

Review of the the Genus *Chrysoclista* Stainton, 1854 (Lepidoptera: Agonoxenidae) in Turkey with a New Species

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ABSTRACT

A new species of the genus *Chrysoclista* Stainton, 1854, is described from the central Anatolia in Turkey *Chrysoclista ankaraensis* sp.n. (Type locality: Türkiye, Ankara). In the study is discussed situation of *Chrysoclista linneella* recorded from Turkey.

Key words: *Chrysoclista*, new species, taxonomy, distribution, Turkey.

INTRODUCTION

Chrysoclista had earlier been considered to belong to the 'Cosmopterygidae' by Fletcher (1929) and to the Momphidae by Riedl (1969), but the recent designation to the Agonoxenidae is well established (Leraut, 1980; Hodges, 1983, 1999; Karsholt and Razowski, 1996; Koster and Sinev, 2003; Koçak and Kemal, 2012). Currently considered a putative subfamily of Elachistidae (Heikkilä *et al.*, 2013).

In Agonoxeninae more than 50 species are recorded from the Palaearctic, with 6 genera and 21 species in the Europe region (Koster and Sinev, 2003). Totally 6 genera and 6 species are reported of the this family from Turkey; *Blastodacna libanotica*, *Chrysoclista linneella*, *Haplochrois theae*, *Heinemannia festivella*, *H. laspeyrella*, *Spuleria flavicaput* (Koçak and Seven, 2003).

The genus *Chrysoclista* is a small genus with five species described from the Palaearctic and three from the Nearctic region, of which *Chrysoclista linneella* Clerck has a Holarctic distribution (Koster, 2002). The species of *Chrysoclista* in Europea are reviewed (Karsholt, 1997). In Caucasus two species of this genus are known (Koster and Sinev, 2003). Only one species is known from Turkey (Zagulajev, *et al.*, 1990; Koçak and Seven, 2003). Their larvas live, as far as it is known, under bark of braches and trunks of deciduous trees. The adults are mostly found resting on the trunks of their host free; occasionally they are netted during daytime or attracted to light. Moth species of *Chrysoclista* are considered as rare (Karsholt, 1997).

In this paper, specimen of *Chrysoclista* collected from Ankara province is described and illustrated. Also situation of genus *Chrysoclista* in Turkey is discussed.

MATERIAL AND METHODS

Specimen was collected from Ankara province in June 2003 by using light trap (mercury vapour white light 120 W), prepared and labeled according to the standart museum methods. After this preparation, illustration of genitalia was captured with the digital camera attached to Nikon stereomicroscope. The specimens were deposited in the Zoology Museum of Gazi University (ZMGU). When the diagnostic key of species was prepared, the datas on Koster and Sinev (2003) were used.

RESULTS

Elachistidae, Agonoxeninae

Chrysoclista Stainton, 1854

Chrysoclista Stainton, 1854, Ins. Br. Lepid.: 240.

Type species: *Phalaena linneella* Clerck, 1759, by subsequent designation by Fletcher, 1928.

Syn.: *Glyphipteryx* Curtis, 1827 Br. Ent. 4: 152 [unjustified emendation].

The genus *Chrysoclista* is characterized by a combination of the following characters: head smoothly scaled; ocelli absent; haustellum developed, short, scaled; labial palpus cylindrical, porrect with third segment slightly angled upwards; antenna four-fifth to just slightly shorter than length of forewing, sometimes slightly serrate distally; scape without pecten; forewing lanceolate and with orange ground colour, often with some distinct patches of raised scales. Male genitalia: symmetrical; uncus rudimentary or absent; gnathos a pair of lobes or arms, often dentose distally, this in contradiction with the usual club-shaped processes covered with rows of spines in Agonoxenidae; tegumen short and broad with small socii; valva simple, broad with rounded or truncated apex; juxta lobes pronounced; vinculum large, with or without a short saccus; aedeagus long, tubular, bent, with or without cornuti (Koster and Sinev, 2003).

Checklist

Palearctic species of the genus *Chrysoclista* are listed.

1. *C. abchasica* (Sinev, 1986)
2. *C. lathamella* Fletcher, 1936; *bimaculella* (Haworth, 1828), nec (Thunberg, 1794); *razowskii* Riedl, 1965.
3. *C. linneella* (Clerck, 1759); *schaefferella* Duponchel, 1828; *gemmatella* Costa, [1836]
4. *C. splendida* Karsholt, 1997; *bimaculella* auct.; *razowskii* auct.
5. *C. zagulajevi* Sinev, 1979

Chrysoclista ankaraensis sp.n.

Holotype 1 ♂: Turkey, Ankara Pr., Karagöl, 1000 m, 14 July 2005 leg. S. Çalışkan and E. Çalışkan.

Male genitalia (Fig. 7): Resembles *C. splendida*, but gnathos arms more straight and slightly widening distally with many more thorns. Valvae more strongly narrowing apically. Anellus lobes not as slender and about half the length of valvae. Aedeagus only slightly bent.

Diagnosis

The main differences between *C. ankaraensis* sp. n. and other species of *Chrysoclista* are the orange areas separated by an indistinct white line and shape of orange areas on front wings. The gnathos arms of new species are curved right angle and teeth of these arms are longer than *C. splendida*. The tip of valva of *C. ankaraensis* sp.n. is rounded and is not narrow as in *C. lathamella*.

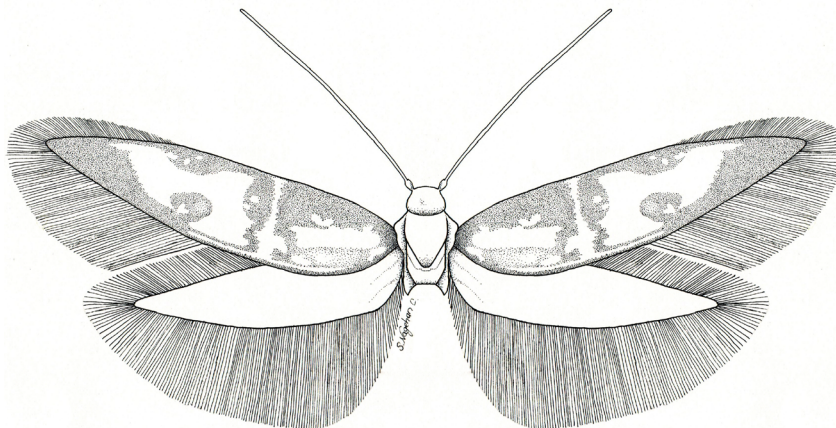


Fig. 1. Male habitus of *Chrysoclista ankaraensis* sp. n., holotype

***Chrysoclista linneella* (Clerck, 1759)**

Phalaena linneella Clerk, 1759, Icones Insect. rar. 1: pl.12, Fig. 6.

Syn.: *gemmatella* Costa, [1836].

Adult: Wingspan 10-13mm. Head dark brown. Thorax and tegulae shining greyish brown. Forewings bright orange, broadly edged shining blackish brown, narrowest on costa. Two small silvery streaks, one in fold near base, another on costa opposite outer dorsal spot; cilia dark greyish brown. Hindwings brownish grey with shining bronze reflection (Koster and Sinev, 2003).

Biology: The larva has a brown head and a yellowish white body. It tunnels under the bark of the trunk of *Tilia* sp. from August to April. Bright brown frass is extruded and is visible in the cracks of the bark, indicating the presence of the larva. Pupation takes place in the gallery, from May to June (Sinev 1986, Stainton 1859). Lhomme (1948), however, mentioned that on two occasions imagines were obtained from dried leaves, indicating that the larva had left its gallery prior to pupation. The adult flies from the end of May till August and can be found resting on the trunk of the food plant (Koster, 2002).

Host plants: *Tilia cordata* Mill., *T. europaea* L. (Tiliaceae) (Koster, and Sinev, 2003).

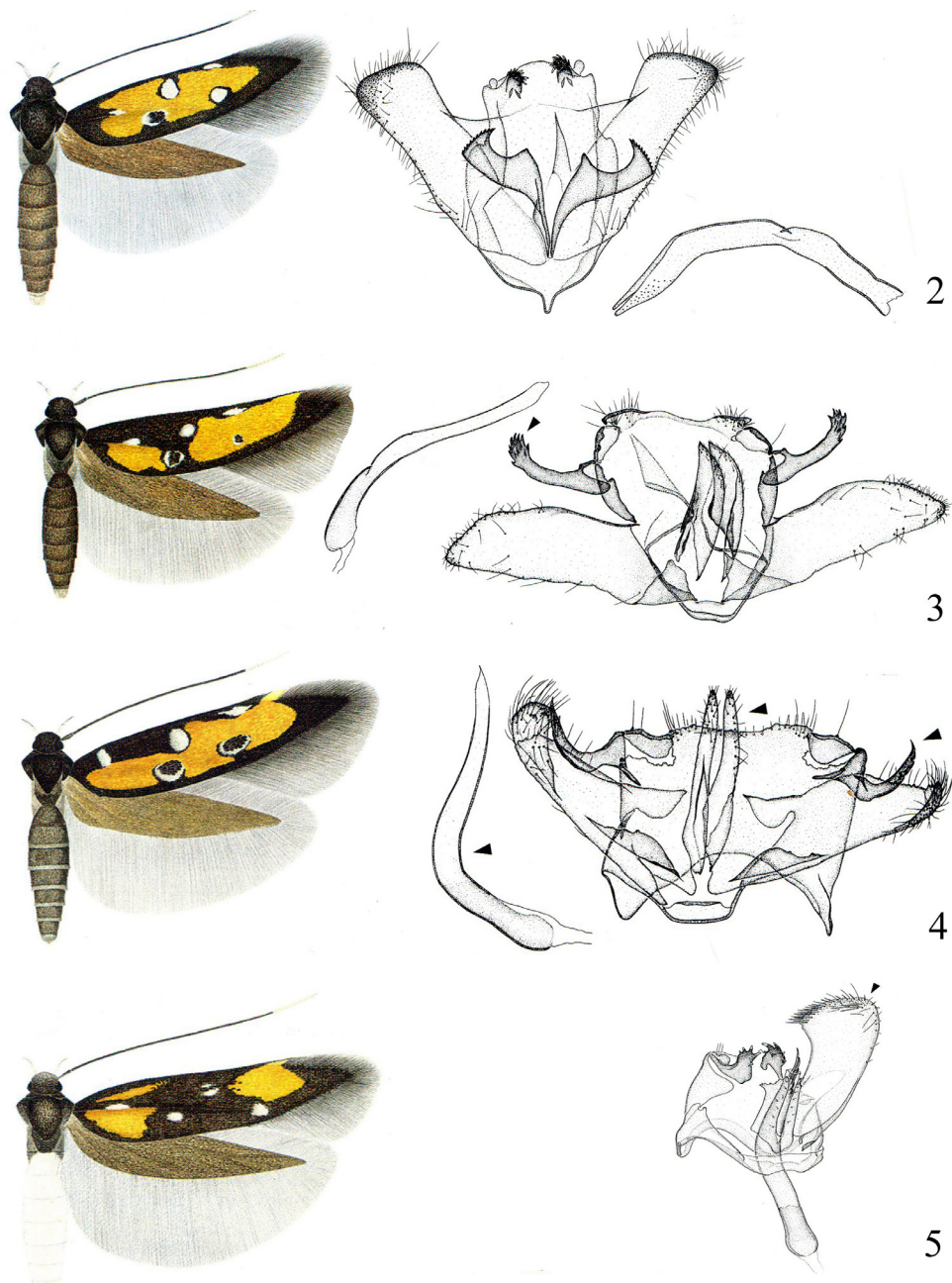
General distribution: Europe to southern Fennoscandia in the North; Introduced to the eastern part of the U.S.A. and Canada, Turkey (?) (Klots, 1942; Zagulajev, and Sinev, 1990; Karsholt, 1997; Koster, 2002; Koster, and Sinev, 2003).

Remarks: This species was recorded from Asia Minor in Zagulyaev (Zagulajev, and Sinev, 1990). Since any other data were reported for finding of this species in Turkey, the available data is not enough to decide whether it live or not in Turkey. In addition, Koster and Sinev, (2003) reported the records of this species in Turkey are suspicious.

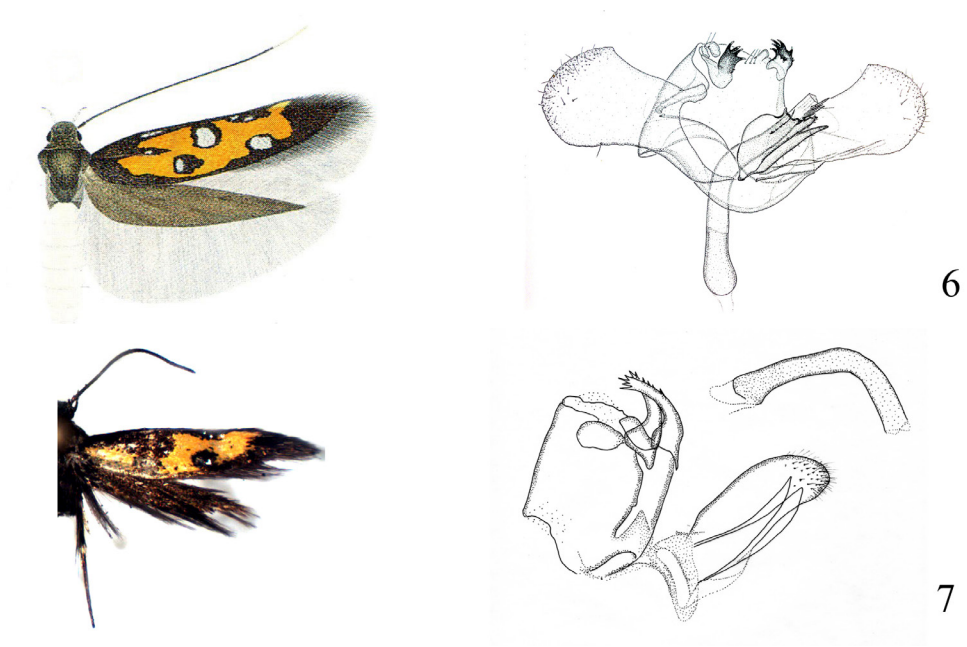
The genus *Tilia* known host plant of *Chrysoclista linneella* (Clerk, 1759) has been represented in Turkey with *Tilia rubra caucasica* (Rupr.), *T. cordata* Mill., *T. platphyllus* Scop., *T. argentea* Desf. (Davis, 1966). These four species are present mainly in north part of Turkey. *Tilia cordata* host plant of *C. linneella*'s larva is known from Trabzon, Çanakkale and Isparta province in Turkey (Davis, 1966). When the zoogeographical distribution of *C. linneella* and species in the genus *Tilia*, known from Turkey are considered together, it is possible that *Chrysoclista linneella* will occur in northern part of Turkey especially Black Sea Region.

A key based on external characters to the *Chrysoclista* species of the Palaearctic

- 1- Orange colour on forewing divided into two areas2
 - Orange ground color on forewing undivided.4
- 2- Orange colour on forewing divided by a broad blackish brown band..... 3
 - Orange ground colour on forewing divided into two areas by a linear band, bottom side of orange areas on distal part significantly indented (Fig. 1, 7)....*ankaraensis* n.sp.
 - Orange area that closed to basal part of forewing divided transversely, orange area on the distal part not divided and prolonged to costa, this area is smaller than orange area on the distal part the other species (Fig. 5).....*zagulyaevi*
 - Orange area that closed to basal part of forewing undivided transversely (Fig. 3).....*lathamella*
- 4- Orange color tapered toward the tip of the wing (Fig. 2)..... *linneella*
 - Orange ground color rounded toward the tip of the wing..... 5
- 5- Orange color combine with costa (Fig. 6).....*abchasica*
 - Orange ground color more rounded toward the tip of the wing and combine with costa but the bottom half of the basal part of wing is orange (Fig. 4).....*splendida*



Figs. 2-5. Habitus and male genitalia of *Chrysoclista* species. 2. *C. linneella*; 3. *C. lathamella*; 4. *C. splendida*; 5. *C. zagulajevi* (Koster and Sinev, 2003)



Figs. 6-7. Habitus and male genitalia of *Chrysoclista* species. 6. *C. abchasica* (Koster and Sinev, 2003).
7. *C. ankaraensis* Seven n.sp.

ACKNOWLEDGEMENTS

I thank to Dr. Ole Karsholt for providing paper about this genus and S. Nagehan Cığerci for drawing habitus of new species.

REFERENCES

- Clerck, C. A., 1759, *Icones Insectorum rariorum cum nominibus eorum trivialibus locisque e C. Linnaei*. Holmiae, 55 Pls.
- Costa, O. G., 1836, Fauna del regno di Napoli ossia enumerazione di tutti gli animali che abitano le diverse regioni di questo regno e le acque che le bagnano contenente la descrizione de nuovi o poco esattamente conosci. *Lepidotteri*, 314 pp.
- Curtis, J., 1827, *British Entomology*, London, 4: 147-149.
- Davis, P. H., 1984mü. *Flora of Turkey and East Aegean Islands*. Edinburgh: Edinburgh University Press, 2: 580.
- Fletcher, T. B., 1929, A list of the generic names used for Microlepidoptera. *Memoirs of the Department of Agriculture in India*, 11: 1-246.
- Fletcher, T. B., 1936, A new name for *Chrysoclista* "*bimaculella*, Haworth 1828" (Lepidoptera: Cosmopterigidae). *Festschrift zum 60. Geburtstag von Professor Embrik Strand*, 1: 504-506.
- Haworth, A. H., 1828, *Lepidoptera Britannica* London, 4: 513-609.

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- Hodges, R. W., 1983, *Gelechioidea*. In: R. W. Hodges *et al.* (Eds.), Check list of the Lepidoptera of America North of Mexico, London, 7(1): 1-195, pls.
- Karsholt, O. J., Razowski (Eds.), 1996, *The Lepidoptera of Europe. A distributional checklist*. Stenstrup, 1-380.
- Karsholt, O., 1997, The genus *Chrysoclista* Stainton, 1854 in Europe (Lepidoptera, Agonoxenidae). *Entomologiske Meddelelser*, 65(1): 29-33.
- Kasy, F., 1954, Kleinschmetterlingsraupen als Bewohner von der Weidenholzgallmücke (*Helicomyia saliciperda* Duf.) befallenen Weidenaeste und -stämmchen. *Entomologische's Nachrichtenblatt Österreichischer und Schweizer Entomologe*, 6:1-4.
- Klots, A. B., 1942, A newly imported European Lavernid (Microlepidoptera). *Bulletin of the Brooklyn Society*, 37: 173.
- Koçak, A., Seven, S., 2003, Tentative checklist of the Turkish Lepidoptera, <http://www.members.tripod.com/entlep/Checklist2.htm>
- Koster, J. C., 2002, *Agonoxenidae*. In: Emmet, A. M. (Ed.): The moths and Butterflies of Great Britain and Ireland. 4(1): 326 pp., 7pls.
- Koster, J. C., 2002, Review of the Nearctic species of *Chrysoclista* Stainton (Lepidoptera, Agonoxenidae). *Tijdschrift voor Entomologie*, 145: 103-114.
- Koster, S., Sinev, S., 2003, *Microlepidoptera of Europe*, Apollo Books, 5: 387.
- Leraut, P., 1980, Liste systématique et synonymique des Lépidoptères de France, Belgique et Corse. *Supplément à Alexanor et au Bulletin Société Entomologique Français*, 1-334.
- Lhomme, L., 1948-1949, *Catalogue der Lépidoptères de France et de Belgiqu*, 2(5): 649-808.
- Riedl, T., 1965, Matériaux pour la connaissance des Momphides paléarctiques (Lepidoptera). Partie III. Etude sur quelques Momphides européens. *Polskie Pismo Entomologiczne*, 25: 419-468.
- Riedl, T., 1969, Matériaux pour la connaissance des Momphidae paléarctiques (Lepidoptera, 9.Revue des Momphidae européennes, y compris quelques espèces d'Afrique du Nord et du Proche-Orient., *Polskie Pismo Entomologiczne*, 39(4): 635-919.
- Sinev, S. Yu., 1986, A list of momphid moths (Lepidoptera Momphidae, s.l.) of the USSR fauna [in Russian]. *Trudy usesoyuznogo entomologicheskogo Obshchestva*, 67: 19-74.
- Stainton, H. T., 1854, *Insecta Britannica. Lepidoptera. Tineina*. London, 313 pp.
- Stainton, H. T., 1859, *A manual of British Butterflies and Moths*. London, 2: 480 pp.
- Zagulajev, A. K., Sinev, S. Vu., 1990. *Momphidae, Walshiidae, Cosmopterigidae*. In: Medvedev, G.S. (ed.), Keys to the Insects of the European Part of the USSR. 4(2): 701-742.

Received: November 12, 2013

Accepted: September 17, 2014