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Scottish Parliament

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[The Presiding Officer opened the meeting at 14:00]

Time for Reflection

The Presiding Officer (Ken Macintosh): Good afternoon. Our first item of business is time for reflection, and our leader is Father Leonard Chiti, head of the province of Zambia and Malawi Jesuits and member of the Scottish Catholic International Aid Fund.

Father Leonard Chiti: Presiding Officer and members of the Scottish Parliament, I thank you for the opportunity to address you this afternoon.

The theme of my reflection is “decision time”. Every day, we make decisions: some small, some big; some conscious, some not. From force of habit, when we get out of bed, we know what we will do immediately and other details of our lives. Very often, our day is filled with details of what we need to do, and we move throughout the day like we are on autopilot.

However, sometimes we are invited to make big decisions in the face of urgent matters—decisions that can change our lives and the lives of others. What goes into making those big decisions? What informs our decision making?

In the Christian faith, we are invited to make decisions that contribute towards the inauguration of God’s kingdom here on earth. What does God’s kingdom look like? It probably looks like this: our decisions are informed by love, of those close to us and those far away; our decisions are informed by a desire to promote human dignity and not just our own interests; our decisions are informed by a commitment to promote the common good, so that those who live far away from us can have a meal on the table, the promise of a regular income and a thriving environment, to live in harmony with God’s creation; our decisions are informed by the desire not to do harm to others and our planet; and our decisions are informed by love of God and our neighbour as much as by love for ourselves.

Leaders in the Christian faith community are servants. Leadership is about service; it is about putting the interests of others first, before one’s own interests. It is about washing the feet of those whom we serve. Great leaders put people before numbers. People who die in flash floods are human beings with a God-given dignity. People who die because poor rains mean that they cannot put food on their table are children of God and not mere statistics.

Leaders seek to motivate and empower others to work for the common good. Leaders work across all sections of society and, ultimately, leaders transform the world around them and beyond. Leaders take real action to deliver justice for the planet and its people on behalf of present and future generations. May all our leaders of today and tomorrow be our servants and not our masters.

Thank you for your attention. *[Applause.]*

Topical Question Time

14:03

University and College Union (Industrial Action)

1. Ross Greer (West Scotland) (Green): To ask the Scottish Government what its response is to members of the University and College Union who are striking over pay, working conditions and pensions. (S5T-01899)

The Minister for Further Education, Higher Education and Science (Richard Lochhead): The current industrial action is of course unwelcome news. However, as I am sure the member is aware, universities are autonomous institutions and matters relating to pay, working conditions and pensions are for them to determine. Although it is not for the Government to intervene, it is worth saying that industrial action is in the interests of no one, especially students, and I expect management and unions to make every effort to reach a settlement on these matters.

Ross Greer: During the previous round of sustained industrial action, which in that case was by college lecturers, the Government said that it would remain neutral and then in the very next breath called for the union to suspend its industrial action. In this case, will the minister respect the right of workers to take industrial action and withdraw their labour? Will the Government give a commitment to do nothing to undermine the union during the strike action?

Richard Lochhead: Of course the unions are acting within their rights in highlighting what they see as genuine concerns, and they are right to do so. As I said, I urge both sides to get round the negotiating table—I know that employers have offered to do that—in order that we can settle the dispute sooner rather than later. Any Government anywhere would want to minimise the period in which industrial action takes place, and we will continue to monitor the situation.

Ross Greer: That was not an answer to my question about the Government respecting the right of unions to act, but simply an acknowledgement of their legal rights, which is a different thing.

Will the Government acknowledge that university lecturers' pay has plummeted by 20 per cent in real terms at the same time as their workload has increased to the point that they work an average of two days' overtime a week? Does the Government consider it acceptable for any worker to see their pay plummet by 20 per cent while their workload explodes?

Richard Lochhead: If employees have concerns about their workload, or about any other issue—I know that a number of issues are being discussed as part of the dispute—they have every right to raise those concerns with their employers and act through their union representatives. We hope that both sides can reach an agreement sooner rather than later, so that there is an end to industrial action. As I said, staff have the right to act through their unions.

Justice System (Victim Experience)

2. Rona Mackay (Strathkelvin and Bearsden) (SNP): To ask the Scottish Government how it is improving the experiences of victims in the justice system. (S5T-01900)

The Cabinet Secretary for Justice (Humza Yousaf): I welcome Rona Mackay's question, which is asked during the 16 days of activism against gender-based violence. I thank all the organisations, particularly feminist organisations, that are working tirelessly to consign to history violence against women and girls.

We are progressing a range of initiatives to improve the experiences of victims. For example, this week, the victim surcharge was introduced in Scotland, which is a new financial penalty that will be imposed on offenders who are sentenced to a court fine. The funding that is generated will be banked in the victim surcharge fund and used to provide quick, practical support to victims and their relatives.

Rona Mackay: The victim surcharge fund has the potential to make a real difference to how victims experience the justice system. Will the cabinet secretary expand a little on the practical support that the fund will pay for?

Humza Yousaf: The member is right to emphasise practical support, because that is what we want the victim surcharge fund to provide. As I have said previously at the Justice Committee, I expect the fund to be as flexible as possible, so that it can help with a range of issues and pay for things such as new windows, doors or alarm systems for victims of house breaking right the way through to counselling for those families who have been bereaved by crime.

The fund is open and flexible, and I am looking forward to it being disbursed to victims' organisations and then to victims directly thereafter. I think and hope that it will make a practical difference in helping to alleviate some of the trauma that victims of crime experience.

Rona Mackay: The fund is only one example of how the Government is working to improve the experience of victims. Will the cabinet secretary outline what other work the Government is doing to support victims and witnesses?

Humza Yousaf: We have a range of work under way. I know that there is still plenty of work to do—I have met enough victims and their families to know that. I am delighted to co-chair, along with the Lord Advocate, the victims task force, which brings together leaders from across the justice sector, including from victims organisations, and has a key focus on developing and further enhancing our victim-centred approach to the justice system.

As the member knows, we are investing £80 million this year in victim support services. We are also helping the most vulnerable victims and witnesses, as demonstrated by last week's opening of the evidence and hearings suite in Glasgow, which was supported by almost £1 million of Government funding.

We are doing plenty. Nonetheless, I repeat that we realise that there is still much to do. That will always be informed by the direct experience of victims.

Liam Kerr (North East Scotland) (Con): Last Friday, the Scottish Government released an analysis report on the transforming parole in Scotland consultation, which aims to involve victims more in the process. Anything that improves the experience of victims and witnesses of crime is to be welcomed. Will the cabinet secretary consider extending the report's actions to cover temporary release?

Humza Yousaf: Although I understand why Liam Kerr has asked the question, it is important that we do not conflate the two issues. I appreciate that he is not doing that, but it is important that we do not conflate parole with temporary release. They are two very different mechanisms for two very different purposes, although I accept that they are interlinked.

I will explore what has been said about parole and will see whether there is anything that we can learn that will inform temporary release. I will be open-minded on that, but it is important that we focus on parole. We have heard really good feedback from a number of victims who have said that they want to attend parole hearings. They want more confidence about what can be done in relation to exclusion zones. Those are all things that the Government has said that we will take forward.

James Kelly (Glasgow) (Lab): The victim surcharge fund is a welcome support for victims whose lives have been disrupted as a result of crimes having been committed against them. It is important that all victims are able to access the fund. Will the cabinet secretary explain what steps will be taken to ensure that victims who do not have direct links to the organisations that have been set up to facilitate applications are made

aware of the fund, and of the process involved in making an application?

Humza Yousaf: That is a hugely important point. If a person becomes a victim of crime, the details of those organisations will be sent to them. Victim Support Scotland knows that a significant proportion of victims do not take up that support. We will certainly work closely with organisations such as VSS to reach those individuals who do not often access support services.

When the victim surcharge fund is ready to launch—it will take time for money to accumulate in the fund, so we estimate that that will be in summer 2020—I will take James Kelly's points on board. There will be marketing and awareness raising so that the fund reaches people who have not previously been reached by traditional methods.

Scotland as a Science Nation

The Presiding Officer (Ken Macintosh): The next item of business is a debate on motion S5M-20027, in the name of Richard Lochhead, on Scotland as a science nation.

14:12

The Minister for Further Education, Higher Education and Science (Richard Lochhead): I welcome the opportunity to present the motion to Parliament.

Since starting in my ministerial role, I have been consistently impressed by the incredible work that is carried out across all our Scottish institutions, with our United Kingdom and international partners, in growing and developing science and research in Scotland.

From the enlightenment through the range of industrial revolutions—we are now in the age of the fourth industrial revolution—the people of Scotland have shaped the modern world through science, invention and innovation. Our pioneers continue to echo through the ages and to inspire new generations, as we can see from events that are taking place this year, including events to commemorate the bicentenary of James Watt's death. Other commemorations have occurred—for example, Mary Somerville, who is known as the queen of 19th century science, became the first female scientist to be featured on a British banknote, following a public vote on the issue.

The new knowledge that is created in Scotland not only improves the daily lives of our people, but places our country at the forefront in addressing many challenges that are of global importance.

It would, of course, be an understatement to say that we live in very interesting times. Never before have we been bombarded daily with half-truths and even naked lies by the news and the media. In such confusing times, it is perhaps more important than ever that we all come together to recognise the key role that Scottish science and research can play in uncovering and promoting new facts—I emphasise the word “facts”—and knowledge.

However, we must not forget the importance of ethics in that process. There is a key role for us—as politicians and members of the Scottish Parliament—and for all those who are in public roles, to ensure that we respect the facts. Science and research in this country would not be excellent if it were not for the fact that they are also ethical. That idea very much fits with the Scottish Government's commitment to protect, respect and realise internationally recognised human rights, and to promote democracy, the rule of law and

human rights across the world. Research ethics not only promote the expansion of knowledge, but support values including fairness and mutual respect, which are key components for collaboration.

Scotland's science and research has intrinsic value as a cultural good and as a symbol of human achievement. Therefore, we must continue to listen to and respect the experts who enable us to use science and research outputs to the benefit of society. We should bear that in mind, given that some politicians have, in the past, said that we should ignore the experts or not give them the respect that they deserve.

There are many benefits from research and science in this country, including economic benefits. Scottish universities continue to perform well with spin-off activity. The latest figures show that the number of active university spin-offs grew by 46 per cent between 2014 and 2017. This morning, I spoke to Professor Peter Mathieson, who is principal of the University of Edinburgh. He told me that the university has, in the past 12 months alone, created 65 new companies, and its track record illustrates that 80 per cent of its spin-offs still exist after 15 years.

As well as what our universities are doing, our research institutes are impacting positively, particularly on the rural economy. Analysis has estimated that the wider economic benefits of their research contributed a total of £151.8 million in gross value added to the Scottish economy in 2016 alone, and supported nearly 1,500 jobs.

As many members will know, I have spoken often in the chamber, as have others, about Scotland's culture of science, discovery and invention. It is worth remembering that Scotland continues to be a global leader in science and research, so I will take this opportunity to highlight a few of our successes.

“A Metrics-Based Assessment of Scotland's Science Landscape 2007-2016”, which was published this year by the Scottish Science Advisory Council, underlines the truly global reach and quality of Scottish research at our universities, in our research institutes and businesses and within the public sector. The report provides clear evidence of just how much above our weight we punch. Scotland is number 1 in the UK in terms of the number of publications per researcher. We are also number 1 in the UK in terms of citations per researcher, and we are number 1 for that measure among European Union members and the other countries that were studied. Those are our current strengths as a science nation, and we should shout them from the rooftops and tell the world.

However, if we are to secure that position into the future, we cannot be complacent: we must

work hard to ensure that Scotland continues to provide people with the right skills, and that it remains a great place to study and work in science and research.

As part of that agenda, it is worth noting that we continue to make good progress on delivering our five-year science, technology, engineering and mathematics strategy, which is our key policy for supporting STEM education and training in Scotland. Actions include trialling of the Scottish young STEM leader mentoring programme and grant funding of STEM professional learning projects. Colleges are developing regional STEM hubs to strengthen collaboration between partners including universities, science centres and employers. Our science and society funding is making science events and activities at science centres and science festivals accessible for about 1 million people in Scotland.

All that activity is focused on ensuring that we maintain and strengthen our talent pipeline in science, from supporting learning and teaching at all stages to inspiring people of all ages through public science initiatives. The Education and Skills Committee has just published its report on STEM, and we look forward to debating that in the chamber, I hope, at some point in the future.

We can be truly proud of the contribution that Scotland-based researchers are making on the European stage and in the wider world. The SSAC report that I mentioned earlier underlines the fact that international collaboration is integral to our continued excellence in science and research. Being a key leader and partner in international collaborations will continue to be a major part of our drive to promote Scotland as a world-leading science and research nation.

I will not go off on a tangent and speak about Brexit in any great detail. However, if Brexit were to go ahead—I hope that it will not—it is important that we maintain the strength of Scottish science and research and that we maintain collaboration with our European partners.

Oliver Mundell (Dumfriesshire) (Con): Does the minister acknowledge that, if we leave the EU with a deal and have a constructive relationship with our European partners going forward, that would be the best outcome from Brexit?

Richard Lochhead: From all my conversations with many leading researchers and their representatives in Scotland, the best deal for science and research in Scotland would be to have no Brexit and to remain within the European Union. However, if we are to leave but continue with the full benefits of horizon 2020, Erasmus and the European collaboration that takes place in science and research, we will need a much better deal than that which is currently on the table.

In support of collaboration, I recently convened Scotland's first-ever science and research summit, in June. That brought together the wider science sector, including universities, colleges, research institutes, science engagement and Government science. The summit focused on key issues in respect of collaborating for excellence.

Since then, I have invited our chief scientific adviser, the renowned Professor Sheila Rowan, to chair a working group to develop the ideas that will help us to achieve our "Scotland science nation" ambitions. I look forward to seeing the working group's recommendations.

I want more people in Scotland to take pride in the fact that science and research excellence is not just part of our history, but is part of our present and future success. Science is an intrinsic part of our culture and our daily lives. It reflects that Scotland is an outward-looking open and progressive nation, and that, as our campaign says, "Scotland is now." We should celebrate all that.

We need to get that message out to international audiences, to encourage people of all countries to visit, study, work and invest in Scotland. My vision is of Scotland being recognised across the globe as a science and research nation. I strongly believe that many members, if not all, will agree that Scotland has a clear and proven track record in science and research.

This is not just about celebrating the figures of the Scottish enlightenment—although we should continue to do that, and do it more often—and those who were prominent in previous industrial revolutions and who did so much to invent the modern world, although we should, of course, do that too. It is about recognising today's world leaders in research and science in Scotland and recognising Scotland's pioneering role in the fourth industrial revolution.

We must also recognise that the Scottish Government's progressive and forward-looking policies, together with Scotland's research excellence, are an ideal combination to support the United Nations sustainable development goals and to help to make the world a better place. We should inspire people from around the world about the fantastic careers that are open to them in science and research in Scotland, and say that there is something special about Scotland that makes it one of the best places in the world for science, invention, innovation and research. Our research excellence is as Scottish as our landscapes, our tartan and our whisky.

Scotland's proven research excellence across a broad range of disciplines allows us to capitalise flexibly on emerging opportunities, and to respond

positively to a wide range of national and global challenges. I will give a small flavour of those strengths spanning physical, biological and clinical sciences.

We have a strong footprint in the physical sciences across artificial intelligence—which was debated in the chamber a week or two ago—data, engineering, robotics, photonics and sensors, including their applications in energy and transport.

In biological and clinical sciences, we have expertise in molecular biology, drug discovery, infectious diseases, genetics, animal and plant sciences, Alzheimer's, precision medicine and many other areas.

Another key Scottish strength is in environmental sciences, including aquaculture, food security and blue biotechnology.

In that context, I highlight that, just last week, the University of Strathclyde received the Queen's anniversary prize for higher and further education, which is one of the highest accolades in UK higher education. The award recognised Scotland's research in energy innovation. I am sure that we all say "Well done" to everyone who has been involved in that fantastic achievement. A total of 22 prizes were announced this month in the 13th round of the Queen's anniversary prizes, and three of them came to Scottish institutions—the University of Strathclyde, the University of Stirling and Heriot-Watt University. Those prizes are more examples of Scotland's excellence in science and research.

However, we must not stand still. In order to maintain our excellence in science and research, we must support and nurture the next generation of researchers and knowledge-exchange practitioners, and we must ensure that our excellence in academia supports our excellence in business and public services. We are doing that, for instance, through our continuing investment in the innovation centre programme. Through transformational collaboration between businesses, universities, colleges, institutes, the public sector and others, the innovation centres aim to enhance innovation and entrepreneurship across key economic sectors, in order to create more jobs and to grow the economy.

Through the Scottish Funding Council and the enterprise agencies, we will continue to invest in the innovation centres, with up to £75 million over the next five years. The recent announcement of funding for the Scottish Aquaculture Innovation Centre to the tune of £10 million is just one example of how we are helping to grow innovation between business and research.

I have seen at first hand some of the ground-breaking innovation, which has been absolutely

fascinating. One project that I recently observed during my visit to the Digital Health and Care Institute in September was the Scottish capsule programme—ScotCap. It is a leading innovation that uses camera-pill technology and a managed service to aid clinicians in gastroenterology services. That innovative technology means that patients receive a less invasive form of endoscopy in community hubs and in their own homes, which also minimises the impact on their daily lives. The technology involves the patient taking a pill that has a camera inside it, which videos their insides, which is much less invasive than other methods. That is an example of the amazing things that are happening with technology and innovation in Scotland at the moment.

Members will hear me talk about my ambition for Scotland to stand out as a science and research nation. It is innovative projects such as ScotCap that are supporting a revolution in health services in Scotland and beyond.

It is not only in health that such innovation has the potential to transform lives. An amazing partnership between the Scottish company Sunamp Ltd and the school of chemistry at the University of Edinburgh has successfully developed heat-battery technology that can store energy from any source as heat and release it on demand to provide space heating and hot water, thereby reducing use of fossil-fuel energy sources, and reducing carbon emissions. It also saves households a lot of money, with proven savings of up to 75 per cent on utility bills. There are a lot of amazing and exciting things happening in Scotland.

Looking ahead, I point out that we have a once-in-a-lifetime opportunity to promote science in this country through the United Nations 26th conference of the parties summit, which will be held in Glasgow a year or so from now. That annual global forum on climate change will attract hundreds of world leaders and thousands of delegates and other visitors from around the world. It will give us an amazing and unprecedented opportunity to showcase the best of Scottish science and research, and the developments that are taking place here, through collaboration between industry and academia, to help to tackle climate change. We will absolutely use that platform to do that.

Scotland excels in science and research, so we should be celebrated as a science nation. Researchers in Scotland are at the forefront of multidisciplinary international research collaborations that tackle national and global challenges and drive forward the frontiers of knowledge.

I hope that members can rally today to promote Scotland as one of the world's leading science nations.

I move,

That the Parliament celebrates Scotland's role as a science nation with a deserved global reputation, which builds on a famous heritage, a range of former achievements and continues to grow today; acknowledges the excellence of Scotland's science and research base as reflected in the Science Landscape report, *A Metrics Based Assessment of Scotland's Science Landscape*, which was published earlier in 2019; recognises the ongoing collaboration between academia, business, public sector and third sector that lies at the core of Scotland's excellence; endorses the important role that Scottish science and research plays in addressing the economic, societal and environmental challenges that the country faces, including dealing with the climate change emergency, reducing inequalities and improving public health; acknowledges that science and research therefore underpins Scotland's commitment to the sustainable development goals, and looks forward to the conclusions of the Science and Research Working Group led by the Chief Scientific Adviser for Scotland on how to further promote Scotland's strengths as a science nation.

14:27

Oliver Mundell (Dumfriesshire) (Con): It is a pleasure to open this afternoon's debate on behalf of the Scottish Conservative and Unionist Party and to join others from across the chamber and beyond in celebrating Scotland's role as a science nation.

There is not much in the minister's speech with which to disagree: it is a topic that we can all gather together and support. As the Government motion rightly states, we can be very proud of the deserved global reputation that we have in the field, from the tremendous university and research institutions that are leading the way in life sciences, biotech and informatics—as well as just about everything else—to the world-leading companies and industries that are based here and call Scotland their home; from the North Sea to the renewables sector; and from drug and medicine manufacturers to the aerospace industry. There can be no doubt that we have a lot to celebrate in the here and now.

Those achievements find their foundation in our proud history of scientific endeavour. For centuries, Scotland has been a beacon for enlightened scientific thought—it was home to Alexander Graham Bell, Mary Somerville, Alexander Fleming and James Watt among many others, which are names that will probably pop up many times in the debate.

In addition, many of the most important scientific advances have their roots in Scottish research, such as the magnetic resonance imaging scanner, the development of keyhole surgery and the

theory around the existence of the Higgs boson particle.

I do not want to dwell overly on the historical, but the lesson that we can all take from the strength of what has already been achieved and what we enjoy today, is that we must continue to invest in and value science and recognise its importance to our cultural identity, to the economy and to job creation. It is not possible to have future success, and to see things develop over time, without continuing to do that.

By ensuring that we take the right steps now, and by listening to the conclusions that come from the science and research working group, led by the chief scientific adviser for Scotland, we can ensure the success of future generations through the legacy of the achievements and work of today.

The cabinet secretary talked about the importance of listening to experts. My plea is for all parties and all Governments to carefully and gently reflect on his advice. The Scottish Government can sometimes be as guilty as other Governments in the United Kingdom of cherry picking which experts it wants to listen to, and when. If we are genuinely going to put experts at the forefront of our science policy, we need to be willing to listen to them, even when they have uncomfortable truths to share with us.

For me, this centres on education and on the need to properly promote science in our schools, particularly in the early years and in primary schools. I have seen great work—there is no denying the great work that is being done in many of our schools. I have visited schools in my constituency that do phenomenal things and give our young people great opportunities. However, the picture is not consistent across the country.

One of the many inspiring contributions in that area has come from Sir James Hough, who, despite his position as an international leader in the search for gravitational waves and his academic commitments, has spent a great deal of time and taken a great deal of interest in encouraging primary school teachers to embrace science in the classroom.

I was delighted to join other members of the Education and Skills Committee, of which I was a member at the time, at this year's primary science education conference. I was impressed by Sir James and many of the other speakers, exhibitors, classroom practitioners and teachers, as well as the young people who were there. They all appeared to grasp the importance of engaging with people early and recognising that science does not need to be complicated or particularly elaborate to be interesting and useful. There is a lot of work that we can do to ensure that our schools are well equipped to deliver meaningful

science, and to teach the next generation the principles and values that we have heard about during the debate.

I intend to remain positive in what will be a predominantly positive debate. However, it would be remiss of me not to take the opportunity to highlight some of the challenges to the Scottish Government, the first of which is the importance of subject choice as people move into secondary school. The research and the anecdotal evidence, as well as the opinions of many experts, suggest that science subjects are feeling the squeeze, at least in some schools, particularly when it comes to qualifications.

As the Government acknowledges, there are also challenges in recruiting and retaining teachers in STEM subjects, particularly in rural and remote communities, such as my Dumfriesshire constituency.

More recently, concerns have been raised about multi-level teaching, where two or more distinct courses are taught simultaneously in one classroom. The learned societies group on STEM education said:

“Science teachers have expressed concern that multi-course teaching does not allow them to fully support the needs and aspirations of pupils”.

That should worry us all. These issues are well-documented and have been the subject of considerable recent and on-going parliamentary interest. If we are unable to get to the bottom of such systemic issues in our education system, the sector and our country will suffer and fail to maximise its potential.

It is also difficult to see how we will meet the Scottish Government’s key performance indicator to reduce the proportion of STEM employers in Scotland that are experiencing skills shortages if the Government fails to close the gap in the education system.

As well as what is happening in our schools, what happens in our universities, colleges and research institutions also remains important.

As I said, there is much to be proud of. Five Scottish universities are in the top 200 institutions in the 2016-17 Times Higher Education world university rankings. Our academic and research institutions punch well above their weight: figures show that 77 per cent of university research in Scotland is deemed to be world leading or internationally excellent. We can be very proud of that. Indeed, figures show that university research in Scotland has a greater impact on our economy than research in the UK as a whole has on the UK economy. That shows how key what is developed at our universities is.

It is all about how we capitalise on that and help to commercialise some of that research. In an unpredictable world, that is key to helping to make sure that those institutions are sustainable in future.

There are too many outstanding projects, individuals and collaborations for me to be able to list them all in today’s debate. I am sure that many members will give examples. As the MSP for Dumfriesshire, I could not have spoken in this debate without highlighting the work of Scotland’s Rural College, in my constituency, at its dairy research centre, which is due to be significantly enhanced as part of the Borderlands inclusive growth deal. The work will build on one of the longest-running longitudinal experiments in the world, by applying learning from the research into the Langhill herd in the significant partnerships that the college has established around the world, including in Malawi. It is very special that research on dairy cows in Dumfriesshire is benefiting farmers in a nation that has such close links to Scotland and this Parliament.

Such research, like the work that is done at the Moredun Research Institute and Roslin institute, makes a significant contribution to rural Scotland and our rural economy. It shows the value and practical advantage of retaining and developing world-leading expertise here in Scotland.

It also shows the breadth of our research expertise. When people hear the word “science”, many of them think about traditional areas such as chemistry, biology and physics, but a great deal of work is being done in industry that has significant commercial potential and can change people’s day-to-day lives.

That takes me on to the final piece of the puzzle: industry. My colleagues will expand on that in their speeches this afternoon.

I say again that we are fortunate to have many world-leading and enterprising research-based companies here in Scotland. It is a real positive that such companies want to be based here and there is no doubt that they recognise the strength of our science education and the opportunity to work in partnership with our great universities and research institutions. That is a vital draw for them.

If we can get the package around education right, and if we can continue to deliver world-leading opportunities, I see no reason why our success as a science nation will not continue for decades and centuries to come.

14:38

Iain Gray (East Lothian) (Lab): The Scottish Government is sometimes a little too ready to claim world-leading status for Scotland in

whatever area of policy endeavour—or life—about which it might be talking at a given moment, but to claim that Scotland is a science nation seems reasonable enough.

Certainly, we can point to the historical track record. The minister mentioned James Watt and Mary Somerville, Mr Mundell mentioned other Scottish scientists, and there are plenty more: James Clerk Maxwell, Kelvin, Joseph Black, James Black, William Ramsay, Alexander Fleming, Hutton, Napier, Logie Baird—the list goes on and on.

Of course, that leads to a question: how stands our claim to be a science nation today? There are few countries in the modern developed and developing world that would not claim to be—or to be trying to be—a science nation. After all, it is clear that the future belongs to the countries that can build prosperity on high-tech industries that are highly skilled and innovative, with global relevance and reach, and which are, therefore, underpinned by science.

Therefore, the Scottish Science Advisory Council's assessment of Scotland's science landscape is a critically important document. It shows that Scotland's researchers continue to be among the most productive in the world. As the minister pointed out, the number of publications per researcher is consistently higher here than in the rest of the UK and, indeed, in all other comparator nations. The assessment also shows that our research continues to be of the highest quality, with the highest average number of citations per researcher. It shows, too, that our research output has increased by 15 per cent since 2007.

However, the assessment also tells us that that increase is slower than in the United Kingdom generally, and slower than the global average, and that our total gross expenditure on research and development as a share of gross domestic product continues to be low—lower than in the UK as a whole and lower than in all comparator nations, with the exception of Ireland. Therefore, it is absolutely clear that we cannot rest on our laurels. We will not maintain our position as a science nation without making the conscious effort to do so.

Although the minister's science and research working group is a welcome initiative for pursuing such an objective, we face significant challenges. The most imminent and urgent of those is, of course, Brexit, as the minister mentioned. We have debated that threat to our science base separately on a number of occasions. Much of our research base is underpinned by EU funding and the contribution of EU citizens who have chosen to base themselves here, and much of our research takes place within research partnerships that are

embedded in European research frameworks. All of those are, at best, uncertain now. I agree with the minister that the most effective way of resolving that lies in the election on 12 December. A Labour Government would be willing to put the Brexit question back to the people so that we can stop Brexit.

Like Mr Mundell, I think that we can all support the motion. I understand that the minister is seeking consensus, but it would be remiss of me not to mention, at least gently, that other and greater constitutional threat to our research base: another independence referendum. We know that Scottish research punches way above its weight in the UK, with 14 per cent of UK-wide research funding won here as a result of the excellence of our university and research sector. However, we cannot assume that we would continue to have access to all of that pool of funding were we to leave the UK, and to jeopardise it would be foolish in the extreme. Being thrown back more on our own resources, whether by Brexit or by independence, would mean redoubling our efforts to ensure the highest-quality training and opportunities for our next generation of scientists.

The truth is that, in some ways, we are already going backwards. That 14 per cent share of UK research funding is a figure from 2019-20; only six years ago, the figure was 15.6 per cent share. Universities Scotland tells us that that drop, small though it sounds, amounts to a loss of tens of millions of pounds of research and the jobs that go with it. There are signs that our competitive edge is slipping when it comes to research. The reason is not hard to find. That competitive edge to win funding, whether at European or UK level, depends on our core research capacity. The main research grant for Scotland's universities—the research excellence grant—has been cut by 12 per cent in real terms since 2014-15.

In the same period, England's universities have seen their public funding for research and innovation increase. That creates consequential funding that could have been passed on to universities in Scotland but has not been. Indeed, there are around £18 million of consequentials from university research this year that the Scottish Government has already received but has not passed on.

It is, of course, the Government's prerogative to spend that money somewhere else, but if we are serious about the desire for Scotland to be a science nation, we have to be prepared to put our money where our mouth is. Universities Scotland has asked for a 2 per cent real-terms increase in research excellence funding in the budget, and it needs a positive response.

Of course, the other investment that we have to be sure that we are making in the future of science

in Scotland is in our schools, which Oliver Mundell mentioned. We must ensure that the next generation of scientists are given the knowledge, skills and opportunity to secure our scientific future. We should be worried by the evidence in the Education and Skills Committee's report and elsewhere that the number of subjects that children can choose in the senior phase of secondary school is reducing, and that STEM subjects are among those that are being squeezed. That is being exacerbated by teacher shortages—particularly in computer science—which run the risk of becoming systemic, meaning that computer science, for example, could be squeezed out of many schools altogether. With data science and artificial intelligence, which the minister mentioned, becoming some of the fundamental disciplines underpinning a great deal of research work and science, we cannot allow that to happen.

We will support the Government's motion, but we need to hear more specifics about how serious ministers and the Government are about supporting Scotland as a science nation into the future.

14:46

Beatrice Wishart (Shetland Islands) (LD): I thank the cabinet secretary for bringing the debate to the chamber.

I take the opportunity to reinforce the point that it is not only universities and large organisations based in cities that are driving research and innovation, important though that world-leading work is. In Shetland, more than 55,000 fish and shellfish were measured by scientists from the NAFC Marine Centre in 2018, and more than 1,700 students enrolled on 150 full-time or part-time courses, including students from Norway, Denmark, Switzerland, Portugal and Canada studying an online course in fish welfare. Also in 2018, John McCulloch from Unst became the first person in Britain to complete the groundbreaking professional development programme in aquaculture management, which was developed by the NAFC Marine Centre in Scalloway. Further, Kirsty and Aimee Budge are doing important work to share best practice on their farm in Bigton, which is Shetland's monitor farm.

The fishing, aquaculture and agriculture industries are working hard to maintain sustainable world-class products and overcome environmental challenges. Yesterday, pupils at Sound primary school told me how important the issue of environmental challenges is to them.

Shetland has a history of being at the forefront of scientific breakthroughs. The chamber might not be familiar with the work of Sir William Watson

Cheyne, who grew up in Fetlar. During the late 19th century, he was a surgeon and assistant to Sir Joseph Lister, who developed antiseptic surgery, as well as being a researcher at the forefront of medical bacteriology in his own right. Now, in the 21st century, Shetland is well placed to capitalise on the burgeoning small satellite industry, and I look forward to supporting progress towards delivering a launch facility in Unst.

University of Edinburgh PhD student Matjaz Vidmar was recently in Lerwick for a talk on Scottish spaceports. He made the point that Scotland could be in an ideal location to capitalise on space innovation. Scotland already has the talent to design, build, launch and extract data from satellites; we just need the infrastructure to do it.

Part of that will involve securing high-speed broadband connections. The Education and Skills Committee's report into STEM in the early years, which was published last week, recommended that the Government consider the extent to which STEM learning in schools is being hampered by poor internet connections. That cannot be allowed to continue if we are to meet our science nation ambitions.

It is not just at school where children need good internet connections—they need to be able to access learning materials online at home if they are to develop a passion in STEM subjects. Now that a preferred bidder has been announced for the reaching 100 per cent programme, work must proceed quickly.

The Education and Skills Committee's report also looked at gender issues in early years education. The committee heard that children as young as six already associate girls with reading and boys with maths. The latest statistics show that only 17.3 per cent of first-degree entrants on engineering and technology courses at Scottish higher education institutions are female; the figure for computer science was similarly low, at 18.5 per cent.

Equally worryingly, the Royal Society of Edinburgh's "Tapping all our Talents" report found that only 30 per cent of female STEM graduates in the UK are working in STEM industries. A science nation cannot have young women being discouraged from pursuing a career in science as a result of a lack of progress in opening up male-dominated industries.

It is the Government's responsibility to ensure that teachers have the time and resources that they need to deliver engaging STEM lessons. That is not happening on a wide scale today, even though some very good work is being done, as other members have acknowledged. Last year, an Educational Institute of Scotland survey found that

90 per cent of teachers did not have enough time to dedicate to professional learning.

All that being said, Brexit looms over Scotland's science sector and presents real risks to funding and to collaboration with our European Union partners. There are no reassurances about Scotland's status in the successor scheme to horizon 2020. As of July 2018, Scottish organisations had secured €533 million-worth of funding from horizon 2020.

However, the issue is not just about funding. Last week, I was saddened to learn of Professor Fabio Quondamatteo's resignation from his post as chair in anatomy at the University of Glasgow. He wrote on Twitter that that was

"A difficult and painful decision mainly driven by the uncertainties in planning a long term life for our Italian family in the UK."

The UK will undeniably be poorer if talented academics such as Professor Quondamatteo no longer choose to study and make their lives here because they do not feel welcome. The human cost of Brexit is utterly shameful. Scotland did not achieve any of its past scientific success in isolation, nor will we do so in future.

The Liberal Democrats will support the motion.

The Presiding Officer: We turn to open debate.

14:52

Clare Adamson (Motherwell and Wishaw) (SNP): Earlier this week, I listened to "Woman's Hour" on Radio 4, on which there was an interesting article about women and the Royal Society. Despite being very aware of the societal barriers to women in science, I was surprised to learn that the first female fellow was admitted to the Royal Society only in 1945. I thank colleagues in the chamber who have mentioned the great wealth of talent that there has been in the past in Scotland. I felt that it would be nice to mention some of the women involved in that.

In 2013, I spoke in a debate in the Parliament about an exhibition in the National Library of Scotland on women scientists from Scotland. A specific criterion for the women who featured in that exhibition was that their research was still being taught in universities and was still valid today. I will run through a few of them. Elizabeth Blackwell was a botanist. Elizabeth Fulhame was a chemist. Williamina Fleming was an astronomer who discovered the Horsehead nebula. Maria Gordon was a geologist who did much of her work in Italy. Muriel Robertson was a zoologist and one of the first women to be made a fellow of the Royal Society. Victoria Drummond was a marine engineer. Marion Ross was a physicist who became the first director of the University of

Edinburgh's fluid dynamics unit. It is right that we mention those women because, although they do not come to mind as easily as Maxwell and Hutton, their contribution to science and to Scotland as a science nation has been invaluable.

From an exhibition that took place during women's history month, I move to November, which is pancreatic cancer awareness month, which is why I am sporting a bit of purple today. Pancreatic cancer awareness month is about raising awareness of pancreatic cancer. We know that there will be 10,000 people diagnosed with that disease this year and that 9,300 of them will die of the disease within a very short period.

I am delighted that the pan can van is outside the Parliament today. Its team has been highlighting the world-leading work that is being done by the Precision-Panc team, which is led from the Wolfson Wohl cancer research centre at the University of Glasgow. That groundbreaking research seeks to understand the human genome better and to find the right drug for the right patient at the right time. The work is completely patient focused, and it represents a different way of approaching cancer treatment. The pancreatic clinical trials are individually focused and genome based in order to develop targeted treatments for genetically complex pancreatic cancers. That means developing new treatments, optimising current treatments, matching them to the patient and making them even more effective. The aim is to make precision medicine a reality for people with pancreatic cancer. It is a groundbreaking example of what is happening in modern Scotland and it defines us as a science nation.

I was very grateful to be taken round the Beatson Institute for Cancer Research by Jen Morton and to meet the people taking part in the Pancreatic Cancer UK future leaders academy. Those PhD and MSc students are studying pancreatic cancer and investigating the preclinical trials of some of the drugs that are being developed at the institute. It was remarkable to see those young people in that setting. They come from a wide range of backgrounds, and many of them are from other European nations.

That brings me to a report by the Scottish Science Advisory Council, which the minister mentioned. He highlighted some of the things that Scotland is excelling in, and I want to talk about two things that were highlighted in that report. First, more than 89 per cent of Scottish researchers have published outside Scotland, and 57 per cent of them are transitory; and secondly, Scotland is a global collaborator when it comes to science research, working with the United States of America, Germany, France, Italy and Austria. That shows that, as an outward-looking science

nation that collaborates, we must be very wary of the dangers of Brexit.

I am very disappointed that the UK Government has yet to respond to the concerns raised by the Education and Skills Committee, particularly on the matter of short stays and the temporary leave to stay, which has been extended for three years should there be a no-deal Brexit. That is not suitable for Scottish universities. Indeed, Professor Sir Anton Muscatelli described it as “crass”. He said:

“We can’t have policies which are made on the hoof, which this one appears to be.”

I thank Beatrice Wishart for highlighting Professor Quondamatteo’s Twitter feed, in which he describes his feelings about being a researcher in Scotland and the fact that he no longer feels that this is a place where he can raise his family as a direct result of the damage that Brexit is already doing to our universities. That must be addressed, and we must be able to look to a future where Scotland can continue to collaborate and where our students are still able to go on exchanges across Europe. The best way for that to happen is simply for Brexit not to happen.

The Deputy Presiding Officer (Christine Grahame): We have some time in hand, so I will not be brutal if I members wish to take an extra minute to make their points. I should have said that to you, Ms Adamson—but I did not, so there we are.

14:58

Gordon Lindhurst (Lothian) (Con): Scots have invented almost everything worth inventing—at least, I am sure we might like to believe that. All joking aside, and many true things are said in jest—you name it: the television, the telephone, penicillin, the steam engine and the bicycle—refinements of existing technologies and new discoveries by Scots have enabled immeasurable positive change across the world.

In this modern age, Scotland’s scientific success has become important in finding solutions to our contemporary problems, perhaps most prominently on climate change and the emerging technologies of the space race. Importantly, Scottish research continues to punch above its weight, as it has often done. In that regard, we have already heard that 77 per cent of university research in Scotland has been deemed by the research excellence framework to be “world leading” or “internationally excellent”.

Scotland is indeed well placed to take full advantage of new areas of technology and research and to carve out a highly skilled manufacturing and research niche. We can consider the newly proposed aerospace

innovation centre, which will be a 10,000 square-foot multipurpose hub for Scotland’s aerospace sector, funded through the UK Government’s Ayrshire growth fund, that will allow several constituent parts of our country’s nascent aerospace sector to come together and innovate. We hope that the involvement of a number of our national universities will see well honed-routes for our graduates into those sectors in the years to come.

The Conservative-led UK Government has made great strides through investment across Scotland. The UK Space Agency has been at the forefront of encouraging innovation, awarding funding to Scots companies such as Clyde Space and recognising the £3.8 billion that the commercial space sector could be worth to the British economy over the next decade. The UK’s share of the global space industry is projected to grow to 10 per cent in the next decade. A central tenet of that pro-enterprise agenda is, importantly, to remain outward looking and pro-European. We will continue to welcome the best talent, allowing close co-operation with our neighbours and the world.

The Scottish Conservatives wish, of course, to remain vigilant in defence of a genuinely pro-investment and pro-enterprise agenda in Scotland. We need to avoid anticompetitive policies and underfunded infrastructure and to take full advantage of the £521 million real-terms increase in the block grant and the generous increases that recur, too, as a result of Barnett consequentials. In 2016-17, the Scottish universities gained 13.5 per cent of their funding via EU allocations, but that was far outweighed by the £629.7 million of research income that was gained from UK sources—a sum six times larger than the EU one. Whatever happens in the near future, EU and UK co-operation on such funding will doubtless continue. The current programme is guaranteed by the negotiated financial settlement; and involvement with future horizon programmes has been left open for discussion.

Adam Smith laid the foundations for a free market system for this country through which scientific innovation flourished and working people gained control over their own lives and exercised their prerogative in ways previously unthinkable. Arguably, scientific ideas and innovations born here in Scotland have been responsible for lifting millions out of poverty and enabling them to grasp new opportunities that industries have presented. Those things are hard won, but I am afraid to say that, as long as Scotland possesses a Government that is allergic to investing properly in infrastructure and has a counterproductive attitude to investment, we are in danger of losing them. We can consider the Scottish National Party’s mishandling of tax and fiscal policy in Scotland,

breaking a manifesto promise not to raise the basic rate of income tax, which now hits everyone earning above £26,000—a salary that can hardly be described as a high income. It is economic common sense that levying uncompetitive tax rates here will only drive business south of the border. The Scottish Lifesciences Association warned last year that tax rises would only damage recruitment of highly skilled people in Scotland.

Richard Lochhead: Will the member at least acknowledge that the biggest threat to researchers and academic staff basing themselves in Scotland is not the tax regime but the threat of Brexit, which is cited time and again? Our university staff and students and the wider research and innovation community all voted against Brexit because they want to remain in Europe, as that is the best means to attract people to come here to live and work.

Gordon Lindhurst: I thank the minister for highlighting the fact that Brexit will bring huge opportunities not only for the United Kingdom, but for Scotland in particular. That is, of course, something that we should all welcome as we leave the European Union, but remain part of Europe—as we will do.

There is, always was and, we hope, always will be immense talent in Scotland. However, that talent must be nurtured and encouraged, not overtaxed and driven away.

15:05

Shona Robison (Dundee City East) (SNP): As we have heard, Scotland has long been regarded as a world leader in the field of sciences, and is able to boast a number of discoveries that have shaped the modern world. In fact, Dundee is known as the city of discovery in honour of its scientific achievements, and, of course, its famous ship, the royal research ship *Discovery*. It was launched in March 1901 and designed for Antarctic research, and its first mission was the expedition that carried Scott and Shackleton on their first successful visit to the Antarctic, which was known as the *Discovery* expedition. That expedition was one of the first research trips that was concerned with the environment at a time when little was understood about the nature of our environment or the future importance of its protection. It was a truly groundbreaking expedition that led to the discovery of more than 500 types of marine animal, many hundreds of miles of unknown coast, and towering mountain ranges and glaciers, as well as providing invaluable magnetic measurements, auroral observations and seismic recordings. The body of work was massive, and when the research had been analysed and the Royal Geographical Society came to publish the results, 10 large,

weighty volumes were filled. It represented a major contribution to the understanding of the Antarctic continent; a feat made all the more remarkable considering the extreme conditions endured by the heroic scientists of RRS *Discovery*.

However, that was not the end of *Discovery*'s endeavours. In 1925, RRS *Discovery* set sail for the southern seas once again. Its mission was to research whale stocks and the migration pattern of whales, as well as to provide a scientific basis for regulation of the whaling industry. As on *Discovery*'s last trip south, important scientific breakthroughs were made that heralded the beginnings of conservational thinking.

Scotland is now a world leader in the fight to protect the environment through our advancements of the scientific understanding of climate change and the application of new scientific methods to combat threats to our climate. However, a recent report by the Centre for Constitutional Change stated:

“Brexit poses significant risks for the climate and energy ambitions of the devolved nations. These include the loss of European Structural and Investment Funds targeted at climate and low carbon energy policies, from which the devolved territories have benefited ... The removal of the EU policy framework, which has incentivised the low carbon ambitions of the devolved governments directly and indirectly, may also result in lost opportunities fostered by the EU's new legislative framework in climate and energy policy.”

I will be interested to hear the minister's view on that.

Dundee has been a recipient of a large number of research grants from the EU, which it has used to great effect. It punches well above its weight, with the James Hutton Institute and in life sciences in particular. The latest win is the £100 million Innovative Medicines Initiative European lead factory programme, which will speed up the development of new drugs and was won by BioCity Scotland, the University of Dundee and the Scottish Universities Life Sciences Alliance, with the support of Dutch and English partners.

The University of Dundee has been rated among the world's best universities for the impact of its scientific research in the 2019 CWTS Leiden rankings, which place Dundee at 15th in the world for the highest proportion of highly cited publications. According to the ranking, Dundee is just behind Oxford and Cambridge—which are 11th and 12th—in that important marker of research quality, and it is the highest-placed university in Scotland.

That is not the only way in which the university leads, or has led, the way. At the age of 80, Mary Baxter founded University College, the forerunner to the University of Dundee, and her work has

encouraged women who would otherwise not have had the opportunity to study to take up new careers in science and medicine. Even though that was more than a century ago, much still has to be done to ensure that education is equal. I welcome the Scottish Government's focus on STEM education to develop and grow Scotland's expertise in the interrelated fields of science, technology, engineering and mathematics.

I would be interested to hear from the minister what further steps the Scottish Government is taking to ensure equal female representation in the take-up of STEM education, and how it is ensuring that women are given every encouragement and opportunity to continue studies in those important fields.

In conclusion, we have a rich scientific history—particularly in the city of Dundee—of which we should be proud, but which needs to be nurtured and supported to ensure that it continues to lead the world.

15:10

Rhoda Grant (Highlands and Islands) (Lab):

The sentiments of the motion cannot be argued with—a bit like motherhood and apple pie. However, there are challenges in the sector and little acknowledgement of those in either the motion or the cabinet secretary's opening speech.

Let me mention a couple of them. We know that women are underrepresented in the sector, so where is the plan to get more women into STEM? Where is the industrial strategy to ensure that the benefits of our research and development continue into industry and that Scotland reaps the benefit?

Looking at the statistics, we see that only 15 per cent of engineering graduates are female. For computer studies, the figure is 19 per cent, and for maths, it is 38 per cent. Despite those low numbers, the Royal Society of Edinburgh found that 70 per cent of women who graduated with STEM qualifications are not working in the industry. That is simply not good enough.

Recently, when we debated artificial intelligence, the point was made that things designed for men could be unsafe for women. Caroline Criado Perez's book "Invisible Women" points out those dangers. It is about the design of things that we live and work with every day. Frightening statistics include the fact that women are 50 per cent more likely to be hurt in a car crash than men, because the car is designed around a male body rather than a female one. The recognised symptoms of a heart attack are of a male heart attack. The symptoms are different in women, which means that they are more likely to

die if they have one. A world designed by men is simply not safe for women.

It is also interesting that robotics often use female voices to take commands, emphasising gender stereotypes rather than creating a fairer world.

Underrepresentation also increases the gender pay gap. Those STEM-based jobs are better paid and, again, women are being left behind. The gender pay gap is not about women being paid less for doing the same job as a man. That is illegal. It is about gendered pay, where jobs predominantly done by women are paid less than those done by men.

After studying on a bursary for three years, a nurse starts on a salary of around £22,500. A police officer is paid a salary of around £26,000 from the moment that they start training. By the time that they accrue three years' on-the-job training under their belt, they earn around £10,000 more than a nurse who has studied more intensively for the same period. They both save lives while putting their own on the line. The only reason for that difference is that police officers are predominantly male and nurses predominantly female. That is simply unfair. It is a historical gender pay gap. We should not start this unfairness all over again with new career structures.

I cannot speak about women in science and technology without mentioning the women into science and engineering—WISE—campaign for gender equality in science, technology and engineering. The University of Edinburgh's Roslin institute has championed that cause and is working to achieve a better gender balance in STEM.

However, it cannot do it alone. In order to increase the numbers that go to university and then into the workplace, we need to ensure that girls at school are choosing science. We must also look at why the women who make it to university are not working in the field.

We know that like appoints like, so in order to increase the number of women in those careers, we need to encourage positive measures to ensure that those who are doing the appointing are women.

The other issue in this debate that I want to touch on—in common with other such debates—is where is the industrial strategy? This is yet another debate about one aspect of our economy, held in a silo of its own. This is a Government that refuses to step back and see the wider picture—a Government without an industrial strategy, which hopes that, somewhere along the line, all the different aspects of our economy will miraculously come together. That will not happen without the

Government acting, by bringing forward an industrial strategy. Its absence means that we are not maximising the impact of the actions that are being taken.

Resources are short and we need to ensure that every aspect of development and industry is pulling in the same direction. That starts with education. We educate children for the world that we live in, and to equip them for life. Therefore, we need to know what we need them to be, and what they need to know to be that.

The other issue that I will quickly touch on is research funding, which Iain Gray spoke about in his speech. The main research grant for Scotland's universities, the research excellence grant, has been cut by 12 per cent in real terms since 2014-15, and Barnett consequentials have not been passed on. We take our success in research and development for granted at our peril. We used to lead the world in education and now we are lagging way behind, and we cannot afford to do the same in research and development. STEM subjects are growing in importance and we need to ensure that they are promoted throughout schools, academia and the workforce. To do that, we need a plan to make it happen, to ensure that nobody is left behind.

15:16

Gail Ross (Caithness, Sutherland and Ross) (SNP): I refer members to my entry in the register of members' interests.

The Environmental Research Institute or ERI is one of the country's leading scientific institutions and authorities on environmental issues. Based in Thurso in North Highland College, which is part of the University of the Highlands and Islands, the ERI provides educational opportunities from undergraduate to doctoral level and its mission is

"to address contemporary environmental issues and advance understanding of the sustainable use of the Earth's natural resources."

Research at the institute currently focuses on environmental contamination and ecological health; water and climate; and renewable energy and the environment. The ERI has built up a reputation in the Highlands and in the wider world, attracting students from the Americas, Asia, Australia and throughout Europe. Its partnership working has seen it access funding for projects with international significance and its unique setting, right beside the largest expanse of blanket bog in the world—the Forsinard flows—makes it an ideal centre for research on the carbon capture and storage capabilities of peatlands.

One of the current projects is to monitor and assess how much carbon is stored and released at various points around the bog. Peatland

scientist Roxane Andersen uses a special piece of equipment called an eddy flux covariance tower, which is a complicated name for something that does a relatively simple job. It samples air from the bog in 30-second intervals to track the amounts of methane and carbon that are stored and released. It is a hardy piece of kit that gathers data day and night, unless it is knocked off course by wind—of course, Caithness and Sutherland are very windy counties—or, I am told, unless its tubes are clogged with midges.

I spoke recently in the chamber about the negative effect of previous tax incentives to plant trees on the flows. When the trees were planted, the ground was dried as the peat was drained, releasing untold amounts of carbon into the atmosphere. Scientists have been undertaking restoration of the bog for 16 years now, which includes felling the trees and rewetting the ground by filling in furrows. They have had remarkable results that have further enhanced their understanding of that special environment. All that contributes to achieving the aim in the Scottish Government's climate change plan to restore 250,000 hectares of peatland by 2030.

Earlier this year, the peatlands fell victim to a particularly large wildfire that burned away 6,500 hectares of blanket bog. The area was made up of peatland in a range of conditions—drained, drained and afforested, undergoing restoration and near natural. Dr Andersen and her team are using that unprecedented occurrence to their advantage and have secured funding for the fire blanket project to try to better understand how the management of the bog influences its reaction to the fire.

Another important research project that ERI scientists are working on is to do with pharmaceuticals getting into our watercourses. Many everyday medicines do not fully metabolise in the body and are routinely excreted and washed into our sewers, which, in turn, enter our waste water treatment plants. Some conventional treatment plants—especially those in rural areas—are unable to fully remove them.

For the past year, those scientists have been monitoring levels of pharmaceuticals in the River Dee in Aberdeenshire. Results show that medicines such as ibuprofen, paracetamol, trimethoprim and carbamazepine have been detected.

The data will continue to be collected in order to provide evidence-based research for possible policy changes to include maximum levels of pharmaceuticals in environmental quality standards, which is something that—bizarrely enough—does not happen at the moment.

In Scotland, we rightly pride ourselves on the quality of our water, which is of huge importance to our economy. However, there are many challenges, current and future, that will have to be resolved if we are to continue to benefit. The UHI's water quality innovation group, chaired by the ERI's Professor Stuart Gibb, was set up to find solutions to the challenges, particularly in rural and sparsely populated areas. The group draws on expertise from around the world. At its previous meeting, there was collaboration between science, business and other stakeholders interested in water quality. Those parties will continue to work towards the development of innovative products that will help to meet policy and regulation changes.

The ERI is making fantastic scientific progress in many fields, and the work of the people there has never been more essential. I wish them and all the students and specialists who come to the area from the EU and around the world well in their future endeavours, I thank them for their time and work, and hope that the connections and, indeed, the friendships that they are making continue for many years to come.

15:22

George Adam (Paisley) (SNP): So far, this has been a very good debate. Earlier you said that there might be an extra minute of speaking time, Presiding Officer. I was interested to see Brian Whittle celebrate that. After years of running round a track in the least amount of time that he could manage, he is now celebrating how long he can debate topics. How the mighty have fallen.

There are a number of personal and probably selfish reasons why I am so keen to take part in this debate. First, I, too, emphasise that Scotland punches well and truly above its weight in science and research activity. That has always been the case. For a start, Scotland has four universities in the world top 200 of the Times Higher Education world university rankings. That was recognised in the report that the Scottish Science Advisory Council published this year, which compares how Scotland's science research sector performed over the past decade against other similar-sized countries. The SSAC found that

"Scottish research is high quality: in terms of citations per researcher, Scotland is number one compared to the other UK nations and the ten other countries in the report"

and that

"Scottish researchers are 'very productive': around 10% of the UK's researchers are based in Scotland".

Having listened to Shona Robison talking about Dundee, I could not carry on without mentioning the research and educational facilities that the great town of Paisley has brought to us.

The Deputy Presiding Officer: I have to say that we had a bet on up here—with no money changing hands—on how long it would take you to mention Paisley. We were all wrong—you have lasted longer than we thought you would. *[Laughter.]*

George Adam: Thank you very much.

Weather forecasting was developed at the old engineering school in Paisley in the 1940s. That might not be a positive thing for us with our climate, but we gave that ability to the world.

Scotland's excellence in research is underpinned by extensive collaborations worldwide. This is an important part of the debate, and one that I want to expand on later. Scottish Government funding to the Scottish Funding Council in 2019-20 has stayed at £285 million. That enables Scottish universities to continue to be very successful in gathering further funding from UK Research and Innovation, the EU and third and private sector sources.

That model ensures that we can continue to punch above our weight.

Where research is concerned, we have another advantage. We are a nation of 5 million people. For research into various long-term conditions and diseases, in pure research terms we are a large enough sample to test just about anything, but small and organised enough to be able to provide quality data.

All that brings me to my own, very personal and very selfish, reasons for wanting to take part in today's debate. As many members know, my wife Stacey has multiple sclerosis. Here in Scotland, we have a higher incidence of MS per head of population than anywhere else in the world.

There are over 100,000 people in the UK living with MS. Many of them are in their 20s or 30s, which are key working years for us all, and 10 to 15 per cent of them have primary-progressive MS, which progresses from their very first symptoms. Eighty-five per cent of people with MS are initially diagnosed with relapsing forms of the condition. They have distinct attacks of symptoms, with underlying damage building up over time and leading to secondary-progressive MS, usually within about 15 years. Everyone has seen how Stacey has ended up disabled as she currently is. She has secondary-progressive MS.

There are currently 13 disease-modifying therapies—DMTs—licensed for use with MS patients here in Scotland. Those therapies slow down damage and reduce relapses. It was not always like that. Stacey has a level of disability because those DMTs were not around, or available, at the time she needed them. We are not bitter about that because we can both see the

opportunity we have, through research, to make things even better for those living with MS.

If members compare the DMTs that are available now for patients with MS to those that were available 20 years ago, they will understand why I advocate for Scotland's place in the world of science. I recently had the chance to meet and to discuss the future of multiple sclerosis with Professor Siddharthan Chandran of the Anne Rowling clinic and the University of Edinburgh, who was able to show me much of the work that they are doing on MS. That will help most neurological conditions, because the clinic currently works on motor neurone disease, MS and dementia. Professor Chandran's research into MS is really interesting, because he sees it as a gateway to helping those other conditions in the long term.

Scotland is a nation of only 5 million people, but we have more people with MS than anywhere else in the world. Our nation is the perfect test subject: we are small enough to be able to manage such a project but large enough to make a difference. We have a fully integrated health service and should be able to get anyone that we need around the table. The Anne Rowling clinic is a perfect example of how Scotland is punching above its weight. Through the University of Edinburgh, it competes with the Harvards and Cambridges of the world, and Professor Chandran himself was previously at the University of Cambridge. The clinic's funding is a mixed basket of private and public money, and it recruits some of the best people in the world. Professor Chandran has told me that he believes that we could soon have a cure for MS and that Scotland could lead the way in achieving that. That is good enough for me, Presiding Officer. Our wee nation is a big player in the world of science and research.

I have given members some personal examples, which come solely from the field of neurology, but I am sure that we could all find similar examples of our own. Science in Scotland will continue to be a giant in the world of research through using our own national inquisitiveness and talent, helped by the fact that people from all over the world want to live and work here. We must continue to invest in research, whether it be through the public or the private sector. We can be a centre of excellence in science, and especially in the world of neurology.

15:29

Alexander Burnett (Aberdeenshire West)
(Con): I am delighted to speak in the debate, which highlights Scotland's role as a science nation.

The debate is happening just two days after the 160th anniversary of the publication of Charles Darwin's theory of evolution. Members might ask what relevance that has to Scotland's scientific history. In answer, I am proud to say that the concept of evolution originated nearly a hundred years earlier, here in Scotland, through an ancestor of mine: James Burnett, Lord Monboddo.

Some scholars consider Monboddo to have been a precursive thinker in the theory of evolution, and credit him with anticipating the idea of natural selection, which was read by Erasmus Darwin and acknowledged in his writing. Subsequently, Charles Darwin read the works of his grandfather—Erasmus—and later developed the ideas into a scientific theory.

I am not sure whether that constitutes a need for me to declare an interest, but I am more than happy to do so, if it does.

In addition to being the father of Robert Burns's muse Eliza, Monboddo was an eccentric Scottish judge as well as a scholar of linguistic evolution and philosopher. He came from the age of enlightenment, during which Scotland produced a great selection of scientists who made discoveries in a range of fields. There were chemists and physicians, including Joseph Black, who is best known for his discoveries of latent heat, specific heat and carbon dioxide, and who has been honoured by having chemistry buildings named after him at Glasgow and Edinburgh universities.

We also have the fortune of having George Forbes, who was an electrical engineer who experimented in using carbon for the brushes in electric motors, which is the universal choice in electricity generation to this day and is a concept that is critical to our decarbonisation programme. Of course, the public will be glued to their screens watching our speeches today because of John Logie Baird, who was one of the inventors of the mechanical television and was the first person to demonstrate publicly the colour television system.

Scotland has a proud history of scientific endeavour. We are home to a number of UK scientific institutions, with Scotland's universities being world leaders in the scientific community. It is fortunate for future generations that we still have many budding scientists coming through our schools. On Friday, I was delighted to visit some Banchory academy students who had, at Silverstone in October, taken part in an international 90-mile race in the electric car that they had built from scratch. It is great to see students in our schools taking part in initiatives that will be integral to our future.

That education must flow through to business. Just this morning, I met the chief executive of ABB, which spends some £1.5 billion on research

and development annually, and is the second-largest supplier of robots in the world. Its work, from the robotarium at Heriot-Watt University to the carbon-capture demonstration plant at Imperial College London, shows how business is leading the way—but it is for Governments to set out the path.

Science affects all industries. NFU Scotland notes that the agriculture industry is founded on scientific principles and that, for many years, the sector's advancement has been driven by world-leading research that has been conducted in Scotland's science and research institutes. Science in agriculture is vital in helping to combat climate change. With ambitious targets, it is essential that our agriculture industry finds new and innovative ways of reducing its emissions.

In my role as shadow spokesperson for business, energy and innovation, I particularly enjoy engaging with companies across Scotland on new solutions that they have created. For example, the Data Lab innovation centre carries out work in Aberdeen, Edinburgh, Inverness and Glasgow. Although data science is perhaps not a well-known field, work in it will soon become commonplace in businesses across Scotland and the UK, with the field being expected to contribute more than £20 billion to Scotland's economy by the end of next year.

I am pleased that being part of the UK has such a positive impact on our life sciences sector. It is encouraging to read that the UK life sciences sector is soaring, with record turnover of more than £70 billion. Small and medium-sized enterprises now account for 82 per cent of businesses and 24 per cent of employment in UK life sciences. In 2018, the UK Government published "Life Sciences Sector Deal 2, 2018", which will help to ensure that new pioneering treatments and medical technologies are produced in the UK. It highlighted the progress that has been made, as well as the new commitments from our UK Government and the wider industry.

However, due to the SNP's obsession with independence, progress on important issues such as STEM subjects has been hindered up here in Scotland. The proof is in the figures. The number of employers that are flagging up STEM skills shortages has increased. In 2015, the Scottish Government's annual report on STEM found that the proportion of STEM employers in Scotland with at least one skills-shortage vacancy was 6.4 per cent. In 2017, that figure had risen to 7.7 per cent. That is simply not acceptable: we can and must do better.

We are a country with a proud heritage of scientific thought, but the SNP Government is dimming the lights in a country that was once known for its enlightenment.

15:34

Richard Lyle (Uddingston and Bellshill) (SNP): I will try not to mention politics, Brexit, or the single word that the Tories are concentrating on because they do not have a single effective policy.

I welcome the opportunity to contribute to the debate. Scotland's contribution to the world is renowned—from mammal cloning to the television, to penicillin, to the telephone to many more inventions.

Scotland is a science and research nation, and we already punch above our weight and enjoy a global reputation for research and innovation. That reputation continues into the modern world, with research and development in abundance here. Scotland more than punches above its weight in science, research activity and impact.

In 2016 and 2017, Scottish universities secured £282 million, which was equivalent to 9.2 per cent of the £3 billion of UK research councils' spending that was allocated for grants, studentships and fellowships. In addition, Scottish universities have so far secured almost €650 million from the EU horizon 2020 programme, which represents about an 11 per cent share of the UK's allocated funds from that programme, as at July 2019.

Scotland's share of the top 1 per cent of the world's most-cited publications between 2007 and 2016 is the largest of all UK nations. Scotland also has four universities in the top 200 of *Times Higher Education's* world university rankings for 2019-20. That is more top universities per head than any country except Switzerland.

Three of our universities are in the world top 200 for research volume, income and reputation, and four are in the top 200 for research influence and citations. Nine Scottish universities are in the world top 200 for international outlook related to staff, students and research. That was also recognised in a report that the Scottish Science Advisory Council published this year.

I have given a lot of numbers. I could make a joke about that being appropriate for a science and research geek, but I will leave that for another time. Those numbers and facts tell a good story about Scotland and our institutions. They show that we are an outward-looking nation that makes an immense contribution.

The SNP Government recognises that, so I am sure that it will continue to invest in core research and knowledge exchange in Scottish universities, thereby allowing them to compete successfully for other funding. In 2019-20, the baseline grant for university research and innovation that is provided by the Scottish Government via the Scottish Funding Council was maintained at £285 million in

order to continue to strengthen the status of that research and innovation. In practice, that means Scottish universities being enabled to continue to be very successful in competing for funding from other sources.

Scottish universities receive almost 75 per cent of their research and innovation income from United Kingdom Research and Innovation, the European Union, third sector sources and private sector sources. The SFC core grant for research and innovation includes the university innovation fund, which will be worth £13.5 million in 2019-20. It has the explicit objective of supporting the Scottish Government's economic strategy—in particular, the innovation pillar—via effective translation of research excellence into economic and societal benefit for Scotland. That reiterates our commitment to our world-class research and development, and to innovation being used to shape a better Scotland and, I hope, an independent—Oh, I am sorry; I had meant not to use that word—Scotland.

The Scottish Government continues to fund a network of innovation centres. The Scottish Government, the SFC and the enterprise agencies have committed up to £75 million for phase 2, from 2019 to 2024, to ensure that world-leading collaborations between businesses, universities, colleges, the public sector and others can capitalise on Scotland's world-class research.

We are not just looking within Scotland: indeed, excellence in research is underpinned by our extensive collaborations worldwide. Scotland can point to significant successes in working across European boundaries with international research centres that are increasingly attracted to Scotland by the quality of our research base.

Scotland has long excelled in science and research, therefore it is only right that it should be celebrated as a science nation, and not only in the chamber today, but every day.

At the beginning of my speech, I reflected on the notable contributions to research and science from Scots of the near past, but we have even more modern inventions. Admittedly, I am not much of a gamer, but I know that "Grand Theft Auto" has become a cult classic and is the brainchild of Scottish video game designers extraordinaire David Jones and Mike Dailly.

The question is, how do we continue to shape and create that innovation and the science nation? STEM is an integral part of our future economic and social development, so we want everyone in Scotland to build a strong base of STEM skills and knowledge. That is part of the answer, and it is why STEM education is a priority of the SNP Government. The Scottish Government published

its STEM education and training strategy in 2017, which

"aims to build Scotland's capacity to deliver excellent STEM learning, and to close equity gaps in participation and attainment in STEM. It also aims to inspire young people and adults to study STEM, and to provide a better connection between STEM education and training and the needs of the labour market in Scotland."

We rightly have a focus on encouraging young women to enter STEM industries and to see STEM as part of their future, thereby creating the next generation of scientists and innovators.

Presiding Officer, I will take you at your word and take a bit more time—I am enjoying this. Scotland's world-class research plays a key role in economic, societal and environmental challenges, both nationally and globally. I am getting back at our Conservative friends who have said nothing in regard to my excellent speech. *[Laughter.]*

Scotland's research supports inclusive and sustainable economic growth that delivers highly skilled people to the labour market, creates new businesses, improves the performance of existing public and private organisations and attracts foreign direct investment through the creation and application of new knowledge.

Researchers in Scotland are at the forefront of multidisciplinary international research collaborations that tackle national and global challenges and drive forward the frontiers of knowledge.

I am proud that we have had the chance today to recognise Scotland's role as a science nation. Long may it continue.

15:42

Iain Gray: As the minister predicted, we have heard today about Scotland's pedigree as a science nation, with lots of examples of great scientists from the past. Alexander Burnett probably wins the prize by claiming that a member of his family developed the idea of natural selection 100 years before Darwin did. I feel compelled to point out to him that there is another Scottish connection with that particular science—Darwin himself first developed his ideas of evolution and natural selection while strolling along the beach in Prestonpans in East Lothian when he was a student at the University of Edinburgh. All great things come not only from Scotland, but from East Lothian.

Quite rightly, we have heard more about what we have to do in order to sustain Scotland as a science nation into the future. I will comment on some of those points, although I will not have time to talk about all of them.

George Adam made an important point: we have to make the most of Scotland not only as a science nation, but as a research nation. Due to our size and the amount of available data on our population and demography, we are quite a useful place particularly for medical research.

A number of speakers, including me, talked about the importance of bringing future scientists through in our schools. The core issue is that of subject choice—there is overwhelming evidence that science and maths subjects are being squeezed out of the curriculum. The Scottish Government has undertaken a review of the senior phase in our schools. I say to the minister that, as the Minister for Further Education, Higher Education and Science, he must make absolutely sure that protecting access to science subjects is a key part of that review.

Beatrice Wishart and Rhoda Grant talked about the well-understood and well-evidenced challenge of the barriers that young girls and young women face when choosing science subjects and going on to a career in science. The key piece of evidence referred to by Beatrice Wishart is the Royal Society of Edinburgh's "Tapping all our Talents" report of 2012 and its progress report, which was published last year. Although the latter shows progress, it also shows the predominance of men in senior positions, even in those sciences with a reasonable gender balance—biological sciences, for example. That leads to the gender pay gap that Rhoda Grant mentioned, whereby the better-paid senior positions are, it would appear, still disproportionately reserved for men. The report makes a significant series of recommendations on how to address that.

Rhoda Grant talked about the Roslin institute and the WISE programme. The Roslin institute is a good example to look at in addressing the gender balance issue because it is also the only research institution in Scotland with a gold award in the Athena SWAN programme. One of the ways in which the programme has been progressed is through funding bodies insisting on institutions having it in place before they will give funding. When the Scottish Government looks at how the SFC makes funding decisions, perhaps there is something there to think about.

Albert Einstein said:

"Most people say that it is the intellect which makes a great scientist. They are wrong: it is character."

That is also true of a science nation. The minister sort of referred to that when he talked about the importance of respecting the experts, respecting science, and respecting the ethics of science. That is absolutely right, but Mr Mundell also made an important point when he said that, if we decide to respect the experts, we cannot cherry pick which

ones we decide to respect. I say gently to the Scottish Government that it has not always respected the experts' opinions on, for example, the role that nuclear power can play in decarbonising our electricity supply, or on the role of research into genetic modification. In those cases, the experts have not really been listened to.

Richard Lochhead: The member makes an interesting point, but surely he is not suggesting that scientists should make policy. We have elected politicians to apply ethics and other criteria when deciding on the best policies to implement, and they should be informed by good science. It is not therefore a case of disrespecting the science on genetic modification or nuclear power; it is about taking the policy position that they are not the best options for Scotland.

Iain Gray: Of course that is true, and one of the ways in which policy makers do that is through the scientific advisers. We have a good chief scientific adviser in Sheila Rowan, as the minister said himself. However, here we have another example of a time when the Scottish Government was not at the forefront of something. Professor Rowan was appointed after a long interregnum of almost two years when we had no chief scientific adviser. The sense of urgency that we need to see has not always been there.

Members talked about lots of good things, such as the innovation centres. It would have been good to discuss research pooling—the Scottish universities physics alliance, of which Professor Rowan was part, is a good example of that.

In the end, it all comes down to this: if we want Scotland to be a science nation, we have to put our money where our mouth is. Let us return to the issue when we debate the budget, and let us see the investment that our universities tell us that they need if we are to assure our future as a science nation.

15:50

Brian Whittle (South Scotland) (Con): I refer to my entry in the register of members' interests.

In George Adam's preamble to his speech, he talked about my excitement at perhaps getting an extra minute to talk about science, and then he spoke for an extra two minutes, to make sure that I would not get that extra minute. *[Laughter.]*

A big revelation of the debate has been that Darwin was 100 years too late in coming up with his theory of evolution, because Alexander Burnett's family had sorted that out a long time before.

I welcome the opportunity to speak in the debate. Not long ago, the Parliament debated

innovation, and just last week, Iain Gray led a fascinating members' business debate on the international year of the periodic table. What a fantastic debate that was; the Presiding Officer was positively purring with excitement as we discussed the topic. Many MSPs missed that debate, but the good news is that they can watch it on Parliament TV—I know that they want to do so.

Scotland is unquestionably a science nation. Over the centuries, at home and around the world, Scottish scientists have pioneered many breakthrough discoveries that changed our world. Scots and Scotland have often led the way with innovations that have become ubiquitous in the modern world.

I listened with interest to Richard Lochhead's speech. He mentioned the B-word—Brexit—and its threat to collaboration in the science world. Collaboration is hugely important to the advancement of science and we need to encourage it. There is a global approach, for example, to space exploration. However, I note that many of the world's leading achievements in science, many of them rooted in Scotland, were made long before the European Union was thought of and long before we joined the union. Science has led the way in seeking excellence and collaboration beyond country boundaries for a long time, and I am sure that it will continue to do so.

Richard Lochhead was right to say that Scotland is fantastic when it comes to innovation and invention. However, we need to do better when it comes to the next step, which is the implementation of the technology and the creation of an environment in which it can be used to grow businesses of size. In that context, Shona Robison was right to say that Dundee is an exemplary tech hub for life sciences and gaming. Who knew that Richard Lyle was an expert in "Grand Theft Auto"? We learn something every day. We are good at developing small and medium-sized businesses but we are not quite as good at developing those into bigger businesses. Too many of our innovative companies are purchased by the United States or China and developed further afield.

Even Scotland's countryside has contributed to science. In 1774, Schiehallion, in Perthshire, was chosen as the ideal location for a team of scientists who were seeking to discover the mean density of the earth. The astronomer royal at the time, Nevil Maskelyne, who conducted the experiment, said that it

"would ... do honour to the nation where it was made".

Is the motion a bit complacent? There is no small amount of back-patting in it, albeit that that is well deserved, but far less is said about the future of Scottish science, beyond a reference to the

conclusions of the science and research working group.

At its core, science is about questions and answers. Often, when we find answers, they provoke new questions. It is an endless process of discovery. Sometimes we find a new answer and sometimes we find a new question, but there is never an end to what science can teach us or do for us. Therefore, we have to keep pushing the boundaries of science, exploring and discovering. Scotland has an enviable world-class reputation, but the competition for scientific discovery is only going to become more fierce, and we have to be ready.

The final line of the motion, on promoting "Scotland's strengths", is slightly concerning. We should be wary of narrowing our scientific focus to the point at which we give less to research that is not judged to be one of Scotland's strengths. Yes, we have real strengths in arenas such as life sciences, aerospace and astronomy, but there is an important balance to be struck between focusing on specialist areas and ensuring that we can still benefit from cross-pollination and collaboration among different scientific fields.

We do not always know which projects or ideas will prove to be the right ones, or which will end up being catalysts for something even more important. Some of our greatest scientific breakthroughs have happened by accident, or their true value was discovered only much later. Scotland's own Alexander Fleming, who was born in Darvel in East Ayrshire, discovered penicillin entirely by accident. The discovery of the electron in 1897 provided an interesting fact about the structure of the universe, but it had no practical application. Today, our entire world runs on electronics.

Scotland is a science nation, but science is a global endeavour. Our scientists work around the world, and scientists of other nationalities work here. Science is a global language—even a universal language, as we discussed at length in Iain Gray's debate on the periodic table last week.

Science and scientific discovery are a race. We co-operate around the world, but being the nation that is at the forefront of science or the first to make a discovery gives a competitive advantage.

We have already touched on the value of science in policy making. As Adam Smith said:

"Science is the great antidote to the poison of enthusiasm and superstition."

Many of the challenges facing Scotland today will require scientific solutions or, at the very least, policy making that is supported by scientific evidence and discovery. At the forefront of that is climate change, and renewable technologies such

as hydrogen fuel cells and electric cars. Carbon capture has been talked about today, and we need to consider improved recycling and battery technology, and new sources of energy. It is the youth of today who are leading that debate and making us pay attention to climate change.

I am very interested in healthcare technology and science in health. We are particularly good in Scotland at developing healthcare technology—Dundee has been mentioned—but what we are not good at is adopting that technology in our healthcare system. When Nye Bevan spoke about the principles underlying the national health service, he talked about the medical arts of science and healing. When we are looking at healthcare technologies such as gene therapy, stem cell research and nanotechnology, we must also look at how we adopt that technology at the other end.

Oliver Mundell rightly highlighted the need for science in education. We need teaching that inspires, we need experiments in the classroom and we need relevance to the real world. We must foster a passion for science and the scientific method, but we must also allow pupils to be creative and try left-field ideas just to see what happens. We need to inspire pupils to take on the great science and engineering challenges that face us, from fighting cancer to developing new battery technologies and energy sources and improving food production. We need to look at the curriculum for excellence, which Oliver Mundell also mentioned, and the current squeeze on STEM subjects. We must ensure that STEM subjects are accessible to all because, as Alexander Burnett said, too many tech companies out there report a shortage of staff in STEM subjects.

There is much that I would love to say. We need to continue to be as ambitious in our support for science as we ask science to be in its quest for new discoveries. As Arthur C Clarke said:

“The only way to discover the limits of the possible is to go beyond them into the impossible.”

Let us strive for the limits of possibility, push the edge of what is possible further into the distance and ensure that Scotland’s scientific community continues to make history.

16:00

Richard Lochhead: I thank members for their contributions to this debate in celebration of Scotland’s scientific heritage and the continuing excellence that we see in our country today and that we will see for a long time to come.

Many members mentioned scientific endeavours in their corners of Scotland. Of course, George Adam managed to mention Paisley, doing so in his

first sentence. I thought that he wanted to give the impression that Paisley invented the weather. If he had done, I would have said that it did not do a very good job of that. However, he went on to talk about other issues that are close to his heart, particularly the science around treatments for MS. He spoke about the advances that have occurred in that regard and the on-going work at the Anne Rowling centre at the University of Edinburgh, and he explained how Scotland is punching above its weight in that area.

Shona Robison mentioned the amazing work that is going on in the University of Dundee, and, in particular, paid tribute to the work that has been done there in relation to the early diagnosis of cancer. She also spoke about the James Hutton Institute, which is in the Dundee area, and its work on vertical farming, which can address food security issues, low-carbon food production and other matters.

Gail Ross spoke about the work that is going on in her corner of Scotland and mentioned the work that the University of the Highlands and Islands is doing in Thurso on carbon capture and storage.

All the examples that were mentioned by members are little points of light that represent all of the scientific discovery and endeavour that is taking place in every corner of our nation, and of which we should be proud. As George Adam said, those examples show that Scotland is punching above its weight, because we are a nation of only 5 million people in a world of 7 billion people or thereabouts. We have an incredible legacy in this country—as many people said, that involves not only the past but the present.

There were various references to women in science. In my opening remarks, I mentioned Mary Somerville, and Clare Adamson mentioned many other female scientists with claims to fame. I should also mention that the Scottish Government’s chief scientific adviser is Professor Sheila Rowan, who is professor of physics and astronomy at the University of Glasgow and is internationally renowned for her achievements and work in the context of gravitational waves.

I recommend that members visit the Royal Society of Edinburgh to see the exhibition on women in science that is taking place there. It highlights many of our most famous female scientists, including many of today’s scientists. I should also point out that the president of the Royal Society of Edinburgh is Dame Anne Glover, who is a well-known scientist in her own right.

The debate went on to consider how we can ensure that there are women in science in the future, more women getting involved in science today and more females taking science subjects at school, college and university. It is important to

address that, because that is a challenge, as many members said.

I should say that, following a successful three-year research project, Education Scotland has now appointed improving gender balance and equalities officers, who will work throughout Scotland to address gender imbalance and attainment at every age from three to 18. Further, each college and university now has a gender action plan that outlines how it will advance equality and reduce gender disparities within STEM and other areas of further and higher education.

A lot of work is also being done in early years education, where a lot of issues around stereotyping and perceptions must be addressed. There is a lot of evidence that says that, in order to do that, we must intervene in the early years of young girls' education.

The briefing from Universities Scotland says that the number of people graduating with STEM degrees increased by 9 per cent over the past two years. The situation is improving, even though there is a long way to go. Of course, the Scottish Government has introduced STEM bursaries of up to £20,000 for career changers. Those bursaries are oversubscribed, and are proving to be a popular measure to encourage people to change career and go into teaching jobs in STEM subjects.

Another issue that was raised was research funding. It is important to put on record the fact that the Scottish Government is continuing to invest £285 million in core university research funding.

Brian Whittle: On funding, does the cabinet secretary recognise the importance of the third sector, given the amount of funding that it puts into research, particularly in relation to developing new healthcare technologies?

Richard Lochhead: Absolutely. We must recognise that the third sector and the charitable sector invest literally hundreds of millions of pounds in research projects in Scotland.

The comment was made that the Scottish Government does not pass on the Barnett consequentials from UK research, but that is not true—in 2018-19, we passed on the £11.6 million of budget consequentials for university research. It should be noted that the higher education sector attracts £800 million per year of research funds from other sources. Although the share of UK Research and Innovation funding has gone down slightly, as some members have said, the actual figure has increased, because UKRI is hosting more funding.

It has been mentioned that Scotland's constitutional arrangements are very relevant to the amount of research funding that comes into Scotland. Research funding knows no boundaries, because it is scientific excellence, not borders between countries, that attracts research funding. That is why Scotland has been so successful in attracting scientific funds from many different sources in many different sectors.

However, if a country withdraws from international arrangements, that can be damaging. The threat to research funding is not the independence debate, as some members have said; the immediate threat that is on the lips of every researcher in Scotland as we speak is the threat of Brexit. Over the past few years, Scotland has secured almost €650 million of funding through the EU's horizon 2020 programme. If Brexit goes ahead and we leave the EU, that money will be endangered. That is the constitutional change that will endanger the research funding that comes to Scotland, and we should all bear that in mind.

I set up the science and research working group, which is chaired by Scotland's chief scientific adviser, Professor Sheila Rowan, because we want to bring together all the stakeholders in academia to celebrate Scottish science and to make it work even better for Scotland through greater collaboration and a higher international profile. We want to make sure that the rest of the world knows that Scotland is a science nation, as that will attract more research funds and inward investment.

As I mentioned, the first ever science and research summit was held in June. It had three key themes: improving science and research collaboration across Scotland; driving science and research excellence in Scotland; and promoting and marketing Scotland's science and research internationally. We have an amazing story to tell, but I do not think that we tell it often enough or loudly enough. We should tell it to our own people to inspire them to take up scientific careers and get involved in research and innovation. We should also tell it to the rest of the world, because although we have a great reputation around the world, we should make more of it and sell Scotland's story. That way, we would attract more research funding, more collaboration and more inward investment to our country.

The economic contribution that is made by science and research is paramount. It is worth highlighting the Scottish Government's export growth plan, which was launched earlier this year. It made the link between trade and excellence in science, research and innovation. In addition, as many people will be aware, through Derek Mackay, the Cabinet Secretary for Finance,

Economy and Fair Work, we commissioned the eminent economist Professor Anton Muscatelli of the University of Glasgow to review the economic impact that universities in Scotland make by working with business, which needs to be highlighted.

During these uncertain times, it is more important than ever that our graduates, especially those from other countries, turn their positive experiences here in Scotland into influence and support for our country. We want to remain one of the world's leading science and innovation nations, and it is extremely important that we are seen to be an outward-looking, tolerant country that is open to Europe and the rest of the world. We must strain every sinew to make sure that we are seen as a welcoming country. If Brexit goes ahead, that will set us back. We will not end up in a better place or even the same position that we are starting from. That is the message from every university, every research institution, every researcher and every research fund. That will be the biggest challenge to maintaining our reputation as a science nation in the years ahead.

We will have to respond to whatever happens. We will have to ensure that every graduate and every researcher who comes here for a while and then goes back to their home country is an ambassador for, and remains a friend of, Scotland. That is why we are pursuing a new strategy for alumni around the world, which will deliver huge dividends for this country.

I thank members for all their contributions in celebrating Scotland as one of the world's leading science nations. We should build on that, deliver the social and economic contribution that that brings to our country and make sure that our science, intellectual capital and knowledge contribute to solving the world's problems, whether we are talking about overpopulation, food security or tackling climate change, on which we can lead the world. That is what the future should hold for our country, and that will mean jobs, success and a better Scotland.

The Presiding Officer (Ken Macintosh): If no member objects, I would be minded to accept a motion without notice to bring forward decision time to now. As no one objects, I call on the Minister for Parliamentary Business and Veterans to move such a motion.

Motion moved,

That, under Rule 11.2.4 of Standing Orders, Decision Time on Tuesday 26 November be taken at 4.10 pm.—
[Graeme Dey]

Motion agreed to.

Decision Time

16:10

The Presiding Officer (Ken Macintosh): There is only one question today. The question is, that motion S5M-20027, in the name of Richard Lochhead, on Scotland as a science nation, be agreed to.

Motion agreed to,

That the Parliament celebrates Scotland's role as a science nation with a deserved global reputation, which builds on a famous heritage, a range of former achievements and continues to grow today; acknowledges the excellence of Scotland's science and research base as reflected in the Science Landscape report, *A Metrics Based Assessment of Scotland's Science Landscape*, which was published earlier in 2019; recognises the ongoing collaboration between academia, business, public sector and third sector that lies at the core of Scotland's excellence; endorses the important role that Scottish science and research plays in addressing the economic, societal and environmental challenges that the country faces, including dealing with the climate change emergency, reducing inequalities and improving public health; acknowledges that science and research therefore underpins Scotland's commitment to the sustainable development goals, and looks forward to the conclusions of the Science and Research Working Group led by the Chief Scientific Adviser for Scotland on how to further promote Scotland's strengths as a science nation.

Catholic Schools

The Deputy Presiding Officer (Christine Grahame): The final item of business is a members' business debate on motion S5M-19246, in the name of Elaine Smith, on the positive contribution of Catholic schools.

Motion debated,

That the Parliament recognises the positive contribution that Catholic schools have made to Scotland's education system, in particular since the historic Education (Scotland) Act 1918 came into force, when the schools became part of the state education system in return for, among other things, the right to retain their Catholic ethos; acknowledges what it sees as the contribution and the positive impact that it believes that this has had on society; considers that denominational schools continue to play a vital role in Scottish education; believes that sectarianism predates the existence of Catholic schools and that they are not a cause of it and instead they contribute to an open, tolerant, diverse and inclusive education system in Central Scotland and across the country; considers that anti-Catholicism has no place in Scotland, and acknowledges the calls that it must be challenged in all its forms.

16:12

Elaine Smith (Central Scotland) (Lab): I thank the many members who have supported my motion and those who will be contributing this evening. I declare an interest at the outset, as I attended St Patrick's Catholic primary and secondary schools in Coatbridge; my son, Vann, was also a pupil at St Patrick's primary and at St Ambrose high school; and I am a trained Catholic secondary school teacher.

This debate is taking place during Catholic education week 2019, the theme of which is promoting gospel values. Four values that should play a part in the life of every Catholic school are truth, love, justice and freedom. As Archbishop Tartaglia said in the *Scottish Catholic Observer*,

"This theme reflects the vision and aim of Catholic education: that Catholic schools, centred on the person of Jesus Christ, form young people to discover and follow the Christian vocation to live responsibly with and for others in accordance with the message of Christ and so build up and transform society for the better."

Some of the things that make Catholic schools distinctive are that learning is shaped using Gospel values, that prayer, worship and religious celebrations are integral to the life of the school, and that Catholic schools promote social justice and serve their communities. Their vision, aims and values—to educate the whole person: body, mind and soul—are developed in partnership with parents and parishes.

Some of the questions that Catholic schools ask their pupils include:

"Are we challenged to use our talents for the service of others?"

"Do we put into practice the things we learn about the love of Jesus through our own acts of witness, in our contributions to charities?"

and

"Do we show love & concern for others in our school?"

State-run Catholic schools have been an integral part of our communities for more than a century. They give children not only a foundation of their faith but an understanding of the world around them. Under the historic concordat between the Catholic community and the state more than 100 years ago, 224 Catholic schools transferred into the public sector. In return, they received a guarantee of state funding, agreement to teachers requiring church approval with regard to religious belief and a statutory right to a distinctive Catholic ethos and identity.

The Catholic community paid for the land and building of over 60 per cent of the Catholic schools that we have today. Despite being in existence since 1918, faith schools have, sadly, again come under attack under the guise of ending sectarianism in Scotland. However, the issue in Scotland that needs urgently addressed is anti-Catholicism. Roman Catholics are subject to more attacks than all other religious groups combined; indeed, half of all reported religiously aggravated hate crimes are against Roman Catholics.

The recent comments by a former senior police officer, who claimed that Catholic schools should be abolished in the bid to end sectarianism, are unacceptable. That claim not only attempts to blame victims for the crimes; it flies in the face of reality. If sectarianism could be resolved simply by the removal of Catholic schools, how do we explain and resolve other forms of prejudice and religious discrimination? There are 2,000 Catholic schools in England and Wales; if Catholic schools cause sectarianism, why is it not an issue there? It is perfectly obvious that abolishing Catholic schools would not end the attacks on Catholics in Scotland.

As I said earlier, I was fortunate to have enjoyed a Catholic education and to have taught in Catholic schools. The ethos of Catholic schools is one of inclusivity and non-discrimination. Parents of other faiths and none also choose Catholic schools for their children, which shows that their appeal goes beyond the Catholic community. While I was teaching, I was aware of the exceptional academic encouragement in the schools and of pupils being inspired to lead good lives built on Christian values, personal integrity and moral courage. That is the very opposite of the hate-filled sectarian bigotry that exists in Scotland, the same bigotry that Catholics are more likely than anyone else to be a victim of. We do indeed need to end sectarianism in Scotland, but that will not be done by unwarranted attacks on

the religious group most likely to be the victims of it. I certainly hope that all parliamentarians believe that anti-Catholicism has no place in Scotland and agree that it must be challenged in all its forms. That includes standing up for the right of Catholic schools to exist.

Beyond that, there are other reasons to support and celebrate our Catholic schools, such as the good work being done in central Scotland through the engagement with St Margaret's in Airdrie with pupils in Malawi. As patron of Missio Scotland, I also commend pupils from the St John Ogilvie and Holy Cross high schools in Hamilton for their recent work in Uganda. I am sure that colleagues will want to welcome the 30-odd pupils and their teachers in the public gallery this evening. I was delighted to learn that Archbishop Cushley was going to take time to be with us this evening, but the time change for this debate means that he might not manage that. However, I hope that he might yet be able to join us. I hope that we will hear from colleagues other positive examples like those that I indicated—please join us for a cup of tea in the chamber conference room after the debate.

Scotland's Catholic schools produce not only fantastic young active citizens but academic excellence. Year after year, Catholic schools secure outstanding academic results in some of the most deprived areas of our country, helping to close the attainment gap. This month, we saw Catholic school pupil Declan Shafi awarded the candidate of the year award by the Scottish Qualifications Authority. It is worth noting that all three candidates nominated for that prestigious national award were taught in Catholic schools, including St Ambrose in Coatbridge. Instead of closing our high-performing schools down, we should be focused on repeating their best practice across all our state schools. Catholic schools are a sign of an inclusive society that embraces diversity and of a country where freedom of choice and speech are part of the culture.

It is time that those with power and privilege in our society stopped attacking faith schools and started questioning why Catholics are the subject of such a volley of hatred as the country's statistics seem to show. I care passionately about Catholic schools. I want them to be able not only to exist but to flourish in the future and I am pleased that a number of MSP colleagues support that and believe that Catholic schools are good for Scotland. I will close with the words of Archbishop Tartaglia:

"In Catholic schools, our children and young people absorb the message that God is present and active in their lives, especially in challenging or difficult times. They learn to recognise the signs of God's love around them and realise that they are called to be instruments of God's

Grace in their families, among their friends and in the world." [*Interruption.*]

The Deputy Presiding Officer: Thank you. I say to those in the public gallery that they are not permitted to applaud. I understand why they applaud, but they are not permitted to do so as only MSPs can applaud in the chamber.

I have nine members down to speak in the debate, so I ask them to please keep to their allocated time. I call Richard Lyle, to be followed by Liz Smith.

16:19

Richard Lyle (Uddingston and Bellshill) (SNP): I have been a Scottish National Party politician for some 43 years and it is a pleasure to speak in the debate. I thank Elaine Smith for bringing it to the chamber.

Last year, Catholic schools celebrated a 100-year anniversary. The Education (Scotland) Act 1918 rightly brought Roman Catholic schools into the state education system, while allowing them to retain their religious character, access by priests and the requirement that school staff be acceptable to the Catholic Church.

I have always supported the retention of the Education (Scotland) Act 1918. I support Catholic schools and the right of Catholics to be educated in them. The 1918 act was the most influential piece of legislation governing Scottish education in the 20th century, and the system that it established is still, in essence, in place today. However, it is remembered now mostly because one of its provisions set up a mechanism by which Catholic schools could transfer from the ownership of the church to that of the locally elected education authorities. Significant though that arrangement was, its importance lies in its being an instance of the 1918 act's wider framework of promoting the liberal universalism that became Scotland's guiding social principle in the ensuing century.

If we stand back and take the wider view, we see that the 1918 act introduced an unprecedented concordat between church and state in the provision of education. I am not sure whether it has been paralleled elsewhere, although I venture to hope that its longevity—and the way in which it has served so well the interests of all parties—augurs well for the more recent concordat, which was reached with the Convention of Scottish Local Authorities and today's local authorities, and was guided through by John Swinney MSP. I remember it well, because I was the person who promoted it through COSLA when I was the SNP group leader.

The tradition of the church working with the state—with both national and local government—

has been well sustained over the 10 decades since the 1918 act. The legislation may have changed its form, as have the administrative bodies and educational structures, but the strength of the relationship is undiminished. It shines through in the distinctive contribution that Catholic schools now make to Scottish education as a whole.

Today, there are 336 thriving Catholic schools in Scotland, and we celebrate the fact that Catholic schools are an integral and highly successful part of public education in Scotland. Before the 1918 act, Catholic school teachers were not paid the same as their counterparts in state schools and Catholic schools were not keeping up with educational developments. Now, Catholic schools benefit from equal state funding, thus keeping them at the same level as other schools in Scotland.

According to a story that was found via Google, a young boy who attended a Catholic voluntary school in Edinburgh in 1918—I sound like Stewart Stevenson—described the aftermath of the 1918 act by saying that it was “just like Christmas”. Catholic schools were now part of the national system.

We need to think about what is really important, and that is that all children in Scotland, regardless of their religion, should have access to the educational tools that they need to be successful and to be good citizens.

During my time as a councillor for Orbiston in the Motherwell district, and as SNP group leader on North Lanarkshire Council, I built many relationships with all my constituents, including both priests and ministers. Sadly, the religious divide is prevalent, but we are all working towards ending that. I abhor any attack on Catholic schools. People should know better than that, because Catholic schools are an integral and highly successful part of public education in Scotland. I wish the schools well and I support both the retention of the Education (Scotland) Act 1918, and the retention of Catholic schools. I thank Elaine Smith for bringing this important debate.

16:23

Liz Smith (Mid Scotland and Fife) (Con): I thank Elaine Smith for bringing this debate to Parliament. It will not have escaped members' notice at the weekend that, on the back of *The Sunday Times* publication of Scottish schools' comparative results, there was much discussion about what makes a good school. Yet again, Scotland's Catholic schools showed a very strong performance, as they always do, so it is important

to reflect on what characteristics make that happen—I will return to that in a minute.

Scotland in the 21st century is an increasingly multicultural country, with the majority of religious schools being Catholic and a growing, though smaller, number of schools serving other denominations. The Catholic Church has more than a millennium of experience in education and the holistic development of young people, as Elaine Smith described, whether that be educational, cultural, social or spiritual, has always been central to the Catholic structure of schooling, not only in Scotland but worldwide. It is therefore right and proper that we acknowledge the success of Catholic education over a long period in creating well-balanced and well-educated young people.

Diversity in education and the parental choice that comes with that are inherently good things and should be seen as such. The availability of Catholic schools is part of that mix, not least because they give our young people a wider spectrum of open and accessible schooling. Therein lies the parallel to the fact that many of those Catholic schools consistently achieve well, including within some of the more deprived areas of Scotland.

A recent study by Her Majesty's Inspectorate of Education makes very good reading for Catholic schools, particularly when it comes to their progress within some of the more difficult and deprived areas of Scotland. We have to ask ourselves why that is. The schools are a very important tradition, and, like other members in this chamber, I am fully supportive of the work that they do.

Children and young people obviously come from dissimilar backgrounds, faiths, cultures and communities, and are often at different places in the range of religious conviction. Although most young people in Catholic schools will be of the Catholic tradition, some will be of other denominations and religious traditions or have views that may be independent of any specific religious conviction. They come because of what Catholic schools represent and the fact that they pride themselves not just on their ethos, vision and values but on good quality education.

Catholic schools have long met academic and emotional requirements for their students, and the success of that approach should be seen in exam results, and, more importantly, in the positive destinations of the young people as they leave school and take their places in Scottish and other societies.

To those who argue that separating and encouraging fundamental lines of difference in schooling is contentious and leads to religious,

ethnic and socioeconomic division, my response is that such an education may actually help young people to recognise and appreciate what lies around them. Other international religions, whether Judaism, Islam or others, are generally taught in Catholic schools from primary 3 and are further pursued in secondary 1 and 2, building on the informal experiences that those young people are likely to get before and after that time.

We have a lot to learn from the Catholic form of education, in terms of the tolerance with which their young people are imbued, and their understanding and appreciation of others' cultural histories and divides.

That said, I wholly agree that we should do more to encourage close partnerships between denomination-based schools and, indeed, between the divisions within particular traditions that sometimes affect the criticism that we hear. We need to attend to that in our own cultural output.

I finish by paying great tribute to the Catholic schools in Scotland. They have a remarkable tradition, which we should celebrate, and we are very pleased to welcome their representatives to the chamber.

16:27

Iain Gray (East Lothian) (Lab): I begin by congratulating Elaine Smith on obtaining the debate to mark Catholic education week and to acknowledge the positive contribution of Catholic schools in Scotland. As the motion notes and as Elaine Smith said, the schools have been an integral part of our state education system in Scotland for 101 years. Their place was enshrined in the Education (Scotland) Act 1918 and has been protected ever since.

It is right to recall the importance of that legislation and the historic concordat that it marked between the state and the Catholic community at the time. We have often debated sectarianism here and acknowledged its continuing blighting of our country. It is sometimes referred to as "Scotland's secret shame", but 100 years ago there was nothing secret about the prejudice and bigotry that were aimed at the Catholic—largely Irish—community in Scotland. They were open and blatant, and my church, the Church of Scotland, was, to its shame, more than complicit.

Prejudice and bigotry were not limited to the west of Scotland. My late father used to tell me about growing up in Leith in the 1930s. At that time, John Cormack and the Protestant Action Society were a significant political force there, and in what was then Edinburgh Council.

Catholic schools, therefore, were and are an important reflection of our desire for a tolerant, diverse and inclusive state education system. They are a bulwark against sectarianism and an important indication to the Catholic community that Scotland will not tolerate bigotry—a guarantee that is, as Elaine Smith pointed out, sadly still needed today.

As members have said, they are also very successful schools that provide high-quality education for 20 per cent of our children of all faiths and none. In many instances they serve communities in which children face particular barriers to education, and they deliver excellent results—academic and otherwise—even in those circumstances.

Given their ethos and values, it should be no surprise that Catholic schools are outward looking and are actively engaged in charitable work in their communities. A few days ago, I was fortunate enough to be a guest at a mass that was given by Archbishop Cushley—who is in the gallery—at St Martin's RC church in Tranent, to celebrate the 50th anniversary of that church. I heard about the work that is being done in the diocese to support refugees and asylum seekers, which encourages pupils in local Catholic schools to understand the similarities to the challenges that their own families faced a few generations ago, and to support those who are facing those challenges now.

That is a good example of how our Catholic schools are contributing to ensuring the tolerant and welcoming future that we want for our country and all its diverse communities, of whatever faith or, indeed, of none.

16:30

Joan McAlpine (South Scotland) (SNP): I congratulate Elaine Smith on securing the debate. I was delighted to support her motion. I welcome to the gallery Archbishop Cushley and the pupils who are also there.

I spoke out on this issue a couple of months ago, in response to a social media comment from Mark Millar, who is a very famous and successful film-maker from Coatbridge, which is the home town of Elaine Smith. He posted that he had heard a number of politicians saying that Catholic schools had to go, and that they were saying it privately. I do not know who they were: I have never heard any politicians say that privately. I think that the turnout for the debate from across Parliament shows that Parliament is fully in support of Catholic schools. We want to send the strong message that, by supporting Catholic schools, we are supporting a truly equal society that accepts difference and diversity.

I totally agree with Elaine Smith that suggesting that Catholic schools in any way contribute to sectarianism is tantamount to victim blaming because, even today, Catholics are still subject to far more sectarian attacks and discrimination than are people in other parts of the population.

I also back what members have said about the Education (Scotland) Act 1918. Some of the people who attack Catholic schools do so from a position of complete ignorance and really should read their history. The 1918 act put Catholic schools on the same footing as non-Catholic schools at a time when discrimination was absolutely appalling for the Irish Catholic population in Scotland, who included my grandparents and great-grandparents, who came from Ireland.

Elaine Smith: Joan McAlpine has reminded me that I should have said in my speech that, a year ago, the Scottish Catholic Education Service had a stall in Parliament to celebrate 100 years of Catholic education. I also should have welcomed Barbara Coupar, the director of the SCES to the gallery. Will the member join me in doing that?

Joan McAlpine: Yes—I am absolutely delighted to do so.

On the 1918 act, it is important to remember that Scotland has a proud tradition of education, which is rooted in the Church of Scotland and goes back many hundreds of years. The schools that grew in Scotland were parochial ones that were close to the kirk. That is to be celebrated for the Church of Scotland, but those in the large influx of Roman Catholics from Ireland did not feel that the schools that were provided through the parochial boards, and then the local education boards, would give their children the religious education that they needed. They were absolutely right. That is why it was such an advance to bring Catholic schools into the state system in 1918. Before that, Catholic schools had been underfunded, when compared with the so-called non-denominational schools.

I want to say something about the term “non-denominational schools”. I went to Catholic schools—St Ninian’s primary school in Gourrock and St Columba’s high school in Greenock—and I really benefited from that education. However, I chose not to send my children to a Catholic school, but to a non-denominational school. Non-denominational schools have close links to the Church of Scotland. I was surprised that, although they teach about other religions, there are links to their local Church of Scotland churches. Therefore, it is not true to say that we have Catholic schools and non-denominational schools.

I reiterate the First Minister’s comments when she spoke on the centenary of the Education

(Scotland) Act 1918. She said that the act had shaped

“modern Scotland for the better”

and that the legislation was

“a national success story”

and a

“far sighted compromise”

between church and state.

Catholic schools benefit everyone in our society. Long may that continue.

16:35

Annabelle Ewing (Cowdenbeath) (SNP): I am also pleased to have been called to speak in this important members’ business debate, and I congratulate Elaine Smith on securing it. I, too, welcome Archbishop Cushley and all our other distinguished guests to the gallery.

I have unswerving support for faith-based education in Scotland, and hence for Catholic schools. Catholic schools have made a positive contribution to Scotland’s education system and to our wider society. I argue that they are, indeed, a “national success story”.

The background to Catholic schools becoming part of the state education system is the Education (Scotland) Act 1918, as has been mentioned. It is important to note that the legislation provided for a number of groundbreaking reforms, including the raising of the school leaving age and the amazing partnership between the Catholic church and the state, which was, as Joan McAlpine mentioned, a far-sighted development.

Under that historic concordat, Catholic schools, which were at that time set up voluntarily and were largely underfunded, were brought into the state education system and were therefore able to access state funding while retaining the right to maintain their Catholic ethos. I believe that that was a game changer for young Catholics. As facilities in their schools improved significantly, so did—which is important—their prospects. The legislation also served to signify a different relationship between the Catholic community and the state.

Professor Sir Tom Devine, when giving the 2017 Cardinal Winning lecture on the 1918 act, stated that it

“enabled the growth of a large Catholic professional class, fully integrated into the mainstream of Scottish society.”

The legislation reflected, in Scotland, a new level of trust, through which Catholic schools considered that they could play a full role in the development and wealth of the nation.

Over the years, we have seen the distinctive contribution that Catholic schools have made, with a high level of achievement and attainment. That reflects the truism that diversity is a source of strength that should be celebrated, because it enriches and shapes our society for the better. Indeed, we have seen children come through Scotland's Catholic schools with a strong moral foundation, a sense of personal responsibility, an understanding of the common good and a strong commitment, as has been noted, to charitable causes at home and abroad. That must all be to the good, and it fits well with the importance that we place on free education for all. We should recall that universal school education was introduced in Scotland in 1696, with a school and schoolmaster for every parish.

I am proud, as the MSP for Cowdenbeath, to say that there are many excellent Catholic primary schools in my constituency: St Brides RC primary school in Cowdenbeath, St John's RC primary school in Rosyth, St Joseph's RC primary school in Kelty, St Kenneth's RC primary school in Ballingry, St Ninian's RC primary school in Cardenden and St Patrick's RC primary school in Lochgelly. The teachers and staff in all those schools are to be congratulated for all their work in helping young people to be the best that they can be. I also take this opportunity to commend the teachers and staff in all the schools in my constituency, who do so much to improve the life chances of young people in Fife.

To conclude, I quote the First Minister at last year's Cardinal Winning lecture:

"The Scottish Government is an unequivocal supporter of Catholic schools. We value the contribution that Catholic schools make to modern Scotland. We want that contribution to continue in the years ahead."

I am proud to endorse those sentiments and to pledge to my constituents that I will always support the role of Catholic schools in our country.

16:40

Jackie Baillie (Dumbarton) (Lab): I join in offering my congratulations to Elaine Smith for securing today's debate and for the content of her speech. I also welcome all the visitors to the public gallery.

It is important that we have an opportunity to debate in Parliament the value of Catholic education from an informed viewpoint. As others have noted, the Education (Scotland) Act 1918 enshrined Catholic schools in the public sector, guaranteeing them funding from the state while allowing them to retain their distinct ethos, identity and culture. They have grown in number from 224 schools at the commencement of the 1918 act to 366 schools today.

Let me take a leaf from Annabelle Ewing's book and mention the schools in my area. I have one Catholic secondary school in my constituency, Our Lady and St Patrick's high school, with feeder primaries at St Joseph's in Helensburgh, St Martin's in Renton, St Mary's in Alexandria, St Kessog's in Balloch, St Michael's and St Patrick's primaries in Dumbarton and St Peter's in Bellsmyre. All of them are excellent schools, with excellent and hard-working staff who work closely with their non-denominational counterparts in the area. My experience of visiting them is that those schools are attended by Catholics and non-Catholics alike. There are children there from Muslim backgrounds, from Chinese backgrounds and from families that are not religious at all. That is because they believe in and value the ethos of the school.

At Our Lady and St Patrick's, for example, extensive volunteering, charitable work and service in the community are a substantial and significant part of school life. The ethos and culture of caring for others is embedded in much of what the school does and helps to shape the young people's sense of civic duty. That goes hand in hand with excellence in academic attainment. Despite drawing from a significantly deprived catchment area, the school outperforms every other school in my constituency, which is quite an achievement.

Of course, nothing ever stands still, and Catholic education has evolved. Now, almost half of the local Catholic primary schools in my area share campuses with non-denominational primary schools. Although a lot of their joint activity works well, the schools retain their distinct identities.

The Catholic education that I have witnessed is very good: it is all about inclusion, tolerance and co-operation and not segregation or separation. To those who think, or infer, that Catholic schools contribute to sectarianism, I say that that is extremely lazy thinking, which runs contrary to the evidence that we see in our own local communities. Elaine Smith was right to say that Catholic schools in England do not seem to have such a problem.

Nor do I think that being a fan of one or other of the major football teams makes someone sectarian. In my local area, there is a passionate Celtic-supporting minister of the kirk. Of course, he has good taste. There are tribal loyalties and keen rivalry, but the majority of people are there for the football and nothing else.

Sectarianism existed long before the Education (Scotland) Act 1918. Its roots are deep seated and will be addressed only by education that is designed to change society's attitude. We should be encouraged by a TNS-BMRB survey that was done a few years ago, which said that more than

90 per cent of Scots recognised the negative impacts of sectarianism and wanted to see action to address it. That is important. Work done by groups such as Nil by Mouth and the sense over sectarianism programme, which is essential to breaking the cycle of bigotry that remains, will land on people who want change. We need to see sustained, long-term support for such activity coming directly from the Government.

In this Catholic education week, let us celebrate the contribution that Catholic schools make to our local communities and to civic society across Scotland, and let us ensure their continuation for decades to come.

The Deputy Presiding Officer: Before I call Fulton MacGregor, I advise members that, given the number of members who still wish to speak in the debate, I am minded to accept a motion without notice, under rule 8.14.3, to extend the debate by up to 30 minutes. I invite Elaine Smith to move such a motion.

Motion moved,

That, under Rule 8.14.3, the debate be extended by up to 30 minutes.—[*Elaine Smith*]

Motion agreed to.

16:44

Fulton MacGregor (Coatbridge and Chryston) (SNP): I put on record my thanks to Elaine Smith. I know that she has taken forward this issue passionately over the years. Like everybody else, I agree entirely with the motion. Catholic schools make a positive contribution to Scotland and are an integral part of the fabric of our constituencies and our nation.

I attended Coatbridge high school, which is a non-denominational school, but, as is normal in central Scotland, many of my friends and family attended Catholic schools. Our friendships were based on geography and shared interests, not on whether we went to Coatbridge high or St Pat's, which were the two main schools that served the area that I lived in.

Many people whom I know send their children to Catholic schools. As other members have said, some of those people went to non-denominational schools and, as Joan McAlpine demonstrated, the reverse can also happen. The education that is provided in Catholic schools has always been considered to be positive and inclusive and to in no way disadvantage pupils.

As an MSP, I am lucky enough to go around all the schools in my constituency, and I pay tribute to the teaching staff and pupils at each and every one of them. I witness at first hand the work that they do. There are too many schools to mention,

but I will quickly talk about the two Catholic secondary schools in my constituency.

As folk will know, St Ambrose high school was in the news a lot over the summer. While the Deputy First Minister is in the chamber, I will take the opportunity to thank him again for his intervention and for bringing some clarity to an issue that has been of some concern to local people. However, at no point was the concern to do with pupils or teaching staff. Indeed, pupils at St Ambrose achieve and attain very well in very difficult circumstances. Elaine Smith mentioned one such pupil.

Today, I was able to pick out two recent motions that I have lodged. One was on St Ambrose and mental health, which recognised pupils who participated in the Scottish mental health arts festival that was held in Lanarkshire. More recently, I lodged a motion in 2019 on the Crown Office national public speaking competition, the two winners of which were from St Ambrose. Just this week, as was shown in the local advertiser, St Ambrose pupils were critical in setting up a food pantry near Blairgrove. The pupils have done absolutely fantastic work in supporting inclusiveness and a community spirit.

In the same vein, St Andrew's high school, which is nearby, has also made the news recently by supporting the hospice and the Conforti food bank in Coatbridge. In addition, 2019 was a very successful year for St Andrew's, with many pupils winning bronze Duke of Edinburgh certificates. Overall, we can see that those schools are achieving.

I agree whole-heartedly with the sentiment of the second part of Elaine Smith's motion, which is about sectarianism. In fact, I find it ludicrous that people think that removing Catholic schools will help to tackle sectarianism. Sectarianism predates Catholic schools. Anti-Catholicism is the problem, so how would removing Catholic schools help with that? Although removing such schools might sound like a coherent argument in some circumstances, it is not backed up by evidence and is argued through the prism of a west of Scotland—or at least a central Scotland—psyche. Elaine Smith made that point very well.

Catholic schools are not the cause of sectarianism in Scotland; it is as simple as that. We must all work together to stamp out all forms of hate, and I know that the Scottish Government is committed to doing that. What annoys me most is that we are still having these conversations, particularly in working-class post-industrial areas. Coatbridge high and St Andrew's both cover central Coatbridge, and they face the same primary issue: poverty. The division that we must address is wealth disparity and deprivation. Those are the biggest issues that our education system

face. Better academic results and outcomes are achieved by pupils from wealthier areas and by those who can afford private education. That cannot be right, and that is where the debate needs to be. Talking about whether we should have denominational schools is just a smokescreen to that real debate.

Again, I thank Elaine Smith not only for securing the debate but for her dedication to this issue over the years.

16:49

John Mason (Glasgow Shettleston) (SNP): I thank Elaine Smith for lodging the motion, which I fully support.

Since the 1500s, following the reformation in Europe, we have had the major split between Protestant and Catholic churches. For most of that time, most people in Europe—including in the UK and Scotland—have considered themselves to be Christian, even though sometimes their personal level of faith may have been minimal. Quite frankly, both sides have behaved shamefully at times—each has discriminated against the other, and people were killed because they were on the wrong side of the divide. Scotland was no exception. Both sides behaved badly, to say the least, when they were in power.

Schools were largely set up by the churches and Scotland became one of the most literate countries in Europe. However, time moved on and the state accepted responsibility for schools. Discrimination against Catholics, especially Irish Catholics, continued. Understandably, Catholics wanted to keep their own schools when the state got more involved.

We then move on to the present day. Scotland is overwhelmingly secular and those with a live personal faith are probably in a relatively small minority, although we still see cultural and traditional faith resurfacing at funerals, weddings and remembrance events, and when major tragedies occur.

As I see it, we have Catholic schools and secular schools, with some Catholic schools having a large proportion of non-Catholic pupils—perhaps because their families prefer a more openly Christian ethos and feel that there is a stronger value system in a Catholic school.

The SNP policy has been that the state would fund particular schools if there was sufficient demand from parents. Potentially, that could mean a wide range of types of schools, including Steiner, Muslim and Jewish schools or those of other Christian denominations being state funded, although so far that has not really happened to any great extent.

I would certainly argue that such a range of schools fits with our desire to treat all young people equally. Equality does not need to mean a uniform greyness but can be multicoloured and multifaceted.

Freedom of religion or belief surely means equal treatment and respect, whether people have faith or not. Some would argue that faith must be both personal and private. I absolutely agree that it is personal, but it is not private. Just as our secular and humanist friends have every right to argue for their place in the public square and in education, so people who choose to follow a particular faith path have every right to be in the public square and in education.

That raises the question of the place of families and parents in education. Should the state—in practice, that means the Government or the council—have total control over schools and what young people learn or should parents and families have a degree of control, too? Have we got the balance right between the state and the family? That is particularly an issue with current subjects such as same-sex relationships and transgender issues. Some parents and others feel that the state is too dominant in promoting what may be the majority view in Parliament but is not always accepted by the wider public. Can we allow room for diversity?

It is perhaps unfortunate that we really have only two streams of schools in the state sector, which has, perhaps inevitably, put the focus on the Catholic sector. As many others have said in the debate, Catholic schools are wrongly seen in some quarters as contributing to sectarianism. However, as Elaine Smith hinted at, when we put black and white young people in the same school, we do not solve racism—we still have it, unfortunately—so it is pretty obvious that the school is not the source of such deep-seated problems.

Despite not being a Catholic, I welcome the motion and I welcome Catholic schools. I think that we should be considering whether there is demand for other types of schools as well.

16:53

Clare Adamson (Motherwell and Wishaw) (SNP): I, too, thank Elaine Smith for bringing her motion to the chamber for debate. I am proud to be allowed to speak in the debate, just I was proud to be invited a short time ago to contribute to some videos around the celebration of 100 years of Catholic education.

What has not been discussed in the debate so far is what education means to the Catholic church. It is interesting that today's time for reflection from the Scottish Catholic International

Aid Fund was delivered by a Jesuit brother, as the Jesuit brothers are of course a teaching order. I am the niece of a Marist brother, and education as a way out of poverty and a way of emancipating people not just in Scotland but throughout the world has been key to my understanding of the Catholic church's relationship with education.

Elaine Smith mentioned that the Catholic church funded the building of the schools. It is interesting that, in a lot of cases, it built schools in communities before churches, because education was so key to the Catholic church's relationship with the community and its understanding of how it wanted its children to be raised and educated.

I attended Catholic schools—St Aidan's primary and secondary schools in Wishaw—as did my son, which gives me the unique opportunity to welcome Archbishop Cushley, who is a former chaplain of St Aidan's and is in the public gallery tonight. I know that he has very fond memories of his time at St Aidan's, as do I.

My son's experience of the school was different from mine. I was not aware of many people of other religions when I was at school, but many of my son's friends are Muslims who attended St Aidan's. My son was able to take part in the Pope Benedict Caritas award, which is a medal that is given to young people who demonstrate their faith by contributing through loving charitable service to their local community. The Caritas award represents 400,000 hours of volunteering by young people from Catholic schools who have supported their local communities.

In my son's time at the school, St Aidan's was involved in the Mark Scott leadership awards. Mark Scott was a young man who was killed in a sectarian attack, and his family set up the leadership awards to bring groups of young children from different religious backgrounds and different schools together in projects that benefit the community. I have seen many examples from the Mark Scott leadership awards that involve people working with housing associations, with older people, in nurseries and with younger children in the area to break down the barriers that unfortunately still exist.

During the centenary of the first world war, St Aidan's, Coltness, Clyde Valley and Calderhead high schools in my area came together to tell the story of Willie Angus, who showed great valour in the first world war and was a Victoria Cross recipient. He was also a very talented football player and was signed to Celtic Football Club. The young people produced a film about him and, to promote the film, they also produced a stage play with musical interludes. They all got together to tell a story about compassion and the futility of war, and how the war had affected communities.

That is an example of the Catholic school being part of the community, and it shows the richness and diversity that make us stronger as communities because we have Catholic education alongside other education in our country. I am very proud to support the motion.

16:58

The Deputy First Minister and Cabinet Secretary for Education and Skills (John Swinney): I congratulate Elaine Smith on securing this important debate and I thank her for giving me and other members from across the political spectrum an opportunity to express clearly and firmly our support for Catholic schools and Catholic education in Scotland. I take the opportunity to state that position clearly on behalf of the Scottish Government.

It is a timely debate, as it takes place during Catholic education week, which is a week in which we acknowledge the significant contribution to our education that is made by the Catholic schools of Scotland.

Elaine Smith began her contribution by making a necessary declaration of interest due to her associations with the Catholic education system, and I feel obliged to do likewise. My youngest son, Matthew, is wonderfully educated at St Stephen's Roman Catholic primary school in Blairgowrie. As Jackie Baillie mentioned, the school is part of a shared campus in which the identity, values and the expressed faith of St Stephen's primary school are in no way inhibited by the fact that it shares facilities with an outstanding school along the corridor—Newhill primary school—thereby demonstrating how we can modernise our education estate but fundamentally maintain the quality and strength of our education system.

I join others in extending a warm welcome to the representatives of some of our Roman Catholic schools—St Thomas of Aquin's RC high school, St Augustine's RC high school and Holyrood high school, in the city of Edinburgh; to Barbara Cooper of the Scottish Catholic Education Service who, along with her colleagues, makes an outstanding contribution to the formulation of education policy and direction in Scotland; and to His Grace Archbishop Cushley, who is a very welcome presence at our debate.

As members have said, last year marked the 100th anniversary of the Education (Scotland) Act 1918 and the integration of Catholic schools into the state education system. I was delighted to host a reception for pupils, teachers, the papal nuncio to Great Britain and Scotland's bishops in the great hall at Edinburgh castle to mark the occasion, at which the First Minister had the privilege of delivering the Cardinal Winning

lecture. At such events and on many other occasions, the First Minister and I have been absolutely clear on the value that we place on Catholic education and on the important role that Catholic schools have in building the society that we live in today.

The Education (Scotland) Act 1918 was important as it addressed a key inequality at that time. Between 1872 and 1918, the Roman Catholic community maintained its own schools at a time when parents, as ratepayers, also contributed to the running of other schools. That almost inevitably meant that Roman Catholic schools, which educated one seventh of Scotland's schoolchildren, were significantly underresourced. In turn, that meant that Catholic children were deprived of the educational opportunities that other children could take for granted. That changed with the Education (Scotland) Act 1918.

The Government is committed to tackling today's inequalities, and Catholic schools play a key role in that. Our Catholic schools contribute to all Scotland's communities. Like non-denominational schools, they serve some of our most deprived communities and provide an important route out of poverty through the high-quality, values-based education that they provide.

The Government has made closing the attainment gap between children in affluent areas and children in poorer areas its defining aim. We are not doing that just because of the harm that inequality causes to individuals across the country, but because inequality is bad for the country as a whole. We all suffer when individuals, through no fault of their own, face barriers to fulfilling their potential. It means that they are less able to contribute their efforts, talents, and ideas to wider society.

Annabelle Ewing referred to the comments of Professor Sir Tom Devine, who talked about the effect of the 1918 act in creating growth in the large Catholic professional class, thus contributing to the mainstream of Scottish society.

During the debate, members talked about the high quality of Catholic education. When I was dealing with the issues at St Ambrose high school in Fulton MacGregor's constituency during the summer, I was struck to see that one of the desperate aspirations of parents in that community was to make sure that their children were in no way deprived of the high quality education that St Ambrose high school offered their children. I was pleased that we were able to address the issues and enable the children to return to that high quality education.

Catholic schools also provide other opportunities for young people to thrive, and Clare

Adamson referred to the Caritas awards. I had the privilege of attending the Caritas awards ceremony in Glasgow earlier this year. The event, involving more than 3,000 pupils, showcased the charitable and community activities that hundreds of pupils who attend Catholic schools take part in. The Caritas awards are an outstanding example of the service of young people in our country, and they are an example of the broad range of awards that young people are now achieving as part of their education. However, the Caritas awards are uniquely provided by the Catholic education system.

I was delighted to see a number of representatives of St John's academy in Perth, the Catholic secondary school that serves my constituency, receiving the Caritas awards, as well as seeing examples of how the young people live out the aspirations of the Caritas awards through the recent work of that academy in supporting an orphanage in Romania with the devoted service of many of the senior pupils of the school.

Elaine Smith's motion refutes the concern that is sometimes raised that Catholic schools are, in some way, a source of sectarianism in our society. I agree entirely with Elaine Smith, as did the independent advisory group on tackling sectarianism in Scotland, that there is absolutely no substance to the suggestion that denominational schools cause sectarianism. The independent advisory group concluded:

"We do not believe that sectarianism stems from, or is the responsibility of, denominational schooling, or, specifically, Catholic schools, nor that sectarianism would be eradicated by closing such institutions".

Such a powerful and informed contribution from the independent advisory group should put to rest some of the regrettable rhetoric that we have heard on the subject.

I want to emphasise a key characteristic of the contribution of the Catholic education system to Scottish education as a whole: the importance of the values-based education that lies at the heart of Catholic schools, which makes a vital contribution to building a diverse, tolerant and loving society. Elaine Smith quoted Archbishop Tartaglia's explanation of the gospel values of truth, love, justice and freedom, which are promoted in Catholic education. If ever four values were the antithesis of sectarianism, I advance that truth, love, justice and freedom are those four values.

Those values have underpinned Catholic education in Scotland for so many years, and it is fascinating to note that when the national debate on the formulation of curriculum for excellence took place, one of the conclusions of the process was the importance of anchoring values at the heart of our curriculum. Therefore, curriculum for excellence was developed with a reliance on the

clear, strong values of wisdom, justice, compassion and integrity, which, as members of this Parliament know, are the values that are engraved on the mace that sits in front of the Presiding Officer. The Catholic education system's embracing of firm gospel values has therefore served the Scottish education system as a whole well; values are anchored in our education system through their inclusion at the heart of curriculum for excellence.

The Catholic Education Service website gives us a strong insight into the aims and approaches of Catholic education in Scotland and demonstrates the importance that our Catholic schools attach to a reliance on religious learning that helps young people to

“nurture respect for other Christian traditions and world faiths, experience opportunities for spiritual growth”,

and

“acquire the skills of reflection, discernment and moral decision-making”

that they need. In the complex world of the 21st century, a reliance on those essential characteristics of religious learning serves young people in our Catholic schools well.

I welcome this opportunity to make clear this Government's support for Catholic schools and our commitment to tackling sectarianism. Joan McAlpine mentioned Mark Millar's comment about private conversations in which politicians questioned the future of Roman Catholic schools. I say openly and on the record that I have never heard such a conversation take place. Perhaps the demonstration of cross-party support for Catholic education that we have seen tonight will put to rest comments of that nature.

It is vital that our support for Catholic education is expressed without equivocation; I do that positively and enthusiastically in the Parliament this evening. The Scottish Government remains an unequivocal supporter of Catholic education. We value the contribution that Catholic schools and faith schools make and we are determined to ensure that the tradition is maintained in Scotland as a vital element of the Scottish education system.

Meeting closed at 17:09.

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