

NEW DATA ON THE CHEWING LOUSE FAUNA (PHTHIRAPTERA: AMBLYCERA, ISCHNOCERA) FROM ROMANIA. PART I

COSTICĂ ADAM, ATTILA D. SÁNDOR

Abstract. We present the partial results of our research on the ectoparasitic material collected on different bird species from the Romanian fauna, for 6 years (1996-2002); from the 13 identified chewing louse species, the species *Colpocephalum impressum* Rudow, 1866, *Philopterus fedorenkoae* (Mey, 1983) and *Ph. vernus* (Złotorzycka, 1964) are new mentions for the Romanian entomological fauna. We mention for the second time the presence of *Philopterus reguli* (Denny, 1842) on *Regulus ignicapillus*. For the species *Menacanthus eurysternus* (Burmeister, 1838) and *Ciconiphilus decimfasciatus* (Boisduval et Lacordaire, 1835) new hosts are mentioned in Romania. The species *Philopterus turdi* (Denny, 1842) et *Ph. citrinellae* (Schrank, 1776) were mentioned in Romania before on the same hosts, but under the scientific name *Ph. merulae* and, respectively, *Ph. pyrrhulae*, considered synonyms today.

Résumé. On présente les résultats partiels de la recherche du matériel ectoparasitologique collecté sur différentes espèces d'oiseaux de la faune de Roumanie pendant une période de 6 années (1996-2002). Parmi les 13 espèces de mallophages identifiées, les espèces *Colpocephalum impressum* Rudow, 1866, *Philopterus fedorenkoae* (Mey, 1983) et *Ph. vernus* (Złotorzycka, 1964) sont mentionnées pour la première fois dans la faune de Roumanie. On mentionne pour la deuxième fois la présence de *Philopterus reguli* (Denny, 1842) sur *Regulus ignicapillus*. Pour les espèces *Menacanthus eurysternus* (Burmeister, 1838) et *Ciconiphilus decimfasciatus* (Boisduval et Lacordaire, 1835) on mentionne des hôtes nouveaux en Roumanie. Les espèces *Philopterus turdi* (Denny, 1842) et *Ph. citrinellae* (Schrank, 1776) ont été signalées auparavant en Roumanie sur des mêmes hôtes, mais sur les noms scientifiques *Ph. merulae* et, respectivement, *Ph. pyrrhulae*, considérés aujourd'hui comme synonymes.

Key words: Phthiraptera, chewing lice, birds, Romania, ectoparasites.

In the papers published as yet and deal with the Romanian chewing louse fauna, less than 400 chewing louse species, parasites of birds, were mentioned. Taking into consideration that the Romanian avifauna is estimated to 381 species (including the species occurred accidentally) by Munteanu (2001), the parasitic chewing louse fauna of Romania on birds could be estimated to 750 species, at least. Also, in the Romanian fauna there are still many bird species on which the chewing lice were never collected. Therefore, the probability of finding chewing louse species new to science on these birds is very large. For this reason we emphasize the necessity of continuing the studies on the chewing lice on the birds from the Romanian fauna, and not only from here.

Regarding the ectoparasitic fauna of the Romanian birds we published data in several previous papers (Adam, 2003; Adam & Daróczy, 2003; Petrescu & Adam, 2000, 2001). By this paper we continue the series (Adam, op. cit.; Petrescu & Adam, 2001) in which we present data on the parasitic chewing louse fauna on birds in Romania, also underlining the cases in which we occurred the polyparasitism phenomenon in a host (when on the same host we found species belonging to other ectoparasitic groups besides chewing lice).

MATERIAL AND METHOD

Our material was collected and studied during 10th of March 1996–29th of March 2002. The studied birds originated in 8 Romanian localities (Tab. 1), all of them belonging to wild species and were collected from their natural environment using Japanese nets. After the identification of sex and age the birds were ringed and studied for finding the possible parasitic arthropods. The investigation was made moving slightly the feathers on the head, neck and body of the bird, collecting every parasite, and then estimating the number of acarids from the primary remiges. The material was preserved in 80% ethylic alcohol. A number of 340 birds belonging to 41 species were studied, the chewing lice being found only on 22 birds (14 adults, 6 immatures and 2 juveniles) belonging to 11 species. Along the years, a material which belonged to other ectoparasitic groups, as some species of Acari and Diptera (Hippoboscidae, Carnidae), was collected together with the chewing lice, some results being presented in other papers (Adam & Daróczy, op. cit.; Petrescu & Adam, 2000).

In order to identify the specimens, a part of the collected material was mounted in Canadian balm, using the classical technics. The rest of the was preserved in 80% alcohol. The identification of the specimens was made using the microscope “Carl Zeiss” (augmentation: 40X, 100X and 200X), and the following bibliography: Zlotrzycka (1977), Price et al. (2003), Price & Beer (1963), Ségy (1944) and Bechet (1962). The scientific names of the chewing lice used in this paper are according to the chewing louse list published by Price et al. (op. cit.).

Table 1 presents the host species, collecting data, the list of the collected chewing lice and the number of the collected species.

RESULTS AND DISCUSSIONS

From the collected material 116 chewing louse specimens were identified. Later on, it was established that these specimens belong to 7 genera and 13 species. From the 116 collected specimens, 44 are females (37.93%), 16 males (13.79%) and 56 larvae (48.27%). In the statistical estimation made by us we did not take into consideration the birds without parasites.

From the chewing lice collected by us, a small number (13.79%) belonged to the suborder Amblycera, the best represented being the genus *Menacanthus* (10 specimens, a single species), and the rest (86.21%) belonged to the suborder Ischnocera, the best represented being the genus *Philopterus* (77 specimens, 6 species).

As regards the diversity of the chewing louse species found on the birds of the studied groups, most of the species were found on the representatives of the families Turdidae (4), Sylviidae (2) and Sittidae (2) (between brackets we specified the number of the found chewing louse species). But if we make a ratio between the number of the chewing louse species found in every bird family and the number of species of the respective family to which the studied individuals belong we observe that the largest diversity of the found chewing louse species is in the representatives of the families Turdidae and Sittidae, where we found 2 chewing louse species on one individual for each of the species *Turdus merula*, *T. viscivorus* (Turdidae) and *Sitta europaea* (Sittidae) (Fig. 1).

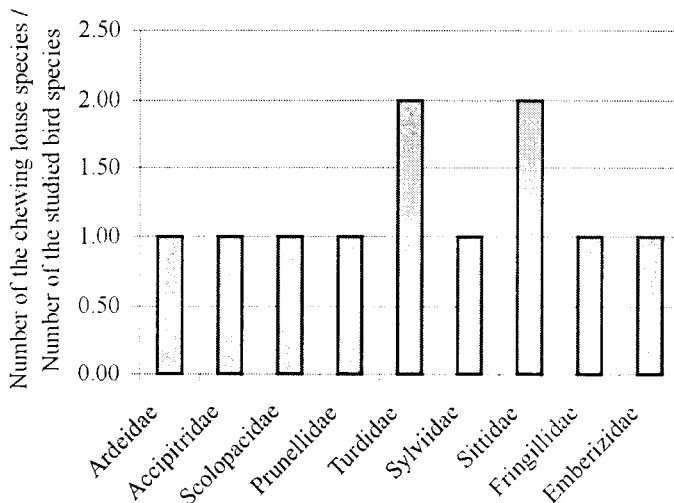


Fig. 1 – Diversity of the chewing louse species collected from the 9 bird families

If we refer to the chewing louse infestation degree, we can assert that the birds were slightly infested. This thing is explained by that the host birds were caught in their natural environment for being ringed. This thing demonstrates that they were healthy and vigorous. Most of the chewing lice were found on the following birds (between brackets it is written the number of the chewing lice found on the respective bird): an adult male of *Prunella modularis* (19) and an adult of *Turdus merula* (17) (Tab. 1). But this number of chewing lice also shows a weak infestation. Healthy birds are consistent in making their own toilet, thus controlling chewing louse populations on their body. Further on, if we refer to the birds groups on whose representatives the material was collected and make a ratio between the collected chewing louse number and the number of the studied birds, we can observe that the highest degree of infestation with chewing lice is in the representatives of the families Prunellidae, Turdidae and Sittidae (Fig. 2).

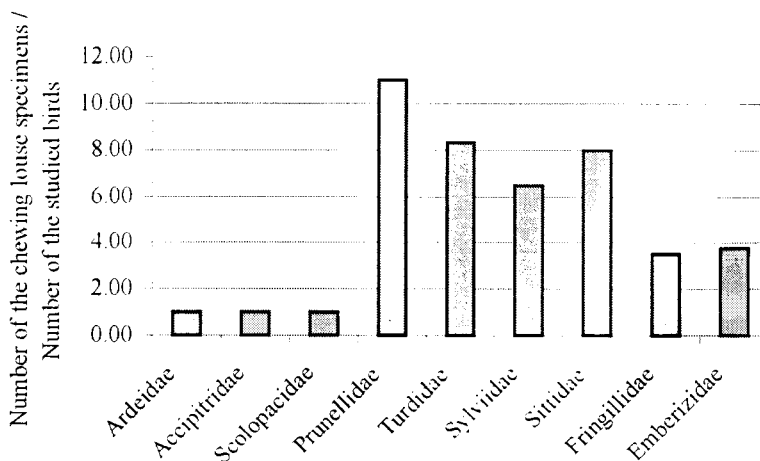


Fig. 2 – Infestation degree with chewing lice in the studied bird groups

Table 1

New data on the chewing louse fauna (Phthiraptera: Amblycera, Ischnocera) from Romania. Part I

Hosts		Parasites					
Species	Number	Collecting data	Species	Number of specimens			
				♀♀	♂♂	Nymphs	Total
<i>Nycticorax nycticorax</i>	1 juvenile	Miheșu de Câmpie (Mureș) 13.07.1996 Leg.: Attila D. Sándor	<i>Cicconiphilus decimfasciatus</i> (Boisduval et Lacordaire, 1835)	1	0	0	1
<i>Aquila pomarina</i>	1 adult	Mureșeni (Mureș) 23.07.1999 Leg.: Attila D. Sándor	<i>Colprocephalum impressum</i> Rudow, 1866	0	1	0	1
<i>Actitis hypoleucos</i>	1 adult	Gura Zlata, Retezat Mts (Hunedoara) 09.06.2001 Leg.: Attila D. Sándor	<i>Actornithophilus flumineus</i> Clay, 1962	1	0	0	1
<i>Acrocephalus arundinaceus</i>	1 immature	Grândul Chituc (Tulcea) 28.08.1996 Leg.: Attila D. Sándor	<i>Philopterus fedorenkoae</i> (Mey, 1983)	2	0	8	10
<i>Regulus ignicapillus</i>	1 adult (♂)	Sovata (Mureș) 29.03.2002 Leg.: Attila D. Sándor	<i>Philopterus reguli</i> (Denny, 1842)	1	2	0	3
<i>Sitta europaea</i>	1 adult (♀)	Sovata (Mureș) 07.10.1999	<i>Bruceia conocephalus</i> (Blagoveshtchensky, 1940)	3	2	1	6
	1 immature	Leg.: Attila D. Sándor	<i>Monacanthus curysternus</i> (Burmeister, 1838)	6	0	4	10
<i>Turdus merula</i>	1 adult (♂)	Baile Herculane (Caraș Severin) 30.04.1996 Leg.: Attila D. Sándor	<i>Bruceia merulensis</i> (Denny, 1842)	9	7	1	17
	1 adult (♂)	Gura Zlata, Retezat Mts (Hunedoara) 21.04.2001 Leg.: Attila D. Sándor	<i>Philopterus turdi</i> (Denny, 1842)	0	0	1	1

Table 1 (continuation)

Species	Hosts	Collecting data	Parasites				
			Species	Number of specimens			
				♀♀	♂♂	Nymphs	Total
<i>Turdus viscivorus</i>	1 juvenile	Ornitological Camp in Gurghiu Mts (Sovata) (Mureş) 14.08.1998 Leg.: Attila D. Sándor	<i>Myrsidea thoracica</i> (Giebel, 1874)	2	0	1	3
			<i>Philopterus vernus</i> (Zlotorzycza, 1964)	1	0	3	4
<i>Prunella modularis</i>	1 adult	Ornitological Camp in Gurghiu Mts (Sovata) (Mureş) 25.07.1996 Leg.: Attila D. Sándor	<i>Philopterus modularis</i> (Denny, 1842)	3	0	0	3
				8	1	10	19
<i>Pyrrhula pyrrhula</i>	1 adult (♂)	Ornitological Camp in Gurghiu Mts (Sovata) (Mureş) 18.07.1996 Leg.: Attila D. Sándor Gura Zlata, Retezat Mts (Hunedoara) 21.04.2001 Leg.: Attila D. Sándor	<i>Philopterus citrinellae</i> (Schrank, 1776)	0	0	2	2
				0	0	5	5
				4	1	11	16
<i>Emberiza citrinella</i>	3 adults (1♀, 2♂♂) + 2 immatures (2♂♂)	Baciu (Cluj) 10.03.1996 Leg.: Attila D. Sándor	<i>Philopterus citrinellae</i> (Schrank, 1776)	3	2	6	11
				0	0	3	3
				0	0	3	3

Throughout the years several papers on the chewing lice from the birds of Romania were published. In some of them chewing louse species collected from the same hosts we also collected were cited and we mentioned them further on (Adam, op. cit.; Bechet, op. cit.; Iordan-Georgescu, 1941; Negru, 1958, 1959, 1960 a, 1960 b, 1963, 1965; Rékási & Kiss, 1994, 1997, 1999).

Making a comparison between our data with those from the mentioned papers we can assert that from the 13 chewing louse species collected and identified by us, the species *Colpocephalum impressum* Rudow, 1866, *Philoaterus fedorenkoae* (Mey, 1983) and *Ph. vernus* (Złotorzycka, 1964) are mentioned for the first time in Romania. The species *Ciconiphilus decimfasciatus* (Boisduval et Lacordaire, 1835), collected by us from a juvenile of *Nycticorax nycticorax*, was mentioned before in Romania, according to the literature we had at our disposal, by Adam (op. cit.) on *Ardea cinerea*, by Bechet (op. cit.) on *Ardea purpurea* and by Iordan-Georgescu (op. cit.) on *Ardea purpurea* and on *Egretta alba*. Iordan-Georgescu (op. cit.) mentioned this species under the name of *Colpocephalum importunum*, which now is considered a synonym (Price et al., op. cit.) with *Ciconiphilus decimfasciatus*. Also, the species *Menacanthus eurysternus* (Burmeister, 1838), collected by us from an adult and an immature of *Sitta europaea*, was mentioned before in Romania by Bechet (op. cit.) on *Pica pica* and by Rékási & Kiss (1999) on *Pastor roseus*. According to Price's et al. list (op. cit.) the typical host for *C. decimfasciatus* is *Ardea cinerea*, and for *M. eurysternus*, is *Pica pica*, but in the same time the authors mentioned for these species the other parasite-host associations mentioned in Romania, too. The species *Philoaterus reguli* (Denny, 1842), found by us on an adult male of *Regulus ignicapillus*, was mentioned in Romania by Bechet (op. cit.) on *Regulus regulus* and by Negru (1958) on *Regulus ignicapillus*. Price et al. (op. cit.) mentioned for this chewing louse species the typical host *Regulus regulus*, but the authors did not mention this species also on *Regulus ignicapillus*. Negru (1958) mentioned the presence of *Ph. reguli* on *Regulus ignicapillus* for the first time, and now we mention this parasite-host association for the second time.

The species *Philoaterus turdi* (Denny, 1842) and *Ph. citrinellae* (Schrank, 1776) were found by us, the first on *Turdus merula*, and the second one on *Emberiza citrinella* and on *Pyrrhula pyrrhula*. *Ph. turdi* was mentioned before in Romania (Bechet, op. cit.; Negru, 1960; Rékási & Kiss, 1997) on *T. merula* but under the name of *Philoaterus merulae*, and *Ph. citrinellae* was also mentioned on *E. citrinella* under the same name (Bechet, op. cit.; Negru, 1965; Rékási & Kiss, 1994, 1997) and on *Ph. pyrrhula* under the name of *Philoaterus pyrrhulae* (Rékási & Kiss, 1997). For the time being *Ph. merulae* is considered similar to *Ph. turdi* and *Ph. pyrrhulae*, to *Ph. citrinellae*, the names being considered synonymis; the valid names are *Ph. turdi* and, respectively, *Ph. citrinellae* (Price et al., op. cit.).

ACKNOWLEDGEMENTS

Thanks to Dr. Vince Smith (University of Glasgow, UK), to Dr. Angela Petrescu ("Grigore Antipa" National Museum of Natural History, Bucharest) and to Dr. János Botond Kiss ("Delta Dunării" National Institute of Research, Tulcea) for putting at my disposal the specialized papers. Also thanks to the anonymous scientific referees for their useful advice regarding this paper.

DATE NOI PRIVIND FAUNA DE MALOFAGE (PHTHIRAPTERA: AMBLYCERA, ISCHNOCERA) DIN ROMÂNIA. PARTEA I

REZUMAT

În perioada 10.03.1996 – 29.03.2002 am colectat malofage (Phthiraptera: Amblycera, Ischnocera) din mai multe puncte de pe teritoriul României. Am colectat de pe 22 exemplare de păsări-gază (aparținând la 11 specii din 9 familii) un număr de 116 exemplare de malofage. Acestea au fost determinate ca aparținând la 13 specii și 7 genuri. Comparând rezultatele noastre cu datele din literatura de specialitate avută la dispoziție, am constatat că speciile *Colpocephalum impressum* Rudow, 1866, *Philoapterus fedorenkoae* (Mey, 1983) și *Ph. vernus* (Zlotorzycska, 1964) reprezintă semnalări noi pentru fauna entomologică a României. De asemenea speciile *Menacanthus eurysternus* (Burmeister, 1838) și *Ciconiphilus decimfasciatus* (Boisduval et Lacordaire, 1835) au mai fost semnalate în România însă nu pe gazdele pe care le-am găsit noi. Conform literaturii pe care am avut-o la dispoziție, semnalăm pentru a doua oară prezența lui *Philoapterus reguli* (Denny, 1842) pe *Regulus ignicapillus*, prima semnalare fiind făcută de Negru (1958). Speciile *Philoapterus turdi* (Denny, 1842) și *Ph. citrinellae* (Schrank, 1776) au mai fost semnalate în România pe aceleași gazde pe care le-am găsit și noi, însă sub denumirile *Philoapterus merulae* și, respectiv, *Ph. pyrrhulae*. denumiri intrate în prezent în sinonimie cu primele.

LITERATURE CITED

- ADAM, C., 2003 - Chewing lice (Phthiraptera: Amblycera, Ischnocera) collected on some bird species of Romania. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa", 45: 159-172.
- ADAM, C., S. DARÓCZI, 2003 – *Carnus hemapterus* Nitzsch, 1818 (Diptera: Carnidae) parazit pe *Buteo buteo* L., 1758 (Aves: Accipitridae) în centrul României. Revista Română de Parazitologie, 13 (2): 46-47. (in Romanian)
- BECHET, I., 1962 - Cercetări asupra malofagelor din Republica Populară Română. Teză de doctorat. Universitatea din București, București. 492 pp. + 81 figs. (Ph. D. thesis) (in Romanian)
- IORDAN-GEORGESCU, M., 1941 - Contribuțiuni la studiul malofagiilor din România. Analele Academiei Române, Memoriile Secțiunii Științifice. Seria III, 16 (20): 841-968. (in Romanian)
- MUNTEANU, D., 2001 - Dicționar poliglot al speciilor de păsări din România. Ediția III. Publicațiile Societății Ornitologice Române, Cluj, 14: 1-58. (in Romanian)
- NEGRU, ȘT., 1958 - Malofage noi pentru fauna R. P. R. (*Mallophaga* Nitzsch). Studii și Cercetări de Biologie, Biologie animală, 10 (3): 225-248. (in Romanian)
- NEGRU, ȘT., 1959 - Malofage noi pentru fauna R. P. R. (*Mallophaga* Nitzsch). Studii și Cercetări de Biologie, Biologie animală, 11 (2): 135-147. (in Romanian)
- NEGRU, ȘT., 1960 a - Malofage noi pentru fauna R. P. R.. Studii și Cercetări de Biologie. Biologie animală, 12 (1): 45-51. (in Romanian)
- NEGRU, ȘT., 1960 b - Malofage noi pentru fauna R. P. R. (*Mallophaga* Nitzsch) (IV). Studii și Cercetări de Biologie, Biologie animală, 12 (2): 141-149. (in Romanian)
- NEGRU, ȘT., 1963 - Malofage noi pentru fauna R. P. R. (*Mallophaga* Nitzsch) (VI). Comunicările Academiei Republicii Populare Române, 13 (1): 39-44. (in Romanian)
- NEGRU, ȘT., 1965 - Mallophages de Sinaia est la région environnante (II) (*Mallophaga* Nitzsch, 1818). Analele Universității București, Seria Științele Naturii. Biologie, 14: 173-178.
- PETRESCU, A., C. ADAM, 2000 - *Carnus hemapterus* Nitzsch, 1818 (Diptera: Carnidae) parasite on *Merops apiaster* L., 1758 (Aves: Meropidae) in southern Romania. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa". 42: 221-224.
- PETRESCU, A., C. ADAM, 2001 - Interspecific relations in the populations of *Merops apiaster* L. (Aves: Coraciiformes) of southern Romania. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa", 43: 305-322.
- PRICE, R., J. BEER, 1963 - Species of *Colpocephalum* (Mallophaga: Menoponidae) parasitic upon the Falconiformes. The Canadian Entomologist, 95 (7): 731-763.
- PRICE, R., R. HELLENTHAL, R. PALMA, K. JOHNSON, D. CLAYTON, 2003 – The Chewing Lice: World Checklist and Biological Overview. Illinois Natural History Survey Special Publication 24. x + 501 pp.

- RÉKÁSI, J., J. B. KISS, 1994 - Date privind malofagele (Mallophaga) păsărilor din Delta Dunării. *Analele Științifice ale Institutului Delta Dunării*, 3: 101-110. (in Romanian)
- RÉKÁSI, J., J. B. KISS, 1997 - Data on the Bird lice (Mallophaga) of some bird species from the Danube Delta (North Dobrogea, Romania). *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"*, 39: 59-82.
- RÉKÁSI, J., J. B. KISS, 1999 - New data on birdlice (*Mallophaga*) of rare birds from northern Dobrogea (Romania). *Analele Științifice ale Institutului Național de Cercetare-Dezvoltare „Delta Dunării” - Tulcea*, 44-46.
- SÉGUY, E., 1944 - Insectes ectoparasites (Mallophages, Anoplures, Siphonaptères). *Faune de France*. Paris, 43: 1-684.
- ZŁOTORZYCKA, J., 1977 - Klucze do oznaczania owadów Polski. Część XV. Zesz. 4. Nadrodzina Philopteroidea: rodzina Philopteridae. PWN Warszawa. 124 pp. (in Polish)

Received: March 5, 2004

Accepted: March 29, 2004

Costică Adam

Muzeul Național de Istorie Naturală "Grigore Antipa"

Șos. Kiseleff nr. 1, 011341 București 2, România

e-mail: cadam@antipa.ro

Attila D. Sándor

Societatea Ornitologică Română

Str. Gh. Dima 49/2, 400336 Cluj, România

e-mail: attila.sandor@sor.ro