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Lectotype designations of some Palaearctic Aradidae (Heteroptera)

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A b s t r a c t : Lectotypes are designated for 16 species of Aradidae described by ancient authors, kept in the collections in St. Petersburg (Russia) and Vienna (Austria). For the closely related species *Aradus truncatus* FIEBER 1860 and *Aradus somcheticus* KIRITSHENKO 1913, distinguishing characters are given and both species are figured including male genitalic structures.

K e y w o r d s : Heteroptera, Aradidae, lectotypes, synonymies, Palaearctic.

Introduction

When preparing the chapter "Aradidae" for volume IV of the "Catalogue of the Heteroptera of the Palaearctic Region" it seemed necessary to recognize and designate type - specimens from the collections of ancient authors, which were not labelled as such. The purpose is to preserve stability of nomenclature for name - bearing type specimens according to the requirements of the International Code for Zoological Nomenclature (ICZN), 4th edition, Article 74.

Although several type fixations for Aradidae were published in previous papers [e.g. KERZHNER & HEISS 1993 (Kolenati); HEISS 1994 (Costa), 1997 (Fabricius), 1998 (Jakovlev, Kiritschenko)], still numerous taxa could not be investigated so far.

In this paper further lectotypes are designated for species described by JAKOVLEV and KIRITSHENKO kept in the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZMAS) and by FIEBER, KOLENATI and SIGNORET kept in the Naturhistorisches Museum Wien, Vienna, Austria (NHMW). All species will be labelled accordingly, indicating their status.

In addition two so far cryptic taxa described from France by DUMERIL 1804 are discussed.

All taxa are listed in alphabetical order. Labels as given on the pin are separated by quotation marks. Abbreviations used: LT = Lectotype, PLT = Paralectotype, ST = Syntype.

Lectotype designations

Aneurus macrotylus JAKOVLEV 1880

LT: male, glued on triangle, labels (1) "golden circle", (2) "Vladiv." [handwritten by Jakovlev], (3) "collection of V. Jakovlev [printed, in Russian], (4) "28" [handwritten with pencil]. PLT: 1 male, glued on card, with labels (1) - (3); 1 female, glued on triangle, labels as in LT, but "29" instead of "28"; 1 female, glued on card, labels (1)-(3) plus a green square [= Vladivostok] and "*A. macrotylus* m." [handwritten by Jakovlev]. Currently *Aneurus* (*Neaneurus*) *macrotylus*. ZMAS.

Aradus czerskii KIRITSHENKO 1915

LT: male, glued on card, "golden circle", "Primorsk. obl., Spasskoe, Odarkovskiy zavod, 24.III.11, A. Cherskiy" [printed]. PLT: 4♂♂, 5♀♀ labelled as LT; 1♀ labelled as LT except for date, which is 28 instead of 24. 1♂, 1♀ of the PLT are actually borrowed but included here. ZMAS.

Aradus distinctus FIEBER 1860

LT: male, pinned [antennal segments II - IV missing], "Megerle" [printed diagonally on square label], "*distinctus* ♂ Fieb." [handwritten by Fieber]. NHMW.

Aradus gebleri KOLENATI 1857

LT: female, pinned, "Barnaul" [printed on blackish label], "Gebler" [printed on green label], "*lugubris* Fll. *gebleri* Kol." [handwritten]. Synonym of *Aradus lugubris* FALLEN 1807. NHMW.

Aradus morio JAKOVLEV 1889

LT: female, glued on card, "two pale green squares" [= Ovsyanka at Zeya River], "golden circle", "*A. morio*" [handwritten by Jakovlev, pencil], "collection of V. Jakovlev" [printed, in Russian]. Synonym of *Aradus aterrimus* FIEBER 1864. ZMAS.

Aradus nigellus KIRITSHENKO 1926

LT: male, pinned, "Kamenets-Podol'sk, 24.III.1908 [= 6. IV of new style], Jakubowski" [handwritten by Kiritshenko, in Cyrillic characters], "2.14" [handwritten]. PLT: 1 male, pinned, "3.33" [printed], "Kamenets-Podol'sk, Tsybulevskiy les, 20.III.11, Jakubowski" [handwritten by Kiritshenko, in Cyrillic characters]; 1 male, pinned, "Khar'kov" [handwritten, in Cyrillic characters], "collection of V. Jakovlev" [printed, in Russian]; 2 females, carded and pinned, labelled "Kup." and "Kup. IV." respectively [handwritten by Jakovlev] and "collection of V. Jakovlev" [printed, in Russian].

Of the syntypes mentioned in the description, those from Pulavy (2♂♂) and Sinjava (2♂♂, 5♀♀) could not be located. Synonym of *Aradus corticalis* (LINNAEUS 1758). ZMAS.

***Aradus somcheticus* KIRITSHENKO 1913**

LT: male, pinned, "Borzhom, Prov. Tiflis, aetat 1911", "Type", "N. Kiritschenko", "*Aradus somcheticus* n. sp. [handwritten by Kiritschenko], A. Kiritschenko det. [printed]. ZMAS.

The description was based on male specimen(s) from "Borzhom" and "St. Petersburg", the latter from the collection Kuschakevitsch. The single available specimen from the first locality is regarded as *somcheticus* and designated as LT, the one from St. Petersburg belongs to *Aradus truncatus*.

***Aradus truncatus* FIEBER 1860**

LT: female, pinned, "Megerle" [printed diagonally on square label], "*truncatus* [handwritten] det. Reuter [printed]", "*humeralis* i. l. Fieb." [handwritten by Fieber]. The name "*humeralis*" is a nomen nudum. NHMW.

Aradus somcheticus and *Aradus truncatus* are closely related and were confounded in collections and literature. While *truncatus* is regarded an Eurosiberian faunal element, widely distributed in Northern - and Middle Europe, *somcheticus* shows a Ponto - Northern Mediterranean distribution and is known from Western Caucasus through Crimea, Bulgaria to Italy, France and Spain.

These two species can be distinguished by the following characters:

<i>somcheticus</i> (Fig. 3-5, 12-14, 16)	<i>truncatus</i> (Fig. 1-2, 6-11, 15)
♂♂. anterolateral angles of pronotum and dorsal external laterotergite VIII with a distinct white spot	anterolateral angles and Deltg VIII without a whitish spot
whitish portion of corium larger, extending to clavus	smaller, not extending to clavus
antennae more slender	antennae thicker
parameres more stout as Fig. 12-14	parameres more slender as Fig. 6-11
parandria as Fig. 16	parandria as Fig. 15
♀♀. Whitish spot on anterolateral angle of pronotum is always present	usually lacking, rarely there is a spot of lighter colour in the same position

***Aradus wagneri* JAKOVLEV 1865**

LT: female, pinned, "golden circle", "Kas. 21.V" [handwritten by Eversmann], "*crenaticollis* SAHLB. (*wagneri* JAK.) sect. A. N. Kiritsch." [handwritten by Kiritschenko], "*A. Wagneri* mihi" [handwritten by Jakovlev], "collection of V. Jakovlev" [printed, in Russian]. Synonym of *Aradus crenaticollis* R.F. SAHLBERG 1848. ZMAS.

***Aradus ussurensis* JAKOVLEV 1876**

LT: male, glued on card, "golden circle", "Ussuri" [handwritten by Jakovlev], "collection of V. Jakovlev" [printed, in Russian]. PLT: brachypterous female, as LT, but with additional label "*A. ussurensis*" [handwritten by Jakovlev]. ZMAS.

***Mezira infantulus* KIRITSHENKO 1959**

LT: male, glued on transparent triangle, "Japan [printed], Honshiu, Takao-san, 24.IX.933 [handwritten by Kiritshenko], Zhenzhurist [printed, in Cyrillic characters]", "T.-san, 24-9" [handwritten by Zhenzhurist]. The original description was based on 6♂♂, 10♀♀ ST, but 3♀♀ could not be located. PLT: 5♂♂, 5♀♀ labelled as LT, but 2♀♀ bear an additional label "Fig." [handwritten by Kiritshenko, in Russian], and one of these also a label "*Mezira (Mezirella) infantulus* KIR. [handwritten by Kiritshenko], Kiritshenko det. [printed]". Currently *Glochocoris infantulus*. ZMAS.

***Mezira atra* JAKOVLEV 1878**

LT: female, glued on card, "golden circle", "Ussuri" [handwritten by Jakovlev], "collection of V. Jakovlev" [printed, in Russian].

Note: Jakovlev's label "*M. atra mihi*" is under a female from Vladivostok not mentioned in the original description. Currently *Neuroctenus ater*. ZMAS.

***Mezira castanea* JAKOVLEV 1878**

LT: male, glued on card, "golden circle", "Ussuri" [handwritten by Jakovlev], "*M. castanea mihi*" [handwritten by Jakovlev], "collection of V. Jakovlev" [printed, in Russian], "III" [handwritten with pencil]. Currently *Neuroctenus castaneus*. ZMAS.

***Mezira verruculata* KIRITSHENKO 1959**

LT: male, glued on card, "Nicol'sk-Ussur., Prim. obl., zavod P'yankova, 1.VI.1925, Samoylova" [printed, except date and "zavod P'yankova"; in Cyrillic characters], "*Mezira* [handwritten by Kiritshenko] Kiritshenko det. [printed]", [no species name given]. PLT: 1 female, labelled as LT, but without second label; 1 male, glued on card, genital segment and paramere on a separate card, "Suyfunskiy r-n, Vladivostokskogo okr.", "26.VI.1930 g., V. Shabliobskiy" [both labels handwritten, in Cyrillic characters], "*Mezira verruculata* KIR. [handwritten by Kiritshenko] Kiritshenko det. [printed]". ZMAS.

Note: Nicol'sk-Ussuriyskiy was renamed Voroshilov and so cited in the original description, its current name is Ussuriysk.

***Neuroctenus macer* KIRITSHENKO 1959**

LT: female, glued on card, "golden circle", "Lazarevka, Spassk. u., Uss. kr., 2.V.929, Kiritshenko" [handwritten, in Cyrillic characters], "*Neuroctenus macer* m. [handwritten by Kiritshenko] Kiritshenko det. [printed]". PLT: 1 female, labelled as LT. ZMAS.

***Stenopterus perrisii* SIGNORET 1865**

LT: stenopterous male, glued on card [left antennal segment IV and right III + IV missing], "Algeria [handwritten] Coll. Signoret [printed]", Perrisii [handwritten] det. Signoret [printed]", "mutilé aujourd' hui ext. Elytra, evitand ... (illegible line)" [handwritten, different from other labels]. NHMW. Synonym of *Aradus stenopterus* BERGROTH 1887.

Species dubiae

Due to his excellent knowledge of ancient literature I.M. Kerzhner informed me, that there are two species of Aradidae described from France by DUMERIL 1804 : *Acanthia aterrima* and *Acanthia ferruginea*. Except for one suspected synonymy (PUTON 1899) for *A. aterrima*, both names have never been mentioned in the literature since. Their taxonomic status is discussed below.

***Acanthia aterrima* DUMERIL 1804: 102**

From the short description one can assume, that *Acanthia aterrima* belongs to the *Aradus* - "*lugubris*"-group (*aterrimus* FIEBER 1864, *bimaculatus* REUTER 1872, *lugubris* FALLEN 1807- all occurring in France), but cannot be assigned with certainty to one of these taxa. However it is a senior homonym and most likely a senior synonym of *Aradus aterrimus* FIEBER 1864.

For such a case, the International Code of Zoological Nomenclature (ICZN) article 23.9 (Reversal of precedence) can be applied to maintain the prevailing usage of a junior homonym when the following conditions are both met:

23.9.1.1 the senior synonym or homonym has not been used as a valid name after 1899, and 23.9.1.2 the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years.

It can be stated, that to the knowledge of the author, the first condition applies.

The second condition is met by the following publications using *Aradus aterrimus* FIEBER 1864 as valid name:

STICHEL 1957: 28; USINGER & MATSUDA 1959: 88; STICHEL 1959: 303; WAGNER 1961: 112; KERZHNER & JACZEWSKI 1964: 781; GYLLENSVÄRD 1964: 11; WAGNER 1966: 205; LINNAVUORI 1967: 95 and 101; SERVADEI 1967: 303; JOSIFOV 1970: 845; PUTSHKOV 1974: 87; VÁSÁRHELYI 1976: 191; COULIANOS & OSSIANNILSSON 1976: 162; HOBERLANDT 1977: 74; VÁSÁRHELYI 1978: 17; JONES 1978: 120; HELIÓVAARA & VÄISANEN 1983: 105; KORMILEV & FROESCHNER 1987: 37; KANYUKOVA 1988: 875; COULIANOS 1989: 53; GÜNTHER & SCHUSTER 1990: 381; HEISS & JOSIFOV 1990: 142; FARACI & RIZZOTTI - VLACH 1995: 32; VINOKUROV & KANYUKOVA 1995: 149; HEISS & HELLRIGL 1996: 355; FRIESS, HEISS & RABITSCH 1999: 461.

Therefore the junior homonym can be regarded as valid and must be maintained:

Aradus aterrimus FIEBER 1864: 210 = **nomen protectum**

? *Acanthia aterrima* DUMERIL 1804: 102 = **nomen oblitum**

***Acanthia ferruginea* DUMERIL 1804: 102 - 103**

This taxon most likely refers to *Aneurus laevis* (FABRICIUS 1775) and as such a junior synonym of the latter.

Therefore:

Aneurus laevis laevis (FABRICIUS 1775) = ?*Acanthia ferruginea* DUMERIL 1804, **syn. nov.**

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Zusammenfassung

In der vorliegenden Arbeit werden 16 Lectotypen palaearktischer Aradidae designiert, welche von früheren Autoren ohne Fixierung eines Holotypus beschrieben wurden. Das Material ist in den Sammlungen von St. Petersburg (Russland) und Wien aufbewahrt. Für die sehr nahestehenden Arten *Aradus truncatus* FIEBER 1860 und *Aradus somcheticus* KIRITSHENKO 1913, werden die Unterscheidungsmerkmale angeführt und beide Arten einschließlich der männlichen Genitalstrukturen abgebildet.

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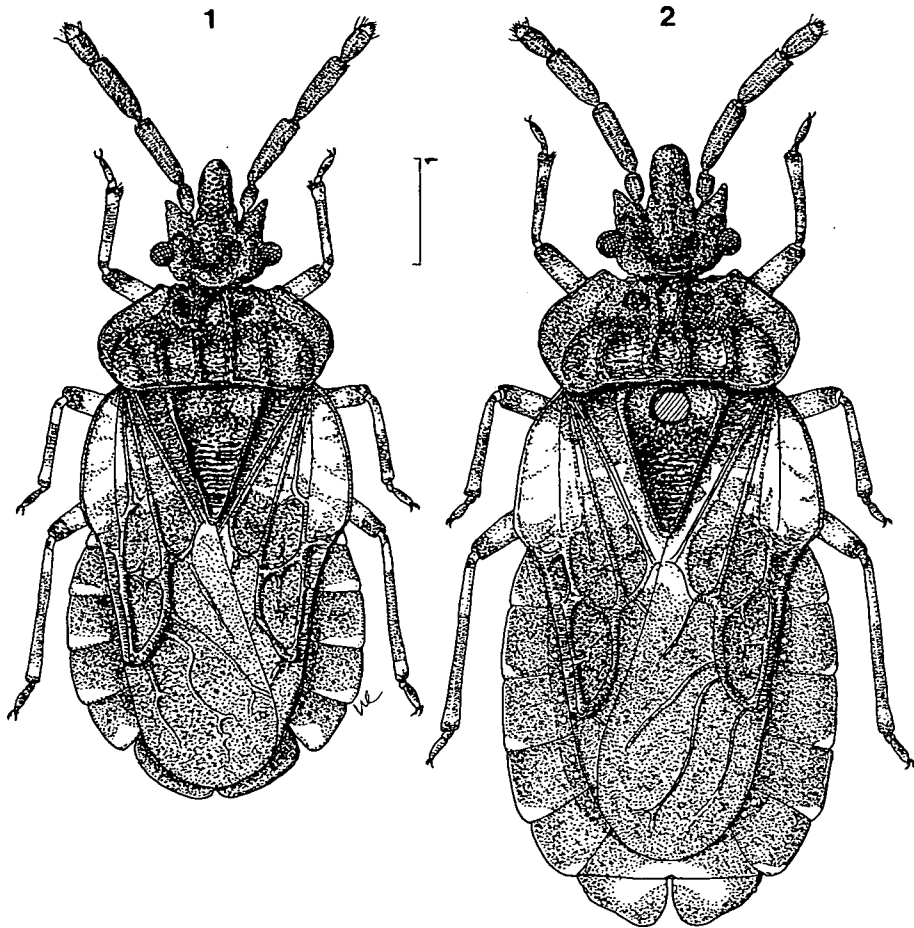


Fig. 1-2: *Aradus truncatus*. 1 – male (Sablino nr. St. Petersburg), dorsal view; 2 – female lectotype, dorsal view. Scale in millimeter.

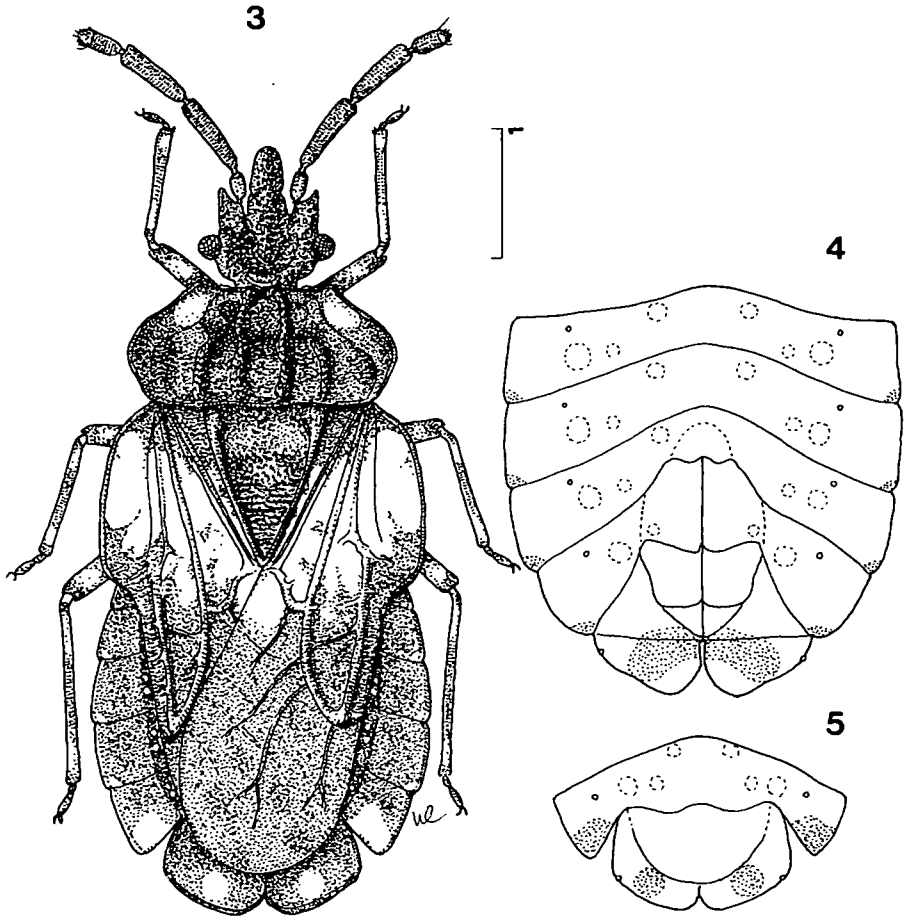


Fig. 3-5: *Aradus somcheticus*. 3 – male (Abchasia), dorsal view; 4 – venter of female; 5 – ventral terminal segments of male. Dotted areas in Fig. 4-5 mark whitish areas. Scale in millimeter.

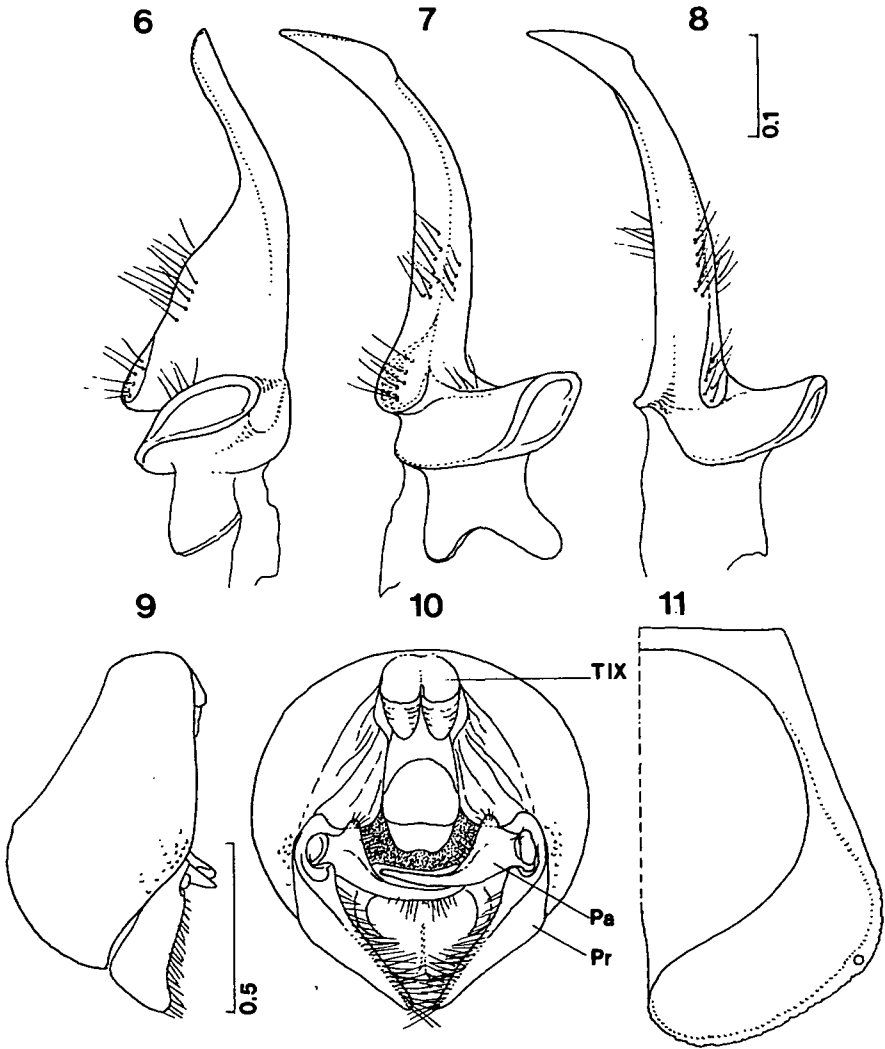


Fig. 6-11: *Aradus truncatus*, male genitalic structures. 6-8 - left paramere in different positions; 9 - pygophore lateral; 10 - ditto dorsal; 11 - right half of tergite VII, dorsal. Abbreviations: Pa = paramere; Pr = parandrium; T IX = tergite IX. Scale in millimeter.

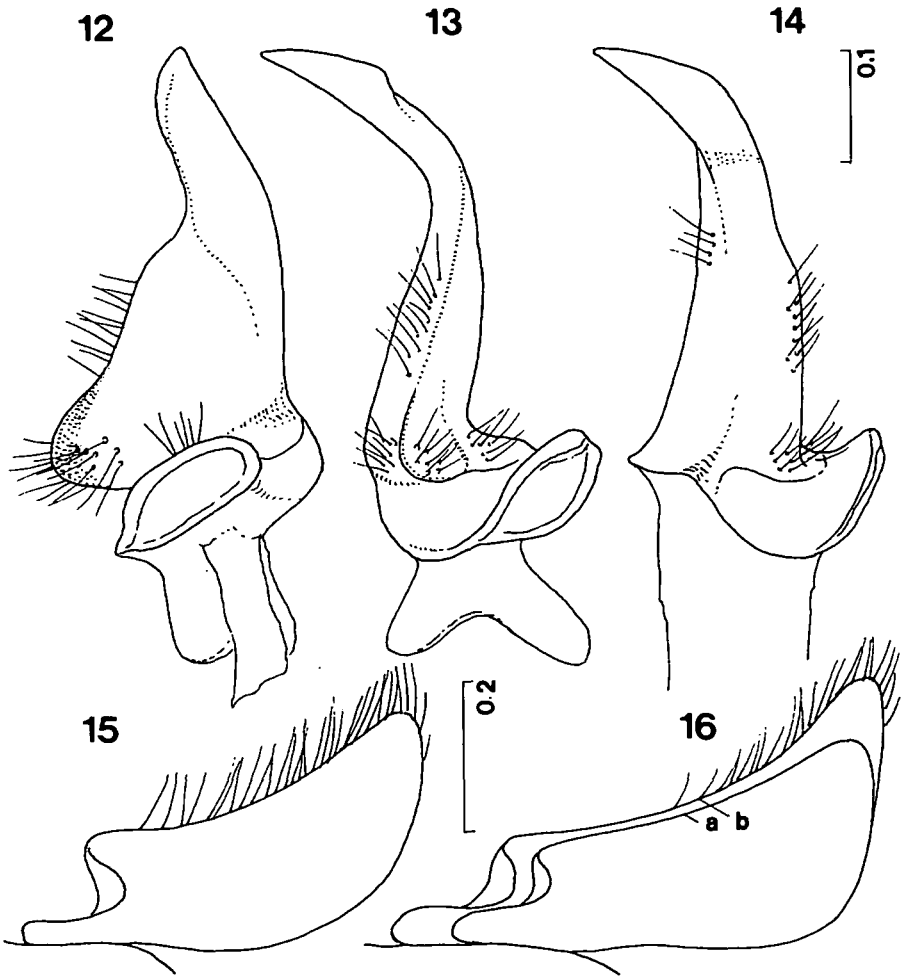


Fig. 12-16: 12-14 – *Aradus somcheticus* (Abchasia), left paramere in different positions; 15 – *Aradus truncatus* (Austria), parandrium; 16 – *Aradus somcheticus*, parandrium, a: Abchasia, b: N-Italy. Scale in millimeter.

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