

MORGAN, WILLIAM (1750 - 1833), actuary and scientist

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Name: William Morgan

Date of birth: 1750

Date of death: 1833

Spouse: Susannah Morgan (née Woodhouse)

Child: Sarah Morgan

Child: Susannah Morgan

Child: Cadogan Morgan

Child: John Morgan

Child: William Morgan

Child: Arthur Morgan

Parent: Sarah Morgan (née Price)

Parent: William Morgan

Gender: Male

Occupation: actuary and scientist

Area of activity: Science and Mathematics; Economics and Money

Author: Nicola Bennetts



William Morgan was born in Newcastle, Bridgend, Glamorgan, on 26 May 1750, the third of eight children and the first son of William Morgan (1708-1772), apothecary and doctor, and his wife Sarah (née Price, 1726-1803), sister of the philosopher [Richard Price](#). The precise date of his birth is given by Caroline Williams, the family biographer and great-niece of William, but the date on his tomb is 6 June 1750. The most likely explanation for this discrepancy is the introduction of the Gregorian calendar in 1752 when eleven days were 'lost' in order to correct the former Julian dating system.

William's mother was a Welsh speaker, and William himself is likely to have spoken the language, at least as a boy. He is later said to have been able to 'turn a Welsh song into elegant English on the spur of the moment' (Williams, 137). His younger brother, [George Cadogan Morgan](#), studied classics at Cowbridge Grammar School and, although William's name does not appear in the school records, an ode by him in imitation of Horace suggests that he, too, had a classical education. William was born with a clubfoot but his father, determined that his son should follow him into the practice, foresaw no problems with the disability. At the age of nineteen, reluctant but obedient to his father's wishes, he went to London to study medicine. In his first apprenticeship to a self-styled apothecary at Limehouse Docks, he endured a harsh regime until, as he recorded in his diary, his 'Welsh temper could stand it no longer' and he laid his employer in the gutter.

His uncle, [Richard Price](#), arranged a second apprenticeship and paid for Morgan to attend St Thomas's hospital as a pupil and dresser. Morgan was a conscientious and promising student but his training was cut short when his father died in 1772. He went home to Bridgend but was unsuccessful in running the practice; his patients were suspicious of his youth, his inexperience and his clubfoot. He then returned to London and asked advice of [Richard Price](#). Their conversation has become part of actuarial folklore: did William know anything of mathematics, asked [Price](#). 'No, Uncle,' replied Morgan, 'but I can learn.' He learnt very quickly. [Price](#) found him an opening at a fledgling life assurance company, the Equitable, in 1774, and in 1775, aged only twenty-five, he was elected, unopposed, to be actuary of the company. He remained in the post for the next fifty-five years steering the Equitable to unprecedented prosperity.

Many similar companies failed; actuarial science was a new discipline and few knew how to calculate premiums. In the early years Morgan had the advantage not only of [Price](#)'s mathematical teaching but also his Northampton Table - a table of life expectancy based on a forty-five year study of mortality records in a Northampton parish. Morgan further developed the mathematics and had two papers presented (on his behalf by [Price](#)) to the Royal Society for which, in 1789, he was awarded the Copley medal. He became a Fellow of the Royal Society in 1790. As further papers followed, Morgan became a respected authority in life assurance and related matters. He advised on the setting up of Scottish Widows Life Insurance Company; he wrote the section on annuities for [Rees](#)'s *Cyclopaedia*; he advised the Diocese of Exeter over the valuation of property on lease-for-life tenancies; and, in the years 1817-18, he gave advice to a Parliamentary Committee on the Poor Law. Today he is known as the 'father of actuarial science'.

Like his contemporaries Morgan was fascinated by electricity. Displays of sparks and demonstrations of electric shocks delighted eighteenth century audiences but Morgan's interest went beyond popular entertainment. His paper to the Royal Society in 1785 describes his experiment to test the non-conductivity of a perfect vacuum - a laborious procedure and,

given the use of mercury, a hazardous one. As well as his eventual success with the experiment, he recorded his failed attempts when he observed in the partial vacuum a 'beautiful green light'. It is this which is of scientific and historical importance. Morgan had created a very basic X-ray tube, the first step towards the discovery in 1895 of X-ray.

Morgan never forgot his debt to [Richard Price](#) and, in 1815, published *Memoirs of the Life of the Rev Richard Price*, as much a record of his gratitude to his uncle as of [Price](#)'s life. It also provides a clue to his religious beliefs which 'on all the great points' concurred with [Price](#)'s philosophy and Unitarian creed. He admits rather coyly 'some doubts' but does not give any details.

Through [Price](#), Morgan met a number of the leading intellectuals of the day including Joseph Priestley, Benjamin Franklin, Thomas Paine, John Howard and John Horne Tooke, and he shared many of their radical views. He was sympathetic to the Americans in the War of Independence and he applauded the principles (though not the methods) of the French Revolution. He was highly critical of Pitt's government and their handling of the war with France, publishing several pamphlets addressed to the People of Great Britain deploring the expenditure on the war and the government's obfuscation of these figures. At his house at Stamford Hill, Morgan hosted Sunday evening gatherings where, with shutters closed, he and his friends sang revolutionary songs. In 1794, during Pitt's 'Reign of Terror', Horne Tooke and eleven others were tried for high treason. They were acquitted but Morgan knew that his name was also on the list of those threatened with prosecution. At the time Pitt let it be known that Morgan would be rewarded if he published papers in support of the government, but Morgan would not be bought.

A portrait of William Morgan by Thomas Lawrence hangs in the great hall at the Institute of Actuaries at Staple Inn. It was commissioned by the directors of the Equitable in recognition of his achievements and, when Morgan retired in 1830, they granted him a pension of his full salary of £2,000.

William Morgan died on May 4 1833 within a month of his eighty-third birthday. He was buried in his family tomb at St Mary's, Hornsey.

He was survived by his wife Susannah, née Woodhouse, 1753-1843), whom he married in 1781. They had six children, two of whom predeceased him: Sarah Morgan 1784-1811, Susannah Morgan abt 1788-1855, William Morgan abt 1791-1819, John Morgan 1797-1847, Cadogan Morgan 1798-1862, Arthur Morgan 1801-1870. Arthur joined his father at the Equitable in 1820 becoming the Actuary in 1830 and holding the post for forty years.

Author

Nicola Bennetts

Sources

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Family history research by David Perry and John Morgan

Information from Paul Frame

Personal research

Further reading

Nicola Bruton Bennetts, *William Morgan: Eighteenth-Century Actuary, Mathematician and Radical* (University of Wales Press 2020)

Laura MacDougall, [History: An Equitable life](#)

Wikipedia Article: [William Morgan \(actuary\)](#)

Additional Links

Glamorgan Archives: [D945: William Morgan FRS, Actuary \(Equitable Assurance Society\), Papers - 1770-1862](#)

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