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# The nasal mites of the family Rhinonyssidae with description of a new species (Acarina)

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with 6 Figures

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The Rhinonyssidae are parasitic blood sucking mites that live in the nasal cavities of birds. This kind of parasitism is very common in birds in all the parts of the world.

This fauna is still very incompletely known in Austria. One of us (W. SIXL) has started with the collecting and the study of these mites in this country since 1968. Three new species have been discovered during these investigations. They have been published in two papers (FAIN & SIXL 1969 and 1971).

Recently we have discovered a new species in the nasal cavities of an *Acrocephalus schoenobaenus* (L.) from Illmitz, Burgenland. We describe it hereunder.

The present paper allows us to give a list of all the species of Rhinonyssidae found so far in Austria, it comprises 25 species belonging to 4 genera.

For the explanation of the nomenclature and the abbreviations, see FAIN & HYLAND 1962.

## Family Rhinonyssidae TROUESSART 1895

### Genus *Ptilonyssus* BERLESE & TROUESSART 1895

#### 1. *Ptilonyssus echinatus* BERLESE & TROUESSART 1889:

*Ptilonyssus echinatus* BERLESE & TROUESSART 1889 : 126.

This cosmopolitan species is commonly found in swallows. Type host: *Hirundo rustica* L.

In Austria we found this species in *Riparia riparia* L. from Parndorf NE Eisenstadt (12. VI. 1971).

#### 2. *Ptilonyssus hirsti* CASTRO & PAREIRA 1947:

In Austria we found it in *Passer montanus* (L.) from Graz (5. 4. 1970).

### 3. *Ptilonyssus emberizae* FAIN 1956:

*Ptilonyssus emberizae* FAIN 1956 : 140; 1959 : 95; 1963 : 168.

Described from *Emberiza flaviventris* STEPH. in Rwanda.

This species is common in Belgium where it parasitizes three different species of *Emberiza* (*Emberiza hortulana* L., *E. calandra* L. and *E. citrinella* L.) and various other birds belonging to different families of Passeriformes (CHOUMILO & LOUNKACHOU 1970).

In Austria this species has been found by us in *Emberiza schoeniclus* L. from Illmitz (20. VI. 1971) in *E. calandra* L. from Parndorf NE Eisenstadt (9. V. 1970) and in *E. citrinella* L. from Neusiedl NE Eisenstadt (10. V. 1970).

### 4. *Ptilonyssus motacillae* FAIN 1956:

*Ptilonyssus motacillae* FAIN 1956 : 143; FAIN, 1957 : 104.

This species has been described from *Motacilla aguimp vidua* in Rwanda. It is commonly found in Europe from various hosts.

In Austria we found it in *Ficedula albicollis* TEMM. from Graz (1. V. 1971) and in *Erithacus rubecula* (L.), from Schützen E Eisenstadt (VII. 1973) and Grambach SSE Graz (1973).

### 5. *Ptilonyssus fringillicola* FAIN 1959:

*Ptilonyssus fringillicola* FAIN 1959 : 28; FAIN 1962 : 262; CHOUMILO & LOUNKACHOU 1970 : 30.

*Ptilonyssus pyrrhulae* FEIDER 1962 : 43 Syn. nov.

This species has been described from *Poliospiza striolata kivuensis* SCHOUTEDEN in Rwanda.

It is very common in numerous fringillid birds in different countries of Europe.

In Belgium this species has been recorded from *Pyrrhula pyrrhula coccinea* (GM.) and *Carduelis carduelis* (L.) (FAIN 1962).

CHOUMILO & LOUNKACHOU (1970) in their comprehensive monography on Rhinonyssidae from the Republic of Moldavia and Ukraina (SSR) have reported this species from *Pyrrhula pyrrhula* (L.).

FEIDER found the species in the same host in Romania but he did not recognize it and gave it a new name *Ptilonyssus pyrrhulae*.

In Austria we found this species in *Carduelis spinus* (L.) from Schützen E Eisenstadt (1973).

### 6. *Ptilonyssus ruandae sylviae* FAIN 1963:

*Ptilonyssus ruandae* subsp. *sylviae* FAIN 1963 : 172.

This subspecies is common in the Sylviidae of Belgium. The type has been described from that country from *Sylvia a. atricapilla* (L.).

In Austria we found it in the same host, from Schützen E Eisenstadt (VII. 1973) and Grambach SSE Graz (1973).

### 7. *Ptilonyssus pari* FAIN & HYLAND 1963:

*Ptilonyssus pari* FAIN & HYLAND 1963 : 375.

This species has been described from various species of *Parus* in Belgium and U.S.A. The typical host is *Parus atricapillus* L. (U.S.A.).

In Austria we found this species in *Parus major* L. from Graz-Kroisbach (1966); in *Parus cristatus* L. from Autal SSE Graz (1. V. 1970), in *Parus atricapillus* L. from Graz, Autal, in *Parus ater* L. from Autal and Brunsee S of Styria (6. VII. 1969), in *Parus montanus* BALDENSTEIN, *Parus caeruleus* L. and *Sitta europaea* L. from Autal and Brunsee.

**8. *Ptilonyssus certhiae* FAIN & BAFORT 1963:**

from *Certhia* spec. (VI. 1967) Graz-Kroisbach.

**9. *Ptilonyssus coccothraustis* FAIN & BAFORT 1963:**

*Ptilonyssus coccothraustis* FAIN & BAFORT 1963 : 471.

Described from *Coccothraustes coccothraustes* (L.), Antwerp, Belgium. Has been found from the same host in Austria. Locality: Grambach SSE Graz (1973).

**10. *Ptilonyssus euroturdi* FAIN & HYLAND 1963:**

*Ptilonyssus euroturdi* FAIN & HYLAND 1963 : 381.

The typical series has been described from *Turdus v. viscivorus* L. (host of the holotype) and *Turdus e. ericetorum* TURTON in Belgium. Also found in the République of Moldavia and Ukraine (USSR) (CHOUMILO & LOUNKACHOU 1970) and in Romania (FEIDER & MIRONESCU 1968) from various Turdidae.

In Austria we found that species in *Turdus merula* L., Locality: Grambach SSE Graz (July 1973) and Graz (2. IV. 1970).

**11. *Ptilonyssus acrocephali* FAIN 1964:**

*Ptilonyssus acrocephali* FAIN 1964 : 55.

Described from the nasal cavities of *Acrocephalus s. scirpaceus* (HERM.) from Deurne, Belgium.

In Austria we have collected numerous specimens of this species in 4 different hosts: *Acrocephalus schoenobaenus* (L.) from Illmitz (20. VI. 1971 and 1973); *Acrocephalus arundinaceus* (L.) from Illmitz (20. VI. 1971 and 1973); *Acrocephalus scirpaceus* (HERM.) from Illmitz, Burgenland (1973).

**12. *Ptilonyssus sittae* FAIN 1965:**

*Ptilonyssus sittae* FAIN 1965 : 158; FAIN 1966 : 117; DOMROW 1972 : 575.

*Ptilonyssus strandtmannianus* FEIDER & MIRONESCU 1969 b : 644; DOMROW 1972 : 575.

*Ptilonyssus bregetovae* FEIDER & MIRONESCU 1969 b : 656; DOMROW 1972 : 575.

*Ptilonyssus pelmaspis* FEIDER & MIRONESCU 1969 b : 656; DOMROW 1972 : 575.

*Ptilonyssus marxvachoni* FEIDER & MIRONESCU 1970 a : 17; DOMROW 1972 : 575.

The typical host of that species is *Sitta europaea* L., the typical locality: Kappellen, near Antwerp, Belgium.

In Austria we have seen this species from *Sitta europaea* L. and *Parus major* L. in Autal and in Brunsee (VI., IV. 1969). This bird is a new host for this species.

The presence of *Ptilonyssus sittae* in *Parus major* L. may be explained by the fact that *Sitta europaea* L. frequently occupies the same artificial nests (small wooden boxes fitted for Paridae) as this bird.

According to DOMROW: "*Ptilonyssus strandtmannianus*, *P. bregetovae* and *P. pelmaspis* FEIDER and MIRONESCU 1969 and *Ptilonyssus marxvachoni* FEIDER & MIRONESCU 1970 a are obvious synonyms of *P. sittae*. See also FEIDER and MIRONESCU 1970 b, p. 15 where these authors still fail to see they are naming specimens, not species" (DOMROW 1972 : 575).

We agree entirely with DOMROW. The dorsal shields in the Rhinonyssidae are in a process of reduction and therefore in an unstable condition and they may vary in shape and size even in the same population. We think therefore that these "species" of FEIDER & MIRONESCU are not more than intraspecific variations.

**13. *Ptilonyssus reguli* FAIN & SIXL 1969:**

*Ptilonyssus reguli* FAIN & SIXL 1969 : 264.

This species has been described from the nasal cavities of the Kinglet *Regulus regulus* L., from Autal SSE Graz (II. 1965).

**14. *Ptilonyssus fringillae* FAIN & SIXL 1971:**

Described from *Fringilla coelebs* L. in Brunnssee, Styria (holotype) and Autal SSE Graz (6. V. 1970) Austria (holotype) and in Belgium (paratypes).

**15. *Ptilonyssus schoenobaeni* spec. nov. :**

This new species is represented by 3 female specimens found in the nasal cavities of *Acrocephalus schoenobaenus* (L.). It is characterized by the strong reduction of the podosomal shield bearing only one or two pairs of short hairs combined with the presence of a median pygidial shield and the small size of the dorsal chaetotaxy.

Female (holotype) (fig. 1—6): LI<sub>d</sub> 780  $\mu$ ; WI<sub>d</sub> 360  $\mu$ ; LPP 159  $\mu$ ; WPP 120  $\mu$ ; LpP 45  $\mu$ ; WpP 57  $\mu$ ; LSP 110  $\mu$ ; WSP 40  $\mu$ ; LGP 156  $\mu$ ; WGP 74  $\mu$ ; LAP 129  $\mu$ ; WAP 69  $\mu$ ; LG 180  $\mu$ ; WG 102  $\mu$ ; LCH 150  $\mu$ .

Podosomal shield with lateral margins sinuous, its maximum width is situated a little behind its middle; without network at its surface and bearing one pair of very short spinelets. Pygidial shield more sclerotized in its two lateral corners and bearing on its posterior margin two short conical spines. Cuticle of dorsum with very short conical spines. Spiracle situated at level of coxa III; peritreme 33  $\mu$  long. Sternal plate irregular, very poorly sclerotized. The cuticle situated between this shield and the posterior vulvar lip is not striated and apparently very slightly sclerotized. Sternal hairs short (5 to 9  $\mu$ ) conical. Opisthoventral setae strong, conical with apex finely attenuated. Legs of medium length and width. Claws I normal, equal to claws II—IV. Coxae II with a rather strong anterior triangular process. In the type this process is lacking on one side. Legs with strong and short spines on their ventral surface, their dorsal surface with much smaller hairs. On the tarsi III and IV the short spines are concentrated mainly along their anterior surfaces. Chelicera with a long basal bulb (90  $\mu$  long); the movable digits are relatively long (10  $\mu$ ).

Host and locality :

Nasal cavities of *Acrocephalus schoenobaenus* (L.), Illmitz, Burgenland (VII. 1973), (holotype and 3 paratypes, all females).

Holotype in the Institut Royal des Sciences Naturelles de Belgique.

Genus *Sternostoma* BERLESE & TROUESSART 1889

1. *Sternostoma tracheacolum* LAWRENCE 1948:

*Sternostoma tracheacolum* LAWRENCE 1948 : 366; FAIN & HYLAND 1962 : 404.

*Sternostoma meddai* LOMBARDINI 1953 : 187.

*Sternostoma castroae* FAIN 1956 : 393.

*Agapornyssus faini* GRETILLAT, CAPRON & BRYGOO 1959 : 375.

This species is a common parasite of Passeriform birds in many parts of the world. In canaries it parasitized not only the upper respiratory tract but also the lungs, producing pneumonia (FAIN & CARPENTER 1958).

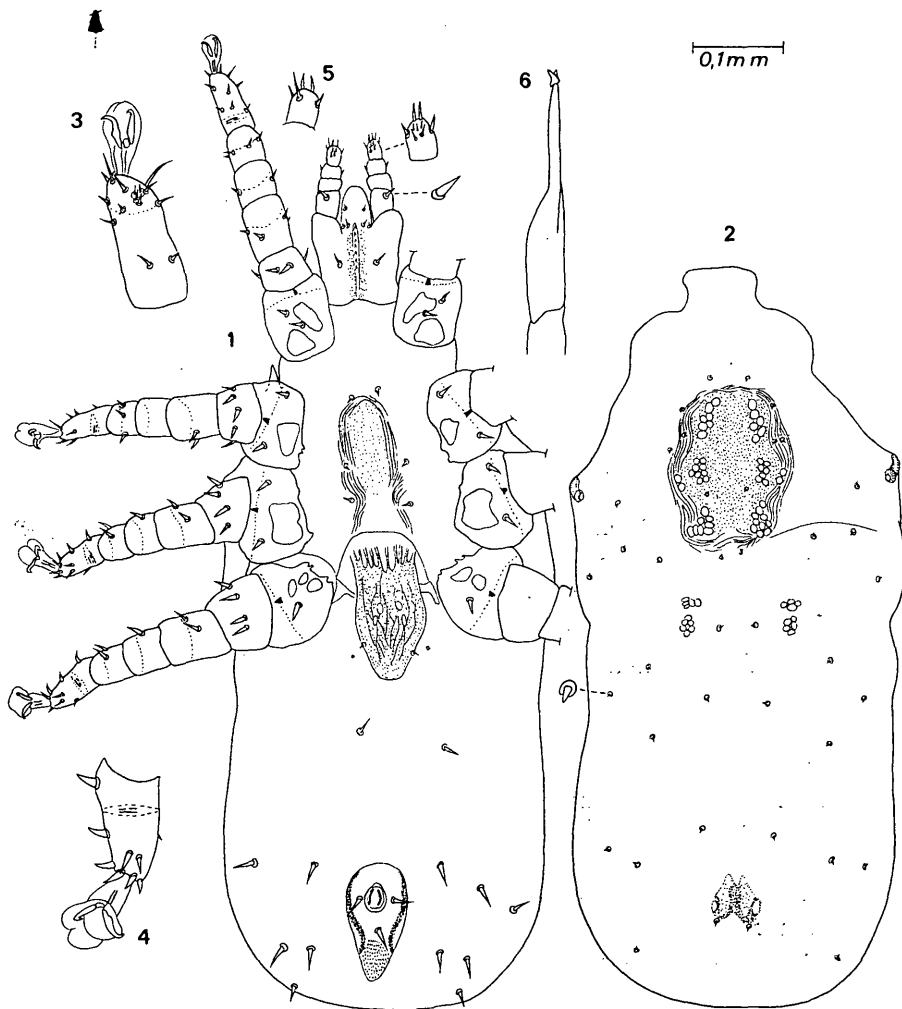


Fig. 1—6: *Ptilonyssus schoenobaeni* sp. n. Female (holotype) in ventral (fig. 1) and dorsal view (fig. 2). Tarsus I dorsally (fig. 3). Tarsus IV ventrally (fig. 4). Palp tarsus dorsally (fig. 5). Chelicera (fig. 6)

In Austria we found female specimens of this species in the nasal cavities of *Acrocephalus schoenobaenus* (L.) in Illmitz/Burgenland (1973) and in *Coccothraustes coccothraustes* (L.) in Autal SSE Graz.

## 2. *Sternostoma turdi* ZUMPT & TILL 1955:

*Sternostoma turdi* ZUMPT & TILL 1955 : 85; FAIN 1956 : 151; 1957 : 64; 1963 : 176.

*Sternostoma borceanum* FEIDER & MIRONESCU 1968 : 105.

This species has been described from *Turdus olivaceus* L. in South Africa. It is widespread in Europe. In Belgium it parasitizes *Turdus m. merula* L. and *Turdus pilaris* L. (see FAIN 1963). In Romania the hosts are *Turdus pilaris* L., *T. ericetorum* TURT. and *T. torquatus* L. (cited under the name *Sternostoma borceanum* by FEIDER & MIRONESCU). In USSR (Moldavia and Ukraina) the hosts are *Turdus merula* L., *T. pilaris* L. and *T. philomelos* BREHM (CHOUMILO & LOUNKACHOU 1970).

In Austria we have found this species in *Turdus merula* L. from Graz (16. IV./2. IV. 1970) and Brunnsee, Styria (20. V. 1970), and in *Turdus philomelos* BREHM, from Schützen E Eisenstadt (18. VIII. 1973).

## 3. *Sternostoma laniorum* FAIN 1956:

*Sternostoma laniorum* FAIN 1956 : 156; FAIN 1957 : 76.

Described from different species of *Lanius* in Rwanda. The typical host is *Lanius c. collurio* L.

Has been recorded from the same host in USSR (BUTENKO 1965) and from *Lanius minor* GM. in the Republic of Ukraine, USSR (CHOUMILO & LOUNKACHOU 1970).

In Austria we found this species in *Lanius collurio* L. from Parndorf E Eisenstadt (12. VI. 1970) and Grambach SSE Graz (1973).

## 4. *Sternostoma batis* FAIN 1957:

*Sternostoma laniorum* var. *batis* FAIN 1957 : 77.

*Sternostoma batis* FAIN 1962 c : 146.

The typical host is *Batis molitor puella* REICH in Rwanda.

In Austria we have found that species in *Emberiza schoeniclus* L., from Illmitz, Burgenland (VII. 1973), and in *Acrocephalus scirpaceus* (HERM.) from the same locality (20. VI. 1971).

## 5. *Sternostoma bruxellarum* FAIN 1961:

In Austria we have found this species in *Sturnus vulgaris* L. from Brunnsee, Styria (VI. 1969).

## 6. *Sternostoma ficedulae* FAIN & SIXL 1971:

*Sternostoma ficedulae* FAIN & SIXL 1971 : 89.

Described from *Ficedula albicollis* TEMM. of Brunnsee, Styria (5. V. 1970).

## 7. *Sternostoma hylandi* FAIN & JOHNSTON 1966:

*Sternostoma hylandi* FAIN & JOHNSTON 1966 : 32.

This species has been described from *Dendrocopos pubescens* (L.), near Wooster, U.S.A. It was known, so far, only from the type.

In Austria we have found one female which is not separable from that species. The host is *Dendrocopos major* L., Autal SSE Graz (17. IV. 1966).

### Genus *Mesonyssus* FAIN 1960

#### 1. *Mesonyssus melloi* (CASTRO 1948).

*Neonyssus melloi* CASTRO 1948 : 270.

*Mesonyssus melloi* FAIN 1962 a : 307.

*Neonyssus hirsutus* FEIDER 1962 : 57 Syn. nov.

This species is a cosmopolitan and a common nasal parasite of the domestic pigeon *Columba livia domestica* L.

We have found that species in Austria in the same host from Graz (1. V. 1970).

#### 2. *Mesonyssus columbae* (CROSSLEY 1950).

*Neonyssus columbae* CROSSLEY 1950 : 309.

*Mesonyssus columbae* FAIN 1962 a : 313.

The typical host is the domestic pigeon *Columba livia domestica* L., U.S.A.

This species is cosmopolitan. It is common in Belgium.

In Austria we found it in the same host from Graz (29. IX. 1969, 1. V. 1970, 17. VI. 1970).

### Genus *Rallinyssus* STRANDTMANN 1948

#### 1. *Rallinyssus caudistigmus* STRANDTMANN 1948:

*Rallinyssus caudistigmus* STRANDTMANN 1948 : 512; FAIN 1957 : 58.

This species has been described from *Fulica americana* GM. and *Rallus elegans* AUD., in N.America.

Our single specimen found in Austria comes from *Gallinula chloropus* (L.), in Graz (5. V. 1970).

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