

## RESEARCH NOTE

**Pupation of *Dermatobia hominis* (L. Jr., 1781)  
(Diptera: Cuterebridae)  
Associated with *Sarcodexia lambens* (Wiedmann, 1830)  
(Diptera: Sarcophagidae)**

Uriel Franco Rocha<sup>+</sup>, Júlio Mendes

Departamento de Patologia, Centro de Ciências Biomédicas, Universidade Federal de Uberlândia, Caixa Postal 593, 38400-902 Uberlândia, MG, Brasil

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An extension course on farm animal parasites was conducted under the request of a group of livestock breeders and labourers who, among other subjects, asked to be instructed on the fundamental facts of the life cycle of the cattle grub *Dermatobia hominis* (Linnaeus Junior, 1781). For that purpose an experiment was mounted with adapted equipment available on farms, by means of which 3rd instar larvae collected from skin nodules of *Bos indicus* Linnaeus, 1758 were "cultured" on sterilized soil.

**Regional data** - Rural zone of Cocalzinho, GO, located between 15.5° - 16.0° S and between 49.0° - 49.5° W, 1.185 m above sea level. Air temperature kept between the minimum 8°C and the maximum 27°C and air relative humidity around 69% during the observation period.

**Sterilized soil** - 600 g of soil was laid on a newspaper sheet in a baking aluminum pan (60 cm x 30 cm x 4 cm) and put in a domestic gas-oven set at its maximum temperature. After 90 min the paper borders not covered by soil were charred black and the protected part became dark brown, while the soil sample was reduced from 600 g to 523 g, so it was concluded to be sterilized. It was divided in three sub-samples seemingly equal, each of which was put into a clean cylindrical glass-pot. Each of these received 45 ml of filtered water.

**Collection of grubs from cattle** - Ten grubs

were pressed out of their individual skin nodules into each of the three glass pots and upon the humid soil substract they contained. That was done while the zebuine hosts were restrained in a body compressing chute. Some exudate dropped on top of the soil with each larva thus collected. The pots were kept open during about 12 hr on a stable bench in order the cattlemen could observe the larvae burrowing into the soil; the pots were then closed on the top by a folded newspaper sheet tied in place with a piece of string.

***Sarcodexia lambens* (Wiedemann, 1830), adult flies** - On the 20th and 21st days after the collection of *D. hominis* grubs, 13 adults flies identified as *S. lambens* were seen inside pots no. 1 and 3 (Table). No evidence of *Sarcodexia* invasion was found in pot 2. Two adult flies did not emerge from the 15 puparia recovered or were subject to some predatory organism (Table).

***D. hominis* adult flies** - From the 32nd to the 35th day after their collection directly over humid soil substract, at least 50% of the larvae had developed into adult flies in the three pots (Table). After passing the soil through a sieve there were found in the first pot, besides *S. lambens* and *D. hominis* remains, a kind of silken cocoon containing chitinous debris and two larvae had disappeared. In the 3rd pot were detected the presence of the "small common red home ant" (probably *Myrmex* sp.) and one corroded abdomen from female adult fly (Table).

It seems obvious that *S. lambens* larvae were laid in two of the pots while these were kept open in order the cattlemen could observe *D. hominis* larvae burrowing into the substract containing some of the host's skin exudate that may have attracted the sarcophagid fly. It is possible that only one *S. lambens* female flew unnoticed in and out of two of the three pots leaving there a few of its tiny 1st instar larvae. These may have fed later on the exudate and eventually on leftovers from *D. hominis* and even from *S. lambens*, specially from immature specimens dying and decaying without reaching the adult stage. The opportunism herein pointed out as one of *S. lambens*'s behavioral features had not been described in Brazil, but its aptitude of developing within organic material from animal origin has been mentioned in this country (MJM Ferreira 1979 *Rev Bras Biol* 39: 773-781, J Mendes & AX Linhares 1993 *Rev bras Ent* 37: 355-364, JM d'Almeida 1984 *Mem Inst Oswaldo Cruz* 79: 413-417). This species is included among the synbovin Diptera by GP Oliveira (1986 *Arq Biol Tecnol* 29: 211-324), who did not find this species carrying *D. hominis* eggs and did not include it among species that breed in bovine feces (GP Oliveira et al. 1993 *An 45 Reun SBPC*).

<sup>+</sup>Corresponding author. Fax: 55-34-218.2333

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The present study shows that the adopted crude methodology, besides being cheap and easy to employ, is adequate for the obtention of *D. hominis* adult flies under field conditions. It is recom-

mended that the pots with soil substract be closed immediately after the larvae are directly collected into them, to avoid penetration of other arthropods, among them *S. lambens*.

TABLE  
Pupation of *Dermatobia* larvae associated with *Sarcodexia lambens*

Pot. no.	<i>Dermatobia hominis</i>						<i>Sarcodexia lambens</i>		
	3rd instar larvae	Emerged flies	Empty puparia	Dead larvae	Sterile pupae	Lost larvae	Adult flies male	female	Empty puparia
1	10	3	4	3	1	2	4	4	9
2	10	7	7	2	1	-	-	-	-
3	10	5 <sup>a</sup>	5	4	1	-	2	3	6
Total	30	15	16	9	3	2	6	7	15

a: one female fly was partially destroyed by predatory ants (probably *Myrmex* sp.)