

## A new species and new records of the cheyletoid mites (Acari: Cheyletoidea) from passeriform birds in Poland

Maciej SKORACKI<sup>1</sup>, Andre V. BOCHKOV<sup>2</sup> & Bozena SIKORA<sup>1</sup>

<sup>1</sup> Department of Animal Morphology, A. Mickiewicz University, 28 Czerwca 1956/198, 61-485 Poznań, Poland.

<sup>2</sup> Zoological Institute Russian Academy of Sciences, Universitetskaya embankment1, 199034 St. Petersburg, Russia.

### Abstract

A new and three recognised cheyletoid mites are recorded in Poland from passeriform birds: *Harpypalpoides lesickii* sp. n. from *Coccothraustes coccothraustes* (type host) and *Fringilla coelebs* (Fringillidae), *Harpypalpoides lukoschusi* LOMBERT et MOSS, 1983 from *Turdus merula* (Turdidae), *Harpypalpus longipis* (FRITSCH; 1954) from *Parus major* (Paridae) and *Ornithocheyletia dubinini* VOLGIN, 1964 from *Sturnus vulgaris* (Sturnidae). This is the first record of mites of the family Harpirhynchidae and of *O. dubinini* from Poland.

**Keywords:** parasitic mites, Harpirhynchidae, Cheyletidae, passeriform birds.

### Introduction

The superfamily Cheyletoidea is a large and diverse group of prostigmatid mites (Acari, Prostigmata), which includes free-living predators of small invertebrates and parasites of mammals, reptiles and birds (KETHLEY, 1982). Among them, the four families i.e., Cheyletidae, Syringophilidae, Harpirhynchidae and Cloacaridae are partly or completely associated with birds. The biodiversity of the quill mites (Syringophilidae) is relatively well known in Poland (SKORACKI, 1999; SKORACKI & DABERT, 1999; SKORACKI *et al.* 2001; SKORACKI & MAGOWSKI, 2001; SKORACKI & BOCHKOV, 2002), while the mites of the families Harpirhynchidae and Cloacaridae have not been registered from Poland and the cheyletid records on birds were limited mostly to the predatory species (BOCHKOV *et al.*, 2002).

The present communication is a contribution to our knowledge of the cheyletoids in Poland. These mites were collected from different passerine birds in Jezioro village near Poznań (Poland). Four cheyletoid species of the families Harpirhynchidae and Cheyletidae were collected. Among them, one

species is new for science and three other are new for Poland. We give here the description of a new species, *Harpypalpoides lesickii* sp. n., the redescription of the poorly known *Harpypalpus longipis* (FRITSCH, 1954) (Harpirhynchidae) and the description of the male *Ornithocheyletia dubinini* VOLGIN, 1964 (Cheyletidae) which was formerly unknown.

Descriptions of the listed species are given in the standard formats used for respective taxa of the cheyletoid mites. The nomenclature of idiosomal chaetotaxy follows that developed originally for the family Cheyletidae by FAIN (1979), as far as this nomenclature may be applied to all families of the Cheyletoidea (FAIN *et al.*, 1999). All measurements are given in micrometers ( $\mu\text{m}$ ). For the new species, each measurement of the holotype precedes the corresponding range for the paratypes. Latin names of birds follow the checklist of HOWARD & MOORE (1991).

Abbreviations for locations where specimens were deposited are as follows: UAM - A. Mickiewicz University, Poznań, Poland. ZIN - Zoological Institute, Russian Academy of Sciences, Saint-Petersburg, Russia. IRSNB - Institut royal des Sciences naturelles de Belgique, Belgium, Bruxelles.

### Systematic part

Family Harpirhynchidae DUBININ, 1957

Subfamily Harpypalpinae FAIN, 1972

Genus *Harpypalpoides* LOMBERT & MOSS, 1983

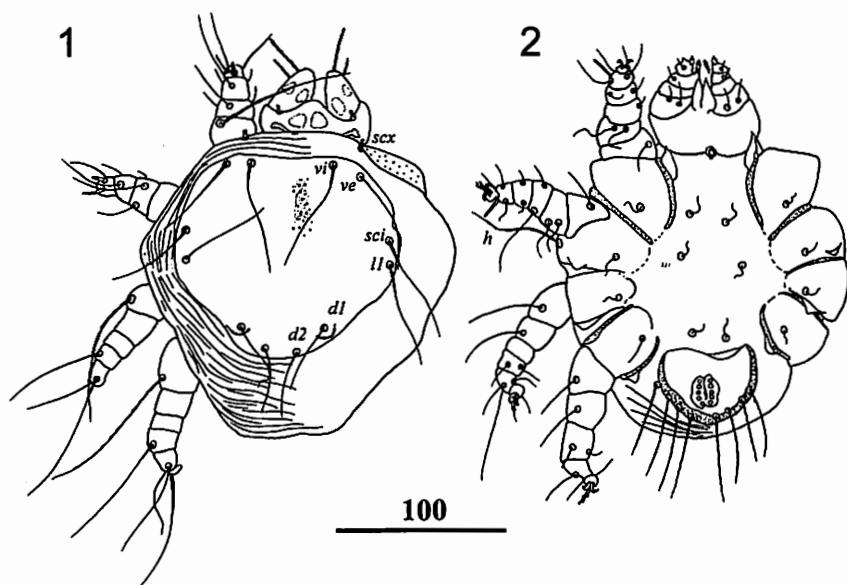
This genus includes 3 species (FAIN *et al.*, 1999).

#### *Harpypalpoides lesickii* sp. n. (Figs 1-3)

*Female* (holotype). Gnathosomal length 35 (35-37 in 3 paratypes), width 58. Idiosomal length 150 (155-165), width 150 (155-176). Length of dorsal shield 45 (47), width 50 (52-55). Length of setae: *vi* 25 (25-27), *ve* 25 (26-27), *sci* 22 (21-23), *h* 25 (26-29), *d1* 21 (20-22), *d2* 23 (20), *l1* 25 (20-25) - all smooth; *d3* 24 (21-24), *d4* 20 (19-20), *d5* 17 (18-19), *l5* 40 (40-44). Setae *g1-g5* present. Femur I with 3 setae, femur II with 2 setae; dorsal seta of femur I serrate, dorsal seta of trochanters III-IV serrate, 70-80 long, all other leg setae, including ventral setae of trochanters III and IV smooth.

*Male* (one paratype). Gnathosomal length 28, width 45. Idiosomal length 122, width 125. Length of dorsal shield 95, width 95. Length of setae: *vi* and *ve* very short, about 2, *sci* 16, *d1* 14, *l1* 16 - all smooth; *d2* 40, *d5* and *l5* about 40 - all serrate. Chaetotaxy of legs as in the female.

**Host and locality.** Holotype female, 3 female and male paratypes from *Coccothraustes coccothraustes* (Fringillidae), Poland, Poznań environs, Jeziory village, 24.V.2002. Coll. M. SKORACKI and B. SIKORA. Holotype, female and male paratypes are deposited in UAM, one female paratype - in



Figs 1-2. *Harpyalpoides lesickii* sp. n. 1: holotype female in dorsal view, 2: the same in ventral view.

ZIN and IRSNB, respectively. 3 females from *Fringilla coelebs* (Fringillidae), the same locality, 18. V. 2002. Coll. M. SKORACKI and B. SIKORA.

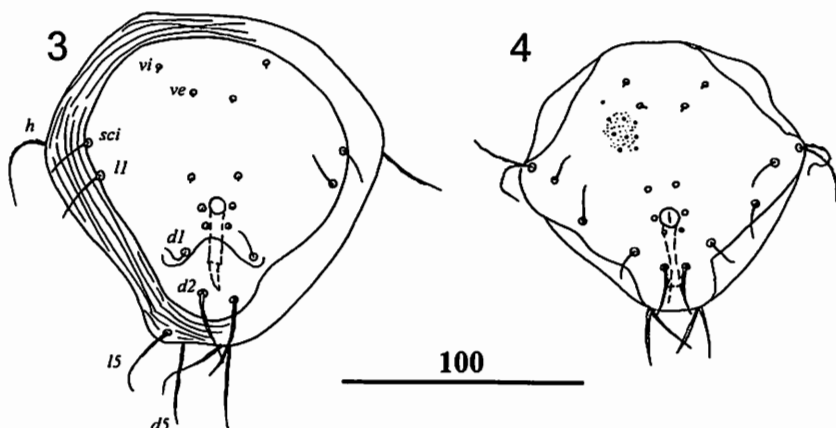
**Etymology.** This species is named in a honour to Prof. A. LESICKI (A. Mickiewicz University, Poznań, Poland).

**Remarks.** This species is closely related to *Harpyalpoides lukoschusi* LOMBERT et MOSS, 1983 from *Turdus merula* (Turdidae) from Holland (LOMBERT & MOSS, 1983). It differs from this species by the serrate dorsal seta of trochanters III and IV and by the smooth ventral seta of these trochanters. In *H. lukoschusi*, the dorsal seta of trochanters III and IV is smooth and the ventral seta of these trochanters is serrate. *H. lesickii* sp. n. also differs from *Harpyalpoides namibiensis* FAIN et al., 1999 from *Emberiza impetuani* (Emberizidae) from Namibia (FAIN et al., 1999) by the presence of genital setae in the female and by the serrate setae *d2* in the male. In the female *H. namibiensis*, the setae *g* are lacking and in the male, the setae *d2* are smooth.

*Harpyalpoides lukoschusi* LOMBERT & MOSS, 1983

**Material examined.** 3 females from *Turdus merula*, Poland, Poznań environs, Jeziory village, 24. V. 2002. Coll. M. SKORACKI and B. SIKORA.

This species was described from *Turdus merula* from Holland (LOMBERT & MOSS, 1983). This is the first record since the original description.



Figs 3-4. Males of Harpypalpinae in dorsal view. 3: *Harpypalpoides lesickii* sp. n., 4: *Harpypalpus longipis* (FRITSCH, 1954).

Genus *Harpypalpus* DUBININ, 1957

This genus includes 6 species (FAIN *et al.*, 1999).

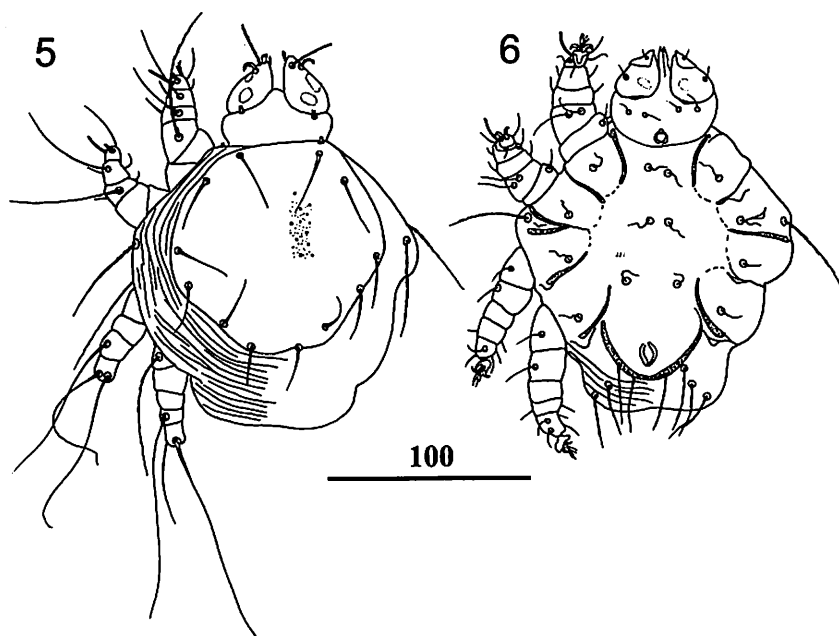
*Harpypalpus longipis* (FRITSCH, 1954)  
(Figs 4-6)

**Material examined.** 10 females and 4 males from *Parus major* (Paridae), Poland, Poznań environs, Jeziory village, 24. V. 2002. Coll. M. SKORACKI and B. SIKORA.

The male of this species was described from *Troglodytis troglodytis* (Troglodytidae) from Germany (FRITSCH, 1954). Later on, it was found on *Nucifraga caryocatactes* (Corvidae), *Parus major*, *P. caeruleus* (Paridae), *Serinus mozambicus*, *Carduelis spinus* and *Pyrrhula pyrrhula* (Fringillidae) from Palaearctic region by MOSS (1979). We give here the redescription of the male of this species, the female of this species is described for the first time.

**Female** (5 specimens). Gnathosomal length 30-35, width 45-50. Idiosomal length 115-130, width 115-125. Length of the dorsal shield 85-95, width 95-100. Length of setae: *vi* 32-37, *ve* 35-37, *h* 32-37, *d1* 23-28, *d2* 25-30, *ll* 25-30 - all smooth; *sci* 28-30, *sce* 40-44, *d3*, *d4* 25-32, *d5* and *l5* 25-30 - all serrate. Setae *g* lacking. Femora III and IV with ventral seta. Whip-like dorsal setae of the femora I and trochanters III-IV serrate, other leg setae smooth. Length of dorsal setae of trochanters III and IV 45-55.

**Male** (4 specimens). Gnathosomal length 40-45, width 28-30. Idiosomal length 95-105, width 105-110. Length of the dorsal shield 75-80, width 85-87. Length of setae: *vi* and *ve* 2-5, *sci* 15-23, *sce* 20-28, *h* 15-18, *d1* and *ll* 15-20 - all smooth; *d2* 18-23, *d5* and *l5* 23-28 - all serrate. Dorsal seta of trochanter III and IV 44-46 long.



Figs 5-6. *Harpypalpus longipis* (FRITSCH, 1954). 5: female in dorsal view, 6: the same in ventral view.

Family Cheyletidae LEACH, 1815

Tribe Ornithocheyletiini VOLGIN, 1969

Genus *Ornithocheyletia* VOLGIN, 1964

This genus includes 30 species.

*Ornithocheyletia dubinini* VOLGIN, 1964  
(Fig. 7)

*Ornithocheyletia barri* SMILEY, 1974 – syn.n.

**Material examined.** 4 females and 2 males from *Sturnus vulgaris* (Sturnidae), Poland, Poznań environs, Jeziory village, 18.V.2002. Coll. M. SKORACKI and B. SIKORA.

The female of this species was described from *Sturnus vulgaris* from Moldavia (VOLGIN, 1964). Later on, it was collected from the type host in Holland (FAIN, 1981). SMILEY (1977) described *Ornithocheyletia barri* SMILEY, 1977 from the same host from the U.S.A. According to FAIN (1981), these two species differ from each other only by the four striations between the

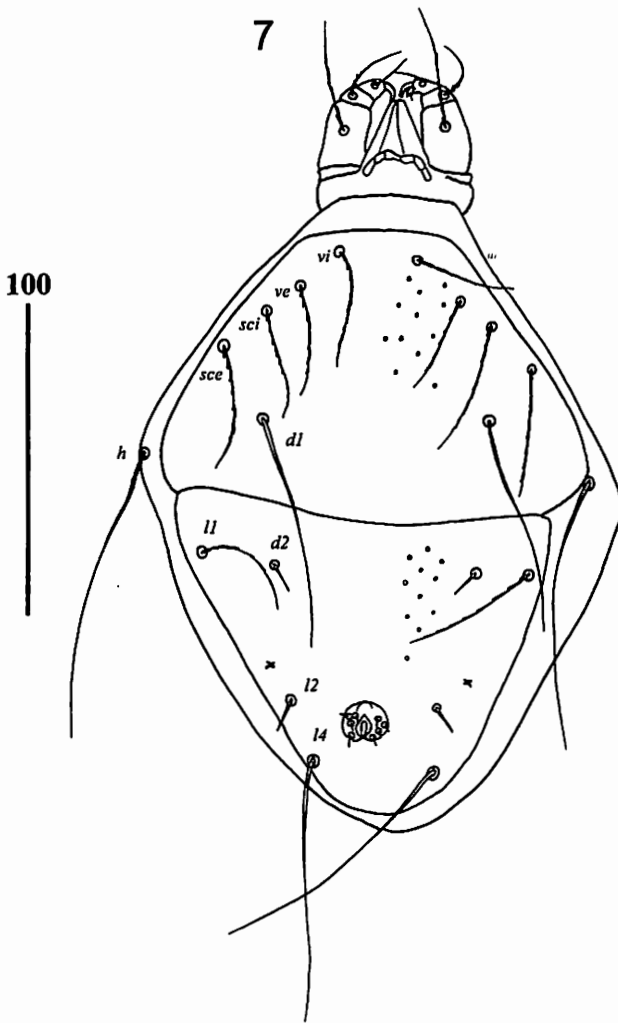


Fig. 7. *Ornithocheyletia dubinini* Volgin, 1964, male in dorsal view.

main dorsal shields in the holotype of *O. barri*, while these shields are contiguous in the holotype of *O. dubinini*. We re-examined the type series of *O. dubinini*, actually it includes the specimens with the dorsal shields separated by soft cuticle. Therefore, we consider here *O. barri* syn. n. as an junior synonym of *O. dubinini* and give the description of the male for the first time.

*Male* (2 specimens). Gnathosomal length 62-64, width 60-60. Palpal femur without internal process. Idiosomal length 207-214. Dorsum. Length of propodosomal shield 110-115, width 100-155. Length of hysterosomal shield

80-87, width 125-135. Dorsal shield almost contiguous, hardly sclerotized and covered with reach punctuation. Length of setae: *vi* 32-40, *ve* 40-55, *sci* 45, *sce* 53-57, *h* 125-135, *l1* 35-40 - all barbed; *d1* 95-105, *l2* 18-23, *l3* 18, *l4* 138-145 - all smooth. Genital setae *g1-g4* smooth. Venter. Medial plates absent. All legs with the same chaetotaxy and solenidiotaxy as in the female.

#### Acknowledgements

We are grateful for the enabling of our study to Prof. B. MARCINIAK and Prof. A. LESICKI (UAM). We also grateful to Dr. J. DABERT (UAM) for critical reading of the MS. For the present research AVB was supported by the grant of the INTAS (International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union), grant YSF 2002-0116/F4.

#### References

- BOCHKOV A.V., FAIN A. & DABERT J. 2002. - A revision of the genus *Cheletopsis* (Acari Cheyletidae). *Bulletin de l'Institut royal des Sciences naturelles de Belgique, Entomologie*, 72 : 5-26.
- FAIN A. 1979. - Idiosomal and leg chaetotaxy in the Cheyletidae. *International Journal of Acarology*, 5 : 305-310
- FAIN A. 1981. - Revision of the genus *Ornithocheyletia* VOLGIN, 1964 (Acari: Cheyletidae). *Systematic Parasitology*, 2 : 181-205.
- FAIN A., BOCHKOV A.V. & MIRONOV S.V. 1999. - A contribution to the systematics of the family Harpyrhynchidae (Acari: Cheyletoidea). *Acarologia*, 15 : 37-54.
- FRITSCH W. 1954. - Die Milbengattung *Harpyrhynchus* MEGNIN, 1878 (Subordo Trombidiformes, Fam. Myobiidae MEGNIN, 1877). *Zoologische Anzeiger*, 152 : 177-198.
- HOWARD R. & MOORE A.A., 1991. - *A complete checklist of the birds of the world*. - Second Ed., Academic Press, London, 622 pp.
- KETHLEY J.B. 1982. Acari: Prostigmata. In: *Synopsis and classification of living organisms*. - S. P. PARKER (ed.). McGraw-Hill, New York, 2 : 117-145.
- LOMBERT H.A.P.M. & MOSS W.W. 1983. - Description and developmental cycle of *Harpyalpoides lukoschusi* gen. et sp. nov. (Acari: Harpyrhynchidae: Harpyalpinae) from the Eurasian Blackbird, *Turdus merula* (Aves: Passeriformes: Turdidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 135 : 163-176.
- MOSS W.W. 1979. Patterns of the host-specificity and co-evolution in the Harpyrhynchidae. In: *Recent Advances in Acarology*, 2 : 379-384.
- SKORACKI M. 1999. - New genus and species of Syringophilidae from Eurasian Reed Warbler, *Acrocephalus scirpaceus* (Sylviidae: Passeriformes). *Genus*, 10 : 155-162.
- SKORACKI M. & BOCHKOV A.V. 2002. - A new quill mite species *Bubophilus asiobius* sp. n. (Acari: Syringophilidae) from the Long-eared Owl *Asio otus* (Strigiformes: Strigidae). *Genus*, 13 : 149-152.
- SKORACKI M. & DABERT J. 1999. - A new species of the genus *Syringophilopsis* KETHLEY, 1970 (Acari: Prostigmata: Syringophilidae) from the Tree Pipit *Anthus trivialis* (Passeriformes: Motacillidae). *Acarina* 7 : 89-92.

- SKORACKI M. & MAGOWSKI W. 2001. - *Picobia modularis* and *Picobia curruca*, two new species of the family Syringophilidae (Acari: Prostigmata: Cheyletoidea). *Acarina*, 9 : 113-119.
- SKORACKI M., MAGOWSKI W. & DABERT J. 2001. - *Picobia polonica* sp. n. (Acari: Prostigmata: Syringophilidae), a new species of quill mite from the domestic hen, *Gallus gallus domesticus* (Aves: Phasianidae). *Folia Parasitologica*, 48 : 154-158.
- SMILEY R.L. 1977. - Further studies on the family Cheyletiellidae (Acarina). *Acarologia*, 19 : 225-241.
- VOLGIN V.I. 1964. - On the taxonomy of predatory mites of the family Cheyletidae VI. The genus *Ornithocheyletia* VOLGIN gen. nov. *Zoologicheskii Zhurnal*, 43 : 28-36. (In Russian).