Visit to LGC's Teddington HQ by Members of the House of Commons Select Committee on Science & Technology and the Parliamentary & Scientific Committee

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INTRODUCTION

The visitors were received by and introduced to David Richardson, LGC's Chief Executive, Dr Derek Craston, Government Chemist and MD, LGC Science & Technology, Dr Steve Wood, Head of Regulatory Services, Dr Paul Debenham, Director, Innovation & Development, Dr Julian Braybrook, Head of Strategy, Measurement Research, Peter Bedson, Head of Operations, Measurement Research, Ric Treble, Scientific Advisor for LGC Forensics and LGC Standards and Richard Gardner, GK Political.

DAVID RICHARDSON, CHIEF EXECUTIVE

David Richardson welcomed the visitors and emphasised that the Laboratory of the Government Chemist was established in 1842 by Robert Peel who also founded the police, so connection between police and science was established from the outset. George Phillips, whose picture is on display, was the first Government Chemist. The original raison d'être was to help the government claw back customs revenue. People were importing gin and tobacco, paying some duty and then diluting it and adulterating it and selling it off for a lot more money. George Phillips didn't feel this was a good idea! I suspect that his boss, the Prime Minister, didn't feel very happy about it either! So the Laboratory of the Government Chemist was brought into being to use science to help government collect revenue, but in particular of course, to make sure that the regulatory function around that was properly fulfilled.

LGC's modern history started in 1996. They were privatised at the same time as two other government laboratories by a Conservative administration. They have grown organically since then out of all recognition. In those days LGC was about two hundred and fifty people, based very largely on this site and working entirely for government in the UK. They are now nearly fifteen hundred people based at thirty-one labs and centres all around the world and operate in different countries and different scientific disciplines.

Most recently LGC changed ownership again. This is their third private equity iteration since privatisation and they are now backed by Bridgepoint who have about €11.5 billion of funds invested all around Europe. Over sixty thousand people work for Bridgepoint companies and LGC felt that Bridgepoint were a new owner who really understood and was sympathetic not only to the objectives of the business but also to the history and the way LGC do business here.

LGC expertise extends across a broad range of scientific activities with capability in regulatory and statutory testing – this is their history, heritage and legacy and where they have continued to invest and develop. But they have expanded that to include laboratory management, R & D, surveillance, measurements, standards and a whole range of other disciplines, including scientific project management. Although they are a private sector business, they still undertake a number of important regulatory and statutory functions for government.

Dr Derek Craston is the Government Chemist and LGC is the designated National Measurement Institute for chemistry and biochemical analysis and a national reference laboratory. LGC therefore have an international role to maintain on behalf of the UK, which is at the forefront of measurement science internationally.

LGC considers itself to be in the top tier of National Measurement Institutes in the world, alongside the likes of the USA and Korea. The UK therefore has a strong voice in international measurement, which is important for UK plc and supports international trading relationships. LGC turnover has progressed steadily upwards and last year income was just over £130m and earnings were of the order of £20m.

Many of the LGC businesses have their origins in the Government Chemist function and LGC work in measurement science. For example, LGC have created what is now the largest private sector forensic science provider in this country and probably elsewhere, and their reference materials business in eighteen countries has a turnover exceeding £60m.

The four divisions within which LGC operate are
1) forensics science;
2) standards including reference

materials and proficiency testing schemes;
3) genomics, primarily DNA sequencing, particularly in the agricultural sector; and
4) science and technology, which includes statutory functions.

Perhaps the best known of the LGC businesses is LGC Forensics, involving nearly ninety different disciplines where the provision of a comprehensive suite of services is critical to police forces and other customers. This range of services enables police to manage cross-boundary cases. It is an important strategic priority for LGC to be represented in as many disciplines as possible. For example, computer analysis for child protection and e-crime is an increasing part of the police's crime fighting inventory of skills. LGC also have expertise in and have been involved in cold cases.

Last year LGC completed a very interesting piece of work in Fromelles in Northern France, which is a First World War mass grave. Nearly three hundred bodies were exhumed, of which LGC have now helped to identify ninety-seven. The soldiers have received headstones in a new cemetery that was opened last July by Prince Charles.

Genomics is a DNA sequencing operation in Berlin with some R & D in Teddington. LGC are not involved in GMOs, but rather with accelerated breeding programmes, where the technique is to cross two plants and see (through DNA sequencing) whether the genes have been expressed through into the next generation, enabling customers to really speed up that process of producing crop varieties that are more drought resistant or are likely to stay redder and firmer on the shelf if they happen to be a tomato. LGC are also expanding into other growth areas, especially pharmacogenetics.

LGC's biggest division is in Standards, involving providing reference materials to support globally a very large number of laboratories. Reference materials are produced in Luckenwalde, south of Berlin, which are distributed from LGC Standards headquarters in Wesel in Western Germany and about seventeen other sales offices around the world. LGC also operate training schemes and proficiency testing schemes for laboratories so that they can check quality and ensure that they are operating to high standards when compared with other laboratories worldwide. LGC also undertake work outsourced from the major blue chips and also provide their in-house reference materials. The Standards division is the largest LGC division with a turnover of nearly £60m.

LGC Science & Technology represent nearly a quarter of the LGC business. They are still largely a UK business geographically, but this will shrink as a percentage because the international part of the business will grow. LGC, through the acquisition of HFL Sport Sciences, have recently opened a laboratory in Kentucky to test race horses, using the skills developed in the UK to help underpin the horseracing industry in the US, especially in relation to gambling and animal welfare. LGC expect the US to become an increasing focus for what they do.

In addition to the UK, Germany is also important for LGC, since they have about two hundred and fifty people who undertake virtually all disciplines including genomics, forensic testing for German police in Cologne and distribution and production of reference materials in Wesel and Luckenwalde.

In India LGC produce reference materials in Bangalore where they have a very successful joint venture growing at nearly twenty per cent a year – an exciting and important part of the future. LGC opened a sales office in Brazil last year and opened in China about eighteen months ago (and have already had to move once because they outgrew the office!). These BRIC territories are all important parts of the LGC future.

The LGC workforce is very highly skilled. Twelve per cent of LGC people hold PhDs, some of them world-leading in their specialisms. LGC overall are about sixty per cent graduate staff, which is clearly essential if they are to keep up their skills base, but it also demands a strong on-going investment in training and development and in providing their people with the very best equipment to enable them to do their job.

Typically, LGC are competing against major pharmaceutical testing companies and others in the scientific arena, and also obviously compete on an international stage as well. So it is important for them to be able to provide the research opportunities and also the scientific instrumentation that attracts people to work at LGC – something we saw when we went around their laboratories.

DR DEREK CRASTON, GOVERNMENT CHEMIST AND MD LGC SCIENCE & TECHNOLOGY

Dr Craston mentioned two areas that the Committee would not see on their visit. One was the Programme Management Group based at Twickenham. This is a science management service LGC provide to government including the Department of Health where they manage about a third of the Department's research funding budget as part of the National Institute of Health Research where research outputs are being translated into the National Health Service to provide patient benefit. LGC also work for other departments like Business Innovation and Skills and DEFRA and do some administration for the Technology Strategy Board. LGC also work for the private sector in areas relating to the broader area of health and healthcare.

The other work not based at Teddington is the recently acquired horseracing forensic laboratory which is just outside Cambridge and tests horses and greyhounds involved in racing to make sure that there is no cheating going on, and no banned substances are being used. LGC also provide services in food testing and pharmaceuticals.

DR STEVE WOOD, HEAD OF REGULATORY SERVICES

The Government Chemist has two functions, firstly as a statutory referee analyst under the four Acts of Parliament covering food, agriculture, medicines and hydrocarbon oils and secondly, the Government Chemist is an advisor to government on the impact of regulations and policy on analytical chemistry.

The Government Chemist may become involved in any statutory analysis where there is a dispute. For example, a formal sample could be taken of an import consignment, which would then be divided into three portions. One portion goes to the owner for analysis and one part goes to the Public Analyst. If there is a dispute

between the two sets of results, the third part of the sample will come to LGC for the referee analysis. This process protects both industry and government. It protects industry by providing an opportunity to redress any issues that are wrong, and it also protects government by maintaining the integrity of the regulatory process. It also assists the courts in the case of dispute where LGC provide accurate and precise results and valid and informed interpretation of the data. So LGC are protecting both the regulated and the regulator through the Government Chemist statutory function.

The primary objectives are to assist smart regulation in order to reduce the regulatory burden. The Government Chemist, by virtue of the accuracy of LGC measurement science, can help prevent disputes through method development, and increase current awareness amongst the scientists involved. LGC perform dissemination and training activities, and publish the methodology in peer reviewed papers to make this information available to the public analysts and to the industries involved. LGC are also seeking out big issues that are likely to arise and work with local government regulation, the food law group and the FSA, so that we can identify trends that might provide clues requiring a response in the future.

The Government Chemist also advises on key analytical issues affecting regulation and enforcement and compliance involving foresight activity. Through the Government Chemist programme, LGC advise industry on the interpretation of their regulations and actions that are required by them to ensure compliance. LGC do this by organising training and dissemination events.

LGC have a very successful partnership with the Medicines and Healthcare Regulatory products Agency (MHRA) and operate two of their laboratories. The work of these laboratories is to assist the MHRA's enforcement officers in ensuring the integrity of products on the marketplace, including protecting against counterfeiting, and to support the work of the British Pharmacopoeia Commission In developing methods that are used to prove the quality of generic medicines that become available on the market and in producing the reference standards that help calibrate equipment and validate the methodology.

LABORATORY TOUR

The introduction was followed by a visit to four laboratories in three groups. The groups were led by Dr Paul Debenham, Director Innovation & Development, Dr Julian Braybrook, Head of Strategy, Measurement Research, and Peter Bedson, Head of Operations, Measurement Research.

The laboratories visited included

1) DNA Crime Stains where buccal swabs were required for elimination before entering laboratories (Ric Treble, Scientific Advisor for LGC Forensics and LGC Standards);
2) Laser dissection/single cell analysis laboratory (Damian Marshall, Principal Scientist, Cell Biology);
3) Isotope ratios in hair laboratory (Ruth Hearn, Team Leader, Chemical Measurement & Calibration); and
4) GMO quantitation laboratory (Malcolm Burns, Science Leader, Molecular and Cell Biology).

The visitors were entertained to lunch and a final discussion session before departing with a vote of thanks to the hosts for such a well organised and informative visit.

To see David Richardson's powerpoint presentation visit www.scienceinparliament.org.uk