

Forensic Entomology:

Teaching and Focused Research in the UK. What's on Offer From a Prospective Student's View Point.

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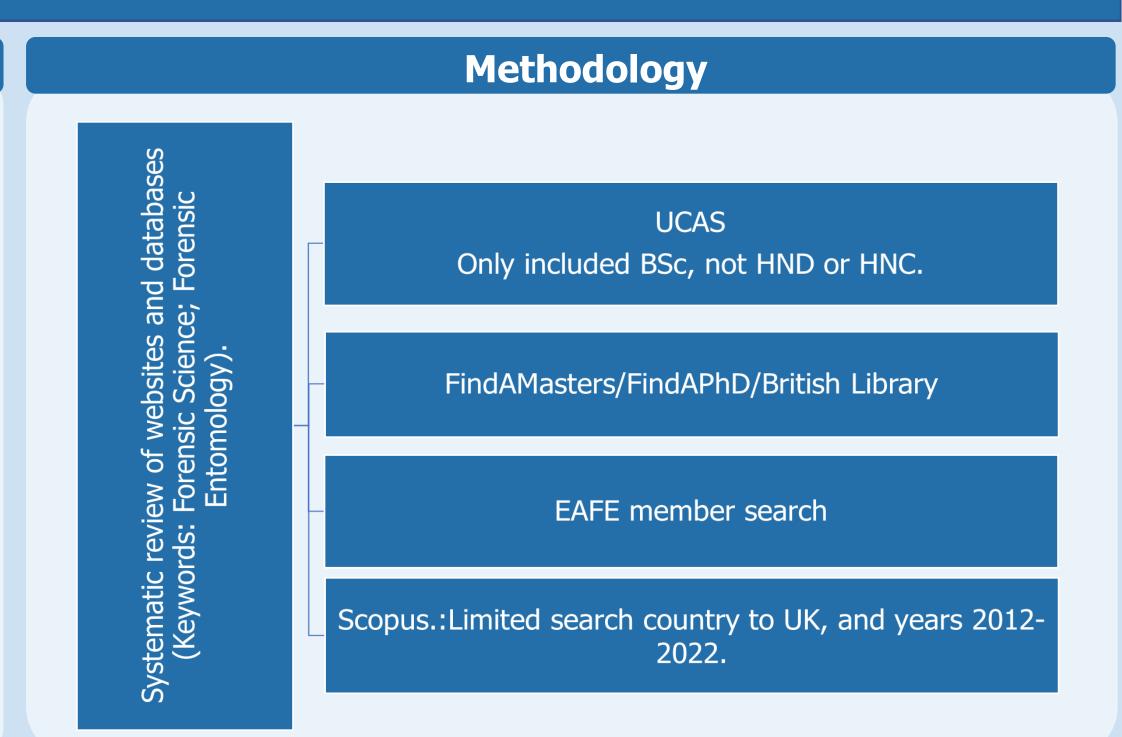


Introduction

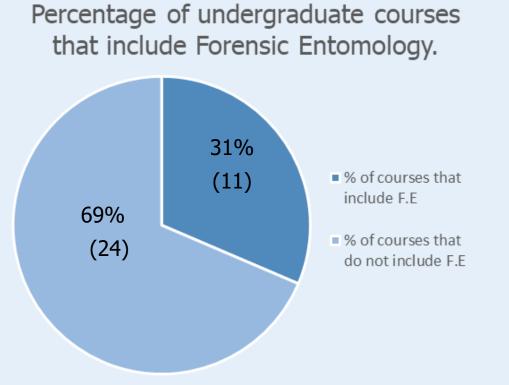
Forensic entomology is a field of forensic science which involves the scientific study of insects and other arthropods in a legal context, this can include using the insects to help:

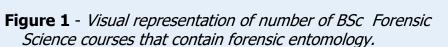
- Provide an estimation of the post-mortem interval (PMI), or the minimum amount of time that has that has elapsed between insect colonisation and when the body was discovered (PMI_{min}) (Amendt et al., 2004; Villet et al., 2010).
- Victim identification (de Lourdes Chávez-Briones et al., 2013).
- Both human and animal neglect where the victims can be both alive or deceased (Benecke and Lessig, 2001; McGarry et al., 2018).
- Detect drugs in decomposing tissues (Carvalho et al., 2001).

While forensic entomology is a small and niche part of forensic science it is a vital part none the less, and should be delivered as such on a Forensic Science course. This pilot study aimed to give a brief overview of the teaching and research into Forensic Entomology within the UK, from a prospective student's point of view. Both undergraduate and postgraduate courses were reviewed and evaluated, as well as any available data on current UK registered forensic entomologists was gathered. It also looked at completed PhD's and any published journal articles again with a entomological focus.



Results





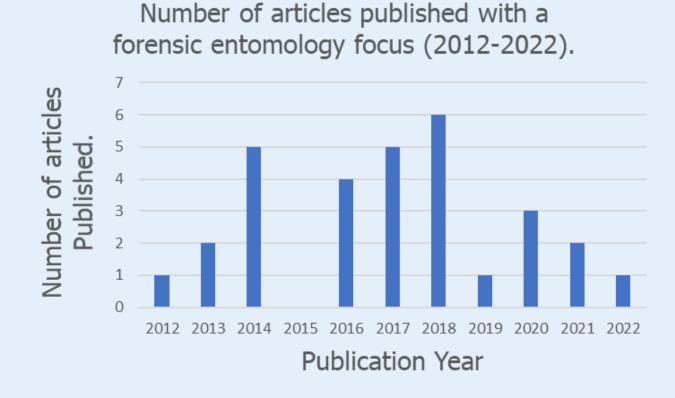


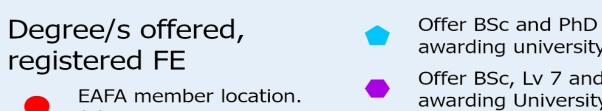
Figure 2 - *Number of journal articles published yearly, of the 29* published within the last 10 years in the UK.

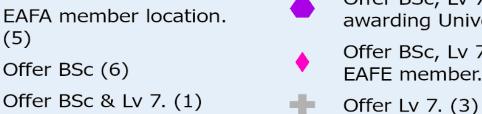
Table 1 - Forensic Entomology based Thesis titles.

Thesis Title	Year
A framework of morphological and molecular methods for the analysis and interpretation of entomological remains from archaeological and forensic contexts.	2020
Non-invasive approaches to morphological and molecular identification of insects from museum, archaeo-funerary and forensic contexts.	2019
Development of Standard Operating Procedures for the detection of Volatile Organic Compounds associated with the decomposition process.	2019
Soil mites as forensic markers of decomposition of corpses and carcasses.	2019
The study and application of underwater decomposition from an entomological perspective for the purpose of post-mortem interval estimation	2019
Documentation of the body transformations during the decomposition process: from the crime scene to the laboratory.	2018
Chemical and morphological investigations of the ontogenetic effects of Novel Psychoactive Substances on forensically important blowfly species (Diptera: Calliphoridae).	2018
Post-feeding larvae dispersal of forensically important UK blow flies.	2018
Megaselia scalaris (Diptera: Phoridae), a fly of forensic interest: advances in chronobiology and biology.	2015
Development of blowflies (Diptera: Calliphoridae) on pig and human cadavers: implications for forensic entomology casework.	2014
The effect of nicotine on carrion feeding insects with considerations for use within forensic sciences.	2014
A molecular study of contemporary and museum Calliphoridae of forensic importance.	2013
Analysis of cuticular hydrocarbons in forensically important blowflies using mass spectrometry and its application in Post Mortem Interval estimations.	2013

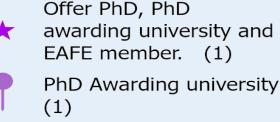
7 Masters (L7) qualifications on offer within the UK. 1 current self-funded pre-Scotland determined advertised PhD offered within the UK. Edinburgh 15 registered EAFE members. Newcastle upon Northern Belfast Ireland O Douglas The Pennines Ma...chester Dublin AND Birmingham Wales English Cardiff Channel Celtic Sea Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, 0 30 60 120 km

Legend









PhD Awarding university and EAFA member. (3)

Figure 3 - Visual representation locations of all data that has been looked at during this pilot study.

Discussion/Conclusion

A BSc Forensic Science degree is offered by 35 universities across the United Kingdom, however only 11 which is just under a third currently state that they offer forensic entomology as part of the teaching and learning on the degree. This number drops dramatically for postgraduate learning and research, with only 7 Masters degrees and 1 advertised PhD being offered at the time this research was conducted. Other self funded PhD's may be available upon approaching a university.

It is however, at undergraduate level where the student's interest needs to be created. Student's who are studying on forensic science courses should be made aware of what Forensic Entomology is, what it entails, how insects can be used as evidence and how they can get involved in research within this field.

This lack of an initial introduction at undergraduate level, seems to have a knock-on effect for post graduate research. Less than 7% of Forensic Science research theses produced in the last 10 years have been based on Forensic Entomology. For research in this field to grow the knowledge needs to be gained and developed right from the start of the degree.

Recommendations

Further research (in the form of a questionnaire) is needed to see if any of the other Forensic Science courses on offer in the UK do include any forensic entomology within any modules. Questions should be asked of each university that offer BSc Forensic Science to assess if they do cover forensic entomology and how in depth the coverage of this subject is, in addition if any final year projects have had an entomology subject matter.

References

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