

Forensic entomological study on monkey carcasses submerged in river in tropical rain forest in Malaysia

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This forensic entomological study was conducted to estimate the post mortem interval (PMI) of monkey carcasses submerged in river in a forested area located in Ulu Gombak, Selangor, Malaysia. Monkeys were used as a model for human decomposition. Initially, monkeys were euthanized and the study protocol was approved by IMR's Unit of Animal Care and Use Committee. After death was confirmed, the carcasses were immediately clothed to simulate human cadavers. The carcasses were kept in metal cages and submerged in the river with water temperature of about 20°C. The carcasses were monitored daily until no more larvae and body remains were observed. The decomposition of carcasses underwent 5 stages, namely fresh (3 days), bloating (4 days), decay (1 - 2 days), advanced decay (1 - 2 days) and remains (10 - 12 days onward). No fly activity was observed on the first day. From Day-2 (fresh) to Day-11 (advanced decay), adult flies belonging to Calliphoridae, Muscidae, Sarcophagidae, Lauxaxiidae and Dolichopodidae were observed visiting the carcasses. However, no adult flies visited the carcasses at the remains stage from Day-10 to Day-12 onwards. No maggots were recovered from the carcasses in the first 5 days. On Day-6 (bloating), 2nd instar maggots of *Chrysomya pinguis* (Walker) were recovered. On Day-8 (decay), 3rd instar maggots of *Hemipyrelia* (Townsend) sp. and Sarcophagid were recovered, while on Day-11 (remains), 3rd instar maggots of *Ophyra* (Robineau-Desvoidy) sp. were recovered. This study indicated that PMI was delayed by 4 days on carcasses submerged in flowing river.

