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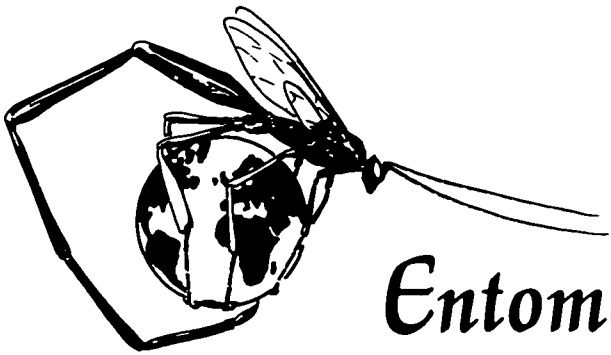

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Chamaesphecia schroederi sp. nov., a new species of clearwing moth from Inner Mongolia, China

(Lepidoptera, Sesiidae)

Ivo Tosevski

Abstract

Key words: *Chamaesphecia schroederi* **sp. nov.**, Sesiidae, Lepidoptera, *Euphorbia linifolia*, Inner Mongolia, China.

In 1992 material has been received of root-boring moths reared from the roots of *Euphorbia linifolia* collected near Dongsheng, Inner Mongolia. All specimens belonged to an yet undescribed species of the genus *Chamaesphecia* SPULER, 1910. The description of *Chamaesphecia schroederi* is provided together with preliminary information on its life history and distribution. It is expected that additional undescribed species of *Chamaesphecia* will occur in eastern Asia.

Introduction

In June 1991, during a survey in China for additional potential biological control agents of leafy spurge (*Euphorbia esula* s.l.), Dr. Peter HARRIS found larvae of a *Chamaesphecia* species mining the roots of *Euphorbia linifolia* near Dongsheng. In 1992, mature larvae and pupae were collected at the same site by collaborators of the Biological Control Laboratory, Chinese Academy of Agricultural Sciences, Beijing, and sent to the European Station, CAB International Institute of Biological Control, Delémont, Switzerland, for host acceptance tests with *E. esula*. Examination of the moths emerging from infested roots of *E. linifolia* revealed that all specimens belonged to an undescribed species of *Chamaesphecia*.

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Chamaesphecia schroederi sp. nov.

Holotype male: China, Inner Mongolia, Dongsheng, Habagexi village, Ejin Horo Banner, 30.VII.1992 (F.H. WAN) (Biological Control Laboratory, Chinese Academy of Agricultural Sciences, Beijing).

Paratypes, 12 males, 9 females: Same locality as holotype (F.H. WAN) (CAB International Institute of Entomology, London; Collection Ivo TOSEVSKI in Neo Beograd, Serbia).

Male (fig. 1a). Alar expanse 19 mm. Antenna brown-black. Labial palpus white, 2nd and 3rd joint with pale brown scales exteriorly. Frons dark brown with some yellowish scales. Vertex shiny black. Patagia black-brown. Thorax black-brown with long whitish hairs posteriorly, tegula dorsally edged ochre-yellow. Fore coxe white, black-brown interiorly; femur black-brown with whitish scales exteriorly; tibia brown-black with yellowish white scales exteriorly; tarsi brown. Hind coxa brown-black; femur brown-black with whitish scales laterally; tibia ochre-white with black-brown and pale brown scales proximally and distally. Abdomen dark brown; distal margin of 2nd, 4th and 6th tergites narrowly banded white; all tergites with ochre-white spot medially, and pale brown scales laterally; anal tuft brown with ochre-white scales medially. Abdomen brown-black ventrally. Ground colour of fore wing dark brown; anterior transparent area (ATA) with dark brown scales, in outer 1/2 thinly covered with white hyaline scales; posterior transparent area opaque dark brown. Discal spot dark brown, its width exceeds length; external transparent area (ETA) small, round, divided into three cells, covered with pale white scales; apical area dark brown, wide, towards apex between veins with large white spots. Anal and apical margin of hind wing widely dusted dark brown, space between veins M3-Cu1 and Cu1-Cu2 nearly covered with dark brown scales; distal spot dark brown, wide, rectangular, reaching common stem M3-Cu1.

Male genitalia (fig. 2a). Uncus with scopula androconialis undeveloped. Valva trapeziform, with characteristic group of specialized setae in dorso-basal part which are strongly bounded distally; crista sacculi short, raises into a ridge somewhat obliquely situated, nearly reaching 1/2 of valva length. Aedeagus bulbous basally, somewhat longer than valva length, vesica with two cornuti.

Female (fig. 1b). Similar to male but more robust, darker in ground colour with snow-white coloured parts of body. ATA and ETA of fore wing covered with white scales.

Female genitalia (fig. 3a). Papilla analis sclerotic as long as hemisternite of 8th segment; hemisternite of 8th segment slightly sclerotic; ostium bursae wide, membranous; antrum begins at wide base, funnel shaped, strongly sclerotic, in proximal 1/3 strongly twisted ventrally, continues with short and membranous ductus bursae; bursa copulatrix membranous, sac shaped.

Variabylity. None in type series.

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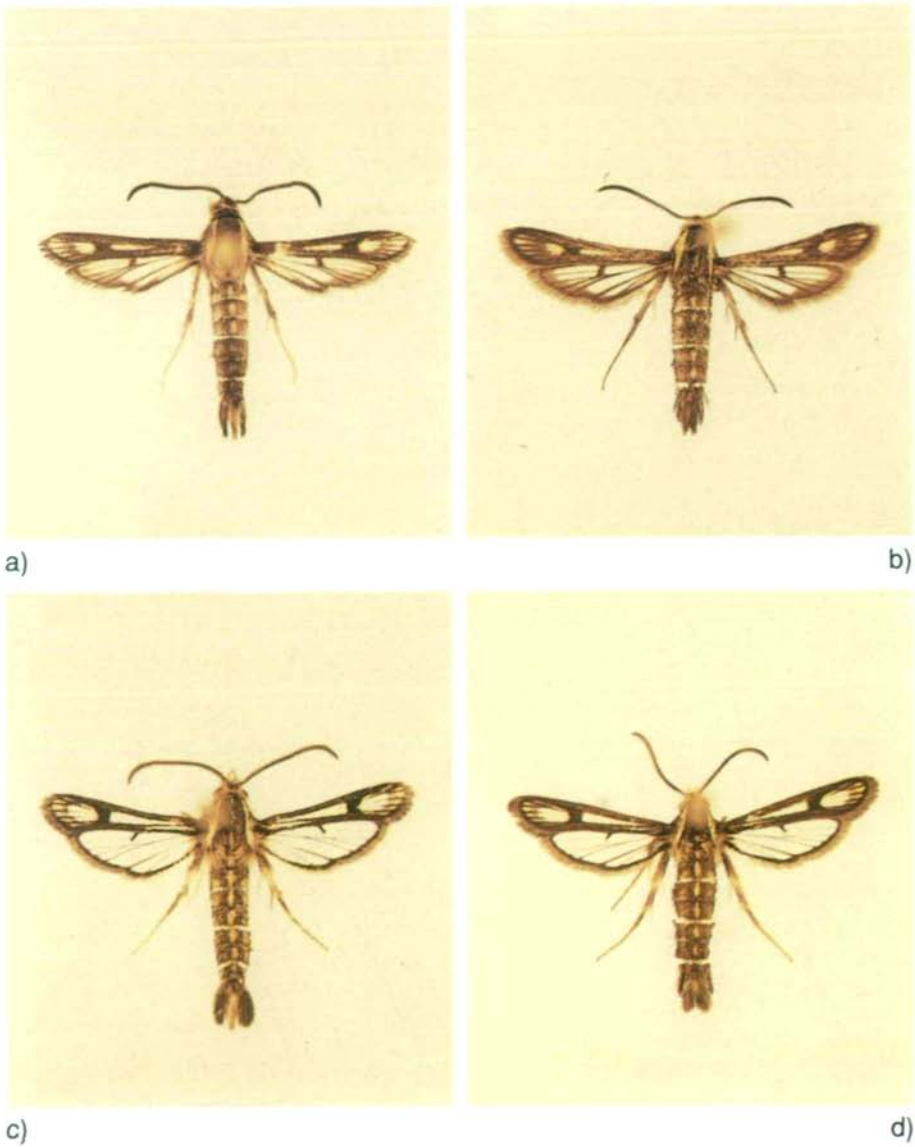

Fig. 1 a, b: *Chamaesphecia schroederi* sp. nov. - a) holotype male; b) paratype female.
Fig. 1 c, d: *Chamaesphecia crassicornis* BARTEL, 1912 - c) Male; d) female.

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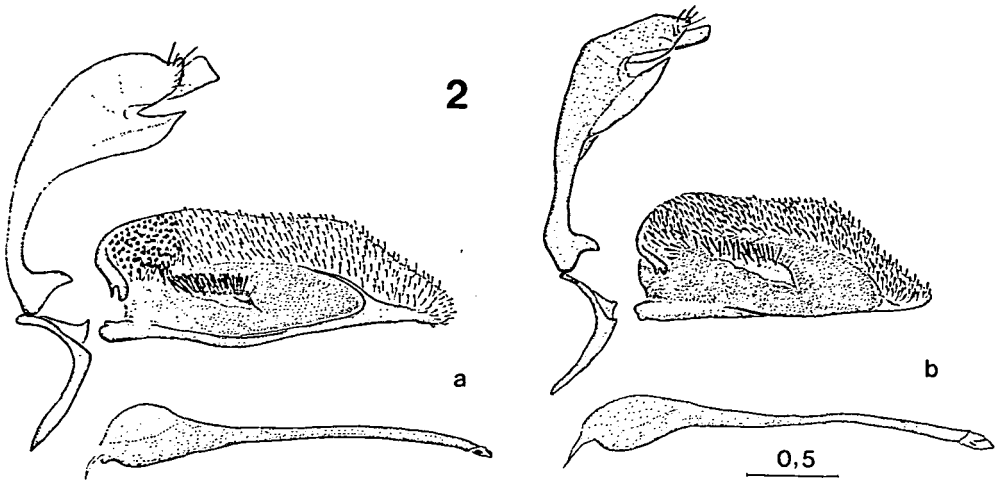

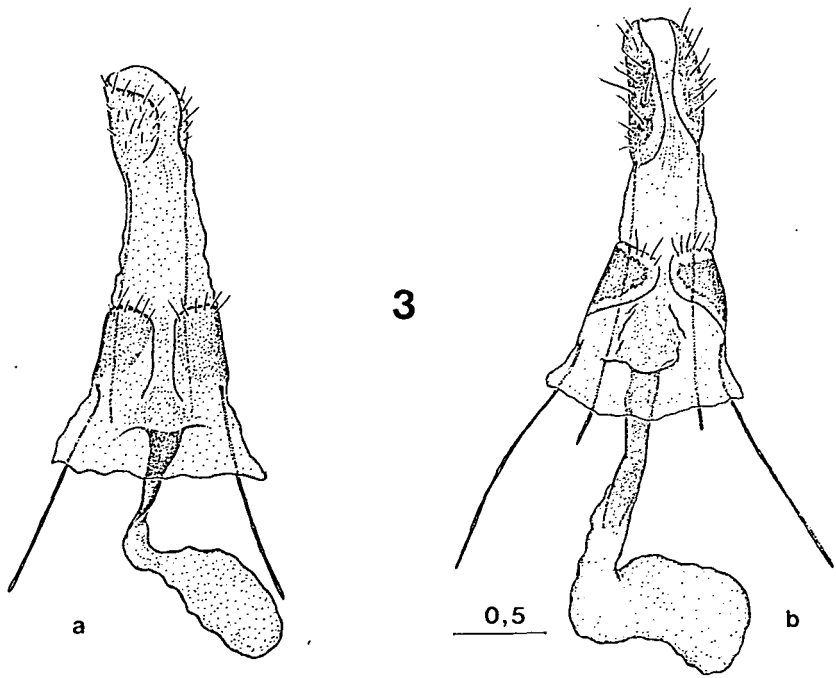

Fig. 2: *Chamaesphecia* spp., male genitalia - a) *Ch. schroederi* sp. nov., paratype; b) *Ch. crassicornis* BARTEL, 1912.

Fig. 3: Chamaesphecia spp., female genitalia - a) *Ch. schroederi* sp. nov., paratype; b) *Ch. crassicornis* BARTEL, 1912.

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Differencial diagnosis. Habitually, *Ch. schroederi* is very similar to *Ch. crassicornis* BARTEL, 1912. In the new species, ATA of fore wing in both sexes reduced to a thin line covered with whitish scales, ETA very small, outer margin of hind wing widely dusted with dark brown scales and space between veins M3-Cu1 and Cu1-Cu2 nearly covered with dark brown scales. In *Ch. crassicornis* (fig. 1c, d) ATA of fore wing clearly transparent in both sexes, ETA elongated oval as wide as apical area, while outer margin of hind wing is narrowly dark brown.

The differences in genital morphology are very distinct. By type, male genitalia of *Ch. schroederi* are similar to those of species in the *Ch. tenthrediniformis*-group, which are characterized by the presence of a group of strongly bounded large specialized setae in the dorso-basal part of the inner surface of valvae, while in *Ch. crassicornis* (fig. 2b) the dorso-basal part of valvae is homogenously covered with specialized setae, but without a group of bounded setae which is characteristic for species belonging to the Ch. *euceraeformis*-group (TOSEVSKI et al. in press). Differences in female genitalia are quite clear. In *Ch. schroederi* hemisternites of 8th segment are lightly sclerotic, antrum begins at wide base, funnel strongly twisted in proximal 1/3, continues with membranous ductus bursae, while in *Ch. crassicornis* (fig. 3b) hemisternites of 8th segment are strongly sclerotic, antrum nearly parallel and partly penetrates into somewhat wider membranous part of ductus bursae.

Bionomics. Larvae and pupae of the new species were collected in roots of *Euphorbia linifolia*, on 18 June 1992 at an open, semiarid, sandy habitat along a road side at 1200 - 1500 m. From about 90 infested roots, some 80 adults emerged between early July and mid August. It would seem that larval developement is completed within one year, although some younger instar larvae were found when the roots were dissected.

Distribution. So far only known from the type locality, but probably more widely distributed in Inner Mongolia and western China. Up to now, *Chamaesphecia* species were only known from the western and central Palaearctic (LASTUVKA 1988), i.e. from the northern border of the arboreal zone northwards. The presence of *Ch. schroeder* far east to the known distribution area of the genus *Chamaesphecia* suggests that other undescribed Sesiidae occur in the eastern Palaearctic. This assumption is supported by the fact that during the past few years several new *Chamaesphecia* species were described from Central Asia and the Caucasus (SPATENKA 1987; GORBUNOV 1989, 1991).

Etymology. The new species is named after Dr. Dieter SCHROEDER (CAB International Institute of Biological Control, Delémont, Switzerland), who tested the first *Chamaesphecia* species as potential control agent of leafy spurge in North America in 1969.

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Author's address:
Ivo TOSEVSKI
European Station, IIBC
1, chemin des Grillons
CH-2800 Delémont
Switzerland

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Literaturbesprechung

SVENDSEN, Poul (ed.) & Michael FIBIGER: The Distribution of European Macrolepidoptera. Noctuidae, Vol.1, Noctuinae I. - European Faunistical Press, Copenhagen 1992.

Die Faunistica Lepidopterorum Europaeorum (FLE) hat die Aufgabe, eine Monographie der Verbreitung aller europäischen Großschmetterlinge mit Verbreitungskarten zu publizieren, ein Vorhaben, das nur durch die Mitarbeit von vielen Lokalfaunisten und Bearbeitern von Landesfaunen und die Berücksichtigung vorhandener Publikationen bewältigt werden kann. Die mehr als 60 Mitarbeiter bzw. Informationsquellen, geordnet nach Ländern und Staaten, werden in der Einleitung vorgestellt, wobei die neue politische Struktur Europas schon nach Möglichkeit berücksichtigt wird. Die einzige österreichische Informationsgrundlage ist die ZOODAT, weitere erübrigen sich wegen des überragenden Informationswertes und der überwältigenden Datenmenge dieser Dokumentation - ein Kompliment an den Leiter des Unternehmens Prof. E.M. REICHL.

Im vorliegenden Band werden 134 Arten behandelt, eine Zahl, die man in dieser relativ kleinen Noctuidengruppe nicht erwartet hätte. Wenn man annimmt, daß die Noctuidentaxonomie endlich geklärt und zum Stillstand gekommen wäre, irrt man. Nicht nur der Subspeziesrang, auch Arten sind noch revisionsbedürftig, was der Autor in vielen Fällen glaubhaft darlegt.

Im systematischen Teil steht zuerst eine revidierte, aber noch sehr hypothetische systematische Liste der Genera, Arten und Unterarten, gefolgt vom Hauptteil, der Artenliste mit vollem Art- und Gattungsnamen, Zitaten der Erstbeschreibungen, Bemerkungen zur Taxonomie und systematischen Stellung, Synonymie und der Differenzierung von Subspezies und einer kurzen verbalen Verbreitungscharakteristik. Für jede Art und sogar für die meisten Unterarten gibt es Verbreitungskarten.

Es fällt sofort auf, daß das Werk eine recht gute Dokumentation der horizontalen Verbreitung - und damit eine gute Erfassung der Areale - vermittelt, aber daß es nicht immer gelingt, diese Verbreitung zu analysieren. Begriffe wie "disjunkte" oder "kontinuierliche Verbreitung", "Reliktareale", "boreoalpines Arealmuster", Rückzugsareal", "sublitoral", "Endemismus" etc. fehlen oft; sie hätten sehr zum chorologischen Verständnis beitragen können.

Die vertikale Verbreitung bzw. ihre wichtige ökologische Zonierung (kollin, montan, subalpin etc.), wie sie heute allgemein und nicht nur in der Zoologie gebräuchlich ist, wird nicht in die verbale Verbreitungscharakteristik aufgenommen - schade.

Im Text von *Standfussiana wiskotti* fehlt die in der Verbreitungskarte richtig dokumentierte ostalpine Verbreitung.

Orthographische Fehler im Englischen und Deutschen wären leicht vermeidbar gewesen. In einem deutschen Text (p. 36-37) kommen in nur drei Absätzen folgende Fehler vor: Ergebniße - ausserordentlich - Kenntniße - schliesslich - ungleichmässig - müßen. Englische Sätze, wie "Yugoslavia has up till 1992 included the following republics:" und viele andere störende Bocksprünge beleidigen den sensiblen Leser. Der im Werk oft zitierte englische Terminus "Atlantico-Mediterranean" ist noch ein Beispiel.

Der vorliegende erste Band ist eine Pionierarbeit für die großräumige Chorologie der europäischen Lepidopteren und eine Pilotarbeit für weitere Bände; nur unter diesen

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Aspekten ist die Arbeit zu werten, und nur so kann man viele Anfangsschwierigkeiten verzeihen.

Gerfried DESCHKA

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Erika Scharnhop, Werner-Friedmann-Bogen 10, D-80993 München 40
Thomas Witt, Tengstraße 33, D-80796 München 40.
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