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British Association for Human Identification



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Posted by: anthro on 19/05/2004 10:43 PM

Forensic entomology review

BAHID Review of the Forensic Entomology Special Issue of Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology



Imagine a pdf of 11.8Mb, downloadable to your computer-based library, giving instant access to 59 pages of detailed Forensic Entomology: 12 papers (mostly collaborative) from 30 authors spread across nine countries internationally. Well, it is available. Whether you are a lover of paper and fine books or not, the electronic format is a medium we simply cannot ignore. Electronic media are here, now, to be embraced, probably as the future format of scientific dissemination and hopefully allowing faster access and greater transfer of knowledge and information.

The Forensic Entomology Special Issue of Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology can be accessed and downloaded at: <http://www.geradts.com/anil/ij/indexpapers.html>. The downloadable pdf is suitable to both Mac and PC computers.

This issue currently stands as a unique example of things to come. It examines case histories involving insects, from nine cases, three experiments with surrogate species (pigs or rabbits), one review paper and an interview. Visual interpretation is assisted by the inclusion of high quality colour photographs (including various stages of development of five species of fly and four beetles) black and white

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pictures, graphs and tables.

Entomological evidence can sometimes provide solutions where other medical techniques fail. The most frequent insects used in this way are blowflies (family Calliphoridae), but in cases of longer exposure Histid, Clerid and Dermestid beetles and Tineid moths are of increasing importance. Calliphorid flies can reach vast numbers: one surrogate experiment recorded the rearing of 1730 individual Calliphora vicina flies from only 208g (fresh weight) of pork! In contrast, only 350 Sacrophaga africa flies (family Sacrophagidae) were reared from 253g (fresh weight) of pork.

The several case histories are well presented and highlight the need for greater experimental research outside of Europe and the USA, especially since conditions are frequently not comparable, even if the species are similar. For readers who do not know what the insects that are mentioned in the papers look like, the colour pictures are very crisp and detailed – well worth downloading the file purely to see these. Cessation of conscriptive military service in Argentina was a rather unusual consequence of one of the cases reported on.

A detail, which is perhaps normally overlooked, although it may turn out to be of little consequence in most cases, is the gnawing and scavenging by *bleep*roaches, ants, rodents and lizards and the parasitism of fly larvae and pupae by parasitic wasps. This is mentioned in two of the case histories, but its relevance in terms of change in body mass, is not well understood. There is at least one historic account in which Entomological evidence concerning ant or *bleep*roach bites has prevented the miscarriage of justice. One case report mentions the considerable removal of victim biomass by ants. Clearly more research is needed on these issues.

Other important concerns arise from the papers included in this special issue, the most pertinent of which is that Entomologist should be called to the crime scene as early into the case as is possible, once it is realised that insects are involved. Furthermore, adequate data needs to be provided. If this does not happen, important evidence is quickly lost through the inadequate treatment and storage of specimens, or through inaccurate solutions being arrived at though deficient information in the first place. Such inadequacies amount to negligence of a sort that would not normally be allowed with ballistic or DNA evidence, for instance.

Another important point is that drugs used by the victim prior to death, whether they be of a medicinal or a narcotic nature, or taken into the victim's body through high exposure (e.g. organo-phosphate insecticides or fertilisers) can have a retarding effect on PMI of as long as 18 hours in some instances. This is an

important issue often overlooked by both defence and prosecution. High Performance Liquid Chromatography (HPLC) was used in one report to analyse the presence of the insecticide Parathion in fly larvae and found to be a highly sensitive means of assessment.

The issue ends on a very human note, with an interview of Madison Lee Goff, author of *A Fly for the Prosecution*. This slightly humorous insight into the life of a Forensic Entomologist ends on a sobering word about the proper role of a Forensic Entomologist in legal cases.

Occasional formatting and typographical errors besides, there are rather few criticisms to be levelled at this excellent production and we can only hope to see more of the same standard in the future. One curiosity does stand out however, and that is the use of an arachnid (spider) for the logo, rather than a diagrammatic rendering of some well known forensic insect. A small matter, to be sure.

A review of a special issue such as this cannot deny the existence of the parent journal and it is at this point that I would like to congratulate Professor Aggrawal on a superb internet journal, not only for setting high standards, but also for penetrating to the very core of interesting topics. Of course, such views are biased because I am a firm supporter of electronic journals, but then again the accolade would still be appropriate if this was a printed journal.

Lastly, I would like to conclude by saying how greatly this work is to be applauded and how valuable the enthusiasm, hard work and willingness of the editorial team is to the readers. The Guest editor, Mark Benecke, is to be complimented on a superb array of entomological papers, excellently edited into a readable set. It is repeatedly the case that electronic journals appear more readily available to authors globally, enabling authors anywhere in the world to publish and read high quality research seemingly denied to at least some of them though printed literature, perhaps because of high subscription manuscript and postage rates. There is a lesson inherent in this for prospective electronic journals. It is a pleasure therefore, to welcome electronic journals, editors, authors and readers everywhere.

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