



## **Scientific impacts of changing relationships with the EU**

### **Perspectives from the Systematics Association**

#### **The UK's learned society for biodiversity scientists**

**22 August 2016**

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We, the Council of The Systematics Association, present here our concerns on the potentially significant negative changes in the United Kingdom's relationship with the European Union and what limits on the movement of scientific expertise and resources are likely to mean for our science.

#### **Who are we?**

Systematics is the scientific study of biodiversity, the many ways that life on our planet is manifest. Biodiversity is awe-inspiring, essential for our survival and yet incompletely known and under threat. Systematics addresses the fundamental questions of what biodiversity exists and how it is interrelated. Systematics contributed substantially to Charles Darwin's profound insights into the interrelatedness of all life and modern systematics builds on his intellectual legacy. Systematics underpins science in all of biology, including the effective management and preservation of our common biodiversity heritage. The Systematics Association exists to promote the science of systematics and thus humankind's understanding of the world's biodiversity.

#### **Our EU relationships**

Biodiversity does not respect geopolitical borders and systematics has always been an international endeavor. Darwin's pivotal contributions to the science of systematics were based on famously long-distance collaborations with natural historians around the world. Today, the UK continues to lead research in this field. Like many other disciplines, significant past investment in the UK's intellectual capacity means that our research institutions such as museums, herbaria, zoos, botanic gardens and universities have a global profile and impact far beyond that expected for a country of our size. In the field of systematics, UK institutions are a magnet for students and collaborators from elsewhere. This is particularly true for our relations with Europe, our nearest neighbours, with the EU providing very substantial funding and free movement of researchers, making connections among institutions fluid and efficient. **We not only add value to the international stage, but strongly benefit from the EU.**

Although the Systematics Association is a UK-based and UK-focused body, we have a 2:1 ratio of UK to European members. It is seen as good value by our colleagues in Europe to be part of our organization and thereby promote our shared values.

#### **EU-linked Collaborations and Funding**

Society requires reliable biological data to plan a sustainable future, and our core work in outreach, education and research in systematics has had strong, long-term support from EU funding. For example, the "big twelve" natural history institutions in Europe receive a substantial proportion of their research funding from the EU, as do many smaller institutions and universities. British institutions routinely lead in big framework grants, and in some cases, are the hosting institutions for grant-dispensing sources. These schemes and funded projects all rely on free movement of researchers and scientific materials.

Major funding schemes in systematics that are or have been funded by the EU:

Marie Curie Fellowships

European Distributed Institute of Taxonomy (EDIT) (2006-2011)

pro iBiosphere (2012-2014)

EU BON – Building the European Biodiversity Observation Network (2012-2017)

SYNTHESYS - Synthesis of systematic resources (2004-2017)

ViBRANT – Virtual Biodiversity Research and Access Network for Taxonomy (2010-2013)  
BIG4 (Biosystematics, Informatics, Genomics)  
ERC (European Research Council) funding

### **Exchange of highly specialised expertise and sharing access to collections**

The scale of biodiversity is huge, and it can take a lifetime of specialized study to be expert in any of its components. No single collection of specimens is sufficient to understand the diversity of any group of organisms and no single country has specialists in all groups of organisms. This means that international exchange in both people and material is essential to cover the topics of systematics and biodiversity. The greater the ease of exchange between institutions, the more effective our research and more substantial its impacts on conserving and harnessing the potential for biodiversity in tackling global challenges.

Systematics is underpinned by an international standards and archiving system provided by museums and herbaria. To function effectively, these depend on the ease of movement of scientifically sensitive materials, as well as people. International loans of specimens within a common governance area are significantly easier to implement than those outside, and border transit rules can radically restrict access to material, resulting in the intellectual and physical isolation of scientists and their collections.

Furthermore, as museums and herbaria have come under increasing pressure for funding in recent years, it has been mooted that the major European institutions combine their collections to some degree to minimize duplication of effort and expense. While combining physical collections presents logistical issues, and may be discouraged by parliamentary mandates that we keep our national collections available for research consultation, the process of linking collections through shared digital tools has proceeded largely through EU projects. If we are outside the EU, the UK potentially will miss the opportunity to participate in this historical discussion, to integrate our collections within a much bigger network, and to amplify the impact of our legacy and historical primacy in systematics.

### **Concerns for the future of UK systematics outside the EU**

We believe the status of the UK leading in scientific endeavour is a priority for consideration in mapping any future outside the EU. The House of Lords reports on our field (2008, p.7, and previous reports) concluded that 'systematic biology is at the heart of our understanding of the natural world', yet is working under extraordinarily stressed financial circumstances. It is vital to our field of endeavour, as it is for many branches of the STEM disciplines, that the UK is still able to apply for EU framework funding or that a similarly scaled and international funding scheme is immediately established to fill the hole that leaving the EU might cause. Our current high global profile also relies on exchange of scientists to be protected by freedom of movement.

We add our voice to the many other institutions such as the Royal Society, major universities, and other learned societies in expressing concern that science and its many fields be safeguarded during any departure of the UK from the EU. We welcome recent indications that the UK government intends to guarantee EU funding beyond the date of any UK exit from the EU. However, we remain concerned that short-term measures are likely to have limited, transient benefits, and call for specific recognition of the importance of continued free movement of scientific expertise and material resources.

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### **Parliamentary reports on systematics**

House of Lords Science and Technology Committee, 5th Report, 2008. Systematics and Taxonomy: Follow-up Report with Evidence. HL Paper 162.

<http://www.publications.parliament.uk/pa/ld200708/ldselect/ldsctech/162/16202.htm>

Walmsley, J. (chair) (2002). What on Earth? The threat to the science underpinning conservation. House of Lords Select Committee on Science and Technology Paper 118. 48, 170 pp.

House of Lords Science and Technology Committee, First Report, Session 1991–92, Systematic Biology Research (HL Paper 22),

House of Commons Culture, Media and Sport Committee, Sixth Report, Session 2006–07, Caring for our collections (HC 176)