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Louse Flies on Birds of Baja California

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ABSTRACT: Louse flies were collected from 401 birds of 32 species captured in autumn of 1996 in Baja California Sur (México). Only one louse fly species (*Microlynchia pusilla*) was found. It occurred in four of the 164 common ground doves (*Columbina passerina*) collected. This is a new a host species for this louse fly.

Key words: Hippoboscidae, louse flies on birds, *Microlynchia pusilla,* new host record survey.

Little is known on the effects of louse flies on birds (Tella et al., 1995; Tompkins et al., 1996; Saino et al., 1998), and on the host specificity and distribution of louse flies on avian hosts (see Tella et al., 1998a). Herein, we present the results of the first survey for louse flies in different species of birds of Baja California Sur México where there is but a single previous study on louse flies of California quail (*Callipepla californica*) (Llinas and Jiménez, 1996).

The study was conducted in the vicinity of La Paz (Baja California Sur, México; 24°20′N, 110°20′W) between 15 November and 9 December 1996. The study area has sarcocaulescent scrub vegetation, with low precipitation (150.6 mm of rain annually), and with an annual mean temperature between 22.1 and 23.4 C (Rodríguez-Estrella et al., 1998). We attempted to capture as many different bird species as possible for a survey on plasma carotenoids (see Tella et al., 1998b), hematozoa, and ectoparasites in birds. Most bird species were captured by using non-selective mist-nets, so number and diversity of birds sampled reflect the bird community present in the area (for surveys based on point counts, see Rodríguez-Estrella, 1997). However, raptors (Families Cathartidae, Accipitridae, and Falconidae) and waterbirds (Families Threskiornitidae and Charadridae) were selectively captured using baited nets, mist-nets, and bal-chatri traps. Birds were visually examined for louse flies (e.g., Young et al., 1993; Tella et al., 1998a) just after capture by blowing the feathers of the whole body. Although birds were handled during 10–15 min, all flies were detected and captured by hand during the first few minutes of manipulation.

Four hundred one adult birds of 32 species and 15 families were examined for louse flies (Table 1). Only 4 (2%) of 164 common ground doves (*Columbina passerina*) were found parasitized by louse flies. Three birds had one fly and one bird had two flies; all birds were males. None of the other bird species examined by us (Table 1) were parasitized by louse flies. Flies were stored in 70% ethyl alcohol and later identified as *Microlynchia pusilla,* following the descriptions of Bequaert (1955) and Maa (1969). One specimen was deposited at the Entomological Collection of the Centro de Investigaciones Biológicas del Noroeste (La Paz, Baja California Sur, México; accession number CIB 99-I).

The common ground dove is a new host species for *M. pusilla.* The absence of previous records of *M. pusilla* in this species is probably related to the small number of individuals previously examined ($n = 3$; McClure, 1984). Other Hippoboscidae species, e.g., *Crataerina melbae* (Tella et al., 1998a) seem to be closely tied to a host. However, we cannot relate a high host specifity to *M. pusilla.* Although *M. pusilla* is mainly a parasite of the Columbidae, it has been reported on 19 genera of birds (Maa, 1969; McClure, 1984), including five bird species surveyed by us (*C. californica, Zenaida macroura, Zenaida asiatica, Carpodacus mexicanus* and *Passer domesticus*). Moreover, Llinas and

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TABLE 1. Number of sampled birds grouped by species and family.

Family	Species	*n*
Threskiornithidae	*Plegadis chihi*	2
Cathartidae	*Cathartes aura*	13
Charadriidae	*Charadrius semipalmatus*	2
	Calidris mauri	15
Accipitridae	*Parabuteo unicinctus*	2
Falconidae	*Falco sparverius*	68
Phasianidae	*Callipepla californica*	7
Columbidae	*Zenaida macroura*	1
	Zenaida asiatica	2
	Columbina passerina	164
Picidae	*Melanerpes uropygialis*	4
	Colaptes auratus	1
	Picoides scalaris	1
Tyrannidae	*Pyrocephalus rubinus*	1
	Empidonax difficilis	1
Troglodytidae	*Campylorhynchus brunneicapillus*	13
Muscicapidae	*Polioptila melanura*	1
	Catharus guttatus	1
Mimidae	*Toxostoma cinereum*	2
	Mimus polyglottos	1
Emberizidae	*Pheucticus ludovicianus*	1
	Cardinalis cardinalis	3
	Cardinalis sinuatus	5
	Pipilo chlorurus	5
	Pipilo fuscus	1
	Chondestes grammacus	15
	Zonotrichia leucophrys	52
	Spizella breweri	3
	Vermivora celata	4
	Geothlypis trichas	1
Fringillidae	*Carpodacus mexicanus*	4
Passeridae	*Passer domesticus*	6

Jiménez (1996) reported *M. pusilla* on 30% ($n = 30$) of California quail captured from November–December 1992 in our study area.

The overall prevalence of louse flies reported in this study (1%, $n = 401$ birds) is much lower than in other studies (e.g., 19%, $n = 301$, Whitman and Wilson, 1992; 17%, $n = 382$, Young et al., 1993; 57%, $n = 364$, Tella et al., 1998a). McClure (1984) found 4% of birds captured in November–December ($n = 3{,}946$) infected by louse flies in southern California, this prevalence being significantly higher than the reported by us (χ^2 with Yates correction = 6.71, 1 df, $P < 0.01$). These differences may be attributed to the composition of each bird community, to the bird species captured, and/or to the climatic conditions of each study area, since weather influences the abundance of louse flies (Young et al., 1993; Senar et al., 1994).

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