



## Pathology & Biology Section – 2004

### G68 Evidence for Neglect of Children and Elderly Persons by Use of Forensic Entomology

Mark Benecke, PhD, MSc\*, International Forensic Research & Consulting, Postfach 250411 Cologne, NRW 50520, Germany

After attending this presentation, attendees will recognize and collect evidence in severe cases of neglect, understand how to interpret the evidence, and the importance of the actual scene where the body was found, not only the state at the Institute of Legal Medicine.

This presentation will impact the forensic community and/or humanity by demonstrating forensic entomology in difficult cases: Insects on living persons — investigation however after death of persons.

Wounds of living persons are a potential target for the same flies that live, or feed early on corpses. This can lead both to complications in estimation of PMI (post mortem interval), or to additional information that might be valuable in a trial, or during the investigations. With forensic entomology, and forensic entomologists being more and more present, even lower profile cases like the neglect of elderly people (without violence being used against them (i.e., natural death), and neglect of children comes to our attention. Furthermore, much more people grow older than in the past years which leads to increased awareness of malpractice of caregivers in the professional, and personal environment.

Case 1: Elderly women found dead in October 2002 in her 3rd floor apartment in urban Cologne, Germany. Apartment was very clean except of the bathroom in which a bathtub had been filled with water, and clothing. Exclusively dead adult flies of the species *Muscina stabulans* FALLÉN were found spread on the floor; no blow flies in the zoological sense of the meaning were present in any live stage. Calculation of PMI led to an interval of around three weeks. This would have been a misconduct of the paid professional care giver who was supposed to check for the woman every week.

The caregiver claimed that she had called the woman ca. two weeks ago to check on her; the now dead woman allegedly rejected a visit. This possibility could not be ruled out since the old woman was known to be healthy, yet mentally unstable and behaving “difficult” against everybody.

In clear contrast to the entomological findings, it was assumed that the caregiver tried her best; no prosecution followed.

Case 2: In September 2002, an old woman was found dead in her apartment in an urbanized town in western Germany. Her foot was wrapped in a plastic bag; inside, numerous larvae of *Lucilia sericata* were found. The caregiver openly stated that “it was well possible that the foot of the person was wrapped in a plastic bag, and that maggots may have been present inside during the lifetime of the woman.”

The age of the maggots was estimated as four days (4x 24 hrs). However, judging from the deep tissue loss at the foot, it was discussed that most likely, the maggots had been feeding on the living woman for at least a week whilst she was still alive but then left the bag to pupate elsewhere. The apartment could not be checked for pupae, however.

Case 3: In March 2002, the corpse of an old woman found in her apartment in an urban apartment in a western German town. The apartment was not cleaned up, and on the actual corpse, the following insects were found: Larval *Fannia canicularis* flies, larval *Muscina stabulans* flies, and adult *Dermestes lardarius* beetles. These insects are known to build up populations inside of human housings but *Fannia* frequently hints towards the presence of feces, and urine in cases of neglect. In this case, further evidence for this possibility was found in the fact that the skin of the corpse was not fed on by the larvae. Pupae (of an unknown species) were reported but not collected. The son of the woman who was convicted of misconduct of taking care of his mother. It remained however unclear if the insects had inflicted pain on the woman or not.

Case 4: On the skin surface under the diaper (anal-genital area), third instar larvae of the false stable fly *Muscina stabulans* FALLÉN, and the lesser house fly *Fannia canicularis* L. were found. *F. canicularis* adults are attracted to both feces and urine. From the face, larvae of the bluebottle fly *Calliphora vomitoria* L. were collected. *C. vomitoria* maggots are typical early inhabitants of corpses. From the developmental times of the flies, it was estimated that the anal-genital area of the child had not been cleaned for about 14 days (7-21 day range), and that death occurred only 6-8 days prior to discovery of the body.

Conclusion: From the actual case work, we get the impression that misconduct of elderly people currently becomes a severe problem in our aging societies. From a juridical standpoint, it is – and will be – very difficult to judge if the care giver is guilty of misconduct, or not. Forensic entomology can give important insights into the dynamics, the amount, and the final state of bodily care that was given to the neglected person.

At the same time, forensic entomology helps to excuse care givers who did actually do their duty whilst maggot infestation of a person’s wounds occurred during a normal interval of non-visits.

#### Forensic Entomology, Child Neglect, Neglect of the Elderly