

New species of the feather mite genus *Metapteronyssus* GAUD, 1981 (Astigmata Analgoidea Pteronyssidae) from African passerines (Aves Passeriformes)

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Abstract

Nine new species of the feather mite genus *Metapteronyssus* GAUD 1981 are described from South African passerines of the families Estrildidae and Ploceidae: *Metapteronyssus plocei* sp. n. from the Village Weaver *Ploceus cucullatus*, *M. gaudi* sp. n. from the Orange Weaver *P. aurantius*, *M. puylaerti* sp. n. from the African Masked Weaver *P. velatus*, *M. capensis* from the Cape Weaver *P. capensis*, *M. bubalornis* sp. n. from the White-billed Buffalo Weaver *Bubalornis albirostris*, *M. plocepasseri* sp. n. and *M. anoplonotus* sp. n. from the White-browed Sparrow *Plocepasser mahali*, *M. daberti* sp. n. from the Red-backed Sparrow Weaver *Pl. rufoscapulatus*, and *M. lonchurae* sp. n. from the African Silverbill *Lonchura cantans orientalis*. A key to all recently known species of the genus *Metapteronyssus* is provided.

Key words: feather mites, Analgoidea, Pteronyssidae, new species, Passeriformes, Africa.

Résumé

Neuf espèces nouvelles d'Acariens plumicoles du genre *Metapteronyssus* Gaud, 1981 sont décrites sur passereaux des familles des Estrildidae et Ploceidae d'Afrique Sud: *Metapteronyssus plocei* sp. n. sur *Ploceus cucullatus*, *M. gaudi* sp. n. sur *P. aurantius*, *M. puylaerti* sp. n. sur *P. velatus*, *M. capensis* sur *P. capensis*, *M. bubalornis* sp. n. sur *Bubalornis albirostris*, *M. plocepasseri* sp. n. et *M. anoplonotus* sp. n. sur *Plocepasser mahali*, *M. daberti* sp. n. sur *Pl. rufoscapulatus*, et *M. lonchurae* sp. n. sur *Lonchura cantans orientalis*. La clé est fournie pour toutes les espèces du genre *Metapteronyssus*.

Mot clé: feather mites, Analgoidea, Pteronyssidae, new species, Passeriformes, Africa

Introduction

The present report continues a series of publications dedicated to the biodiversity and taxonomy of feather mites associated with the passerines of Africa (MIRONOV & KOPIJ, 1996a, b, 1997, 2000a – c; MIRONOV, 2001). Three latter publications were focused on the mite genera belonging to the family Pteronyssidae OUDEMANS, 1941 (Analgoidea). The present paper, also dealing with the systematics of this family, includes descriptions of nine new species of the genus *Metapteronyssus* GAUD, 1981 (in: FACCINI & ATYEO, 1981) found on various passerine birds of the families Estrildidae and Ploceidae from Africa (Table). It also contains a key to all recently known species.

Up to now the genus *Metapteronyssus* has included two species, *Metapteronyssus glossifer* (GAUD, 1953) and *M. angolensis* MIRONOV & KOPIJ, 2000, described from African passerines (GAUD, 1953; MIRONOV & KOPIJ, 2000b). This genus represents a morphologically highly evolved taxon among the eight pteronyssid genera known from the passerine birds (FACCINI & ATYEO, 1981; MIRONOV, 2001). It is characterized by the absence or great reduction of the vertical seta *vi* in both sexes and by the development of the internal hysteronotal ridges on the hysteronotal shield of males (Fig. 1). Based on the previous records (GAUD & MOUCHET, 1959; GAUD & TILL, 1961) and the host associations revealed during the present study, it is reasonable to conclude that the host range of this mite genus is restricted to the Estrildidae and Ploceidae.

Material and methods

The main part of the material used in the present study was borrowed in a loan from the Musée Royal de l'Afrique Centrale (Tervuren, Belgium). These feather mite specimens were originally accumulated from various sources or personally collected by the late Prof. Dr. J. Gaud (Université de Nice, France). One new species was recovered in the synoptic feather mite collection of the A. Mickiewicz University (Poznan, Poland).

In the descriptions of the taxa and a key to species, the chaetotaxy of the idiosoma follows GRIFFITHS *et al.* (1990), and the leg chaetotaxy is that of ATYEO & GAUD (1966). The general terminology follows GAUD & ATYEO (1996); the terms used for the description of the dorsal hysteronotal shields in the pteronyssid females were proposed by MIRONOV (1992). All measurements are given in micrometers (μm). Since the number of specimens in most type series was restricted, a full set of measurements is given only for the holotype (male) and one paratype (female). The range of idiosomal size (length, width) and some important characters is displayed for other paratype specimens.

Abbreviations given in the access numbers of examined material and used to point out the type material

Table — Parasite-host associations of the genus *Metapteronyssus*

Mite species	Host species	Locality	Reference
<i>M. plocei</i>	<i>Ploceus cucullatus</i> , <i>P. nigricollis brachypterus</i> <i>P. xanthosp</i>	French Equatorial Africa “ Transvaal	Present study “ “
<i>M. gaudi</i>	<i>Ploceus aurantius aurantius</i> <i>P. bicolor amaurocephalus</i> <i>P. nigerrimus</i> <i>P. nigricollis brachypterus</i>	Nigeria Cameroon “ “	Present study “ “ “
<i>M. puylaerti</i>	<i>Ploceus velatus</i>	Transvaal	Present study
<i>M. capensis</i>	<i>Ploceus capensis</i>	South Africa: Cape Prov.	Present study
<i>M. bubalornis</i>	<i>Bubalornis albirostris</i>	Cameroon	Present study
<i>M. anoplnotus</i>	<i>Plocepasser mahali</i> <i>Quelea quelea</i>	South Rhodesia, Transvaal South Rhodesia	Present study “
<i>M. daberti</i>	<i>Plocepasser rufoscapulatus</i>	North Rhodesia	Present study
<i>M. plocepasseri.</i>	<i>Plocepasser mahali</i>	South Rhodesia	Present study
<i>M. lonchurae</i>	<i>Lonchura cantans orientalis</i>	Somali	Present study
<i>M. glossifer</i>	<i>Euplectes oryx franciscana</i> <i>E. hordaceus</i> <i>Uraeginthus bengalus</i> (?)	Sudan “ “	Gaud, 1953 “ “
<i>M. angolensis</i>	<i>Uraeginthus angolensis</i>	South Africa: Northern Prov.	Mironov & Kopij, 2000b

(?) - Questionable record.

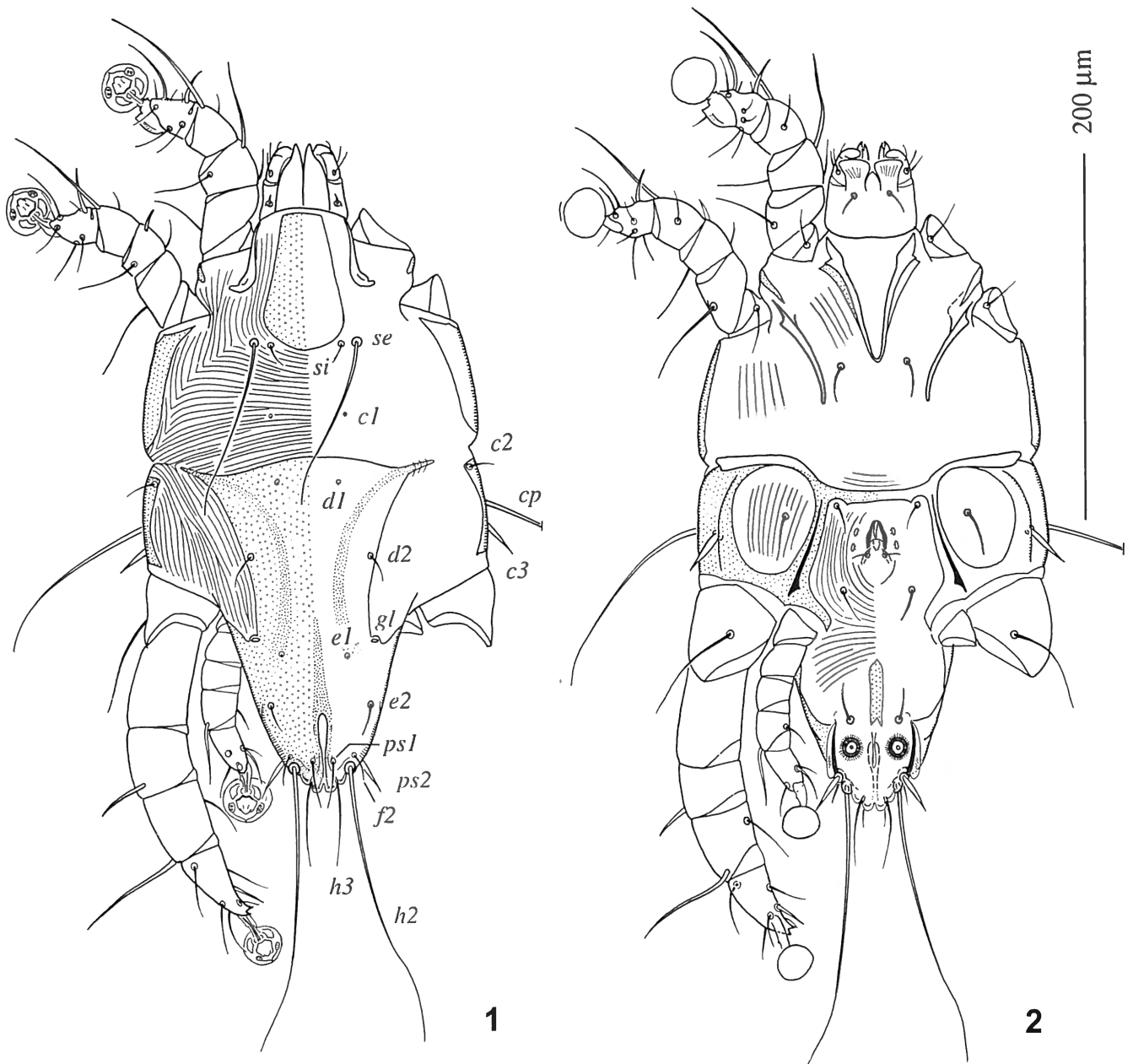
reposition are as follows: MRAC - Musée Royal de L'Afrique Centrale (Tervuren, Belgium); NMB - National Museum of Bloemfontein (Free State, South Africa); UGA - University of Georgia (Athens, USA); UMMZ - Museum of Zoology, University of Michigan (Ann Arbor, USA); USNM - U.S. National Museum of natural History (Washington D.C., USA); ZISP - Zoological Institute, Russian Academy of Sciences (Saint-Petersburg, Russia). In those cases when the specimen is provided with two numbers, the first one means the collection number of mite, and the second one is the collection number of the host specimen.

Family Pteronyssidae OUDEMANS, 1941
Genus *Metapteronyssus* GAUD, 1981

1. *Metapteronyssus plocei* MIRONOV sp. n.
(Figs. 1-7)

MALE (HOLOTYPE). Length of idiosoma 314, width of idiosoma 182 (idiosomal size in 26 paratypes 295-316 x 160-182). Prodorsal shield with rounded posterior end, without extending posterior angles, 70 in length, 43 in width, vertical seta *vi* absent, scapular setae *si*, *se* on striated tegument, setae *se* separated by 56. Length of

hysterosoma 178. Setae *c3* narrow lanceolate, with thin apex, 30 in length. Hysteronotal shield: anterior margin convex, length along medial line 175, width at anterior margin 125, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* anterior to level of setae *h2*. Opisthosoma gradually attenuate to posterior end, terminal part of opisthosoma with pair of small tongue-like lobules between bases of setae *h3*, margins of lobules with narrow rounded terminal membranes; margins of opisthosoma between bases of setae *h2* and *h3* bearing small rounded subterminal membranes similar in size to terminal membranes (Figs. 1, 6), length of terminal membranes about 3-3.5, length of incision between lobules 5. Distance between setae and openings: *c2-d2* 48, *d2-e2* 80, *d2-gl* 40, *gl-e1* 8, *h2-h2* 27. Transventral sclerite thin, almost straight sclerite connecting coxal fields III, length along median line 4.5, tips of epiandrium on its posterior margin scarcely marked, setae *3a* posterior to transventral sclerite (Fig. 5). Genital arch 20 in length, 10 in width, genital setae *g* situated at base of genital arch. Adanal apodemes bow-like. Adanal membranes narrow, slightly enlarged posteriorly. Adanal shield represented by single medial sclerite as longitudinal bar. Tarsus III 40 in length; its apical processus bearing two teeth slightly curved medially, seta *r* about 1/2 of segment length, seta *s* needle-like (Fig. 7).

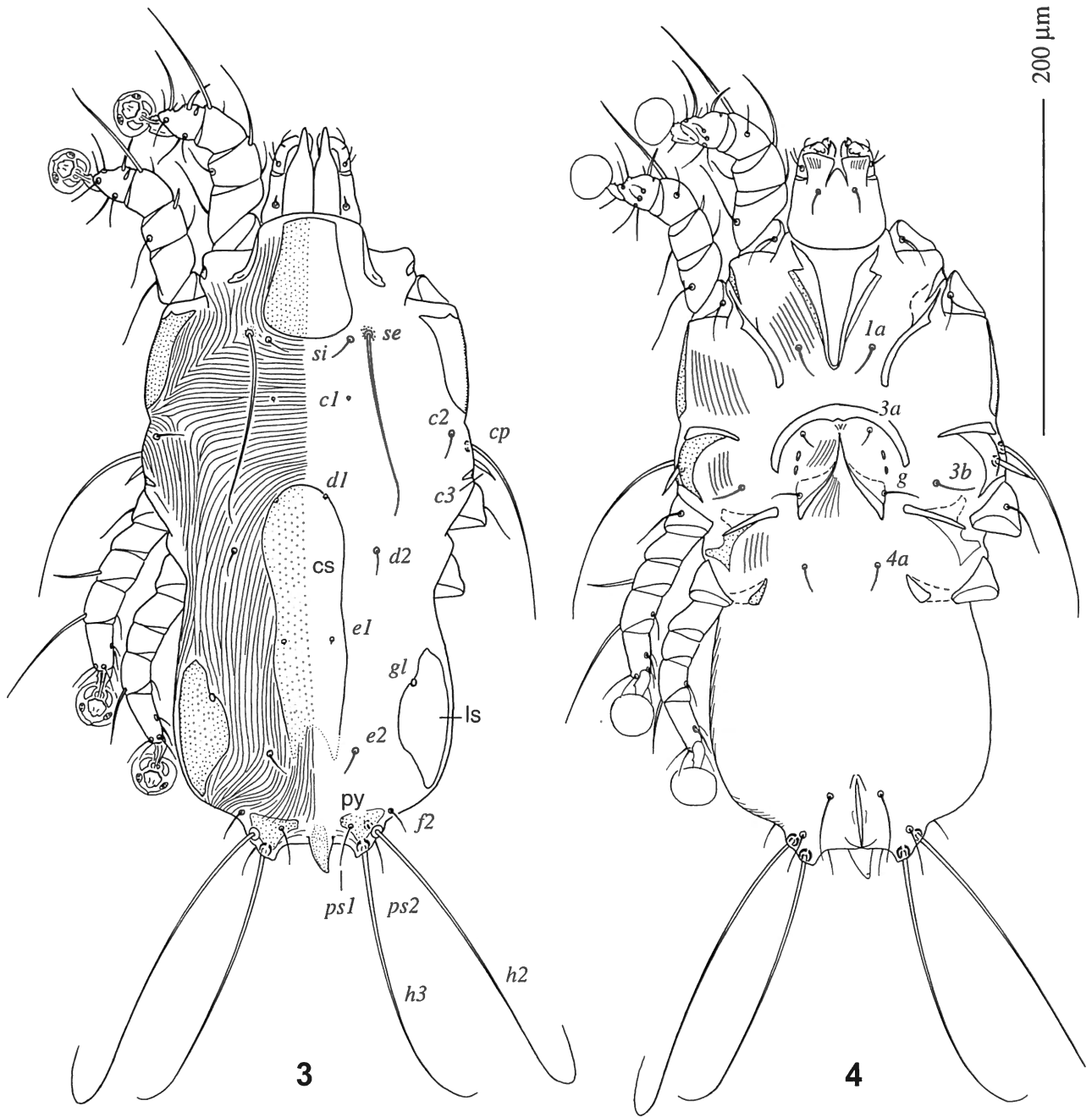


Figs. 1, 2 — *Metapteronyssus plocei*, male. 1: dorsal view, 2: ventral view.

FEMALE (PARATYPE). Length of idiosoma 380, width of idiosoma 194 (idiosomal size in 15 other paratypes 374-376 x 188-198). Prodorsal shield as in the male, 76 x 54, setae *se* separated by 68. Length of hysterosoma 254. Setae *c3* narrow lanceolate, 25 in length. Posterior margin of opisthosoma with pair of angular short lobes. Arrangement of hysteronotal sclerites: central hysteronotal shield, pair of lateral opisthosomal shields, pair of pygidial shields (Fig. 3). Central shield as wide longitudinal bar, with rounded anterior end, with sinuous lateral margins, with incised posterior margin, 140 in length, 48 in width in anterior part. Lateral opisthosomal shields as sclerites of irregular form, 70-75 in length, with openings *gl* on

anteromedial margins. Pygidial shields as small triangular sclerites encompassing bases of setae *h2*, *h3*, *ps1*. Setae *d1*, *e1* on central hysteronotal shield, setae *d2*, *e2*, *f2* on striated tegument. External copulatory tube a cone-like process curved ventrally, 17 in length (15-18 in other paratypes), 14 in width at base. Distance between setae: *c2-d2* 59, *d2-e2* 118, *h2-h3* 83. Epyginium semicircular, 38 in length, 80 in width (32-38 x 72-80) (Fig. 4).

DIFFERENTIAL DIAGNOSIS. The new species differs from the type species, *M. glossifer* (GAUD, 1953) and all new species described below by having the prodorsal shield with rounded posterior end without any posterior angles



Figs. 3, 4 — *Metapteronyssus plocei*, female. 3: dorsal view, 4: ventral view. Abbreviations: cs = central hysteronotal shield, ls = lateral opisthosomal shield, py = pygidial shield,

encompassing bases of scapular setae (Figs. 1, 3). The females of *M. plocei* are distinguished from *M. glossifer* by the form of central hysteronotal shield having a rounded anterior margin, incised posterior margin and approximately equal width of anterior and posterior parts of this shield (Fig. 3). In the females of *M. glossifer*, the central hysteronotal shield is significantly attenuate posterior, its anterior margin has a finger-like extension, and the posterior margin is narrow and not incised (Fig. 27). TYPE MATERIAL. Holotype male, 3 male and 1 female paratypes from the Village Weaver *Ploceus cucullatus*, (MÜLLER, 1776) (Ploceidae), Oubangai, French Equatorial Africa, VII 1951, unknown leg. (MRAC 180622);

5 male, 2 female paratypes, same data (MRAC 180621); 3 male paratypes, same host, Bossangoa, French Equatorial Africa, VII 1951, unknown leg. (MRAC 180634); 15 male, 13 female paratypes, same host, Bamako, French Equatorial Africa, X 1950, unknown leg. (MRAC 180623 – 180625). Holotype and most paratypes – MRAC, paratypes – ZISP.

ADDITIONAL MATERIAL. 14 males, 8 females from the Black-necked Weaver *P. nigricollis brachypterus* (SWAINSON, 1834), Bobodioulasso, French Equatorial Africa, X 1950, unknown leg. (MRAC 180626 – 180629); 1 female from the Holub's Golden Weaver *P. xanthops*

(HARTLAUB, 1862), Haenertsburg, Transvaal, 26-27 XI 1961, S.A.I.M.R. leg. (MRAC180638).

ETYMOLOGY. The species name derives from the generic name of host.

2. *Metapteronyssus gaudi* MIRONOV sp. n. (Figs. 8, 10)

MALE (HOLOTYPE). Length of idiosoma 285, width of idiosoma 185. Prodorsal shield with extended posterior angles carrying scapular setae *si*, *se*, posterior margin slightly convex, 68 in length, 66 in width, seta *vi* absent, setae *se* separated by 58. Length of hysterosoma 182. Setae *c3* narrow lanceolate, 25 in length. Hysteronotal shield: anterior margin convex, length 172, width 127, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* anterior to setae *h2*. Opisthosoma gradually attenuate to posterior end, terminal part of opisthosoma with pair of small and short tongue-like lobules carrying narrow rounded terminal membranes; margins of opisthosoma between bases of setae *h2* and *h3* bearing small rounded subterminal membranes (Fig. 8); length of terminal membranes 3.5-4, length of incision 5. Distance between setae and openings: *c2-d2* 48, *d2-e2* 80, *d2-gl* 44, *gl-e1* 2-3, *h2-h2* 38. Transventral sclerite almost straight, thin, length along median line 8, tips of epiandrium very short, not extending to apex of genital arch apex. Setae *3a* posterior to transventral sclerite. Genital arch 18 in length, 9 in width, setae *g* situated posterior to genital arch base. Adanal apodemes almost straight. Adanal membranes narrow, slightly enlarged posterior. Adanal shield consists of 3 fragments: one medial sclerite as longitudinal bar and pair of lateral sclerites of irregular form. Tarsus III 33 in length, apical processus slightly curved medially, seta *r* about 1/2 of segment length, seta *s* needle-like.

FEMALE (PARATYPE). Length of idiosoma 375, width of idiosoma 197. Prodorsal shield as in the male, 73 x 76, setae *se* separated by 67. Setae *c3* narrow lanceolate, 22 in length. Posterior margin of opisthosoma rounded, without lobe-like extensions. Arrangement of hysteronotal sclerites: central hysteronotal shield fused with pygidial shields into single fish-shaped sclerite, 214 in length, 56 in width in anterior part; pair of lateral opisthosomal with unguiform posterior extension, 73-80 in length, with openings *gl* on anteromedial margin (Fig. 10). Setae *d1*, *e1*, *h2*, *ps1* on surface of fish-shaped shield of hysterosoma, setae *d2*, *e2*, *f2* on striated tegument. External copulatory tube a finger like process, 30 in length, 8 in width in medial part, about 13 at base. Distance between setae: *c2-d2* 59, *d2-e2* 118, *h2-h2* 83. Epyginium semicircular, 40 x 81.

DIFFERENTIAL DIAGNOSIS. The males of *M. gaudi* are similar to *M. plocei* described above. Both sexes of *M. gaudi* differ from the latter species by having the prodorsal shield with well-developed posterior angles (Fig. 10).

The males of the new species are also distinguished by the adanal shield consisting of three fragments and the thicker transventral sclerite with short epiandrium tips on its posterior margin (Fig. 8). In the males of *M. plocei*, the adanal shield consists of single medial sclerite, the transventral sclerite is thin, about 4-5 along median line, and epiandrium tips are scarcely distinct (Fig. 5). The females of the new species clearly differ from *M. plocei* and all other species of the genus *Metapteronyssus* by unique form of central hysteronotal shield which is fused with pygidial shields into a fish-shaped sclerite (Fig. 10). In the females of other known species of *Metapteronyssus*, the central hysteronotal shield, if present, is always free and has another form (Figs. 16-21).

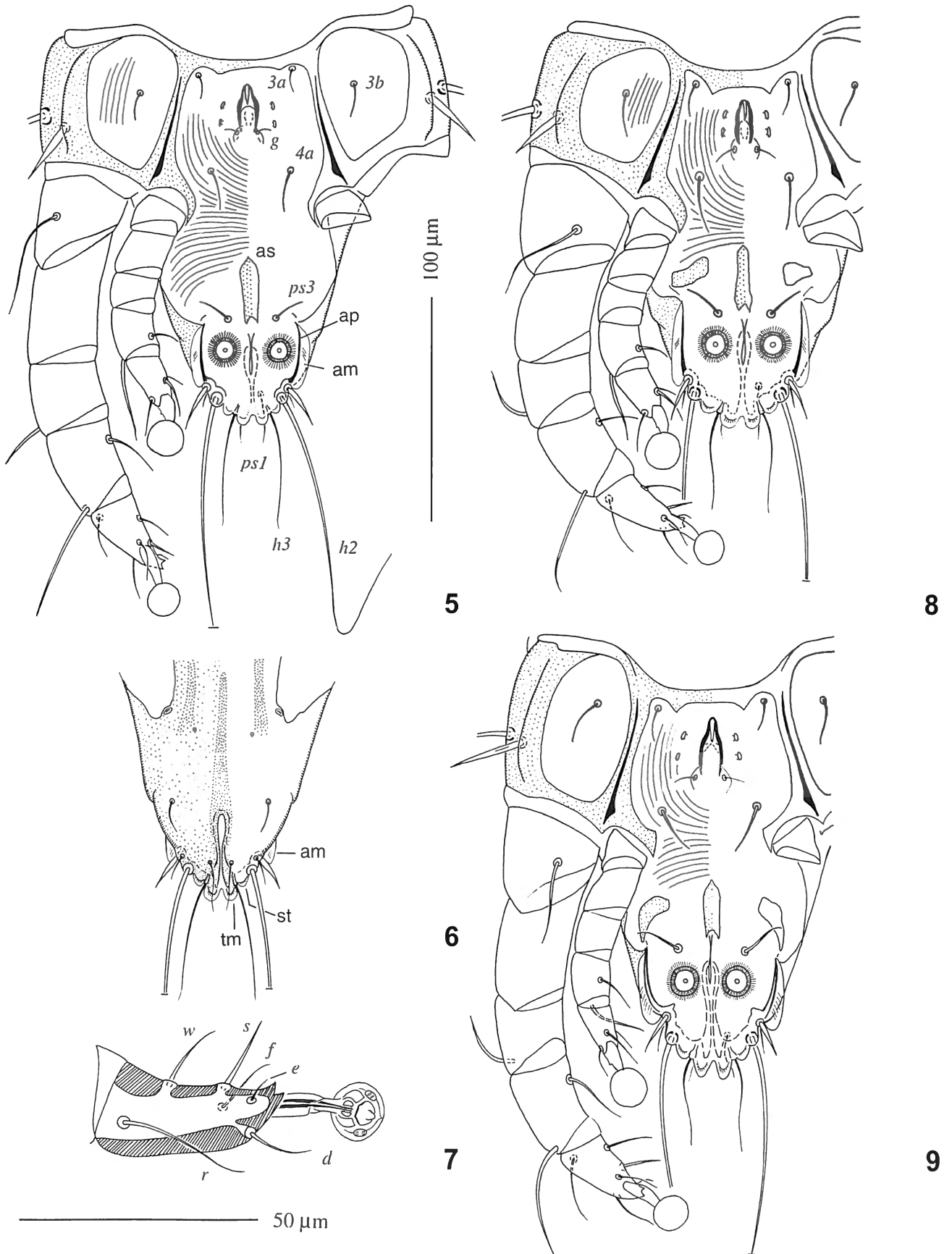
TYPE MATERIAL. Holotype male and paratype female from the Orange Weaver *Ploceus aurantius aurantius* (VIEILLOT, 1805) (Ploceidae), Degema, S. Nigeria, 14 I 1902, W.J. Ansorge leg. (MRAC 180639). Holotype and paratype - MRAC.

ADDITIONAL MATERIAL. 2 males, 2 females from the Forest Weaver *P. bicolor amaurocephalus* (VIEILLOT, 1819), South Cameroon, XI 1955, unknown leg. (MRAC 180636, 180637); 4 males, 5 females from the Vieillot's Black Weaver *P. nigerrimus* (VIEILLOT, 1819), South Cameroon, VIII 1955, unknown leg. (MRAC 180631, 180632); 2 females, same host, Yaoundé, Cameroon, VII 1955, unknown leg. (MRAC 180633); 2 males, 2 females from the Black-necked Weaver *P. nigricollis brachypterus* (SWAINSON, 1834), South Cameroon, VIII 1955, unknown leg. (MRAC 180630).

ETYMOLOGY. The species is named in a honor of the great feather mite expert, Prof. Dr. J. Gaud (Université de Nice, France).

3. *Metapteronyssus puylaerti* MIRONOV sp. n. (Figs. 9, 11)

MALE (HOLOTYPE). Length of idiosoma 323, width of idiosoma 185 (idiosomal size in 7 paratypes 288-323 x 178-197). Prodorsal shield with extended posterior angles encompassing scapular setae, 73 in length, 70 in width, with slightly convex posterior margin, seta *vi* absent, setae *se* separated by 61. Length of hysterosoma 182. Setae *c3* stiletto-like, 30 in length. Hysteronotal shield: anterior margin convex, length 182, width 145, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* anterior to level of setae *h2*. Opisthosoma gradually attenuate to posterior end, terminal part of opisthosoma with small and short tongue-like lobules carrying narrow and rounded terminal membranes; margins of opisthosoma between bases of setae *h2* and *h3* bearing small rounded subterminal membranes (Fig. 9); length of terminal membranes 3.5-4, length of incision 8. Distance between setae and openings: *c2-d2* 58, *d2-e2* 76, *d2-gl* 32, *gl-e1* 8, *h2-h2* 35. Transventral sclerite almost



Figs. 5-9 — Males of *Metapteronyssus*. 5: *Metapteronyssus plocei*, ventral view of hysterosoma, 6: idem, dorsal view of opisthosoma, 7: idem, dorsal view of tarsus III, 8: *M. gaudi*, ventral view of hysterosoma, 9: *M. puylaerti* - ventral view of hysterosoma. Abbreviations: am = adanal membrane, ap = adanal apodeme, as = adanal shield, st = subterminal membrane, tm = terminal membrane.

straight, thin, length along median line 8, tips of epian-drium short, not extending to genital arch apex, setae *3a* posterior to transventral sclerite. Genital arch 24 in length, 10 in width, setae *g* situated at base of genital arch. Adanal apodemes bow-like. Adanal membranes narrow, slightly enlarged posterior. Adanal shield consists of three fragments: medial sclerite as longitudinal bar, lateral sclerites with acute posterior ends. Tarsus III 40 in length, apical process bearing two teeth, slightly curved medially, seta *r* about 1/2 of segment length, seta *s* needle-like.

FEMALE (PARATYPE). Length of idiosoma 426, width of idiosoma 220 (idiosomal size in 7 other paratypes 360-420 x 195-220). Prodorsal shield as in the male, 81 x 79, setae *se* separated by 73. Length of hysterosoma 276. Setae *c3* narrow lanceolate, 29 in length. Posterior margin of opisthosoma widely rounded, without lobe-like extensions. Arrangement of hysteronotal sclerites: central hysteronotal shield separated into anterior and posterior fragments, pair of lateral opisthosomal shields present, pygidial shields absent (Fig. 11). Anterior fragment of central shield as sclerite of irregular form, about 80 x 88; posterior fragment as longitudinal sclerite with incised posterior margin, 105 x 58. Lateral opisthosomal shields as comma-shaped sclerites, 70-75 in length, with opening *gl* on anteromedial margins. Setae *d1*, *e1* on respective fragments of central hysteronotal shield, setae *d2*, *e2*, *f2*, *h2*, *h3*, *ps1*, on striated tegument. External copulatory tube a long cone-like process, 38 in length, 18 in width at base. Distance between setae: *c2-d2* 108, *d2-e2* 112, *h2-h2* 78. Epyginium bow-like, 38 x 95 (36-40 x 84-90).

DIFFERENTIAL DIAGNOSIS. The males of the new species are most similar to *M. gaudi* by the structure of opisthosoma. The males of *M. puylaerti* differ from the latter species by having the lateral fragments of adanal shields with acute posterior ends, the longer genital apparatus and setae *c3* (Fig. 9). In the males of *M. gaudi*, the lateral fragments of adanal shield are represented by sclerites of irregular form (Fig. 8), the genital arch is less than 20 in length, setae *c3* are lanceolate, 23-25 in length. The females of *M. puylaerti* are well distinguished from all species of the genus *Metapteronyssus* by having the central hysteronotal shield is split into anterior and posterior fragments (Fig. 11). In all other species of the genus, this shield is either entire or absent (Figs. 16-21).

TYPE MATERIAL. Holotype male, 3 male and 3 female paratypes from the African Masked Weaver *Ploceus velatus* (VIEILLOT, 1819) (Ploceidae), Potchefstroom, Transvaal, 26 XII 1952, S.A.I.M.R. leg. (MRAC 180045), 4 male, 5 female paratypes, same data (MRAC 180042, 180046). Holotype, paratypes – MRAC, paratypes – ZISP.

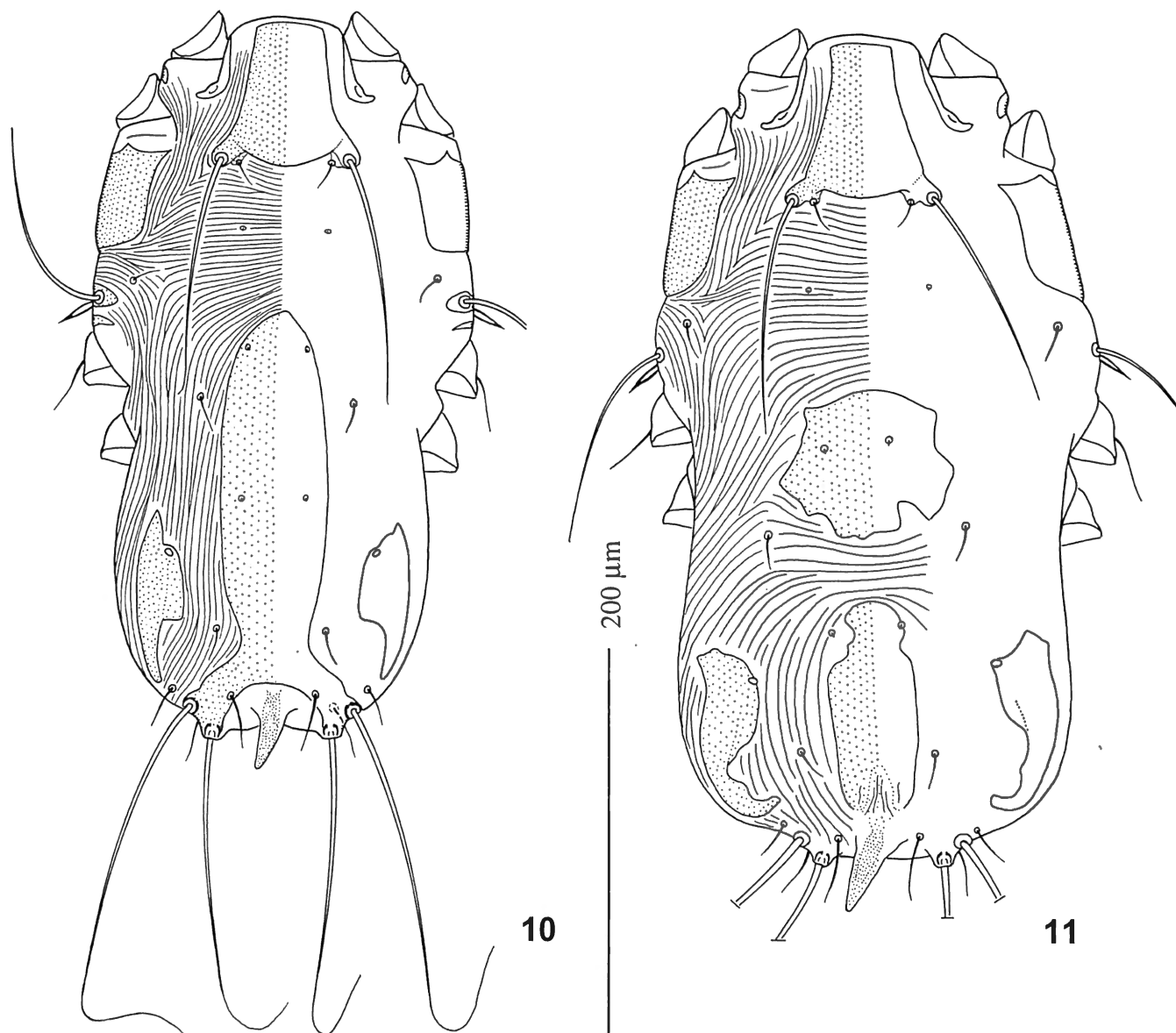
ETYMOLOGY. The species is named in a honor of Dr. F. Puylaert (Musée Royal de l'Afrique Centrale, Tervuren, Belgium).

4. *Metapteronyssus capensis* MIRONOV sp. n. (Fig. 16)

MALE (HOLOTYPE). Length of idiosoma 332, width of idiosoma 197 (idiosomal size in 4 paratypes 330-358 x 190-204). Prodorsal shield with extending posterior angles carrying scapular setae *si*, *se*, posterior margin slightly convex, 76 in length, 68 in width, seta *vi* absent, setae *se* separated by 58. Length of hysterosoma 194. Setae *c3* narrow lanceolate, 18 in length. Hysteronotal shield: anterior margin convex, length 185, width 140, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* slightly anterior to setae *h2*. Opisthosoma gradually attenuate to posterior end, terminal part of opisthosoma with pair of small and short tongue-like lobules carrying narrow rounded terminal membranes; margins of opisthosoma between bases of setae *h2* and *h3* bearing small rounded subterminal membranes, length of terminal membranes 3-3.5, length of incision 5. Distance between setae and openings: *c2-d2* 52, *d2-e2* 80, *d2-gl* 35, *gl-e1* 6-7, *h2-h2* 35. Transventral sclerite as thin, almost straight, length along median line 5, tips of epian-drium on its posterior margin scarcely marked, setae *3a* posterior to transventral sclerite. Genital arch 24 in length, 11 in width, setae *g* situated at level of genital arch base. Adanal apodemes almost straight. Adanal membranes narrow, slightly enlarged posterior. Adanal shield consists of 3 fragments: medial sclerite as longitudinal bar and pair of lateral sclerites of irregular form. Tarsus III 45 in length, apical process slightly curved medially, seta *r* about 1/2 of segment length, seta *s* thin and saber-like.

FEMALE (PARATYPE). Length of idiosoma 404, width of idiosoma 207 (idiosomal size in 11 other paratypes 404-430 x 205-220). Prodorsal shield as in the male, 83 x 80, setae *se* separated by 68. Length of hysterosoma 273. Setae *c3* narrow lanceolate, 19 in length. Posterior margin of opisthosoma with pair of short angular lobes. Arrangement of hysteronotal sclerites: central hysteronotal shield, pair of lateral opisthosomal shields, pair of pygidial shields (Fig. 16). Central shield as wide longitudinal bar slightly enlarged posterior, with rounded anterior end, and deeply incised posterior margin, 165 in length, 32 in width in anterior part. Lateral opisthosomal shields as sclerites of irregular form, 85-90 in length, with openings *gl* on anteromedial margins. Pygidial shields as small triangular sclerites touching bases of setae *h2*, *h3*, *ps1*. Setae *e1* on central hysteronotal shield, setae *d1*, *d2*, *e2*, *f2* on striated tegument. External copulatory tube a long finger-like process curved ventrally, 38 in length (34-42), 13 in width at base. Distance between setae: *c2-d2* 84, *d2-e2* 110, *h2-h2* 68. Epyginium semicircular, 42 in length, 90 in width (35-42 x 86-90).

DIFFERENTIAL DIAGNOSIS. The males of *Metapteronyssus capensis* are quite similar to *M. gaudi* (Fig. 8), while the females of new species more resemble those of *M. plocei* by the structure of the dorsal hysteronotal shields (Figs. 3, 16). The males of *M. capensis* differ from *M. gaudi* by



Figs. 10, 11 -- Females of *Metapteronyssus*, dorsal view of idiosoma. 10: *Metapteronyssus gaudi*, 11: *M. puylaerti*.

having the thin tranventral sclerite without expressed epiandrium tips and the greater length of idiosoma (330-358); the females are distinguished from that species by the central hysteronotal shield being separated from the pygidial shield. The main difference between the females of *M. plocei* and *M. capensis* is in the relative length of central hysteronotal shield: in the former species it includes the bases of setae *dl* (Fig. 3), in the latter species, the anterior end of central hysteronotal shield does not reach these setae (Fig. 16).

TYPE MATERIAL. Holotype male, 1 male and 5 female paratypes from the Cape Weaver *Ploceus capensis* (L., 1766), East London, Cape Prov., South Africa, X 1966, unknown leg. (MRAC 180635); 3 males, 7 female para-

types, same data (MRAC 180618). Holotype, paratypes – MRAC.

ETYMOLOGY. The species name derives from the generic name of host.

5. *Metapteronyssus bubalornis* MIRONOV sp. n.
(Figs. 12, 17)

MALE (HOLOTYPE). Length of idiosoma 351, width of idiosoma 210 (idiosomal size in 2 paratypes 348-358 x 195-214). Prodorsal shield with extending posterior angles carrying scapular setae, 85 in length, 76 in width, with slightly convex posterior margin, seta *vi* absent,

setae *se* separated by 70. Length of hysterosoma 204. Setae *c3* narrow lanceolate, 27 in length. Hysteronotal shield: anterior margin convex, length 192, width 132, dorsal setae *e1* anterior to level of openings *gl*, setae *ps1* at level of setae *h2*. Opisthosoma gradually attenuate posterior, with weakly marked lobular extensions, posterior margin with terminal membrane forming pair of small tongue-like extensions between bases of setae *h3*, and with pair of subterminal membranes between bases of setae *h3* and *h2*; length of terminal membrane extensions from bases of setae *h3* to apices 8, length of incision between them 10.

Distance between setae and gland openings: *c2-d2* 57, *d2-e2* 80, *d2-gl* 40, *gl-e1* 0-3 (in paratypes 3-5), *h2-h2* 27. Transventral sclerite with concave anterior margin, length along median line 10, tips of epiandrium almost extending to genital arch apex, setae *3a* on posterior margin of transventral sclerite. Genital arch 18 in length, 10 in width, setae *g* situated at base of genital arch. Adanal apodemes bow-like. Adanal membranes wide along all their length. Adanal shield with shape of flying bird silhouette (Fig. 12). Tarsus III 51 in length, with straight and thin apical process, seta *r* subequal in length to segment, seta *s* needle-like.

FEMALE (PARATYPE). Length of idiosoma 454, width of idiosoma 220 (idiosomal size in 5 other paratypes 427-460 x 198-216). Prodorsal shield almost as in the male, posterior margin with short blunt-angular extension, 88 x 76, setae *se* separated by 71. Length of hysterosoma 308. Setae *c3* narrow lanceolate, 24 in length. Posterior end of opisthosoma widely rounded, without lobe-like extensions. Arrangement of hysteronotal sclerites: central hysteronotal shield, pair of lateral opisthosomal shields, and pair of pygidial shields (Fig. 17). Central hysteronotal shield as narrow longitudinal bar, with rounded anterior end, almost parallel lateral margins, and incised posterior margin, 188 in length, 32 in width. Lateral opisthosomal shields as sclerites of irregular form, with acute anterior end, 70-75 in length, with openings *gl* on medial margins. Pygidial shields as small triangular sclerites touching bases of setae *h3*, *ps1*. Setae *d1*, *e1* on margins central hysteronotal shield, setae *d2*, *e2*, *h2*, *f2* on striated tegument. External copulatory tube a small truncate cone, 7 in length, 10 in width at base. Distance between setae: *c2-d2* 127, *d2-e2* 125, *h2-h2* 80. Epyginium bow-like, 34 x 89 (32-38 x 85-90).

DIFFERENTIAL DIAGNOSIS. The new species is related to *M. plocei* by the set and form of hysteronotal shields in females. Both sexes of *M. bubalornis* differ from *M. plocei* by the prodorsal shield having well developed posterior angles, as in most species of *Metapteronyssus*; the females are differentiated by having a significantly longer idiosoma (425-460) and smaller external copulatory tube in a form of truncate cone (Fig. 17); the males are distinguished by the adanal shield in a shape of flying bird and the wider adanal membranes (Fig. 12). In both sexes of *M. plocei*, the prodorsal shield has a rounded

posterior end without extending posterior angles; in females, the length of idiosoma varies within the limits 370-380, the external copulatory tube is represented by a wide and short cone (Fig. 3); in males, the adanal shield consists of three separate fragments and the adanal membranes are narrow (Fig. 5).

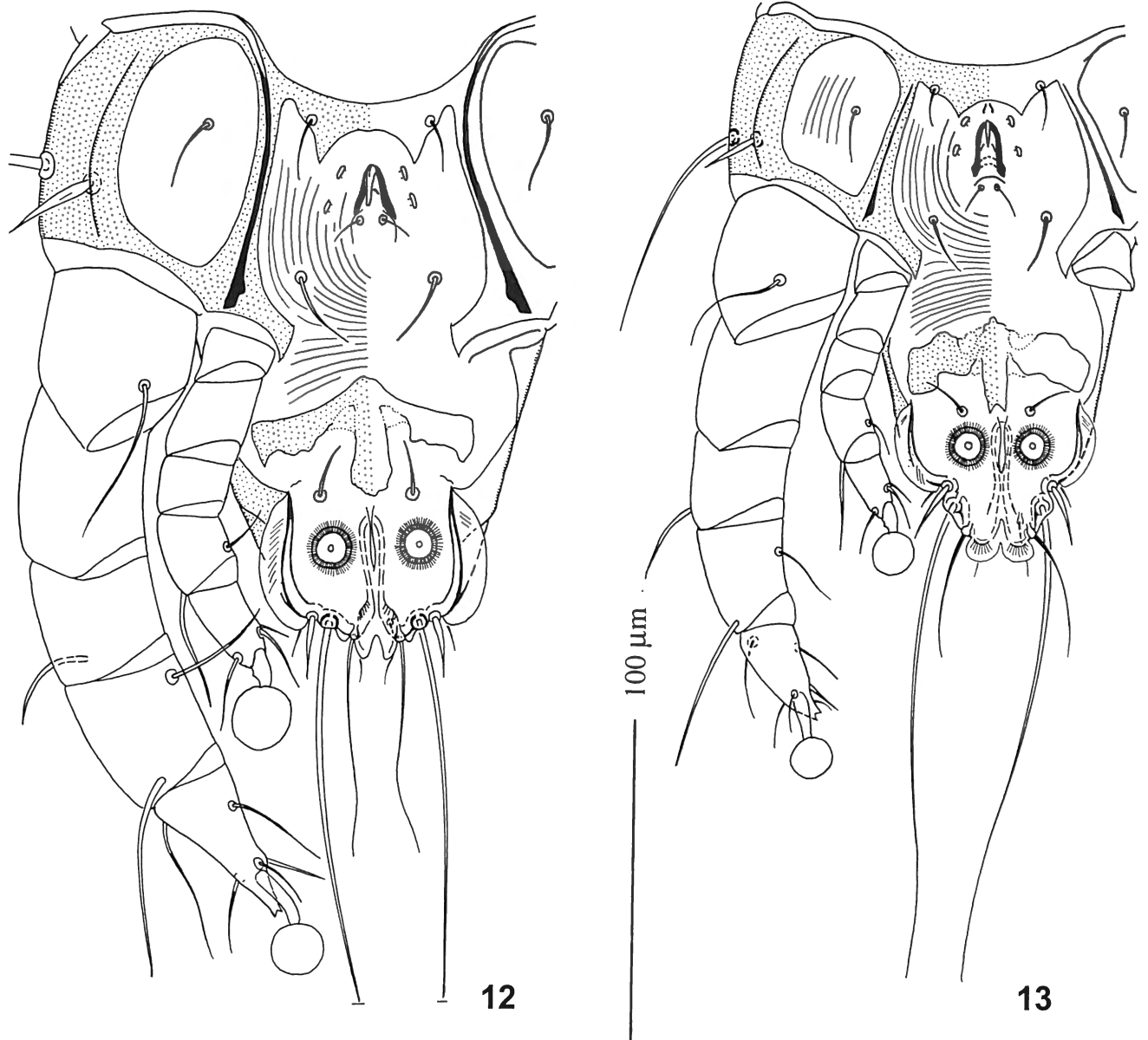
TYPE MATERIAL. Holotype male, 2 female paratypes from the White-billed Buffalo Weaver *Bubalornis albirostris* (VIEILLOT, 1817) (Ploceidae), Maroua, Cameroon, 1949, unknown leg. (MRAC 180601); 2 male, 4 female paratypes, same data (MRAC 180602 - 180604). Holotype, paratypes - MRAC, paratypes - ZISP.

ETYMOLOGY. The species name derives from the generic name of the host.

6. *Metapteronyssus anoplnotus* MIRONOV sp. n. (Figs. 14, 18)

MALE (HOLOTYPE). Length of idiosoma 330, width of idiosoma 194 (idiosomal size in 19 paratypes 298-340 x 194-213). Prodorsal shield with extending posterior angles encompassing scapular setae, 76 in length, 68 in width, with convex posterior margin, rudimentary unpaired seta *vi* present, setae *se* separated by 62. Length of hysterosoma 205. Setae *c3* narrow lanceolate, 29 in length. Hysteronotal shield: anterior margin convex, length along medial line 190, width at anterior margin 143, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* anterior to level of setae *h2*. Lateral margins of opisthosoma anterior to setae *ps2* greatly convex; terminal region of opisthosoma with small and short tongue-like lobules between bases of setae *h3*, with narrow terminal membrane on these lobules (Fig. 14), length of membranes about 4, length of incision between them 8. Distance between setae and gland openings: *c2-d2* 58, *d2-e2* 84, *d2-gl* 42, *gl-e1* 8, *h2-h2* 37. Transventral sclerite with shallowly concave anterior margin, length along median line 14, tips of epiandrium scarcely marked or indistinct, setae *3a* on posterior margin of transventral sclerite. Genital arch 24 in length, 20 in width, setae *g* situated at midlength of genital arch. Adanal apodemes strongly curved. Adanal membranes wide along all their length. Adanal shield as transverse band with very thin medial part. Tarsus III 48 in length, apical process slightly curved medially, seta *r* equal in length to segment, seta *s* narrow and lanceolate in apical part.

FEMALE (PARATYPE). Length of idiosoma 404, width of idiosoma 213 (idiosomal size in 17 paratypes 370-414 x 197-223). Prodorsal shield as in the male, 82 x 85, setae *se* separated by 75. Length of hysterosoma 292. Setae *c3* narrow lanceolate, 24 in length. Posterior end of opisthosoma with distinct terminal region forming with two short lobes. Arrangement of hysteronotal sclerites: central hysteronotal shield absent, pair of lateral opisthosomal shields and pair of pygidial shields present



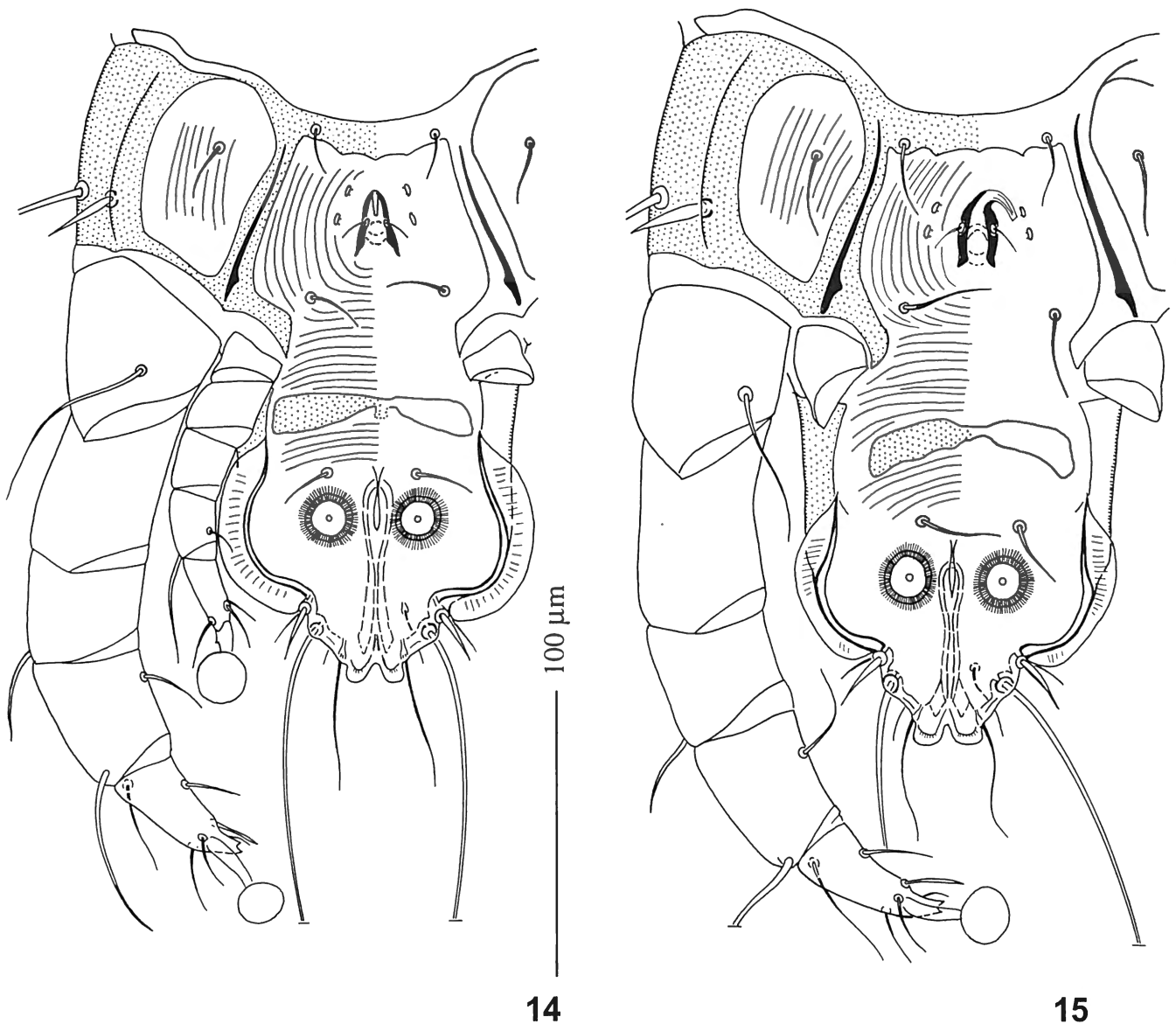
Figs. 12, 13 — Males of *Metapteronyssus*, ventral view of hysterosoma. 12: *Metapteronyssus bubalornis*, 13: *M. plocepasseri*.

(Fig. 18). Lateral opisthosomal shields as narrow longitudinal bands with acute anterior ends, with posterior ends turned onto ventral side of opisthosoma, 106-116 in length, openings *gl* on medial margins of these shields. Pygidial shields as relatively large triangular sclerites covering almost terminal region of opisthosoma, and encompassing bases of setae *h2*, *h3*, *ps1*, *f2*. Setae *d1*, *d2*, *e1*, *e2* on striated tegument. External copulatory tube a finger like process, 27 in length, 18 in width at base. Distance between setae: *c2-d2* 86, *d2-e2* 127, *h2-h3* 84. Epyginium semicircular, 38 x 89 (38-40 x 76-92).

DIFFERENTIAL DIAGNOSIS. *M. anoplnotus* and two subsequent species form a species group, which is character-

ized by the greatly curved adanal apodemes and wide adanal membranes in males, and the band-like lateral opisthosomal shields in females. The males of *M. anoplnotus* are most similar to *M. daberti* (see below) and differ by shorter idiosoma (298-340) and the supranal concavity extending to the level of anterior margin of adanal discs or even to setae *ps3* (Fig. 14). In the males of *M. daberti*, the length of idiosoma exceeds 350 and the supranal concavity not extends to the level of anterior margin of adanal discs (Fig. 15). The females of *M. anoplnotus* are distinguished from the latter species and all other known species of the genus by the absence of central hysteronotal shield (Fig. 18).

TYPE MATERIAL. Holotype male, 3 male and 5 female



Figs. 14, 15 — Males of *Metapteronyssus*, ventral view of hysterosoma. 14: *Metapteronyssus anoplnotus*, 15: *M. daberti*.

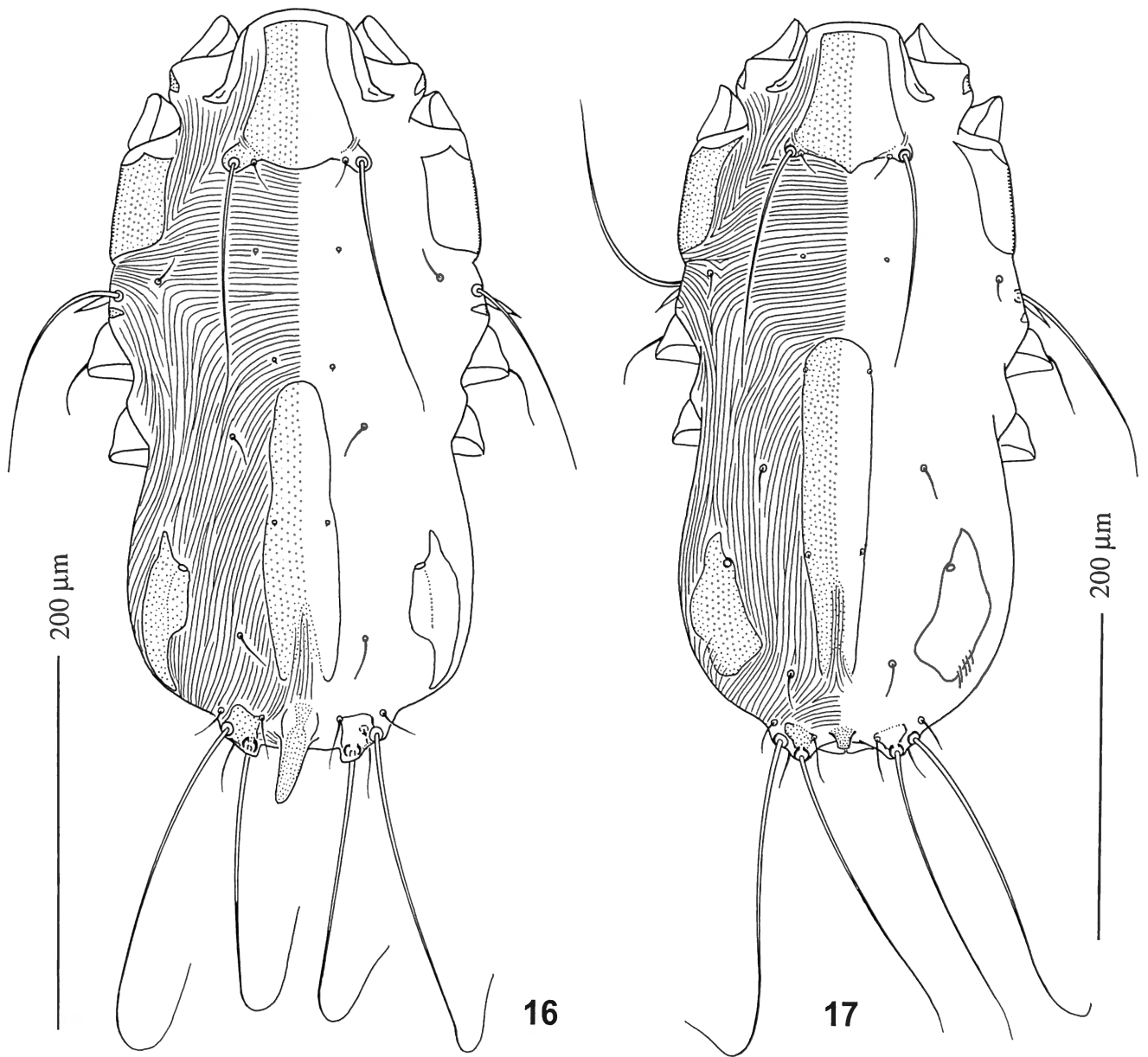
paratypes from the White-browed Sparrow *Plocepasser mahali* SMITH, 1836, (Ploceidae), Chirundu, South Rhodesia, II 1964, unknown leg. (MRAC 180606), 15 male, 12 female paratypes, same data (MRAC 180605, 180607, 180608). Holotype, paratypes — MRAC, paratypes — ZISP.

ADDITIONAL MATERIAL. 13 males, 15 females from *P. mahali*, Kariba, South Rhodesia, February 1964, unknown leg. (MRAC 180615 – 1808019), 2 females, same host, Pietersburg, Transvaal, 10 XII 1967, unknown leg. (MRAC180620); 12 males, 15 females from the Red-billed Quelea *Quelea quelea* (L., 1758) (Ploceidae), Kariba, South Rhodesia, II 1964, unknown leg. (MRAC 180609 – 180614).

ETYMOLOGY. From *an* (Gr., without), *hoplon* (Gr., weapon, armor), and *notum* (Gr., back).

7. *Metapteronyssus daberti* MIRONOV sp. n.
(Figs. 15, 19)

MALE (HOLOTYPE). Length of idiosoma 352, width of idiosoma 208. Prodorsal shield with extending posterior angles carrying scapular setae, 80 in length, 80 in width, with convex posterior margin, rudimentary seta *vi* present, setae *se* separated by 72. Length of hysterosoma 226. Setae *c3* narrow lanceolate, 27 in length. Hysteronotal shield: anterior margin convex, length 207, width at anterior margin 138, dorsal setae *e1* posterior to level of

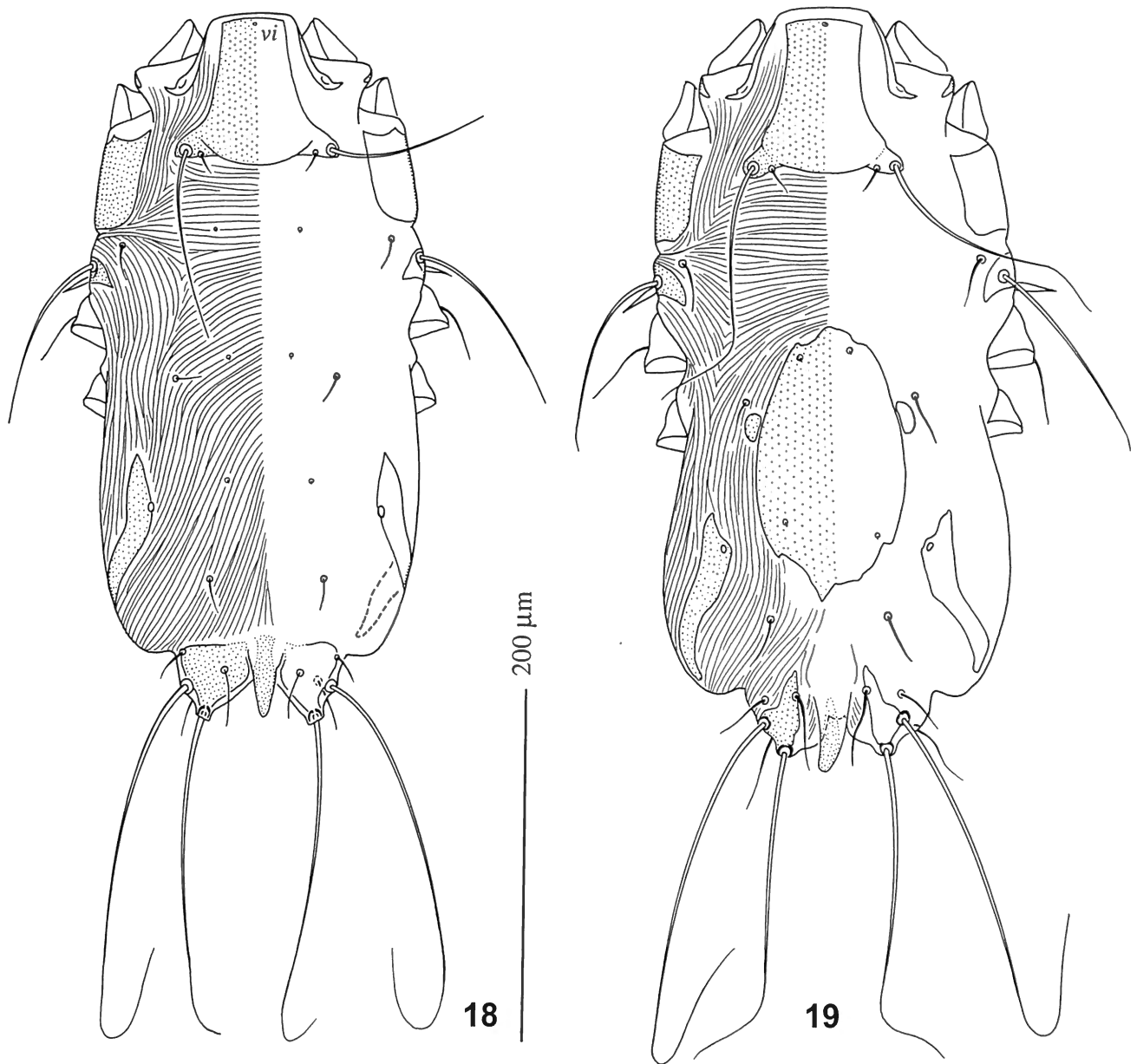


Figs. 16, 17 — Females of *Metapteronyssus*, dorsal view of idiosoma. 16: *Metapteronyssus capensis*, 17: *M. bubalornis*.

openings *gl*, setae *ps1* anterior to level of setae *h2*. Lateral margins of opisthosoma anterior to setae *ps2* greatly convex; terminal part of opisthosoma with small and short tongue-like lobules between bases of setae *h3*, with narrow terminal membrane on these lobules (Fig. 15), length of membranes about 5, length of incision 8. Distance between setae and gland openings: *c2-d2* 71, *d2-e2* 81, *d2-gl* 42, *gl-e1* 6, *h2-h2* 40. Transventral sclerite with slightly concave anterior margin, length along median line 15, tips of epiandrium very short, not extending to genital arch apex, setae *3a* on posterior margin of transventral sclerite. Genital arch 24 in length, 20 in width, setae *g* situated at midlength of genital arch. Adanal apodemes strongly curved. Adanal membranes wide along all their length. Adanal shield as transverse

band with narrow medial part. Tarsus III 48 in length, apical process slightly curved medially, seta *r* subequal to segment length, seta *s* narrow lanceolate in apical part.

FEMALE (PARATYPE). Length of idiosoma 426, width of idiosoma 204. Prodorsal shield as in the male, 87 x 85, setae *se* separated by 80. Length of hysterosoma 282. Setae *c3* narrow lanceolate, 22 in length. Posterior end of opisthosoma with terminal region forming two short lobes. Arrangement of hysteronotal sclerites: central hysteronotal shield as large oval, pair of little ovate sclerites posterior to bases of setae *d2*, pair of lateral opisthosomal shields and pair of pygidial shields (Fig. 19). Central hysteronotal shield 154 in length, 83 in width, with

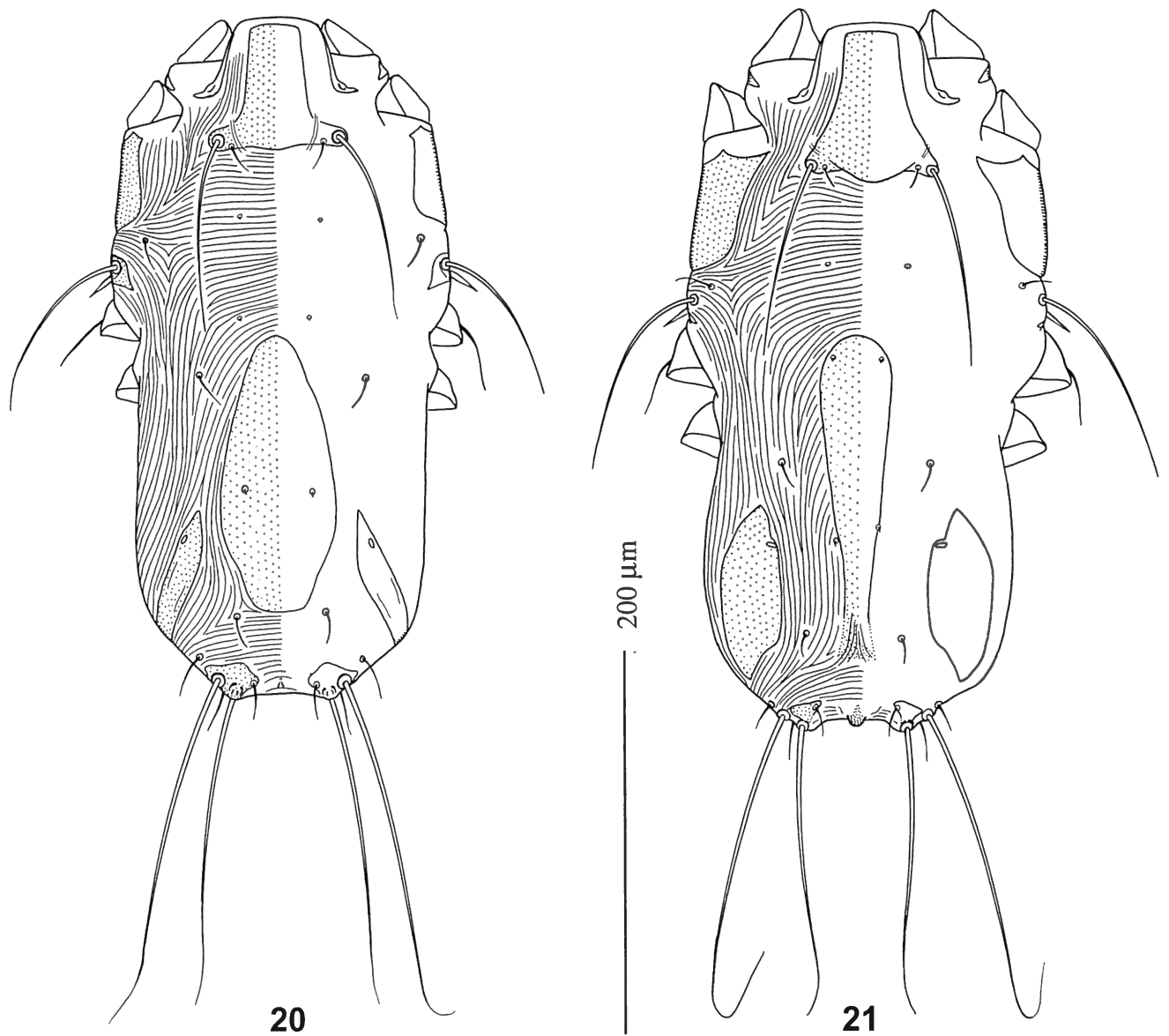


Figs. 18, 19 — Females of *Metapteronyssus*, dorsal view of idiosoma. 18: *Metapteronyssus anoplnotus*, 19: *M. daberti*.

irregular border on anterior and posterior ends. Lateral opisthosomal shields as narrow and curved longitudinal bands, with acute anterior ends, 80-85 in length, with openings *gl* on anteromedial margins. Pygidial shields as narrow triangular sclerites touching bases of setae *h2*, *h3*, *ps1*. Setae *d1*, *e1* on central hysteronotal shield, setae *d2*, *e2*, *f2* on striated tegument. External copulatory tube a large finger-like processus, 46 in length, 19 in width at base. Distance between setae: *c2-d2* 78, *d2-e2* 127, *h2-h2* 75. Epyginium semicircular, 47 x 83.

DIFFERENTIAL DIAGNOSIS. The new species is the largest among three species of the genus *Metapteronyssus* associated with weavers of the genus *Plocepasser* and is most closely related to *M. anoplnotus* by the structure of the

opisthosoma in males and lateral opisthosomal sclerites in females. The males of *M. daberti* are quite similar to the latter species and are distinguished by the greater length of idiosoma and the supranal concavity not extending to the level of anterior margin of anal discs (Fig. 15); while the females clearly differ from that species by the presence of a central hysteronotal shield and narrow pygidial shields (Fig. 19). In the males of *M. anoplnotus*, the length of idiosoma varies within the limits 295-340, and the supranal concavity reaches the level of anterior margin or even setae *ps3* (Fig. 14); in the females, the central hysteronotal shield is absent and pygidial shields are wide (Fig. 18). By the general shape of dorsal hysteronotal shields, the females of *M. daberti* more closely resemble *M. plocepasseri* (Fig. 20), how-



Figs. 20, 21 — Females of *Metapteronyssus*, dorsal view of idiosoma. 20: *Metapteronyssus plocepasseri*, 21: *M. lonchurae*.

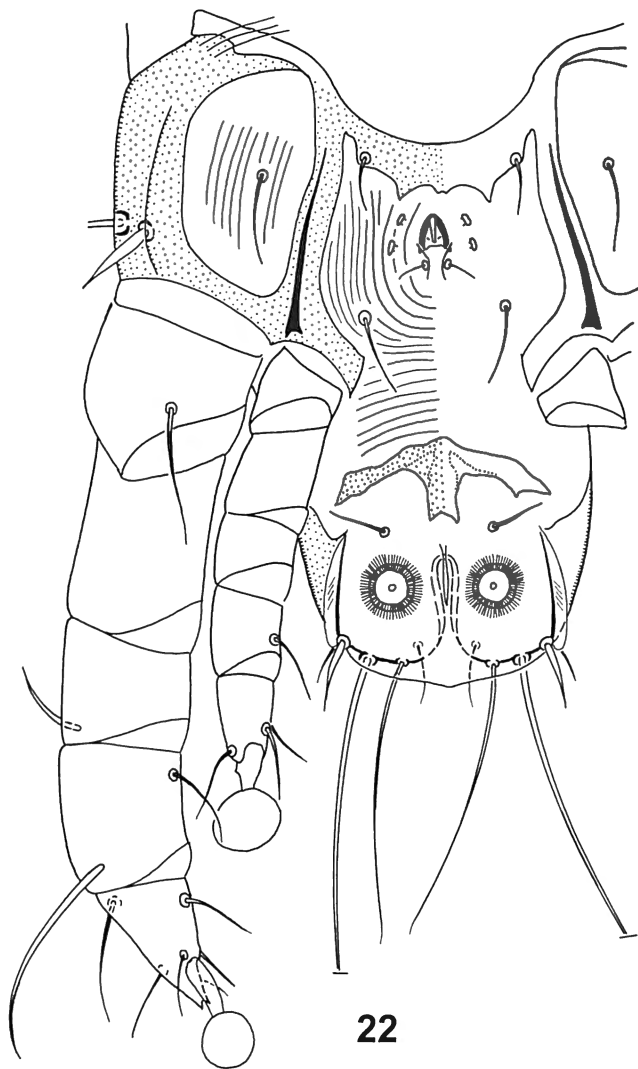
ever they are easily differentiated from the latter species by having the posterior end of opisthosoma with an extending terminal region and a well developed external copulatory tube. Females of *M. plocepasseri* lack both a terminal extension on the opisthosoma and an external copulatory tube.

TYPE MATERIAL. Holotype male and paratype female from the Red-backed Sparrow Weaver *Plocepasser rufoscapulatus* BÜTTIKOFER, 1888 (Ploceidae), Luanshya, North Rhodesia, 22 III 1953, Maj. E.L. Haydock leg. (UGA 3044, USNM 46038). Holotype and paratype – UMMZ.

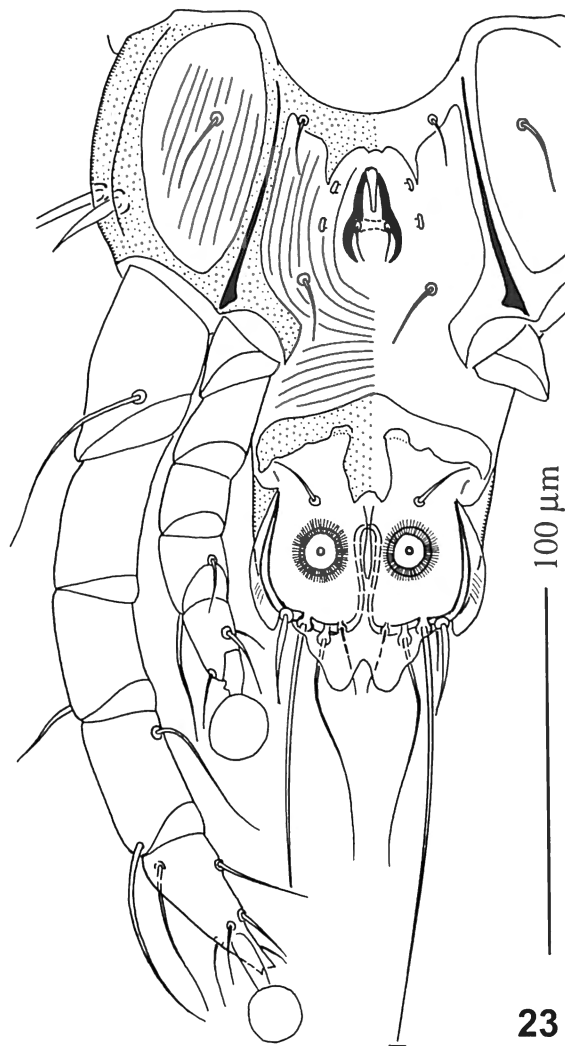
ETYMOLOGY. The species is named in a honor of Dr. J. Dabert (A. Mickiewicz University, Poznan, Poland).

8. *Metapteronyssus plocepasseri* MIRONOV sp. n. (Figs. 13, 20)

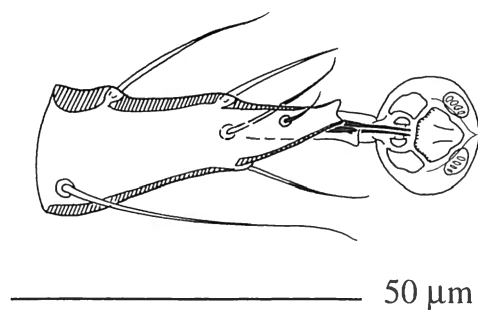
MALE (HOLOTYPE). Length of idiosoma 285, width of idiosoma 168 (idiosomal size in 13 paratypes 282-302 x 160-180). Prodorsal shield with extending posterior angles carrying scapular setae, 59 in length, 56 in width, with slightly convex posterior margin, seta *vi* absent, setae *se* separated by 49. Length of hysterosoma 166. Setae *c3* narrow and lanceolate, 19 in length. Hysteronotal shield: anterior margin convex, length 163, width 116, dorsal setae *e1* posterior to level of openings *gl*, setae *ps1* slightly posterior to level of setae *h2*. Lateral margins of opisthosoma anterior to setae *ps2* convex; terminal region of opisthosoma with small tongue-like lobules between



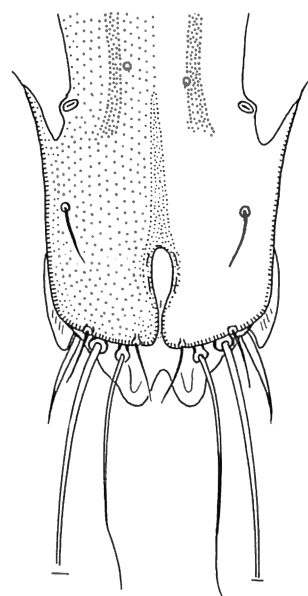
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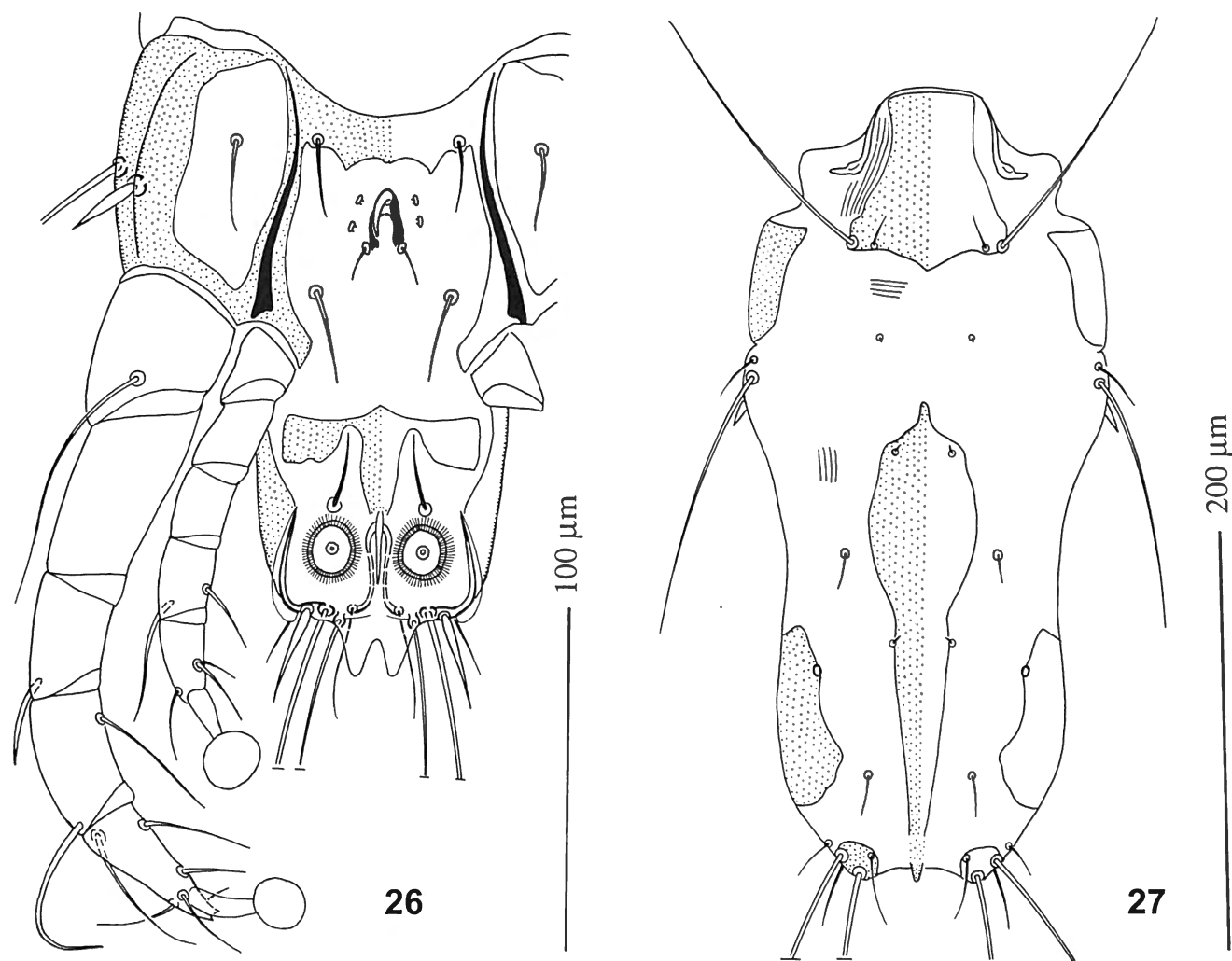


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Fig. 22-25 — Males of *Metapteronyssus*. 22: *Metapteronyssus lonchurae*, ventral view of hysterosoma, 23: *M. angolensis*, ventral view of hysterosoma, 24: idem, dorsal view of opisthosoma, 25 idem, dorsal view of tarsus III.



Figs. 26, 27 — *Metapteronyssus glossifer*. 26: male, ventral view of hysterosoma, 27: female, dorsal view of idiosoma (after: Faccini et Atyeo, 1981, modified).

bases of setae *h3*; lobules with small fan-like terminal membranes (Fig. 13); length of membranes about 3.5, length of incision between them 6. Distance between setae and gland openings: *c2-d2* 49, *d2-e2* 69, *d2-gl* 38, *gl-e1* 5-8, *h2-h2* 30. Transventral sclerite with almost straight anterior margin, length along median line 11, tips of epiandrium not extending to genital arch apex, setae *3a* on posterior margin of transventral sclerite. Genital arch 16 in length, 8 in width, setae *g* situated posterior to base of genital arch. Adanal apodemes bow-shaped. Adanal membranes wide along all their length. Adanal shield in shape of flying bird. Tarsus III 36 in length, apical process slightly curved medially, seta *r* slightly shorter than segment, seta *s* needle-like.

FEMALE (PARATYPE). Length of idiosoma 358, width of idiosoma 178 (idiosomal size in 3 other paratypes 338-358 x 163-175). Prodorsal shield as in the male, 62 x 72, setae *se* separated by 62. Length of hysterosoma 242. Setae *c3* narrow lanceolate, 19 in length. Posterior end of

opisthosoma bluntly rounded, without lobar extensions. Arrangement of hysteronotal sclerites: central hysteronotal shield, pair of lateral opisthosomal shields, pair of pygidial shields (Fig. 20). Central shield narrowly ovate, 140 in length, 62 in width. Lateral opisthosomal shields as narrow longitudinal bars with acute anterior ends, 62-68 in length, with openings *gl* on lateral margins. Pygidial shields as small sclerites on posterior end of opisthosoma encompassing bases of setae *h2*, *h3*, *ps1*. Setae *e1* on central hysteronotal shield, setae *d1*, *d2*, *e2*, *f2* on striated tegument. External copulatory tube absent. Distance between setae: *c2-d2* 72, *d2-e2* 117, *h2-h2* 60. Epyginium bow-like, 24 x 74 (23-28 x 68-74).

DIFFERENTIAL DIAGNOSIS. *M. plocepasseri* is related to previous species, *M. daberti*, by the set of hysteronotal shields in females and structure of ventral opisthosoma in males. The females of *M. plocepasseri* differ from *M. daberti* and other species described above by having the central hysteronotal shield as a long narrow oval and the

openings *gl* situated on external margin of lateral opisthosomal shields (Fig. 20); the males are distinguished from the latter species by the adanal shield in a form of flying bird, the genital setae *g* situated posterior to the genital arch, and significantly shorter idiosoma (282-302) (Fig. 13). In the females of *M. daberti*, the central hysteronotal shield is represented by large oval, the openings *gl* are situated on medial margin of lateral opisthosomal shields (Fig. 19); in the males, the adanal shield is a transversal band-like sclerite, and the setae *g* are situated at the midlength level of the genital arch (Fig. 5 c).

TYPE MATERIAL. Holotype male, 3 male paratypes from the White-browed Sparrow *Plocepasser mahali* SMITH, 1836, (Ploceidae), Chirundu, South Rhodesia, II 1964, unknown leg. (MRAC 179999), 10 male, 7 female paratypes, same data (MRAC 179997, 179998, 180600). Holotype, paratypes – MRAC, paratypes – ZISP.

ETYMOLOGY. The species name derives from the generic name of host.

9. *Metapteronyssus lonchurae* MIRONOV sp. n.

(Figs. 21, 22)

MALE (HOLOTYPE). Length of idiosoma 298, width of idiosoma 180. Prodorsal shield with extending posterior angles carrying scapular setae, 71 in length, 60 in width, with slightly convex posterior margin, seta *vi* absent, setae *se* separated by 55. Length of hysterosoma 175. Setae *c3* narrow lanceolate, 24 in length. Hysteronotal shield: anterior margin convex with little medial incision, length 165, width at anterior margin 100, dorsal setae *e1* anterior to level of openings *gl*, setae *ps1* anterior to level of setae *h2*. Posterior end of opisthosoma bluntly rounded, with small angular terminal cleft between bases of setae *h3*, posterior margin of opisthosoma with entire and convex terminal membrane spreading between bases of setae *ps2*, length of membrane from level of setae *h3* to free margin 6 (Fig. 22). Distance between setae and gland openings: *c2-d2* 56, *d2-e2* 66, *d2-gl* 40, *gl-e1* 5, *h2-h2* 44. Transventral sclerite deeply concave on anterior margin, length along median line 12, tips of epiandrium not extending to genital arch apex, setae *3a* on posterior margin of transventral sclerite. Genital arch 12 in length, 10 in width, setae *g* situated posterior to base of genital arch. Adanal apodemes slightly curved. Adanal membranes narrow. Adanal shield in shape of flying bird. Tarsus III 43 in length, apical process straight, seta *r* equal in length to segment, seta *s* needle-like.

FEMALE (PARATYPE). Length of idiosoma 373, width of idiosoma 182. Prodorsal shield as in male, 76 x 70, setae *se* separated by 62. Length of hysterosoma 241. Setae *c3* narrow and stiletto-like, 24 in length. Posterior end of opisthosoma widely rounded, without lobar extensions. Arrangement of hysteronotal sclerites: central hysteronotal

shield, pair of lateral opisthosomal shields, pair of pygidial shields (Fig. 21). Central shield as longitudinal band greatly attenuate to posterior end, about 165 in length, 47 in width in anterior part. Lateral opisthosomal shields as large elongated sclerites of irregular form, 82-85 in length, with openings *gl* on anteromedial margins. Pygidial shields as small sclerites at posterior end of opisthosoma touching bases of setae *h3*, *ps1*. Setae *d1*, *e1* on margins of central hysteronotal shield, setae *d2*, *e2*, *h2*, *f2* on striated tegument. External copulatory tube a small hemispheric button, about 6 in length. Distance between setae: *c2-d2* 86, *d2-e2* 92, *h2-h2* 74. Epyginium semicircular, 37 x 80.

DIFFERENTIAL DIAGNOSIS. The new species is related to the type species, *M. glossifer*, by the structure of the hysteronotal shields in females. The females of *M. lonchurae* differ from the latter species by the button-like external copulatory tube and the central hysteronotal shield with rounded anterior end (Fig. 21); the males are distinguished by entire and convex terminal membrane (Fig. 22). In the females of *M. glossifer*, the external copulatory tube is a small cylinder, about 8-10 in length, and the central hysteronotal shield has a narrow finger like extension on anterior margin (Fig. 27); the males carry the terminal membrane with a pair of small tongue-like extensions (Fig. 26).

TYPE MATERIAL. Holotype male and from the African Silverbill *Lonchura cantans orientalis* (GMELIN, 1789) (Estrildidae), Bikendula, Somaliland, 16 III 1919, unknown leg. (MRAC 180047); paratype female, same data (MRAC 180048). Holotype, paratype – MRAC.

REMARK. The host name in the original labels of type specimens is *Lonchura malabarica orientalis*. According to the recent taxonomic point of view, the *orientalis* subspecies belongs to the species *L. cantans* (WALTERS, 1982; HOWARD & MOORE, 1991).

ETYMOLOGY. The species name derives from the generic name of host species.

10. *Metapteronyssus glossifer* (GAUD, 1953)

(Figs. 26, 27)

Metapteronyssus glossifer, the type species of the genus, was recorded from several species of the Ploceidae and Estrildidae of Africa: *Euplectes oryx franciscana* (ISERT, 1789) (Ploceidae), *E. hordaceus* (L., 1758) (Ploceidae), *Ploceus cucullatus* (MÜLLER, 1776) (Ploceidae), and *Uraeginthus bengalus* (L., 1766) (Estrildidae) (GAUD, 1953; GAUD & MOUCHET, 1959; GAUD & TILL, 1961). As it was recovered by MIRONOV & KOPIJ (2000b) and during the present study, *M. glossifer* is apparently restricted to the weaver genus *Euplectes*, while the passerines of the genera *Ploceus* and *Uraeginthus* bear different species of the genus *Metapteronyssus* (Table). An adequate redescription

tion of *M. glossifer* based on the material from the type host, *E. oryx franciscana*, was given by FACCINI & ATYEO (1981).

11. *Metapteronyssus angolensis* MIRONOV & KOPIJ, 2000
(Figs. 23-25)

This species was described from the from the Cordonbleu or Blue Waxbill *Uraeginthus angolensis* (L., 1758) (Estrildidae) from South Africa (MIRONOV & KOPIJ, 2000b). The description was based on two males only, females were not found.

MATERIAL EXAMINED. Holotype and paratype males from *U. angolensis* (Estrildidae), Pafuri, Kruger National Park, Northern Province, South Africa, 10.I.1989, R.A. Earle leg. (NMB 00189). Holotype and paratype – NMB.

Key to *Metapteronyssus* species
(female of *M. angolensis* is unknown)

Males

1. Terminal membrane entire, its free margin slightly convex, without lobe-like extensions (Fig. 22)
..... *M. lonchurae* sp. n.
- Terminal membrane entire, with pair of tongue-like extension on free margin (Figs. 23, 24), or terminal end of opisthosoma with pair of lobules carrying very small semicircular terminal membranes on their margins (Figs. 5, 6, 12-15) 2
2. Adanal shield as a transverse band (Figs. 14, 15) or in a shape of flying bird (Figs. 13, 23). Setae *3a* situated on transventral sclerite 3
- Adanal shield represented by single longitudinal sclerite or three separate fragments (Figs. 5, 8). Setae *3a* situated posterior to transventral sclerite 8
3. Adanal apodemes greatly curved, about one third of circle (Figs. 13-15) 4
- Adanal apodemes straight or slightly curved 6
4. Adanal shield as silhouette of flying bird. Genital setae *g* posterior to genital apparatus (Fig. 13)
..... *M. plocepasseri* sp. n.
- Adanal shield as transversal band with thin medial part. Genital setae *g* at midlength level of genital apparatus 5
5. Length of idiosoma 295-340. Anterior end of supranal concavity extending to level of anterior margin of anal discs (Fig. 14) *M. anoplnotus* sp. n.
- Length of idiosoma more than 350. Anterior end of supranal concavity not extending to level of anterior margin of anal discs (Fig. 15) *M. daberti* sp. n.
6. Epiandrium tips short, not extending to level of genital arch apex (Fig. 26) *M. glossifer* (GAUD, 1953)
- Epiandrium tips long, extending to apex of genital arch 7

7. Adanal membranes wide (Fig. 12). Setae *e1* slightly posterior to openings *gl*. Length of idiosoma more than 340 *M. bubalornis* sp. n.
- Adanal membranes narrow. Setae *e1* anterior to openings *gl* (Figs. 23, 24). Length of idiosoma less than 300 *M. angolensis* MIRONOV & KOPIJ, 2000
8. Prodorsal shield with rounded posterior end, without extending posterior angles, scapular setae *si*, *se* on striated tegument (Fig. 1). Adanal shield represented by single longitudinal sclerite (Figs. 2, 5)
..... *M. plocei* sp. n.
- Prodorsal shield with extending posterior angles encompassing bases of scapular setae *si*, *se*. Adanal shield consists of three fragments (Figs. 8, 9) 9
9. Transventral sclerite thin, about 4-5 along median line, tips of epiandrium not expressed. Length of idiosoma more than 330 *M. capensis* sp. n.
- Transventral sclerite about 8-10 along median line, with short epiandrium tips on posterior margin. Length of idiosoma less than 320 10
10. Genital arch 22-26 in length. Lateral fragments of adanal shield with acute posterior ends (Fig. 9)
..... *M. puylaerti* sp. n.
- Genital arch 16-18 in length. Lateral fragments of adanal shield of irregular form (Fig. 8)
..... *M. gaudi* sp. n.

Females

1. Central hysteronotal shield absent (Fig. 18)
..... *M. anoplnotus* sp. n.
- Central hysteronotal shield present 2
2. Central hysteronotal shield fused with pygidial shields forming fish-shaped shield (Fig. 10)
..... *M. gaudi* sp. n.
- Central hysteronotal shield separated from paired pygidial shield (Figs. 3, 16-19) 3
3. Central hysteronotal shield interrupted by transversal band of striated tegument into anterior and posterior fragments (Fig. 11) *M. puylaerti* sp. n.
- Central hysteronotal shield not interrupted by transversal band into fragments 4
4. Central hysteronotal shield as longitudinal oval. Lateral opisthosomal shields as long and narrow longitudinal bands (Figs. 19, 20) 5
- Central hysteronotal shield as longitudinal band with rounded anterior end and usually incised on posterior margin (Figs. 3, 16). Lateral opisthosomal shields of another form 6
5. Posterior margin of opisthosoma with extending terminal region bearing two short lobes. External copulatory tube finger-like. Small ovate additional sclerites posterior to setae *d2* present (Fig. 19)
..... *M. daberti* sp. n.
- Posterior margin of opisthosoma bluntly rounded, without terminal extension and lobes. External copulatory tube absent. Additional sclerites near lateral margins of central hysteronotal shield absent (Fig. 20)
..... *M. plocepasseri* sp. n.

6. Anterior end of central hysteronotal shield not reaching setae *d1*, these setae on striated tegument (Fig. 16). External copulatory tube finger-like, 34-42 in length *M. capensis* sp. n.
 – Anterior end of central hysteronotal shield encompassing bases of setae *d1*. External copulatory tube of another form, shorter than 25 7
7. External copulatory tube as wide cone-like processus curved ventrally, 15-18 in length. Central hysteronotal shield not attenuate posterior. Prodorsal shield without extending posterior angles, setae *se*, *si* on striated tegument (Fig. 3) *M. plocei* sp. n.
 – External copulatory tube small, usually of another form, 5-10 in length. Central hysteronotal shield gradually attenuate to posterior end. Prodorsal shield with extending posterior angles encompassing bases of scapular setae *se*, *si* (Figs. 17, 21) 8
8. Posterior margin of prodorsal shield slightly convex. External copulatory tube is button-like (Fig. 21) *M. lonchurae* sp. n.
 – Posterior margin of prodorsal shield with blunt-angular short extension. External copulatory tube as very short cone or cylinder 9
9. Anterior margin of central hysteronotal shield with finger-like extension, external copulatory tube as little cylinder (Fig. 27). Length of idiosoma less than 370 *M. glossifer* (GAUD, 1953)
 – Anterior margin of central hysteronotal shield rounded, external copulatory tube as little truncate cone (Fig. 17). Length of idiosoma 420-460 *M. bubalornis* sp. n.

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