

A new species of *Gortyna* Ochsenheimer, 1816 from Golestan forests of Iran (Noctuidae)

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Abstract. *Gortyna golestanensis*, sp. n., is described from forest habitats along the Golestan forests in the NNE of Iran. The habitats include both the forested and the low, fully green vegetations in all parts of the north-east Elburs mountains. The adult, and the male and female genitalia are illustrated and compared with *Gortyna flavago* ([Denis & Schiffermüller], 1775). The systematic position of *Gortyna* Och. is described, and all taxa are listed.

Key words. new species, Iran, Golestan forests, *Gortyna*

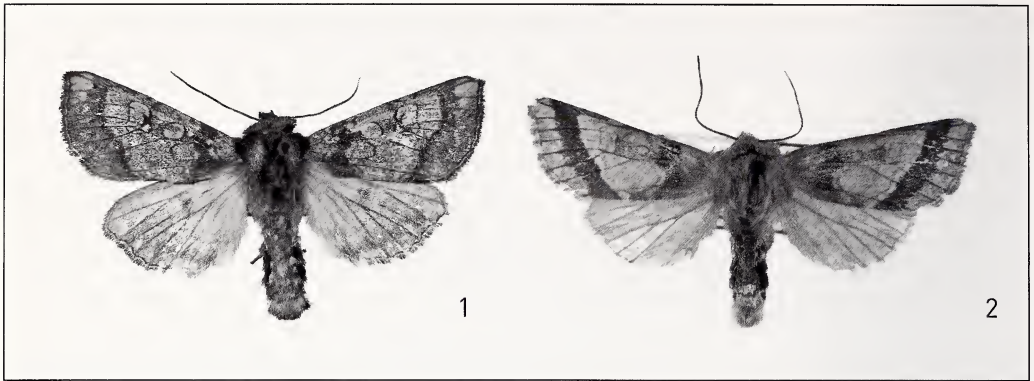
Introduction

The second meeting of the ALI cooperation (Association Lepidoptera Iranica) took place in late May 2005 in Teheran, Iran, where scientists from many countries of Europe met with their colleagues in the Plant Pests & Diseases Research Institute in Teheran, Iran. The objectives of this first paper dealing with Noctuidae of Iran are to describe a new species of *Gortyna*, which will enhance the interpretation of the data collected for the insect inventory and monitoring project by the HMIM (Hayk Mirzayans Insect Museum) in Iran. During examination and identification of the noctuid material in this, the largest insect museum in the Middle East, (HMIM), which belong to PPDRI: ITRD (Insect Taxonomy Research Department), we discovered a possibly new species of *Gortyna* Ochsenheimer, 1816, that was recorded from the north eastern parts of the Elburs mountains. Immediate genitalia preparation confirmed our suspicion that the species was undescribed.

Gortyna golestanensis sp. n.

Material. Holotype, ♂: Iran, prov. Golestan, Park-e Melli-e Golestan, Almeh, 1600 m., 30.ix.2000, leg. Gh./Gil., prep. Fibiger & Zahiri 201, HMIM. – Paratypes: 5♂, same data as holotype; 11♂, same data as holotype, but 2.–6.x.1994 leg. Mirz, Ebra & Badii; 1♀, same data as holotype, but 30.x.1998, leg. Mogh, Naz & Manz., prep. Fibiger 5394; 5♂, same data, but Golestan forest, Almeh, 1650 m., 2.–12.x.1988, leg. Paz.; 14♂, same data, but 1700 m., 2.–3.x.1992, leg. Ebra & Badii; 1♂, same data, but Elika, 2100 m., 23.ix.1987, leg. Hash; coll. Fibiger, HMIM; NHM London, P.Gyulai, TMB Budapest. 1♂, 1♀ Khorasan, Golestan N. P., Almeh, 56°07'021 N, 37°20'748 E, 1750 m, 26.–27.x.2003, leg. Wieser & Stangelmaier, coll. Landesmuseum Kärnten & coll. Stangelmaier.

Description. **Adults** (Fig. 1). Wingspan 37–43 mm. Labial palps porrect; first and second segment ventrally densely covered with long hair-like scales; third segment rounded, the length 1/3 of second; antennae of male ciliate, that of female filiform; head, thorax, abdomen, and ground colour of forewing light yellow / cream; all cross-lines well marked, antemedian and postmedian lines double, the former zig-zagged,

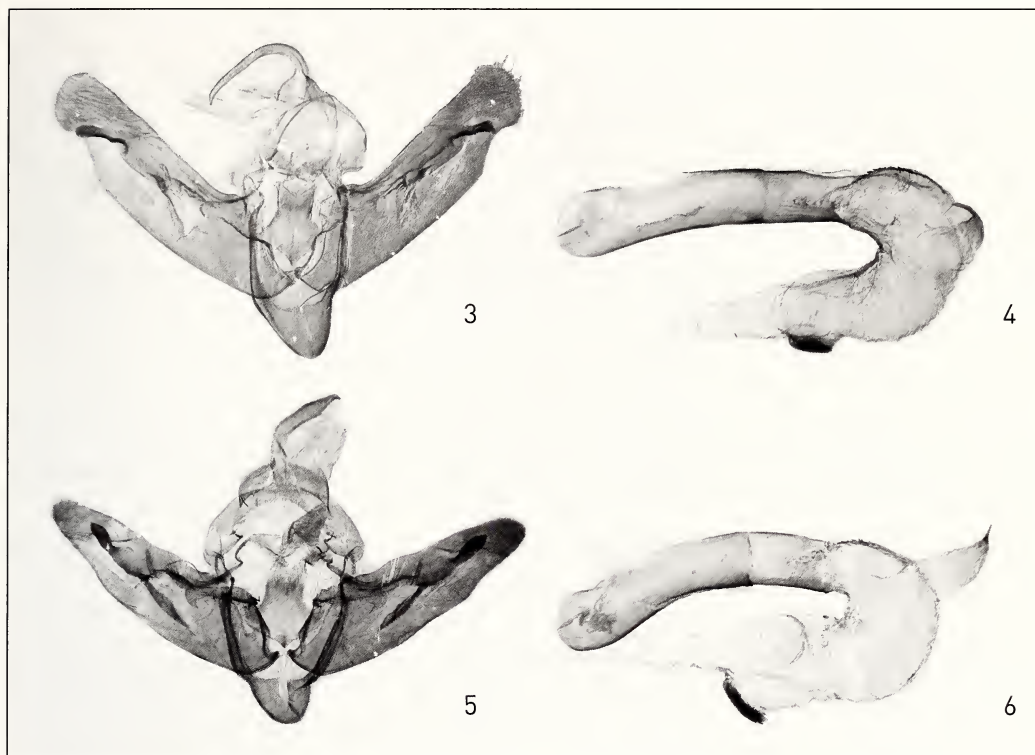


Figs. 1–2. Adults of *Gortyna*. **1.** *G. flavago* (Denis & Schiffermüller), ♂ from Denmark. **2.** *G. golestanensis*, sp. n., holotype ♂ from Iran, Golestan.

the latter almost straight; posterior basal area, anterior area of subterminal area, and fringes brown; orbicular and reniform stigmata present, the former small; claviform stigma absent: Abdomen and hindwing cream, the latter with well marked yellowish venations and terminal line; discal spot absent. Underside unicolorous greyish cream, with weakly marked subterminal area of forewing; discal spot absent; medial line yellowish, well marked.

Male genitalia (Figs 5–6). Uncus elongate, flattened, approximately $0.42 \times$ length of valve, equally broad throughout, tapered apically with a blunt hook; tegumen and vinculum equally long; penicellus relatively small, rounded; length of valve approximately $0.45 \times$ width by base, both margins nearly straight, apex round, width of apex of the valve approximately $0.37 \times$ of its base; clasper oblique to ventral margin, $0.11 \times$ length of valve; ampulla is very small and slender; digitus medially on the inner surface of valve, the free tip thumb-like; transtilla sclerotised – also the lobes by diaphragma; juxta shield-like, higher than wide. Phallus relatively broad, $5 \times$ longer than wide, smoothly bent. Vesica projecting ventro-laterally to the left; a dorsal, narrow, and spined carina-band extends into basal part of vesica; subbasal diverticulum membranous, cone-like, with a small pointed cornutus on top; two broad, rounded membranous diverticula by vesica ejaculatorius, the right unarmed, the left with a field of small spines.

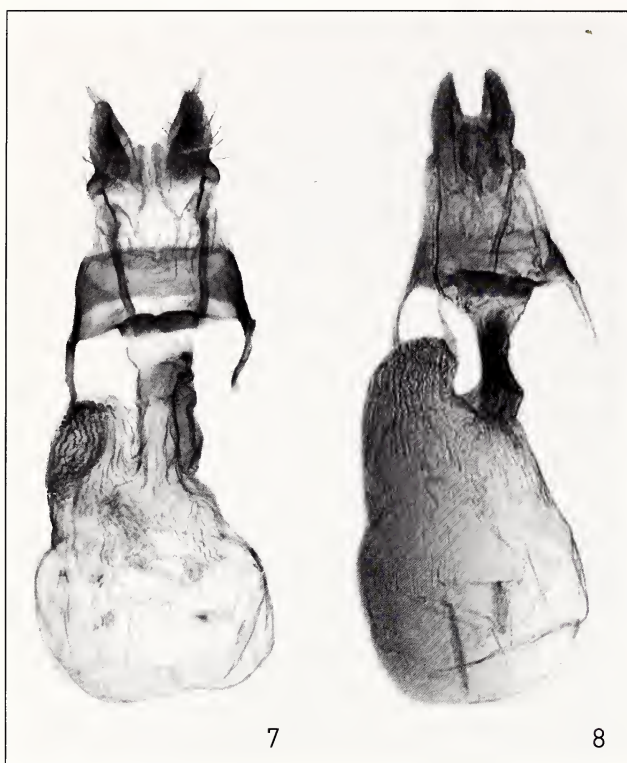
Female genitalia (Figs 7). Ovipositor heavily sclerotised, dorso-ventrally flattened, lightly ventrally bent, rounded by tip, with lateral swellings posteriorly; the two apameine-autapomorph sclerotised rods between the lobes are relatively broad and lightly sclerotised; both apophyses stout, the anterior half the length of the posterior; the eighth segment membranous ventrally, tapered towards ostium bursae: antrum dorsally membranous, ventrally with a heavily sclerotised band, $6 \times$ broader than high; ductus bursae basally membranous, then heavily scobinate to the globular corpus bursae; basal half of corpus lightly scobinate, posterior part membranous with four small signa-bands; appendix bursae broad, cylindrical, positioned on the left side, its wall with sclerites; ductus seminalis arising at tip, closest to ductus bursae.



Figs 3–6. Male genitalia of *Gortyna*. **3.** *G. flavago* from Denmark (prep. Fibiger 4895). **4.** *G. flavago*, phallus with everted vesica (same specimen as Fig. 3). **5.** *G. golestanensis*, sp. n. (prep. Fibiger & Zahiri 201). **6.** *G. golestanensis*, sp. n., (same specimen as Fig. 5).

Differential diagnosis. The imagines of *Gortyna golestanensis*, sp. n. resembles *G. flavago* ([Denis & Schiffermüller], 1775) in size, forewing pattern, and the light yellowish hindwing. However, *G. flavago* has a yellow-golden ground colour, lightly curved postmedian line, and well defined reniform, orbicular and claviform stigmata, whereas the ground colour of *G. golestanensis* is cream, the posterior cross-line is almost straight, and the claviform stigma is absent. The median area is triangular in *G. golestanensis*, trapezoid in *G. flavago* (*sic*). Further, the forewing is less pointed in *G. flavago*; the subterminal area is almost unicolourous brownish, that of *G. golestanensis* is prominently divided into a brownish and a yellowish band; and the hair-like scales of thorax in *G. golestanensis* are light yellowish-brown, where those of *G. flavago* are darker brown and more golden.

In the male genitalia the uncus is prominently broader in *G. golestanensis* than that of *G. flavago*; *G. golestanensis* has a narrower, throughout tapered valve toward apex, whereas in *G. flavago* the costal and ventral margins are parallel 2/3 out, and constricted subapically; the narrow, heavily sclerotised, dentate band from apex of phallus to the basal part of vesica is shorter by *G. golestanensis*; the subbasal diverticulum is longer in *G. golestanensis*, and its cornutus on top is much smaller; and the apical spinefield is larger.



Figs. 7–8. Female genitalia of *Gortyna*.
7. *G. golestanensis*, sp. n. (prep. Fibiger 5394). **8.** *G. flavago* from Denmark (prep. Fibiger 5424).

In the female genitalia: the dorso-ventrally flattened ovipositor is broader in *G. golestanensis*; the sclerotised part of antrum of *G. flavago* is 4 times broader than long, and so extends longer into ductus bursae; and the signa-bands are much longer and more heavily sclerotised in *G. flavago*.

Habitat and distribution. Specimens were taken from Almehr, Golestan forests. Golestan forests are situated in the north east of the Elburs mountains. The biotope of this part of Golestan forests is mostly semi-high mountain with 1600–1700 m. altitude. Almehr is characterised by vegetation dominated by trees and shrubs, with many different herbaceous plants, especially dominant in the spring. The highest elevation zones reaches approx. 2100 m altitude. The materials were all taken by light during the end of September until the end of October.

Derivatio nominis. The specific epithet, *golestanensis*, refers to the type locality in northern Iran.

Taxonomic notes. According to the new classifications of Noctuidae (Fibiger & Lafontaine 2005) *Gortyna* is placed in the subfamily Xyleninae Guenée, 1837, tribe Apameini Guenée, 1841, subtribe Apameina Guenée, 1841. This taxon comprises 6 species in Europe; 17 in the Palearctic region (Zilli et al. 2005), 3 of those in Iran (Ebert & Hacker 2002). The new species is similar to *G. flavago*, like many other members of the genus. Especially the much paler yellowish forewing colouration pattern is conspicuous.

According to Zilli et al. (2005), *Gortyna* belongs in the more ancestral genus-group with the sister-genera *Papaipema* Smith, 1899 (Nearctic, a different genus although superficially it is sometimes strikingly similar to species of *Gortyna*), *Hydraecia* Guenée, 1841, and *Amphipoea* Billberg, 1820. The subtribe is mainly Holarctic, includes more than 1000 species, and is distributed world wide, except in the Neotropical and Australian regions. The plesiomorphic features are: the smoothly bent uncus; the oblique clasper compared to the valve margins (higher up, more derived; in the subtribe the clasper is parallel with the margins); the medially positioned, apically rounded digitus; the heavily sclerotised, dentate band from apex of phallus to the basal part of vesica; and the smoothly, ventrally bent ovipositor lobes.

List of the Palaearctic *Gortyna*

- G. joannisi* (Boursin, 1928)
G. flavina Hreblay & Ronkay, 1997
G. plumbitincta Hreblay & Ronkay, 1997
G. plumbeata Hreblay & Ronkay, 1997
G. imitans Hreblay & Ronkay, 1997
G. fortis (Butler, 1878)
 koreago Bryk, 1949
G. basalipunctata Graeser, (1889)1888
 intermixta Swinhoe, 1891
G. flavago ([Denis & Schiffermüller], 1775)
 ochracea Hübner, 1786
 lappae Donovan, 1801
 ochraceago Haworth, 1809
 cinerea Goossens, 1880
G. golestanensis sp. n.
G. osmana Hacker & Kuhna, 1986
G. xanthenes Germar, [1842]
 G. xanthenes ifranae (Boursin, 1963)
G. franciscae (Turati, 1913)
G. moesiaca Herrich-Schäffer, 1849
 perlucida Warren, 1911
 G. moesiaca euxinia Hacker, 1986
G. hethitica Hacker, Kuhna & Gross, 1986
G. puengeleri (Turati, 1909)
 puengeleri Hampson, 1910
 turatii Constantini, 1913
G. borelii Pierret, 1837
 leucographa (Borkhausen, 1792, auctorum)
 lunata Freyer, [1838]
 illunata Guenée, 1852
 fiorii Berio, 1963
 galassii Berio, 1963
G. rungsi (Boursin, 1963)
 G. rungsi gigantea (Boursin, 1963)

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