

A CONTRIBUTION TO THE KNOWLEDGE OF BITING LICE (MALLOPHAGA) FOUND ON PASSERINES (PASSERIFORMES)

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Abstract. Descriptions are given of the following seven new species of biting lice (Mallophaga) collected off passerines (Passeriformes) in Czechoslovakia, German Democratic Republic, Yugoslavia and Austria: *Menacanthus brelihi* sp.n. (type-host: *Panurus biarmicus*), *M. obrteli* sp.n. (type-host: *Locustella luscinioides*), *M. stiefeli* sp.n. (type-host: *Carduelis flavirostris*), *Brueelia vaneki* sp.n. (type-host: *Acrocephalus schoenobaenus*), *B. matvejevi* sp.n. (type-host: *Turdus viscivorus*), *Allobrueelia haftorni* sp.n. (type-host: *Turdus iliacus*) and *Allonirmus tovornikae* sp.n. (type-host: *Sylvia atricapilla*). On *Acrocephalus scirpaceus* also specimens of the genus *Brueelia* have been found which show certain deviations from the newly described species *B. vaneki* sp.n.

This paper is an extension of the previous paper dealing with Mallophaga (Balát 1981). The material was collected primarily off birds captured in net for the purpose of ringing (exceptionally some of them were shot for special investigations, e.g. on the presence of viruses, helminths etc.). Live birds were examined immediately after capture and released so that the possible transfer of ectoparasites from other host was eliminated. A strict isolation was observed mainly in case of the shot birds, because the transfer of ectoparasites is much more impending here, primarily of the suborder Amblycera.

The material was placed in 70% alcohol. Some specimens were mounted in Canada balsam for microscopic examination in the course of one to three years, or much later. The material treated as long as 20 years later did not yield satisfactory preparations and its evaluation was considerably difficult. In some cases (*Menacanthus* off *Carduelis spinus*, off *Motacilla cinerea* and off other still unknown hosts) the taxonomic treatment had to be postponed until fresh material was collected. On the other hand, the material kept in dry state proved to be suitable for slide preparations of very good quality even after this long period. While describing the specimens I emphasized mainly those characters which cannot be changed by different technique of preparation. Therefore, e.g. in representatives of the genus *Menacanthus*, I omitted detailed descriptions of head shape. In such cases the chaetotaxy, body dimensions and photomicrography of habitus are much more instructive and useful for determination.

In treating some species I appreciated the material made available to me by Dr. Savo Brelih of the Natural Sciences Museum in Ljubljana (Yugoslavia), to whom I wish to extend my thanks.

Menacanthus brelihi sp. n.

Fig. 1, Plate I, Figs. 1, 2

Type host: *Panurus biarmicus* (Linnaeus)
 Material examined: Holotype: ♀, slide FB 1394*, Vel. Dvůr near Pohořelice (South Moravia), 15. 6. 1961. Paratypes: ♂, ♀, from the same host; ♂, 3 ♀♀, 7 larvae, N. Ves near Pohořelice (south Moravia), 18. 7. 1962; ♂, 4 ♀♀, 2 larvae from the same host species, Neusiedl am See (Eastern Austria), 17. 9. 1960 — leg. F. Balát.

Description: Female (holotype). A relatively large yellow-brown species with a wide head (in ♀ head 1.91—2.0 times wider than long). The general habitus is given in Plate I, Fig. 2. The prothoracic bar well developed, broad and considerably long; jutting from below backwards in the centre there is a narrow, long projection with a blunt end and indented margin. Very distinct are the characters in the chaetotaxy of abdomen. Posterior corners of tergites always bear one spine each, with as many as 9 setae, spine-like setae and spines attached to it. Posterior margins of tergites with long and semi-long setae (as many as 40); shorter, markedly stout spine-like setae, characteristic of *M. eurysternus* (Burmeister, 1838) s.l. (Price 1975) are absent. Spine-like setae on pleurites: III. 1—3; IV. 3—5; V. 6—7; VI. 4; VII. 4; VIII. 0. Pleurites I—VIII with a number of setae and spine-like setae; also a number of setae are running across sternites II—VIII. Moreover, sternites III—VI bear brushes of setae numbering 6—12; on the sides of sternites VII and VIII there is a group of 7—8 somewhat longer setae and on segment VIII another one in the middle. Anus is rimmed with 9—10 spine-like setae on each side. **Male** (Plate I, Fig. 1) is of smaller size. Head is also considerably wider than long (1.86—2.0 times as much). Setal cover of abdomen is somewhat thinner than in ♀.

Fig. 1 shows shape of parameres.

Dimensions	♀			
	holotype	♀	♀	♂
Head length	0.33	0.33	0.34	0.30
width	0.66	0.66	0.65	0.56
prothorax				
width	0.49	0.47	0.47	0.39
meso-metath.				
width	0.64	0.64	0.64	0.52
abdomen length	1.26	1.28	1.38	0.95
width	0.84	(0.87)	(0.87)	0.66
total length	1.94	1.94	1.95	1.56

I have dedicated this species to Dr. S. Breljih, the Yugoslav mallophagologist and a good friend of mine from Ljubljana.

***Menacanthus obteli* sp. n.**

Fig. 3, Plate I, Fig. 6

Type host: *Locustella luscinioides luscinioides* (Savi). Material examined: Holotype: ♀, slide FB 1498, Sedlec near Mikulov, Nesyt fishpond (South Moravia), 13. 8. 1978. Paratypes: 5 ♀♀ from the same host, leg. F. Balát. Moreover, on the head of another *L. luscinioides* captured 23. 4. 1978 around Velký Dvůr near Pohořelice (South Moravia) at least 200 eggs of the genus *Menacanthus*, apparently belonging to this species, were found. Imagoes, however, failed to be found despite a long search for them.

On the birds belonging to the genus *Locustella* no specimen of the biting lice of the genus *Menacanthus* was encountered. Of the allied bird genus *Acrocephalus* only one species was described: *M. wegelini* Eichler, 1953 (a single ♀ found in April 1886 on *Acrocephalus paludicola* in Tunisia; leg. Alexander Koenig). It was only 24 years later that Mey (1977) reported findings of these biting lice on *Acrocephalus scirpaceus* and on *A. palustris*. The mentioned author designated the material originating from *A. scirpaceus* by the name *M. eisenachensis* sp.n. The description of this species is in press. In 1978 I collected from five birds of the above host species 1 ♂ and 25 ♀♀ in south Moravia (Sedlec near Mikulov and Velký Dvůr near Pohořelice). The material from *Locustella luscinioides* is markedly different.

Description: Female (holotype). The general habitus is shown in Plate I, Fig. 6. At first sight it differs from *M. eisenachensis* in fully brown colouring. *M. eisenachensis*

possesses a distinctly darkbrown head, prothorax and partly meso-metathorax, the whole abdomen is yellowbrown, so that the specimens appear bicolored even macroscopically. The head is 1.84 (1.79—1.95 times; $n = 6$) broader than long. In the region of the preocular enlargement it is on the average 1.31 times broader (1.28—1.36 times; $n = 6$) than in the region of the temples (in 6 ♀♀ *M. eisenachensis* the average is 1.26 ranging from 1.23—1.28*). Plate I, Figs. 5 and 6 reveal great differences even in the shape of head of the two species. Posterior corners of prothorax are more angular than in *M. eisenachensis* (in this species they are more pointed). In both species there is one short and one long seta on the anterior corner of prothorax and behind them one spine-like seta, and on the posterior corner two long setae; the posterior margin of prothorax is straight in both species and in *M. obrteli* it bears 4 long setae (in *M. eisenachensis* there are 6). A wide short projection with a blunt end and indented margin is jutting in the centre of the lower side of prothorax (Fig. 3) (in *M. eisenachensis* and other species of the genus *Menacanthus* it is always narrower, longer and tapering to point).

Dimensions	♀					
	holotype	♀	♀	♀	♀	♀
Head length	0.24	0.24	0.24	0.22	0.23	0.23
width	0.44	0.43	0.44	0.43	0.42	0.42
prothorax width	0.32	0.30	0.30	0.29	0.28	0.29
meso-metath. width	0.38	0.38	0.38	0.37	0.37	0.37
abdomen length	0.89	0.83	0.84	0.82	0.73	0.79
width	(0.72)	0.59	(0.64)	0.57	0.54	0.57
total width	1.30	1.22	1.25	1.20	1.13	1.17

The average length of 6 ♀♀ is 1.21 mm (ranging from 1.13 to 1.30), in *M. eisenachensis* the average length of 12 ♀♀ is 1.38 mm (ranging 1.27—1.47).

I have named this new species after Ing. R. Obrtel, C.Sc., my co-worker and entomologist of the Institute of Vertebrate Zoology, Czechoslovak Academy of Sciences, Brno.

Menacanthus stiefeli* sp. n.*

Fig. 6, Plate I, Figs. 3,4

Type host: *Carduelis flavirostris flavirostris* (Linnaeus) Material examined: Holotype: ♀, slide FB 1496, Halle/Saale (GDR), 19. 1. 1968. Paratypes: 3 ♂♂ and 2 ♀♀ in slides and untreated material in alcohol from other 6 *Carduelis flavirostris*, collected in December 1967—February 1968 at the same locality, leg. A. Stiefel.

From *Carduelis flavirostris* no findings of biting lice have been reported in literature. From the related avian species known are *Menacanthus carduelis* (Denny, 1842) (type host: *Carduelis carduelis*) and *M. wipszyckii* Eichler et Zlotorzycska, 1963 (type host: *Carduelis chloris*). I could compare 1 ♂ and 1 ♀ of the first mentioned species, collected off *Carduelis carduelis* on 2.4. 1949 near Hodonín (south Moravia).

Description: Female (holotype). The general habitus is seen in Plate I, Fig. 4. The head is 1.51—1.57 times broader than long ($n = 3$). Anterior corners of prothorax are blunter than in *M. carduelis* (cf. Figs. 6 and 7). Another difference is in the numbers of longer slim spines on the sides of abdomen, between its margin and stigmata (counted separately on the left and right sides):***

* A comparison in this respect is also possible because the slides were made of the material of the same age, at the same time and by the same technique.

** While this paper was still in press a description of *Menacanthus cannabinae* Fedorenko et Belskaya, 1980 was published (Izv. AN Turkm. SSR, No 1, 91—93, 1980) parasitic on *Carduelis cannabina*. As this host is considerably close to the species *C. flavirostris*, a great similarity of this new species to the species *M. stiefeli* sp.n. may be anticipated. The differences will have to be stated after directly comparing the material.

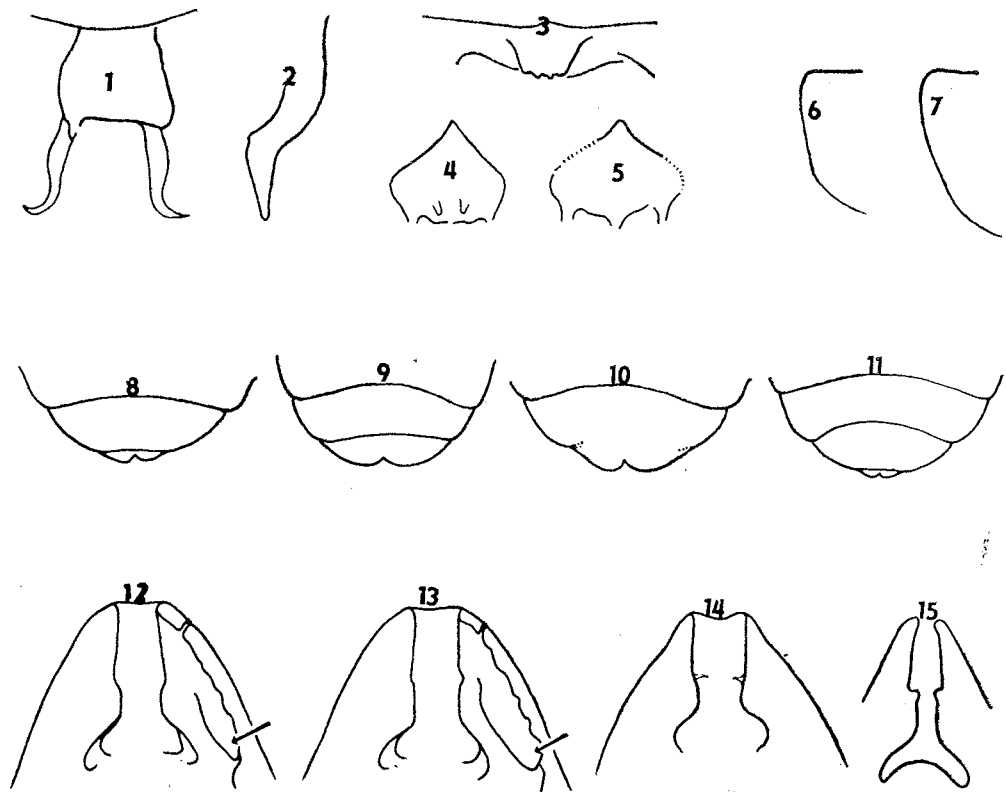
*** In *M. wipszyckii* these slim spines are absent (cf. Zlotorzycska 1965).

	3 ♀ <i>M. stiefeli</i> sp. n.	1 ♀ <i>M. carduelis</i>
segment V.	1—4 (—6)	6—7
segment VI.	1—3	5—6
segment VII.	1—3	4—6
segment VIII.	0—1 (—3)	4

In the centre part of abdomen both the tergites and sternites at the posterior margin are rimmed with only semilong setae; sternites are covered all over with additional (distinctly shorter) setae. In comparison with *M. carduelis* the general setal cover of abdomen is thinner. On the corners of abdominal segments I—IV there are, besides setae, 2—4 spines respectively (in *M. carduelis* maximally two are discernible). The specimens are fully yellow-brown (in *M. carduelis* dark brown).

Male. The general habitus is seen in Plate I, Fig. 3. Characters of the species similar to those in female. Index of head somewhat lower (1.44; n = 2). The number of slender spines all over particular segments of abdomen is lower than in ♀ (except segment VIII). In this respect the following table shows a comparison with the male of *M. carduelis*:

	3 ♂ <i>M. stiefeli</i> sp. n.	1 ♂ <i>M. carduelis</i>
segment V.	0—2 (—3)	3—5
segment VI.	2—3	4
segment VII.	0—2 (—3)	3—4
segment VIII.	1—3	2



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Dimensions	♀				♂
	holotype	♀	♀	♀	immat.
Head length	0.28	0.29	0.28	0.27	0.27
width	0.43	0.44	0.44	0.44	0.44
prothorax width	0.34	0.34	0.35	0.30	0.29
meso-metath. width	0.40	—	—	0.35	0.34
abdomen length	0.97	0.94	0.94	0.81	—
width	0.64	0.64	(0.70)	0.55	0.52
total length	1.50	1.50	1.42	1.31	(1.18)

I have named this new species after Dr. A. Stiefel of Halle/Saale (German Democratic Republic), the ornithologist who was the first to collect it in large number and made available the material to me for treatment.

***Brueelia vaneki* sp. n.**

Figs. 2, 9, 15, Plate IV, Figs. 1, 4

Type host: *Acrocephalus schoenobaenus* (Linnaeus)

Material examined: Holotype: ♀, slide FB 1519, Velký Dvůr near Pohořelice (South Moravia), 18. 6. 1978. Paratypes: 1 ♂ from the same host; 3 ♂♂, 2 ♀♀, 2 larvae from another bird in the same locality, same day; ♀, 2 larvae from the same host species, Hodonín (South Moravia), August 1951, leg. F. Balát.

From birds of the genus *Acrocephalus* no finding of biting lice of the genus *Brueelia* has been reported in literature. From birds of the closely related genera three species are known so far: *B. rosickyi* Balát, 1955 (type host: *Sylvia nisoria*), *B. currucae* Bechet, 1961 (type host: *Sylvia curruca*) and *B. locustellae* Fedorenko, 1975 (type host: *Locustella luscinioides*). Available to me for comparison were males and females of the species *B. rosickyi* (see dates of findings in Balát's paper 1955), and 2 ♀♀ of the species *B. locustellae* (date of finding: 1. 5. 1962, Šakvice, South Moravia). My material off *A. schoenobaenus* differs markedly from the mentioned material.

Description: Female (holotype). The general habitus is given in Plate IV, Fig. 4. Head is 1.36—1.37 times longer than wide ($n = 3$) Sides of the head before trabeculae are only slightly convex and hardly contracted before the front part of head, while in *B. rosickyi* and *B. currucae** they are distinctly convex and in *B. locustellae* markedly contracted. Clypeal suture is narrow and long (Fig. 15). The abdomen is relatively very long and narrow (index = 2.87—3.05). Posterior margin of tergite VII very concave (Fig. 9).

Male (Plate IV, Fig. 1) is smaller in size, with a somewhat shorter head (index = 1.26—1.34; $n = 2$). Segment VIII of abdomen is markedly narrower than segment VII; segment IX is distinctly half-circular. Parameres short, strongly bent (Fig. 2).

Dimensions	♀				
	holotype	♀	♀	♂	♂
Head length	0.38	0.37	0.38	0.29	0.33
width	0.28	0.27	0.28	0.23	0.24
prothorax width	0.19	0.18	0.19	0.15	0.17
meso-metath. width	0.26	0.26	0.27	0.23	0.24
abdomen length	1.09	1.11	1.13	0.81	0.81
width	0.38	—	0.37	0.27	0.30
total length	1.72	1.78	1.76	1.39	1.37

I have named this new species after K. Vaněk, my friend who often assists me in catching birds in the field.

* After original description and figure (Bechet 1961)

Note: I found 2 ♀♀ and 1 larva of the genus *Brueelia* on *Acrocephalus scirpaceus* (Herrmann) which I had captured 10. 9. 1978 in the reeds of the Nesyt fishpond near Sedlec (south Moravia). These specimens were very similar to the preceding species *B. vaneki* sp.n., but differed from it in some details (clypeal suture, gular plate and dimensions).

***Brueelia matvejevi* sp. n.**

Figs. 8, 12, Plate III, Figs. 3, 6

Type host: *Turdus viscivorus viscivorus* (Linnaeus)

Material examined: Holotype: ♂, slide FB 1523, Žabljak (Monte Negro, Yugoslavia), 3. 7. 1958, leg. S. Brelj. Paratypes: ♀ from the same host; 20 ♂♂, 26 ♀♀, 6 larvae from the same host species, Brno-Obora (Central Moravia), 15. 6. 1954, leg. F. Balát.

So far representatives of the genus *Brueelia* Kéler, 1936 s.l. have been collected from *Turdus viscivorus* very rarely. Following the description of the species *Nirmus viscivori* Denny, 1842 only two concrete findings were recorded in literature: In 1953 one larva was found near Wrocław in Poland and identified as *Allobrueelia viscivori* (Denny, 1842), (Zlotorzycska 1964). In her later paper Zlotorzycska (1977) included this species in the genus *Brueelia* Kéler, 1936 s.str.) The second finding was reported from the town Reghin in Romania (Bechet 1961). In 1951—1960 I examined gradually 24 birds. On three of them I encountered representatives of the genus *Brueelia* Kéler, 1936 s.l. and after preparing them for examination I found two different forms. The head of specimens in two samples was approximately as broad as long (a typical character of the genus *Allobrueelia* Eichler, 1951), while in the third sample it was considerably narrower (= genus *Brueelia* Kéler, 1936 s.str.). After inquiry at the British Museum in London I was informed that due to the shape of its broad head the holotype of *Nirmus viscivorus* Denny, 1842 belongs to the genus *Allobrueelia*.*

Of the European species of the subfamily Turdinae 4 species of biting lice have been described so far which belong among "narrow-headed" species of the genus *Brueelia* s.str.:

B. iliaci (Denny, 1842)

B. antimarginalis Eichler, 1951

B. intermedia (Nitzsch, 1866)

B. jacobii Eichler, 1951

type host: *Turdus iliacus*,

T. pilaris,

T. torquatus,

T. merula

The material of the first three mentioned species was available to me. It became evident that specimens off *Turdus viscivorus* differed from them. Because the slides made from my material, which had been kept in alcohol for 20 years, were not as suitable for examination as the slides which I meanwhile obtained by courtesy of Dr. S. Brelj from Ljubljana, I chose the specimens from Yugoslavia as holotype of the new species.

Description: Male (holotype). The general habitus is given in Plate III, Fig. 3. The head is slightly (1.17—1.21 times; n = 3) longer than wide. It differs from the species *B. antimarginalis* and *B. intermedia* in the shape of clypeal suture which has no marked horn-like projections on anterior side (cf. Plate III, Fig. 2 and Plate IV, Fig. 2). The similarity with the species *B. iliaci* is considerable and after obtaining further material from other bird species of the genus *Turdus* it is possible that it will be evaluated only as its subspecies. From this species it differs firstly, in the onion-shaped gular bar (in *B. iliaci* it is more conical); secondly, in longer antennae (the mean length of segments II—V in three males is 0.125 mm in ♂ of *B. iliaci* 0.115 mm), while the body length

* I wish to thank Mr. C.H.C. Lyal of the British Museum Entomological Department, for examining and identifying this specimen.

is similar. The details in the structure of male copulative organs will need to be detected in the prepared organs of further material collected. The mean length of 3♂♂ is 1.55 mm. **Female** (Plate III, Fig. 6) is somewhat bigger: The mean length of 3 specimens is 1.78 mm. The head is 1.15—1.18 times longer than wide (n = 3). While the body length is almost the same it differs from the *B. iliaci*: in shorter antennae — the mean length of segments II—V in three females is 0.132 mm (in three females of *B. iliaci* = 0.120 mm), in the above described shape of gular bar and in the shape of the last two segments of abdomen. On the average they are 2.81 times wider than long (n = 3; Fig. 8), while in *B. iliaci* they are only 2.34 times wider (n = 3; Fig. 10). The posterior part of depression on the bottom side of head between marginal carina and ventral carina is distinctly larger (Fig. 12) than in the species *B. iliaci* (Fig. 13).

Dimensions	♂					
	holotype	♂	♂	♀	♀	♀
Head length	0.36	0.36	0.35	0.39	0.39	0.39
width	0.30	0.29	0.30	0.33	0.33	0.34
prothorax width	0.19	0.20	0.20	0.21	0.22	0.22
meso-metath. width	0.29	0.29	0.28	0.32	0.32	0.31
abdomen length	0.98	0.91	0.94	1.16	1.14	1.09
width	0.39	0.36	—	0.44	0.47	0.42
total length	1.59	1.51	1.54	1.79	1.79	1.75

I have named this species after Dr. S. D. Matveyev, the outstanding Yugoslav ornithologist.

***Brueelia iliaci* (Denny, 1842)**

Figs. 10, 13, Plate III, Figs. 1, 4

Type host: *Turdus iliacus* Linnaeus

Material examined: 11 ♀♀, 5 larvae, Serrahn (GDR). 8. 4. 1977; 3 ♂♂, 2 ♀♀, ibid., 11. 4. 1977, collected on type host by F. Balát. I present figures (Plate III, Figs. 1, 4) and dimensions of this little known and rarely collected species.

Dimensions	♀				
	♂	♀	♀	♀	♀
Head length	0.35	0.39	0.39	0.40	0.39
width	0.30	0.35	0.34	0.34	0.33
prothorax width	0.20	0.22	0.23	0.22	0.22
meso-metath. width	1.28	1.31	1.32	1.33	1.32
abdomen length	0.95*	1.13	1.16	1.16	1.18
width	0.26	0.28	0.30	0.32	0.27
total length	1.56*	1.75	1.80	1.82	1.81

***Brueelia antimarginalis* Eichler, 1951**

Plate IV, Figs. 2, 5

Type host: *Turdus pilaris pilaris* Linnaeus

Material examined: 1 ♂, 8 ♀♀, Plavecké Podhradie (W. Slovakia), 30. 10. 1950, on type host, leg. F. Balát.

So far only a single female has been known. I am therefore adding the figure of the female (Plate IV, Fig. 5) and of the heretofore unknown male (Plate IV, Fig. 2), as well as their dimensions. Of all four species this is the biggest.

* During preparation the abdomen which was initially longer, was secondarily deformed (cf. Plate III, Fig. 1). The blunt termination of abdomen in the depicted specimen cannot be considered as a species character, because in another not quite grown-up specimen in Dr. Pfleger's collection (slide SZ 3152) the last segment of abdomen is projected backwards, similarly as in other species.

Dimensions	♂	♀	♀	♀
Head length	0.37	0.39	0.39	0.39
width	0.32	0.34	0.34	0.34
prothorax width	0.21	0.22	0.22	0.24
meso-metath. width	0.31	0.35	0.34	0.35
abdomen length	0.97	1.11	1.14	1.20
width	0.47	0.49	0.49	0.52
total length	1.64	1.81	1.84	1.90

Allobrueelia haftorni sp. n.

Fig. 11, Plate II, Figs. 2,6

Type host: *Turdus iliacus* Linnaeus

Material examined: Holotype: ♀ slide FB 1242, Sokolnice near Brno (Central Moravia, ČSSR), 1. 4. 1958. Paratypes: 2 immature ♂♂ off the same host, all collected by F. Balát.

So far the genus *Allobrueelia* Wd. Eichler, 1952 includes the following species:

<i>A. abluda</i> Zlotoryzcka, 1964	type host: <i>Turdus philomelos</i>
<i>A. amsel</i> (Wd. Eichler, 1951)	<i>T. merula</i>
<i>A. daumae</i> (Clay, 1936)	<i>T. dauma</i>
<i>A. marginata</i> (Burmeister, 1838)	<i>T. pilaris</i>
<i>A. viscivori</i> (Denny, 1842)	<i>T. viscivorus</i>

The material collected by me of a shot *Turdus iliacus* (3 specimens and several eggs in the ventral feathers) was kept in alcohol for 20 years and this fact affected the quality of microscopic preparations. Nevertheless, the slides reveal a few characters which differentiate it from the species *A. abluda* (Plate II, Figs. 1, 5) *A. amsel*, *A. marginata* (Plate II, Figs. 3, 7) and *A. viscivori* (Plate II, Figs. 4, 8), which I collected in Czechoslovakia.

Description: Female (holotype): The general appearance is given in Plate II, Fig. 6. The head is huge, broad and well rounded anteriorly. Unlike the other mentioned species, the osculum is very wide, slightly concave in my slides. The head in holotype is only slightly (1.07 times) wider than long, but this index should be considered with great caution; in some samples collected from the above hosts the head in females was somewhat longer than broad and in another sample from the same host species it was slightly broader than long (particularly in *A. amsel* and *A. viscivori*). As decisive therefore it is necessary to consider the dimensions and the shape of head only in quite mature specimens, and this can be done only when large material is available (see the note in *Brueelia weberi* sp. n. in my paper of 1980). Temple angles very rounded, in other species more or less angular. Occipital part of head almost straight, hardly ever concave, similarly as in the species *A. abluda* (in other species it is evidently concave). The sides of prothorax are more tapering backward than in other species examined. Typical is the very short segment IX of abdomen which is nine times shorter than the

Dimensions	♀ holotype
Head length	0.44
width	0.47
prothorax width	0.28
meso-metath. width	0.42
abdomen length	1.04
width	0.64
total length	1.69

preceding segment VIII (Fig. 11), while in other species it is only 3—4 times as short. The posterior margin of tergite VII is deeply concave, arch-like (in other species it is distinctly angular in the centre). Because the two males are not quite mature, I am restricted to give only their habitus (Plate II, Fig. 2).

This species originating from the North-European bird species, has been dedicated to Prof. Dr. S. Haftorn, the prominent Norwegian ornithologist of the University of Trondheim.

Allonirmus tovornikae sp.n.

Figs. 4, 14, Plate IV, Figs. 3, 6

Type host: *Sylvia atricapilla atricapilla* (Linnaeus)

Material examined: Holotype: ♂, slide FB 1383, Antošovice (North Moravia, Czechoslovakia), 2. 7. 1977. Paratypes: 2 ♂♂, 1 ♀ from the same host, leg. F. Balát; ♂, 2 ♀♀, Metković (mouth of the Neretva river, Yugoslavia), 23. 4. 1963, leg. S. Brelih.

So far only two species have been known from the genus *Allonirmus*: *A. lais* (Giebel, 1874) and *A. tristis* (Giebel, 1874). I encountered both species in my collections in South Moravia: the first one was found on two *Luscinia megarhynchos* 6. 5. 1953 between Nejdeč and Lednice, the second — on *Eriothacus rubecula* 8. 4. 1954 near Střelice.

Description: Male (holotype): The general habitus is given in Plate IV, Fig. 3. The head is more slender than in other two species: it is 1.10—1.14 times longer than broad (in *A. tristis* 1.05—1.09 times, in *A. lais* 1.03 times as long). The sides of head before trabeculae are less concave than in *A. tristis* (about the same as in *A. lais*) and show a rather marked constriction (Fig. 14). Clypeal suture in this species is the narrowest (the broadest in *A. tristis*). Gular plate has two dark inconspicuous formations protruding backwards near the centre of posterior margin (Fig. 4), these being very distinct in *A. tristis*, while in *A. lais* in their place there is a wide tongue-like projection (Fig. 5). Termination of the gular plate is wedge-shaped, in the other two species it is narrower, elongated, tapering to tip. The separation of abdominal segment IX from the preceding segment is not too evident (similarly as in *A. lais*, while in *A. tristis* it is well marked). The whole genital complex of male is shorter and broader than that in the other two species; its outer sides are distinctly concave (similarly as in *A. lais*, while in *A. tristis* they are only slightly concave).

Female (Plate IV, Fig. 6) differs from male in larger dimensions and in the formation of the last abdominal segment. The head is 1.08—1.12 times longer than wide (in *A. tristis* it is 1.05—1.07 times, in *A. lais* 1.01—1.07 times as long).

Dimensions	♂					
	♂	holotype	♂	♀	♀	♀
Head length	0.34	0.33	0.33	0.37	0.36	0.39
width	0.31	0.29	0.29	0.33	0.33	0.36
prothorax width	0.19	0.18	0.18	0.20	0.21	0.22
meso-metath. width	0.27	0.27	0.26	0.29	0.29	0.32
abdomen length	0.73	0.78	0.76	0.91	1.05	1.06
width	0.40	0.38	0.38	0.42	0.44	0.47
abdomen length	1.29	1.31	1.29	1.44	1.63	1.69

I have named this species after Dr. D. Tovornik of Ljubljana, the co-author of Mallophaga surveys of Yugoslavia.

МАТЕРИАЛЫ К ПОЗНАНИЮ ПУХОЕДОВ (MALLOPHAGA)
ОТ ВОРОБЬИНЫХ (PASSERIFORMES)

Ф. Балат

Резюме. Дано описание семи новых видов пухоедов (Mallophaga), собранных с воробьиных (Passeriformes) в Чехословакии, Германской Демократической Республике, Югославии и Австрии: *Menacanthus brelihi* sp. n. (типовой хозяин: *Panurus biarmicus*), *M. obrteli* sp. n. (типовой хозяин: *Locustella luscinioides*), *M. stiefeli* sp. n. (типовой хозяин: *Carduelis flavirostris*), *Brueelia vaneki* sp. n. (типовой хозяин: *Acrocephalus schoenobaenus*), *B. matvejevi* sp. n. (типовой хозяин: *Turdus viscivorus*), *Allobrueelia haftorni* sp. n. (типовой хозяин: *Turdus iliacus*) *Allonirmus tovornikae* sp. n. (типовой хозяин: *Sylvia atricapilla*). На *Acrocephalus scirpaceus* также обнаружены особи, относящиеся к роду *Brueelia*, которые показывают определенные отклонения от новоописанного вида *B. vaneki* sp. n.

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Fig. 1. *Menacanthus brelihi* sp. n., ♂ parameres. Fig. 2. *Brueelia vaneki* sp. n., ♂ right paramere. Fig. 3. *Menacanthus obrteli* sp. n., ♀, median projection on transversal bar on lower side of prothorax. Fig. 4. *Allonirmus tovornikae* sp. n., male gular plate. Fig. 5. *A. lais* (Giebel, 1874), male gular plate. Fig. 6. *Menacanthus stiefeli* sp. n., left lateral part of female prothorax. Fig. 7. *M. carduelis* (Denny, 1842), left lateral part of female prothorax. Figs. 8.—11. Terminal segments of female abdomen. Fig. 8. *Brueelia matvejevi* sp. n. Fig. 9. *B. vaneki* sp. n. Fig. 10. *Brueelia iliaci* (Denny, 1842). Fig. 11. *Allobrueelia haftorni* sp. n. Figs. 12.—15. Preantennal region of head. Fig. 12. *Brueelia matvejevi* sp. n., ♀. Fig. 13. *B. iliaci* (Denny, 1842), ♀. Fig. 14. *Allonirmus tovornikae* sp. n., ♂. Fig. 15. *Brueelia vaneki* sp. n., ♀.

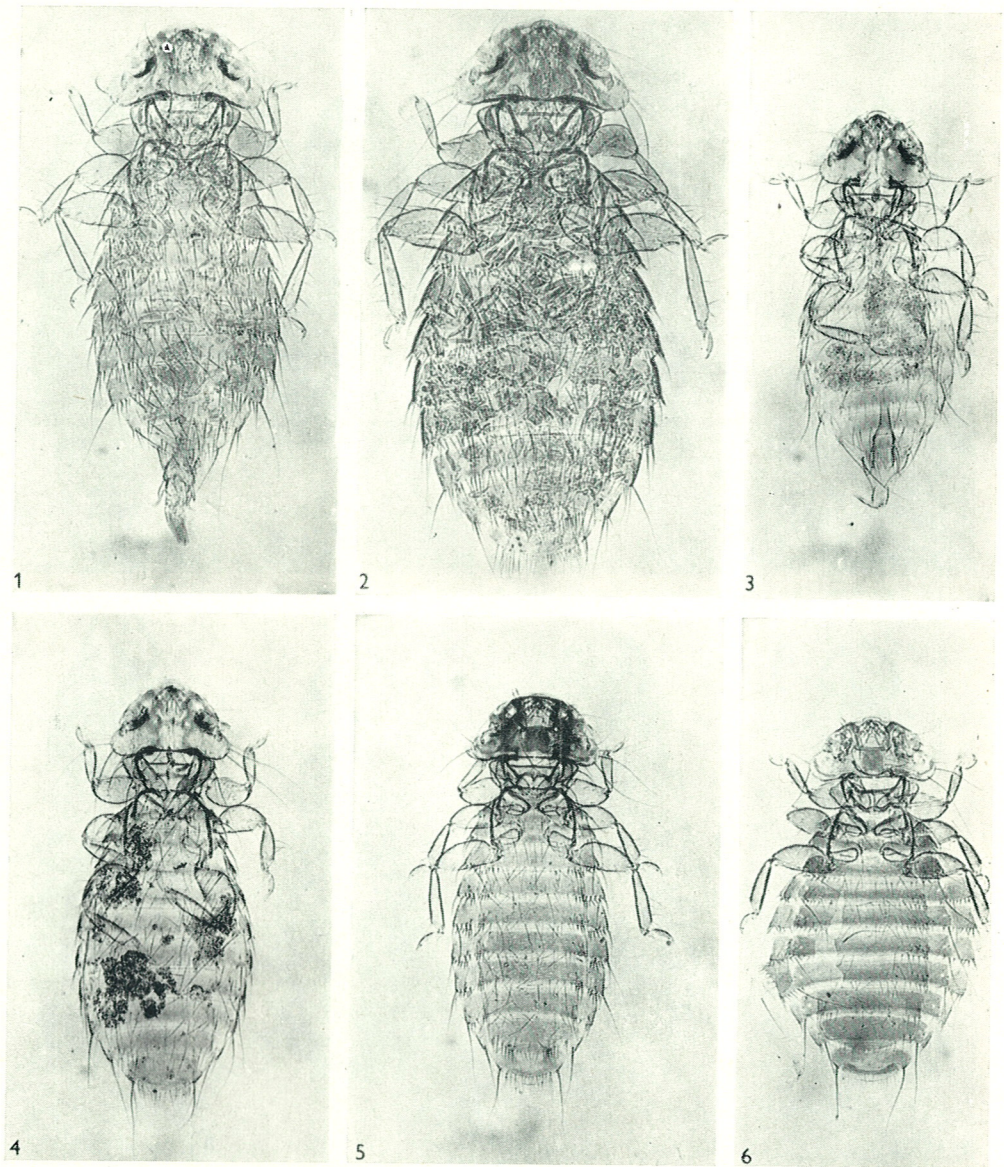


Fig. 1. *Menacanthus brelihi* sp.n., ♂ (prep. FB 1393). Fig. 2. *M. brelihi* sp.n., ♀ holotype (prep. FB 1394). Fig. 3. *M. stiefeli* sp.n., ♂ (prep. FB 1502). Fig. 4. *M. stiefeli* sp.n., ♀ holotype (prep. FB 1496). Fig. 5. *M. eisenachensis* Mey, in press ♀ (prep. FB 1482). Fig. 6. *M. obrteli* sp.n., ♀ holotype (prep. FB 1498).

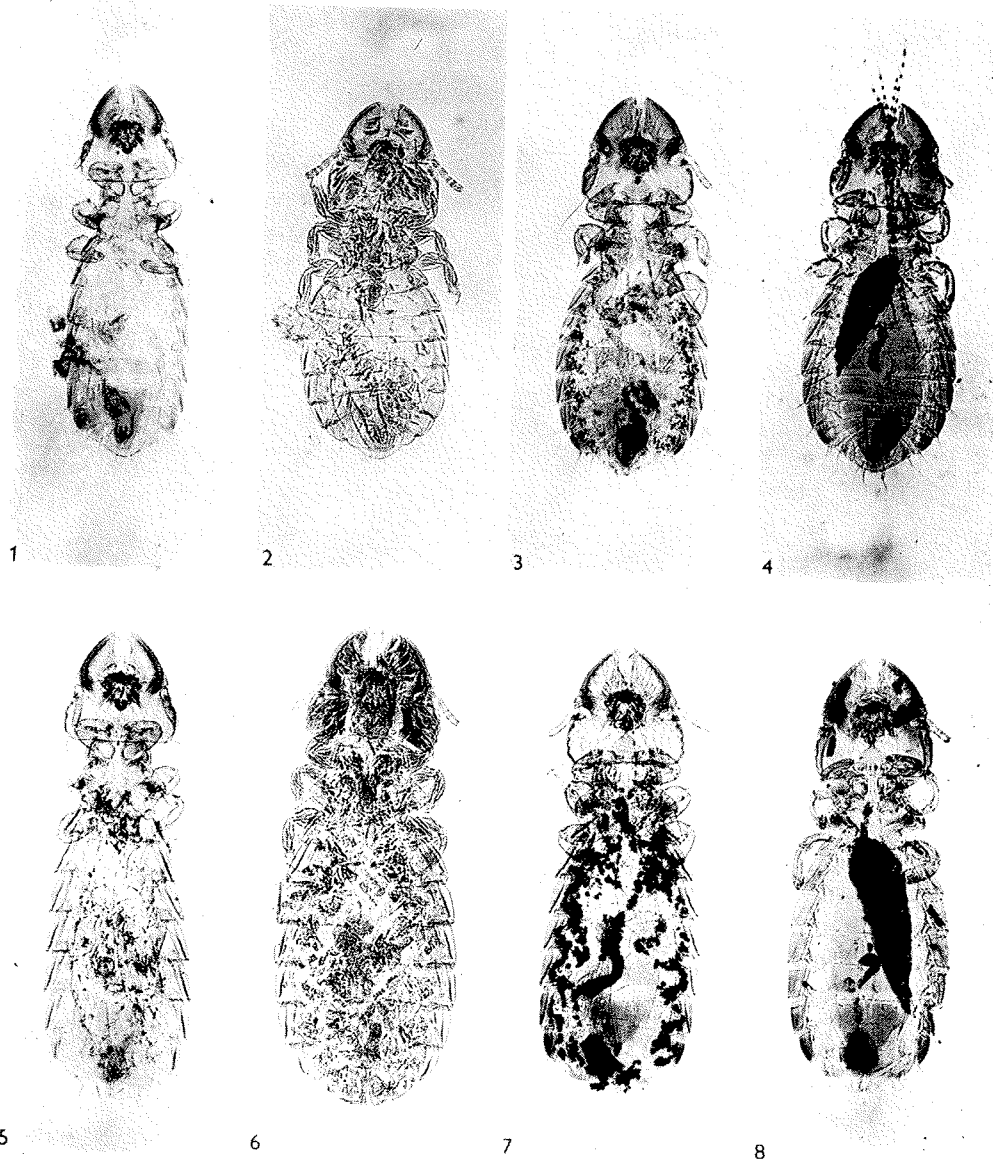


Fig. 1. *Allobruceia abluda* Zlotorzyczka, 1964, ♂ (prep. FB 753). Fig. 2. *A. haftorni* sp.n., immat. ♂ (prep. FB 1240). Fig. 3. *A. marginata* (Burmeister, 1838), ♂ (prep. FB 620). Fig. 4. *A. viscivori* (Denny, 1842), ♂ (prep. FB 1194). Fig. 5. *A. abluda* Zlotorzyczka, 1964, ♀ (prep. FB 753). Fig. 6. *A. haftorni* sp.n., ♀ holotype (prep. FB 1242). Fig. 7. *A. marginata* (Burmeister, 1838), ♀ (prep. FB 620). Fig. 8. *A. viscivori* (Denny, 1842), ♀ (prep. FB 1194).

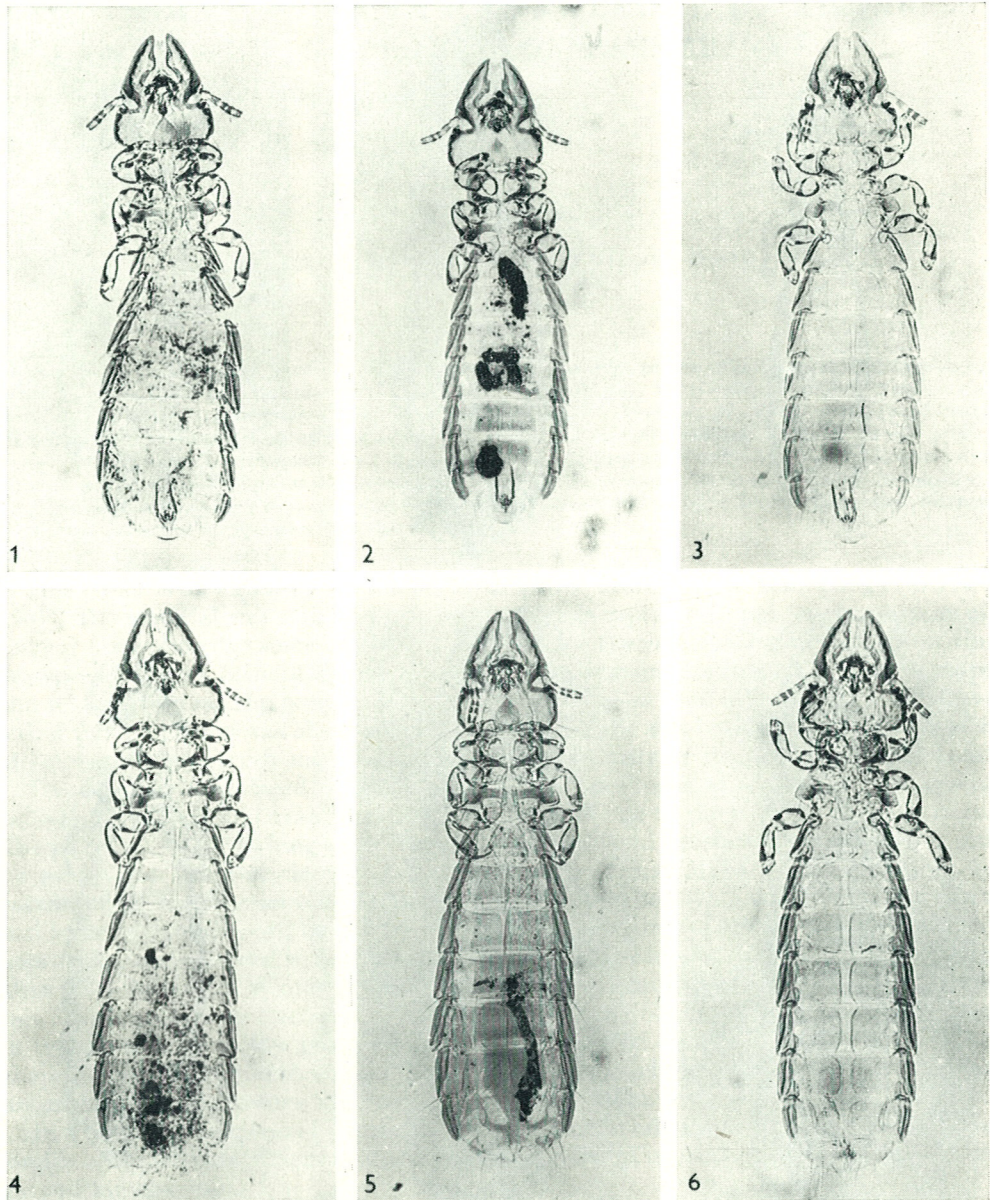


Fig. 1. *Bruceelia iliaci* (Denny, 1842), ♂ slightly malformed (prep. FB 1522 R). Fig. 2. *B. intermedia* (Nitzsch, 1866), ♂ (prep. FB 956). Fig. 3. *B. matvejevi* sp.n., ♂ holotype (prep. FB 1523). Fig. 4. *B. iliaci* (Denny, 1842), ♀ (prep. FB 1437). Fig. 5. *B. intermedia* (Nitzsch, 1866), ♀ (prep. FB 956). Fig. 6. *B. matvejevi* sp.n., ♀ (prep. FB 1524).

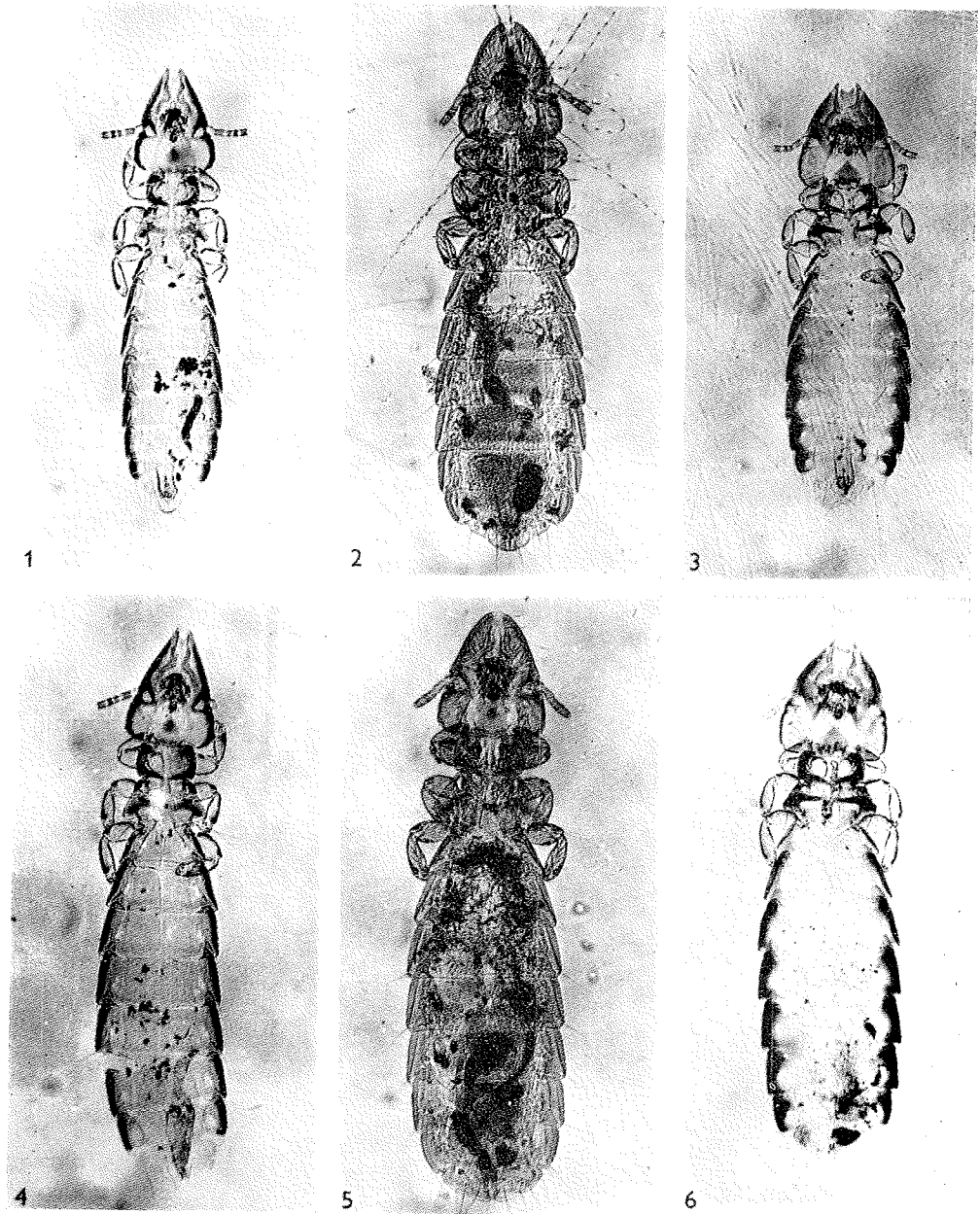


Fig. 1. *Brueclia vanski* sp.n., ♂ (prep. 1507). Fig. 2. *B. antimarginalis* Eichler, 1951, ♂ (prep. FB 514).
Fig. 3. *Allonirmus tovoznikae* sp.n., ♂ holotype (prep. FB 1383). Fig. 4. *Brueclia vanski* sp.n., ♀
holotype (prep. FB 1519). Fig. 5. *B. antimarginalis* Eichler, 1951, ♀ (prep. FB 514). Fig. 6. *Allonirmus
tovoznikae* sp.n., ♀ (prep. FB 1382).