

Dr Mark Andrew Spencer F.L.S.

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BIOGRAPHY:

My life-long passion for plants began in my childhood which I spent wandering the Lizard peninsula, Cornwall and the Northamptonshire countryside. In 1989 I moved to London to study Horticulture at Kew Gardens. My first degree was in Botany, and my PhD (both at the University of Reading) was on the systematics of Peronosporomycetes (water mould fungi). I am committed to engaging with and educating the wider public about the value and interest of the world's flora.

I have been a practicing forensic botanist since 2011. During that time, I have worked on a wide range of serious criminal investigations, including murder, violent and sexual assaults, burglary, arson and domestic terrorism. I specialize in missing person searches, using shifts in vegetation structure or damage as a means of locating clandestine burials. I use vegetation to estimate timeframes at deposition scenes and interpret suspect/victim activity, such as entry routes. I also use vegetation fragment trace evidence and other environmental data to link suspects to crime scenes or victims. I have also undertaken Civil Procedure work relating to taxation and commodities disputes, child welfare, boundary disputes and seizure/forfeiture of property or earnings.

I am an experienced botanist with in-depth knowledge of the plant life of Britain and Europe. I was a Senior Curator for 12 years at the Natural History Museum London and have considerable knowledge and experience of museum curation and the use of botanical collections in forensics, climate change research, the history of botany and the use of natural history collections for societal benefit. Until recently, I was also the honorary botany curator at the Linnean Society of London and have particular interest in 'early-modern' botany. My botanical interests are wide-ranging but currently are particularly focused on the historic and non-native floras of London. I am the Botanical Society of the British Isles vice-county recorder for Middlesex and the Vascular Plant Recorder for the London Natural History Society.

I am also an experienced lecturer and trainer, delivering lectures and training to varied audiences on behalf of the Field Studies Council, The Arts Society and other organisations. I also am committed to mentoring and supporting students and volunteers in their studies.

Career

- 2016 Independent Forensic Botanist and Consultant
- 2008 Senior Curator, British and Irish & Sloane Herbariums, Department of Botany, Natural History Museum, London
- 2006 Curator, British & European Herbariums, Department of Botany, Natural History Museum, London
- 2004 Research Botanist, Linnaean Plant Name Typification Project, Department of Botany, Natural History Museum, London
- 2002 Field Botanist and Habitat Surveyor, London Wildlife Trust

Education

- 2003 PhD '*Molecular phylogenies and systematics of the Peronosporomycetes*' - University of Reading
- 1998 1st Class BSc Honours Degree in Botany - University of Reading

Voluntary and honorific positions held

- 2012-2025 Hon. Curator (Plants), Linnean Society of London
- 2016-2022 Scientific Associate, Natural History Museum, London
- 2006 London Natural History Society, Vascular Plant Recorder
- 2006 Botanical Society of Britain and Ireland, Middlesex Vice-county Recorder

Professional & Academic Body Memberships

2019 British Academy of Forensic Sciences (member)

1998 Linnean Society of London (Fellow)

Grants awarded

2016 *Lincolnshire Plants – Past and Future*. Heritage Lottery Fund project involving Lincolnshire Naturalists' Union, Lincolnshire Wildlife Trust, the Sir Joseph Banks Society and the Natural History Museum (£494,000).

2016 *Orchid Observers*. University of Oxford Zooniverse funded project in partnership with the Natural History Museum (approx. £30,000).

2010. Isles of Scilly Survey. Cross-departmental Natural History Museum project partially funded by the Isles of Scilly Area of Outstanding Natural Beauty (approx. £5,000).

Expertise & Interests

Forensic Botany: I have regularly undertaken casework in crime scene forensics since 2011. I have worked on over 100 criminal investigations in England and Wales and have provided assistance on several overseas cases. I also provide training on forensic ecology to crime scene professionals, such as crime scene managers and detectives as well as occasionally teaching on university courses. I have been Police Security Vetted (NNPPS + SC) and hold the Cardiff University Bond Solon Criminal Expert Certificate. I have worked with many of the English and Welsh police forces as well as several of the leading forensic service providers in Great Britain. I have written many expert witness reports, primarily within the criminal justice system but I have also undertaken civil casework.

Types of casework undertaken: Murder, attempted murder, suicide (and suspected suicide) and/or accidental death, missing person searches, sexual violence, arson, burglary, domestic terrorism, wildlife crime and veterinary cases. I also undertake work civil casework and trade disputes involving the identification of plant based commodities.

Techniques applied: *Missing Person Searches:* landscape and vegetation interpretation (integrated with other detection methodologies especially forensic archaeology). *Deposition Site Examination:* estimation of minimum time period at deposition scene (potentially integrated with forensic entomology). Assessment of points of entry and physical damage of vegetation as a means of determining the potential course of events. Retrieval of botanical data and exhibits for comparison with evidences from associated scenes. *Vegetation fragment identification:* the identification of vegetation fragments is a useful tool to link suspects to crime scenes and/or victims. Vegetation fragment data can be integrated with pollen, soil and entomological data as a means of determining unknown localities. Examination of digestive tract contents can identify potential toxic plants and last meal eaten.

Museum Curation: I was the honorary curator of the Linnaean (LINN) and J.E. Smith (LINN-HS) herbariums at the Linnean Society of London. The Linnaean herbarium is the historical and intellectual basis of modern botany. During my time at the Natural History Museum (BM), I managed the following herbariums:

- The herbarium of Sir Hans Sloane, one of the most important surviving elements of the foundational collections of the British Museum.
- The 'Linnaean' herbariums of Paul Hermann, George Clifford and John Clayton
- The British and Irish Herbarium, the most comprehensive and the largest collection of flowering plants (and some conifers) from the Britain and Ireland, comprising 620,000 specimens.

History of botany: 17th and 18th century botanical science. Especially, the herbarium and botanical works of Carl Linnaeus; the early modern history of the development of botanic gardens (particularly the one at Fulham Palace, the former seat of the Bishops of London) in northern Europe and the life and work of Rev. Adam Buddle.

British and Irish Botany: I use my knowledge of our plant-life for a wide range of activities, including

- Research and fieldwork interests include collecting and documenting the non-native flora of Greater London and the Isles of Scilly.
- The impact of climate change upon phenological events and the distribution of British and Irish flowering plants
- Aspects of botanical nomenclature, particularly typification.
- Advisory role and/or consultancy on UK Invasive Non-native Species issues, including: the London Invasive Species Initiative, the GB Non-native Species Secretariat and the Defra-led Biocontrol Steering Group

Mycology: Field mycology (the study of fungi) in the London area and the systematics and identification of Peronosporomycetes (oomycetes or water moulds).

PEER REVIEWED ARTICLES

Booy, O., Mill, A.C., Roy, H., & al. (2017) Risk management to prioritise the eradication of new and emerging invasive non-native species. *Biological Invasions* **19**: 2401–2417.

Brown, J.M., Brummitt, R.K., **Spencer, M.A.** & Carine, M.A. (2009) Disentangling the bindweeds: hybridization and taxonomic diversity in British *Calystegia* (Convolvulaceae) *Bot. J. Linn. Soc.* **160** (4): 388-401.

Compton, J.A., Culham, A. & **Spencer, M.A.** (2008). Typification of the names of *Cyclamen hederifolium* Aiton, *C. coum* Miller, *C. orbiculatum* Miller, *C. persicum* Miller, *C. purpurascens* Miller and *C. vernale* Miller (Myrsinaceae). *Cyclamen*: 75-83.

Calvo, J., **Spencer, M.A.** & Aedo, C. (2014) Proposal to conserve the name *Senecio macrophyllus* against *S. orientalis* (Compositae). *Taxon* **63**(6): 1377-1378.

Calvo, J., **Spencer, M.A.** & Aedo, C. (2014) Lectotypification of names of Eurasian African *Senecio* (Compositae). *Taxon* **63**(2): 423-426.

Grundmann, M., Rumsey, F.J., Ansell, S.W., Russell, S.J., Darwin, S.C., Vogel, J.C., **Spencer, M.A.**, Squirrell, J., Hollingsworth, P.M., Ortiz, S. & Schneider, H. (2009). Phylogeny and taxonomy of the bluebell genus *Hyacinthoides*, Asparagaceae [Hyacinthaceae]. *Taxon* **59**(1): 68-82.

Jarvis, C.E., Reduron, J.-P., **Spencer, M.A.** & Cafferty, S. (eds) (2006). Typification of Linnaean plant names in Apiaceae. *Taxon* **55**(1): 207-216.

Jarvis, C.E., **Spencer, M.A.** & Cafferty, S. (eds) (2005). Typification of Linnaean plant names in Ranunculaceae. *Taxon* **54**(2): 467-471.

Johnson, K.G., Brooks, S.J., Fenberg, P.B., Glover, A.G., James, K.E., Lister, A.M., Michel, E., **Spencer, M.**, Todd, J.A., Valsami-Jones, E., Young, J.R. & Stewart, J.R. (2011). Climate Change and Biosphere Response: Unlocking the Collections Vault. *BioScience* **61**(2): 147-153.

Jiménez-Mejías, P., Míguez, M., **Spencer, M.A.**, Jarvis, C.E. & Martín-Bravo, S. (2017) Typification of 18th Century names in *Carex* sect. *Rhynchocystis* (Cyperaceae): *Carex pendula* and allies. *Taxon* **66**(4): 973-975.

Lister, A.M. & Climate Change Research Group (2011). Natural history collections as sources of long-term datasets. *Trends in Ecology and Evolution* **26**: 153–154.

Martínez-Azorín, M., Crespo, M. B. & **Spencer, M.** (2006). Typification of names of taxa in *Orithogalum* L. subg. *Cathissa* (Salisb.) Baker (Hyacinthaceae). *Taxon* **55**(4): 1014-1018.

McMillan, P.D., Blackwell, A.H., Blackwell, C. and **Spencer, M.A.** (2013). The vascular plants in the Mark Catesby collection at the Sloane Herbarium, with notes on their taxonomic and ecological significance. *Phytoneuron* 7: 1–37.

Monro, A. & **Spencer, M.A.** (2005). Typification of Linnaean plant names in Urticaceae. *Taxon* **54**(3): 796-798.

Mosyakin, S.L. & **Spencer M.A.** (2017) Typification of the Linnaean name *Corispermum squarrosum*, with notes on *C. hyssopifolium* and nomenclatural implications for *Agriophyllum* (Chenopodiaceae: Corispermeae). *Phytotaxa* 329 (3): 212-222.

Rogers, Z.S. & **Spencer, M.A.** (2006). Typification of plant names in Thymelaeaceae published by Linnaeus and Linnaeus filius. *Taxon* **55**(2): 483-488.

Rumsey, F.J. & **Spencer, M.** (2012). *Is Equisetum ramosissimum* (Equisetaceae: Equisetophyta) Native to the British Isles? *Fern Gazette* **19**(2):37-46.

Rumsey, F.J, Crouch, H.J., Lansdown, R.V. & **Spencer, M.A.** (2019). Pedunculate Club-rush *Bolboschoenus laticarpus* (Cyperaceae) – an overlooked native or a spreading neophyte? *British and Irish Botany* **1** (2): 91-106.

Skilbeck, C.A., Lynch, I., Ellenby, M. & **Spencer, M.A.** (2019) Achene Morphology of British and Irish Mayweeds and Chamomiles: implications for taxonomy and identification. *British and Irish Botany* **1** (2): 128-166.

Spencer, M.A. (2021) Forensic botany: time to embrace natural history collections, large scale environmental data and environmental DNA. *Emerg Top Life Sci* 24; **5** (3): 475–485. doi: <https://doi.org/10.1042/ETLS20200329>

Spencer, M.A., Irvine, L.M. & Jarvis, C.E. (2009). Typification of Linnaean names relevant to algal nomenclature. *Taxon* **58**(1): 237-260.

Spencer, M.A., Vick, M.C. & Dick, M.W. (2002). Revision of *Aplanopsis*, *Pythiopsis*, and ‘subcentric’ *Achlya* (Saprolegniaceae) species using 18S rDNA and morphological data. *Mycological Research* **106**: 549-560.

Zhu, X., Gopurenko, D., Serrano, M., **Spencer, M.A.**, Pieterse, P.J., Skoneczny D. & al. (2019) Genetic evidence for plural introduction pathways of the invasive weed Paterson’s curse (*Echium plantagineum* L.) to southern Australia. *PLoS ONE* **14**(9): e0222696. <https://doi.org/10.1371/journal.pone.0222696>

BOOK

Spencer, M.A. (2019) *Murder Most Florid*. Quadrille Publishing. 176 pp.

BOOK CHAPTERS

Jarvis, C., **Spencer, M.** & Huxley, R. (2012). Sloane’s plant specimens at the Natural History Museum (with a supplementary account of Sloane’s fossils by C. Delmer). In: Walker, A. & Hunter, M. (eds.), *From Books to Bezoars*. London: British Library.

Spencer, M. A. & Dick, M. W. (2002). *Aspects of graminicolous downy mildew biology: perspectives for tropical plant pathology and Peronosporomycetes phylogeny*. In: Watling, R. et al. *Tropical Mycology*, Vol. 2, *Micromycetes*. CABI Publishing, Wallingford, UK. pp. 63-81.

Spencer, M.A. (2016) Natural history collections and connecting people with the reality of environmental change. *In: Lebas, C., Field Studies: Walking Through Landscapes and Archives*. Amsterdam: Fw:Books.

Spencer, M.A. (2020) Discovering and Mapping Urban Plants. *In: Gandy, M. & Jaspar, S. The Botanical City*. Berlin: Jovis.

NON-PEER REVIEWED PUBLICATIONS

Bailey, J.P. & **Spencer, M.** (2003). New records for *Fallopia x conollyana*: Is it truly such a rarity? *Watsonia* **24**(3): 452-453.

Spencer, M.A. (2005). Descriptions of Fungi and Bacteria: set 160 (1591-1599). CABI Bioscience. Egham.

Spencer, M.A. (2006). A brief gallivant through European and Middle Eastern botanical science. *Endeavour* **30**(2): 43-44.

Spencer, M.A. & David, J. (2006). *Egeria densa* (Large-flowered Waterweed) - in flower in Surrey. *BSBI News* **101**: 39.

Spencer, M.A. (2008). News from the NHM. *BSBI Recorder* **12**: 27.

Spencer, M.A. (2008). *London's changing vegetation*. *In: Burgess, M. (ed.) London's Changing Natural History: classic papers from 150 years of the London Natural History Society*. pp. 111-112.

Spencer, M.A. (2008). Botany Report for 2007. *London Naturalist* **87**: 175-191.

Spencer, M.A. (2019) *Murder Most Florid*. Quadrille Publishing Ltd, London