

SURVEY OF LICE (MALLOPHAGA) AND SOME REMARKS ON THEIR LIFE CYCLES ON BIRDS AT BALBINA, AMAZONAS, BRAZIL

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RESUMO

Levantamento dos Malófagos e Notas Sobre sua Condição de Reprodução em Aves de Balbina, Amazonas, Brasil

Lista de malófagos, seus sexos e seus hospedeiros. Relato sobre a reprodução de malófagos em *Catharus fuscescens* (Turdidae) em abril, quando as aves estão retornando para a América do Norte para a reprodução.

Palavras-chave: Levantamento, malófagos, aves, reprodução.

ABSTRACT

List of lice (Mallophaga) with sex, age status and their bird hosts. Reproduction of lice was recorded in *Catharus fuscescens* (Turdidae) in April, when it is returning to North America to breed, and in several Brazilian species before post breeding molt.

Key words: Survey, Mallophaga, birds, reproduction.

INTRODUCTION

The birds of Balbina, Amazonas were studied in 1985 by Willis and Oniki (1988). On that occasion, birds were observed with binoculars, but some were mist-netted for data on weight, cloacal temperature, measurements and study of plumage (Oniki 1986) and collection of ectoparasites such as lice, ticks and chiggers.

Mallophaga of many Brazilian regions have never been surveyed and this is the case for Balbina. The present paper reports on lice found on the birds mist-netted. Breeding status of Mallophaga is related to breeding of birds.

MATERIAL AND METHODS

Birds were mist-netted on 1 and 7 April at the forest near the hydroelectric power plant and, on April 2 and 3, at the clearing between the house and the forest at Vista Alegre, 66 km by river above Balbina.

After collection with ether (method described in Oniki and Emerson, MS), lice were placed in a vial with 70% alcohol. In the laboratory, specimens were cleared and mounted on balsam on slides. The taxonomic order for birds is that of Meyer de Schauensee (1970).

TABLE I
Lice (Mallophaga) from birds at Balbina, Amazonas, Brazil

Bird Species	Lice Species	Immatures			Adults	
		male	female	?	female	male
Columbidae					2	
<i>Geotrygon montana</i>	<i>Hohorstiella corpulenta</i> Carriker, 1963				4	6
	<i>Physconelloides montana</i> Carriker, 1961		1	4	4	1
	<i>Columbicola macroura</i> (Wilson, 1941)	1	2	9	1	1
Alcedinidae					9	2
<i>Chloroceryle aenea</i>	<i>Alcedoffula aeneae</i> Carriker, 1959					
Dendrocolaptidae					1	
<i>Dendrocincla merula</i>	<i>Furnaricola</i> sp.				2	
<i>Glyphorhynchus spirurus</i>	<i>Furnaricola cephalosa</i> Carriker, 1944					
<i>Xiphorhynchus pardalotus</i>	<i>Furnaricola</i> sp.			1		
Furnariidae		2				
<i>Xenops minutus</i>	<i>Furnaricola</i> sp.					
Formicariidae						2
<i>Pithys albifrons</i>	<i>Myrsidea</i> sp.				2	
<i>Hylophylax poecilinota</i>	<i>Myrsidea</i> sp.					
Pipridae					2	1
<i>Pipra serena</i>	<i>Myrsidea</i> sp.					
Tyrannidae				1		
<i>Terenotriccus erythrurus</i>	<i>Myrsidea</i> sp.			3	1	2
<i>Myiobius atricaudus</i>	<i>Myrsidea</i> sp.					
Turdidae		0,3	1,2		3,11	1,3
<i>Catharus fuscescens</i> *	<i>Brueelia</i> sp.					
Parulidae		1,0		1,19	5,0	1,0
<i>Basileuterus rivularis</i> *	<i>Myrsidea</i> sp.					
Coerebidae				1		
<i>Coerebe flaveola</i>	<i>Myrsidea</i> sp.					
Thraupidae				0,6,1	5,0,0	5,0,0
<i>Ramphocelus carbo</i> *	<i>Myrsidea</i> sp.			5		2,0,0
	<i>Ricinus</i> sp.					
Fringillidae			1			
<i>Saltator maximus</i>	<i>Myrsidea</i> sp.			1		
<i>Myospiza aurifrons</i>	<i>Myrsidea</i> sp.					

* Commas separate lice from different host individuals.

RESULTS

Table I presents the birds and the lice species or genus found on them. Sex and immature status are given for lice. Number of lice is for each bird host, otherwise they are separated by a comma.

Except for *Geotrygon montana* (Columbidae) and *Chloroceryle aenea* (Alcedinidae), all birds in Table I are Passeriformes. For *Dendrocincla merula*, *Xiphorhynchus pardalotus*, *Glyphorhynchus spirurus* and *Xenops minutus* I found species of *furnaricola* which were already found in the bird families Dendrocolaptidae and Furnariidae (Carriker 1966). All representatives of Formicariidae, Pipridae, Tyrannidae, Coerebidae, Parulidae, Thraupidae and Fringillidae had species of *Myrsidea*, family Menoponidae. *Catharus fuscescens* (Turdidae) hosted a *Brueelia*, family Philopteridae.

DISCUSSION

Although Carriker (1966) found *Furnaricola* on members of other families of birds, *Furnaricola* in Balbina were on Dendrocolaptidae and Furnariidae. *Furnaricola cephalosa* on *Glyphorhynchus spirurus* were adult females but the *Furnaricola* found on *Xenops minutus* were immature males. *Xiphorhynchus pardalotus* had an immature *Furnaricola*.

Catharus fuscescens, a North American migrant thrush, hosted a species of *Brueelia*, a genus common in Brazilian *Turdus* species. It is interesting that the *Brueelia* found in two individuals of *Catharus fuscescens* were female, male and also immatures, which means they were breeding in April at a period *C. fuscescens* is returning to the United States for breeding. Thus, their lice ectoparasites were breeding before the breeding of their host. The entire life cycle of Mallophaga is short enough

that presence of immatures indicates egg laying within the preceding month or two. Baum (1968) studied the life cycle in *Ricinus ernstlangi* (now *R. elongatus* (Nelson 1972) and found 39 days from egg-laying to the adult stage, including three nymphal instars. Foster (1969) found that there is a correlation between the timing of breeding in *Ricinus picturatus* and *Menacanthus* sp. with the timing of the breeding in their host, the Orange-crowned Warbler, *Vermivora celata*, Parulidae. Although, this type of relationship can be expected, so that Mallophaga have the opportunity to disperse by transferring to fledglings, the subject has not been followed up by other authors.

According to Table I, high numbers of Mallophaga were found in Turdidae and Columbidae. For some reason, it seems that members of the Turdidae carry many lice at any time of the year (pers. observ.). *Geotrygon montana* (Columbidae) also had a high diversity of lice, as 3 species were found in one young bird.

Since *Myrsidea* of South American birds are little studied, some may be new species. It is surprising to find *Myrsidea* in such families as Formicariidae, Pipridae, Tyrannidae, Coerebidae, Parulidae, Thraupidae and Fringillidae. Members of these families host such lice as *Ricinus* and *Philopterus* as well. Some *Myrsidea* found on Tyrannidae (*Myiobius atricaudus* and *Terentotriccus erythurus*), on *Coereba flaveola* (Coerebidae), on *Basileuterus rivularis* (Parulidae) and *Saltator maximus* and *Myospiza aurifrons* (Fringillidae) were immatures. One individual of *Basileuterus rivularis* had a large number (19) of immature *Myrsidea*.

According to Table I in Oniki 1986, most birds captured were molting or about to molt indicating that they were finishing their breeding season. The lice found on them, with immature individuals, indicate that they also were breeding or finishing breeding. Also, such species as *Geotrygon montana*, *Basileuterus rivularis* and *Ramphocelus carbo* were young birds with young and adult lice, corresponding to Foster's (1969) finding that some species of lice do synchronize their breeding to that of their host.

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