

***Acerbia cornuta* spec. nov. and
Acerbia seitzi micropuncta subspec. nov. from Central Asia**

(Lepidoptera, Arctiidae)

by

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Summary: A new species *Acerbia cornuta* spec. nov. and a new subspecies *Acerbia seitzi micropuncta* subspec. nov. are described. The new species is morphologically related to *Acerbia seitzi* (A. BANG-HAAS, 1910), but differs by the male genitalia structure. *Acerbia seitzi micropuncta* subspec. nov. differs from the nominative subspecies by external features. The lectotype of *Hyphoraia seitzi* A. BANG-HAAS, 1910 is designated.

Acerbia seitzi (A. BANG-HAAS, 1910)

Hyphoraia seitzi A. BANG-HAAS was described in 1910 as a species based on 2 males originating from the Issyk-Kul region (col. pl. XXII, figs. 1–4; text fig. 1). A photograph of the male was added to the description.

Hyphoraia seitzi khumbeli O. BANG-HAAS was described as subspecies in 1927 based on a male from "Thianchan centr. sept.: Khum Bel and Alma Ata (formerly known as „Wjernyi" [fort Vernyi]) 3080 m, 30.7.1926" (col. pl. XXII, figs. 5, 6).

That description includes photographs of *A. seitzi khumbeli* O. B.-H. and *A. seitzi seitzi* A. B.-H. while a male of the latter is figured as the female type from "Thianchan centr. mer., Narynsk". However, that does not correspond to the data provided by A. BANG-HAAS in 1910 (2 male specimens from the Issyk-Kul region). The existence of this female type was accepted by SOTAVALTA (1965), DUBATOLOV (1996) and MURZIN (2003) as the typical specimen of *Hyphoraia seitzi* originating from Narynsk. At the same time, Sotavalta (1965) noted that he had never seen a female representative of this species.

As a result of the authors' investigations the complete type-material of these descriptions could be established in the O. BANG-HAAS collection, preserved in the Museum für Naturkunde of the Humboldt-University Berlin.

As A. BANG-HAAS did not identify a type in his description, a lectotype of *Hyphoraia seitzi seitzi* A. B.-H. is designated:

Lectotype ♂: "Issykkul", red label "Origin." [handwriting A. BANG-HAAS], white label "*Arctia Seitzi* BH.", "*Horae* Macrolep. Vol.I abgebildet t.9 f.3 beschrieb. P.70"; additional red label: "Lectotypus *Hyphoraia seitzi* A. BANG-HAAS, 1910, des. SALDAITIS & IVINSKIS & WITT 2004"

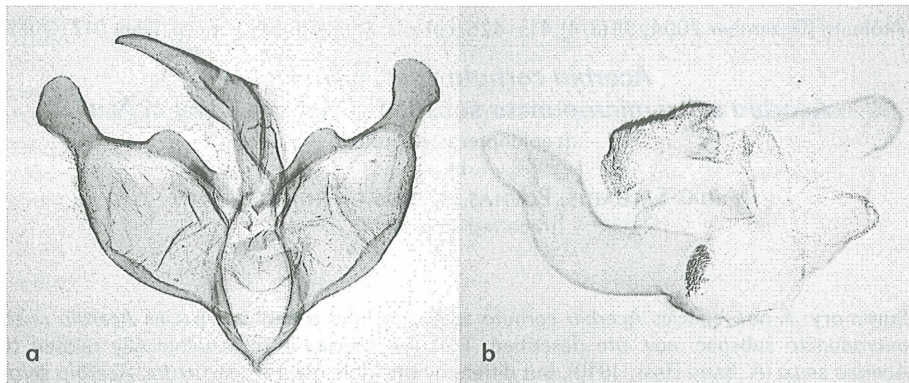


Fig. 1: Male genitalia of *Acerbia seitzii seitzii* (A. BANG-HAAS, 1910) (paralectotype, Issyk-Kul).
a) male genitalia without aedeagus; b) aedeagus.

This ♂ clearly matches with the male (erroneously mentioned as a female) figured in A. BANG-HAAS (1927: plate 9, fig. 3), by the position of the antennae and the legs visible on the right side of the abdomen.

Paralectotype ♂: "Issykkul", red label "Origin." [handwriting A. BANG-HAAS]; additional labels: "genitalia slide LG 2344" and "Paralectotypus *Hyphoraia seitzii* A. BANG-HAAS, 1910, des. SALDAITIS & IVINSKIS & WITT 2004".

The genitalia, hitherto stucked on a paper, were cleaned and transferred on a glass-slide (LG 2344) by Mr. GYULA M. LÁSZLÓ.

The *Acerbia seitzii*-population of the Northern Tian-Shan (Issyk-Kul) should be considered as typical, because the moths of this population are morphologically more related to the individuals described by A. BANG-HAAS than the individuals from the Inner Tian-Shan (Narynsk).

Acerbia cornuta spec. nov.
(colour plate XXII, figs. 4–6)

Holotype ♂: UDSSR [former Soviet Union, Uzbekistan-Tadzhikistan border], Turkestan [Turkestan Mts.], Kum-Belj-Pass, 2500 m, 25.VI.1986, coll. Dr. A. SCHULTE, ex coll. Dr. W. THOMAS (Gen Präp Het WITT 8610) (coll. Museum WITT, Munich).

Paratypes: 1 ♂, the same locality; 1 ♀, the same locality (Gen Präp Het WITT 8611) (coll. Museum WITT, Munich).

Description

Male. Length of forewing 24 mm in the holotype and 23 mm in the paratype. The new species is externally similar to *Acerbia seitzii seitzii* A. B.-H., but is different by a series of morphological features. The head and body of the new species are typical for the genus *Acerbia* and do not differ from *Acerbia seitzii seitzii* A. B.-H.

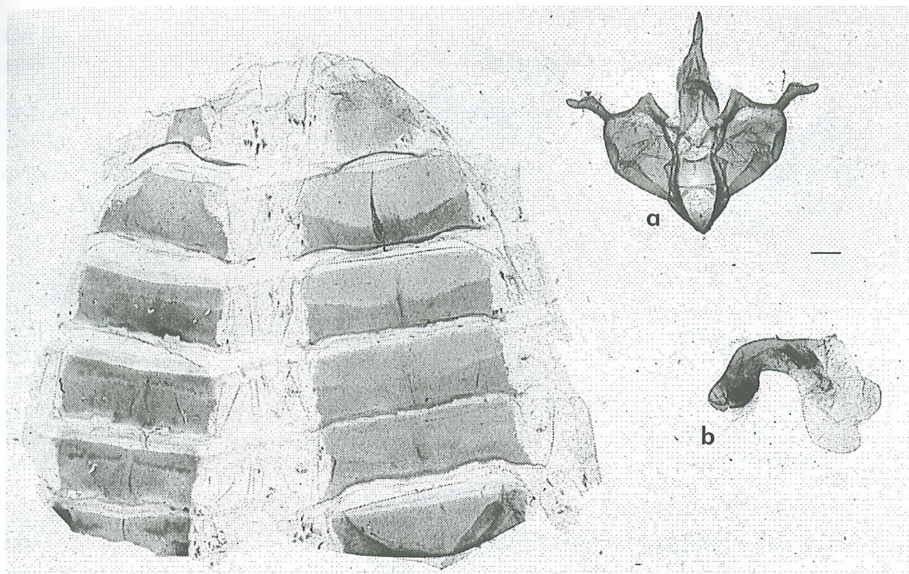


Fig. 2: Male genitalia of *Acerbia cornuta* spec. nov. (holotype, UDSSR [former Soviet Union, Uzbekistan-Tadjikistan border], Turkestan [Turkestan Mts], Kum-Belj Pass, 2500 m, 25.VI.1986, Gen prep. Het WIT 8610). a) male genitalia without aedeagus; b) aedeagus.

Forewings bear a pattern typical for *Acerbia*, though different by the colour and size of spots. Small forewing spots are lemon-coloured and are spread on the brown background. The ground colour of hindwings is orange-yellow; the distal stripe is reduced and made up of a narrow V-shaped strip and a small distal spot.

Male genitalia (fig. 2). The male genitalia of the new species are typical for the genus *Acerbia*. *A. cornuta* spec. nov. is distinguished by its sacculus, of which the costa is very sharp-angled. The anal edge is two-folded. The cucullus is narrowed, its apex is knee-shaped. The uncus is long and gradually narrowing, the juxta is of a regular form and angular. The saccus is pointed at the apex. The aedeagus is massive and bent; the vesica (partially turned) three-patched, with tiny spines.

Female. Length of forewing 25 mm. The ground colour is light brown, the spots making the lemon-coloured pattern are slightly larger than these of males. The hindwings are the same as of the males, but the ground colour is light orange-yellow, the wing base is much less darkened than that of the males.

Female genitalia (fig. 3). Bases of posterior apophyses are enlarged, their length slightly exceeds the width of the ductus bursa, anterior apophyses are reduced. The ductus bursae is strongly chitonized, the bursa is round with a large curved narrowing bulla. The bursa contains one small and two large signa of spiny plates.

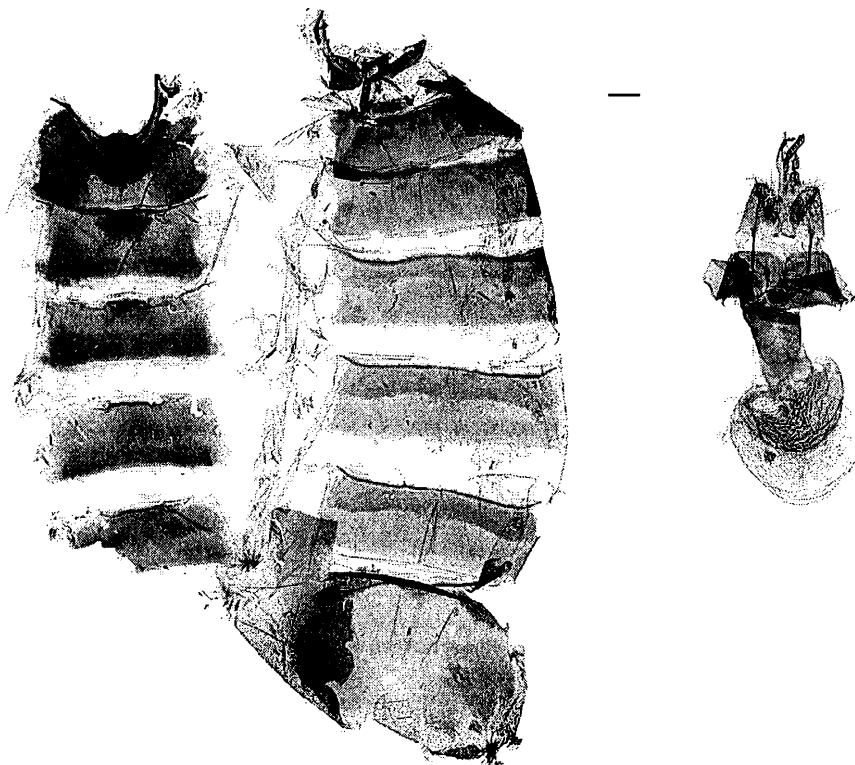


Fig. 3: Female genitalia of *Acerbia cornuta* spec. nov. (paratype, same locality, Gen prep. Het Witt 8611).

A. cornuta spec. nov. differs from its related *A. seitzii* A. B.-H. by the colour and size of the forewings (lemon-coloured spots are small, whereas *A. seitzii* A. B.-H. is distinguished by larger light yellow spots), the hindwings are orange-yellow (whereas those of *A. seitzii* A. B.-H. are orange) with a reduced distal stripe. The male genitalia of *A. cornuta* spec. nov. differs from *A. seitzii* A. B.-H. by the shape of the sacculus of which the costa is of the distinct triangular form; the narrow cucullus does not widen towards the apex, but is bent and knee-shaped. The female genitalia differs from those of *A. seitzii* A. B.-H. by lacking a big cestum in the proximal part. Two signa in the bursa are equally-sized, whereas the third one is notably smaller.

Distribution and biology

The new species is known only from the typical location (Turkestan Mts.). There are no data on the biology of the new species, but at the Kum-Belj Pass at 2500–2700 meters elevation the most common biotope is grasses around “archa” (*Juniperus*) trees or on stony slopes. The latter biotope is similar to the biotopes (except “archa” trees) of Zaiylisky Alatau, where *Acerbia seitzii* A. B.-H. lives.

On the basis of 2500 m altitude, the authors suppose that the biotope of *Acerbia cornuta* spec. nov. is subalpine grasslands (S. CHURKIN, pers. comm.).

Etymology

The species is named *cornuta*, which in Latin means cornuted. This name is given to the new species because of the specific form of the valva in the genitalia of its males.

Acerbia seitzi micropuncta subspec. nov.

(colour plate XXIII, figs. 1–9)

Holotype ♂: Kirghizia centr.[Kirgizia, Inner Tian-Shan]. Kara-Dzhorgo Mts., Dolon-pass, 12.–15.VII.1989, ex coll. L. BIEBER, Dr. W. THOMAS (Gen Präp Het WITT 4444) (coll. Museum WITT, Munich).

Paratypes: 3 ♂♂, 4 ♀♀ and 1 ♀ (Gen Präp Het WITT 4451) same locality as holotype (coll. Museum WITT, Munich); 3 ♂♂, Kirgizstan [Kirgizia], N edges Fergansky Mts., Karasu L. [Karasu lake], 2200–2500 m, 2.–7.VII.2001, S. CHURKIN leg. (coll. S. CHURKIN, Moscow).

Description

Male. Length of the forewing 22 mm in the holotype and 21–23 mm in the paratypes. The new subspecies differs from the nominative one by a set of external features, though differences in the genitalia structure are slight and do not allow to treat this taxon as an independent species.

Forewings bear the pattern typical of the genus *Acerbia*, though different by its colour and the size of spots. The forewing spots are whitish-yellow and situated on the dark brown background. The spots are small with the noticeable tendency towards reduction and decrease.

The hindwings, according to their pattern and colour, do not differ from those of the nominative subspecies.

Male genitalia (figs. 4, 5). The sacculus costa is heavily sclerotised and distinctly angled. The cucullus is wide and slightly narrowing towards the apex. The top of the juxta is slightly sagged and narrowing, twice narrower than the base. The aedeagus has a three-patched vesica covered with microscopic spines. The basal diverticulum of the vesica is narrowing towards the apex, whereas the medial one is very wide. In the proximal part, the aedeagus has an aggregation of spines and two stripe-like cornuti, one is spiny, the other is not.

Female. Length of forewing 22–24 mm. The ground colour is light brown, spots making the pattern are orange. One individual has the pattern similar to this of males—whitish-yellow. Spots in comparison with these of the nominative subspecies are very tiny. By their pattern and colour the hindwings do not differ from those of males of the nominative subspecies.

Female genitalia (fig. 6). Abdominal segment VIII is narrow and short. Its dorsal marginal edge is almost as long as the socia. The ductus bursae is wide, strongly sclerotized, with two signa.

♂♂ of the new subspecies differ from nominative *A. seitzi seitzi* A. B.-H. by the size of spots on the forewings (spots distinctly smaller than those of the nominative subspecies). The colour of

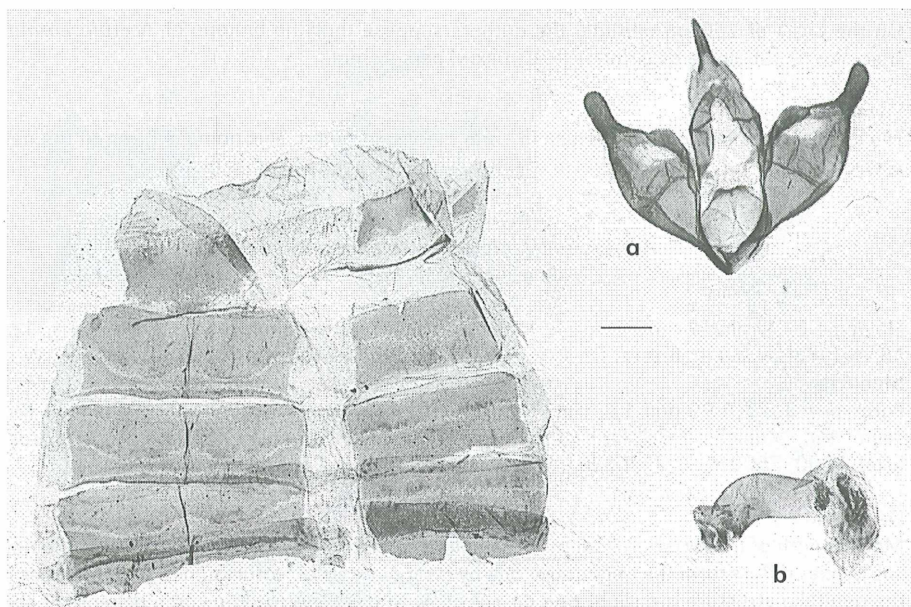


Fig. 4: Male genitalia of *Acerbia seitzi micropuncta* subspec. nov. (holotype, Kirghizia-centr. [Kirgizia, Inner Tian-Shan]. Kara-Dzhorgo Mts., Dolonpass, 12.-15.VII.1989, Gen. prep. Het Wm 4444). a) male genitalia without aedeagus; b) aedeagus.

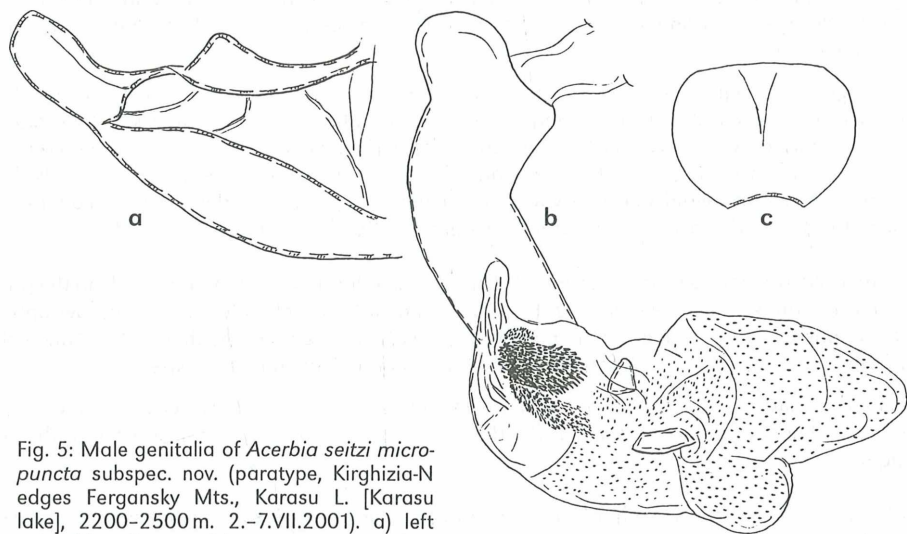


Fig. 5: Male genitalia of *Acerbia seitzi micropuncta* subspec. nov. (paratype, Kirghizia-N edges Fergansky Mts., Karasu L. [Karasu lake], 2200-2500 m. 2.-7.VII.2001). a) left valva, b) aedeagus, c) juxta.

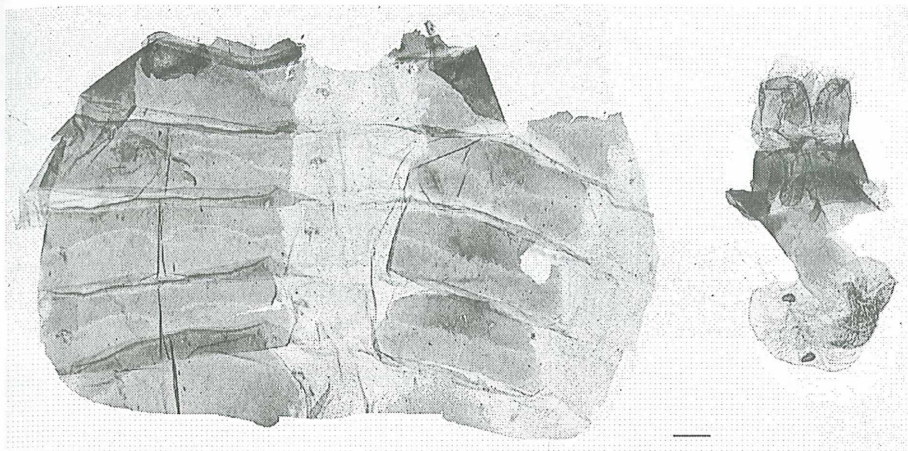


Fig. 6: Female genitalia of *Acerbia cornuta* spec. nov. (paratype, same locality as holotype, Gen prep. Het WIT 4451).

the forewing spots of the ♀♀ of *A. seitzi micropuncta* subsp. nov. is orange. The spots are very small. The forewing spots of the ♀♀ of the nominative subspecies are very large and have a tendency of blending and forming a solid line. Their colour is white-yellow.

The new subspecies differs from the nominative one (figs. 7a-c) by the following characteristics of the male genitalia: a non-narrowing cucullus, the base of the juxta is twice as wide as the top, the form of the vesica, female genitalia, narrow abdomen segment VIII and a two-sigma bursa.

Distribution and biology

The new subspecies is distributed in the western part of the range of the species. *A. seitzi seitzi* A. B.-H. occurs in the North Tian-Shan Mts. (Zailiysky Alatau Mts., Alma-Ata env., Kungei Alatau Mts., Karabulak env., Kara-Katty Mts., Kyzart Pass). *A. seitzi micropuncta* subsp. nov. is common in the Inner Tian-Shan Mts. (Kara-Dzhorgo Mts. Dolon-pass., Fergansky Mts., Karasu Lake).

The moths fly together with *Paralasa* spec. (Satyridae) in a very special biotope: rocky semi-vertical slopes with plots of green grass. At the same time, there is no certainty if such a biotope is natural for this taxon: green slopes are nearby and the fact that moths were driven to the rocks by the wind cannot be excluded. Unfortunately, the season and the weather prevented the possibility to verify this assumption (S. CHURKIN, pers. comm.).

Etymology

The subspecies is named *micropuncta*, which in Latin means tinily dotted. This name is given to the new subspecies as the dots on forewings of the ♂♂ and ♀♀ of this subspecies are small.

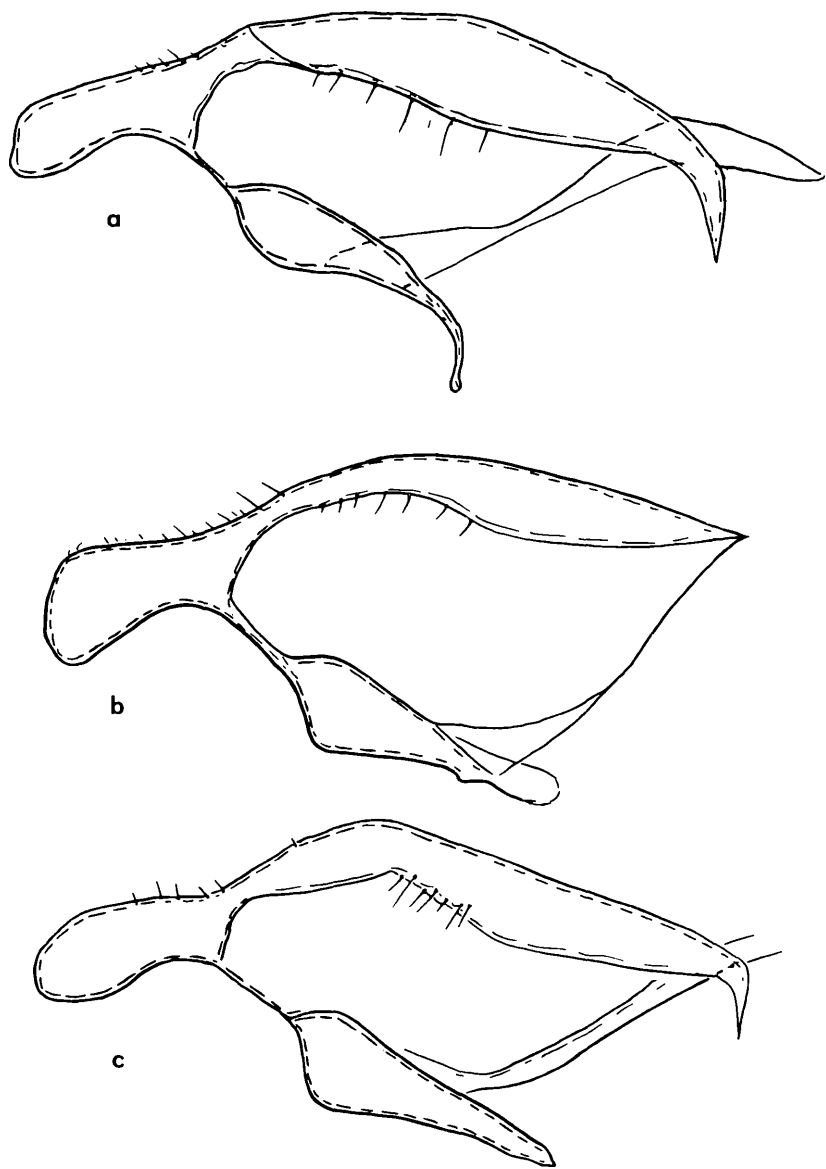
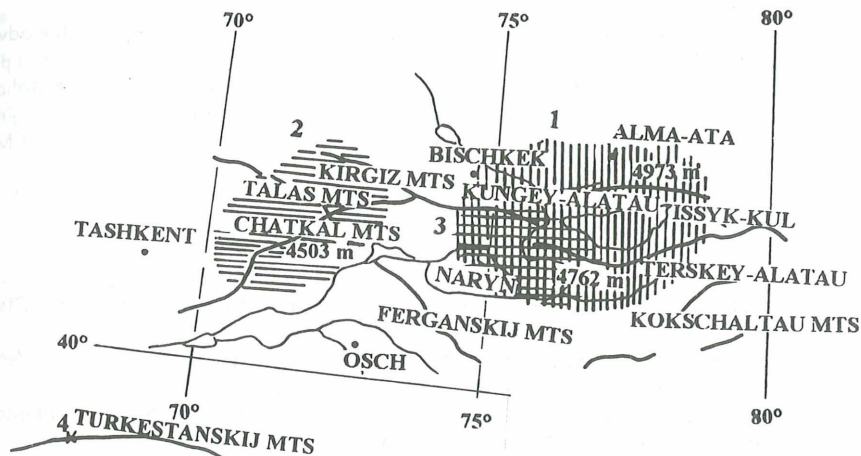


Fig. 7: Male right valva of *Acerbia seitzii seitzii* (A. BANG-HAAS, 1910). Kirghizia, Kara-Katty Mts., Kyzart Pass, 3100-3400 m, 25.VI.2001. a-c) valvae of different specimens from the same locality.



• SAMARKAND

Fig. 8: Distribution of species of the genus *Acerbia* in Central Asia. 1 - *Acerbia seitzi seitzi* (A. BANG-HAAS, 1910), 2 - *Acerbia churkini* SALDAITIS, IVINSKIS & WITT, 2003, 3 - *Acerbia seitzi micropuncta* subsp. nov., 4 - *Acerbia cornuta* spec. nov.

Discussion

Acerbia seitzi A. B.-H. from different parts of its range was regarded as a single species because of its rarity. With the possibility to study the abundant material of the genus *Acerbia* at the authors' disposal as well as the types of *Acerbia seitzi* A. B.-H., it has become evident that a complex of species of the genus *Acerbia* lives in the mountains of Central Asia. All the groups of *Acerbia seitzi*-species are more or less similar, though they reliably differ by a series of morphological features.

Acerbia seitzi seitzi A. B.-H. is distributed in the North Tian-Shan Mts., whereas *micropuncta* subsp. nov. occurs in the western part of the species range—the Inner Tian-Shan Mts. There is a probability that *Acerbia churkini* SALDAITIS, IVINSKIS & WITT, 2003 (col. pl. XXIII, figs. 10, 11) in the eastern part of its range coexists with *A. seitzi* A. B.-H., but *A. churkini* SALDAITIS, IVINSKIS & WITT is found on bare peaks (without vegetation) of mountain ranges, amidst rocks. MURZIN (2003) described *A. seitzi* f. *tilaevi*. The authors suppose that the latter is a dark specimen of *Acerbia churkini* SALDAITIS, IVINSKIS & WITT.

Acerbia cornuta spec. nov. lives in another mountain system (Gysarskij-Darvazskij) and is currently known only from its type-locality (Turkestan Mts). The biotope of this species is not known (fig. 8). The authors presume that more material is needed to enlarge our knowledge of the complex of *Acerbia* species which is not yet fully investigated and that with appearance of new material possibly new taxa can be identified.

Acknowledgements

The authors express their thanks to Mr. S. CHURKIN (Moscow) for the material, valuable advice and help; to Mr. I. KOSTJUK (Zoological Museum of the Kiev University, Kiev) for taking the photographs for the colour plates; to Mr. G. M. LÁSZLÓ (Budapest) for the restoration of genitalia of type material; to Dr. W. MEY (Museum für Naturkunde, Institut für Systematische Zoologie of the Humboldt-University, Berlin) for providing type-material and to Dr. J. RIMŠAITĖ and Mrs. S. DAUTARTIENE (Vilnius) for help.

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Explanation of colour plate XXII (p. 489):

Figs. 1–3: *Acerbia seitzii* (A. BANG-HAAS, 1910)

Fig. 1: *Acerbia seitzii seitzii* lectotype ♂.

Fig. 2: *Acerbia seitzii seitzii* paralectotype ♂.

Fig. 3: *Acerbia seitzii khumbeli* (O. BANG-HAAS, 1927) holotype ♂.

Figs. 4–6: *Acerbia cornuta* spec. nov.

Fig. 4: Holotype ♂, UDSSR, Turkestan, Kum-Belj-Pass, 2500 m, 25.VI.1986 (Gen prep. Het WITT 8610).

Fig. 5: Paratype ♀, the same locality.

Fig. 6: Paratype ♂, the same locality.

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Explanation of colour plate XXIII (p. 491):

Figs. 1–9: *Acerbia seitzii micropuncta* subspec. nov.

Fig. 1: Holotype ♂, Kirghizia-centr. Kara-Dzhorgo Mts. Dolon-pass, 2200 m, 12.–15.VII.1989, 15.VII.1988 (Gen prep. Het WITT 4444).

Fig. 2: Paratype ♀, the same locality.

Fig. 3: Paratype ♀, the same locality (Gen prep. Het WITT 4451).

Figs. 4–6: Paratypes ♂♂, the same locality.

Figs. 7–9: Paratypes ♀♀, the same locality.

Figs. 10, 11: *Acerbia churkini* SALDAITIS, IVINSKIS & WITT, 2003

Fig. 10: Holotype ♂, UDSSR, Kirghisia sept. Tian-Shan, Ala-Buka, 40 km N Namangan, 2100–2500 m, 15.VII.1988 (Gen prep. Het Witt 4600).

Fig. 11: Paratype ♀, W-USSR, Kirgizia Talasskiy Ala-Tau, Shilbili-Say River, Korum-Tor, 2800 m, 42° 20' N 71° 29' E, 29. July 1987 (Gen prep. Het Witt 4599).

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Figs. 1–3: *Acerbia seitzi* (A. BANG-HAAS, 1910)

Fig. 1: *Acerbia seitzi seitzi* lectotype ♂.

Fig. 2: *Acerbia seitzi seitzi* paralectotype ♂.

Fig. 3: *Acerbia seitzi khumbeli* (O. BANG-HAAS, 1927) holotype ♂.

Figs. 4–6: *Acerbia cornuta* spec. nov.

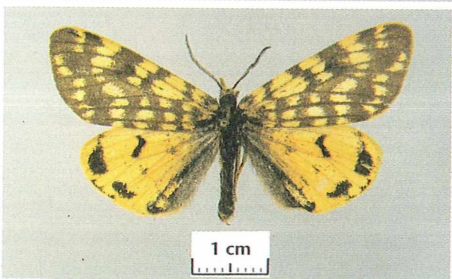
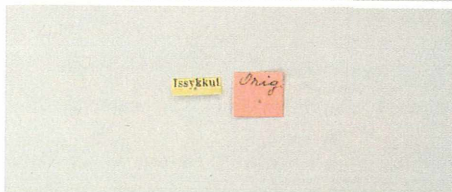
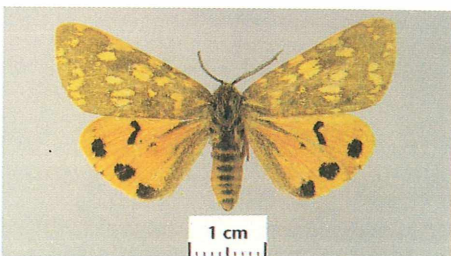
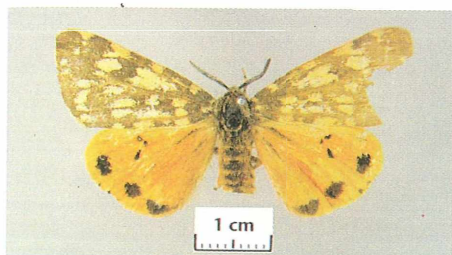
Fig. 4: Holotype ♂, UDSSR, Turkestan, Kum-Belj-Pass, 2500 m, 25.VI.1986 (Gen prep. Het WITT 8610).

Fig. 5: Paratype ♀, the same locality.

Fig. 6: Paratype ♂, the same locality.

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Colour plate XXII



SALDAITIS, A., IVINSKIS, P. & T. J. WITT: *Acerbia cornuta* spec. nov. and *Acerbia seitzi micropuncta* subspec. nov. from Central Asia (Lepidoptera, Arctiidae). – *Atalanta* **35** (3/4): 415–425.

Figs. 1–9: *Acerbia seitzi micropuncta* subspec. nov.

Fig. 1: Holotype ♂, Kirghizia-centr. Kara-Dzhorgo Mts. Dolon-pass, 2200 m, 12.–15.VII.1989, 15.VII.1988 (Gen prep. Het WITT 4444).

Fig. 2: Paratype ♀, the same locality.

Fig. 3: Paratype ♀, the same locality (Gen prep. Het WITT 4451).

Figs. 4–6: Paratypes ♂♂, the same locality.

Figs. 7–9: Paratypes ♀♀, the same locality.

Figs. 10, 11: *Acerbia churkini* SALDAITIS, IVINSKIS & WITT, 2003

Fig. 10: Holotype ♂, UDSSR, Kirghisia sept. Tian-Shan, Ala-Buka, 40 km N Namangan, 2100–2500 m, 15.VII.1988 (Gen prep. Het WITT 4600).

Fig. 11: Paratype ♀, W-USSR, Kirgizia Talasskiy Ala-Tau, Shilbili-Say River, Korum-Tor, 2800 m, 42° 20' N – 71° 29' E, 29. July 1987 (Gen prep. Het WITT 4599).

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Colour plate XXIII



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