

Presentation of the Cymmrodorion Medal 2013
to Sir Martin Evans, FRS

Royal Society, London, 25 September 2013

Introduction by the President, Professor Prys Morgan

Croeso cynnes i chi i gyd, Syr Martin a Lady Evans ac annwyl gyfeillion. Several of us here today were also at last night's excellent Cymmrodorion lecture on Lord Howard de Walden by Professor Hazel Walford Davies, who is also here with us today.¹ A highlight of her illustrations was a painting entitled *Deffroad Cymru* ('Awakening of Wales') by Christopher Williams. This was a fortuitous link with our ceremony today, for Sir Martin's wife, Lady Evans, is the grand-daughter of Christopher Williams, and the artist is thus the grandfather-in-law of the recipient of our medal.

In one of our previous medal ceremonies some years ago, I mentioned that we do not celebrate Wales enough, but that we would not celebrate anything at all, at least in Welsh, if one of the early Cymmrodorion had not actually invented the word *dathlu*, 'to celebrate'. This was an inspired invention by the lexicographer William Owen Pughe, who was a drawing master in London over two hundred years ago, and Pughe deservedly was awarded one of the earliest medals of the Cymmrodorion when the society revived itself from its slumbers in 1820. It is true that the present series of medals starts as recently as 1883, but we did award medals in the 1820s, and to prove it I am wearing one of the 1821 medals today. It was awarded to the young poet Ieuan Glan Geirionydd, and was only recently rescued from a Chicago auction house by the watchful Mr Roger Pope who has generously donated it to the Society.² The Society decided that it should be a presidential badge of office, so that this President – I speak only of myself – should have at least some mark of distinction.

I made those remarks about the verb *dathlu* in a ceremony we held some years ago to present the Cymmrodorion medal to former Archbishop Rowan Williams. That reminds me of a curious story I was told the other day when I was shopping in the Mumbles [near Swansea], a stone's throw from the church in which the Archbishop grew up. I was admiring the bright red berries of a rowan tree, when an unknown lady asked me whether I had heard about another rowan tree which the parishioners had planted in the nearby churchyard to honour Archbishop Rowan. It was a disaster: the leaves fell off, the berries fell off, and when twigs fell off as well the parish decided to try and rescue the tree by lifting it and planting it in some better soil. When they lifted it up, they found that nobody had taken it out of the tight plastic bag in which its roots had been bound in the garden centre. Well, I do

1 Professor Walford Davies's lecture, given on 24 September 2013, is included in this issue of the journal [Ed.].

2 The history of the 1821 medal, now the President's Medal, was published in the *Transactions of the Honourable Society of Cymmrodorion*, 18 (2012) [Ed.].

not think that awarding a medal carries that sort of risk.

In honouring a world-famous scientist like Sir Martin, I am also conscious of how few recipients of the Cymmrodorion medal have been scientists, and some of those have been given the medal for non-scientific services to Wales – I imagine that Professor John Lloyd Williams had his medal, not for his work on algae, valuable though that may have been, but for his contribution to Welsh music, while Sir Isambard Owen had his for working like a Trojan for the university movement in Wales, Newcastle, and Bristol. Professor Neil McIntyre, who is sitting here in front of me, has reminded me that Isambard was Vice-Chancellor of the University of Bristol when its imposing tower was completed, and when this was restored it was found that on its roof, visible only from the vault of Heaven, are the enormous letters I. O. Well, Sir Martin has had so many honours from right across the world that I suppose that sort of honour will eventually come his way.

But it is a medal that we are awarding today. It is with great pleasure that I now call upon Sir John Meurig Thomas, scientist, Welshman, and Cymmrodor, to celebrate Sir Martin's achievements and to present him with the Cymmrodorion medal.

Address and Presentation by Sir John Meurig Thomas, FRS

Fellow members, distinguished guests, ladies and gentlemen: it is a great pleasure and an honour to have the opportunity of presenting the Society's medal to my former colleague at Cambridge and friend, Sir Martin Evans.

A few days ago, an English friend in Cambridge heard me talk about this medal, and he asked me to name some of the previous recipients. I first mentioned Sir Geraint Evans, the operatic star who performed the role of Figaro over 500 times; then I recalled that Sir Kyffin Williams, who at the time of his passing was the senior Academician of the Royal Academy, was also a previous winner; I then named the former Archbishop of Canterbury, the Rt Rev. Rowan Williams, FBA. My interlocutor responded by noting that the sequence of winners – Evans, Evans, Williams, and Williams – could well have signified a firm of solicitors in Aberystrwyth.

Be that as it may, ladies and gentlemen, there have been some fifty recipients in all since the medal was first awarded in 1882; and the list of winners makes fascinating reading. It was William Rees (1802–1883), better known as Gwilym Hiraethog (GH), the great Welsh hymn-writer and non-conformist preacher, based largely in Liverpool, who was the first recipient. GH wrote one of the greatest hymns of the Welsh language: 'Dyma gariad fel y moroedd'. But GH was far more than an influential preacher-hymn writer. He took a great interest in contemporary politics, nationally and internationally. He corresponded with Louis Kossuth (1802–1894), the Hungarian revolutionary, who later became President of his country's short-lived republic (1849). He also became friendly with another nationalist / revolutionary, the Italian Giuseppe Mazzini (1805–1872) who, while exiled in London, became friendly with GH.

I do not intend to recite the achievements or recall the personalities of all the

other worthy recipients. But I hope you will allow me to select a few of my own favourites. The eighth recipient was Sir John Morris-Jones (1864–1929), Professor of Welsh in Bangor, a poet of great renown and an unusually gifted linguist. Although he graduated from Jesus College, Oxford with a rather poor degree in mathematics, he soon made sense of, and rationalized, the rather confused orthography of the Welsh language. In addition, he translated the *Rubáiyát of Omar Khayyám* directly from the Persian into Welsh. And he wrote Welsh poems of lyrical beauty.

Other notable recipients include Ernest Rhys (1859–1946), editor of Everyman's Library, and Llewelyn Wyn Griffiths (1890–1977), who, as a member of the Welsh team in the BBC radio programme 'Round Britain Quiz', gave the correct answer – which I remember hearing as a young teenager – to the question: 'Where would you find Moscow next to Edinburgh?' (The English hymnal.)

Let me turn now to today's recipient, the man of the moment, Sir Martin Evans. We all know that Sir Martin won the Nobel Prize for Medicine or Physiology in 2007 (and may I draw the audience's attention to the fact that we have with us today another Nobel Prize winner in Medicine – Sir John Gurdon, Sir Martin's long-time friend at Cambridge). We also have present Sir Brian Smith who, as Vice-Chancellor of Cardiff University, persuaded Sir Martin to re-locate his highly successful research group in the Department of Genetics, Cambridge, to the Principality in 1997.

A graduate of Christ's College, Cambridge, Sir Martin spent his early career in University College, London before moving to the University of Cambridge. Working in collaboration with Martin Kaufman, he was the first to make embryonic stem cells. These kinds of cells were derived, in this work, in 1981, from normal mouse embryos. Sir Martin was able to grow the cells from a small part of the early embryo in cultures in such a way that they could go on proliferating indefinitely but, importantly, could at any time be made to differentiate into different kinds of all types such as nerve, gut, liver, etc. This was a completely unexpected discovery and even now it is unclear exactly why this manoeuvre works. Although Sir Martin was ingenious enough to create these kinds of cells in one particular strain of mouse, his methods have now been extended to other strains of the mouse and, importantly, to humans. According to Sir John Gurdon this was, in the views of many, one of the greatest discoveries in the biological sciences in the past century.

Sir John Gurdon (the present Nobel Laureate in Medicine or Physiology) tells us that the reason why these cells are of immense significance and importance at the present time is because it is now possible to take cells, non-invasively, from humans, such as a tiny piece of skin of only about 1mm diameter, and to derive from the adult skin a few of these embryonic stem cells. Once that has been done, these rejuvenated skin cells, which now resemble normal embryo cells, can be grown as an embryonic stem cell culture using the Martin Evans procedure. When they have been grown to reach sufficient numbers, some of them can be made to specialize into different sorts of adult human tissue such as brain, heart, and in fact into almost all other cell-types. These can then be, in principle, used to give people back brain cells, heart cells, etc., to compensate for the normal deterioration of tissues that occurs with age and disease.

This surprising ability to derive new heart, brain, etc., cells from tissues of

old or diseased people is currently leading to a massive proliferation of stem cell research institutes around the world. There is every reason to believe that this so-called replacement cell therapy will transform the lives of many people. The point of critical importance is that the rejuvenated cells can be created from the actual individual with the disease or aged tissue, avoiding the need for immunosuppressive drugs, which would be required if a person were to be given cells derived from someone else, as in transplant and replacement surgery.

The technique introduced and pioneered by Sir Martin Evans has paved the way for so-called gene targeting, which can be used to produce almost any type of DNA modification in the mouse genome, allowing scientists to investigate the roles of individual genes in health and disease. Gene targeting has, by now, produced hundreds of different mouse models of human disorders, including cardiovascular and neurodegenerative diseases, diabetes, and cancer.

After formal 'retirement' as Director of the School of Biosciences at Cardiff University, Sir Martin (who received his knighthood in 2004) became the President of the University in 2009 and subsequently its Chancellor in 2012. Apart from his Nobel Prize, Sir Martin has been the recipient of the Gold Medal of the Royal Society of Medicine (2009), the Copley Medal of the Royal Society, and the Lasker Prize for basic medical research (USA).

As members of this Honourable Society, we are immensely proud that Sir Martin has agreed to accept this prestigious medal, which bears the exquisite motto: *Cared doeth yr encilion*, 'Let the wise seek the secret places'. Sir Martin, we are delighted that you and Lady Evans are with us here today on this memorable occasion.*

* I acknowledge with gratitude stimulating discussions and advice from the following: Professors Gwyn Thomas (Bangor), John Tudno Williams (Aberystwyth), Andrew Lever, and Sir John Gurdon (Cambridge), and the expert guidance of our Honorary Secretary, Peter Jeffreys.