

## Notes on the biology of *Holoplagia lucifuga* (LOEW) (Diptera: Scatopsidae)

[Anmerkungen zur Biologie von *Holoplagia lucifuga* (LOEW) (Diptera: Scatopsidae)]

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<b>Abstract</b>	<i>Holoplagia lucifuga</i> (LOEW, 1870) is reported from three locations in the federal states of Berlin and Brandenburg, Germany. All life stages of this scatopsid were found in accumulations of rotten wood caused by the arboreal ant <i>Lasius brunneus</i> (LATREILLE, 1798). The pre-imaginal stages of <i>H. lucifuga</i> are described. Data on sex ratio, imaginal walking speed and parasitization by the nematode <i>Scatonema wuelkeri</i> BOVIEN, 1932 are given. The synoecious socialisation of <i>H. lucifuga</i> with <i>L. brunneus</i> is described. Myrmecophily within the genus <i>Holoplagia</i> ENDERLEIN, 1912 is discussed. <i>Holoplagia bullata</i> (EDWARDS, 1925) is recorded from Germany for the first time.
<b>Key words</b>	Scatopsidae, <i>Holoplagia</i> , Palaearctic Region, Germany, pre-imaginal stages, biology, myrmecophily, parasitism, <i>Scatonema wuelkeri</i> , new records, first record
<b>Zusammenfassung</b>	<i>Holoplagia lucifuga</i> (LOEW, 1870) wird von drei Fundorten in den Bundesländern Berlin und Brandenburg gemeldet. Alle Stadien dieser Scatopsiden-Art wurden in Mulm-Ansammlungen gefunden, die von der arborealen Ameise <i>Lasius brunneus</i> (LATREILLE, 1798) verursacht wurden. Die Präimaginalstadien von <i>H. lucifuga</i> werden beschrieben und Angaben zum Geschlechterverhältnis, zur Laufgeschwindigkeit der Imagines sowie zur Parasitierung mit dem Nematoden <i>Scatonema wuelkeri</i> BOVIEN, 1932 gemacht. Die synöke Vergesellschaftung von <i>H. lucifuga</i> mit <i>L. brunneus</i> wird beschrieben. Die Myrmecophilie innerhalb der Gattung <i>Holoplagia</i> ENDERLEIN, 1912 wird diskutiert. <i>Holoplagia bullata</i> (EDWARDS, 1925) wird erstmals für Deutschland nachgewiesen.
<b>Stichwörter</b>	Scatopsidae, <i>Holoplagia</i> , paläarktische Region, Deutschland, Präimaginalstadien, Biologie, Myrmecophilie, Parasitismus, <i>Scatonema wuelkeri</i> , neue Nachweise, Erstnachweis

### Introduction

The Scatopsidae includes approximately 350 described species (ZIEGLER 2003), and thus is one of the smaller families of the “Nematocera”. The genus *Holoplagia* ENDERLEIN, 1912, which contains eleven species, belongs to this family. Four of these species have a Palaearctic distribution and seven species occur in other zoogeographic regions. *Holoplagia* is characterised by the combination of: cross-vein between radial radius  $R_{4+5}$  and medial radius  $M_1$ , the stout thorax, and wings which are densely covered with microtrichia. The imago of *Holoplagia lucifuga* (LOEW, 1870) is completely black and approximately 1.8 mm long (Fig. 3). Females of *H. lucifuga* possess a convexity on the wing apex between medial radii  $M_1$  and  $M_2$  with a dense microtrichial vestiture (Fig. 4). Due to the low economic importance of scatopsid flies, the biology of most species is practically unknown. Only the pre-imaginal stages of cosmopolitan species like *Coboldia fuscipes* (MEIGEN, 1830) and *Scatopse notata* (LINNAEUS, 1758) are well-known (MORRIS 1918, LYALL 1929, BOVIEN 1935). In *Holoplagia* only the full-grown larva of *H. richardsi* (EDWARDS, 1934) is described (HAENNI & VAILLANT 1994). It is therefore no surprise that little is also known about parasites of Scatopsidae. BOVIEN (1932) discovered the nematode *Scatonema wuelkeri* BOVIEN, 1932 (Tylenchida), which lives in *C. fuscipes*, and