

# Further notes on nasal mites from South Africa, with description of a new genus and five new species.

by

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(Submitted through F. Zumpt, South African Institute for Medical Research, Johannesburg).

In a previous paper I described a small collection of nasal mites from South African birds (Fain, 1957c).

Through the generosity of Dr. F. Zumpt, of the South African Institute for Medical Research, I received in 1957 and 1958 several new batches of these interesting mites\*. This collection includes two specimens (collected from the nasal cavities of a bat) belonging to a new genus and a new species, and 4 new species of Rhinonyssid mites from birds.

The holotypes and paratypes of the new species described here are in the South African Institute for Medical Research, Johannesburg, except for the holotypes of *Ptilonyssus estrildicola* n.sp. and *Ptilonyssus fringillicola* n.sp. which are in the Congo Museum (Tervuren, Belgium). Paratypes are in the possession of the author.

## 1. NASAL MITES OF BATS.

### SARCOPTIFORMES.

Family GASTRONYSSIDAE Fain 1956.

#### ***Opsonyssus zumpti* n.g., n.sp. (fig. 1)\*\***

The genus *Rodhainyssus* Fain, Gastronyssidae, includes 2 species parasitic on the eye and in the nasal cavities of bats: *R. yunkeri* Fain and *R. brutsaerti* Fain. The former species lives in the nasal cavities of *Nycteris* and *Lavia frons* whereas the latter may also occur in this habitat but is more often found

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\* This material forms part of a survey of arthropod parasites of vertebrates in the Ethiopian region which is being carried out under the direction of Dr. F. Zumpt, with financial assistance from the the S.A. Council for Scientific and Industrial Research.

\*\* It is a pleasure to name this new species in honour of Dr. F. Zumpt.

fixed onto the eye of *Epomophorus*. Recently we have discovered this species on the cornea of a new host *Micropteropus pusillus* Pet., (Boma and Kwango in Belgian Congo). The 2 specimens which we have received from Dr. Zumpt present the same general characteristics as *R. brutsaerti*, especially the lateral triangular and strongly chitinized process on each side of the gnathosoma; however, it may be easily distinguished from this species by several features such as the chaetotaxy, the length and thickness of the posterior setae and the structure of epimera III.

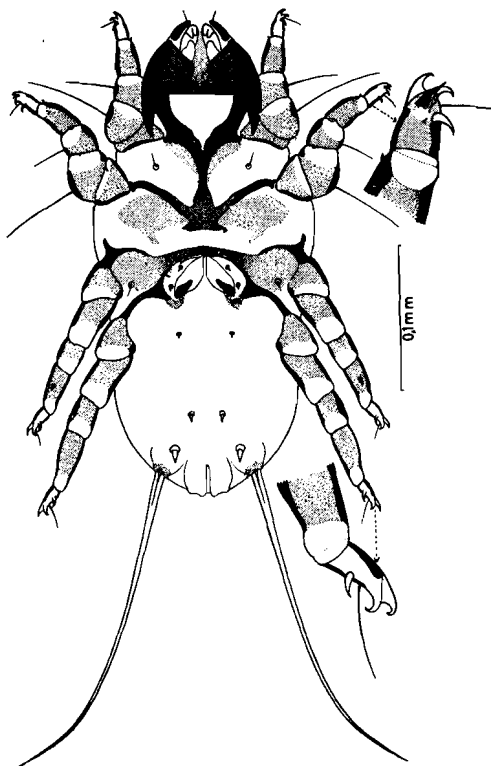


Fig. 1: *Opsonyssus zumpti* n.g., n.sp., female in ventral view.

The discovery of a second species possessing the same lateral processes on the gnathosoma, which are lacking in *R. yunkeri*, shows that this character may be used at the generic level. Accordingly I propose to erect a new genus *Opsonyssus* n.g., to include the two species showing this character.

Definition of the genus *Opsonyssus* n.g.: It has the general features of the family Gastronyssidae and the genus *Rodhainyssus*, but can be distinguished

from the genus *Rodhainyssus* by the presence, on both sides of the gnathosoma, of a strong triangular process directed posteriorly or postero-laterally.

Genotype: *Rodhainyssus brutsaerti* Fain 1956.

### Description of *Opsonyssus zumpti* n.g., n.sp.

This new species is easily distinguishable from the genotype by its very long and strong posterior setae, its strong ventral spines, the sclerotization of the space separating the coxae III, the posteriorly directed cephalic process, and the much longer legs.

#### FEMALE (Holotype). (fig. 1)

The body is flattened. The length of the idiosoma, the gnathosoma included, is  $326\ \mu$ ; that of the paratype is  $319\ \mu$ . The width between legs III and IV is  $115\ \mu$ ; (paratype,  $114\ \mu$ ). Dorsum: The hysterosoma is irregularly scaly, the proterosoma is sclerotized in its anterior portion. The venter is similar to that of *R. brutsaerti* but there are 2 pairs of small setae in the genital region instead of pores, and the soft part of the venter behind the genital region bears three pairs of setae, the posterior pair ( $10\text{--}12\ \mu$  long and  $4.5\text{--}5.5\ \mu$  wide) being lanceolated and much stronger than the other two. The two posterior marginal setae are  $260\ \mu$  long and  $7.6\ \mu$  wide at their bases; in the paratype they are  $235\ \mu$  long. The epimera are as in *R. brutsaerti*, but there is a sclerotized bridge between the epimera III. The soft cuticle behind the genital region is transversely striated. The lateral process of the gnathosoma is directed ventrally and posteriorly. Legs I to IV measure respectively:  $100\ \mu$ ,  $108\ \mu$ ,  $132\ \mu$  and  $150\ \mu$  (measured from the base of the trochanter to the tip of the tarsal spines). The anus is terminal and a small bursa copulatrix is visible dorsal to the anus.

Host and locality: Nasal cavities of *Rhinolophus capensis*, Lichtenstein, Wynberg cave (Table Mountain); 15-IX-1957. This new species is represented only by two female specimens. The holotype is in the collection of the S.A.I.M.R. and one paratype is in the collection of the author.

## MESOSTIGMATA.

### Family LAELAPTIDAE Berlese, 1892.

#### *Steatonyssus* sp.

Four nymphs belonging to the genus *Steatonyssus* were collected from the nasal cavities of *Tadarida bocagei* (Seabra), Kanye, Bechuanaland, 24-X-1957. This genus includes ectoparasites on bats and I believe that the presence of these nymphs in the nasal cavities is purely accidental and that they probably invaded the nose after the death of their host.

## 2. NASAL MITES OF BIRDS.

### SARCOPTIFORMES.

Family TURBINOPTIDAE Fain, 1957.

#### 1) *Schoutedenocoptes aquilae* Fain, 1956.

There are 5 specimens, all females, one of which is in bad condition. They were collected from the nasal cavities of *Kaupifalco monogrammicus* (Temmick), Sabi Sand Wildtuin near Newington, Transvaal, 12-VII-1957.

#### 2) *Schoutedenocoptes dartevellei* Fain, 1956.

This species is represented by a single female specimen from *Lophoceros flavirostris* (Rüppel), Sabi Sand Wildtuin, Transvaal, 17-VII-1957.

### MESOSTIGMATA.

Family RHINONYSSIDAE (Trouessart, 1895) Vitzthum, 1935.

1) Subfamily PTILONYSSINAE (Castro, 1948), Fain 1957.

#### 1) *Astridiella capitatus* (Strandtmann, 1956).

Syn. *Paraneonyssus capitatus* Strandtmann, 1956.

Fain (1957 a & d) established the genus *Astridiella* for 3 new species which agree in all respects with the genus *Ptilonyssus* except in having a distinct tritosternum ending in two lacinae. None of these 3 species has a pygidial shield. The species described as *Paraneonyssus capitatus* by Strandtmann must be classified in this genus. It bears a small tritosternum and has no pygidial plate. One specimen belonging to this species, a single female very much cleared, is present in our collection. I have not observed a tritosternum on this one; it has probably been rubbed off. In all other respects this specimen agrees with the description and the figures given by Strandtmann. Host: *Telophorus zeylonus* (Linnaeus), Winburg (Orange Free State), 11-I-1954.

In our collection of mites from Ruanda-Urundi I have found one specimen belonging to this species. The tritosternum is present and all the other characteristics agree with the original description. It was collected from *Telophorus dohertyi* (Rothschild), Rugege Forest, Ruanda-Urundi, IV-1956.

#### 2) *Astridiella caprimulgi* Fain, 1957.

This species is represented in the collection by a single female collected from *Caprimulgus curopaeus* Linnaeus, Debeete, Bechuanaland, 20-I-1956.

**3) Ptilonyssus terpsiphonei** Fain, 1956.

There are 8 females and 1 nymph from *Terpsiphone viridis* (Müller), Ndumu, Zululand, 17-VIII-1956, and one female from the same host at Rustenburg, Transvaal, 20-X-1955.

**4) Ptilonyssus echinatus** Berlese and Trouessart, 1889.

There is only one female specimen from *Hirundo rustica* Linnaeus, Bloemhof, Transvaal, 3-XII-1956.

**5) Ptilonyssus lanii** Zumpt and Till, 1955.

This species is parasitic in many hosts and has a wide distribution through Central and South Africa. The specimens were collected from the following hosts and localities: *Lanius collurio* Linnaeus at Mabelikwa, Transvaal, 12-I-1957 (one female); *Lanius collaris* Linnaeus from the same locality, 9-I-1957 (two females); from Rustenburg, Transvaal, 18-V-1957 (three females, one in bad condition); *Urolestes melanoleucus* Jardine from Newington, Transvaal, 14-VII-1957 (three females), and from Maun, Bechuanaland, 30-XII-1954 (one female).

The type of this species was described from *Lanius collaris* in South Africa. The following are the measurements of one specimen from the same host in Rustenburg: Idiosoma 672  $\mu$  long and 360  $\mu$  wide. Podosomal plate 232  $\mu$  long and 201  $\mu$  wide. Pygidial plate 38  $\mu$  long and 63  $\mu$  wide. Genital plate 145  $\mu$  long and 75  $\mu$  wide. Sternal plate weakly sclerotized, 115  $\mu$  long. Anal plate 119  $\mu$  long and 64  $\mu$  wide, bearing two hairs situated behind the anus. Gnathosoma 195  $\mu$  long; palpi alone 90  $\mu$ . Chelicera 186  $\mu$  long; basal dilated part 66  $\mu$  long. Tarsal claws I slightly modified as in *P. motacillae* Fain. The dorsal hairs on the opisthosoma are very short, 4 to 7  $\mu$ ; those of the ventral surface of the opisthosoma are much stronger and are 14 to 24  $\mu$  long. The specimens from *Urolestes* are larger, idiosoma 925  $\times$  420  $\mu$ , podosomal plate 285  $\mu$  long and 247  $\mu$  wide, and the two paired anal hairs are situated at the level of the anus.

**6) Ptilonyssus estrildicola** sp. nov. (figs 2—5).

This new species is based on several female specimens from the following ploceid birds (Sub-fam. Estrildinae) collected by the author in Ruanda-Urundi and which were labelled *P. lanii*: *Uraeginthus bengalus ugandae* Zedlitz, Astrida, 7-XI-1955; *Lagonosticta rhodopareia* Heuglin, Astrida, VII-55 (holotype) and IV-1954; *Lagonosticta rubricata* (Lichtenstein), Akanyaru, X-1955. In the present collection I have found 2 females from *Uraeginthus angolensis* (Linnaeus), Rustenburg, Transvaal, 18-V-1957, one female from *Pytilia melba* (Linnaeus), in the same locality, 4-V-1957, and one specimen from *Amadina erythrocephala* (Linnaeus), Bloemhof, Transvaal, 3-XII-1956. A specimen from *Granatina granatina* (Linnaeus), Debeete, Bechuanaland, 23-I-1956, is also assigned to this species. I place here provisionally 5 female specimens from *Batis capensis* (Linnaeus), Knysna, Cape Province, 26-XII-1953. They are

very much cleared and softened and their plates are difficult to trace. The anal shield has the same structure as in this new species but the apico-ventral tarsal hairs on leg IV are stronger and the tarsi of the palpi each bear a small forked seta with two short tines.

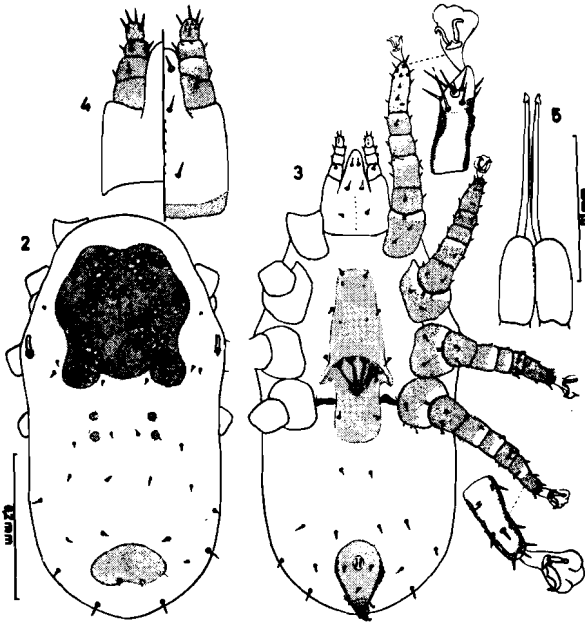


Fig. 2-5: *Ptilonyssus estrildicola* n.sp. female. Dorsal (2) and ventral view (3) Gnathosoma (4) and chelicerae (5).

#### FEMALE (Holotype).

Idiosoma 540  $\mu$  long, 258  $\mu$  wide. Podosomal plate the same shape as in *P. lanii* but smaller (195  $\times$  171  $\mu$ ) and with the posterior margin much lobated. In the specimen from *Pytilia* this plate has a length of 216  $\mu$  and a width of 204  $\mu$ . Pygidial plate 96  $\mu$  wide and 53  $\mu$  long; sternal plate weakly sclerotized, 102  $\mu$  long and 66  $\mu$  wide; genital plate 114  $\mu$  long and 60  $\mu$  wide; anal plate 95  $\mu$  long and 62  $\mu$  wide. Anus situated a little in front of the middle of the plate; 2 hairs are situated at the level of the anus and a 3rd hair in front of the cribrum. Gnathosoma, palpi included, 135  $\mu$  long; palpi alone 60  $\mu$  long. Chelicerae 165  $\mu$  long, the widened basal part 63  $\mu$  long, movable digit 6—7  $\mu$  long. Tarsal claws I slightly modified. Dorsal hairs on opisthosoma stronger than in *P. lanii* (they are 7—12  $\mu$  long) and the 2 terminal hairs are 16  $\mu$  long; the ventral hairs are smaller than in *P. lanii* and are 10—16  $\mu$  long. This new species is distinguishable from *P. lanii* by the smaller size of the idiosoma, the gnathosoma, the chelicerae and

the plates, except the pygidial plate which is relatively much larger, by the chaetotaxy and by the structure of the anal plate. It seems to be very close to *P. japuibensis* Castro but the shape of the podosomal plate and the chelicerae, and the dorsal chaetotaxy are different.

The holotype, collected from *Lagonosticta rhodopareia* Heuglin, Astrida, Ruanda-Urundi, VII-1955, is in the collection of the Congo Museum (Tervuren, Belgium); paratypes are in the collection of the S.A.I.M.R. and of the author.

### 7) *Ptilonyssus motacillae* Fain, 1956. (fig. 10)

There are 7 females, 4 males and 2 nymphs from *Motacilla capensis* (Linnaeus), Johannesburg, 22-VII-1855; one nymph from *Motacilla aguimp* Dumont, Mabelikwa, Transvaal, 6-I-1957 and one female from *Erythropygia coryphaeus* (Lesson), Colesberg, Cape Province, 8-XII-1953. This last specimen is much softened by the potash and the dorsal shields are difficult to trace, but it agrees in other respects with this species.

### 8) *Ptilonyssus pycnonoti* Fain 1956.

Host: *Pycnonotus nigricans* (Vieillot), Potchefstroom, Transvaal, 12-VII-1954 (Coll. No. 28-II-54). One female specimen.

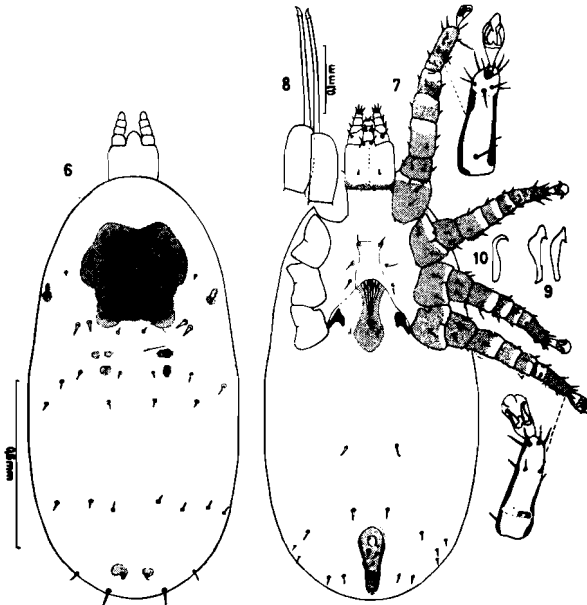


Fig. 6-9: *Ptilonyssus tillae* n.sp., female. Dorsal (6) and ventral view (7). Chelicerae (8). Claw of tarsus I (9).

Fig. 10: *Ptilonyssus motacillae* Fain, female. Claw of tarsus I.

**9) Ptilonyssus tillae** n.sp.\* (figs. 6—9).

This species is, in general appearance, similar to *Ptilonyssus motacillae* Fain, but the tarsal claws of leg I are very modified, the idiosoma is longer and wider, the podosomal and genital plates are slightly different in shape, and the dorsal chaetotaxy of the idiosoma is much stronger. It is distinguishable from *P. japuibensis* Castro and *P. sairae* Castro by the presence of two pygidial plates, the structure of the anal plate and the much larger size of the idiosoma and the shields.

**FEMALE (Holotype).**

The length of the idiosoma is  $1210\ \mu$  in the holotype, as against  $1340$ — $1200$ — $1150$  and even  $850\ \mu$  in some paratypes. The specimen of  $850\ \mu$  is very shrunken. The width between the 3rd and 4th pair of legs is  $590\ \mu$ . The dorsum is covered by a large podosomal plate which is  $335\ \mu$  long and  $315\ \mu$  wide in the holotype, in paratypes  $336 \times 332\ \mu$ ,  $345 \times 335\ \mu$ ,  $335 \times 310\ \mu$  and  $316 \times 305\ \mu$ . The peritremes are  $43\ \mu$  long and are situated at the level of the 3rd coxae. The cuticle bears, at the level of the postero-lateral angles of the podosomal plate, 2 pairs of strong setae about  $25$ — $30\ \mu$  long, and behind this plate several rows of setae  $14$  to  $18\ \mu$  long. There are two small rounded pygidial plates  $40\ \mu$  in diameter. The posterior margin of the idiosoma bears 2 setae,  $35$ — $40\ \mu$  long. Ventrally there is a weakly sclerotized sternal plate which is  $121\ \mu$  long and  $75\ \mu$  wide. The 2 anterior sternal setae are situated on the sternal plate, while the 4 others are situated on the soft skin. The genital plate, narrowed in its median part, is  $220\ \mu$  long and  $79\ \mu$  wide in its posterior 3rd, (paratypes:  $210\ \mu \times 95\ \mu$  and  $200\ \mu \times 94\ \mu$ ). The genital hairs are rubbed off in the holotype. In the paratypes they are situated on the plate. Behind the genital plate the venter bears several setae  $25$  to  $28\ \mu$  long. The anus is situated in the anterior part of a weakly sclerotized plate which is  $198\ \mu$  long and  $80\ \mu$  wide. The 3 anal hairs are situated between the anus and the cribrum. The gnathosoma is  $262\ \mu$  long, the palpi alone being  $114\ \mu$  long. The chelicerae are  $285\ \mu$  long (in paratypes:  $310$ — $288$ — $280\ \mu$ ), the basal widened part is  $114\ \mu$  long, and the movable digit  $11\ \mu$ . The first leg ( $646\ \mu$ ) is longer than the 4th ( $570\ \mu$ ). The claws of leg I are very abnormal, while in *P. motacillae* they are only slightly modified (figs. 9 and 10).

**MALE.** There are 2 specimens in very bad condition. The dorsum bears 2 large sclerotized plates. The length of the chelicerae is  $156\ \mu$ , the movable digit  $51\ \mu$ .

*Host and locality:* 1) *Lamprotornis mevesii* (Wahlberg), Sabi Sand Wildtuin, near Newington, Transvaal, 15-VII-1957: the holotype and 15 females (10 in bad condition), 2 males (very badly preserved) and 2 nymphs.

\* This species is named in honour of Dr. W. M. Till, of the South African Institute for Medical Research.



2) *Lamprotornis australis* (A. Smith), Newington, 14-VII-1957: 4 females (2 incomplete) and 2 nymphs.

3) In the collection from Ruanda-Urundi there is 1 female belonging to this species and collected from *Lamprocolius chalybaeus* (Hemprich & Ehrenburg), Gisagara, 17-I-1956.

#### 10) *Ptilonyssus dioptrornis* Fain 1956.

*Host and locality:* One female collected from *Cossypha dichroa* (Gmelin), Storms River, Cape Province, 1-I-1954. This specimen agrees well with the type. In this specimen, as in the type, the tarsus of leg I bears in the apico-ventral position a strong blunt spine which was omitted in the figure given with the original description. This species has characteristics of the two genera *Sternostona* and *Ptilonyssus*; it constitutes in fact a link between these two genera. It has a pygidial plate, a terminal or nearly terminal rostrum as in *Ptilonyssus*, but is devoid of a true peritreme and the spiracle is surrounded by an oval, punctate membrane.

#### 11) *Ptilonyssus melittophagi* Fain 1956.

There is one female specimen from *Melittophagus pusillus* (Müller), Newington, Transvaal, 19-VII-57.

#### 12) *Ptilonyssus cisticolarum* n.sp. (fig. 11—13).

This new species has a pear-shaped podosomal plate as in *P. pycnonoti*, *P. aureliani* Fain and *P. chlorocichlae* Fain. It differs from the first named species in the much reduced size of the idiosoma, the shape and the size of the podosomal plate which is much smaller, the presence of a sternal plate, the structure of the anal plate and the chaetotaxy. It may be distinguished from *P. aureliani* chiefly by the chaetotaxy. From *P. chlorocichlae* it differs in the smaller size of the idiosoma and the podosomal plate, the shape of this plate and the absence of 2 strong bristles on its posterior border, the presence of a sternal plate, the structure and the size of the anal and genital plates.

#### FEMALE (Holotype).

The length of the idiosoma is 850  $\mu$ , the width between legs III and IV being 330  $\mu$ . In the paratypes the idiosoma measures 590  $\times$  270  $\mu$  and 780  $\times$  240  $\mu$ . Dorsally there is a podosomal plate similar to that of *P. aureliani* but more pear-shaped. This plate is 162  $\mu$  long and 126  $\mu$  wide (paratypes: 144  $\times$  126  $\mu$  and 150  $\times$  132  $\mu$ ). The peritremes are 24  $\mu$  and 27  $\mu$  long and are situated dorsally at the level of the 3rd coxae. The soft part of the dorsum bears, in the podosomal region, 6 pairs of very small hairs and 2 pairs of strong bristles (26—30  $\mu$ ). The opisthosoma bears four small sclerotized areas and more posteriorly a small pygidial plate which is wider than long (81  $\times$  26  $\mu$ ), and 8 pairs of bristles 10—18  $\mu$  long. Ventrally there is a distinct but weakly sclerotized sternal plate. The first pair of sternal hairs

is situated on the anterior border of the plate, and the remaining two pairs on soft skin. The genital plate is  $140\ \mu$  long and  $33\ \mu$  wide. The genital hairs ( $10\text{--}15\ \mu$  long) are situated on soft skin near the postero-lateral border of the plate (on this border in paratype). The anal plate is pointed posteriorly,  $114\ \mu$  long and  $57\ \mu$  wide. The anal hairs are as in *P. aureliani*. The venter bears several hairs which are much smaller and thinner than in *P. aureliani* ( $19\text{--}30\ \mu$  long and  $3\text{--}4\ \mu$  wide basally). The gnathosoma is  $162\ \mu$  long, the length of the palpi  $78\ \mu$ . The chelicerae are  $165\ \mu$  long, with the basal half greatly widened; the movable digit is  $7\text{--}9\ \mu$  long. Leg I is longer ( $324\ \mu$ ) than leg IV ( $282\ \mu$ ). All the claws are small and weakly sclerotized. The claws of leg I have the same shape as those of the following legs. The chaetotaxy of the legs is indicated in the drawing; the setae of the ventral surface of the coxae and the trochanter arc  $14\text{--}20\ \mu$  long and slightly widened basally ( $4\text{--}5\ \mu$  wide).

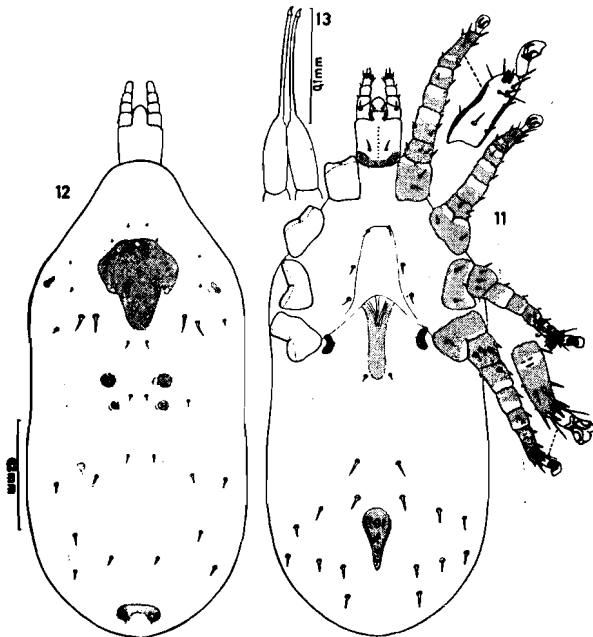


Fig. 11-13: *Ptilonyssus cisticolarum* n.sp., female. Ventral (11) and dorsal view (12). Chelicerae (13).

This species is based on the holotype, a paratype female in bad condition and one nymph from *Cisticola fulvicapilla* (Vieillot), Rustenburg, Transvaal, 4-V-1957. Two other females in bad condition were collected from *Apalis flavida* (Strickland), Duiwelskloof, Transvaal, 2-X-1954.

In our collection from Ruanda-Urundi there are several females, labelled *P. calamocichlae* Fain, which belong in fact to this species. They were collected by the author from *Cisticola robusta nuchalis* Reichenow, Astrida, 5-II-1956, *Cisticola erythrips sylvia* Reichenow, Akanyaru, 20-X-1955, *Prinia leucopogon* (Cabanis), Akanyaru, 13-XII-1955, and *Apalis flavida caniceps* (Cassin), Akanyaru, 19-X-1955. The pygidial plate in this species is in a very unstable condition. In some specimens from *Cisticola* it is transversely elongated and very faint in its median part. In all the specimens from *Prinia* and from *Apalis* there are 2 small pygidial shields, distinctly separated, in the female and only a single one in the nymph.

**13) *Ptilonyssus fringillicola* n.sp. (figs. 14—17).**

In the nasal cavities of *Poliospiza striolata kivuensis* Schouteden from the Rugege Forest, Ruanda-Urundi, the author found in June 1955 several female specimens of a species that had been mentioned in his preceding papers as *P. lanii*. In fact these specimens are distinguishable from *P. lanii* and from *P. motacillae* by different characteristics such as the structure of the anal plate and the dorsal chaetotaxy. They have the same general appearance as *P. sairae* but the shape of the podosomal plate is different and the chelicerae are much shorter and have a relatively longer widened basal part. This new

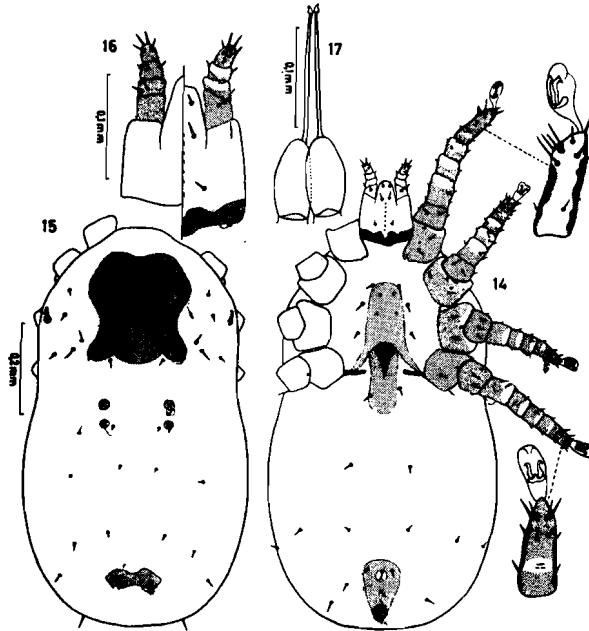


Fig. 14-17: *Ptilonyssus fringillicola* n.sp., female. Ventral (14) and dorsal view (15). Gnathosoma (16) and chelicerae (17).

species is distinguishable from *P. tillae* and *P. japuibensis* by the size of the idiosoma and the shields, the shape of the podosomal plate, and several other characteristics. It may be distinguished from *P. estrildicola* chiefly by the larger size of the idiosoma, the structure of the dorsal chaetotaxy, the relatively smaller size of the pygidial plate, the narrower genital plate, the structure of the anal plate, and the sclerotization of the sternal plate.

In the collection of Dr. F. Zumpt there are 5 specimens collected from *Serinus atrogularis* A. Smith and 6 specimens from *Emberiza flaviventris* Stephens showing the same characteristics as the above specimens. Several other specimens from the latter host were collected by the author in Ruanda-Urundi and were labelled *Ptilonyssus lanii*.

#### FEMALE.

The specimens from *Poliospiza* are 830 to 870  $\mu$  long and 370 to 430  $\mu$  wide (holotype 840  $\mu$  long and 420  $\mu$  wide); those from *Serinus* are more or less retracted and measure 600—780  $\mu$  in length. Dorsally there is a podosomal plate having the same general appearance as in *P. motacillae*. In the holotype it is 228  $\mu$  long and 216  $\mu$  wide (in paratypes 210—225  $\mu$   $\times$  160—186  $\mu$ ). The dorsal chaetotaxy is as in the drawing. The pygidial shield is 45  $\mu$  long and 115  $\mu$  wide (in paratypes 30—39  $\mu$   $\times$  76—90  $\mu$ ). The peritreme, at the level of the coxae III, is 34  $\mu$  long. The cuticle bears laterally, at the level of the postero-lateral angles of the podosomal plate, 2 pairs of strong setae (25—30  $\mu$  long) and more laterally 2 shorter setae. On the opisthosoma there are several rows of shorter setae (6—16  $\mu$ ). Ventrally there is a well sclerotized sternal shield within the area bordered by the 6 sternal hairs. The genital plate is tongue-shaped or slightly narrowed in the median part; it is 150  $\mu$  long and 60  $\mu$  wide in the holotype (in paratypes 135—140  $\mu$   $\times$  50—57  $\mu$ ). The genital hairs are situated on the plate or on the soft skin. The anal plate is pear-shaped, 132  $\mu$  long and 75  $\mu$  wide. The anus is situated in the anterior third of the plate, the paired anal hairs are on the anterior border or in front of the anus and the posterior hair between the anus and the cribrum. The gnathosoma is 182  $\mu$  long, the palpi alone being 80  $\mu$ . The chelicerae are much swollen in their basal third; they are 210  $\mu$  long in the holotype, the swollen part measuring 76  $\mu$ . The movable digit is very short (7—8  $\mu$ ). In paratypes the chelicerae are 182 and 198  $\mu$  long. Leg I bears in the holotype a modified claw as in *Ptilonyssus tillae* and it is longer (400  $\mu$ ) than leg IV (350  $\mu$ ). In the specimens from *Serinus atrogularis* the idiosoma and the sclerotized shield are generally a little smaller than in the specimens described above, and the tarsal claw of leg I has a nearly normal shape.

The specimens from *Emberiza flaviventris* also agree with the above description but they have 2 small rounded and distinctly separated pygidial shields instead of one, and claw I has a normal shape but it is a little smaller and less curved than the following ones.

*Host and locality*: *Poliospiza striolata kivuensis*, Rugege Forest, Ruanda-Urundi, III-1-56 (holotype and several female specimens); *Serinus atrogularis*,

Pietersburg, Transvaal, South Africa, 29-IX-1954 (5 females), *Emberiza flaviventris*, Kaninya, Ruanda-Urundi, 13-V-55 (several females) and Tsessebe, 23-XII-1955 (4 females and 2 nymphs).

This new species belongs to a group of seven very closely related species to which the following key is given.

### Key to the *Ptilonyssus* species of the "sairae" group.

1. The soft cuticle of the dorsum bears very short conical hairs (3—8  $\mu$  long in *P. motacillae* and *P. lanii*) or short spinous setae (7—12  $\mu$  in *P. estrildicola*) . . . . . 2  
 All the dorsal setae are much longer or the cuticle bears on the postero-lateral angles of the podosomal plate 2 pairs of spinous setae which are distinctly stronger and longer (20—30  $\mu$ ) than those on rest of dorsum . . . . . 4
2. A single pygidial plate; anal plate broadly pear-shaped; genital plate relatively short and wide; ventrally the antero-internal angle of basal movable segment of palp is very slightly or not produced . . . . 3  
 Two small pygidial plates; genital plate long and narrow; anal plate elongated; ventrally the antero-internal angle of basal movable segment of palp is strongly produced . . ***Ptilonyssus motacillae*** Fain.
3. Smaller species; dorsal hairs stronger (7—12  $\mu$  long); ventral hairs shorter (10—16  $\mu$  long); podosomal plate circa 200  $\mu$  long and 185  $\mu$  wide, wide posterior margin lobated; pygidial plate relatively larger (53  $\mu$  long and 96  $\mu$  wide in holotype); anal plate bearing 3 hairs . . . . . ***Ptilonyssus estrildicola*** n.sp.  
 Larger species; dorsal hairs weaker (4—6  $\mu$  long); ventral hairs longer (14—24  $\mu$ ); podosomal plate larger (average 250  $\mu$  long and 220  $\mu$  wide); pygidial plate relatively smaller (38  $\mu$  long and 63  $\mu$  wide); anal plate generally bearing 2 hairs.  
 . . . . . ***Ptilonyssus lanii*** Zumpt and Till.
4. Larger species: average length of idiosoma 1200  $\mu$ . The 3 anal hairs situated behind the anus. Podosomal plate approximately as wide as long (in the holotype 335  $\mu$  long and 315  $\mu$  wide). Anal and genital plates elongated . . . . . ***Ptilonyssus tillae*** n.sp.  
 Smaller species: length of idiosoma not reaching 1 mm. The 2 paired anal hairs situated in front of anus and the 3rd hair behind the anus. Podosomal plate much smaller or distinctly longer than wide . . . 5
5. Podosomal plate distinctly longer than wide. Idiosoma 830—950  $\mu$  long. Chelicerae 270—280  $\mu$  long, swollen in basal fourth.  
 . . . . . ***Ptilonyssus sairae*** Castro.

Podosomal plate only slightly longer than wide, Idiosoma smaller.  
Chelicerae much smaller . . . . . 6

6. Idiosoma smaller (520—660  $\mu$ ). Posterior margin of podosomal plate very slightly festooned . . . . . **Ptilonyssus japuibensis** Castro.  
Idiosoma larger (750—870  $\mu$ ). Podosomal plate having another shape. Sternal shield well sclerotized . **Ptilonyssus fringillicola** n.sp.

**14) Sternostoma turdi** Zumpt and Till 1955.

There are 4 female specimens, one of which is in bad condition, collected from *Turdus libyanus* (A. Smith), Rustenburg, Transvaal, 18-V-1957. This species is easily distinguishable from allied species by the very characteristic structure of its anal shield. Furman (1957) has given a new description of this species based on a female paratype.

**15) Sternostoma hirundinis** Fain 1956.

The 8 specimens that are believed to belong to this species, 7 females and 1 male, were collected from *Cisticola aberrans* (A. Smith), Rustenburg, Transvaal, 18-V-1957.

These specimens agree in general appearance with *S. hirundinis* except in some minor points: the idiosoma is smaller, its length is 375—400  $\mu$ ; the tongue-shaped genital plate is more elongated (105 to 110  $\mu$  long and 60  $\mu$  wide) and is flanked by two very small genital hairs; the opisthosomal plate is slightly smaller; the 2 cylindrical apical hairs of the palpi are longer (6—8  $\mu$ ); there are 6 hairs on the venter behind the genital plate and the anal plate is slightly sclerotized behind the anus.

The length of the idiosoma of *S. hirundinis* in the type is 490  $\mu$  but this specimen is somewhat crushed and its length is perhaps a little exaggerated, for some of our paratypes do not measure more than 400  $\mu$ . The length of the 2 apical hairs of the palpi is also variable in our paratypes.

The following are the measurements of a female collected from *Cisticola aberrans*. The idiosoma is 375  $\mu$  long and 200  $\mu$  wide. The podosomal and opisthosomal shields measure respectively 180  $\times$  155  $\mu$  and 110  $\times$  112  $\mu$ , and are of the same shape as in the type. The sternal and genital plates measure respectively 99  $\times$  80  $\mu$  and 108  $\times$  60  $\mu$ . The total length of the gnathosoma is 96  $\mu$ , the palpi alone being 56  $\mu$  long. The chelicerae are 75  $\mu$  long, and 8 to 12  $\mu$  wide at their base.

**MALE:** The single male specimen is slightly crushed. Its length (372  $\mu$ ) exceeds that of the type (300  $\mu$ ), but it has the same characteristics as the latter.

**16) Sternostoma sturnicola** Fain 1956.

There is a single female specimen from *Lamprocolius chalybaeus* (Hemprich & Ehrenburg), Tsane, Bechuanaland, XII-1954.

**17) *Sternostoma cisticolae* Fain 1957.**

There are 3 female specimens from *Apalis flavida*, Duiwelskloof, Transvaal, 2-X-1954. These specimens are slightly larger than in the typical series from *Cisticola*. The idiosoma is 600—707  $\mu$  long. The podosomal plate is 285—300  $\mu$  long and 174—200  $\mu$  wide. Length/width is 1,5 to 1,7. The other plates have the same shape as in *S. cisticolae* but they are slightly larger, except the genital plate which is shorter (120—124  $\mu$  long, and 55—75  $\mu$  wide in its posterior third). The other characteristics agree well with the original description.

**18) *Sternostoma cuculorum* var. *urolestis* var. nov.**

The 4 specimens collected from *Urolestes melanoleucus* (Jardine) and belonging to this new variety, differ in several respects from the type described from *Cuculus solitarius* Stephens. They are larger, having a longer podosomal plate, a narrower opisthosomal plate, and a broader genital plate. The gnathosoma is nearly completely ventral and the anal plate is broader, more sclerotized, bearing two small setae behind the anus and a wider cribrum. In fact they agree in all respects with the 2 specimens collected previously in Ruanda-Urundi from *Clamator levaillanti* Swains, and labelled *Sternostoma cuculorum* Fain.

**FEMALE (Holotype).**

The idiosoma is 840  $\mu$  long and 450  $\mu$  wide. The podosomal plate has the same shape but is more pointed anteriorly than in the type. It is 326  $\mu$  long and 270  $\mu$  wide. The opisthosomal plate is longer (205  $\mu$ ) than it is wide (165  $\mu$ ). Ventrally there is a well sclerotized sternal plate which is 160  $\mu$  long and 120  $\mu$  wide. The genital plate is 182  $\mu$  long and 90  $\mu$  wide in its posterior third. The anal plate is oval, more sclerotized and larger than in the type; the anus is situated in the anterior half of the plate; there are 2 anal hairs behind the anus. Gnathosoma completely ventral in the holotype or nearly so in some paratypes; its total length is 90  $\mu$ . Palpi 33  $\mu$  long, having the same structure as in the nominate form, their coxae being 27 to 29  $\mu$  wide. Chelicerae 85  $\mu$  long in paratypes. Legs and chaetotaxy as in the nominate form.

*Types*: from *Urolestes melanoleucus*, Gravelotte, Transvaal, 30-X-1957 (holotype and 3 female specimens); *Clamator levaillanti* Swains, Musha, Ruanda-Urundi, V-1955 (2 female specimens).

2) Subfamily RHINONYSSINAE (Trouessart, 1895) Fain emend., 1957.

**19) *Neonyssus buteonis* Fain 1956.**

There are 5 specimens, 3 females and 2 males, from *Coracias caudata* Linnaeus, Gravelotte, Transvaal, 29-X-1957. These specimens agree very well with the original description.

**20) Neonyssus melloi** Castro 1948.

There is only a single female from *Streptopelia capicola* (Sundevall), Louis Trichardt, Transvaal, 4-I-1957.

**21) Neonyssus bubulci** Zumpt and Till 1955.

This species is represented by two female specimens collected from *Mesophoyx intermedius* (Wagler), Serowe, Bechuanaland, 14-I-1956.

**22) Neonyssus ardeae** Zumpt and Till 1955.

Sixteen females, 6 males and 2 nymphs from *Egretta garzetta* (Linnaeus) Simbu Pan, Zululand, 18-VIII-1956, are assigned to this species. The opisthosomal plate in these specimens is more elongated than in the typical series but in the other characteristics they agree with the original description. Strandtmann (1956) believes that this species is a synonym of *Neonyssus belopoliskii* Bregetova, 1950.

**23) Rallinyssus caudistigmus** Strandtmann 1948.

There is one specimen of this species from *Fulica cristata* Gmelin, Johannesburg, Transvaal, 19-XI-1953. It agrees well with the original description but the anterior part of the podosomal shield is very irregular.

**24) Rhinoecius tytonis** Fain 1956.

I have seen three specimens, one female, one male and 1 nymph, belonging to this species, from *Tyto alba*, (Scopoli), Mabelikwa, Transvaal, 11-I-1957.

**TROMBIDIFORMES.**

Family EREYNETIDAE (Oudemans, 1931) Fain emend., 1957.

Subfamily SPELEOGNATINAE Fain 1957.

**Boydaia nigra** Fain 1955.

There are 11 female specimens from *Motacilla capensis*, Johannesburg, Transvaal, 22-VII-1955, and one female from *Polioispiza gularis*, (A. Smith), Tsessebe, Bechuanaland, 8-I-1956.

**Acknowledgements.**

I wish to take this opportunity of thanking Dr. F. Zumpt for his kindness and courtesy in lending me his interesting collection of mites for this study.



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