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The systematic position of *Gelechia semicostella* STAUDINGER, 1871 (Lepidoptera, Gelechiidae)

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Abstract

A new generic combination, *Syncopacma semicostella* (STAUDINGER, 1871) **comb. nov.**, and a new synonym, *Syncopacma suecicella albicapitella* BIDZILYA, 1996 **syn. nov.** of *S. semicostella* (STAUDINGER, 1871), are established. The diagnoses of *S. semicostella* is given and differences of this species from *Syncopacma linella* (CHRETIEN, 1904) are discussed, illustrated with figures of the adults and the male genitalia of both species. The distribution of *S. semicostella*, *S. linella* and *S. suecicella* (WOLFF, 1958) through East Europe and Central Asia are critically analyzed.

Zusammenfassung

Eine neue Kombination, *Syncopacma semicostella* (STAUDINGER, 1871) **comb. nov.**, und ein neues Synonym, *Syncopacma suecicella albicapitella* BIDZILYA, 1996 **syn. nov.** von *S. semicostella* (STAUDINGER, 1871), werden aufgestellt. Die Diagnose für *S. semicostella* wird ausgearbeitet und die Unterschiede zu *Syncopacma linella* (CHRETIEN, 1904) diskutiert, illustriert mit Abbildungen der Imagines und den männlichen Genitalien beider Arten. Die Verbreitung von *S. semicostella*, *S. linella* und *S. suecicella* (WOLFF, 1958) in Osteuropa und Zentralasia werden kritisch analysiert.

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Introduction

Gelechia semicostella STAUDINGER, 1871 was described from 6 specimens from Sarepta (now Krasnoarmeysk, the vicinity of Volgograd). The lectotype and paralectotypes have been designated by K. SATTLER in 1986. In spite of this fact, the species remained within *Gelechia* and was not mentioned in the recent catalogue of European Lepidoptera (KARSHOLT & RIEDL 1996). So the species was unknown for me as a *Syncopacma*, which has caused the description of this remarkable moth as a subspecies of *S. suecicella* (WOLFF, 1958): *S. s. albicapitella* BIDZILYA, 1996. As a result from the examination of the type specimens of *G. semicostella* deposited in ZMHU (Berlin), it was found that this species has to be transfered to *Syncopacma*, and *S. s. albicapitella* BIDZILYA, 1996 is recognized as junior subjective synonym of *S. semicostella*. By the structure of male genitalia *S. semicostella* is similar to *S. linella* CHRETIEN, 1904. The latter was also recently placed in *Syncopacma* (NEL et al. 1996). The examination of collection material of *Syncopacma* from Ukraine and Central Asia has shown that *S. linella* is widely distributed in these regions being erroneous mentioned in Russian literature (BIDZILYA 1995, PISKUNOV 1995) as *S. suecicella* WOLFF, 1958. The correct distribution data of these three species in East Europe and Central Asia are discussed below.

Abbreviations accepted in the text:
DEI = Deutsches Entomologisches Institute (Eberswalde, Germany)
ZISP = Zoological Institute Russian Academy of Sciences (St. Petersburg, Russia)
ZMHU = Zoologishes Museum an der Humboldt-Universität zu Berlin (Germany)
ZMKU = Zoological Museum, Kiev University (Ukraine)
ZMUC = Zoologisk Museum, University of Copenhagen (Denmark)
ZSM = Zoologische Staatssamlung München (Germany)

Syncopacma semicostella (STAUDINGER, 1871) comb. nov.

Gelechia semicostella STAUDINGER, 1871, Berl. ent. Z. 14: 311.
Syncopacma suecicella albicapitella BIDZILYA, 1996, J. Ukr. ent. Soc. 2 (3-4): 19-21, fig. 2 (adult), figs 3a, b (male genitalia), **syn. nov.**

Material. Male with the following labels: "Lectotype" (printed on a round white label with a violet circle) / "LECTOTYPE, Gelechia semicostella Stgr., male, teste Sattler, 1986" / "Origin" (printed on a square pink label) / "Sarepta Chr." (ink handwritten on a green label) / "ex coll. STAUDINGER" (ZMHU). 3 males with the following labels: "PARALECTOTYPE" (printed on a round white label with a violet circle) / "Origin" (printed on a square pink label) / "ex coll. STAUDINGER" (ZMHU). 2 specimens with the same labels as Paralectotypes and handwritten labels: "Abdomen missing" (ZMHU). Male: Crimea, Karadagh, Biostation, 24.6.1987, by light, SINEV leg. (ZMKU). Male: Crimea, Karadagh, Biostation, 19.7.1987, by light,Yu. BUDASHKIN leg. (ZMKU). 10 males: Ukraine, Crimea, Kazantip, 13.9.1995, Yu. BUDASHKIN leg. (ZMKU). Male: Ukraine, Crimea, Kazantip, 10.5.1996, Yu. BUDASHKIN leg. (ZMKU). Male: Südl. Ukraine, Umg. Berdjansk, Aug. 1967, GULINOV leg. (DEI). Male: Talysh, Avrora vil., Girkanskiy forest, 12.7.1964, ZAGULAEV leg. (ZISP). Male: Kumtorkale, Dagestan, 6. V.[1]926, by light, RJABOV leg. (ZISP). 2 males: Pakistan, Abbotabad, Hazara, 1300 m,

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34°13'N, 73°14'E, 15./16.X.1988, leg. HACKER (ZSM). Male: same label, 9.X.1988, leg. HACKER (ZSM). Male: Turkey, Sivas, 10 km NW Darende, 1300 m, 6.vii.1987, leg. M. FIBIGER (ZMUC). Male: Turkey, Kars, 20 km NW Kagizman, 1500 m, 11.ix.1993, leg. M. FIBIGER (ZMUC).

Description (figs 1a, b). Wingspan 9-13 mm. Head, labial palpus, proboscis and tegula white. Thorax black, abdomen black with the last segment white. Scapus brown, antennal scapes brown with a white ring at base. Forewing black, its costal edge white from base to ½ length. At ¾ length there is a white fascia, slightly curved towards apex or reduced to two spots at the costal and posterior edges. Hindwing grey, slightly glittered, with the same cilia.

Male genitalia (figs 3a, b). Uncus rectangular, sligthly elongated, with a long setae at the lateral edge. Gnathos strong, hook-shaped. Valva slightly sigmoid, narrow, elongate, with a rounded apex. The process of posterior edge of vinculum slightly curved inwards, with pointed apex. Vinculum extremely slim, triangular (lateral view), covered by very long setae (fig. 3b). Aedeagus massive at the base, narrowing apically, with very think pointed apex.

Female unknown.

Variation. Some specimens are characterized by a uniformly black or slightly whitened costal edge of forewing. The white fascia is often reduced to two spots or not present at all.

Biology. Host plant unknown. The moths fly from May to October with at least two generations. In the Ukraine the moths occur in dry steppes.

Remarks. The species differs well from all other *Syncopacma* in the white head, palpus and tegula as well as in a good expressed white area at the costal edge of forewing. The specimens with reduced white pattern can be confused with *S. linella*, but they differ in the bright white head, tegula and labial palpus, whereas *S. linella* is characterized by light-grey (dirty white) labial palpus and white frontal part of the head (fig. 2). Moreover tegula and head (except frontal part) of *S. linella* is black and differs well from the white head and tegula of *S. semicostella*. In male genitalia *S. semicostella* looks similar to *S. linella*, but can be recognized by the triangular vinculum (rounded in *S. linella*) (figs 4a, b), slightly longer aedeagus and some more massive gnathos. There are also some differences in the structure of second abdominal sternum of these species (figs 5a. b).

Range. S. Ukraine, Upper Volga (Sarepta), Caucasus (Dagestan), Transcaucasia (Azerbaijan, Talysh), Turkey, Pakistan.

Syncopacma linella (CHRETIEN, 1904)

Anacampsis linella CHRETIEN, 1904, Le Naturaliste (2) 26, 416: 151-152.

Syncopacma linella: NEL et al. 1996, Alexanor 19 (3): 153, figs 1, 2 (male genitalia), 3 (female genitalia).

Syncopacma linella: BIDZILYA 1995: 15 as *Syncopacma suecicella* (WOLFF, 1958).

Syncopacma linella: PISKUNOV 1995: 253, fig. 3 (male genitalia), as *Syncopacma suecicella* (WOLFF).

Material. Male: Auriol, Bd R., Roussargne, 500 m, 17.7.1994, NEL Jackues leg., e. l. L.[inum] narbonense / *S. linella*, det. NEL, 1994 / gen. prep. ' 6/02, O. BIDZILYA (ex coll.

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J. NEL). Male: Buchara merr.-occ., Yargak pr. Chatyrtshy, 20.VI.1928, L. ZIMIN (ZISP) / 5 males Ukraine, Kamennye Mogily Nature Reserve, 30.6.1999, light, A. BIDZILYA (ZM KU). 3 males: S. Ukraine, Tchernomorskiy Nature Resreve, Ivano-Rybal'chanskiy uch., 24.5.2000, light, E. RUTJAN leg. (ZMKU).

Remarks. The species was recently transfered to *Syncopacma* (NEL et al. 1996). The comparison of figures of the male genitalia in above mentioned paper as well as of those of a real male from France with specimens from Ukraine and Middle Asia (Buchara) which were determined as *S. sueciella* has shown that latter ones correspond well with *S. linella*. The species is widely distributed through the Ukraine and occurs in Middle Asia (Uzbekistan). Before it was erroneously recorded from these regions as *S. suecicella* (BIDZILYA 1995; PISKUNOV 1995).

Range. France, Austria, Hungary, Slovakia, Romania (ELSNER et al. 1999), Ukraine, Uzbekistan, ? Transbaikalia.

S. suecicella is widely distributed in Europe (KARSHOLT & RIEDL 1996), but has not been found in Ukraine and European part of Russia yet. There is a record of *S.* ? *suecicella* from Transbaikalia (BIDZILYA et al. 1998) based on a single male which undoubtedly is closely related to *S. linella* but differs slightly in the shape of second abdominal sternum.

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Legends to the figures (p. 233-234)

Fig. 1 *Syncopacma semicostella* STGR.: a) male Paralectotype (Sarepta); b) male Holotype *S. suecicella albicapitella* BIDZ. (Ukraine, Crimea).

Fig. 2 *Syncopacma linella* CHRET. male (France).

Fig. 3 *Syncopacma semicostella* STGR. male genitalia: a) unrolling position, Paralectotype (Sarepta), Gen. prep. 8/02, O. BIDZILYA; b) lateral view, Holotype *S. suecicella albicapitella* BIDZ. (Ukraine, Crimea).

Fig. 4 *Syncopacma linella* CHRET. male genitalia: a) unrolling position (France), Gen. prep. 6/02, O. BIDZILYA; b) lateral view (Ukraine).

Fig. 5 abdominal segments of *Syncopacma* spp.: a). *Syncopacma semicostella* STGR., Paralectotype (Sarepta), Gen. prep. 8/02, O. BIDZILYA; b) *Syncopacma linella* CHRET. (France), Gen. prep. 6/02, O. BIDZILYA.

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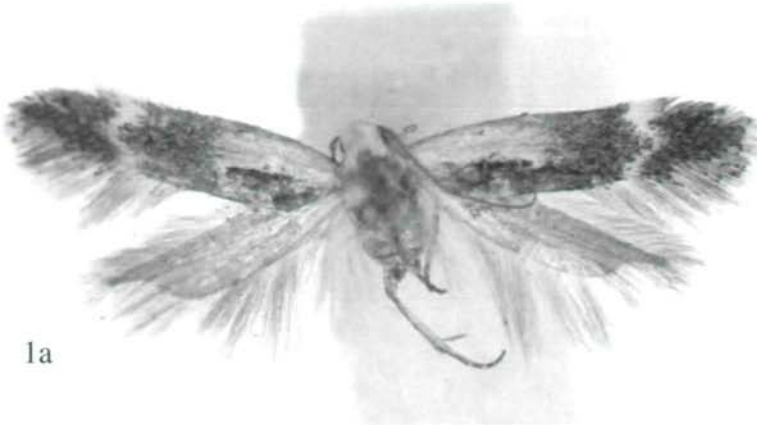
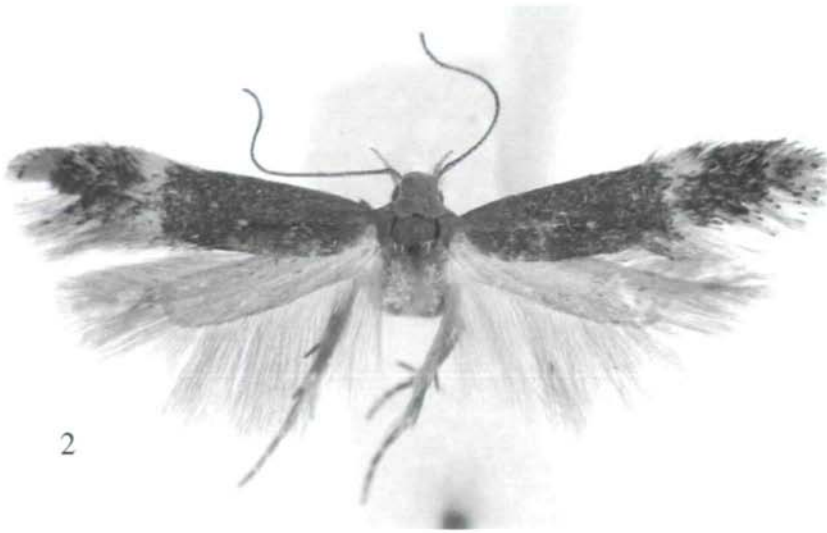


1a

1b



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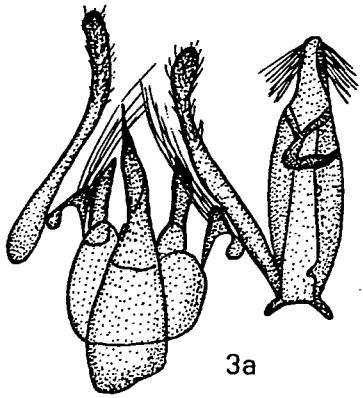

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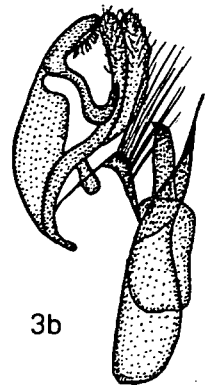

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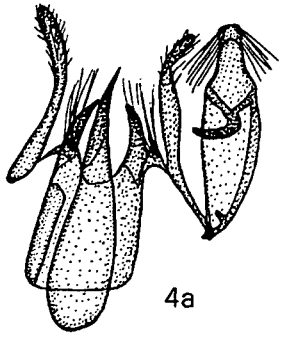

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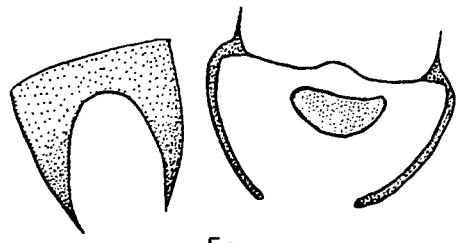

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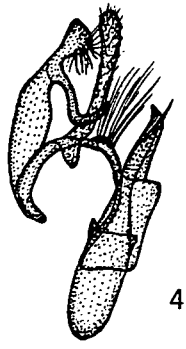

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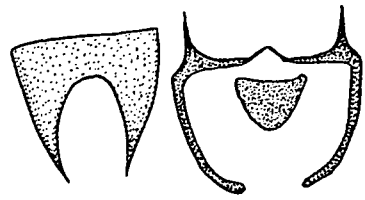

5b

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Literaturbesprechung

DESALLE, R., GIRIBET, G. & WHEELER, W. (eds.) 2002: Techniques in Molecular Systematics and Evolution. - Birkhäuser Verlag, Basel. 407 S.

Molekulare Ansätze sind zum festen Inventar bei Untersuchungen zur Evolution, Systematik und Ökologie von Organismengruppen geworden. Kein anderer Forschungszweig hat in den letzten Jahren einen dermaßen rapiden Anstieg an der Entwicklung neuer Techniken zu verzeichnen, wie die Molekularbiologie. Dementsprechend hat auch der Informationsgehalt exponentiell zugenommen, aber auch der Bedarf an schnelleren und effektiveren Methoden der Datenerfassung und Datenanalyse stieg mehr und mehr. Logischerweise wurde dieses Buch in die zwei Teile "Analytische Methoden" und "Labormethoden" eingeteilt, gefüllt mit insgesamt 17 Fachbeiträgen von international renommierten Forschern. So kann sich der Evolutionsbiologe über die Methoden der Datenerfassung informieren, während der Molekularbiologe Hinweise und Ideen zur Datenanalyse evolutionären Zusammenhänge findet. Die Einführung in die "Analytischen Methoden" erstreckt sich von der "Phylogenetischen Analyse", über "Parsimony Analysis", "Optimization Alignment", "Complex Model Organism Genome Databases" bis hin zu "Comparative Methods" und "Analyzing Data at the Population Level". Im zweiten Teil der Labormethoden wird der Leser mit der Gewinnung, Aufbewahrung und Archivierung von Organismen- und Gewebeproben vertraut gemacht, gefolgt von den DNA Isolationstechniken, Extrahierung pleistozäner DNA, PCR Methoden, Mikrosatelliten-Analyse, bis hin zur Bestimmung räumlicher und zeitlicher Muster der Genexpression. Dank der detaillierten Protokolle, dem breiten theoretischen background, Perspektiven für zukünftige Anwendungen und der Einbeziehung wichtiger websites ist dies ein unschätzbares Werk für alle, die sich mit molekularen Techniken auseinandersetzen wollen.

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