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A Synonymy in the Genus *Rhodogastria* Resulting from Sexual Dimorphism

(Lepidoptera, Arctiidae)

by Michael Boppré

Zusammenfassung

Durch Zuchten wurde festgestellt, daß *Rhodogastria phaedra* (WEYMER) und *R. leucoptera* HAMPSON die Geschlechter einer Art darstellen. Dies ist der erste Nachweis von Sexual-Dimorphismus bei dieser Gattung.

Abstract

Evidence is presented that *Rhodogastria phaedra* (WEYMER) and *R. leucoptera* HAMPSON represent the sexes of a single species. This is the first proved case of sexual dimorphism in the genus.

Rhodogastria phaedra (WEYMER)

Amerila phaedra WEYMER, 1892: 106. HOLOTYPE ♂. EAST AFRICA: Saadani, 1891, (SCHUBERT?). Zool. Mus., Berlin.

ALLOTYPE ♀. Same data as ♂. (=♂ spec. nov.)

Rhodogastria phaedra (WEYMER); BARTEL, 1903: 210. 1 ♂. EAST AFRICA: Saadani (v. NETTELBLADT). Zool. Mus., Berlin.

Rhodogastria phaedra (WEYMER); GAEDE, in SEITZ, 1926: 109+plate 16c.

Rhodogastria phaedra (WEYMER); HAMPSON, 1920: 524+plate LXIX–12.

Rhodogastria leucoptera HAMPSON, 1901: 506+plate L–4. Syn. nov. HOLOTYPE ♀. WEST AFRICA: Sierra Leone (MITFORD). Brit. Mus. Nat. Hist., London.

Rhodogastria leucoptera HAMPSON; GAEDE, in SEITZ, 1926: 109+plate 16e.

In the course of field studies on relationships between Lepidoptera and plants containing pyrrolizidine alkaloids, ten species of *Rhodogastria* were found in the Shimba Hills (Kwale District, Kenya, East Africa) visiting withered *Heliotropium* plants (Boraginaceae) used as baits (BOPPRÉ, 1981). In two of these species, only one sex was recorded: *Rhodogastria phaedra* was represented only by males, *R. leucoptera* only by females.

This sex-bias was unusual compared with other *Rhodogastria* species and it indicated the possibility that both nominal taxa represent a single sexually dimorphic species. This idea was consistent with some other facts: i) In various collections, including those of the British Museum (Nat. Hist.), London, *R. phaedra* is represented only by males, *R. leucoptera* only by females; ii) The original description of *R. leucoptera* (HAMPSON, 1901) is based on a single female specimen; iii) SEVASTOPULO (1962) noted a male *R. phaedra* in coitu with a female *R. leucoptera* and considered it to be a natural cross-pairing.

During the course of physiological studies, eggs from a specimen of *R. leucoptera* were bred through to adult stage on substitutes of the (unknown) natural foodplants: *Taraxacum officinale* (Asteraceae), *Beaumontia grandiflora* (Apocynaceae), and cauliflower. All the males emerging were referable to *R. phaedra*, the females to *R. leucoptera*. Matings were readily obtained and the culture was kept for four generations.

From this evidence it is clear that *R. phaedra* and *R. leucoptera* are the males and females, respectively, of a single species (Fig. 1), *phaedra* being the senior synonym.



Fig. 1: Male (A) and female (B) of *Rhodogastria phaedra*. Scale bar: 1 cm.

WEYMER (1892) in his original description of *R. phaedra* described a female that was dimorphic to the male, a fact which was doubted by BARTEL (1903) and neglected by all other investigators. A check of WEYMER's type material revealed that his allotype female actually is a male of a new species, which is similar to *R. bubo* (WALKER).

Researching the taxonomic history of some *Rhodogastria* species revealed various inconsistencies including further synonymies of *R. phaedra*, but these will be considered elsewhere.

So far, *R. phaedra* is the only species of the genus *Rhodogastria* with a proved sexual dimorphism. However, it is most likely that further cases exist because there are various species described on the basis of female specimen (e. g. *rufifemur* WALKER, *nigroapicalis* AURIV., and others), and the corresponding males are unknown. Thus, those concerned with further taxonomic work on species of this genus must consider that certain colour characters (cf. Table) are not necessarily typical for a species.

<i>R. phaedra</i>	male	female
forewings	brown	white
hindwings	yellow	white
abdomen upper side	scarlet	crimson
lower side	yellow	white

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