bellingham in Co. Louth where he spent some years before returning to Leighlinbridge. Back in his home town in 1836, amid strong religious controversy he sent his two children, John and Emma to school in Ballinabranna 4 miles distant.

The National School in Ballinabranna was originally established by Bishop Doyle (J.K.L.) James of Kildare and Leighlin whose extended evidence to the Educational Westminster Enquiry of 1831 was crucial in establishing the National School system in Ireland. This school established two years later in 1833 was a prototype design for these schools subsequently established throughout the British Dominions. Although built and furnished to accommodate 100 pupils, nine years later there were 261 pupils on the register.

The teacher there was John Conwill and according to Tyndall himself, "*It was in this very classroom that the foundation for my greatness was laid.*"

The unveiling ceremony of a plaque to mark Tyndall's birthplace in Main Street, Leighlinbridge performed by Lord Rosse of Birr Castle.



School Days and Education

Although living in Leighlinbridge, John Tyndall Senior insisted on sending his son and daughter, John and Emma to school in Ballinabranna, where they would be under the tutelage of John Conwill. It was much against the wishes of the established church but Tyndall Senior was under no illusion as to the sound education they would receive. John Conwill was a renowned teacher and was first principal of Ballinabranna school from 1833 - 1847.

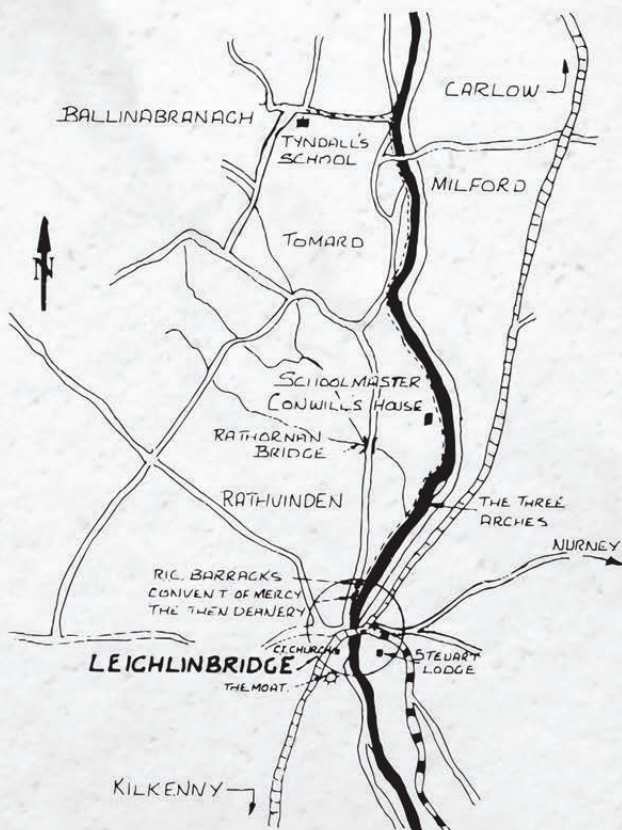
According to Thomas Hirst, a very close friend of Tyndall, Conwill, was a small cadaverous man with a patch on one eye. Despite his appearance, Conwill provided a strong vocational education for his pupils and was one of the most esteemed vocational educators in the entire country at that time. He delivered a practical understanding of mathematics, accountancy, surveying, and most importantly for the scientist's future career, English and English literature. But it wasn't all classroom work - the young Tyndall accompanied by teacher Conwill worked out geometrical problems on the soft surface of the River Barrow towpath on their way home from school.

The plaque indicating that Tyndall attended this school from 1836 to 1838, was unveiled by ETS Walton on Thursday, 17th April 1980.



Photo: The National School in Ballinabranna attended by John and his sister Emma, Illustration: John Conwill outside School

Along the Barrow Track to Ballinabranna School



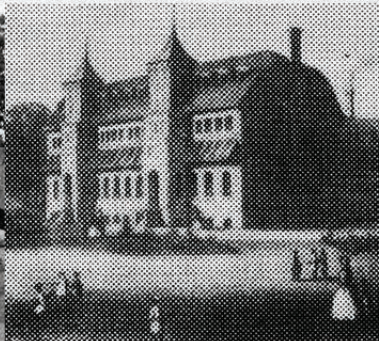
The Three Arches



The route taken by John Tyndall and his sister Emma to Ballinabranna school was along the River Barrow tow path which takes you to a short distance from the school, which must be travelled by road. There is evidence of this in his diaries where he mentions passing over the three arches on his way to meet with Conwill. The three arches are a characteristic of the tow path allowing tributaries to enter the River Barrow. John Conwill, his teacher, lived about mid way between Ballinabranna and Leighlinbridge and about 300 metres in from the towpath. Tyndall and Conwill corresponded all through the years.

Work Experience

Tyndall left school and worked initially in Carlow town but soon joined the Ordnance Survey and worked for a while in the Leighlinbridge area. In 1840 he joined the Survey Office in Youghal, Co. Cork. In 1841 he was transferred to Preston in England and was never again to be a resident of his native country but his links with Leighlinbridge remained immutable.

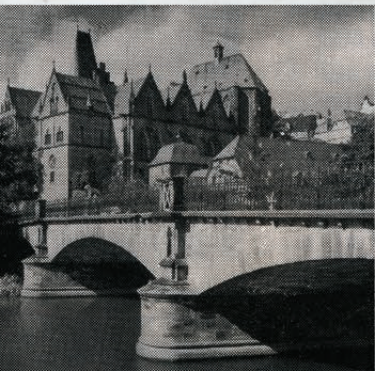


Working with the Ordnance Survey in Leighlinbridge in 1840 and teaching at Queenwood College in Hampshire

While in Preston he did evening studies at the Mechanics Institute. Having severed with the Ordnance Survey, he worked as a railway surveyor and in 1844 he took up a teaching post at Queenwood College, Hampshire.

After one year in Queenwood College the ambitious Tyndall left to study for a Ph.D. in Marburg University, Germany. On qualifying, he returned to Queenwood where he spent a further two years, until his appointment to the Chair of Natural Philosophy at the Royal Institution of London in 1853. Tyndall succeeded Michael Faraday as superintendent of the Royal Institution.

Marburg University in Germany and Royal Institution of London



Tyndall Memorial In The Alps

From 1861 until his death in 1893, the Irish physicist and alpinist John Tyndall spent his summers in the Swiss Alps, mainly at his favourite place, Belalp. After his death, his wife Louisa had the memorial erected above Alp Lusgen in 1911.

Tyndall's contribution to the mountaineering sport are of the first order. He was the author of the first ever mountaineering book in English "Mountaineering in 1861" and a heroic pioneering Alpinist making the first ascent of the Weisshorn and the first traverse of the Matterhorn. While climbing in the Alps he did not confine himself solely to the sport, he studied the difference in air quality, how the atmosphere might absorb heat properties of crystals and glaciers, the colours of the sun and light itself. Later, these questions led to many of his scientific experiments. Today, the penultimate peak, bears his name. Tyndall was the author of the first ever mountaineering book in English "Mountaineering in 1861" and a heroic pioneering Alpinist making the first ascent of the Weisshorn and the first traverse of the Matterhorn.

John Tyndall peak on the Alps / Tyndall with fellow climbers outside the "Club Room" of Forinatt in 1860s / Tyndall's Alpine Summer home at Alp Lusgen complete with lightning conductors attached to the chimney pots.



Climate Science

Tyndall's accurate and extensive work, continued over many subsequent years, underpins our current understanding of the greenhouse effect, weather and climate change. It seems fair to regard him as the founding figure in climate science. Today the Tyndall Institute for Climate Change in England is named after him, and a sister institute in Shanghai, the Tyndall Fudan Centre now in existence since 2011.

Fireman's Respirator

This invention by Tyndall came about from seeing a young female fire victim who was untouched by the flames but could not be rescued by firemen because of smoke.

Germ Theory

Tyndall proved Pasteur's germ theory when the French man had failed to establish reproducible results in his experiments. In France milk is not Pasteurised but Tyndallized.

Research

Tyndall's research legacy is quite incredible. From 1872 to 1873 he spent a year on the East Coast of the USA raising funds to establish the first research facilities in the four Ivy League Universities - Yale, Harvard, Columbia and Penn State - today's Research Legacy.

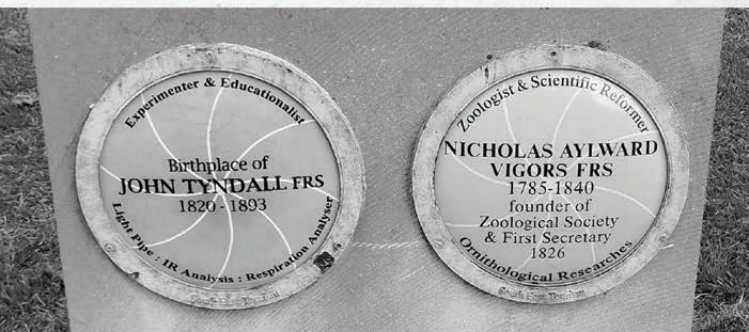
Tyndall Monument Garden Of Remembrance



This monument sculpted by Professor Ralph Stander, who's a Berlin graduate of Sculpture and Fine Arts, in the village of Leighlinbridge is a wonderful addition to the county and the country. This unique monument with a massive mirror, reflects the sky, which shows Tyndall blue on a very clear day. John Tyndall thought that the light bounced off dust or water vapour in the air. This idea is known as the 'Tyndall Effect'. As light from the sun goes through the atmosphere it is scattered around. Blue light is scattered more than other colours and is bounced back to our eyes, which is why the sky is blue.

Commemorative Plaques

The first plaque erected by *The National Committee for Commemorative Plaques* took place in the Garden of Remembrance in Leignlinbridge, to honour local man, John Tyndall. It was unveiled by the Director of Cork's Tyndall National Institution. To date there have been 210 such plaques erected to internationally acclaimed men and women throughout the country. These plaques were designed by famous Irish sculptor Danny Osbourne.



Books Written By John Tyndall

Essays on Floating-matter
Heat Considered as a Mode of Motion
Fragments of Science Vol. I & II
Glaciers in the Alps
On Sound
The Forms of Water
Faraday as Discoverer
Lessons in Electricity
Floating Matter of the Air

Tyndall's Correspondence Project (TCP)

The TCP which is based in York University in Toronto, Canada will be publishing Tyndall's entire correspondence in 18 volumes. Ten volumes have already been published. The general editors: James Elwick, Bernard Lightman and Michael S. Reidy.
Edited by: Geoffrey Cantor and Gowan Dawson.

Social Life

Tyndall's social life was as varied as his science and alpine exploits and was a much sought after guest in London's high society. Among his friends he numbered 19th century giants in the world of science and literature - Louis Pasteur, Michael Faraday, Charles Lister, Thomas Huxley, Alfred Lord Tennyson, Thomas Carlyle.

Retirement Speech

“ I have climbed some difficult mountains in my time, and after strenuous efforts for a dozen hours or more, ice, rock and snow, I have not infrequently reached the top. I question whether there is a joy on earth more exhilarating than that of a mountaineer, who having reached his object, is able to afford himself upon the summit, a foaming bumper of champagne. But my Lords and gentlemen the hardest climb, by far that I have accomplished, was that from the banks of the Barrow to the banks of the Thames - from the modest roof under which I was born to the Willis's Room. Here I have reached my mountain top, and you - God bless you! have given a bumper which no scientific climber ever before enjoyed. ”

John Tyndall retired as Head of the Royal Institution of London in 1887. His later years were troubled by ill health and insomnia. His life ended dramatically on 4th September 1893 at his home in Hindhead House, Surrey, England when he was accidentally poisoned by his wife, Louise, who intended to give him an indigestion remedy, mistook the bottles and instead gave him an overdose of sleeping draught. “*My darling, you have poisoned your John*”, he told her.





*The Birthplace of John Tyndall
Leighlinbridge, Co. Carlow*

- Tyndall Remembered Around The World**
- 1 Leighlinbridge, Carlow, Ireland, birthplace of John Tyndall
 - 2 Tyndall Crater on Mars, bears his name since 1973
 - 3 Tyndall Lunar Impact Crater on the far side of the Moon
 - 4 Tyndall Glacier, Elias, Manitoba, Alaska
 - 5 Tyndall stone, sourced near the town of Tyndall, Manitoba was used in the construction of Saskatchewan University
 - 6 Tyndall Town Manitoba, Canada
 - 7 Tyndall stone lines the walls of government buildings in Ottawa, Canada
 - 8 Tyndall Town, South Dakota, U.S.A.
 - 9 Mount Tyndall, 10th highest peak in the Sierra, Nevada
 - 10 Tyndall Glacier & Creek, Rocky Mountains, Colorado, U.S.A.
 - 11 Tyndall Town, Ohio, U.S.A.
 - 12 River Tyndall, Tyndall Glacier and Tyndall Lake, located in Patagonia Southern Chile
 - 13 Tyndall Mountain, Graham Land, Antarctica
 - 14 Tyndall Mountain, Tanzania, Eastern Africa
 - 15 Tyndall Glacier, Mount Kenya, Kenya, Eastern Africa
 - 16 Tyndall Range, generally known as the Tyndalls, Tasmania
 - 17 Tyndall Glacier, Otago, South Island, New Zealand
 - 18 Tyndall Centre for Climate Change, Fudan University, Shanghai, China
 - 19 Tyndall Centres for Climate Change, U.K. University of Manchester, University of Newcastle & University of Norwich
 - 20 Tyndall studied for his Ph.D in Marburg University, Germany
 - 21 Tyndall Home in Hindhead, Surrey, U.K.
 - 22 Tyndall, Matterhorn, Switzerland
 - 23 Tyndall Memorial and House, Bel Alp, Valais, Switzerland
 - 24 Tyndall Centre for Climate Change, Cork, Ireland
 - 25 Tyndall College Carlow, Ireland