A new species *Chrysorithrum duda* (Lepidoptera: Erebidae) from China

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A new noctuid moth, *Chrysorithrum duda* sp. n., from southwest China is described. Previously the genus *Chrysorithrum* (Butler 1878) included two species with eastern Palaearctic and Manchurian distributions. The new species differs in appearance, genitalia and DNA from its congeners *Chrysorithrum flavomaculata* (Bremer) and *Chrysorithrum amata* (Bremer & Grey).


Institutional acronyms used are as follows: AFM = Alessandro Floriani (Milan, Italy); GBG/ZSM = Gottfried Behounek (Grafing, Germany)/Zoologische Staatssammlung, München (Germany); NRCV = Nature Research Centre (Vilnius, Lithuania); OPB = Oleg Pekarsky (Budapest, Hungary); WIGJ = World Insect Gallery (Joniškis, Lithuania); ZFMK = Zoologisches Forschungsmuseum Alexander Koenig.

*Chrysorithrum duda* Saldaitis & Ivinskis sp. n.

(Figs. 1–3, 7, 8)

**Type material.** Holotype: male (Fig. 1), China, N. W. Yunnan, near Zhongdian, N 27°24.800', E 99°40.500', 23. V. 2012, H.—3350 m, Floriani leg., in GBG/ZSM collection; (Slide No. BJ 2104m)

Paratypes: 1 male (Fig. 2) the same label as holotype, 2 males (Fig. 3) China, N. W. Yunnan, Lijiang/Zhongdian, near Tuguanancun, N 27°29.700', E 99°53.700', 24–25. V. 2012, H.—3200 m, Floriani leg., in the collections of AFM and WIGJ, 1 male, „Li-kiang. (China). Provinz Nord-Yuennan. 21.5.1934. H. Höne"; 1 male, same locality and collector, 21.5.1935; 1 female, same locality and collector, 14.7.1935. Elevation of collecting sites: 2.900–3.200m (H. Höne, i.l.). Coll. Höne, in the collection ZFMK.

**Diagnosis.** The wing pattern of the *Ch. duda* (Figs. 1–3) is approximation to the combination of the forewings of *Ch. flavomaculata* (Fig. 4) with the hindwing of *Ch. amata* (Figs. 5, 6). The wingspan of the new species (54–59 mm) is larger than *Ch. flavomaculata* (50–56 mm). The forewing median band in *Ch. duda* is curved and surrounded by straight yellow fields, an elongated brown anal dash and crooked median line, whereas in *Ch. flavomaculata* the median band is almost straight and lacks an elongated dash. In the new species the large brown reniform stigma is birfurcate at the base while that in *Ch. flavomaculata* is kidney-shaped with a broad wedge extending basally. The distal part of the forewing in *Ch. duda* has a yellow band that narrows significantly from the costal margin and is curved nearly 90°, whereas in *Ch. amata* the band is uniformly wide medially and then slightly curved in a narrow line to the inner margin. In *Ch. duda* the subterminal and terminal areas of the hindwing are brown with silvery suffusion in the costal and anal areas whereas in *Ch. amata* these are respectively brown and yellow. The new species male genitalia (Figs. 7, 8) of *duda* differ from those of *Ch. flavomaculata* (Figs. 9, 10) by having wide leaf-like valves, short ampulla that do not reach the costal edge of the valva, acute valve tips, large valve costal lobes with strongly peaked protuberances, and a short triangular aedeagus-diverticulum. In *Ch. flavomaculata* the valva is elongated, the costal protuberance is slender, the ampulla extends over the costa, and the finger-like aedeagus-diverticulum is large. The genital structure of *Ch. amata* (Figs. 11, 12) is more divergent from either *Ch. duda* or *Ch. flavomaculata*. 

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FIGURES 1–6. Chrysorithrum ssp. adults. 1. Ch. duda sp. n., male, holotype, China, Yunnan (GBG/ZSM); 2. Ch. duda sp. n., male, paratype, China, Yunnan (AFM); 3. Ch. duda sp. n., male, paratype, China, Yunnan (WIGJ); 4. Ch. flavomaculata, male, Russia (NRCV); 5. Ch. amata, male, China, Sichuan (OPB); 6. Ch. amata, male, Russia (NRCV).
FIGURES 7–12. Chrysorithrum ssp. male genitalia. 7. Ch. duda sp. n., holotype, capsule, prep. BJ 2104m; 8. Ch. duda sp. n., holotype, aedeagus, prep. BJ 2104m; 9. Ch. flavomaculata, capsule, Russia, prep. BJ 2103m; 10. Ch. flavomaculata, aedeagus, Russia, prep. BJ 2103m; 11. Ch. amata, capsule, Sichuan, China, prep. OP 2329m; 12. Ch. amata, aedeagus, Sichuan, China, prep. OP 2329m.
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**Description.** Forewing length of holotype 27 mm, wingspan 55 mm; forewing length of paratypes 27–30 mm, wingspan 54–59 mm (n-3). Head, patagium, tegulae and abdomen brownish grey; wings strongly contrasting; ground colour of forewing silvery grey, irrorated with brown, subbasal area silvery with few brown scales; antemedian band strongly and doubly sigmoid; twisted median band silvery brow with elongated brown anal dash; large brown reniform stigma with bifurcate base; subterminal band clear silver with occasional brown scales, from costa to dorsum; terminal line strongly twisted. Hindwing dark brown, with wide yellow band extending from costal margin to middle of wing and narrowing distally to a third of its width, curving nearly 90°. Underside of forewing dirty yellow with broad brown curved median band; underside of hindwing dirty yellowish-brown with slightly curved narrow yellow band. **Male genitalia** (Figs. 7, 8) Symmetrical; uncus claviform with strong thorn-like spine; scaphium a sclerotised ridge, mandibulate with uncus; valva leaf-like, strongly tapered to tip, acute with large costal lobe and strongly peaked protuberance; ampula extending to ¼ valva width; aedeagus thick, curved, basally bilobed; vesica with short triangular diverticulum.

Female like male, with more robust abdomenum. Single know female from ZFMK was not dissected.

**Molecular analysis.** DNA barcoding also supports the existence of a new species of *Chrysorithrum*. Full length 658 base pair ‘barcodes’ of the Cytochrome Oxidase Subunit 5’ Region (CO1-5P) gene were prepared by the University of Guelph’s barcode of Life Data Systems (BOLD) by methods described in Hebert *et al.* (2003). Molecular distance based on the Kimura two-parameter model for COI DNA barcodes between all four specimens of *Ch. duda* and a single specimen of *Ch. flavomaculata* were 3.47% whereas distances between *Ch. duda* and single *Ch. amata* and between *Ch. flavomaculata* and *Ch. amata* were 5.46% and 5.11%, respectively.

**Biology and distribution.** The seven specimens known were collected at ultraviolet light on 23–25 May 2012 and May, July 1934-1935 in southwestern China’s Yunnan province in a remote, area located in the Hengduan Shan (mountains) near Lijiang - Zhongdian on the eastern edge of the Tibetan plateau. The new species is likely endemic to high elevations in this area (Fig. 13). It was collected in two localities near small rivers with valley meadows and dry rocky slopes surrounded by mixed forest and wetlands. Mixed forests were dominated by broad-leaved trees including oaks (*Quercus dentata, Q. glauca*), poplars (*Populus cathayana, P. simonii*), elms (*Ulmus parvifolia*), rhododendrons...
(Rhododendron brachycarpum, R. dauricum) and various species of pines. Other spring-flying noctuid species collected at the same time included Panolis pinicortex Draudt, 1950, Raphia corax Draudt, 1950, Lacanobia kitokia Gyulai, Ronkai & Saldaitis, 2011 and many others.

**Etymology:** The new species is named after colleague, prominent Lithuanian collector and director of the World Insect Gallery Juozas Dūda (Joniškis, Lithuania).

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**References**

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