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The awarding of the first honorary Doctor of Science by the Queen’s University in Ireland to William King — a journey of scientific curiosity

Author(s): John Murray, Ann Dingsdale, Heinz Peter Nasheuer and David A.T. Harper


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THE AWARDING OF THE FIRST HONORARY DOCTOR OF SCIENCE BY THE QUEEN'S UNIVERSITY IN IRELAND TO WILLIAM KING - A JOURNEY OF SCIENTIFIC CURIOSITY

JOHN MURRAY, ANN DINGSDALE, HEINZ PETER NASHEUER AND DAVID A.T. HARPER

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Abstract

William King (1809–86) was the founding Professor of Mineralogy and Geology at Queen’s College Galway (QCG), one of three regional colleges opened in 1849 to provide secular university-level education in Ireland. King came from a modest background and despite lacking third-level qualifications, began publishing on palaeontological and geological matters in the 1840s. These early contributions aided his application for the professorship in Galway, particularly his seminal 1850 monograph on the Permian fossils of England, which was in preparation at the time. During his first two decades at QCG, King maintained an up-to-date teaching programme in geology and palaeontology, played a key role in establishing the natural history museum and further developed his research portfolio. He investigated several topics of international interest, including the supposed earliest fossils of living organisms and the emerging evidence for fossil humans. King’s achievements were impressive, particularly as he was essentially self-taught and also considering the isolated and poor economic standing of Galway at the time. The Queen’s University in Ireland (QUI) bestowed its first ever honorary Doctor of Science on William King in 1870 in recognition of his distinguished geological research, and also to mark a refocussing of the university curriculum to better reflect the importance of science. King’s award came at a time when the education system was coming under increasing scrutiny in Ireland, and as part of these reforms QUI was dissolved in 1882 and replaced by the Royal University of Ireland. One of the final acts of QUI was to award a large number of former graduates with master’s degrees. A select few were conferred with honorary doctorates, including King’s eldest son, William Jr., who had been amongst the first students to enter QCG in 1849 and, after graduating, enjoyed a distinguished career with the Geological Survey of India. Father and son thus achieved the unique honour of being the first and last recipients of a Doctor of Science (honoris causa) from QUI for their geological endeavours.

Introduction

William King was the founding Professor of Mineralogy and Geology at Queen’s College Galway, which formally opened at midday on Tuesday, 30 October 1849. Over the course of the following two days prospective students seeking admission sat matriculation exams (Mitchell 1998). One of the successful candidates was King’s own eldest son William Jr. (1833–1900; Fig. 1), who subsequently
completed a B.A. degree in civil engineering in 1853 and then went on to work as a geologist for the Geological Survey of India (GSI; see Fig. 2). William King Jr. worked in India under the direction of Thomas Oldham, who had previously left his position as Professor of Geology at Trinity College Dublin in 1850 to become the first superintendent of the fledgling Indian survey (Murty 1982; Stafford 1984; Leviton and Aldrich 2004; Wyse Jackson 1997, 2008; Crosbie 2009). Among his geological colleagues there were fellow Irishmen Valentine Ball, who would subsequently return to Dublin in 1881 to assume the Trinity College chair in Geology and Mineralogy (Wyse Jackson 1992, 1994; Fig. 2) and Charles Æmilius Oldham (1831–69), Thomas’s younger brother, who became William King Jr.’s brother-in-law when he married his sister Evelyn in 1863 (Wyse Jackson 2008, p. 101). King Jr. would himself serve as director of the GSI between 1887 and 1894 (Fermor 1951, 1976).

William King Sr. was born on 22 April 1809 in the northeast of England. His parents William, a fish carrier, and Eleanor (née Armstrong) had him baptised on 21 May of that year in Hartlepool parish church. He grew up in Sunderland and attended school, but a relatively modest family background meant he was never fortunate enough to gain a university education. Nevertheless, an avid childhood interest in reading, natural history and collecting saw him open a bookshop in the 1830s. Around this time, King also served as secretary and librarian to the Sunderland Literary and Philosophical Society and also as first curator to the Sunderland Natural History and Antiquarian Society (Brockie 1901; Harper 1988). Eventually, he was able to secure funding for fieldwork, including to Permian sections in Europe (Brockie 1901; Pettigrew 1979; Harper 1988)—research that would ultimately inform the production of a significant monograph (King 1850). On 16 June 1833, William King married Jane Nicholson in the parish church of Jarrow. They would remain married for life and had twelve children, three of whom died in infancy. In 1840, he was offered, and accepted, the position of curator of the Hancock Museum in Newcastle-upon-Tyne (Pettigrew 1979; Harper 1988, 1999, 2004). His family circumstances ruled him out of contention for a curator position.
with the Geological Society of London in 1842—the accommodation associated with the post was more suited for a bachelor; however, correspondence in the archives of the society indicate that he made a good impression on the selection committee. As Murray et al. (2015) noted, William King Sr. was essentially a self-taught scientist, which makes his subsequent research contributions and accomplishments, particularly in the areas of geology and palaeontology, all the more impressive.

The founding of the Queen’s Colleges in Ireland

‘Why pay for geology and not for Christianity?’

Richard Sheil (M.P. for Dungarvan) speaking in the House of Commons on the proposed Colleges (Ireland) Act, 10 July 1845.

The Queen’s Colleges were established in Galway, Cork and Belfast following the Colleges (Ireland) Act of 1845, which had been introduced by Robert Peel (Kerr 1982). The intention was to provide non-denominational third level instruction in the provinces of Ireland and to also address the imbalance created by the fact that Trinity College Dublin catered largely for members of the established Anglican Church of Ireland at that time (Moody 1958). However, the secular ethos adopted by the three new provincial institutions led to them being labelled ‘the godless colleges’, and there was a conspicuous lack of support from the Catholic religious hierarchy right from the outset, and also subsequently during the early years of operation (ÓTuathaigh 1999; Adelman 2006, 2009; Biel 2018). The construction and opening of the Queen’s Colleges coincided with the Great Famine—a catastrophe that had a devastating impact in many areas of Ireland, including Galway (e.g. Langan-Egan 1999).

Under the terms of the 1849 Act, the presidents, vice-presidents and professors were to be appointed by the crown, which in real terms meant the Irish Executive (O’Malley 1999). The task thus fell to the Earl of Clarendon (George William Frederick Villiers, 1800–70) who was Lord Lieutenant and Governor General of Ireland between 1847 and 1852. An annual report on the Queen’s University in Ireland presented to both houses of parliament (Brady 1853, p. 66) noted that the Earl of Clarendon:

‘who, when administering the affairs of this country, was called on to select
Professors of the Queen’s Colleges of Belfast, Cork and Galway; he took pains, from all parts of the United Kingdom, to find out men the most eminent in science, men the best qualified in literary attainments, and men of the highest professional station, to undertake the duty of acting as Professors in those Colleges.

The Earl of Clarendon evidently took quite an active role in the establishment of the Queen’s Colleges in Ireland; he served as first chancellor of the Queen’s University in Ireland, which was established as the degree-awarding body of the three colleges by a Royal Charter in September 1850, and remained so until his death in 1870. At a meeting convened in October 1847, he instructed the Board of Presidents to prepare for delivery of courses in Law and Medicine, expanding the scope of the newly established colleges beyond the Arts (Pettit 1973). This decision had practical implications for delivery of teaching and the number of professors appointed to each of the colleges had to be increased as a result. In the 1850s, the Earl of Clarendon made a donation to Queen’s College Cork to help fund construction of a new medical building, which for a while bore his name.

Several regional Irish newspapers announced the appointment of the various professors to the three new colleges in 1849 (see also Foley 1989; Mitchell 2001). For example, the Anglo Celt (10 August edition, p. 4) described William King as:

‘late Curator of the Newcastle Museum and Lecturer on Geology; author of several Memoirs on Palaeontology and Geology.’

King arrived in the west of Ireland from Newcastle, having left his previous post as curator of the Hancock Museum in acrimonious circumstances two years previously (Turner 1979). The entire King family relocated with him to Galway in 1849, and when Jane and William’s next child was born the following year (1850) she was named Margaret Galvia King, in honour of their new hometown.

William King’s selection for a professorial position at Queen’s College Galway, despite his lack of formal third level qualifications, has remained somewhat intriguing. Brockie (1901; see also Pettigrew 1979) suggested that he moved to Glasgow University for a short time after leaving the Newcastle Museum; however, this remains unverified. Other evidence indicates that King, ever resourceful, remained in Newcastle and established his own museum and geological consultancy during this particular interval, and also offered lectures on geology. ‘William King and Co.’ were mining and general agents offering a range of geological services, including mineral and fossil dealing and also analysis and assay of samples. In a published letter concerning the formation of coal (King 1848/9), he signs off as ‘Lecturer and Supervisor of Museums’ of the North of England Museum of Scientific and Economic Geology.

King had begun publishing his research findings earlier in the 1840s (see Harper 1988 for a detailed list; see also Wyse Jackson et al. 2006) and had amassed some sixteen publications by the time of his appointment to Galway. Harper (1988) speculated that this work may have brought him to the attention of some influential figures in geology, such as Sir Henry De la Beche (1796–1855), who was founding director of the Geological Survey and president of the Geological Society of London (between 1847–49; see Bate 2010; Chubb 2010). De la Beche was also a personal friend of Sir Robert Peel.

It is now very clear from testimonials received by King in late 1848 in support of his application for one of the newly-established professorships in mineralogy and geology in the Queen’s Colleges (note, he did not specify Galway), that his publication record, along with his considerable practical experience in palaeontology, geology, natural history and museum curation, had enhanced his reputation to such an extent that some of the most eminent contemporary names in the field were readily prepared to vouch for him (Table 1). King also received testimonial support for his application from several dignitaries who were not scientists, including James Snape, principal of the Royal Grammar School, Newcastle-upon-Tyne, who observed that:

‘Certain lectures on Geology which he [King] delivered a few years ago to numerous and highly respectable audiences, in the theatre of the Literary and Philosophical Society of this town were most interesting; and it was sufficiently evident that he possessed in his powers of voice, language, and pronunciation, many of the essential requisites to constitute a good and popular lecturer. His unassuming deportment, and suavity of disposition, moreover, will, I am persuaded, obtain the respect, and secure the sympathy of all.’

On the same testimonial document, James Dent Weatherley, the mayor of Newcastle-upon-Tyne commented:
‘Having been on the Committee of the Natural History Society of Newcastle, during nearly the whole of the time Mr. William King held the appointment of Curatorship of the Museum, I feel much pleasure in stating, that I entertain a very high opinion of him, and his official abilities; and it will give me very great pleasure to hear of his succeeding in obtaining the appointment for which he is now a candidate, and so well qualified.’

Clearly, despite the difficult departure he was forced to make from the Newcastle Museum in 1847 (Turner 1979), King still had friends and prominent supporters in the town.

It is particularly evident from these testimonials (Table 1) that King’s impending monograph on the Permian fossils of northeast England played a significant role in greatly elevating his scientific profile and status. At the time of his appointment to Galway in 1849, this particular work was in an advanced stage of preparation (cf. King 1848). It was published the

Table 1—Selected testimonials from prominent contemporary geologists and palaeontologists in support of William King’s application for a Professorship in Mineralogy and Geology, and Curatorship of the Museum, in the Queen’s Colleges Ireland. All of these individuals were Fellows of the Royal Society, and their correspondence was sent between 15 and 21 December 1848. The original document contains sixteen separate testimonials and is available in the Geological Society Archives (item: LDGSL/912 - Testimonials in favour of William King)

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<td>Sir Roderick Impey Murchison</td>
<td>‘In reply to your letter of the 11th, in which you inform me that you are a Candidate for the Professorship of Geology and Mineralogy, and the Curatorship of the Museum in Queen’s Colleges, Ireland, I have great pleasure in testifying that, in my opinion, you are well qualified to occupy such a post. As I have, on a former occasion, strongly recommended you as a fit and proper person to arrange and manage the collections of the Geological Society, so must I now consider you to be still better qualified, - seeing the great progress you have made in Palæontology, and the able work on the Permian Fossils you are about to produce. Having full confidence in your ability, perseverance, and methodical habits, I sincerely hope that you may succeed in the object of your wishes.’</td>
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<td>James Scott Bowerbank</td>
<td>‘The great experience you have acquired as Curator of the Newcastle Museum; your great knowledge of recent forms, and extensive experience in the discriminating and arrangement of the fossil fauna of Great Britain, eminently qualify you for the appointment you desire, and cannot but render your services valuable to any institution to which you may become attached.’</td>
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<td>John Phillips</td>
<td>‘Hearing that you are a Candidate for the Professorship of Geology and Mineralogy (to which is attached the Curatorship of the Museum), in one of the Queen’s Colleges, Ireland, I request your acceptance of a testimonial, on my part, of your excellent qualifications for the office. I found this opinion on your well-known and successful researches into recent and fossil organizations, the activity of your hand and head, and the philosophical bearing of your publications. What you have written on Sigillaria, and other remarkable fossil plants; your Catalogue of the fossils of the Magnesian Limestone, and contributions to recent Zoology, show the extent and variety of your studies. That they are rightly appreciated among those most likely to judge justly of such labours, is evident by the request which has been made to you by the Paleontographical Society for the publication of one of your Monographs in the transactions of that body.’</td>
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<td>Sir Charles Lyell</td>
<td>‘I am most happy of the opportunity of bearing my testimony to the merit of several papers published by you, on fossil botany, and on the classification of recent and fossil shells. Besides writing these memoirs, I am aware that you have devoted much time to the study of Geology in general.’</td>
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<tr>
<td>Rev. Adam Sedgwick</td>
<td>‘I heartily wish you success in your application for one of the new Irish Professorships, because I believe you possessed of talents, and experience, and zeal which would make you a valuable officer in any Collegiate Institution. Your published essays shew [sic] that you are actively employed in the researches of palaeontology: I am, therefore, looking with no small anxiety for, and with the hope of receiving much valuable information from your work on the fossils of the Magnesian limestone, at which you have long been labouring.’</td>
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following year by the Palaeontographical Society (King 1850) and continues to be highly regarded. The Palaeontographical Society itself had been founded in 1847 for the purpose of advancing palaeontological knowledge, principally through publication of illustrated monographs, and its first president was Sir Henry De la Beche (between 1847–55; see Stubblefield 1947), who is acknowledged and thanked in the introduction by King (1850, p. xxxvii). King’s credentials on the title page of his seminal Permian monograph are as a member of the Geological Society of France and also as Professor of Mineralogy and Geology in Queen’s College Galway. He signs off the introduction with his address at Prospect Hill, Galway and the date noted as July 1850.

Later, in 1852, the various professors appointed to Queen’s College Galway signed a solemn declaration that they would carry out their duties honestly and faithfully (Fig. 3). It is interesting to note that on this particular document King signed himself as Professor of Geology and Mineralogy (i.e. with the subjects reversed). There thus appears to have been some fluidity in how the formal title for the chair was expressed, and both variants have appeared in publications over the years.

**King’s teaching and research in Galway (1849–70)**

‘Physical Geography is an easy subject, but Physical Geography, Mineralogy and Geology are very serious. At the present time I cannot lecture on Geology without lecturing on Physical Geography.’

William King on the teaching of earth science in evidence presented to the Queen’s Colleges Commission, 19 March 1857.

Despite the relative geographic isolation and dire economic standing of the Connacht region in the mid-nineteenth century, William King managed to...
develop and maintain an up-to-date teaching programme in the earth sciences and also an impressive research portfolio (Harper 1988, 1999). A list of recommended textbooks for students from the Queen's College Galway Calendar for 1851 includes Charles Lyell's Manual of Geology (3rd Edition) and also his Principles of Geology—the latter would provide considerable inspiration to Charles Darwin as he circumnavigated the globe and formulated his ideas on evolution and natural selection (Secord 1991; Lennox 2005). King initially provided instruction in geology to engineering and agriculture students, and the numbers enrolling in these classes were modest, which was not unusual for Queen's College Galway generally at that time. The president of Queen's College Galway's report for 1851–52 (Berwick 1853) includes a short report from King (on p. 10) concerning the size and conduct of his student class for that particular year:

‘There were in attendance on the Lectures, four first year Agricultural Students, one second year ditto, six first year Engineering Students, and three second year ditto - in all, fourteen Students. 46 Lectures were delivered.

Classifying the Students according to their attendance on the Lectures - ten were of the First Class, three of the Second Class, and one of the Third Class. The latter attended 28 Lectures. I have no complaint to make of any of the Students. Most of them took a lively interest in the subjects of the Lectures, and several went through their “Pass Examination” with considerable credit. The second year Agricultural Students obtained the prize.’

In July 1857, King was appointed as examiner for mineralogy, geology and physical geography for the Queen's University in Ireland (Brady 1858, p.49). Previous incumbents of this position included Frederick M'Coy (1817–99; Professor of Mineralogy and Geology at Queen's College Belfast) and then, from 1855, Joseph Beete Jukes (1811–69), director of the Geological Survey of Ireland. The latter took over examining duties when M'Coy relocated to Australia to take up the newly created professorship of Natural Science in the University of Melbourne in 1854 (Wyse Jackson and Monaghan 1994; Selleck 2001). King was replaced as examiner in July 1859 by Wyville Thomson (1830–82; Professor of Mineralogy and Geology at Queen's College Belfast) and then Professor of Natural History, Queen's College Belfast; Redfern 1888), and he resumed the same role again in 1861.

Following his appointment to Queen's College Galway, King played a leading role in the establishment of the natural history museum in the Quadrangle building (Anderson 1899; Fewtrell 1979; Harper and Jeffrey 1996; Harper and Parkes 1996; Harper and Torrens 1996). The collections included rock, mineral and fossil materials, and also a variety of plant and animal specimens and engineering models and apparatus, with overall management and curation responsibility residing with the professor of mineralogy and geology by statute. A report by the president of Queen's College Galway for 1856 (Berwick 1857, p. 10) provides an overview of the aim of the museum:

‘Although the primary object of the collection is to illustrate the lectures on natural history, it has, nevertheless, become a source of great interest to many in this remote locality - otherwise excluded from all acquaintance with the wondrous forms of animal life.’

William King likely shared a similar opinion on the museum as a resource for both teaching and outreach, particularly given his background in collecting and museum curation (e.g. Adelman 2006). According to Collins (1998, p. 95), King was part of a very small and select group who met Queen Victoria's Consort, Prince Albert, when he visited Queen's College Galway in January 1856. Prince Albert was taken on a tour of the museum and library, and also the grounds of the College and, upon returning to the museum, he presented a book on natural history to the College. The prince complimented William King and Alexander Melville (Professor of Natural History) on the layout of the museum displays (Collins 1998).

Throughout the 1850s and 1860s, William King’s research interests remained diverse. For example, he puzzled over the likely affinity of the curious Paleozoic coral Pleurodictyum problematicum (King 1856), considered the development of jointing in rocks (King 1859a) and correlation of glacial and post-glacial deposits (King 1863a), documented contemporary discoveries on the seafloor (King 1862a, 1863b) and discussed plans for transatlantic telegraph cables (King 1862b), amongst others. He also published several papers on Permian rocks and fossils, as well as a number on Paleozoic brachiopods (see Harper 1988 for a detailed list).
King’s interests were evidently not confined to earth science and fossils. He published an account of a lesser horseshoe bat (Rhinolophus hipposideros) that had flown in through the window of his home on the outskirts of Galway during a family dinner (King 1859b). This report is significant for bat conservationists: it was only the second ever reported sighting of this particular bat species in Ireland, the first being earlier that same year by Frederick Foot of the Geological Survey of Ireland (Foot 1859; see also Jameson 1897, McAney 1994). King (1859b) includes the first published illustration of the head region of an Irish specimen of R. hipposideros, and the bat that had inadvertently invaded his home was nick-named ‘Flitty’—hinting at a more humorous side to King, which is not possible to detect from his other scientific writings. To mark King’s contribution to bat research in Ireland, the Vincent Wildlife Trust named one of the buildings that it protects as shoe bat near Kilgarvan, Kerry in his honour (pers. comm. Kate McAney 2020).

Returning to King’s palaeontological research, perhaps the two most internationally significant contributions he made during this interval concerned the proposed earliest fossil evidence of life on Earth and, at the opposite end of the temporal spectrum, emerging fossil evidence for the evolution of humans. The former topic relates the putative fossil Eozoön, and the bat that had inadvertently invaded his home was nick-named ‘Flitty’—hinting at a more humorous side to King, which is not possible to detect from his other scientific writings. To mark King’s contribution to bat research in Ireland, the Vincent Wildlife Trust named one of the buildings that it protects as an important maternity roost for the lesser horseshoe bat near Kilgarvan, Kerry in his honour (pers. comm. Kate McAney 2020).

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‘But now within the last year the great discovery of the Eozoon in the Laurentian formation of Canada has been made; and after reading Dr. Carpenter’s description of this remarkable fossil, it is impossible to feel any doubt regarding its organic nature. …and Sir W. Logan states…. “We are thus carried back to a period so far remote, that the appearance of the so-called Primordial fauna (of Barrande) may by some be considered a comparatively modern event.” The Eozoön belongs to the most lowly organised of all classes of animals, but for its class is highly organised; it existed in countless numbers, and, as Dr. Dawson has remarked, certainly

preyed on other minute organic beings, which must have lived in great numbers.’

William King and Thomas Henry Rowney (Professor of Chemistry at Queen’s College Galway) immediately began to test these claims, and in an important series of collaborative papers (King and Rowney 1865, 1866, 1869a,b, 1871a,b, 1874a,b, 1876) assiduously argued that Eozoön was not actually a fossil, but rather an inorganic laminated metamorphic mineral growth (Fig. 4). This proposal flew very much against the prevailing opinion at the time and they faced down strong opposition and criticism; however, over time they were proved entirely correct in their assertions (O’Brien 1970; Rehbock 1975; Adelman 2006, 2007; see also King and Rowney 1881 for a comprehensive review of the main arguments on both sides of the debate). Darwin was also forced to concede that Eozoön was not universally accepted, and subsequently modified the text of the 6th edition of Origin of Species to reflect this (Darwin 1872, p.287):

‘the existence of the Eozoön in the Laurentian formation of Canada is generally admitted’.

In August 1856, suspected fossil human remains were discovered by quarrymen in the Feldhofer Cave in the Neander Valley (or ‘Thal’) of Germany. The partial skeleton included a skullcap and several post-cranial bones, and the find was announced by Johann Carl Fuhlrott (1803–77) and Hermann Schaaffhausen (1816–93) the following year (Fuhlrott 1857, 1859; Schaaffhausen 1857, 1858; see also Schaaffhausen 1888; Schmitz et al. 2002; Smith et al. 2006). At some point subsequently, William King acquired a plaster replica of the Neanderthal skullcap from a London-based dealer (King 1864a; see also fig. 3 of Murray et al. 2015). The dealer may possibly have obtained it from a replica carried back to Britain by Charles Lyell, who was presented with the cast by Schaaffhausen when he visited the site in the Neander Valley in 1860 (Lyell 1863).

Following a very careful study of the shape and proportions of the Neanderthal skullcap, King presented his findings at the 33rd Meeting of the British Association for the Advancement of Science in 1863. Considering their original stratigraphic context in the Feldhofer Cave, he suggested that the fossil remains were likely to be extremely old. More importantly, due to the fact that it departed so significantly from the typical cranial morphology observed in
modern humans, King argued that the Neanderthal skull should thus be classified separately, and he duly proposed the formal taxonomic name *Homo neanderthalensis* (King 1863c, 1864b). King published a detailed description of the Neanderthal skullcap early the following year (King 1864a) and modified his opinion further in the final footnote, believing it to perhaps even be generically distinct from modern humans. Notwithstanding this suggestion, the designation *Homo neanderthalensis* King, 1864 survived and William King remains the first scientist to successfully name a new and extinct species of human based on fossil evidence (see Murray et al. 2015; Madison 2016). King’s proposal was not widely accepted at the time; however, it did help to spark one of the longest standing debates in human evolutionary studies: how precisely are Neanderthals related to modern humans?

Recently, the recovery of the Neanderthal Genome has necessitated a reassessment of their relationship to anatomically modern humans—particularly as it is now clear that both groups interbred and produced viable offspring (e.g. Green et al. 2010; Reich et al. 2010; Sankararaman et al. 2014; Prüfer et al. 2014; Fu et al. 2016; Kuhlwilm et al. 2016). This growing body of work has posed questions about the validity of classifying Neanderthals as a distinct species of human, a concept also championed by those who argued that a spectrum of morphological continuity was evident in the fossil records for the various hominin groups (e.g. Frayer et al. 1993; Wolpoff et al. 1994, 2000, 2001; Smith 2013; Smith et al. 2005, 2017). However, setting aside arguments about interbreeding and application of the biological species concept, several other authorities ardently believe that as a morphospecies Neanderthals were sufficiently different to justify separation at species level (e.g. Stringer 2002, 2016; Harvati 2003; Harvati et al. 2004; Tattersall 2007; Tattersall and Schwartz 2009; Hublin 2009; White et al. 2014; see also Wood and Richmond 2000). Stringer (2014) provided a useful overview of all of the various proposed models and arguments, and noted that when Neanderthals and modern humans first encountered each other and mixed, they were very close to biological incompatibility (see also Sankararaman et al. 2014).

Notwithstanding all of this vigorous scientific debate, the central, and indeed fundamental, importance of King’s suggestion to consider Neanderthals as an ancient human group, quite distinct from anatomically modern humans, remains. As Pettitt (2006) and Murray et al. (2015) both noted, tacitly implicit in the acceptance that different varieties, or species, of human had existed in the past, is an acceptance that human evolution had, in fact, taken place.
This was a profoundly important scientific development in nineteenth century science, at a time when the worldview of many was constrained by religious dogma. William King thus made a vital contribution to the birth of palaeoanthropology.

The awarding of the first Queen’s University D.Sc., honoris causa, to King

On 12 October 1870, the annual meeting of the Queen’s University in Ireland took place in Dublin Castle to confer degrees on graduates from the Belfast, Cork and Galway colleges. The lord lieutenant was in attendance, along with numerous dignitaries and proceedings were reported in several national newspapers. The Marquess of Kildare (Charles Fitzgerald, 1819–87), newly established as the chancellor of the Queen’s University in Ireland addressed the gathering. The following is an extract from his speech, the complete text of which was reproduced in *The Irish Times* (13 October 1870, p. 2), and also included in the official report the condition and progress of the Queen’s University in Ireland for 1870–71 (available at http://www.dippam.ac.uk/eppi/documents/15555/page/407351), which was subsequently submitted to Parliament:

‘Before making the usual statement of the present condition of the Queen’s Colleges, I must express how deeply the members of the Queen’s University have to lament the death of the First Chancellor. To the zeal and care of the late Earl of Clarendon at the foundation of the University and Colleges, they are indebted for much of their prosperity, and though in consequence of important public duties it was not in his power to take an active part in the proceedings of the Senate, he watched them with the greatest interest. In the course of the academical year, which comes to an end upon this day, the Senate has decided to establish in this University a special curriculum in which there shall be a predominance of science, and at the close of which there shall be given the degrees of Bachelor in Science and Doctor in Science. And they have inaugurated these degrees by deciding to confer to-day the degree of Doctor in Science, honoris causa, upon Professor William King, of Queen’s College, Galway, for his distinguished labours in Geological science.’ (*The Irish Times* noted applause at this point).

The honorary Doctor of Science degree that William King received that day would remain his only formal academic qualification (Figs. 5 and 6). The wider significance of the award was twofold: firstly, it was the first honorary D.Sc. ever awarded by the Queen’s University in Ireland and, secondly, the honour was bestowed to mark the reconfiguration of teaching programmes in the university in order to better recognise the importance of science in education, leading eventually to the creation of the B.Sc. degree.

In that same speech in 1870 the Marquess of Kildare then continued:

‘Another addition which has been made to the labours of the University within the last year has been in the establishment of examination for women (applause). The first of these examinations was held last June in Belfast and Galway.’

This notice of admittance of women to formal examinations that particular year by the chancellor was extremely significant, and both a necessary and vital development in terms of beginning to make some start on improving social equality in a nineteenth century society where women had very few rights and even fewer privileges (e.g. Luddy and Murphy 1989; Luddy 1995a,b). The participation of women in university education contrasts markedly with the sentiment of the quote from Brady (1853) on the Earl of Clarendon’s search for suitable (male) professorial appointees to the newly established Queen’s Colleges (reproduced earlier). However, several years would still have to elapse before women would begin to formally graduate with degrees from Irish universities (e.g. Harford 2005, 2008a,b; Raftery et al. 2010; Kelly 2013; for specific reference to geological training in Irish universities see Higgs and Wyse Jackson 2007). During this interval the system of education in Ireland was reorganised and the Queen’s University in Ireland formally dissolved by the University Education (Ireland) Act of 1879, to be replaced by its successor, the Royal University of Ireland (Moody 1958).

Epilogue

The awarding of William King’s honorary D.Sc. coincided with a protracted period of educational...
and social reform in Ireland, which would continue right into the twentieth century. As Harper (1988) noted, King’s impressive academic achievements were completed against a backdrop of apparent institutional instability and feuding political machinations. Arguably the most serious threat faced
was that of the Universities Bill, which William Gladstone proposed in 1873. This piece of legislation proposed a radical reorganisation of all of the colleges in Ireland, including Trinity College, under a single university structure, with Queen's College Galway to be closed completely (O’Mulley...
Dr Lyon Playfair (1818–98; Liberal M.P. for Edinburgh and St Andrews universities) argued strongly for rejection of the proposed bill and explicitly defended the status of Queen’s College Galway, including the museum. Extracts from his detailed speech to the House of Commons on 6 March 1873 are as follows:

‘I have had the honour to lay on the Table a Petition signed by 131 out of the 141 students of Galway College, praying your honourable House that this College may not be suppressed. As they have chosen me as their advocate, allow me to say a few words on their behalf. The case must be a strong one to justify the extinction of a College which is the only one in the West of Ireland. At present you have Dublin College for the East, Cork for the South, and Belfast for the North of Ireland, but if you suppress Galway College, the whole of the West of Ireland is left destitute of means of higher culture for its population. There is no part of Ireland where such a college is more important.

‘...I have therefore shown that while, educationally, Galway College is a decided success, numerically it can scarcely be considered a failure. But it is chiefly because it has thoroughly fulfilled the intention of Parliament that I plead for Galway. Our intention was to found Colleges in which the inhabitants of Ireland might study irrespective of their religious creeds.

‘...It is true that Galway and Cork are much disliked by the clerical party in Ireland, yet that is not because Roman Catholics do not frequent them, but because they do. No doubt if Galway College be suppressed it may not wholly be lost to education, for Clause 21 provides for its sale, and the College, with museum and library, may fall on easy terms into the hands of the Roman Catholics alone, and be converted into a diocesan seminary. But such a result could scarcely be agreeable to the advocates of united education, or to Parliament who founded the system.’

Ultimately, the Irish University Bill was narrowly defeated on 11 March 1873, and it contributed to the downfall of Gladstone’s government (Behrman 1970; Parry 1982). In February of that same year, William King applied, unsuccessfully, for the Woodwardian chair of Geology in the University of Cambridge (O’Connor 2005). It is not possible to establish if this potential move was in any way connected to the imminent threat of closure of Queen’s College Galway, which had been known well in advance of the presentation of the bill to parliament, and led to low student enrolments in the years immediately preceding. However, of the three founding professors in mineralogy and geology appointed at the opening of the Queen’s Colleges: James Nicol (1810–79) left Cork and Frederick M’Coy departed Belfast for university positions in Aberdeen and Melbourne (respectively) after just a few years of teaching, whereas William King remained at Galway for well over three decades (Harper 1988, 1999; Wyse Jackson 1997). King eventually retired in 1883, and died at home in Galway on 23 June 1886.

William King had the distinct honour of receiving the Queen’s University in Ireland’s first ever honorary D.Sc. in 1870. The following academic year the university awarded its second honorary Doctor of Science to Wyville Thomson, who had been elected a fellow of the Royal Society in 1869 and had recently left Ireland for the chair of Natural History at Edinburgh University. Soon afterwards, in 1872, Thomson would act as chief scientist for the Challenger expedition, an ambitious research programme widely acknowledged as laying the foundation for the science of oceanography (Rice 1989; MacDougall 2019). King and Thomson thus both made important contributions that ultimately led to the development of new fields of scientific research. Thomson would be celebrated and knighted in 1876 for his achievements (changing his name subsequently from Wyville Thomas Charles Thomson to Charles Wyville Thomson); however, King’s contribution to the founding of palaeoanthropology would prove a much slower burner. Over a century on after his suggestion to classify Neanderthals as a separate and extinct species of human, Leakey and Goodall (1969, p. 18–19) would write:

‘It is to Professor William King of Queen’s College, Galway in Ireland that honour is due for being the first scientist to recognize that the skull cap from the Neanderthal cave belonged to a representative of a hitherto unrecognized type of mankind. Although the vault of the skull was the only well-preserved part of the fossil, King created a new species for its
being William King Jr., deputy superintendent for
were awarded honorary
of Queen's University in February 1882. Two alumni
ferred with masters and doctorates at the dissolution
a list of all former Galway graduates who were con
College Galway for 1881–82 (Moffett 1882) includes
2 February 1882 (p. 5) for an extensive list of names). As a consequence, the Queen's University in Ireland
was formally dissolved after thirty-two years on 3
February 1882, and it held its very last public meeting
two days beforehand in Dublin Castle. The Queen's
University Senate had advised that alumni who had
previously graduated with a bachelor's degree might
not necessarily enjoy the same privileges under the
newly established Royal University and be able to
advance to higher degrees. A significant number of
former graduates were thus conferred with masters-
level degrees at that final meeting, and a select
few were identified for the higher award of an hono-
rary doctorate (Report on the condition and prog-
ress of the Queen's University in Ireland for 1881–2,
available at http://www.dippam.ac.uk/eppi/docu-
ments/17033/page/453720; see also The Irish Times,
2 February 1882 (p. 5) for an extensive list of names).

The annual report of the president of Queen's
College Galway for 1881–82 (Moffett 1882) includes
a list of all former Galway graduates who were con-
ferred with masters and doctorates at the dissolution
of Queen's University in February 1882. Two alumni
were awarded honorary D.Sc. degrees—one of them
being William King Jr., deputy superintendent for
Madras of the Geological Survey of India. By that
stage King Jr. had published several important
reports and notes connected with his work with the
GSI, and he was beginning to develop his own rep-
tuation as a geologist. His father was probably very
proud of the honour bestowed upon his son by the
Queen's University; however, this may have been
tempered somewhat by the fact that the university
system he had worked for since being appointed
to his professorial position at Galway in 1849 was
drawing to a close. It is thus noteworthy that William
King Sr. and William King Jr., both geologists, rep-
resent the very first and (one of) the very last recip-
ients, respectively, of honorary doctor of science
degrees from a university system that, although far
from perfect, was established with the express pur-
pose of trying to improve access to and widen par-
ticipation in higher education in Ireland.

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Online information

Annual reports on the condition and progress of the Queen’s University in Ireland for the period 1851 to 1882 are available online here: http://www.dippam.ac.uk/eppi/eppi_lc_subjects/2471.

A detailed report by the Queen’s Colleges Commissioners, which includes detailed testimony from all of the professors in each of the institutions is available here: http://www.dippam.ac.uk/eppi/documents/13784/page/167437.

Annual reports by the President of Queen’s College Galway are available online here: https://archive.org/search.php?query=College%20galway.

The Queen’s College Galway Calendar for 1851 is available here: http://hdl.handle.net/10379/1485.

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HEINZ PETER NASHEUER
Biochemistry,
School of Natural Sciences,
National University of Ireland Galway,
University Road,
Galway,
Ireland.
ORCID iD: https://orcid.org/0000-0002-9218-9079

DAVID A.T. HARPER
Palaeoecosystems Group,
Department of Earth Sciences,
Durham University,
Durham DH1 3LE,
UK.
ORCID iD: https://orcid.org/0000-0003-1315-9494

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