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Supplement to the revision of the genus *Hadena* Schrank, 1802 by Hacker (1993, 1996) (Noctuoidea: Noctuidae, Hadeninae) (plates 20-22)

Hermann H. Hacker and Peter Gyulai

Abstract: Additions and supplementary notes to the revision of the genus *Hadena* Schrank, 1802 (including some species in closely related genera) published by the present senior author in 1993, 1996 are presented. Six species and six subspecies are described as new to science:

Hadena (*Hadena*) *phaeoscripta* Gyulai & Hacker **spec. nov.**
Hadena (*Hadena*) *drangiana* Gyulai & Hacker **spec. nov.**
Hadena (*Hadena*) *mediana* Gyulai & Hacker **spec. nov.**
Hadena (*Hadena*) *subflavescens* Gyulai & Hacker **spec. nov.**
Hadena (*Hadena*) *pyrrhotatos* Gyulai & Hacker **spec. nov.**
Hadena (*Pinkericola*) *haczi* Gyulai & Hacker **spec. nov.**

Hadena (*Hadena*) *compta parthica* Gyulai & Hacker **subspec. nov.**
Hadena (*Hadena*) *chrysographa ferruginata* Gyulai & Hacker **subspec. nov.**
Hadena (*Hadena*) *karagaia longiqua* Gyulai & Hacker **subspec. nov.**
Hadena (*Hadena*) *pseudoclara levantina* Gyulai & Hacker **subspec. nov.**
Hadena (*Hadena*) *praetermissa remotina* Gyulai & Hacker **subspec. nov.**
Enterpia picturata persa Gyulai & Hacker **subspec. nov.**

A further 23 uncommon taxa are listed with new faunistic data which amplify the knowledge of their distribution.

Introduction

The genus *Hadena* Schrank, 1923 (type species: *Hadena bicruris* Hufnagel, 1766) (including some species in closely related genera) was revised by Hacker (1992, 1996) placed in and seven subgenera:

1. *Hadena* Schrank, 1802
2. *Anepia* Hampson, 1918
3. *Maschukia* Hacker,1996
4. *Klappericola* Hacker,1996
5. *Pinkericola* Hacker, 1987
6. *Pronotestra* Hampson, 1905
7. *Sinotibetana* Hacker,1996

A total of 134 *Hadena* species was recognized, including the descriptions of 45 new species and 45 new subspecies. Addenda and corrigenda to this comprehensive article were made by Hacker (1999a), with the description of *Hadena quotuma* Hacker & Gyulai, 1999 and a numerous faunistic additions. One other additional taxon was described from the high mountains of Yemen: *Hadena albimacula fantastica* Hacker & Fibiger, 1999 (Hacker, 1999b), a subspecies with exceptional distribution caused by the shift of the temperate zones during and between the Ice Ages.

Later in 2002, the results of the revisional work were repeated in the Noctuidae Europaeae series (vol. 4) (Hacker et al., 2002) and confirmed for the European species, expanded by the description of yet another new species *H. azorica* Meyer & Fibiger.

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More new taxa were described by Volynkin (2012) from the Russian Altai: *Hadena telengita* Volynkin, 2012, and by Lödl et al. (2012) from North Pakistan: *Hadena hackeri* Gaal-Haszler, Lödl, Ronkay, Ronkay & Varga, 2012 and *Hadena christophi kasyi* Gaal-Haszler, Lödl, Ronkay, Ronkay & Varga, 2012 from Austria.

Important contributions to knowledge of the distribution *Hadena* species were published in particular by Ebert & Hacker (2002) (Iran), Hacker (2001) (Levante), Hacker et al. (2002) (Europe), Lehmann & Bergmann (2005) (Kyrgyzstan), Kravchenko et al. (2007) (Israel), Poltavsky et al. (2010) (Northern Caucasus and adjacent territories of the south of Russia) and Volynkin (2012) (Russian Altai).

The Nearctic members of the genus *Hadena* Schrank, 1802 were revised by Troubridge & Grabo (2002). They gave a total of 15 species, among which *Hadena caelestis*, *H. gabrieli*, *H. paulula*, *H. lafontainei*, *H. siskiyou* and *H. maccabei* were described as new. *Hadena jola* (Barnes and Benjamin, 1924) was synonymised with *Hadena ectrapela* (Smith, 1898). Two taxa recently placed in *Hadena* were transferred to other genera: *mimula* Grote, 1883 to the genus *Lacinipolia* McDunnough, 1937; *sutrina* Grote, 1881 to the genus *Hada* Billberg, 1920. They designated a neotype for *Mamestra ectypa* Morrison, 1875 and provided an identfication key and illustrations of adults as well as male and female genitalia. The Nearctic *Hadena* species were actually included in the revision by Hacker (1996), but not dealt with really conclusively. Above all, the types specimens remained unanalized.

The interaction between oviposition by *Hadena* species and the pollination of flowers of particular *Silene* species was analysed by Dötterl (PHD-Project at the Department of Plant Systematic, University of Bayreuth, Germany), including a study of the chain of signals that leads to the species specific flower recognition by the moths. Dötterl examined especially the type species of *Hadena* Schank, *H. bicruris* Hufnagel, 1766 and its interaction with *Silene latifolia*.

Now seventeen years after the revision, a further 12 hitherto undescribed species and subspecies have accumulated and are described below. Supplemented are also interesting faunistic data of a larger number of uncommon species, among them many new records for the fauna of various countries and regions.
We have added a new taxonomical checklist to bring the revision up to date. The full references for all taxa known at that time can be found in Hacker (1993, 1996).

The following collection abbreviations are used in the text:

BMNH	British Museum (National History)/London
HNHM	Hungarian Natural History Museum/Budapest
LSNK	Staatliches Museum für Naturkunde/ Karlsruhe
MCSNG	Museo Civico di Storia Naturale - Giacomo Doria/ Genua
MNHN	Muséum National d'Histoire Naturelle/Paris
NHMU	Museum für Naturkunde der Humboldt-Universität/Berlin
NHMW	Naturhistorisches Museum/ Wien
RM	Swedish Museum of Natural History/Stockholm
ZMUK	Zoological Museum, University of Copenhagen/Kopenhagen
ZSM	Zoologische Staatssammlung/München
♂	male
♀	female
gen.prep.	genitalia-preparation

Locality and collecting data are presented as given on the specimen labels in quotation marks.

The dissections of male and female genitalia were made using the standard procedure for Noctuoidea, outlined by Fibiger (1997). The nomenclature of internal structures, mainly parts of the male and female genitalia, follows the series Noctuidae Europaeae, Hacker (1992, 1996, 2004) and Hacker et al. (2008), in which an attempt is made ot standardise the definition of the processes of the inner surface of the valva of the male genitalia (clasper, harpe, digitus and ampulla) which varies in different publications, especially between those of the New and the Old World.

DNA barcodes were checked for most of the species of this publication. In general, results of DNA sequencing become less clear in specimens older than 10 to 20 years. Comparable barcodes of most of the taxa listed and evaluated by Hacker (1992, 1996, 1999) are non-existent, therefore evaluable and appropriate data are lacking for comparision. The arrangement of the genera, subgenera and species follows Hacker (1996).

Overview of all taxa and their systematic position

1. Subgenus *Hadena* Schrank, 1802

bicruris-group

H. (*H.*) ***bicruris*** (Hufnagel, 1766)
H. (*H.*) ***capsincola*** ([Denis & Schiffermüller], 1775)
H. (*H.*) ***nigricata*** Pinker, 1969
H. (*H.*) ***atalantica*** (Hampson, 1905)
H. (*H.*) ***karsholti*** Hacker, 1996
H. (*H.*) ***azorica*** Meyer & Fibiger, 2002
H. (*H.*) ***zaprjagaevi*** Hacker et Nekrasov, 1996
H. (*H.*) ***quotuma*** Hacker & Gyulai, 1999

magnolii-group

H. (*H.*) ***magnolii magnolii*** (Boisduval, 1829)
H. (*H.*) ***magnolii fabiani*** Hacker, 1996

rjabovi-group

H. (*H.*) ***bactriana*** Hacker, 1996
H. (*H.*) ***bactriana distalis*** Hacker, 1996
H. (*H.*) ***rjabovi*** (Idrisov, 1961)
H. (*H.*) ***niveifera*** (Hampson, 1906)

compta-group

H. (*H.*) ***compta compta*** ([Denis & Schiffermüller], 1775)
H. (*H.*) ***compta persica*** (Schwingenschuss,1939)
H. (*H.*) ***compta armeriae*** (Guenée,1852)
H. (*H.*) ***compta parthica*** Gyulai & Hacker **subspec. nov.**
H. (*H.*) ***compta kashgaia*** (Brandt,1947)
H. (*H.*) ***compta almoravida*** Hacker, 1996
H. (*H.*) ***afghana*** (Brandt,1947)
H. (*H.*) ***schwingenschussi*** (Draudt, 1934)
H. (*H.*) ***sogdiana*** Hacker, 1996
H. (*H.*) ***cailinita*** (Draudt,1934)
H. (*H.*) ***phaeoscripta*** Gyulai & Hacker **spec. nov.**
H. (*H.*) ***thomasi*** Hacker, 1996
H. (*H.*) ***thomasi nuristana*** Hacker, 1996
H. (*H.*) ***naumanni*** Hacker, 1996
H. (*H.*) ***drangiana*** Gyulai & Hacker **spec. nov.**
H. (*H.*) ***gandhara*** Hacker, 1996
H. (*H.*) ***weigerti*** Hacker, 1996

confusa-group

H. (*H.*) ***confusa confusa*** (Hufnagel, 1766)
H. (*H.*) ***confusa herczigi*** Hacker, 1996
H. (*H.*) ***confusa iliensis*** Hacker, 1996
H. (*H.*) ***badakhshana*** Hacker, 1996
H. (*H.*) ***pseudodealbata*** Hacker,1988
H. (*H.*) ***variolata variolata*** (Smith, 1888) (nearctic) cf. Troubridge & Crabo (2002)
H. (*H.*) ***variolata dealbata*** (Staudinger,1892)
H. (*H.*) ***variolata kogurei*** Sugi, 1958
H. (*H.*) ***perornata perornata*** (Draudt, 1950)
H. (*H.*) ***perornata gemella*** (Draudt, 1950

magnifica -group

H. (*H.*) ***magnifica*** Hacker Hacker, 1996

humilis-group

H. (*H.*) ***humilis*** (Christoph, 1893)
H. (*H.*) ***adriana*** (Schawerda,1921)
H. (*H.*) ***gueneei gueneei*** (Staudinger, 1901)
H. (*H.*) ***gueneei hostilis*** (Püngeler, 1906)

H. (*H.*) *cavalla* Pinker,1980
H. (*H.*) *mediana* Gyulai & Hacker **spec. nov.**
H. (*H.*) *defreinai defreinai* Hacker, Kuhna et Gross,1986
H. (*H.*) *defreinai thoenyi* Hacker, 1996
H. (*H.*) *secreta* Hacker, 1996
H. (*H.*) *albimacula albimacula* (Borkhausen, 1792)
H. (*H.*) *albimacula excelsa* Hacker, 1996
H. (*H.*) *albimacula nivalis* Hacker, 1996
H. (*H.*) *albimacula fantastica* Hacker & Fibiger, 1999

vulcanica/ melanochroa-group

H. (*H.*) *vulcanica vulcanica* (Turati, 1907)
H. (*H.*) *vulcanica exspectata* Hacker, 1996
H. (*H.*) *vulcanica urumovi* (Drenowski, 1931)
H. (*H.*) *vulcanica clarescens* (Draudt,1936)
H. (*H.*) *germaniciae* Boursin,1959
H (*H.*) *albertii* Hacker, 1996
H. (*H.*) *melanochroa* (Staudinger,1892)
H. (*H.*) *chrysographa chrysographa* Hacker, 1996
H. (*H.*) *chrysographa ferruginata* Gyulai & Hacker **subspec. nov.**
H. (*H.*) *finitima* Hacker, 1996
H. (*H.*) *nobilis* Hacker, 1996
H. (*H.*) *nobilis intermediana* Hacker, 1996
H. (*H.*) *nobilis brandti* Hacker, 1996
H. (*H.*) *kurajica* Hacker, 1996
H. (*H.*) *gyulaii* Hacker, 1996
H. (*H.*) *telengita* Volynkin, 2012
H. (*H.*) *dsungarica* Hacker, 1996
H. (*H.*) *intensa* Boursin, 1962
H. (*H.*) *aureomixta aureomixta* (Draudt,1934)
H. (*H.*) *aureomixta karamixta* Hacker, 1996
H. (*H.*) *aureomixta belucha* Hacker, 1996
H. (*H.*) *duercki* (Draudt, 1934)
H. (*H.*) *rolleti* Lajonquière, 1969
H. (*H.*) *salmonea* (Draudt, 1934)
H. (*H.*) *karagaia karagaia* Bang-Haas,1912)
H. (*H.*) *karagaia extincta* Hacker, 1996
H. (*H.*) *karagaia kautti* Hacker, 1996
H. (*H.*) *karagaia longiqua* Gyulai & Hacker **subspec. nov.**
H (*H.*) *Hreblayi* Hacker, 1996
H. (*H.*) *subflavescens* Gyulai & Hacker **spec. nov.**
H. (*H.*) *canescens* (Brandt, 1947)
H. (*H.*) *canescens pura* Hacker, 1996
H. (*H.*) *canescens hunza* Hacker, 1996
H. (*H.*) *vartianica* Hacker, 1996
H. (*H.*) *tristis tristis* (Draudt,1934)
H. (*H.*) *tristis magna* Hacker, 1996
H. (*H.*) *archaica* Hacker, 1996
H. (*H.*) *perpetua* Hacker, 1996

luteocincta-group

H. (*H.*) *luteocincta luteocincta* (Rambur, 1834)
H. (*H.*) *luteocincta maroccana* Hacker, 1996
H. (*H.*) *thecaphaga thecaphaga* (Draudt,1937)
H. (*H.*) *thecaphaga cyanata* Hacker, 1996
H. (*H.*) *ignicola* (Warren,1910)
H. (*H.*) *difficilis* Hacker, 1996
H. (*H.*) *difficilis maracandica* Hacker, 1996
H. (*H.*) *lucida lucida* (Brandt,1938)
H. (*H.*) *lucida hakkariensis* Hacker, 1996
H. (*H.*) *wehrlii wehrlii* (Draudt, 1934)
H. (*H.*) *wehrlii frequens* Hacker, 1996
H. (*H.*) *orihuela* Hacker, 1996
H. (*H.*) *persimilis* Hacker, 1996
H. (*H.*) *persimilis balcanica* Hacker, 1996

H. (*H.*) *femina* Hacker, 1996
H. (*H.*) *femina marmorea* Hacker, 1996
H. (*H.*) *hissarica* Hacker, 1996

staudingeri-group

H. (*H.*) *staudingeri* (F. Wagner, 1931)
H. (*H.*) *elbursica* Hacker, 1996
H. (*H.*) *danilewskyi* Hacker, 1996
H. (*H.*) *nebulosa* Hacker, 1996
H. (*H.*) *ronkayorum* Hacker, 1996
H. (*H.*) *pfeifferi pfeifferi* (Draudt, 1934)
H. (*H.*) *pfeifferi ponticola* Hacker, 1996
H. (*H.*) *draudti draudti* (Brandt,1938)
H. (*H.*) *draudti extera* Hacker, 1996
H. (*H.*) *mesolampra* (Brandt,1938)

filograna-group

H. (*H.*) *filograna filograna* (Esper, [1788])
H. (*H.*) *filograna consparcata* (Freyer, 1844)
H. (*H.*) *filograna rungsi* (Lajonquiére, 1967)
H. (*H.*) *consparcatoides* (Schawerda, 1928)

caesia-group

H. (*H.*) *caesia caesia* ([Denis & Schiffermüller], 1775)
H. (*H.*) *caesia ostrogovichi* Hacker, 1989
H. (*H.*) *caesia bulgarica* Boursin,1959
H. (*H.*) *caesia xanthophoba* (Schawerda,1922)
H. (*H.*) *caesia frigida* (Zetterstedt, [1839])
H. (*H.*) *caesia grisea* (Hospital, 1948)
H. (*H.*) *caesia castiliana* (Reisser, 1935)
H. (*H.*) *caesia revolcadorensis* Calle, 1982
H. (*H.*) *caesia mananii* (Gregson, 1866)
H. (*H.*) *caesia abruzzensis* (Draudt, 1934)
H. (*H.*) *caesia euxinia* Hacker, 1996
H. (*H.*) *vanensis* Hacker, 1996

clara-group

H. (*H.*) *clara clara* (Staudinger,1901)
H. (*H.*) *clara macedonica* Boursin,1959
H. (*H.*) *clara gladys* (Wiltshire,1947)
H. (*H.*) *clara weissi* (Draudt, 1934)
H. (*H.*) *clara alpina* Boursin, 1959
H. (*H.*) *clara dujardini* Boursin, 1959
H. (*H.*) *clara nevadensis* (Draudt, 1934)
H. (*H.*) *clara atlantis* (Draudt, 1934)
H. (*H.*) *cimelia* (Brandt, 1938)
H. (*H.*) *pyrrhotatos* Gyulai & Hacker **spec. nov.**
H. (*H.*) *pseudoclara pseudoclara* Hacker, 1996
H. (*H.*) *pseudoclara oleagina* Hacker, 1996
H. (*H.*) *pseudoclara cimeloides* Hacker, 1996
H. (*H.*) *pseudoclara levantina* Gyulai & Hacker **subspec. nov.**
H. (*H.*) *pumicosa* Hacker, 1996
H. (*H.*) *hyrcanoides* Hacker, 1996
H. (*H.*) *subhyrcana* Hacker, 1996
H. (*H.*) *drenowskii drenowskii* (Rebel, 1930)
H. (*H.*) *drenowskii sultana* Hacker, 1996
H. (*H.*) *drenowskii kendevani* (Schwingenschuss,1937)
H. (*H.*) *drenowskii khorassana* (Brandt, 1947)
H. (*H.*) *drenowskii lapidea* Kljutschko et Hacker, 1996

montana-group

H. (*H.*) *montana montana* (Brandt,1941)
H. (*H.*) *montana kuruschensis* Boursin,1959
H. (*H.*) *purpurea* Hacker, 1996

H. (*H.*) *purpurea olivascens* Hacker, 1996
H. (*H.*) *fibigeri* Hacker, 1996
H. (*H.*) *praetermissa praetermissa* Hacker, 1996
H. (*H.*) *praetermissa remotina* Gyulai & Hacker **subspec. nov.**
H. (*H.*) *pseudohyrcana* de Freina & Hacker, 1985
H. (*H.*) *virescens* Hacker, 1996

wiltshirei-group

H. (*H.*) *wiltshirei wiltshirei* (Brandt, 1947)
H. (*H.*) *wiltshirei peregovitsi* Hacker, 1996
H. (*H.*) *nekrasovi* Hacker, 1996
H. (*H.*) *nuratina* Hacker et Kljutschko, 1996

2. Subgenus *Anepia* Hampson, 1918

H. (*A.*) *irregularis* (Hufnagel, 1766)
H. (*A.*) *aberrans* (Eversmann, 1856)
H. (*A.*) *dianthoecioides* (Boursin,1940)
H. (*A.*) *syriaca syriaca* (Osthelder,1933)
H. (*A.*) *syriaca podolica* (Kremky,1937)
H. (*A.*) *syriaca imitaria* (Brandt,1947)
H. (*A.*) *syriaca petroffi* (Wiltshire,1948)
H. (*A.*) *syriaca quetta* Hacker, 1996
H. (*A.*) *musculina* (Staudinger,1892)
H. (*A.*) *wolfi* Hacker, 1992
H. (*A.*) *neglecta* Hacker, 1992
H. (*A.*) *esperi* Hacker, 1992
H. (*A.*) *ruetimeyeri* Boursin, 1951
H. (*A.*) *corrupta corrupta* (Herz, 1898)
H. (*A.*) *corrupta splendida* (Draudt, 1950)
H. (*A.*) *perplexa perplexa* ([Denis & Schiffermüller], 1775)
H. (*A.*) *perplexa paghmana* (Brandt, 1947)
H. (*A.*) *plantei* Hacker, 1992
H. (*A.*) *hackeri* Gaal-Haszler, Lödl, Ronkay, Ronkay & Varga, 2012
H. (*A.*) *strouhali strouhali* Boursin,1955
H. (*A.*) *strouhali oxygrapha* Hacker & L. Ronkay, 1992
H. (*A.*) *strouhali permixta* Hacker, 1992
H. (*A.*) *christophi christophi* (Möschler, 1862)
H. (*A.*) *christophi kasyi* Gaal-Haszler, Lödl, Ronkay, Ronkay & Varga, 2012
H. (*A.*) *nevadae* (Draudt, 1933)
H. (*A.*) *silenes silenes* (Hübner, [1822])
H. (*A.*) *silenes variegata* (F. Wagner,1929)
H. (*A.*) *silenes mesopotamica* Hacker, 1992
H. (*A.*) *silenes csorbai* Hacker, 1996
H. (*A.*) *sancta sancta* (Staudinger, 1859)
H. (*A.*) *sancta trisagittata* (Rothschild, 1914)
H. (*A.*) *sancta protai* Berio, 1978
H. (*A.*) *sancta turca* Koçak, 1991
H. (*A.*) *sancta cypriaca* Berio,1978
H. (*A.*) *sancta atrifusa* Wiltshire, 1986
H. (*A.*) *avempacei* (Tams,1925)
H. (*A.*) *eximia eximia* (Staudinger, 1896)
H. (*A.*) *eximia gloriosa* (Draudt, 1950)
H. (*A.*) *paropamisos* Hacker, 1992
H. (*A.*) *capsularis* (Guenée, 1852) (nearctic)
H. (*A.*) *ectypa* (Morrison, 1875) (nearctic)
H. (*A.*) *minorata* (Smith, 1888) (nearctic)
H. (*A.*) *glaciata* (Grote, 1882) (nearctic)
H. (*A.*) *circumvadis* (Smith, 1902) (nearctic)
H. (*A.*) *caelestis* Troubridge & Crabo, 2002 (nearctic) cf. Troubridge & Crabo (2002)
H. (*A.*) *gabrieli* Troubridge & Crabo, 2002 (nearctic)
H. (*A.*) *ectrapela* (Smith, 1898) (= *jola* Barnes & Benjamin, 1924) (nearctic)
H. (*A.*) *amabilis* (Barnes & McDunnough, 1918) (nearctic)
H. (*A.*) *plumasata* (Buckett & Bauer, 1967) (nearctic)
H. (*A.*) *maccabei*Troubridge & Crabo, 2002 (nearctic)
H. (*A.*) *paulula*Troubridge & Crabo, 2002 (nearctic)

H. (*A.*) *siskiyou* Troubridge & Crabo, 2002 (nearctic)

3. Subgenus *Maschukia* Hacker, 1996

H. (*M.*) *pumila pumila* (Staudinger,1879)
H. (*M.*) *pumila phoenica* Hacker, 1996
H. (*M.*) *scythia* Kljutschko et Hacker, 1996
H. (*M.*) *lypra lypra* (Püngeler,1904)
H. (*M.*) *lypra hajara* Hacker et Legrain, 1996
H. (*M.*) *lypra arachosia* Hacker, 1996

4. Subgenus *Klappericola* Hacker, 1996

H. (*K.*) *chrysocyanea* Boursin,1961
H. (*K.*) *heringi* (Draudt, 1934)
H. (*K.*) *klapperichi* Boursin,1960

5. Subgenus *Pinkericola* Hacker, 1987

H. (*P.*) *tephroleuca tephroleuca* (Boisduval, 1833)
H. (*P.*) *tephroleuca reisseri* (Draudt, 1934)
H. (*P.*) *tephroleuca asiatica* (F. Wagner,1931)
H. (*P.*) *inexpectata inexpectata* Varga,1979
H. (*P.*) *inexpectata kurdistanica* Hacker, 1996
H. (*P.*) *inexpectata podlussanyi* Hacker, 1996
H. (*P.*) *pygmaea* Boursin,1962
H. (*P.*) *tephrochrysea* (Draudt, 1934)
H. (*P.*) *macilenta* (Brandt,1947)
H. (*P.*) *haczi* Gyulai & Hacker **spec. nov.**
H. (*P.*) *vulpecula* (Brandt,1938)
H. (*P.*) *cappadocia* Hacker,1987
H. (*P.*) *lafontainei* Troubridge & Crabo, 2002 (nearctic) cf. Troubridge & Crabo (2002)

6. Subgenus *Pronotestra* Hampson,1905

H. (*P.*) *silenides* (Staudinger,1895)

7. Subgenus *Sinotibetana* Hacker, 1996

H. (*S.*) *persparcata* (Draudt, 1950)

Systematic part

bicruris species group

Hadena (*Hadena*) *zaprjagaevi* Hacker & Nekrasov, 1996

Material:

Tadjikistan 2 ♂♂, "Gissar Mts., Ansob pass, 3300m, 3.vii.2000 (leg. Perepechaenko)" (coll. P. Gyulai); 1 ♂, "Gissar Mts., Ansob pass, 3300m, 4.vii.2000 (gen.prep. P. Gyulai 1923♂) (leg. O. Pak)" (coll. P. Gyulai); 1 ♂, 1 ♀, "2800 m, Gissar Mts. Gorge Majchura, Charamkul, 28.vi.1968 (leg. Stshetkin)" (coll. P. Gyulai);

Note. *H. zaprjagaevi* was described from a single male from Tadjikistan, Darwaz, Chabu-Rabot, 3400m and seems to be a xerotherm element of high mountain regions above the treeline, possibly with a small distribution characterised by the localities and areas given.

rjabovi species group

Hadena (*Hadena*) *bactriana distalis* Hacker, 1996 (pl. 20, fig. 1)

Material:

Iran 1 ♂, 5 ♀♀, "Prov. Yazd, Sanij, 2650m, Kuhha-ye-Qohrud, Shir Kuh, N 31°34.370´, E 54°01.091', 14. vi. 2007" (gen. prep. P. Gyulai 2244♂, 2245♀), (leg. T. Hácz), (coll. P. Gyulai); 1 ♂, with the same data, but 15.vi.2007 (coll. P. Gyulai); 1 ♂, "Prov. Fars, S-Zagros; 5 km NE of Saidatshahr, 9 -10.vi.2005 (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai);

Note. *H.* (*H.*) *bactriana* Hacker, 1996 was described from Turkmenistan (Aschabad) and occurs further on in

NE Iran (Khorassan), and thence eastward to Afghanistan and northward to Usbekistan, Kyrgyzstan, Tadjikistan and SW China (Hacker, 1996; Lehmann & Bergmann, 2005). The only subspecies, *distalis* Hacker, 1996 was described from a single female from "SW Iran, 160 km n Shiraz, 1900m, Didegan", and inhabits high mountain chains in Central and Southwest Iran. (Figs 1, 2).

compta species group

Hadena (***Hadena***) ***compta parthica*** Gyulai & Hacker **subspec. nov.** (pl. 20, fig. 2)

Type material

Holotype: ♀, "Iran, Prov. Khorassan, Kopet-dagh Mts., 40 km N of Qucan, 2000m, 4.-5.vi.2010 (gen.prep. P. Gyulai 3508♀) (leg. B. Benedek & T. Hácz)" (coll. P. Gyulai);

Paratypes:

Iran 1 ♀, "Prov. Khorassan, Kopet-dagh Mts.,80 km NE of Qucan, 2000m, 14.-15.vi.2000 (leg. B. Benedek)" (coll. P. Gyulai); 1 ♀, "Prov. Khorasan, W Kopet-dagh Mts.,Garmob 800m, 1.-2.vi.1999 (leg. Hácz & Kőszegi)" (coll. P. Gyulai); 1 ♂, "Prov. Khorasan, Kopet-dagh Mts.,Piscale 29.iv-1.v.2000 (leg. K. Gaskó)" (coll. P. Gyulai); 5 ♂♂, "Prov. Khorasan, Kopet-dagh Mts., 1200m, 50 km SW of Darregaz, 37°33'N, 58°38'E, 1.v.2001 leg. B. Benedek, G. Csorba)" (coll. P. Gyulai, G. Ronkay); 1 ♂, "Prov. Khorasan, Kopet-dagh Mts., 2200m, 70 km NE of Qucan, 37°27'N, 58°35'E, 12.v.2001 leg. B. Benedek, G. Csorba)" (coll. G. Ronkay); 2 ♂♂, "Prov. Khorasan Razavi, Binaloud Shirbad, 3235m, 36°16'N, 59°04,18'E, 12.vii.2012 leg. M.M. Rabieh)" (coll. P. Gyulai);

Turkmenistan all specimens listed by Hacker (1996: 82) under *H. compta armeriae* (Guenée, 1852) from Turkmenistan [Turkmenien] (all in HNHM, 2 coll. Speidel); 1 ♂, 4 ♀♀, "Kopet-dagh Mts., Dushak Mt., 37°54'N, 57°56'E, 1500m, 7-8.viii.1992 No. L 69 (leg. M. Hreblay, Gy. László, G. Ronkay" (coll. G. Ronkay); 2 ♂♂, "Kopet-dagh Mts., Dushak Mt., 37°57'N, 57°54'E, 2400m, 9-10.viii.1992 No. L 70 (leg. M. Hreblay, GY. László, G. Ronkay" (coll. G. Ronkay); 5 ♂♂, 3 ♀♀, "Kopet-dagh Mts., Dushak Mt., 37°57'N, 57°54'E, 2400m, 6-8.vii.1992 No. L 64 (leg. Gy. Fábián, B. Herczig, A. Podlussány, Z. Varga)" (coll. G. Ronkay); 1 ♂, "Kopet-dagh Mts., 800m, v. of Ipay-Kala, 15 km NW of Nochur, 38°15'N, 56°55'E, 26.vi.1992 No. L 58 (leg. Gy. Fábián, B. Herczig, A. Podlussány, Z. Varga)" (coll. G. Ronkay); 2 ♂♂, "Kopet-dagh Mts., 1600m, 6 km S of Ipay-Kala, 15 km NW of Nochur, 38°17'N, 57°07'E, 16-23.viii.1992 No. L 74 (leg. M. Hreblay, GY. László, G. Ronkay)" (coll. G. Ronkay ; 1♂, "Kopet-dagh Mts., 10 km S of Ai Dere, 600-1000m, 38°14'N, 56°46'E, 27.vi.1992 No. L 59 (leg. Gy. Fábián, B. Herczig, A. Podlussány, Z. Varga)" (coll. G. Ronkay); 1 ♂, "Kopet-dagh Mts., Sayvana v.,1000m, cca. 5 km SW of Sayvana, 38°17'N, 56°50'E, 28.vi.1992 No. L 60 (leg. Gy. Fábián, B. Herczig, A. Podlussány, Z. Varga)" (coll. G. Ronkay).

(gen.prep. P. Gyulai 3587♂, 3588♀, 3603♀)

Description

H. compta ([Denis & Schiffermüller], 1775) is one of the most common and widespread species of the genus und occurs across the Palaearctic from Spain and South England in the West to the Pacific Ocean, Japan and the Kuriles in the East (distribution map cf. Hacker, 1996: 83). Several subspecies have been described, among them *armeriae* (Guenée, 1852) from South Russia, *persica* (Schwingenschuss, 1939) from the North Iranian Elburs Mountains and *kashgaia* (Brandt, 1947) from South and Southwest Iran (Zagros Mountains).

The subspecies *parthica* described here was already figured by Hacker (1996, pl. B, fig. 18 - from Turkmenistan, Kopet Dagh). It is characterised by the following subspecific attributes:

- Size relatively large compared with that of the other subspecies;
- Apex of the forewing more pointed;
- Body and forewing upperside dark blackish; pale and dark beige area of the median field usually narrow, or in females even reduced to the centre. Reniform and orbicular stigmata of the same colour; the paler crosslines and other elements of the typical *H. compta* pattern are more faint;
- Hindwings dark brown-grey with paler base.

Male genitalia (fig. 4)

Genital capsule matching that of the other subspecies (cf. Hacker, 1996, figs 19-26). Terminal cornutus of the vesica slender, elongated, the vesica itself also slender and narrow (cf. Hacker, 1996, figs 26 c-h).

Female genitalia (fig. 3)

Remarkable the narrow posterior part of the bursa in comparison with that of the other subspecies (cf. Hacker, 1996, figs 19-26) long and relatively strongly sclerotised throughout; also the usually weakly sclerotised short ductus between antrum and posterior part of the bursa. The two signa of the bursa copulatrix are longer than in the other subspecies.

Distribution

The subspecies is restricted to the Kopet Dagh Mountain system in South Turkmenistan and North Iran and probably also the adjacent high mountain massifs in North Iran, such as the Binaloud Mts. and Ala Dagh, Khorasan.

Hadena (*Hadena*) *phaeoscripta* Gyulai & Hacker **spec. nov.** (pl. 20, fig. 3)

Type material

Holotype: ♀, "Iran, Prov. Yazd, Shirkuh Mts., 6 km NW of Taft-Allabad, 2200m, 10.-11.vi.2005 (gen.prep. H. Hacker 21858♀) (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai);

Paratype: 1 ♀, with the same data, (coll. P. Gyulai).

Locus typicus: Iran, Prov. Yazd, Shirkuh Mts., 6 km NW of Taft-Allabad, 2200m.

Derivatio nominis: The name of the species is derived from the Greek *phaeo=dusky* and the PPP of the Latin *scribere = to write, to paint.*

Description

Habitus and female genitalia of the type specimen do not match any of the known species. It is most like the Central Asian *H. cailinita*, but the characters of the female genitalia are too different for it to be a subspecies of that. It is also reminiscent of *H. drangiana*, decribed above from the Kuh-e-Khabir mountain range. Wingspan 26.0 mm. Antennae of female very shortly ciliate. Labial palps short, upturned.

Pattern and coloration similar to *H. cailinita* and less so to *Hadena magnifica* Hacker, 1996; generally more blurred and less rich in contrasts. Median field and stigmata also murky and less strongly contrasting as especially *H. cailinita*.

Male genitalia

Unknown.

Female genitalia (fig. 9)

Altogether strikingly long, especially the posterior part of the bursa copulatrix. Ovipositor comparable with that of *H. cailinita*, both pairs of apophyses long, slender. Bursa copulatrix anteriorly normal, membranous and with one signum in central position; posterior part heavily sclerotised and with a flat, but large and long appendix with strong sclerotisation. Ductus bursae constricted, antrum and ostium bursae rather narrow.

Distribution

At present only known from the type locality, the Shirkuh Mts., 6 km NW of Taft-Allabad, 2200m, in the Iranian Province Yazd.

The habitat is an *Artemisia* steppe, rich in *Silene* and *Iris* spp., in an isolated high mountain, surrounded by desert or semidesert. It is endangered by a newly opened mine.

Hadena (*Hadena*) *drangiana* Gyulai & Hacker **spec. nov.** (pl. 20, fig. 4)

Type material

Holotype: ♀, "Iran, Prov. Kerman, Kuh-e-Khabir, 2800m, 5.vii.2001 (gen.prep. P. Gyulai 1527♀) (leg. S. Nykl)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Kerman, Kuh-e-Khabir, 2800m.

Derivatio nominis: The name of the species refers to the ancient region Drangiana, a historical region of the Achaemenid and Old Persian Empire.

Description

Habitus similar to those of *H. naumanni* Hacker, 1996, described from NE Afghanistan (Badakhshan) and NW Pakistan (Garam Chasma) (figures cf. Hacker, 1996, pl. C, fig. 17; pl. D, fig. 1). Coloration generally slightly paler with whitish-beige tinge and relatively large pale area in the centre of the median field and in the

large reniform stigma: hence also reminiscent of the Central Asian *H. cailinita* (Draudt, 1934). Labial palps short and thick, upturned. Antenna of the female filiform. Wingspan 29.0 mm.

Male genitalia

Unknown.

Female genitalia (fig. 5)

Of the general type of the *H. compta* species group and most like those of *H. naumanni* (figures cf. Hacker, 1996, figs 37 a, b). Apophyses posteriores as long and strong as in *H. naumanni*; apophyses anteriores longer. Antrum asymmetrical with dissimilar length of the heavily sclerotised lateral sections. Ductus bursae very short, inconspicuous, sclerotised. Bursa copulatrix altogether longer and more slender than in *H. naumanni*, anterior bursa sac smaller, posterioir part long with a long and strong lateral sclerotised crest which covers the full length of the posterioir part of the bursa. Bursa copulatrix posteriorly sclerotised with exception of a small anterior area.

Distribution

At present only known from the type locality, a high mountain area in the Province Kerman in SE Iran. The Kuh-e-Khabir montain range is an elevation standing high above the surrounding area with small summit area, steep slopes and local relief of 3000 metres or more.

Hadena (*Hadena*) *sogdiana* Hacker, 1996 (pl. 20, fig. 5)

Material:

Kyrgyzstan 2 ♀♀, Transalai Mts., Nura, 3100m, 30.vii.1996 (gen.prep. P. Gyulai 1328♀) (leg. Lukhtanov) " (coll. P. Gyulai); 1 ♂, Alai Range, 3500m, Tengizbai river, vii 1997 (gen.prep. P. Gyulai 1597♂) (leg. S. Toropov) " (coll. P. Gyulai);

Note. The females from Nura are unusually large, but apart from the size, the genitalia agree with those of *H. sogdiana*. The species is widespread from North Afghanistan and North Pakistan in the south to North Kyrgyzstan (Issy kul) in the north.

***confusa* species group**

Hadena (*Hadena*) *pseudodealbata* Hacker, 1996 (pl. 20, figs 6, 7)

Material:

Ukraine 5 ♂♂, 1 ♀, Lugansk region, Provalskaya Steppe reserve, 3.vi.2002 (gen.prep. P. Gyulai 1730♂, 1748♂)" (coll. P. Gyulai);

Note. The specimens resemble the Central and Eastern Palaearctic *H. variolata dealbata* (Staudinger,1892). *H. pseudodealbata* was described from the Caucasian/Transcaucasian Region. The westernmost populations of *H. variolata* (Smith, 1888) were reported from the southern Ural Mountains (Nupponen & Fibiger, 2006). (Figs 6, 7).

***humilis* species group**

Hadena (*Hadena*) *adriana* (Schawerda,1921) (pl. 20, fig. 8)

Material:

Bulgaria "1 ♀, Black Sea, Coast E of Kavarna, Cape Kaliakra, 16.v.2010 (gen.prep. H. Hacker 21855♀) (leg. B. Benedek)" (coll. P. Gyulai); 1 ♀, Black Sea coast, Kaliakra, 15.vi.2012 (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai);

Note. Both of these females are unusually pale with whitish-ochreous ground colour on forewing and body hair. New record for the fauna of Bulgaria (cf. Beshkov, 2000; Hacker et al., 2002); already known from the Mediterranean Basin and Crimea. (Fig. 8).

Hadena (*Hadena*) *mediana* Gyulai & Hacker **spec. nov.** (pl. 20, figs 9, 10)

Type material

Holotype: ♂, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-11.vi.2007 (gen.prep. P. Gyulai 2247♂) (leg. T. Hácz)" (coll. P. Gyulai);

Paratypes: 4 ♂♂, 16 ♀♀, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-11. vi. 2007" (gen.prep. P. Gyulai 2228♀, 3504♀, 3375♂, 3575♂) (leg. T. Hácz)" (coll. P. Gyulai); 2 ♂♂, "Iran, Prov. Esfahan, Fereydun Shahr, 3000m, 15.-17.vi.2010 (leg. B. Benedek, T. Hácz)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m.

Derivatio nominis: The name of the species refers to the ancient Median Empire, one of the most important powers of the ancient Near East of the late 2nd millenium BCE to the 7th century BCE,

Description

H. mediana is the sister species of *H. cavalla* Pinker, 1980 which occurs further west in Asia Minor. It has closest resemblance to members of the *clara* species group such as *H. pseudoclara* Hacker, 1996 or *H. clara gladys* (Wiltshire, 1947), less to *H. cavalla*, which is much richer in contrast between the pale whitish-beige ground colour and the partly deep dark-grey basal and subterminal fields.

Wingspan 25 to 26 mm. Labial palps short, upturned. Antennae of the males shortly ciliate, those of the females filiform. Ground colour a pale slate-grey mixed with pale beige; median field, reniform and orbicular stigmata and subterminal fascia pale beige, the stigmata greyish filled. All markings and to some extent the whole pattern and coloration somewhat blurred. Hindwings of both sexes unicolorous greyish.

Male genitalia (fig. 12)

Valva and appendages similar to those of *H. cavalla*, posterior part of the apical process of the sacculus of the newly described species absent, but present in *H. cavalla* (cf. figures by Hacker, 1996, 70a-g). Aedeagus with the typical medial diverticulum, the strong single cornutus and the bundle of small cornuti comparable with those of *H. cavalla.*

Female genitalia (figs 10, 11)
Compared with those of *H. cavalla*, posterior and narrower part of the bursa copulatrix more strongly sclerotised, also the usually two long sclerotised crests and the short ductus bursae.

Distribution

H. mediana occurs in the high areas of 2700 to 3000 m. of the Fereydun Shahr in the Central Iranian Prov. Isfahan, far away from the geographic range of *H. cavalla* which is known from the eastern part of Asia Minor and the adjacent southern Transcaucasia (Hacker, 1996). In Iran *H. cavalla* has been recorded southernmost in the northern Zagros, Prov. Hamadan.

***vulcanica/ melanochroa* species group**

Hadena (*Hadena*) *chrysographa ferruginata* Gyulai & Hacker **subspec. nov.** (pl. 20, fig. 11)

Type material

Holotype: ♂, Iran, "Prov. Zanjan, Talas Mts., 5 km W of Sorkhed Dizaj, 2000m, 30.iv.2000 (gen.prep. P. Gyulai 1501♂) (leg. B. Benedek)" (coll. P. Gyulai);

Paratypes: 5 ♂♂, 1 ♀ "Iran, Prov. Zangan, Tarom v., 20 km NE of Zanjan, 2330m, 13-14. Vi. 2005 (leg. P. Gyulai & A. Garai), (coll. P. Gyulai); 2 ♂♂, "Prov. Zangan, Zangan, 1800-2000m, 6.-7./10.-11.vi.1999 (leg. T. Hácz & G. Kőszegi)", (coll. P. Gyulai); 1 ♂, "Prov. Zanjan, Sendan Mts., Zanjan, 2100 m, 16-18.vi.2007 (leg. T. Hácz & G. Kőszegi)" (coll. P. Gyulai); 1 ♂, "Prov. Zanjan, Sendan Mts, 30 km NE of Zanjan, N 36° 42', E 48° 45', 2200m, 17.v.2001 (leg. B. Benedek, G. Csorba)" (coll. P. Gyulai); 2 ♂♂, "Prov. Hamadan, 5 km SW of Avadj pass to Razan, 2500m, 1-2.vi.2005 (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai); 1 ♂, "Prov. Zanjan, Sendan Mts., 50 km NE of Zanjan, 2200m, 10.vi.2010 (leg. B. Benedek, T. Hácz)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Zanjan, Talas Mts., 5 km W of Sorkhed Dizaj, 2000m.

Derivatio nominis: The name of the subspecies is derived from the Latin *ferrugineus* = *dark, rusty*, which points to its general coloration.

Diagnosis and description

The nominotypical *H. chrysographa* Hacker, 1996 was described from the Eastern Turkish Prov. Agri (Sarican) and occurs according to Hacker (1996) in the easternmost part of Asia Minor, northern Azerbaijan and the adjacent Armenia. The subspecies *ferruginata* described here ranges further east in the Iranian provinces Zanjan and Hamadan and probably also elswhere around. Compared with the nominotypical coloration and pattern (cf. Hacker, 1996, pl. G, figs 16, 17) the general impression is more homogenous and markedly less chromatic, the stigmata are distinctly smaller and scarcely orange encircled; crosslines also more inconspicuous.

The characters of the male genitalia of the two subspecies more or less correspond, especially distinct at the distal process of the sacculus which is saddle-shaped and shifted towards the posterior tip of the sacculus - a specific feature of H. *chrysographa*. (Fig. 13).

Hadena (***Hadena***) ***finitima*** Hacker, 1996 (pl. 20, fig. 12)

Material:

Iran 1 ♂, "Qohrûd, 2700-2900m, 29°05'N, 57°33'E, 4.-6.VI.2005 (gen.prep. H. Hacker 21850♂) (leg. J. Klir)" (coll. P. Gyulai);

Note. *H. finitima* was described from lower and middle heights of the Kopet Dagh Mountains in Turkmenistan and until now was only recorded there. New species for the fauna of Iran. (Fig. 14).

Hadena* (*Hadena*) *gyulaii Hacker, 1996

Note. *Hadena telengita* Volynkin, 2012, descibed from the Russian Altai Republic (Ulagan district), resembles strongly *H. gyulaii*, described also from the Altai. The habitus of the holotypes of each (Hacker, 1996, pl. H, fig. 14; Volynkin, 2012, pl. 3, fig. 8) and the female genitalia (Hacker, 1996, figs 102 a, b; Volynkin, 2012, pl. 34, figs 1, 5) are more or less alike. The outside the posterior part of the bursa copulatrix of *H. telengita* seems to be larger and more heavily sclerotised., but more material, also of the other sex, is needed before a clear statement about the taxonomic status of *H. telengita* can be made.

Hadena* (*Hadena*) *dsungarica Hacker, 1996

Note. *H. dsungarica* was described from males from Zaijsan (Saisan)/Kazachstan. Volynkin (2012) reported the species from the Russian Altai Republic (Ulagan district) and figured the hitherto unknown female genitalia (pl. 34, fig. 4). *H. dsungarica* is closely related to *H.* (*H.*) *gyulaii* Hacker, 1996, described from Mongolia.

Hadena (***Hadena***) ***karagaia karagaia*** (Bang-Haas, 1912) (pl. 20, fig. 13)

Material:

Kazakhstan 1 ♂, "prov. Almaty, Altyn-Emel Mts., Altyn-Emel-Pass, 1700m, 44°11'N, 78°30'E, 23.vii.2009 (gen.prep. P. Gyulai 2350♂) (leg. B. Benedek)" (coll. P. Gyulai); 1 ♀, "prov. Almaty, Zailiskiy Alatau, 15 km S of Issyk, Issyk Lake, 1700m, 43°14'N, 77°28'E, 13.vii.2009 (gen.prep. P. Gyulai 2340♀) (leg. B. Benedek)" (coll. P. Gyulai); 1 ♂, "Karatau, 600m, 27.iv.2000 (gen.prep. P. Gyulai 1728♂) (leg. A. Saldaitis)" (coll. P. Gyulai); 1 ♀, "Keles river, 300m, 18.v.2000 (gen.prep. P. Gyulai 3507♀) (leg. A. Saldaitis)" (coll. P. Gyulai); 1 ♂, 1 ♀, "Tehymkent reg., Karatau Mts., Kentau, 600m, 13.v.1994 (gen.prep. P. Gyulai 1732♂, 1924♀) (leg. I. Pljutsh)" (coll. P. Gyulai);

Note. New for the fauna of Kazakhstan.

Hadena (***Hadena***) ***karagaia longiqua*** Gyulai & Hacker **subspec. nov.** (pl. 20, fig. 14)

Type material

Holotype: ♀, "Iran, Prov. Zanjan, Zangan, 1800-2000m, 6.-7./10.-11.vi.1999 (gen.prep. H. Hacker 21868♀) (leg. T. Hácz & G. Köszegi)" (coll. P. Gyulai);

Paratype: 1 ♂ "Iran, Prov. Kordestan, Mts. Zagros, Askaran, 1365m, 35º05.088'N, 46º54.237'E, 7-8.vi. 2008 (gen.prep. H. Hacker 21860♂) (leg. T. Hácz, K. Székely & K. Vig)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Zanjan, Zangan, 1800-2000m.

Derivatio nominis: The name of the subspecies is derived from the Latin *longiquus* = *remote, apart, off*, which indicates the geographic isolation of this taxon.

Description

H. karagaia (Bang-Haas, 1912) was hitherto interpreted as a Central Asian species with distribution from Afghanistan to North Pakistan and North India (in the South) and Kazakhstan and SW China (in the North). The populations reported here from the Central Iranian provinces Zanjan and Kordestan extend the known distribution markedly westward.

The subspecies *longiqua* described here shows the typical pattern of *H. karagaia*, but the coloration is even darker and more dusky and monotonous , somewhat reminiscent of *H. fibigeri* Hacker, 1996, which belongs to the *H. montana* species-group. The coloration of *H. karagaia* usually includes orange elements, especially at the bordure of the stigmata and orange tinges in the basal and subterminal fields. This orange tinge is lacking in the western subspecies.

Wingspan 25 to 26 mm, distinctly smaller than that of the eastern subspecies. Labial palps short, upturned. Antennae of male shortly ciliate, those of female filiform.

Male and genitalia (fig. 15)

More or less corresponding with those of the three described eastern subspecies.

Female genitalia (fig. 16)

Differentiated from those of the three described eastern subspecies in the following respects:
- Antrum more or less symmetrical, weakly sclerotised; that of *H. karagaia* heavily sclerotised and laterally of different length;
- Anterior bursa sac with three signa distributed around the surface, in *H. karagaia* one throughout.

Nevertheless the taxon *longiqua* is described in subspecific rank, because the characters of the widely distributed *H. karagaia* show some variation within its huge range.

Distribution

At present only known from the two Central Iranian localities.

Hadena (*Hadena*) *karagaia extincta* Hacker, 1996 (pl. 20, figs 15, 16)

Material:

Tadjikistan 1 ♂, "Pamir Mts., Rushan, 3400m, 11.-20.viii.1998 (gen.prep. P. Gyulai 1283♂) (leg. Gurko) " (coll. P. Gyulai);
Iran 1 ♂, "Prov. Golestan, East Elburs Mts., Khosyelaq, 2100m, 3.vi.2010 (gen.prep. P. Gyulai 2810♂) (leg. B. Benedek & T. Hácz) " (coll. P. Gyulai);

Note. The male genitalia of both specimens listed correspond more or less to those of nominotypical *H. karagaia*, although their habitus is very unlike that of this widespread species, originally described from Kyrgyzstan. Like the specimens from Central Iran, here described as *H. karagaia* subspecies *longiqua*, they look so different from nominotypical *H. karagaia* that their conspecificity is hard to imagine. described Lacking the females which sometimes show more useful genitalia characters, the final assignment of these specimens remains open; the assignment made here is tentative (cf. also under the following species). (Fig. 17).

Hadena (*Hadena*) *subflavescens* Gyulai & Hacker **spec. nov.** (pl. 20, fig. 17)

Type material

Holotype: ♀, "Uzbekistan, Kamasha district, Kashkardarya area, 2100m, Maidanak, 3.-10.vii.2005 (gen.prep. P. Gyulai 2243 ♀) (leg. Gurko)" (coll. P. Gyulai);

Paratypes: 1 ♀, "Uzbekistan, Kamasha district, Kashkardarya area, 2100m, Maidanak, 3.-10.vii.2005 (leg. Gurko)" (coll. P. Gyulai);

Locus typicus: Uzbekistan, Kamasha district, Kashkardarya area, 2100m, Maidanak.

Derivatio nominis: The name of the species is derived from the Latin *subflavus* = *yellowish, xanthous* and Latin adjectival suffix *escens* meaning “becoming”.

Description

H. subflavescens is clearly related to *H. karagaia* and *H. canescens* but differs conspicuously in habitus, which has some resemblance to very pale specimens of *H. purpurea* Hacker, 1996, which belongs to the *H. montana* species-group. The specimen from Iran, Golestan listed provisionally as *H. karagaia* subsp. *extincta* might be conspecific with *H. subflavescens*, which they resemble closely in habitus. However, the two sexes originate from different localities some distance apart, and certain the assignment of the male remains unanswered.

Wingspan of the holotype 31 mm. Labial palps extremely short, upturned. Antennae of female very shortly and finely ciliate.

Habitus most like that of *H. purpurea*, ground colour a mixture of pale beige, orange and grey-olive. Forewing pattern only slightly contrasting, especially median field scarcely paler than the ground colour. All crosslines present and relatively strongly zigzagged. Reniform and orbicular stigmata large. Hindwings of the ground colour, bases slightly paler.

Male genitalia

Unknown.

Female genitalia (fig. 18)

Apophyses posteriores very long. 8th segment extremely long, distinctly longer than in any other species of the *vulcanica/ melanochroa* species group, comparable with that of the *Hadena* species with extremely long ovipositor in the l*uteocincta* species group such as *H. persimilis* Hacker, 1996 and *H. femina* Hacker, 1996. Apophyses anteriores also long. Antrum broad, asymmetrical, anterior part even more strongly sclerotised than the posterior part. Bursa copulatrix also elongated, anterior part saccate, membranous and with a single signum in central position. Posterior 3/4 of the bursa copulatrix sclerotized, including two long and even more strongly sclerotised crests, anterior 1/4 membranous.

Distribution

At present only known from the type locality in Uzbekistan.

Hadena (*Hadena*) *canescens* (Brandt, 1947)

Material:

Tadjikistan 1 ♂, 2 ♀♀, W. Pamir, Rushan, 3400m, 10.-20.viii.1998 (gen.prep. P. Gyulai 3506♀) (leg. Gurko)” (coll. P. Gyulai);

Note. *H. canescens* occurs from Central, North Afghanistan and Tadjikistan (ssp. *canescens*) eastward to North Pakistan (ssp. *hunza* Hacker, 1996) and Northwest India (ssp. *pura* Hacker, 1996).

***luteocincta* species group**

Hadena (*Hadena*) *luteocincta luteocincta* (Rambur, 1834) (pl. 20, fig. 18)

Material:

Romania 1 ♂, Transylvania, Kököz, 16.vii.1984 (gen.prep. P. Gyulai 2227♂) (leg. I. Juhász)” (coll. P. Gyulai);

Note. The species is still unreported from Romania (Hacker, 1996; Rakosy, 1996; Rakosy et al., 2003). (Fig. 19).

Hadena (*Hadena*) *femina* Hacker, 1996 (pl. 21, fig. 1)

Material:

Iran 1 ♂, Prov. Hamadan, Kuh-e Alvand, 2800-3000m, 5.-6.viii.2001 (gen.prep. P. Gyulai 1488♂) (leg. S. Nykl) " (coll. P. Gyulai); 1 ♂, "Elburs Mts., 10 km S od Semsak, Deezin, 2000m, 11.vii.2000 (gen.prep. H. Hacker 21838♂) (leg. B. Benedek)" (coll. P. Gyulai); 1 ♂, "Khorassan, Kopet Dagh, Quchan, 2000m, 10.vii.2005 (gen.prep. H. Hacker 21839♂) (leg. T. Hácz, Petrány & Juhász)" (coll. P. Gyulai);

Note. To date only known from eastern Turkey, the Caucasian/Transcaucasian region, the Kopet Dagh in Turkmenistan and the Elburs Mountains in North Iran. (Fig. 20),

staudingeri species group

Hadena (*Hadena*) *draudti draudti* (Brandt,1938)

Material:

Iran 1 ♂, "Prov. Hamadan Avadj pass, 2400m, near Razan, 6-7.ix.2000, light trap (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai);

Hadena (*Hadena*) *mesolampra* (Brandt,1938)

Material:

Iran 3 ♂♂, 1 ♀, "Prov. Boyerahmad-va- Kohgiluyeh, SE- Zagros, 3000m, Kuh-e-Dena, n. Bijan pass, 6 km N of Sisakht; 13-14.vii.2010 (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai); 1 ♂, "Prov. Boyerahmad, Zagros Mts., Yasuj, 2500m, 7-8. vii. 2006 (leg.T. Hácz)" (coll. P. Gyulai); 1 ♀, "Prov. Buyer Ahmad, Zagros Mts., Yasug, 2400m, 28-30.vi.2005 (leg.T. Hácz, Juhász, Petrányi)" (coll. P. Gyulai); 1 ♂, "Prov. Fars, Zagros Mts., Komehr, 2900m, 29.vi.2005 (leg. Hácz, Juhász, Petrányi)" (coll. P. Gyulai); 1 ♂, "Prov. Fars, Zagros Mts., Küh-e-Barm Firuz, between Yasuj and Ardakan, 2500-3000m, 4-6.vii.2000 (leg. B. Benedek)" (coll. P. Gyulai);

clara species group

Hadena (*Hadena*) *pyrrhotatos* Gyulai & Hacker **spec. nov.** (pl. 21, figs 2, 3)

Type material

Holotype: ♂, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-11.vi.2007 (gen.prep. P. Gyulai 2233♂) (leg. T. Hácz) " (coll. P. Gyulai);

Paratypes: 3 ♂♂, 5 ♀♀, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-12.vi.2007 (gen.prep. P. Gyulai 2234♀) (leg. T. Hácz) " (coll. P. Gyulai);); 1 ♂, 2 ♀♀, "Iran, Prov. Esfahan, Fereydun Shahr, 3000m, 15.-17.vi.2010 (leg. B. Benedek, T. Hácz)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m.

Derivatio nominis: The name of the species is derived from the Greek *pyrrho* = *reddish orange* and the Greek superlative ending *tatos*, which refers to coloration and size.

Diagnosis and description

H. pyrrhotatos is the sister species of *H. cimelia* (Brandt, 1938) which was described from the Iranian Prov. Fars. According to Hacker (1996) and Ebert & Hacker (2002) *H. cimelia* is resticted to the SW Iranian Zagros mountain chains. Although the male genitalia of the newly described species are very similar to those of *H. cimelia*, the female genitalia are strikingly different.

Wingspan 29 to 32 mm. Labial palps short, upturned. Antennae of male ciliate, those of female filiform. *H. pyrrhotatos* is superficially separable from *H. cimelia* by the elongated forewing apex, which is very conspicuous in the females, and the rather orange ground colour of the forewing with more or less distinctive ante- and postmedial fascia. *H. pyrrhotatos* is reminescent of the sympatric *H. mediana*, described above, with somewhat larger size, broader beige median field and paler basal area of the hindwings. Ground colour as in *H. mediana*, but with a faint orange tinge.

Male genitalia (fig. 21)

Valva and appendages and especially the everted vesica very similar to those of *H. cimelia* (cf. Hacker, 1996, figs 184a, b).

Female genitalia (fig. 22)

The female genitalia of *H. cimelia* are figured by Hacker (1996, figs 184c); those of *H. pyrrhotatos* are very unlike in nearly all respects: 8th segment and apophyses much more slender and longer, together with the antrum, ductus bursae and the two parts of the bursa copulatrix. Bursa copulatrix heavily sclerotized posteriorly anterior ¼ membranous; anterior bursa sac elongated.

Distribution

Known from the upper heights of the Iranian Zagros Mountains near the town Fereydun Shar.

Hadena (*Hadena*) *pseudoclara levantina* Gyulai & Hacker **subspec. nov.** (pl. 21, figs 4, 5)

Type material

Holotype: ♂, "Syria, Prov. Damascus, 4 km NE of Bloudan, N 33º46.142', E 36º 09.856', 2227m, 5.-7.vii.2007 (gen.prep. P. Gyulai 3509♂) (leg. I. Rozner, G. Rozner & Ib. Rozner) " (coll. P. Gyulai);

Paratypes: 5 ♀♀, "Syria, Prov. Damascus, 4 km NE of Bloudan, N 33º46.142', E 36º 09.856', 2227m, 5.-6.vii.2007 (leg. I. Rozner, G. Rozner & Ib. Rozner) " (coll. P. Gyulai); 1 ♀, "Lebanon, Arab ej Laqlouq, vill. env., 1640m, 24.-31.v.2006 (gen.prep. P. Gyulai 1976♀) (leg. Kriueger & Saldaitis)" (coll. P. Gyulai);

Locus typicus: Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m.

Derivatio nominis: The name of the subspecies is derived from the geographic term Levante. Today the Levant consists of Israel, Jordan, Lebanon, Syria, the Palestinian territories, parts of southernmost Turkey and Cyprus.

Diagnosis and description

The nominate subspecies of *H.* (*H.*) *pseudoclara* Hacker, 1996, occurs in the southeastern parts of Asia Minor. Subsp. *oleagina* Hacker, 1996 is found in the Pontus Mountains and the southern slopes of the Transcaucasian mountain chains and ssp. *cimeloides* Hacker, 1996 in the North Iranian Elburs Mountains. The specimens from the Levante are rather large (wingspan 28 to 31 mm) and pale coloured. Wing pattern similar to the holotype of nominate *H. pseudoclara* (figured by Hacker, 1996, pl. P, fig.6), but the lower segment of the postmedial fascia is broader, more defined, the part of the pale whitish background coloration markedly higher, especially around the orbicular and reniform stigmata. Both fore- and hindwings rather broad.

Male and female genitalia (fig2 23, 24)
Similar to those of the nominotypical subspecies.

Distribution

H. pseudoclara levantina is the subspecies of the xeromontane species of the mountain chains of the Levante. The two specimens figured by Kravchenko et al. (2007, pl. 28, figs 316a, b) from the Mt. Hermon, 2000m (Israel) as *Hadena clara* (Staudinger, 1901) belong to this taxon.

Hadena (*Hadena*) *hyrcanoides* Hacker, 1996

Material:

Iran 2 ♂♂, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32º55.260', E 50º 06.645', 10.-11.vi.2007 (gen.prep. P. Gyulai 2817♂, 3477♂) (leg. T. Hácz) " (coll. P. Gyulai); 1 ♀, "Iran, Prov. Esfahan, Fereydun Shahr, Mts. Zagros, 2705 m, N 32º55.255', E 50º 06.641', 4.-6.v.2008 (leg. T. Hácz, K. Székely, K. Vig)" (coll. P. Gyulai);

Note. *H. hyrcanoides* was originally described from the Elburs Mountains and from the easternmost parts of Asia Minor and the adjacent southern slopes of the Transcaucasian mountain chains. The eastern part of the alpine massifs of the central Zaghros mountains (vicinity of Fereidun Sahr) amidst semideserts and deserts accomodates several high mountain xeromontane *Hadena* taxa with Iranian distribution. (Fig. 35).

montana species group

Hadena (*Hadena*) *montana montana* (Brandt,1941) (pl. 21, figs 6, 7)

Material:

Iran 14 ♂♂, 8 ♀♀, "Prov. Khorasan, Binalud Mts., 40 km SW of Masad, Moghan-Pivejan Site, 2000-2500m, 6.-7. vi.2010 (gen.prep. P. Gyulai 3486♂)" (leg. B. Benedek & T. Hácz)" (coll. P. Gyulai); 1 ♀, "Prov. Khorasan, Kopet-Dagh Mts., 1900m, 80 km NE of Qucan, N 37°29, E 58° 35', 10.v.2001 (gen.prep. H. Hacker 21847♀)" (leg. B. Benedek & G. Csorba)" (coll. P. Gyulai);

Note. Uncommon species, so far only known from a few specimens from the Kopet Dagh Mts. in both Turkmenistan and Iran, and the adjacent Kouh i Binaloud in North Iran. (Figs 25, 26)

Hadena (*Hadena*) *praetermissa remotina* Gyulai & Hacker **subspec. nov.** (pl. 21, fig. 8)

Type material

Holotype: ♀, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-11.vi.2007 (gen.prep. P. Gyulai 2246♀) (leg. T. Hácz) " (coll. P. Gyulai);

Paratypes: 7 ♀♀, "Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m, N 32°55.260', E 50° 06.645', 10.-11. vi.2007 (gen.prep. P. Gyulai 3476♀) (leg. T. Hácz) " (coll. P. Gyulai); 1 ♂, 2 ♀♀, "Iran, Prov. Esfahan, Fereydun Shahr, Mts. Zagros, 2705m, N 32°55.255', E 50° 06.641', 4.-6.v.2008 (leg. T. Hácz, K. Székely, K. Vig) " (coll. P. Gyulai); 1x, 3ww, "Prov. Isfahan, Fereydun Shahr, Zagros Mts., 2700m, 10.-12.vi.2007 (leg. T. Hácz)" (coll. P. Gyulai); 1 ♂, "Iran, Prov. Boyerahmad-va-Kohgliuyeh, SE-Zagros, 3000m, Kuh-e-Dena, n. Bijan pass, 6 km N of Cisakht, 8.-9.x.2002 (gen.prep. P. Gyulai 1625♂) (leg. P. Gyulai & A. Garai) " (coll. P. Gyulai);

Locus typicus: Iran, Prov. Isfahan, Fereydun Shahr, Kuhhá-ye-Zagros, 2700m.

Derivatio nominis: The name of the subspecies is derived from the Latin *remotus = remote, apart*.

Diagnosis and description

H. (*H.*) *praetermissa* Hacker, 1996 is known from easternmost Turkey and the Elburs Mountain chains in North Iran. The holotype comes from the Güseldere Pass in the Prov. Van in southeasternmost Turkey. The populations from the Iranian Elburs and Zagros Mountains are separated here as subspecies *remotina*.
Wingspan 25 to 27 mm, smaller than that of nominotypical specimens (29 - 32 mm). Labial palps extremely short, upturned. Antennae of the males very shortly ciliate, those of the females filiform. Coloration and pattern similar to those of the nominotypical subspecies from Asia Minor (cf. Hacker, 1996, pl. R, figs. 4, 5), differing by the following respects:
- Apex of the forewing more pointed;
- Markings distinctly more blurred, ground colour greyer.

Male and female genitalia (figs 27, 28))

Similar to those of the nominotypical subspecies (cf. Hacker, 1996, figs 201-204), differing as follows:
- The single and usually strong cornutus of the everted vesica smaller and shorter;
- Antrum/ductus bursae rather long, narrow and heavily sclerotised;
- Bursa copulatrix with the typical unequal halves fairly narrow and elongated.

Distribution

Described from the Iranian Zagros Mountains; the more northern populations of *H. praetermissa* of the Elburs Mountains belong to the nominate subspecies.

wiltshirei species group

Hadena (*Hadena*) *nuratina* Hacker et Kljutschko, 1996

Material:

Uzbekistan 1 ♂, "Nuratau Mts. Khajatshai, 1800m, 10.v.1996 (leg. S. Baidak)" (coll. P. Gyulai);

Note. At present only known from the Nuratau region in Uzbekistan.

Hadena (*Hadena*) *nekrasovi* Hacker, 1996

Material:

Kyrgyzstan 1 ♂, "2000m, Alai, Mts., Maidantau, 70 km S of Kisil Kija, 13.-14.vii.1997 (leg. I. Pljutsh)" (coll. P. Gyulai); 2 ♂♂, 2750 m, Prov. Batken, Mts. Kitschik Alai, Mts., 12.-15.vii.2006 (leg. E. Rutjan)" (coll. P. Gyulai);
Tadjikistan 1 ♂, "Zeravshan Mts., 45 km SEE Aini, 2000-2600m, 17–18.vii.1994 (leg. Lukhtanov)" (coll. P. Gyulai); 1 ♀, "Hissar, Ansob pass, 30 km N Dushanbe, 3400m, 24–25.vii.1994 (leg. Lukhtanov)" (coll. P. Gyulai); 1 ♀, "Peter I. Mts., 10 km S of Tadjikabad, vill. Ganishou, 2070m, 13-18.vii.2004 (leg. O. Pak)" (coll. P. Gyulai);

Note. Turkestanian xeromontane element with range from northernmost Afghanistan to Kyrgyzstan.

4. Subgenus *Klappericola* Hacker 1996

Hadena (*Klappericola*) *heringi* (Draudt, 1934)

Material:

Kyrgyzstan 1 ♂, "3600m, Tien-Shan, E Tshatkal, Aflatun riv., 27.vii.1997 (leg. Klimenko)" (coll. P. Gyulai); 1 ♂, "W Kyrgyzstan, 2230m, W Talas Mts., Manas Mt., circ. Maidantal v., 22.vii.2000 (leg. I. Pljutsh)" (coll. P. Gyulai);

Note. The species seems to be restricted to a few regions in Kyrgyzstan.

5. Subgenus *Pinkericola* Hacker, 1987

Hadena (*Pinkericola*) *haczi* Gyulai & Hacker **spec. nov.** (pl. 21, figs 9-11)

Type material

Holotype: ♂, "Iran, "Prov. Yazd, Qohrud Mt., Ali Abad, 2000-2500m, 27.v.1999 (gen.prep. H. Hacker 21835♂) (leg. T. Hácz & G. Kőszegi) " (coll. P. Gyulai);

Paratypes: 1 ♂, 1 ♀, "Iran, Prov. Yazd, Sanij, 2650m, Kuhhâ-ye-Qohrud, Shir Kuh, N 31º34.370', E 54º 01.091', 14.vi.2007 (gen.prep. P. Gyulai 2235♂, 2236♀) (leg. T. Hácz) " (coll. P. Gyulai); 2 ♂♂, 1 ♀, "Iran, "Prov. Yazd, Qohrud Mt., Ali Abad, 2000-2500m, 27.v.1999 (gen.prep. P. Gyulai 1118♂, H. Hacker 21835♂) (leg. T. Hácz & G. Kőszegi) " (coll. P. Gyulai);

Locus typicus: Iran, Prov. Yazd, Sanij, 2650m, Kuhhâ-ye-Qohrud, Shir Kuh.

Derivatio nominis: The species is named after its first collector T. Hácz.

Diagnosis and description

H. haczi is the Iranian sister species of *H. macilenta* (Brandt, 1947), described from Afghanistan (Paghman Mts.) and presently known elsewhere from North Pakistan and Tadijkistan.
Wingspan of the holotype *H. haczi* 27.5 mm, of the paratypes 24-25.5 mm. Labial palps very short, upturned. Antennae of the males ciliate, those of the females also ciliate, but extremely short. Habitus similar to that of *H. macilenta* (cf. Hacker, 1996, pl. U, figs 16 - 18), differing as follows:

- Ground colour pale chocolate brown, more homogenous and lacking the pale and variegated markings of the *H. macilenta* pattern which resembles somewhat that of species of the subgenus *Anepia* Hampson, 1918;
- Stigmata partly dark filled; crosslines less contrasted than in *H. macilenta*;
- Subterminal streaks, which are characteristic of *H. macilenta*, completely lacking;
- Claviform stigma large, semicircular and dark brown filled.

Male genitalia (figs 29, 31)

Similar to those of *H. macilenta* (cf. Hacker, 1996, figs 245, 246), posterior process of the sacculus larger, differently shaped (cf. fig.); carina of the vesica shorter.

Female genitalia (fig. 30)

Similar to those of *H. macilenta* (cf. Hacker, 1996, figs 246c, d), antrum and ductus bursae longer, slender, the first more heavily sclerotised than the last; bursa copulatrix broader and of the typical shape as figured, more or less membranous.

Distribution

At present only known from the type locality in the Central Iranian Province Yazd.

Hadena (*Pinkericola*) *vulpecula* (Brandt,1938) (pl. 21, figs 12-14)

Material:

Iran 1 ♂, "Prov. Fars, Zagros Mts., Kuh-e-Barm Firuz, between Yasuj and Ardekan, 2500-3000m, 4.-6.vii.20000 (gen. prep. P. Gyulai 1461♂) (leg. B. Benedek)" (coll. P. Gyulai); 1 ♀, "Iran, Prov. Isfahan, Zagros Mts., Fereydun Shahr, 2700-3000m, 10.-11.vii.2006 (gen.prep. H. Hacker 21843w) (leg. T. Hácz)" (coll. P. Gyulai); 1 ♂, "Iran, Zagros Mts., Fereydun Shahr, 2800m, 27.vi.2005 (gen.prep. H. Hacker 21842♂) (leg. T. Hácz, Petrány & Juhász)" (coll. P. Gyulai);

Note. The first specimen listed was recorded close to the type locality "Prov. Fars, Straße Ardekan-Talochosroe, Comèe, ca 3600m". *H. vulpecula* from SW Iran and *H. cappadocia* Hacker, 1987 from Turkey are closely related, but distinct in the characters of male and female genitalia (figs 32-34), which differ in the following respects:

- Valva of *H. vulpecula* including costa narrower, more elongated;
- Cornutus I of the vesica of *H. vulpecula* dichotomous, of *H. cappadocia* coalesced to a single base;
- Antrum and ductus bursae larger and especially towards the bursa copulatrix much broader, heavily sclerotised throughout;
- Signum *H. vulpecula* larger and at the anterior tip of the bursa sac, that of *H. cappadocia* smaller and shifted more towards the centre.

7. Subgenus *Sinotibetana* Hacker, 1996

Hadena (*Sinotibetana*) *persparcata* (Draudt, 1950)

Material:

China 1 ♂, "Prov. Yunnan, pass 50 km N of Qiaojia, 2850-3000 m, 13-15.vii.2010 (leg. S. Murzin)" (coll. P. Gyulai);

Note. The first records of this rare species since 1935/36 when Höne collected the types series of the species in North Yuennan.

Genus *Enterpia* Guenée, 1850

Enterpia picturata persa Gyulai & Hacker **subspec. nov.** (pl. 21, figs 15-17)

Type material

Holotype: ♂, "Iran, Prov. Yazd, Sanij, 2650m, Kuhhâ-ye-Qohrud, Shir Kuh, N 31°34.370', E 54°01.091', 14.vi.2007 (gen. prep. P. Gyulai 2249♂) (leg. T. Hácz)" (coll. P. Gyulai; later HNHM);

Paratypes: 3 ♀♀, with the same data (gen.prep. P. Gyulai 3596 ♂) (coll. P. Gyulai); 1 ♂, Iran, Prov. Yazd, Shir Kuh Mts., 6 km NW of Taft Aliabad, 2200m,10-11.vi.2005 (leg. P. Gyulai & A. Garai)" (coll. P. Gyulai)); 2 ♀♀, "Iran, "Prov. Yazd, Qohrud Bonkahar Aliabad 2500m, 3.vii.2005 (gen.prep. P. Gyulai 3592♀) (leg. Hácz, Petrányi & Juhász)" (coll. P. Gyulai); 2 ♀♀, "Iran, prov Esfahan, Kuh-e-Karkas 1700m, 3 km SE of Natanz, 24-25.v.2002 (leg. P. Gyulai) & A. Garai)" (coll. P. Gyulai)); 2 ♂♂, "Iran, Prov. Zangan, 10 km N of Aveg, N 35° 40', E 49° 12', 1800m,10.vi. 2006 (leg. J. Klir)" (coll. P. Gyulai).

Locus typicus: Iran, Prov. Yazd, Sanij, 2650m.

Derivatio nominis: The species is named after the ancient name of Iran.

Diagnosis and description

E. picturata (Alphéraky, 1882) was described from the "West Tian Chian, fl. Terkesse, 2000'" in Chinese Turkestan and inhabits a huge area from the southeastern part of Europe (Saratov, Uralsk, Volgograd area) to South Siberia (Karasuk area) and Mongolia (Gyulai & Ronkay, 1999) in the north to Transcaucasia, South Iran, Afghanistan and North Pakistan in the south (cf. Hacker, 1996: Hacker et al., 2002) (pl. 21, fig. 18). The populations from SW Iran, remote from the strictly Central Asian area of *E. picturata*, are described here as subspecies *persa*. The subspecies differs in the much paler coloration and in the female genitalia.

Pattern and markings of the SW Iranian populations are not really different from those of the nominate

subspecies, but the ground colour is markedly paler, pale grey-beige, lacking all brownish tinge and especially the deep black-brown filling of large parts of the median field. The stigmata and crosslines are finely black lined, usually intensified by pale grey. The postmedian fascia, which is present in most of the nominotypical specimens, is usually lacking throughout.

Male genitalia (fig. 36)

Similar to those of the nominotypical subspecies, figured by HACKER (1996, figs 256, 257).

Female genitalia (fig. 37)

Those of the nominotypical subspecies were figured by HACKER (1996, figs 258 a, b). Antrum, ostium bursae and ductus bursae/posterior part of the bursa copulatrix are rather broad and show some similarity to those of *E. alpherakyi* HACKER, 1996, another Central Asian congener, described from Tadjikistan.

Distribution

At present only known from a desert high mountain in the Central Iranian province Yazd, from the western edge of the desert to the Central-eastern Zagros and from the northern Zagros from the vicinity of a dry pass.

Enterpia alpherakyi HACKER, 1996

Material:

Tadjikistan 3 ♂♂, "3400m, W-Pamir, Vantsh Mts. Rushan distr., Gorno Badakhshan, 10.-20.vii.2000 (leg. V. GURKO)" (coll. P. GYULAI); 1 ♀, same data, but 20.-30.viii.2001 (coll. P. GYULAI); 1 ♀, same data, but 1.-10 viii.2002 (coll. P. GYULAI); 1 ♂, "W. Pamir, 2300m, Chorog, 16.vi.1965 (leg. TSHETKIN)" (coll. P. GYULAI); 1 ♀, "W. Pamir, 2300m, Chorog, 3.viii.1963 (leg. TSHETKIN)" (coll. P. GYULAI);

Kasakhstan 1 ♂, "Ketmen Mts., near Tuyuk, 2200m, 20-30.vi.1996 (leg. V. GURKO)" (coll. P. GYULAI);

Note. So far only known from a small region in Tadjikistan.

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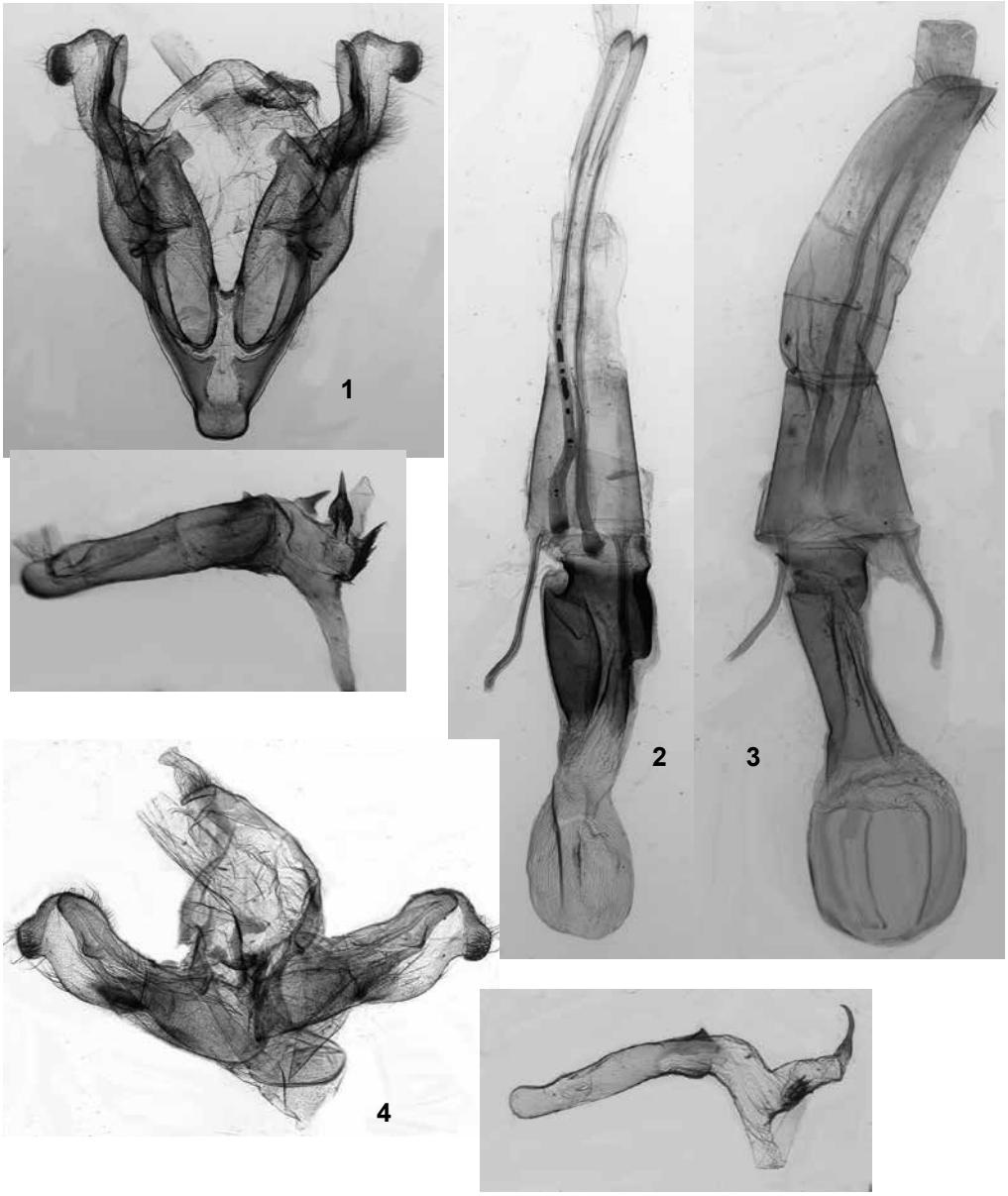

Figs 1-4
1 *Hadena (Hadena) bactriana distalis* Hacker, 1996, gen.prep. P. Gyulai 2244♂
2 *Hadena (Hadena) bactriana distalis* Hacker, 1996, gen.prep. P. Gyulai 2245♀
3 *Hadena (Hadena) compta parthica* Gyulai & Hacker subspec. nov., gen.prep. P. Gyulai 3508♀
4 *Hadena (Hadena) compta persica* (Schwingenschuss, 1939), gen.prep. H. Hacker 21854♂