
Katalog zunanjih zajedavcev z vpijatov (Coraciiformes), shranjenih v zbirkah Prirodoslovnega muzeja Slovenije

Catalogue of the ectoparasites from Coraciiformes in the collection of the Slovenian Museum of Natural History

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Izvleček

Prirodoslovni muzej Slovenije hrani zbirke zunanjih zajedavcev, ki pripadajo klopom (Ixodina), živalskim ušem (Phthiraptera), bolham (Siphonaptera) in muham kožuharicam (Diptera: Hippoboscidae). Gradivo za katalog zunanjih zajedavcev na vpijatih smo našli v dveh zbirkah: zbirki klopov (Ixodina) Danice Tovornik in zbirki perojedov in tekutov (Mallophaga) Sava Breliha. V zbirkah zunanjih zajedavcev Prirodoslovnega muzeja Slovenije imamo shranjene tri vrste tekutov (Phthiraptera: Amblycera), 14 vrst perojedov (Phthiraptera) in eno vrsto klopa (Ixodina), ki so bile najdene na 13 vrstah ptic iz reda vpijatov (Coraciiformes).

Ključne besede: zunanji zajedavci, Phthiraptera, Ixodina, muzejska zbirka, zgodovina zbirke, Coraciiformes

Abstract

The Slovenian Museum of Natural History holds collections of ectoparasites belonging to the ticks (Ixodina), lice (Phthiraptera), fleas (Siphonaptera) and louse flies (Diptera: Hippoboscidae). Material for the catalogue of the ectoparasites from Coraciiformes was found in two collections: collection of ticks (Ixodina) authored by Danica Tovornik and collection of bird lice and chewing lice (Mallophaga) by Savo Brelih. In the ectoparasite collections of the Slovenian Museum of Natural History there are three species of chewing lice (Phthiraptera: Amblycera), 14 species of bird lice (Phthiraptera) and one species of tick (Ixodina), which were found on 13 species of Coraciiformes.

Key words: ectoparasites, Phthiraptera, Ixodina, museum collection, collection history, Coraciiformes

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Prirodoslovni muzej Slovenije hrani zbirke zunanjih zajedavcev, ki pripadajo klopom (Ixodina), živalskim ušem (Phthiraptera), bolham (Siphonaptera) in muham kožuharicam (Diptera: Hippoboscidae). Gradivo za katalog zunanjih zajedavcev na vpijatih smo našli v dveh zbirkah: zbirki klopotov (Ixodina) Danice Tovornik in zbirki perojedov in tekutov (Mallophaga) Sava Breliha. Tradicionalni podred Mallophaga, ki pripada živalskim ušem (Phthiraptera), je danes razpadel v tri parafiletske podrede: tekute (Amblycera), perojede (Ischnocera) in slonje uši (Rhynchophthirina), vendar pa smo zbirko zaradi njene organizacije ohranili kot celoto in jo vodimo pod starim imenom podreda.

Zbirka perojedov in tekutov (Mallophaga) Sava Breliha

Obširno zoološko znanje Sava Breliha je obsegalo tudi ptice in sesalce, ki pa so ga zanimali predvsem kot gostitelji zunanjih zajedavcev. Zunanji zajedavci so milimetrskih velikosti, zato moramo za njihovo preučevanje izdelati mikroskopske preparate. Za njihovo pripravo je Savo Brelih razvil lasten protokol, ki omogoča izdelavo izjemno prosojnih preparatov, na katerih se odlično vidijo potrebne podrobnosti. Upravičeno jih občuduje svetovna strokovna javnost. Še posebno zahtevna je preparacija živalskih uši, kjer je pri živali, veliki 2 do 3 mm, treba odpreti želodec in izprati njegovo vsebino, kar omogoča vpogled v podrobnosti, potrebne za razlikovanje vrst. Z veliko mero potrpežljivosti in neizmerno natančnostjo je Savo Brelih ustvaril študijsko zbirko 14.255 mikroskopskih preparatov perojedov in tekutov (Mallophaga), 9.800 preparatov bolh (Siphonaptera) in 350 preparatov uši (Anoplura), ki so shranjeni v 490 škatlah.

Savo Brelih je začel sistematično raziskovati živalske uši leta 1950 in je v prvem dese-

The Slovenian Museum of Natural History holds collections of ectoparasites belonging to the ticks (Ixodina), lice (Phthiraptera), fleas (Siphonaptera) and louse flies (Diptera: Hippoboscidae). Material for the catalogue of ectoparasites from Coraciiformes was found in two collections: collection of ticks (Ixodina) authored by Danica Tovornik and collection of bird lice and chewing lice (Mallophaga) by Savo Brelih. The traditional suborder Mallophaga belonging to the lice (Phthiraptera) is currently divided into three parafiletic suborders: chewing lice (Amblycera), bird lice (Ischnocera) and elephant and wart-hog lice (Rhynchophthirina). However, the collection is kept, because of its organization, as a whole and under the old name of the suborder.

The collection of bird lice and chewing lice (Mallophaga) authored by Savo Brelih

The extensive zoological knowledge of Savo Brelih also included birds and mammals, in which he was particularly interested as hosts of ectoparasites. The ectoparasites are millimetre-sized, so we need to make microscopic slides for their study. For their preparation, Savo Brelih developed his own protocol, which enables the production of extremely transparent slides, where the necessary details are perfectly seen. They are rightfully admired by the world's experts. Especially demanding is the preparation of Phthiraptera, where it is necessary to open the stomach in animals of 2 to 3 mm in size and wash off its contents, allowing insight into the details needed to distinguish the species. With a great deal of patience and immense precision, Savo Brelih created a study collection of 14,255 microscopic slides of bird lice and chewing lice (Mallophaga), 9,800 slides of fleas (Siphonaptera), and 350 slides of sucking lice (Anoplura) stored in 490 boxes.

Savo Brelih embarked on systematic studies of Phthiraptera in 1950. In the first decade he ex-

tletju pregledal okrog 2.000 ptic in nekaj sto sesalcev iz zahodnega in osrednjega Balkana (= ozemlja bivše Jugoslavije) ter na njih našel približno 400 populacij živalskih uši (BRELIH 1961). Med njimi je bilo tudi nekaj novih vrst in nekatere med njimi je tudi opisal (BRELIH 1965, KISHORE TANDAN & BRELIH 1971). Večino terenskih raziskav je opravil na območju nekdanje Jugoslavije, leta 1960 pa se je udeležil slovenske biološke odprave v Etiopijo, kjer je raziskoval zunanje zajedavce ptic.

Pregledoval je pretežno sveže ptice, takoj ko so jih ustrelili, le redkeje pa žive. Ker nekaterih vrst ptic niso mogli dobiti, je kasneje pregledal tudi mehove v zbirki Ornitološkega zavoda v Ljubljani (danes ornitološki zbirki Prirodoslovnega muzeja Slovenije). Nekateri zajedavci namreč na ptici poginejo in ostanejo tako ali drugače pritrjeni na perju tudi po preparaciji mrtve ptice (MEY 2003). Pri tem se je zavedal problema, da so nekateri zunanji zajedavci preparirane ptice že zapustili, nekateri pa so lahko prešli tudi na druge mehove. Mnogo gradiva so mu darovali tudi drugi ornitologi in preparatorji s celotnega Balkana in od drugod po svetu. Nekateri med njimi so omenjeni tudi v pregledu gradiva v nadaljevanju.

Poleg opisov novih vrst je Savo Brelih v soavtorstvu z Danico Tovornik objavil štiri članke s pregledom perojedov in tekutov, najdenih na ozemlju bivše Jugoslavije (BRELIH & TOVORNIK 1961, 1962, 1963, 1965).

Zbirka klopov (Ixodina) Danice Tovornik

Danica Tovornik je tesno sodelovala s Savom Brelihom in vsi klopi, ki jih je Savo Brelih našel pri pregledovanju ptic, so shranjeni v njeni študijski zbirki klopov (Ixodina), ki jo danes hrani Prirodoslovni muzej Slovenije.

aminated about 2,000 birds and several hundred mammals from the western and central Balkans (= the territory of the former Yugoslavia) and found about 400 Phthiraptera populations (BRELIH 1961). There were also some new species among them and he described some of them by himself (BRELIH 1965, KISHORE TANDAN & BRELIH 1971). He conducted most of the field research in the territory of the former Yugoslavia, and in 1960 he attended Slovenian biological expedition to Ethiopia, where he studied the ectoparasites of birds.

He examined predominantly fresh birds as soon as they were shot and only rarely live individuals. From bird species that were not available fresh, he later checked the study skins in the collection of the Ornitološki zavod (Ornithological Institute) in Ljubljana (present-day Ornithological Collection of the Slovenian Museum of Natural History). Some ectoparasites die on the bird and remain in one way or another attached to the feathers also after the preparation of the dead bird (MEY 2003). He was aware of the problem that some of the ectoparasites of the prepared birds had already gone, some of which could also have moved to another study skin. Many other materials were donated by ornithologists and taxidermists throughout the Balkans and from around the world. Some of them are also mentioned in the review of the material below.

In addition to the descriptions of new species, Savo Brelih co-authored four papers with Danica Tovornik with an overview of bird lice and chewing lice (Mallophaga) found in the territory of the former Yugoslavia (BRELIH & TOVORNIK 1961, 1962, 1963, 1965).

The collection of ticks (Ixodina) authored by Danica Tovornik

Danica Tovornik worked closely with Savo Brelih and all the ticks found by Savo Brelih during the bird inspections were stored in her study collection of ticks (Ixodina), which is now stored in the Slovenian Museum of Natural His-

Podroben pregled lokalitet in datumov najdbe nam pogosto razkrije, da gre dejansko za isti osebek gostitelja. Poleg številnih javnozdravstvenih člankov je Danica Tovornik objavila tudi nekaj favnističnih člankov, med njimi tudi članek o pomenu ptic kot gostiteljih in razširjevalcih klopotov na ozemlju bivše Jugoslavije (TOVORNIK 1990), v katerem omenja tudi edino najdbo klopa na vpijatih.

Katalog zunanjih zajedavcev na vpijatih (Aves: Coraciiformes), shranjenih v zbirkah Prirodoslovnega muzeja Slovenije

V zbirkah zunanjih zajedavcev Prirodoslovnega muzeja Slovenije imamo shranjene 3 vrste tekutov (*Amblycera*), 14 vrst perojedov (*Ischnocera*) in eno vrsto klopa (*Ixodina*), ki so bile najdene na 13 vrstah ptic iz redu vpijatov (*Coraciiformes*). Paraziti so v katalogu razvrščeni glede na vrsto gostitelja.

A detailed overview of the localities and dates of findings often reveals that this is actually the same specimen of the host. In addition to numerous public health papers, Danica Tovornik also published some faunistic papers, including a paper on the importance of birds as hosts and disseminators of ticks in the territory of the former Yugoslavia (TOVORNIK 1990), which also mentions the only finding of a tick on *Coraciiformes*.

Catalogue of ectoparasites from the rollers, kingfishers and bee-eaters (Aves: Coraciiformes) in the collection of the Slovenian Museum of Natural History

In the ectoparasite collections of the Slovenian Museum of Natural History three species of chewing lice (*Phthiraptera: Amblycera*) are stored, 14 species of bird lice (*Phthiraptera: Ischnocera*) and one species of tick (*Ixodina*), which were found on 13 species of *Coraciiformes* birds. Parasite species are arranged in the catalogue according to host bird species.



Slika 1: Mikroskopski preparat perojeda vrste *Capraiella subcuspidata*, najdenega na zlatovranki (*Coracias garrulus*) iz gore Sliven v Bolgariji, ki ga je za zbirko Prirodoslovnega muzeja Slovenije prispeval František Balát (Foto: Tea Knapič)

Fig. 1: Microscopic slide of *Capraiella subcuspidata* found on *Coracias garrulus* from Mt. Sliven in Bulgaria, which was contributed for the collection of the Slovenian Museum of Natural History by František Balát (Photo: Tea Knapič)

Coracias abyssinicus* Hermann, 1783**Capraiella* sp.** (Phthiraptera: Ischnocera: Philopteridae)**Etiopija/Ethiopia**

Koka (8,43°; 39,03°; 1615 m n. v.):

1 ♀ (PMSL-Mallophaga-Brelih-3491); 17.12.1960; leg. & det. Savo Brelih

Shashamana (7,19°; 38,60°; 1960 m n. v.):

2 ♂, 3 ♀ (PMSL-Mallophaga-Brelih-3570-3572, 3594); 20.11.1960; leg. & det. Savo Brelih

2 ♂, 3 ♀ (PMSL-Mallophaga-Brelih-3669-3673); 20.11.1960; leg. & det. Savo Brelih

Coracias caudatus lorti* Shelley, 1885**Colimenopon* sp.** (Phthiraptera: Amblycera: Menoponidae)**Etiopija/Ethiopia**

Shashamana (7,19°; 38,60°; 1960 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-3668); 21.11.1960; leg. & det. Savo Brelih

***Capraiella* sp.** (Phthiraptera: Ischnocera: Philopteridae)**Etiopija/Ethiopia**

Shashamana (7,19°; 38,60°; 1960 m n. v.):

1 ♀ (PMSL-Mallophaga-Brelih-3595); 20.11.1960; leg. & det. Savo Brelih

Coracias garrulus garrulus* Linnaeus, 1758**Goniodes astrocephalus* (Burmeister, 1838)** (Phthiraptera: Ischnocera: Goniodidae)**Hrvaška/Croatia**

Zagreb (45,81°; 15,98°; 135 m n. v.):

2 ♀ (PMSL-Mallophaga-Brelih-10179-10180); september 1968; leg. Konstantin Igalffy; det. Savo Brelih

***Capraiella subcuspidata* (Burmeister, 1838)** (Phthiraptera: Ischnocera: Philopteridae)**Slovenija/Slovenia**

Ptuj, okolica (46,41°; 15,86°; 230 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-324); 2.8.1954; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)

Hrvaška/Croatia

Dubrovnik (42,65°; 18,09°; 40 m n. v.):

4 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-11014-11018); 15.5.1966; leg. Andrija Lesinger; det. Savo Brelih

Bolgarija/Bulgaria

Sliven (42,68°; 26,32°; 265 m n. v.):

1 ♀ (Coll. Dr. F. Balát, Hodoním ČSR); 24.5.1957; leg. & det. František Balát



Slika 2: Samec perojeda vrste *Capraiella subcuspidata* (gostitelj: *Coracias garrulus garrulus*; SLO: Ptuj, okolica; 2.8.1954; leg. & det. Savo Brelih) (Foto: Tomi Trilar)

Fig. 2: Male of *Capraiella subcuspidata* (host species: *Coracias garrulus garrulus*; SLO: Ptuj, surroundings; 2.8.1954; leg. & det. Savo Brelih) (Photo: Tomi Trilar)



Slika 3: Samec (levo) in samica (desno) vodomčevega perojeda (*Alcedofulla alcedinis*) (gostitelj: *Alcedo atthis ispida*; samec – SLO: Ljubljana, okolica; 1951; leg. & det. Savo Brelih; samica – SLO: Cirkulane; jesen 1980; leg. Dare Šere; det. Savo Brelih) (Foto: Tomi Trilar)

Fig. 3: Male (left) and female (right) of *Alcedofulla alcedinis* (host species: *Alcedo atthis ispida*; male – SLO: Ljubljana, surroundings; 1951; leg. & det. Savo Brelih; female – SLO: Cirkulane; autumn 1980; leg. Dare Šere; det. Savo Brelih) (Photo: Tomi Trilar)

Alcedo atthis ispida Linnaeus, 1758

Alcedoffula alcedinis (Denny, 1842) (Phthiraptera: Ischnocera: Philopteridae) Slovenija/Slovenia

Cirkulane (46,34°; 15,99°; 230 m n. v.):

2 ♂, 3 ♀ (PMSL-Mallophaga-Brelih-14063-14067); jesen 1980; leg. Dare Šere; det. Savo Brelih

Ig (45,95°; 14,52°; 298 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-12699); 5.11.1975; leg. Dare Šere; det. Savo Brelih

Ljubljana, okolica (46,0°; 14,5°; 300 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-125); 1951; leg. & det. Savo Brelih

2 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-2273-2275); 1951; leg. & det. Savo Brelih

Ribnica (45,74°; 14,72°; 500 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-4440); 5.11.1955; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)

Škofja Loka (46,16°; 14,30°; 350 m n. v.):

2 ♂ (PMSL-Mallophaga-Brelih-4437-4438); 3.2.1954; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)

Tacen (46,11°; 14,46°; 300 m n. v.):

1 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-4434-4436); 4.11.1958; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)

Zbilje, Zbiljsko jezero (46,15°; 14,41°; 323 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-4439); 5.11.1955; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)

Hrvaška/Croatia

otok Krk: Omišalj (45,21°; 14,55°; 90 m n. v.):

1 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-423, 2100); 30.11.1953; leg. & det. Savo Brelih (BRELIH & TOVORNIK 1961)



Slika 4: Mikroskopski preparat perojeda vrste *Philopterus prionitis* (pod sinonimom *Clayiella prionitis panainensis*), najdenega na zlatovranki vrste *Momotus aequatorialis* (pod sinonimom *Momotus momota aequatorialis*) iz Kolumbije, ki ga je za zbirko Prirodoslovnega muzeja Slovenije prispeval Melbourne Armstrong Carriker mlajši (Foto: Tea Knapič)

Fig. 4: Microscopic slide of *Philopterus prionitis* (under the synonym *Clayiella prionitis panainensis*) found on *Momotus aequatorialis* (under the synonym *Momotus momota aequatorialis*) from Colombia, which was contributed for the collection of the Slovenian Museum of Natural History by Melbourne Armstrong Carriker Jr. (Photo: Tea Knapič)

Corythornis cristatus stuartkeithi Dickerman, 1989

Alcedoffula cristata Tendeiro, 1967 (Phthiraptera: Ischnocera: Philopteridae)
Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

3 ♂ (PMSL-Mallophaga-Brelih-3247-3249); 11.10.1960; leg. & det. Savo Brelih

Halcyon leucocephala leucocephala (Stadius Müller, 1776)

Alcedoecus capistratus (Neumann, 1912) (Phthiraptera: Ischnocera:
Philopteridae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

1 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-3252-3253); 25.10.1960; leg. & det. Savo Brelih

1 ♀ (PMSL-Mallophaga-Brelih-4391); 1.11.1960; leg. & det. Savo Brelih

Halcyon senegalensis senegalensis (Linnaeus, 1766)

Alcedoecus senegalensis Tendeiro, 1965 (Phthiraptera: Ischnocera:
Philopteridae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

1 ♀ (PMSL-Mallophaga-Brelih-4392); 20.10.1960; leg. & det. Savo Brelih

2 ♀ (PMSL-Mallophaga-Brelih-3250-3251); 15.11.1960; leg. & det. Savo Brelih

Senegal/Senegal

Bandia (14,61°; -17,03°; 1710 m n. v.):



Slika 5: Mikroskopski preparat perojeda vrste *Meropoecus debeauxi*, najdenega na malem čebelarju (*Merops pusillus cyanostictus*) iz Etiopije, ki ga je za zbirko Prirodoslovnega muzeja Slovenije nabral, pripravil in določil Savo Brelih (Foto: Tea Knapič)

Fig. 5: Microscopic slide of *Meropoecus debeauxi* found on *Merops pusillus cyanostictus* from Ethiopia, which was collected, prepared and determined for the collection of the Slovenian Museum of Natural History by Savo Brelih (Photo: Tea Knapič)

- 3 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-11633-11637); 7.7.1966; leg. Roger Taufflieb; det. Savo Brelih
 3 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-14089-14093); 7.7.1966; leg. Roger Taufflieb; det. Savo Brelih

Ceryle rudis rudis (Linnaeus, 1758)

Alcedoffula duplicata (Piaget, 1890) (Phthiraptera: Ischnocera: Philopteridae)
 Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

- 8 ♂, 4 ♀ (PMSL-Mallophaga-Brelih-3232-3246); 21.10.1960; leg. & det. Savo Brelih

Momotus aequatorialis aequatorialis Gould, 1858

Philopterus prionitis (Denny, 1841) (Phthiraptera: Ischnocera: Philopteridae)
 (pod sinonimom *Clayiella prionitis panainensis* Cariker M.A. Jr.)

Kolumbija/Columbia

Ventanas (7,07°; -75,27°; 790 m n. v.):

- 2 ♀ (PMSL-Mallophaga-Brelih-7141-7142); 3.6.1948; leg. & det. Melbourne Armstrong Carriker Jr.

Merops apiaster Linnaeus, 1758

Haemaphysalis erinacei erinacei Pavesi, 1884 (Ixodida: Ixodina: Amblyommidae)

Bosna in Hercegovina/Bosnia and Herzegovina

Čapljina (43,11°; 17,70 °; 10 m n. v.):

- 2 ♂ (PMSL-Ixodina-Tovornik-15/15); 14.6.1958; leg. Andrija Lesinger; det. Danica Tovornik (TOVORNIK 1990)

Meromenopon meropis Clay et Meinertzhagen, 1941 (Phthiraptera: Amblycera: Menoponidae)

Hrvaška/Croatia

Metković (43,05°; 17,64°; 5 m n. v.):

- 4 ♂, 5 ♀ (PMSL-Mallophaga-Brelih-9803-9811); 15.10.1964; leg. Andrija Lesinger; det. Savo Brelih

Sudan

Red Sea district (19°N; 35°E):

- 8 ♂, 5 ♀ (PMSL-Mallophaga-Brelih-3459-3470); 9.9.1960; leg. & det. Savo Brelih

Brueelia apiastri (Denny, 1842) (Phthiraptera: Ischnocera: Philopteridae)

Hrvaška/Croatia

Metković (43,05°; 17,64°; 5 m n. v.):

- 1 ♀ (PMSL-Mallophaga-Brelih-7554); 20.5.1963; leg. Andrija Lesinger; det. Savo Brelih
 1 ♀ (PMSL-Mallophaga-Brelih-9794); 15.10.1963; leg. Andrija Lesinger; det. Savo Brelih
 6 ♂, 6 ♀ (PMSL-Mallophaga-Brelih-9791-9802); 15.10.1964; leg. Andrija Lesinger; det. Savo Brelih

- 1 ♂ (PMSL-Mallophaga-Brelih-11400); 18.5.1968; leg. Andrija Lesinger; det. Savo Brelih
1 ♀ (PMSL-Mallophaga-Brelih-2469); 5.8.1928; leg. Andrija Lesinger; det. Savo Brelih

Makedonija/Macedonia

Bitola (41,02°; 21,32°; 580 m n. v.):

- 1 ♀ (PMSL-Mallophaga-Brelih-2469); 15.8.1928; leg. & det. Savo Brelih

Sudan/Sudan

Red Sea district (19°N; 35°E):

- 1 ♂ (PMSL-Mallophaga-Brelih-3225); 9.9.1960; leg. & det. Savo Brelih

***Meropoecus meropis* (Denny, 1842) (Phthiraptera: Ischnocera: Philopteridae)**

Hrvaška/Croatia

Metković (43,05°; 17,64°; 5 m n. v.):

- 3 ♂, 11 ♀ (PMSL-Mallophaga-Brelih-7555-7568); 20.5.1963; leg. Andrija Lesinger; det. Savo Brelih (BRELIH & TOVORNIK 1965)

- 1 ♂ (PMSL-Mallophaga-Brelih-9284); 21.7.1964; leg. Andrija Lesinger; det. Savo Brelih

- 1 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-12218-12220); 18.5.1968; leg. Andrija Lesinger; det. Savo Brelih

Bosna in Hercegovina/Bosnia and Herzegovina

Čapljina (43,11°; 17,70 °; 10 m n. v.):



Slika 6: Samec (levo) in samica (desno) perojeda vrste *Meropoecus debeauxi* (gostitelj: *Merops pusillus cyanostictus*; ET: Koka; 13.12.1960; leg. & det. Savo Brelih) (Foto: Tomi Trilar).

Fig. 6: Male (left) and female (right) of *Meropoecus debeauxi* (host species: *Merops pusillus cyanostictus*; ET: Koka; 13.12.1960; leg. & det. Savo Brelih) (Photo: Tomi Trilar).

2 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-9909-9911); 14.6.1958; leg. Andrija Lesinger; det. Savo Brelih

Senegal/Senegal

Bandia (14,61°; -17,03°; 1710 m n. v.):

2 ♀ (PMSL-Mallophaga-Brelih-12412, 14144); 24.11.1967; leg. Roger Taufflieb; det. Savo Brelih

Sudan/Sudan

Red Sea district (19°N; 35°E):

1 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-3482-3483); 9.9.1960; leg. & det. Savo Brelih

Merops nubicus Gmelin, 1788

Meromenopon sp. (Phthiraptera: Amblycera: Menoponidae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-3471); 16.10.1960; leg. & det. Savo Brelih

Merops pusillus cyanostictus Cabanis, 1869

Meropoecus debeauxi Conci, 1941 (Phthiraptera: Ischnocera: Philopteridae)

Etiopija/Ethiopia

Koka (8,43°; 39,03°; 1615 m n. v.):

1 ♂ (PMSL-Mallophaga-Brelih-4252); 13.12.1960; leg. & det. Savo Brelih

1 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-3478, 3480, 3481); 15.12.1960; leg. & det. Savo Brelih

Merops variegatus lafresnayii Guérin-Méneville, 1843

(pod sinonimom *Mellittophagus lafresnayii lafresnayii*)

Meromenopon sp. (Phthiraptera: Amblycera: Menoponidae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

2 ♀ (PMSL-Mallophaga-Brelih-3472-3473); 10.11.1960; leg. & det. Savo Brelih

Brueelia sp. (Phthiraptera: Ischnocera: Philopteridae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

3 ♂, 6 ♀ (PMSL-Mallophaga-Brelih-4280-4288); 2.11.1960; leg. & det. Savo Brelih

2 ♂ (PMSL-Mallophaga-Brelih-3154-3155); 10.11.1960; leg. & det. Savo Brelih

Meropoecus sp. (Phthiraptera: Ischnocera: Philopteridae)

Etiopija/Ethiopia

Awassa (7,05°; 38,49°; 1710 m n. v.):

4 ♂, 1 ♀ (PMSL-Mallophaga-Brelih-4393-4397); 2.11.1960; leg. & det. Savo Brelih

2 ♂, 2 ♀ (PMSL-Mallophaga-Brelih-3474-3477); 10.11.1960; leg. & det. Savo Brelih

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