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Revision of the genus *Caradrina* OCHSENHEIMER, 1816, with notes on other genera of the tribus Caradrini (Lepidoptera, Noctuidae)

Hermann H. Hacker

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Abstract

The genera *Caradrina* OCHSENHEIMER, 1816, *Platyperigea* SMITH, 1894, *Paradrina* BOURSIN, 1937, *Eremodrina* BOURSIN, 1937 are displaying a group of more or less inconspicuous genera and species, generally assigned together with some hitherto insufficiently defined groups as "caradrines". The general appearance and superficial similarity of the well over 100 species make their determination one of the most challenging problems among all noctuids. In this paper, the complex is revised, redefined and placed in a single genus with eight subgenera:

Caradrina OCHSENHEIMER, 1816 (3 species)

Platyperigea SMITH, 1894 (19 species)

Boursinidrina subgen. n. (19 species)

Kalchbergiana subgen. n. (1 species)

Eremodrina BOURSIN, 1937 (78 species)

Levantrina subgen. n. (1 species)

Weigertrina subgen. n. (3 species)

Paradrina BOURSIN, 1937 (31 species)

A total of 155 *Caradrina* species is currently recognised; 33 new species and 11 new subspecies are described here (c.f. „Taxonomic and nomenclatural summary“). Some species hitherto regarded as belonging to *Caradrina* OCHSENHEIMER, 1816 are transferred to other genera. Four new subgenera *Boursinidrina*, *Kalchbergiana*, *Levantrina* and *Weigertrina* are described. The taxonomy and distribution of all species of *Caradrina* are presented here.

The male and female genitalia of all species have been studied intensively, as well as the type specimens of most of them. Included in this investigations were the type-species of all sister-genera more or less closely related to *Caradrina*, and other genera with more or less similar habitus. The results were scored and documented in matrices of the distribution of derived characters. These were the basis from which autapomorphies for the genus *Caradrina* and its subgenera and species groups were recognised.

Lectotype and neotype designations have been made where necessary. Photographs of nearly all species and subspecies are given, and female and male genitalia are figured.

Zusammenfassung

Die Gattungen *Caradrina* OCHSENHEIMER, 1816, *Platyperigea* SMITH, 1894, *Paradrina* BOURSIN, 1937 und *Eremodrina* BOURSIN, 1937 bilden eine Gruppe von Genera mit mehr oder weniger unauffälligen Arten, welche bisher zusammen mit

einigen ungenügend definierten, weiteren Gruppen als "Caradrinen" bezeichnet wurden. Färbung und Zeichnung dieser Arten sind so unauffällig und ähnlich, dass Determination ihrer weit mehr als 100 Arten eines der größten Probleme innerhalb der Noctuidae darstellte. Der gesamte Komplex mit allen verfügbaren Taxa wird hier revidiert, beschrieben und in acht Subgenera geordnet:

Caradrina OCHSENHEIMER, 1816 (3 Arten)

Platyperigea SMITH, 1894 (19 Arten)

Boursinidrina subgen. n. (19 Arten)

Kalchbergiana subgen. n. (1 Art)

Eremodrina BOURSIN, 1937 (78 Arten)

Levantrina subgen. n. (1 Art)

Weigertrina subgen. n. (3 Arten)

Paradrina BOURSIN, 1937 (31 Arten).

Insgesamt wird der Artstatus für 155 Taxa festgestellt, dabei werden 33 neue Arten und 11 neue Unterarten beschrieben (vgl. „Taxonomic and nomenclatural summary“). Weitere, bisher ebenfalls als Caradrina OCHSENHEIMER, 1816 angesehene Arten wechseln in andere Gattungen. Vier neue Subgenera Boursinidrina, Kalchbergiana, Levantrina and Weigertrina werden beschrieben. Taxonomie und Verbreitung aller Arten werden dargestellt.

Die Genitalarmaturen beider Geschlechter wurden intensiv untersucht, bei den meisten Arten auch die Typenexemplare. Eingeschlossen in die Untersuchungen wurden auch die Typusarten von Schwester-Gattungen oder Gattungen mit ähnlichem Habitus. Die Ergebnisse, in Matrices dargestellt und phylogenetisch nach ursprünglichen (ancestral) und abgeleiteten (derived) Merkmalen ausgewertet, bilden die Grundlage zum Festellen von Autapomorphien für die untersuchten Caradrinen, die Gattung Caradrina selbst, sowie für alle Subgenera und Artengruppen.

Soweit nötig wurden Lecto- und Neotypen ausgewiesen. Alle Arten und nahezu alle Unterarten und ebenfalls ihre männlichen und weiblichen Genitalarmaturen werden abgebildet.

Taxonomic and nomenclatural summary

I New taxa

Ia Four new subgenera

Boursinidrina HACKER subgen. n.

Kalchbergiana HACKER subgen. n.

Levantrina HACKER subgen. n.

Weigertrina HACKER subgen. n.

Ib Thirty-three new species

Caradrina (Platyperigea) olivascens HACKER sp. n.

Caradrina (Platyperigea) hoenei HACKER & KONONENKO sp. n.

Caradrina (Platyperigea) kautti HACKER sp. n.

Caradrina (Boursinidrina) pushkara HACKER sp. n.

Caradrina (Eremodrina) inopinata HACKER sp. n.

Caradrina (*Eremodrina*) *transoxanica* HACKER sp. n.
Caradrina (*Eremodrina*) *genitalana* HACKER sp. n.
Caradrina (*Eremodrina*) *isfahana* HACKER sp. n.
Caradrina (*Eremodrina*) *adriennea* HACKER & GYULAI sp. n.
Caradrina (*Eremodrina*) *nekrasovi* HACKER sp. n.
Caradrina (*Eremodrina*) *altissima* HACKER sp. n.
Caradrina (*Eremodrina*) *himachala* HACKER sp. n.
Caradrina (*Eremodrina*) *parthica* HACKER sp. n.
Caradrina (*Eremodrina*) *margiana* HACKER sp. n.
Caradrina (*Eremodrina*) *muelleri* HACKER sp. n.
Caradrina (*Eremodrina*) *gyulaii* HACKER sp. n.
Caradrina (*Eremodrina*) *vargai* HACKER sp. n.
Caradrina (*Eremodrina*) *zagrobia* HACKER sp. n.
Caradrina (*Eremodrina*) *turcomana* HACKER sp. n.
Caradrina (*Eremodrina*) *naumanni* HACKER sp. n.
Caradrina (*Eremodrina*) *gandhara* HACKER sp. n.
Caradrina (*Eremodrina*) *ronkayorum* HACKER sp. n.
Caradrina (*Eremodrina*) *shugnana* HACKER sp. n.
Caradrina (*Eremodrina*) *baltistana* HACKER sp. n.
Caradrina (*Eremodrina*) *singularis* HACKER sp. n.
Caradrina (*Eremodrina*) *kravchenkoi* HACKER sp. n.
Caradrina (*Weigertrina*) *senecai* HACKER sp. n.
Caradrina (*Paradrina*) *minoica* HACKER sp. n.
Caradrina (*Paradrina*) *fulvafusca* HACKER *Caradrina* (*Paradrina*) *fuscomedia* HACKER sp. n.
Caradrina (*Paradrina*) *levantina* HACKER sp. n.
Caradrina (*Paradrina*) *fibigeri* HACKER sp. n.
Caradrina (*Paradrina*) *afrotropicalis* HACKER sp. n.

1c Eleven new subspecies

Caradrina (*Platyperigea*) *terrea subplumbea* HACKER ssp. n.

Caradrina (*Platyperigea*) *kadenii insularis* HACKER ssp. n.

Caradrina (*Boursinidrina*) *stenoptera baltistana* HACKER ssp. n.

Caradrina (*Eremodrina*) *morosa explanata* HACKER & KONONEKO ssp. n.

Caradrina (*Eremodrina*) *inumbata obfuscata* HACKER ssp. n.

Caradrina (*Eremodrina*) *inumbata exterioris* HACKER ssp. n.

Caradrina (*Eremodrina*) *xiphophora hindostana* HACKER ssp. n.

Caradrina (*Eremodrina*) *pertinax herczigi* HACKER ssp. n.

Caradrina (*Weigertrina*) *eremicola afrisudana* HACKER ssp. n.

Caradrina (*Paradrina*) *wullschlegeli scythica* HACKER ssp. n.

Caradrina (*Paradrina*) *scotoptera fuscovaria* HACKER ssp. n.

II New status

IIa Two subspecies raised to species

Caradrina (*Platyperigea*) *fuscifusa* (VARGA & RONKAY, 1991) stat. n.

Caradrina (*Paradrina*) *abruzzensis* (DRAUDT, 1933) stat. n.

IIb Ten species downgraded to subspecies

Caradrina (*Platyperigea*) *terrea albersi* (WARNECKE, 1936) stat. n.

Caradrina (*Platyperigea*) *terrea froitzheimi* BOURSIN, 1957 stat. n.

Caradrina (*Paradrina*) *selini forsteri* (BOURSIN, 1939) stat. n.

Caradrina (*Paradrina*) *selini mairei* DRAUDT, 1909 stat. n.

Caradrina (*Paradrina*) *abruzzensis rufirena* (BOURSIN, 1939) stat. n.

Caradrina (*Paradrina*) *suscianja cilicia* (HACKER, 1992) stat. n.

Caradrina (*Paradrina*) *chinensis fusca* LEECH, 1900 stat. n.

Caradrina (*Paradrina*) *boursini ellisoni* (BOURSIN, 1937) stat. n.

Caradrina (*Paradrina*) *flavirena zobeidah* (BOURSIN, 1937) stat. n.

Caradrina (*Paradrina*) *clavipalpis fogoensis* TRAUB & BAUER, 1983 stat. n.

III New synonyms

Twenty-one new synonyms

Amphidrina STAUDINGER, [1892] syn. n.

Pseudophyllophila BERIO, 1977 syn. n.

Athetis umbratilis DRAUDT, 1933 syn. nov.
Elaphria prospera KUZNETZOV, 1958 syn. n.
Elaphria pseudopertinax BOURSIN, 1939 syn. n.
Eremodrina leptodactyla VARGA & RONKAY, 1991 syn. n.
Caradrina pertinax argentea CARADJA, 1930 syn. n.
Caradrina fuscicornis continentalis BOURSIN, 1952 syn. n.
Elaphria (Paradrina) personata KUZNETZOV, 1958 syn. n.
Athetis heptarchia BOURSIN, 1936 syn. n.
Athetis wullschlegeli schwingenschussi BOURSIN, 1936 syn. n.
Athetis muricolor BOURSIN, 1933 syn. n.
Athetis persimilis ROTHSCHILD, 1920 syn. n.
Caradrina danieli RUNGS, 1950 syn. n.
Caradrina rebeli lapalmae PINKER, 1962 syn. n.
Caradrina rebeli gran Canariae PINKER, 1962 syn. n.
Caradrina lanzarotensis PINKER, 1962 syn. n.
Caradrina lanzarotensis fuerteventurensis PINKER & BACALLADO, 1975 syn. n.
Caradrina rebeli hierrensis PINKER, [1969] syn. n.
Athetis clavipalpis f. mauretanicus DRAUDT, 1934 syn. n.
Paradrina elongata PLANTE, 1998 syn. n.

IV New combinations

Twenty-six taxa in new combinations

Caradrina (Caradrina) agrotina STAUDINGER, [1892] comb. n.
Caradrina (Caradrina) likiangia (BERIO, 1977) comb. n.
Caradrina (Boursinidrina) rjabovi (BOURSIN, 1936) comb. n.
Caradrina (Boursinidrina) panurgia (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) pseudadelpha (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) brandti (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) hemipentha (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) wiltshirei (BOURSIN, 1936) comb. n.
Caradrina (Boursinidrina) parvaspersa (BOURSIN, 1936) comb. n.

Caradrina (Boursinidrina) pulvis (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) syriaca STAUDINGER, [1892] comb. n.
Caradrina (Boursinidrina) germainii (DUPONCHEL, 1835) comb. n.
Caradrina (Boursinidrina) surchica (BOURSIN, 1937) comb. n.
Caradrina (Boursinidrina) stenoptera (BOURSIN, 1939) comb. n.
Caradrina (Boursinidrina) lobbichleri BOURSIN, 1970 comb. n.
Caradrina (Boursinidrina) oberthuri (ROTHSCHILD, 1913) comb. n.
Caradrina (Boursinidrina) flavitincta (HAMPSON, 1909) comb. n.
Caradrina (Boursinidrina) soudanensis (HAMPSON, 1918) comb. n.
Caradrina (Boursinidrina) pseudocosma (PLANTE, 1998) comb. n.
Caradrina (Boursinidrina) africanarabica (PLANTE, 1998) comb. n.
Caradrina (Kalchbergiana) ingrata STAUDINGER, 1897 comb. n.
Caradrina (Eremodrina) draudti cretica REISSER, 1958 comb. n.
Caradrina (Eremodrina) pseudalbina (BOURSIN, 1942) comb. n.
Caradrina (Levantrina) bodenheimeri (DRAUDT, 1934) comb. n.
Caradrina (Weigertrina) eremicola (PLANTE, 1998) comb. n.
Caradrina (Weigertrina) diabolica (BOURSIN, 1942) comb. n.

V Designation of type specimens

In accordance with art. 73 ICZN, a neotype specimen for *Caradrina* (*Eremodrina*) *agenjoi* (BOURSIN, 1936) is designated. For numerous species with unfixated holotype specimen (syntypes), lecto- and paralectotype specimens are designated.

The *Eublemma* Hübner, [1821] species of Yemen, with description of six new species (Lepidoptera, Noctuidae, Eublemminae). (Part 2)

Michael Fibiger & Hermann Hacker

Summary

The second part of the *Eublemma* species recorded during three expeditions to Yemen has been determined and described. It is done with reference to the faunas of the Middle East, southern Asia, northern, eastern and southern Africa. 24 species are dealt with here, 16 of which are found from Yemen. The imagines are illustrated; and the male and ♀ genitalia of all but two of the species are illustrated.

The first and second part of the *Eublemma* species dealt with are 55 species, of which 45 are stated from Yemen.

Six new species are described:

Eublemma skoui FIBIGER & HACKER, sp. n.;

Eublemma mediana FIBIGER & HACKER, sp. n.;

Eublemma wiltshirei FIBIGER & HACKER, sp. n.;

Eublemma cornutus FIBIGER & HACKER, sp. n.;

Eublemma similis FIBIGER & HACKER, sp. n.;

Eublemma artus FIBIGER & HACKER, sp. n.

Two species are recalled from synonymy:

Eublemma straminea (Staudinger, 1891), stat. rev.

Eublemma tomentalis Rebel, 1947, stat. rev.

Two new synonyms are stated:

Ecthetis Hübner, [1823] is syn. rev. of *Eublemma* Hübner, [1821];

Ecthetis vagans BERIO, 2002 is syn. n. of *Eublemma pallidula* (HERRICH-SCHÄFFER, 1856).