David Hawksworth CBE – Written evidence (FRS0090)

Background

Evidence supplied by Professor David L Hawksworth CBE, BSc (Hons), PhD, DSc, FD (hc), CBiol, MCSFS, FRSB, FLS. Former President, International Union of Biological Sciences, Honorary President, International Mycological Association, and last Director of the intergovernmental International Mycological Institute (Kew and Egham). With some 50 years experience in the identification of fungi, I have been applying this expertise to criminal cases since 2006, and worked for eleven UK police forces, including cases of murder, rape, poisonings, and have appeared in court as an expert witness in three murder trials. I work from my laboratory and library facilities at home but have access to collections and other resources at The Natural History Museum London and Royal Botanic Gardens Kew where I have honorary positions.

1 How the Criminal Justice System can be equipped with robust, accurate and transparent forensic science

1.1 Much of what is considered “forensic science”, is actually about the application of accumulated scientific knowledge to forensic cases, rather than a special branch of science. It follows that the system needs to involve experienced scientists of standing in their disciplines who are willing to contribute their expertise to the elucidation of cases. These scientists need to be free to use their skills to reach evidence-based conclusions, and in order to do this need to operate in environments which will be seen as independent, for examples, ones not part of police forces or where what they should or should not examine is controlled by the prosecuting authorities.

1.2 With respect to research, the main need is for the production of protocols on how to approach particular cases. Each case has its own unique aspects and many studies purported to be of forensic value are never likely to have any substantive contribution to make in actual cases. What would be of value in my area is the production of more comprehensive manuals of reference data, for example of fungal spore identification which is so valuable as trace evidence, and support for the production of databases on the ecology and distributions of species.

2 Whether current training available for practitioners, lawyers and the judiciary is appropriate

2.1 In specialist areas, the fundamental training of practitioners must be in the pertinent scientific disciplines, as evidenced through higher degrees (PhD, DSc), recognition by the relevant learned societies (e.g. as Fellows or Certified Members, Awards and Medals), and scientific papers in the leading peer-reviewed journals in their fields. Scientists of standing undertaking such work would generally take advantage of the various commercial courses on Court procedures from time to time.

2.2 The current system of BSc and MSc courses in forensic science is not fit for purpose apart from training technicians; even the interpretation of
DNA evidence requires scientists with in-depth experience of possible alternative explanations of results. Those wishing to be scientists working in the forensic field would, in my opinion, always be better advised to study an appropriate scientific discipline and become established as a research scientist in that field work before using those skills in a forensic context.

2.3 The annual meetings of the Chartered Society for Forensic Science used to be a great opportunity to mean scientific peers, police, and lawyers, but that is no longer the case as these have come to be dominated by students reporting studies that are rarely likely to be of actual value in particular cases.

2.4 With respect to the training of lawyers and the judiciary, as the subject areas are so diverse and evolving this would perhaps be best approached through a combination of specialist seminars, and then briefings by experts on a case-by-case basis when introducing their type of evidence in Court – especially as the jury will also need to be aware of the methods and their limits.

3 Whether the current market for forensic services in England and Wales is sustainable and whether changes are needed to ensure forensic science provision is maintained at the level required

3.1 The situation has deteriorated dramatically since the dissolution of the Forensic Science Service, and has been compounded by limited budgets and procurement requirements of police forces. It has resulted in a proliferation of companies, many of which offer a wide range of services which they can only provide by outsourcing to university staff with little or no experience of case work or court appearances. This has led to situations in which expensive irrelevant, or fundamentally flawed evidence being commissioned only to be discredited in Court or nor even being withdrawn when faced with a written challenge by an experienced scientist in the field. Budget restrictions have also meant that whole areas of potentially critical evidence to a case are being increasingly ignored, and I suspect that there is enormous scope for miscarriage of justice claims – for example because there is doubt as certain scientific examinations that could have been conclusive were never conducted.

3.2 Procurement policies have also meant that many small companies and individual experts now receive little or no work and so are no longer available to the justice system. In my own area of expertise, forensic mycology, there has been a reduction of perhaps 5-6 cases per year down to 1-2 or zero over the last decade, which means that is no longer economic to pay for inclusion in directories of available experts, membership of forensic bodies (e.g. Chartered Society for Forensic Science), or fees for courses on Court procedures.

3.3 This situation is exacerbated by the Legal Aid system that means a defence is often not in a position to procure appropriate experts or carry out tests to verify the results of in some cases teams of prosecution scientists.
4 Whether the 'Forensic Science Strategy' produced by the Home Office in 2016 is suitable

4.1 I do not consider that this got to the core issue of concern to me, how to maintain the availability of expertise in specialist areas of science that have been proven to have been of pivotal importance in resolving forensic cases.

5 Whether the Forensic Science Regulatory should be given statutory powers

5.1 Definitely not, and potentially very damaging. The current regulator, unlike her predecessor, seems to think that imposing ISO criteria will solve all problems. That system regulates laboratory practice but does not deal with expertise in interpretation. It would be far better to abolish the post and leave regulation to the Chief Scientist at the Home Office who could establish working groups of appropriately experienced scientists to consider particular issues and make recommendations on them as required.

6 What the gaps are in the research and understanding of forensic science

6.1 The main gap in specialist niches such as my own is the lack of specialists in the relevant scientific discipline. There is now NO university in the UK that has a mycologist on staff, and no post-graduate course dealing only with mycology; there are, however, two including some work on fungi along with plants (Edinburgh and London) though overseas students predominate on those. Sufficiently experienced mycologists in the UK are now retired or almost so, and there is an urgent need for arrangements to be made for them to mentor selected mycologists in appropriate organizations (such as the Royal Botanic Gardens Kew) so they can continue to provide the service.

7 Whether enough is being done to prepare for the increasing role that digital forensics will have in the future

7.1 This is not my area of expertise.

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