



THE LEARNED SOCIETY OF WALES
CYMDEITHAS DDYSGEDIG CYMRU

CELEBRATING SCHOLARSHIP AND SERVING THE NATION
DATHLU YSGOLHEICTOD A GWASANAETHU'R GENEDL

Annual Address by The President

Sir John Cadogan CBE DSc FRSE FRSC PLSW FRS

Delivered following the Society's Annual General Meeting
23 May 2012

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TODAY is the second birthday of The Learned Society of Wales. It is therefore timely to review our progress so far and outline our next steps.

We have received a very good summary of our year's work from the General Secretary, Professor John Tucker, so I will not remind you of every milestone in our short journey.

But one must surely stand out. It is the election of a further 73 Fellows bringing our Fellowship up to 250 – with more to come. Our Fellowship represents internationally recognised expertise and knowledge extending from economics to electrical engineering and from philosophy to particle physics. This is a mobilisable bank of knowledge not constrained by institutional or political barriers. We have for the first time an expert resource easily accessible for the benefit of Wales. We think it will take some 3 years to work through what I may call the backlog of scholars and researchers who clearly would have been elected had the Society been in being – as well as the formidable *cadre* of newcomers.

Most – but not all – of our Fellowship reside in the Welsh Universities. These are responsible for the final product of the educational food chain on which this small country of ours depends.

It is a daunting task, particularly for the Vice Chancellors, who as captains have to keep their ships heading in the right direction – and just keeping afloat. I leave aside possible problems from the crew, but we must keep in mind Chekov when he said “The University brings out all abilities, including stupidity.”

I am not sure what the collective noun for Vice Chancellors is. Let us hope it will not turn out to be “The Martyrs of the Arena”. One thing is certain: they have to be masters of the art and science of crisis management.



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The universities are the long term guardians of the future of the Nation. Whatever excellence resides in Wales undoubtedly lies to a great part with them, the cornerstone of our knowledge base. They have a real output, which is the teaching and supervision of some 61000 students at a cost per head which is vastly – and dangerously – lower than any other university sector in Great Britain.

The universities are doing this under a barrage of denigration, misleading analysis and underfunding as documented in our paper on “the Funding Gap”. They have been described by Government as “not fit for purpose”. Given that the Government’s policy on funding crucially depends on attracting students from outside Wales, particularly from overseas, it can be fairly said that this constitutes a monumental shooting in the foot.



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Added to this are the criticisms of alleged poor performance in the research councils’ competitions. Let me say, with regard to the research councils, it is clear to any sensible analyst that our researchers have done remarkably well considering the relative erosion of the infrastructure and people. Making bricks without straw comes to mind. With respect to research council performance the contrast between Wales and Scotland is stark. Scotland takes 14.8% of the pot while

Wales takes 3.3%. Government has perceived many faults in the universities as the genesis of this: not enough collaboration, lack of drive, the fact that Scottish Universities have been around for many hundreds of years and so on.

But age has nothing to do with it. Look at the out-performing Universities of Bristol, York, Lancaster, Warwick, Exeter, Leicester, Sheffield, and Manchester for example. All are younger than Aberystwyth. The real explanation is much simpler. Since Devolution, the funding gap between Scottish and Welsh Universities is greater than £1.3 billion in today’s money. What could have been done with money of this ilk? Or even half of it? The University of Manchester has just advertised for 100 new Lecturers and Professors. Think on that.



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Also the University of Bristol, just across the water, has 30 Professors of Chemistry and 23 Professors of Physics, much greater than the resource for the whole of Wales. And these are the people, with their colleagues, who win the research support and the riches that go with it.

It has always been difficult to win in the competition for research council funds particularly if the infrastructure of equipment and world class staff is not here. Regrettably, recent and ill-advised changes announced by the Engineering and Physical Sciences Research Council will make it even more difficult for Welsh Universities to compete in this sector. One particularly damaging edict is the unequivocal requirement that from November 15 last – and I quote – “all applicants will have to clearly identify the national importance of their proposed research project, over a 10-50 year time frame”. This is breath-taking nonsense. None of the great breakouts which have changed the world would have met this criterion:

- Lasers,
- Optical fibres
- Penicillin and antibiotics
- Organic polymers and composites
- DNA and genomics
- Stem cells

And there are hundreds of others.



Professor John Tucker, General Secretary of the Society, addresses the Annual General Meeting

The discoverer of liquid crystals did not have flat screen TV in mind when he did his seminal work. Indeed, if some committee had decided that flat screen TV was desirable people would have gone on working on the cathode ray tube.

When Donald Hey FRS, a Swansea man, postulated the existence of free radicals in solution he was ridiculed. Even he did not foresee their immense significance in diverse fields from polymers to the genesis of cancers.

When an ICI scientist discovered an unexpected slime in his reaction vessel which turned out to be polyethylene, no one could then come up with a use for it beyond non-drip candles.



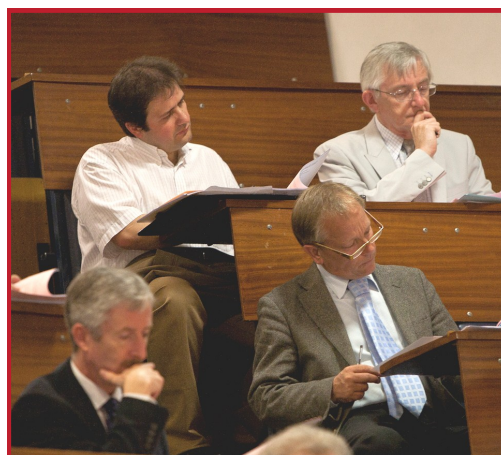
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When Nobel laureate George Porter discovered the chlorine oxide free radical no one had the faintest idea that the ozone hole existed let alone that this free radical was the cause of it and hence where the solution lay. This led to another Nobel prize. The Ozone hole, by the way, is the first time that the discovery of nothing has affected the world!

Lyn Evans FRS, and one of our Fellows, from Aberdare, is the leader of the Large Hadron Collider project at CERN. He said in his lecture to the Learned Society in Cardiff, recently, that no one in CERN had the faintest idea that their World Wide Web would lead to today's consequences.

What would these scientists have said in answer to today's demand by EPSRC?

EPSRC's dirigisme will give preference to short term work based on today's knowledge but not to searches into the unknown. It suggests an ignorance of the nature of scientific discovery which underpins subsequent application. It has the responsibility to support research leading to discoveries that no one is presently aware are there to be discovered. Planned discovery is impossible. I am glad say that there is much opposition to this and other foolish changes.



Professor Tim Phillips, Professor Wolfgang
Langbein, Professor Alistair Cole and
Professor Robin Stowell

We have many new Fellows here today so it is worth repeating some truisms concerning our values and ambitions.

The universities are here to push back the frontiers of knowledge through research by outstanding people of international standard. They also have the massive responsibility of training the young by passing on knowledge and expertise – and for stretching their minds. These youngsters may be specialists or generalists. Both are needed but the specialists must have peripheral vision – people who are aware of what is going on outside their speciality – whether it be in science, humanities or social studies.



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The universities have the unique task of ensuring that the young automatically, almost without thinking:

- act on evidence rather than on opinion or dogma;
- challenge opinion based on their analysis of the facts; and
- seek evidence where none exists.

Unless these are uppermost, the balance will shift from freedom and creativity towards totalitarianism. As Nietzsche said, “convictions are more dangerous enemies of truth than lies”.



The balance and focus of activities will vary from the research intensive universities to those closer to the market place. We must have this diversity.

Consultancy and spin-off for the benefit of industry depends to a very large extent on the university sector in the almost complete absence of government research centres in Wales. Without university based excellence, inward investment will be sparse and will be confined to screwdriver industries – which will up sticks and go to cheaper countries in tough times – or even just across the border.

Independence of our Society is vital, and no more so than today, so I stress that, although our Society owes much to the pump priming of the University of Wales, we see ourselves as the first pan-Wales institution, independent of Government, devoted to supporting excellence in every one of the scholarly disciplines and in the professions, industry, commerce, the arts and public service.

We will set and protect standards.

To be elected will be a target for our young scholars.



Professor John Wyn Owen,
Treasurer of the Society



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We will take our place among the Learned Societies both in the UK and internationally and thereby spread the word about scholarship and creativity in Wales – and when I say creativity I do not mean only the undoubted importance of the production of *Dr Who* in Wales, but our contributions to science, engineering and medicine too.

We have established a series of lectures and events involving internationally-recognised scholars.

We will encourage collaboration but will stress that this should be driven only by the needs of the investigation – and not constrained by artificialities based on geography or dogma.

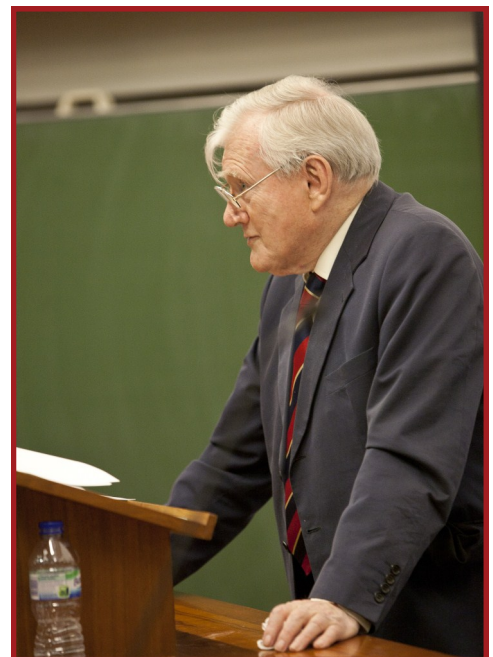
We are actively preparing a case for a Royal Charter and for Royal recognition.

We plan a satellite in North Wales where John Hughes has offered to provide accommodation. We are most grateful for this. Indeed we have received much appreciated support from the universities already in providing free facilities for mounting our events. Here we are in Cardiff University now.

We are particularly grateful to the nascent University of Wales Trinity St David for continuation of financial support for a few years.

We see a need for a thorough SWOT analysis of the full range of our research and scholarship capabilities in Wales: that is, a proper study of Strengths, Weaknesses, Opportunities and Threats. This will need significant input from people at the cutting edge; Government doesn't have that capability.

When I was making the bid for more money for Science at the first Comprehensive Spending review the geniuses in the Treasury said: "if we give you more money, you scientists will just give it to your friends". I then realised we had not shown, in words





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they would understand, what benefits had accrued from science so far. Reference to the billions of Swiss Francs attempt to find the Higgs boson just turned them off. I asked the research councils to produce a thousand one liners, which did the trick. Just one example was the design of the Thrust SSC Car by Swansea's engineering group based on finite element analysis and fluid dynamics – which also underpinned umpteen advances, including the Airbus A380 wing.

Such a one liner list of Welsh discoveries, advances and commentaries right across the spectrum of Welsh scholarship and research, and not restricted to Science and Engineering, will help disprove the unjust canard that the Welsh Universities are not fit for purpose.

To do this we will need the help of you – the Fellowship.

We have a job to do in helping Government to clarify its thinking on creation of wealth and protection of culture from research and scholarship. These are areas where, frankly, it and the civil service which supports it, have

little or no experience. It is worth repeating that we see our Society not only as a radical initiator of beneficial outcomes but also a force for inhibiting damaging decisions based only on belief. Our advice might well be ignored but at least these sound opinions will be there for all to see.



Professor Huw Pryce

It is certainly my view, and one shared by the Council, that the Learned Society should not behave as some sort of exotic jellyfish, whose only function is to rise to the surface once a year to reproduce. It may have to sting now and then, too. We have found ourselves involved in commenting on Governmental actions much more than we had expected. In public, there was the issue of the funding gap and in private we had much to say on improving the draft report on Science Policy. I am glad to say that the final report reflects some of the things we had to say.

Until we came on the scene there was no independent, non-Government funded source of constructive criticism in Wales. However, there was an important action in 2006, which preceded the formation of the Society.



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This was by a group of 12 Welsh FRS, including 9 Knights and a Dame of the realm, who subsequently became Founding Fellows.¹



**The Reverend Professor John Heywood Thomas,
and The Reverend Professor Douglas Davies**

This was the first publication of a trenchant criticism of the absence of a sensible Science Policy, the absence of a Science Minister, the absence of a Chief Scientific Advisor and the existence of a growing Funding Gap ever since devolution.

After an expected period of governmental opposition and denial, to the credit of Government, all issues were addressed –

except the funding gap which is still growing and growing with bad effects across all disciplines. Happily, after another series of denials, Government has now tacitly admitted the existence of the funding gap and accordingly has produced a relatively small, but significant sum of £50 million over five years to help attract distinguished scientists to Wales.

We recognise and applaud this as an important step forward. £10 million a year for five years will be used to attract three academic stars; but there are to be three overseeing Directors too. I wonder whether the stars will be comfortable with this. Being uncomfortable with bureaucracy, personally, I would prefer to see six stars instead. But it is a start. If it works, Government will be under much pressure to extend the funding.

I have said much on scientific issues. The Learned Society is very concerned too about the effects of current thinking on reconfiguration on the health of the humanities and social studies. It is from these constituencies that recruits come for government, the civil service and much of business and commerce in Wales.



**Professor Min Chen and
Professor Tavi Murray**

¹ *Agenda*, May 2006 p 4



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We are a very young Society with an administrative force of just two people – who are excellent, thank goodness. We are also very fragile, financially, so we have not been able to spend as much time as we would like in communicating with you, the Fellowship. With the approval of the Vice Chancellors we would like to hold Town Hall meetings with staff and students to let them know what we are doing – and hoping to do.

Frankly, I am surprised that we have got this Society up and running so quickly. And here I pay tribute to Lynn Williams and Sarah Morse. We could not have done it without them. I hope you would agree that it would be a sad day for Wales if its Learned Society were to fall down or even pushed to the side. We must keep it in being. There are so many things for the good of Wales which need to be done and which we could, and should do.



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