

ON THE PIERID BUTTERFLIES OF THE WEST SHEWA ZONE (ETHIOPIA)  
(LEPIDOPTERA: PIERIDAE)

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**ABSTRACT:** An annotated list of the pierid butterflies (Lepidoptera: Pieridae) of the West Shewa Zone is presented. The material was investigated during short-term field works which were conducted in different types of biotopes in the vicinities of the Ambo Plant Protection Research Center, in the Crater Wonchi, in the forest of Chilimo near Ginchi and in vicinities of Menagesha. 19 species of pierid butterflies (Lepidoptera, Pieridae) belonging to nine genera were recorded in West Shewa. In the proposed annotated list, we present bibliographic data for both the nominal taxon and all its synonyms. For each taxon, its type locality is cited in the original spellings. If necessary, the modern geographical name is given in square brackets. For each species in the section “Bionomics”, data on the larval host-plants, preferred biotopes and the fly time are presented. In the section “Distribution”, in addition to general distribution of the species, data on findings in Ethiopia are given. The studied material is cited only from the investigated area. The section “Note” contains data on the intraspecies subdivision into subspecies and indicates which subspecies inhabits the region. All studied species are illustrated with two pictures: recto and versus.

**Key words/phrases:** Distribution, Ethiopia, Lepidoptera, Pieridae, West Shewa Zone.

### INTRODUCTION

The first mention of the butterflies of Ethiopia, or rather of Abyssinia, is found in the reports of the expedition of Mr. Lefebvre to the northern part of the country in 1839-1843 (Lefebvre, 1847). The section on butterflies provides information on 17 genera and 57 species, of which 5 species have been described as new to science. The next trip, from which butterflies of Ethiopia were published, was that of Messrs. Ferrets and Galinier to the northern part of Abyssinia in the province of “Tigré, du Samen et de l’Ahmarra” (Ferrets and Galinier, 1849 [“1847”]). The butterflies of their collections were studied by Reiche (Reiche, 1849 [“1847”]). The scholar provided information on five genera and eight species of butterflies from which three species were described as new to science.

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Later, several works appear with descriptions of small collections of butterflies collected in Abyssinia (Felder and Felder, 1865; Butler, 1876b). However, under closer scrutiny it turned out that the material for these publications was not collected in Ethiopia, but in Eritrea or Sudan.

In 1894, Mr. Gillet made a collection of Lepidoptera in the southern part of Ethiopia at a place called “Sheik Husein” [= Ethiopia: Oromia Region, Sheik Hussein] (Butler, 1897: 692). This material has been published by Butler (1897). Among all the collected Lepidoptera, 55 species from 25 genera were found to belong to Rhopalocera, and of these only 19 species from the five genera belong to the family Pieridae.

In the late nineties of the nineteenth century, a small collection of butterflies was gathered by Colonel Swayne in the vicinity of Harar. This collection was processed and published by Butler (1899). It consisted of only 27 species, but one of them, namely *Mylothris swaynei*, was described as new to science.

A highly important paper dealing with the Lepidoptera of Ethiopia was published by Carpenter (1935). “This paper is an attempt to bring together all the published records of Abyssinian Rhopalocera and is the result of examination of specimens in the Hope Department of Entomology in the Oxford University Museum, the Museum at Tring, and in the National Collection at the British Museum (Natural History). It has arisen from the working out of a very fine collection from south-west Abyssinia made by Sir Arnold W. Hodson ...” (Carpenter, 1935: 313). The collection “comprises some 3000 specimens belonging to about 260 species” (Carpenter, 1935: 313). Among the studied and published specimens, we find information on the butterflies of the West Shewa Zone for the first time. These are the specimens collected by Dr. Scott in the Djem-Djem Forest in September-November 1926. Now this forest is called Chilimo. In this work, the author not only analyzes the faunistic structure of butterflies of Ethiopia, but also leads a careful zoogeographical analysis of the fauna. In addition, he gives a complete list of literature, directly related to the study of butterflies of the country and brief notes on other Invertebrates of Ethiopia.

Hill (1965) published a list of Insects deposited in the collection of the College of Agriculture, Haile Sellasie I University. All insects mentioned in the paper were collected in Ethiopia but, unfortunately, without exact points of their findings. 125 species of Ethiopian butterflies are presented in the list, of which 40 species of 12 genera belong to Pieridae.

In 1977, Rougeot published the results of an entomological expedition to Djibouti and Ethiopia, carried out in 1973-1975 by the staff of the Muséum National d'Histoire Naturelle in Paris (Rougeot, 1977). The work of the expedition was conducted along the route that ran from the borders of Djibouti, through Dire Dawa, the lakes in the rift valley to Shashamene. From there, visits were made to Dinsho and Goba, Kibre Mengist, Negele, Fisiha Gennet and Arba Minch. As a result of the studies, 128 species from 53 genera of Rhopalocera were recorded (Rougeot, 1977).

The list of butterflies consisting of 87 species from 41 genera collected by Drs Medvedev and Rybalov in the area between the rivers of Baro and Akobo in the Gambella Peoples' National Regional State in November-December 1987 has been published in Gorbunov and Tuzov (1989).

In conclusion, it should be noted that the Lepidoptera of Ethiopia have been studied only in fragmented manner and insufficiently. Certainly, the rich and distinctive lepidopterous fauna of Ethiopia is in need of further investigations.

This work is the fourth one in a series of publications dealing with Lepidoptera of Ethiopia studied in the Joint Ethio-Russian Biological Expedition. The previous works concerned the family Sesuiidae and Pteropforidae of Ethiopia (Ustjuzhanin *et al.*, 2011; Gorbunov, 2015; 2017).

#### MATERIALS AND METHODS

The material for the present study were collected during short-term field-works which were conducted in different biotopes in the vicinities of the Ambo Plant Protection Research Center (Ambo PPRC), in the Crater Wonchi, in the forest of Chilimo (formerly it was called Djem-Djem or Djemdjem) near Ginchi and in vicinities of Menagesha.

The system and nomenclature of the family Pieridae are given in accordance with Pennington's Butterflies of South Africa (Pringle *et al.*, 1994). In the column "Material examined" we indicate specimens from the West Shewa Zone only. All studied specimens were collected by the author. All the images of collected butterflies were taken with a Sony® α450 DSLR camera equipped with a Minolta® 50 f/2.8 Macro lens.

Most synonymic names in the text are given in quotation marks, in the same way as they are presented in the original descriptions.

All pictures of the specimens are labelled with a number, consisting of letters and digits: name of the family-group, two consecutive digits separated by n-dash and a year following m-dash (e.g. RHOPALOCERA varia Pictures №№ 0375-0376–2016). These letter and digit codes correspond to the numbering system of the figured specimens in the author's archive.

### SYSTEMATIC ACCOUNT

#### Family *Pieridae* Duponchel

“Pierides. Mihi.” — Duponchel, 1835 [“1832”]: 381. Type genus: *Pieris* Schrank, 1801.

#### Subfamily *Coliadinae* Swainson

“Coliana” — Swainson, 1827: 188. Type genus *Colias* Fabricius, 1807. – Ruled under the plenary power not to have priority over *Pieridae* Duponchel, 1835 [“1832”] (Opinions and directions, 1958; ICZN, 1982).

#### Tribe *Coliadini* Swainson

#### Genus *Colias* Fabricius, 1807

“*Colias*.” — Fabricius, 1807: 284. Type-species: *Papilio hyale* Linnaeus, 1758, fixed by subsequent designation by the ICZN, Opinion 146 (Opinions and directions, 1943).

#### *Colias electo* (Linnaeus, 1763)



Fig. 1. *Colias electo* (Linnaeus, 1763). Male, recto. Wingspan 46 mm. Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48'N, 037°54'E, 16.XI.2008. RHOPALOCERA varia Picture № 0705–2014.



Fig. 2. Ditto, verso. RHOPALOCERA varia Picture № 0706–2014.



Fig. 3. *Colias electo* (Linnaeus, 1763). Female, recto. Wingspan 42 mm. Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48' N, 037°54' E, 16.XI.2008. RHOPALOCERA varia Picture № 0721–2014.



Fig. 4. Ditto, verso. RHOPALOCERA varia Picture № 0722–2014.



Fig. 5. *Colias electo* (Linnaeus, 1763). Female, recto. Wingspan 39 mm. Ethiopia, Addis Ababa, Russian Embassy, 2470 m, 09°02.091' N, 038°47.042' E, 07.XII.2012. RHOPALOCERA varia Picture № 0709–2014.



Fig. 6. Ditto, verso. RHOPALOCERA varia Picture № 0710–2014.

- “*Papilio electo* D.” — Linnaeus, 1763: 405. Type locality: “Habitat ad Cap. B. spei.” [= South Africa: Cape of Good Hope area].
- = “*Colias hecate* sp. nov.” — Strecker in Weeks, 1900: 7, pl. 3, figs 1–3. Type locality: “Congo, West Africa”.
- = “*Colias electo pseudohecate* subsp. nov.” — Berger, 1940. 40, pl. 1, figs 4, 6, 7; pl. 2, fig. 7. Type locality: “... au Kenya ...” [= Kenya].
- = “*Colias electo Meneliki* subsp. nov.” — Berger, 1940: 44, pl. 1, fig. 11, 12; pl. 2, fig. 10, 11. Type locality: “Gondar, IX” [= Ethiopia: Amhara Region, Gondar].
- = *Colias electo manengoubensis* ssp. nov.” — Darge, 1968: 14, figs 1–4. Type locality: “Mont Manengouba” [= Cameroon: Southwest

Province, Mt. Manengouba].

**Bionomics.** The larval host-plants are various herbaceous legumes (Fabaceae) such as *Vicia* spp., *Medicago* spp. Also *Ricinus communis* (Euphorbiaceae) (Kielland, 1990), *Oxalis* sp. (Oxalidaceae) (Someren, 1974; Larsen, 2005), *Cassia* spp. and *Sesbania* spp. (Fabaceae) (Someren, 1974) were mentioned as food plants but in our opinion, is not possible in nature, but possible in captivity. In the vicinity of Ambo, we repeatedly observed females laying eggs on young green shoots of alfalfa (*Medicago sativa*). It inhabits open montane and submontane meadows, cultivated fields of alfalfa, wastelands. In the Bale Mts. it flies up to 3600–3700 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** In the mountains from Nigeria and Cameroon in the northwest to southwestern Arabia, Eritrea and Ethiopia in the northeast and to RSA in the south. In Ethiopia it was recorded from Sheik Hussein (as *Colias edusa* L. var. *electra*.) (Butler, 1897); Harar (Butler, 1899); Gambella, Addis Ababa, Chilimo Forest (as Djem-Djem), Ziway Lake (Carpenter, 1935); Gondar (Berger, 1940); Addis Ababa, Shashamene, Kefole, Robi, Dinsho, Batu Mt., Bore, Agre Salam, Kibre Mengist, Fisiha Gennet (Rougeot, 1977); Sankaber (Rougeot, 1983); Wondo Genet (Cross, 2003). We have also collected it from Chilimo Forest near Ginchi, Debre Birhan, Rira and Harena Forest.

**Material examined.** 4 males, 3 females, Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48'N, 037°54'E, 16.XI.2008; 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 23.IX.2008; 4 males, 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 10.XI.2013.

**Note.** At present, this species is divided into five subspecies, of which subspecies *meneliki* Berger, 1940 populates Ethiopia, Eritrea and SW Arabia. The females have two distinct color forms: “orange” (Figs. 3, 4) and “white” (Figs. 5, 6). The last of these color forms is more abundant in the dry season.

### **Genus *Catopsilia* Hübner, 1819 [“1816”]**

“*Catopsilia* ...” — Hübner, 1819 [“1816”]: 98. Type-species: *Papilio crocale* Cramer, 1775, fixed by subsequent designated by Scudder, 1875: 136.

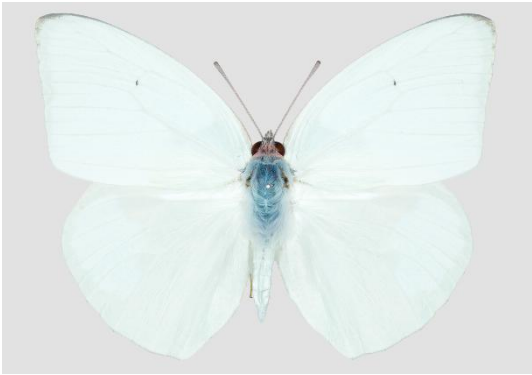
***Catopsilia florella* (Fabricius, 1775)**

Fig. 7. *Catopsilia florella* (Fabricius, 1775). Male, recto. Wingspan 56 mm. Ethiopia, West Shewa, Menagesha-Suba Forest, 2460 m, 08°57.95'N, 038°32.52'E, 03.VI.2014, ex l. RHOPALOCERA varia Picture № 0599–2014.



Fig. 8. Ditto, verso. RHOPALOCERA varia Picture № 0600–2014.



Fig. 9. *Catopsilia florella* (Fabricius, 1775). Female, recto. Wingspan 59 mm. Ethiopia, Ahmara Region, Debre Birhan University, 2756 m, 09°39.47'N, 039°31.65'E, 23.V.2014. RHOPALOCERA varia Picture № 1173–2014.





Fig. 10. Ditto, verso. RHOPALOCERA varia Picture № 1174–2014.

- “[*Papilio*] *Florella*.” — Fabricius, 1775: 479. Type locality: “Habitat in Sierra Leon Africae.” [= Sierra Leone].
- = “*Colias Pyrene*.” — Swainson, 1821: pl. 51. Type locality: “... is from the interior of the Cape of Good Hope, ...” [= South Africa: Cape Peninsula].
- = “*Callidryas Hyblaea*, Boisd.” — Boisduval, 1836: 612. Type locality: “Sénégal.”.
- = “*Callidryas Rhadia*, Boisd.” — Boisduval, 1836: 617. Type locality: “Sénégal, île Maurice.” [= Senegal; Mauritius].
- = “*Pontia Marcellina* Fabr.” — Bertoloni, 1850: 178. Type locality: “... orientale africana.” [= East Africa].
- = “*Catopsilia aleurona*, n. sp.” — Butler, 1876b: 489. Type locality: “[Atbara (Abyssinia)]” [= Sudan: River Nile State, Atbarah].
- = “*Catopsilia rufosparsa*, sp. n.” — Butler, 1880: 395. Type locality: “[... at Fianarantsoa ...]” [= Madagascar: Haute Matsiatra Region, Fianarantsoa].
- = “*Callidryas Swainsoni*, Westw.” — Westwood, 1881: 335. Type locality: “... from Sierra Leone, ...”.

**Bionomics.** We repeatedly bred caterpillars of this species on *Cassia didymobotrya* (Fabaceae). Other species of *Cassia* are also noted as host-plants for the species (Pringle *et al.*, 1994; Larsen, 2005). Beside that, *Sesbania* spp. (Fabaceae) can occasionally be used as a foodplant. (Larsen (2005) and Kielland (1990: 51) pointed out *Gossypium* (Malvaceae) as a

host plant, which, in our opinion, is unlikely. It lives in various types of open biotopes including the forest clearings, wasteland of settlements and roadsides. In mountains it flies up to 2800 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** It occurs practically everywhere in Sub-Saharan Africa. Being an active migrant, the species penetrates the Canary Islands, Egypt, Israel and Lebanon. It is also found on the Arabian Peninsula, where it is common in the south (Larsen, 2005). In Ethiopia, this species was recorded from Shek Husein (Butler, 1897); Gambella (Carpenter, 1935); Koka Lake, Awasa, and Neghele Borana (Rougeot, 1977); Abobo and Addis Ababa (Gorbunov and Tuzov, 1989; 2000); Wondo Genet (Cross, 2003). In addition, we found this species also in Bahir Dar, Debre Birhan, Sodere, Dola Mena.

**Material examined.** 1 male, Ethiopia, West Shewa, Menagesha-Suba Forest, 2460 m, 08°57.95'N, 038°32.52'E, 03.VI.2014, ex l.

**Note.** This species does not have an interspecies division into subspecies.

### Genus *Eurema* Hübner, 1819 ["1816"]

"*Eurema* ..." — Hübner, 1819 ["1816"]: 96. Type-species: *Papilio delia* Cramer, 1780 ["1782"] (nec *Papilio delia* [Denis et Schiffermüller], 1775; = *Eurema demoditas* Hübner, 1819 ["1816"]), fixed by subsequent designation by Butler, 1870: 35.

= "*Terias* ..." — Swainson, 1821 ["1820-1"]: pl. 22. Type-species: *Papilio hecabe* Linnaeus, 1758, by the original designated.

= "Genus *Maiva*, Smith and Kirby (gen. nov.)" — Grose-Smith and Kirby, 1893: 96. Type-species: *Maiva sulphurea* Grose-Smith and Kirby, 1893, fixed by monotypy.

***Eurema brigitta* (Stoll, 1780)**



Fig. 11. *Eurema brigitta* (Stoll, 1780). Male, recto. Wingspan 34 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51' E, 01.XI.2013. RHOPALOCERA varia Picture № 0283–2013.



Fig. 12. Ditto, verso. RHOPALOCERA varia Picture № 0284–2013.



Fig. 13. *Eurema brigitta* (Stoll, 1780). Female, recto. Wingspan 40 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51' E, 01.XI.2013. RHOPALOCERA varia Picture № 0285–2013.



Fig. 14. Ditto, verso. RHOPALOCERA varia Picture № 0286–2013.

“*[Papilio] Brigitta*” — Stoll, 1780: 82, pl. 331, figs B, C. Type locality: “... la Côte de Guinée” [= Guinea].

= “*Terias Zoë* Hpfr. n. sp.” — Hopffer, 1855: 640. Type locality: “... Mossambique ...” [= Mozambique].

= “*T.[erias] Caffra* Nob.” — Felder and Felder, 1865: 213. Type locality: “... Caffr.[aria], ...” [= South Africa: Eastern Cape].

= “*Terias Candace* Nobis.” — Felder and Felder, 1865: 213, pl. 52, fig. F. Type locality: “Abyssinia meridionalis.” [= South Ethiopia].

= “*Maiva sulphurea*.” — Grose-Smith and Kirby, 1893: 96, pl. 21, fig. 13. Type locality: “Lake Nyssa.” [= Lake Malawi/Lake Nyasa].

= “*Terias eximia* n.” — Thurau, 1903: 142. Type locality: “... 13. XI bei Unyika ” [= Tanzania: Mbeya Region].

**Bionomics.** *Senna didymobotrya* (Fabaceae) and *Hypericum aethiopicum* (Hypericaceae) were cited as larval host-plants for a population of the species in Wondo Genet (Cross, 2003). Beside that, the following legumes (Fabaceae) were registered as foodplants in other parts of Afrotropical Region: *Acacia* (Kielland, 1990), *Cassia*, *Sesbania*, *Albizia*, *Tephrosia* (Larsen, 2005). It is rather common in clearings in forests, anthropogenic shrub savannas, wastelands. The flight period lasts throughout the year by several generations.

**Distribution.** The Afrotropical, Oriental and Australian regions. In Ethiopia it is known from Gambella, Dukem, Ziway Lake (Carpenter, 1935); Ziway Lake, Kofele, Wendo, Kebre Mengist, Neghele Borana, and Arba Minch (Rougeot, 1977); Sankaber (Rougeot, 1983); Wondo Genet (Cross, 2003).

We observed it in Ambo, in the Menagesha-Suba Forest, at the west bank of the Langano Lake and 52 km east of Robe.

**Material examined.** 1 male, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 01.XI.2013.

**Note.** At present, this highly widespread species is divided into at least 15 subspecies, of which the nominotypical one occurs in continental Africa southwards of Sahara.

***Eurema desjardinsii* (Boisduval, 1833)**



Fig. 15. *Eurema desjardinsii* (Boisduval, 1833). Male, recto. Wingspan 39 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 03.XI.2013. RHOPALOCERA varia Picture № 0525–2013.



Fig. 16. Ditto, verso. RHOPALOCERA varia Picture № 0526–2016.



Fig. 17. *Eureka desjardinsii* (Boisduval, 1833). Female, recto. Wingspan 34 mm. Ethiopia, Oromia Region, Arsi Zone, 2130 m, 07°28.02'N, 038°52.12'E, 09.XI.2015. RHOPALOCERA varia Picture № 0249–2013.



Fig. 18. Ditto, verso. RHOPALOCERA varia Picture № 0250–2016.

“X.[*anthidia*] *Desjardinsii*.” — Boisduval, 1833: 170. Type locality: “... à Madagascar ...”.

= “*Terias marshalli*, Butler” — Butler, 1899: 851, pl. 50., figs. 8, 9. Type locality: “Malvern, ...” [= South Africa: Johannesburg, Malvern].

**Bionomics.** The larval host-plants are *Senna didymobotrya*, *Sesbania punctata* and *S. sesban* (Fabaceae) in the Wondo Genet (Cross, 2003). In Tanzania the foodplant is *Hypericum* (Hypericaceae) (Kielland, 1990). This species inhabits forests, woodlands, anthropogenic shrub savannas. The flight period lasts throughout the year by several generations.

**Distribution.** Restricted to the Afrotropical Region, including Madagascar and the Comoros. In Ethiopia it was recorded from Gambella, Addis Ababa,

Ziway, Chilimo Forest (as Djem-Djem) (Carpenter, 1935); Shashamene, Kofele, Wendo, Kebre Mengist, and Neghele Borana (Rougeot, 1977); Wondo Genet (Cross, 2003). Beside that, we found this species also in Addis Ababa, Ambo and in the Munesa and Harena Forests.

**Material examined.** 3 males, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 01.XI.2013; 4 males, same locality, 03.XI.2013; 2 males, same locality, 09.XI.2013.

**Note.** At present the species is divided into two subspecies, of which the subspecies *marshalli* Butler, 1898 occurs in Ethiopia and everywhere in the Sub-Saharan Africa.

***Eurema regularis* (Butler, 1876)**



Fig. 19. *Eurema regularis* (Butler, 1876). Male, recto. Wingspan 36 mm. Ethiopia, Amhara Region, Bahir Dar, Zege Peninsula, 1795 m, 11°41.21'N, 037°20.38'E, 24.IV.2015. RHOPALOCERA varia Picture № 0627–2015.



Fig. 20. Ditto, verso. RHOPALOCERA varia Picture № 0628–2015.



Fig. 21. *Eurema regularis* (Butler, 1876). Female, recto. Wingspan 38 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51' E, 10.XI.2013. RHOPALOCERA varia Picture № 0293–2013.



Fig. 22. Ditto, verso. RHOPALOCERA varia Picture № 0294–2013.

“*Terias regularis*, n. sp.” — Butler, 1876b: 486. Type locality: “[Atbara (Abyssinia)]” [= Sudan: River Nile State, Atbarah].

= “[*Terias*] *Oberthurii*, nov. spec.” — Mabille, 1877: 223. Type locality: “Landana.” [= Angola: Cabinda Province, Cacongo].

**Bionomics.** The larval host-plants are unknown for Ethiopia. The species has been bred on Hyperaceae in Senegal (Larsen, 2005). It inhabits forests and wetted savannas. The flight period lasts throughout the year by a few generations.

**Distribution.** It is known from Senegal in the west to Ethiopia in the east and to Zimbabwe and Mozambique in the south. It was recorded in Ethiopia from Neghele Borana (Rougeot, 1977). We found this species in the vicinities of Ambo and on the peninsula of Zege near Bahir Dar.



**Material examined.** 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 10.XI.2013.

**Note.** Some authors (Larsen, 2005) consider this taxon to be a subspecies of *E. desjardinsii*.

***Eurema senegalensis* (Boisduval, 1836)**



Fig. 23. *Eurema senegalensis* (Boisduval, 1836). Male, recto. Wingspan 41 mm. Ethiopia, Oromia Region, Bale Zone, 52 km E of Robe, 1760 m, 07°03.27'N, 040°28.36'E, 05.XI.2015. RHOPALOCERA varia Picture № 0243–2016.



Fig. 24. Ditto, verso. RHOPALOCERA varia Picture № 0244–2016.



Fig. 25. *Eureka senegalensis* (Boisduval, 1836). Female, recto. Wingspan 40 mm. Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48' N, 037°54' E, 16.XI.2008. RHOPALOCERA varia Picture № 0733–2014.



Fig. 26. Ditto, verso. RHOPALOCERA varia Picture № 0734–2014.

“*Terias Senegalensis*, Boisd.” — Boisduval, 1836: 672. Type-species: “Sénégal.”.

= “*Ter.[ias] Brenda* Doubleday & Hewitson” — Doubleday, 1847 *in*: Doubleday, Westwood, 1846–52: 79, pl. 9, fig. 6. Type locality: “Sierra Leone, Ashanti” [= Ghana, Ashanti Region].

**Bionomics.** Cross (2003: 39) wrote: “Early stages: Apparently it feeds on *Senna didymobotrya*”. Larsen (2005) cited *Cassia* and *Acacia* (Fabaceae) as the host-plants of the species for West Africa. *Hypericum aethiopicum* (Hypericaceae) is also recorded as a host-plant (Kielland, 1990). This species flies in different types of evergreen forests up to 2700 m a.s.l. throughout the year by several generations.

**Distribution.** It is distributed in “the rainforest zone of Africa” (Cross, 2003: 39) from Senegal, Sierra Leone and Guinea in the west to Ethiopia in the east and to Tanzania and Mozambique in the south. For Ethiopia it is known from Gambella, Bishoftu, Langano Lake (Carpenter, 1935); Abobo (Gorbunov and Tuzov, 1989; 2000); Wondo Genet (Cross, 2003). In addition, we collected this species 52 km east of Robe.

**Material examined.** 1 female, Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48'N, 037°54'E, 16.XI.2008.

**Note.** This species does not have an interspecies division into subspecies.

### **Subfamily Pierinae Duponchel**

“Pierides. Mihi.” — Duponchel, 1835 [“1832”]: 381. Type genus: *Pieris* Schrank, 1801.

### **Tribe Pierini Duponchel**

### **Genus *Pieris* Schrank, 1801**

“*Pieris*.” — Schrank, 1801: 152, 161. Type-species: *Papilio brassicae* Linnaeus, 1758, by subsequent designation by Latreille, 1810: 351, 440.

### ***Pieris brassicoides* Guérin-Méneville, 1847**



Fig. 27. *Pieris brassicoides* Guérin-Méneville, 1847. Male, recto. Wingspan 53 mm. Ethiopia, Amhara Region, Debre Birhan University, 2756 m, 09°39.47'N, 039°31.65'E, 31.V.2014. RHOPALOCERA varia Picture № 1189–2014.



Fig. 28. Ditto, verso. RHOPALOCERA varia Picture № 1190–2014.



Fig. 29. *Pieris brassicoides* Guérin-Ménéville, 1847. Female, recto. Wingspan 53 mm. Ethiopia, Amhara Region, Debre Birhan University, 2756 m, 09°39.47'N, 039°31.65' E, 31.V.2014. RHOPALOCERA varia Picture № 1185–2014.



Fig. 30. Ditto, verso. RHOPALOCERA varia Picture № 1186–2014.

“*Pieris brassicoides*.” — Guérin-Méneville, 1847: 365, pl. 9, figs 3-6. Type locality: “[Abyssinie]” [= Ethiopia: Gondar?].

= *Pieris brassicoides bogalei* Rougeot, 1980: 153. Type locality: Ethiopia: Gojam, Choke.

= “*Pieris brassicoides marghanita* nom. n.” — Hemming, 1941: 208. Replacement name for *Pieris brassicoides meridionalis* Joicey et Talbot, 1922 [nec *Pieris napi* var. *meridionalis* Heyen, 1895]. Type locality: “Highlands of the Great Craters, Arusha district, Tanganyika territory, 7,500 to 8,800 feet, February to March, ...” [= Tanzania: Arusha].

**Bionomics.** Larsen (1986; 1996) noted that he saw ovipositing in clusters on the underside of the leaves of *Brassica napus* (Brassicaceae) in Addis Ababa. Kielland (1990) wrote, that “Dr. Rydon on one occasion observed many female *brassicoides* flying around Narturtiums (*Tropaelum* sic!) *majus* – Geraniaceae) in a garden on Mt. Meru”. Once in 2015 we found many larvae of this species on *Brassica carinata* (Brassicaceae) and *Tropaeolum majus* (Tropaeolaceae) in the garden and in a yard in the village of Rira in the Bale Mts. It inhabits open montane meadows, cabbage fields and vegetable gardens, wastelands. It is a montane species at altitudes not less than 2000 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** At present, this species is known to occur in the highlands of Ethiopia and Tanzania only. It was recorded the following points in Ethiopia: Gambella, Addis Ababa and Chilimo Forest (as Djem-Djem) (Carpenter, 1935); Addis Ababa, Goba, Robi, Dinsho, and environs of Mt. Batu (Rougeot, 1977); Addis Ababa (Larsen, 1986); Wondo Genet (Cross, 2003). We found it in Ambo, Debre Birhan, Dinsho and Rira.

**Material examined.** 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 05.VI.2014.

**Note.** At present, it is divided into two subspecies, but we do not welcome the separation of Tanzania populations as a distinct subspecies *Pieris brassicoides marghanita* Hemming, 1941 because the species as a whole is found exclusively as small separate populations.

### **Genus *Colotis* Hübner, 1819 [“1816”]**

“*Colotis* ...” — Hübner, 1819 [“1816”]: 97. Type-species: *Papilio amata* Fabricius, by subsequent designation by Scudder, 1875: 146.

- = “*Idmais*.” — Boisduval, 1836: 584. Type-species: *Pontia chrysonome* Klug, 1829, by subsequent designation by Scudder, 1875: 196.
- = “*Callosune*” — Doubleday, 1847 in: Doubleday, Westwood, 1846–52: 57. Type-species: *Papilio danae* Fabricius, 1775, fixed by subsequent designation by Scudder, 1875: 132.
- = “*Anthopsyche*. n. gen.” — Wallengren, 1857: 10. Type-species: *Papilio achine* Stoll, 1781, by subsequent designation by Scudder, 1875: 114.
- = “*Ptychopteryx*. n. gen.” — Wallengren, 1857: 17. Type-species: *Ptychopteryx bohemani* Wallengren, 1857, fixed by monotypy. – Junior homonym of *Ptychopteryx* Leech, 1817 (Diptera, Ptychopteridae).
- = “*Thespia*. Mihi.” — Wallengren, 1858: 77. – Replacement name for *Ptychopteryx* Wallengren, 1857.
- = “*Calicharis Nouna*, Lucas” — Oberthür, 1876: 18. Type-species: *Anthocharis delphine* Boisduval, 1836 (= *Anthocharis antigone* Boisduval, 1836), by subsequent designation by Hemming, 1939: 135.

***Colotis antevippe* (Boisduval, 1836)**



Fig. 31. *Colotis antevippe* (Boisduval, 1836). Male, recto. Wingspan 44 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58' N, 037°51' E, 17.XI.2008. RHOPALOCERA varia Picture № 0685–2014.



Fig. 32. Ditto, verso. RHOPALOCERA varia Picture № 0686–2014.

“*Anthocharis Antevippe*, Boisd.” — Boisduval, 1836: 572. Type locality: “Sénégal.”.

= “*A.[nthocharis] exole*.” — Reiche, 1849 [“1847”]: 460, pl. 31, figs 4–6. Type locality: “...du Tigré, du Samen et de l’Ahmara ... ” [= NW Ethiopia].

= “*Anthocharis Zera*.” — Lucas, 1852: 423. Type locality: “... en Abyssinie et au Sénégal.”.

= “*A.[nthopsyche] gavis* n. sp.” — Wallengren, 1857: 13. Type locality: “Hab. In Caffraria.” [= South Africa: Eastern Cape Province].

= “*Teracolus helle*.” — Butler, 1876a: 149. Type locality: “White Nile ...” [= Sudan].

= “*Teracolus subvenosus*, sp. n.” — Butler, 1883: 105. Type locality: “Victoria Nyanza.” [= Lake Victoria].

= “*Teracolus laura*, sp. n.” — Sharpe, 1890: 441. Type locality: “... from Mombasa to the Ulu Mountains, ...” [= Kenya?].

**Bionomics.** The exact host plant for the species in Ethiopia is unknown. In other parts of the area the host-plants are *Boscia*, *Ritchlea*, *Cadaba*, and *Maerua* (Capparaceae) (Larsen, 2005). It flies in shrub savannas, disturbed forests, semi-deserts up to 2200 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** Sub-Saharan Africa from Mauritania and Senegal in the northwest to Sudan and Ethiopia in the northeast and Namibia, Botswana and RSA in the south. This species is also known to occur in the southern

part of Arabian Peninsula (Larsen, 2005). In Ethiopia it was recorded from Semien Mts. (Reiche, 1849 [“1847”]); Gambella, Ziway Lake (Carpenter, 1935); Addis Ababa, Awasa Lake, Negele Borana and Arba Minch (Rougeot, 1977). We found it in the vicinities of Ambo.

**Material examined.** 1 male, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 17.XI.2008.

**Note.** Presently it is divided into three subspecies, of which subspecies *zera* Lucas, 1852 inhabits Sudan, Ethiopia, Uganda, Kenya and Tanzania, and southern Arabia.

***Colotis euipe* (Linnaeus, 1758)<sup>1</sup>**



Fig. 33. *Colotis euipe* (Linnaeus, 1758). Male, recto. Wingspan 42 mm. Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48'N, 037°54'E, 16.XI.2008. RHOPALOCERA varia Picture № 0687–2014.



Fig. 34. Ditto, verso. RHOPALOCERA varia Picture № 0688–2014.

<sup>1</sup> For this species, there are more than 25 synonyms. We give only the main ones and those that refer to the fauna of Ethiopia.



- “*Papilio Danaus. Euipe*.” — Linnaeus, 1758: 469. Type locality: “Habitat in Asia.” [incorrect!].
- = “*Pieris Omphale*.” — Godart, 1819: 122. Type locality: not mentioned [Africa?].
- = “*A.[nthocharis] exole*. – Reiche” — Reiche, 1849 [“1847”]: 460, pl. 31, figs 4-6. Type locality: “[Abyssinie] [= N. Ethiopia?].
- = “*Anthopsyche epigone nobis*.” — Felder and Felder, 1865: 186. Type locality: “Africa septentrionali-orientalis: Bogos.” [= Eritrea: Anseba region, Keren].
- = “*Teracolus microcale*, n. sp.” — Butler, 1876b: 487. Type locality: “[Atbara (Abyssinia)] [=Sudan: River Nile State, Atbarah].
- = “*Teracolus complexivus*, sp. n.” — Butler, 1885: 770. Type-locality: “[Somali-land] [= Somalia or SE Ethiopia].
- = “*C.[olotis] evippe* [sic] *mediata* subsp. n.” — Talbot, 1939: 199. Type locality: “S. Congo: Elizabethville, 18.iv.1924” [= Democratic Republic of the Congo: Lubumbashi].
- = *Colotis evippe* [sic] *mirei* — Bernardi, 1960: 123. Type locality: “Tibesti, versant nord (Zoumeri), entre Waneufou et Nemanemasse, 1200 m” [= Chad: Tibesti Massif].

**Bionomics.** The host-plants of the Ethiopian populations of the species are unknown. Larsen (2005: 96) wrote: “The host-plants include all the usual Capparaceae, but in the forest zone *Cleome* (Cleomaceae) is the main food by far”. Kielland (1990) mentioned *Maerua variifolia*, *Capparis citrifolia* and *C. oleoides* (Capparaceae) as foodplans of the species in Tanzania. It flies in the bush or forest margins up to 2900 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** This species occurs throughout much of Africa south of Sahara, and Arabian Peninsula. It was recorded for the northwest (Reiche, 1849 [“1847”]) and probably southeast Ethiopia (Butler, 1885); Gambella (Carpenter, 1935); Awasa (Hawassa) Lake (Rougeot, 1977); Abobo (Gorbunov and Tuzov, 1989; 2000). We found it in the Crater Wonchi near Ambo only.

**Material examined.** 1 male, Ethiopia, West Shewa, Crater Wonchi, 2900 m, 08°48'N, 037°54'E, 16.XI.2008.

**Note.** A lot of authors have wrongly spelled the name as “evippe”. At present this species is divided into six subspecies of which subspecies *complexivus* Butler, 1885 should inhabit southern and the subspecies *exole* Reiche, 1849 [“1847”] should lives on southern part of the country. The subspecies position of the studied population is unclear.

**Genus *Belenois* Hübner, 1819 [“1816”]**

“*Belenois Calypso* Cram.” — Hübner, 1819 [“1816”]: 92. Type-species: *Papilio calypso* Drury, 1773, by monotypy.

= “*Anaphaeis* ...” — Hübner, 1819 [“1816”]: 93. Type-species: *Papilio creona* Cramer, 1776, by subsequent designation by Scudder, 1875: 111.

= *Pseudohuphina* — Stoneham, 1940: [4]. Type-species: *Pieris raffrayi* Oberthür, 1878, by original designation.

= *Pseudanaphaeis* — Bernardi, 1953: 50. Type-species: *Pieris gidica* Godart, 1819, by original designation.

***Belenois aurota* (Fabricius, 1793)**



Fig. 35. *Belenois aurota* (Fabricius, 1793). Male, recto. Wingspan 42 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 05.VI.2014. RHOPALOCERA varia Picture № 0441–2014.

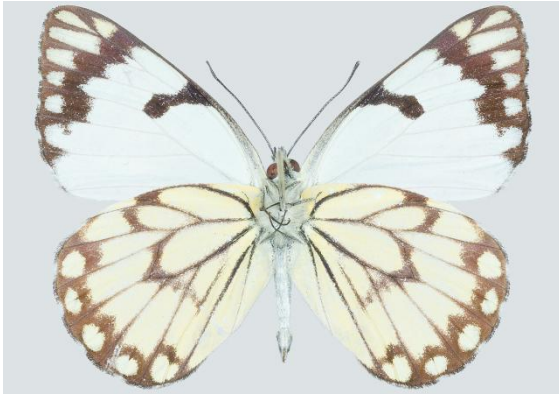


Fig. 36. Ditto, verso. RHOPALOCERA varia Picture № 0442–2014.



Fig. 37. *Belenois aurota* (Fabricius, 1793). Female, recto. Wingspan 39 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51' E, 18.X.2013. RHOPALOCERA varia Picture № 0511–2015.



Fig. 38. Ditto, verso. RHOPALOCERA varia Picture № 0512–2015.

“*Papilio aurota*.” — Fabricius, 1793: 197. Type locality: “Habitat in Coromandel Dom.” [= India: southeastern coast region].

= “*Pinacopteryx syrix* n. sp.” — Wallengren, 1860: 34. Type locality: “Ad Swakop Africae” [= Namibia: Swakopmund].

= “*Pieris Lordaca*, n.” — Walker, 1870: 48. Type locality: “Harkeko.” [= Eritrea: Archico].

**Bionomics.** The exact host-plants of the species are unknown for the territory of Ethiopia for the time being. Larsen (2005: 97) noted that “The host-plants are all genera of Capparaceae, with *Maerua* as a favorite”. It inhabits different types of open biotopes like savanna, bush, forest margins, wasteland, etc. This species is very common almost everywhere it lives. The flight period lasts throughout the year by several generations.

**Distribution.** It is widespread in the Afrotropical Region including Madagascar. This species is also known to occur in Egypt and in the southwest and south Asia from Israel on the west to India in the east and Iran, Turkmenistan and Tajikistan in the north. In Ethiopia it was registered in Harar (as *Belenois mesentina* Cram.) (Butler, 1899); Gambella, Addis Ababa, Kofele, Dinsho, and Awasa (Rougeot, 1977). We observed it in Addis Ababa and at the west bank of the Langan lake.

**Material examined.** 1 male, 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 05.VI.2014; 1 female, same locality, 18.X.2013.

**Note.** At present this species is divided into four subspecies of which the nominotypical one populates the whole Africa. This species is known as a strong migrant.

***Belenois gidica* (Godart, 1819)**



Fig. 39. *Belenois gidica* (Godart, 1819). Male, recto. Wingspan 44 mm. Ethiopia, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35' E, 15.XI.2015. RHOPALOCERA varia Picture № 0045–2015.



Fig. 40. Ditto, verso. RHOPALOCERA varia Picture № 0046–2015.



Fig. 41. *Belenois gidica* (Godart, 1819). Female, recto. Wingspan 46 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 05.VI.2014. RHOPALOCERA varia Picture № 0439–2014.



Fig. 42. Ditto, verso. RHOPALOCERA varia Picture № 0440–2014.

- “*Pieris Gidica*.” — Godart, 1819: 131. Type locality: not mentioned [West Africa?].
- = “*Pieris Abyssinica*.” — Lucas, 1852: 328. Type locality: “... en Abyssinie.” [= Ethiopia?].
- = “*P.[inacopteryx] doubledayi* n. sp.” — Wallengren, 1857: 8. Type locality: “Hab. in Caffraria.” [= Eastern Cape of South Africa].
- = “*P.[inacopteryx] westwoodi* n. sp.” — Wallengren, 1857: 9 Type locality: “Hab. in Caffraria.” [= Eastern Cape of South Africa].
- = “*Pieris Allica*, Bdv., ...” — Oberthür, 1878: 16. Type locality: “Lac de Tzana.” [= Ethiopia: Amhara Region, Lake Tana].
- = *Pieris gidica hypoxantha* — Ungemach, 1932: 27. Type locality: “Gambella” [= Ethiopia: Gambella].

**Bionomics.** The larval host-plant in Ethiopia is still unknown, but in other parts of its area these are *Boscia* spp., *Capparis* spp., *Maerua* spp. (Capparaceae) and *Salvadora* spp. (Salvadoraceae) (Kielland, 1990; Larsen, 2005). Like the previous species it inhabits different types of open biotopes like savanna, bush, forest margins, wasteland, etc. up to 2400 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** This species occurs in Sub-Saharan Africa from Mauritania in the west to Sudan, Ethiopia and Somalia in the east and Namibia and RSA in the south. For Ethiopia, it was reported from Shiek Hussein (Butler, 1897); Gambella, Addis Alem, Addis Ababa, Ziway Lake (Carpenter, 1935); Addis Ababa, Ziway Lake, Mojo, Awassa, Negele Borana and Arba Minch (Rougeot, 1977); Abobo, Gambella and Addis Ababa (Gorbunov and Tuzov, 1989; 2000). We also found this species at the western bank of the Langano lake, in the Harena Forest and 52 km E of Robe.

**Material examined.** 1 male, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 04.XI.2013; 1 male, 2 females, same locality, 05.VI. 2014; 1 male, Ethiopia, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35'E, 15.XI.2015.

**Note.** Currently this species is divided into three subspecies, of which ssp. *abyssinica* Lucas, 1852 is known to be from Ethiopia. The systematic position of the subspecies *hypoxantha* Ungemach, 1932 remains unclear (Larsen, 2005).

***Belenois raffrayi* (Oberthür, 1878)**



Fig. 43. *Belenois raffrayi* (Oberthür, 1878). Male, recto. Wingspan 45 mm. Ethiopia, Amhara Region, Bahir Dar, Zege Peninsula, 11°41.21'N, 037°20.38'E, 24.IV.2015. RHOPALOCERA varia Picture № 0773–2015.



Fig. 44. Ditto, verso. RHOPALOCERA varia Picture № 0774–2015.



Fig. 45. *Belenois raffrayi* (Oberthür, 1878). Female, recto. Wingspan 52 mm. Ethiopia, Amhara Region, Bahir Dar, Zege Peninsula, 11°41.21'N, 037°20.38'E, 24.IV.2015. RHOPALOCERA varia Picture № 0777–2015.



Fig. 46. Ditto, verso. RHOPALOCERA varia Picture № 0778–2015.

“*Pieris Raffrayi*, Oberthür” — Oberthür, 1878: 17, pl. 1, fig. 3. Type locality: “Lac de Tzana, ...” [= Ethiopia: Tana Lake].

= “*Belenois raffrayi similis* ssp. nov.” — Kielland, 1978: 163, pl. 7, figs 25, 26. Type locality: “Tanzania, Mt. Sitebi, 2000 m, 1.v.1970, J. Kielland”.

**Bionomics.** The host-plants are unknown for the populations from Ethiopia. In Tanzania “*Capparis* spp. (Capparicaceae); *Rhus* sp. (Anacardiaceae) was mentioned as foodplants for the species (Kielland, 1990: 61). It inhabits montane deciduous forests up to 2400 m a.s.l. It appears to be flying throughout all the year by several generations.

**Distribution.** It inhabits East Africa from Ethiopia and Sudan in the north to Tanzania in the south and the Democratic Republic of Congo in the west. From Ethiopia, this species was recorded from Tana Lake (Oberthür, 1878); Gambella (Carpenter, 1935); Chilimo Forest (as Djam-Djem) (Carpenter, 1935). We found it on the Zege Peninsula near Bahir Dar.

**Material examined.** We do not have a single specimen of the species from the study area, and it is mentioned here after the indication of Carpenter (1935).

**Note.** Currently this species is divided into three subspecies, of which the nominotypical one occurs in Ethiopia.

### Genus *Pontia* Fabricius, 1807

“*Pontia*.” — Fabricius, 1807: 283. Type-species: *Papilio daplidicae* Linnaeus, 1758, by subsequent designation by Curtis, 1824: pl. 48.



= “*Mancipium ...*” — Hübner, 1807 [“1806”]: pl. [141]. Type-species:  
*Papilio helice* Linnaeus, 1764, by monotypy.

***Pontia daplidice* (Linnaeus, 1758)**



Fig 47. *Pontia daplidicae* (Linnaeus, 1758). Male, recto. Wingspan 41 mm. Ethiopia, Addis Ababa, Embassy of Russia, 09°02'N, 038°47'E, 20.IV.2015. RHOPALOCERA varia Picture № 0819–2015.



Fig. 48. Ditto, verso. RHOPALOCERA varia Picture № 0820–2015.

“*Papilio. Danaus. Daplidice.*” — Linnaeus, 1758: 468. Type locality:  
“Habitat in Europa australi & Africa.” [= Northwest Africa  
(Wagener, 1988)].

= “*P.[ieris] daplidice aethiops* nov.” — de Joannis and Verity, 1913: 120,  
fig. 2. Type locality: “... ad Adi-Ugri ed ad Adi-Caiè” [= Eritrea:  
Mendefera, Adi Keyh].

**Bionomics.** Larsen (2005: 101) wrote: “The main host-plants are species of *Reseda* and other Resedaceae, but also *Sinapis* and other Brassicaceae”. In

Ethiopia, on the experimental fields of the Ambo Plant Protection Research Center, we repeatedly observed females of the species ovipositing on the young *Sinapis* sp. (Brassicaceae). It inhabits open montane grasslands, bushes, fields from 2000 to 2800 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** It occurs in a narrow stripe from Northwest Africa and Mauritania in the west to Ethiopia and Southeast Arabia in the east. However, the border of contact with the Palearctic vicariant species *Pontia edusa* (Cramer, 1777) remains unclear. In Ethiopia this species was recorded from Gambella and Bishoftu (Carpenter, 1935); Ziway, Koka Lake, and Dodola (Rougeot, 1977); Addis Ababa (Gorbunov and Tuzov, 1989; 2000), Wondo Genet (Cross, 2003). We also observed it in Ambo, Addis Ababa and Debre Birhan.

**Material examined.** 1 male, Ethiopia, Addis Ababa, Embassy of Russia, 09°02'N, 038°47'E, 20.IV.2015.

**Note.** From the highlands of Eritrea, a subspecies *aethiops* de Joannis et Verity, 1913 was described, which apparently inhabits the highlands of Ethiopia.

### Genus *Dixeia* Talbot, 1932

*Dixeia* — Talbot, 1932: 36. Type species: *Pieris charina* Boisduval, 1836, by original designated.

### *Dixeia charina* (Boisduval, 1836)



Fig. 49. *Dixeia charina* (Boisduval, 1836). Male, recto. Wingspan 40 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 09.XI.2013. RHOPALOCERA varia Picture № 0299–2013.



Fig. 50. Ditto, verso. RHOPALOCERA varia Picture № 0300–2013.

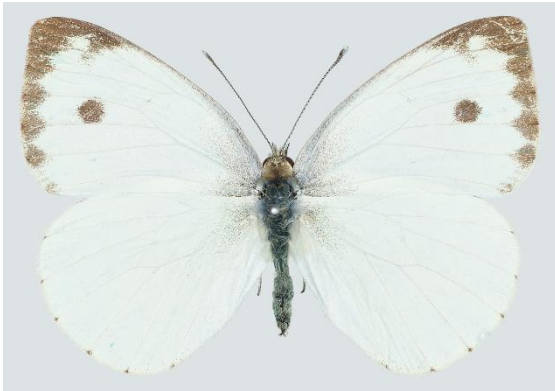


Fig. 51. *Dixeia charina* (Boisduval, 1836). Female, recto. Wingspan 42 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51' E, 04.XI.2013. RHOPALOCERA varia Picture № 0509–2015.



Fig. 52. Ditto, verso. RHOPALOCERA varia Picture № 0510–2015.

- “*Pieris Charina*, Boisd.” — Boisduval, 1836: 525. Type locality: “Cafreterie.” [= South Africa].
- = “*Pieris Simana* Hpfr. n. sp.” — Hopffer, 1855: 640. Type locality: “[Mossambique]” [= Mozambique].
- = “*Belenois liliana*.” — Grose-Smith, 1889: 122. Type locality: “[... in the neighbourhood of Mombasa, East Coast of Africa]” [= Kenya: Mombasa].
- = “*Pinacopteryx nigropunctata*, sp. n.” — Sharpe, 1890: 336. Type locality: “[... in the Ukambani country]” [= Kenya: Machakos and Kitui districts].
- = “*Pinacopteryx gerda*.” — Grose-Smith and Kirby, 1893: 4, figs 10, 11. Type locality: “Hab. Mombasa” [= Kenya: Mombasa].
- = “*Pieris gerda dagera*, n. subsp.” — Suffert, 1904: 82. Type locality: “... aus Mhonda.” [= Tanzania: Morogoro Region, Mhonda].
- = “*Pinacopteryx liliana*, Gr.-Sm., *pulverulenta*, subsp. n.” — Dixey, 1929: 498. Type locality: “Mt. Kulal, N.N.W. of Mt. Marsabit and towards the S of Lake Rudolf;” [= Kenya: Eastern Province].
- = *Dixeia doxo septentrionalis* — Bernardi, 1958: 77. Type locality: “Djemdjem, Ethiopie” [= Ethiopia: Chilimo Forest near Ginchi].

**Bionomics.** The larval host plants are unknown for the country for the time being. In Tanzania “species of *Capparis* (Capparidaceae)” was mentioned as foodplants for the species (Kielland, 1990: 63). *Capparis sepiaria* (Capparidaceae) is known as a foodplant in South Africa (Pringle *et al.*, 1994). The species flies in open habitats, deciduous woodlands, bushes. The flight period lasts throughout the year by several generations.

**Distribution.** It occurs from Ethiopia and Kenya in the northeast to South Africa in the south and Democratic Republic of Congo in the west. From Ethiopia it was known from Addis Alem (Ungemach, 1932); Chilimo Forest near Ginchi (as Djemdjem Forest) (Bernardi, 1958). We found this species in Ambo, Menagesha-Suba Forest and on the Zege Peninsula near Bahir Dar.

**Material examined.** 1 male, 1 female, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 04.XI.2013; 1 male, same locality, 09.XI.2013; 1 female, same locality, 05.VI. 2014; 1 male, 1 female, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35'E,

15.XI.2015.

**Note.** Presently it is divided into seven subspecies, of which the subspecies *septentrionalis* Bernardi, 1958 inhabits Ethiopia.

**Genus *Mylothris* Hübner, 1819 [“1816”]**

“*Mylothris* ...” — Hübner, 1819 [“1816”]: 90. Type-species: *Papilio poppea* Cramer, 1777, by subsequent designation by Butler, 1870: 42.

= *Pseudomylothris* — Neustetter, 1929: 191. Type-species: *Mylothris leonora* Krüger, 1928, by monotypy.

***Mylothris agathina* (Cramer, 1779)**



Fig. 53. *Mylothris agathina* (Cramer, 1779). Male, recto. Wingspan 55 mm. Ethiopia, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35'E, 15.XI.2015. RHOPALOCERA varia Picture № 0037–2015.

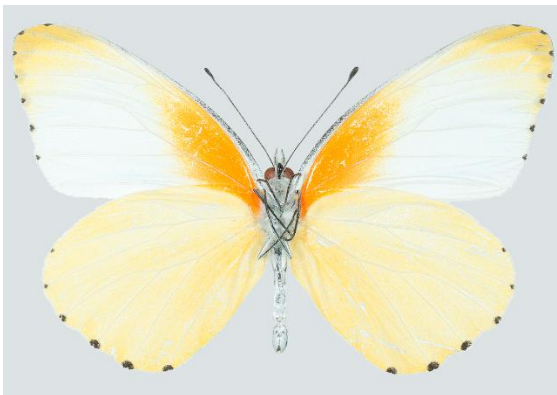


Fig. 54. Ditto, verso. RHOPALOCERA varia Picture № 0038–2015.



Fig. 55. *Mylothris agathina* (Cramer, 1779). Female, recto. Wingspan 63 mm. Ethiopia, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35' E, 15.XI.2015. RHOPALOCERA varia Picture № 0031–2015.



Fig. 56. Ditto, verso. RHOPALOCERA varia Picture № 0032–2015.

“*D.[anaus] E. Agathina*.” — Cramer, 1779: 70. Type locality: “... l’Isle de Java à Batavia.” [incorrect!]

= “*Mylothris chloris richlora*, n. subsp.” — Suffert, 1904: 72. Type locality: “... aus Njam Njam.” [= Central African Republic].

= “*M.[ylothris] intermedia* Auriv.” — Aurivillius, 1910: 32, pl. 12, row a. Type locality: “Kamerun” [= Cameroon].

**Bionomics.** The following plants were mentioned as host-plants in various parts of its area: *Tapinanthus rubromarginatus*, *T. oleifolius*, *Erianthemum dregei*, and *Oncocalyx quinquenervia* (Loranthaceae), *Ximena caffra*, *Osyris lanceolata* and *O. compressa* (Santalaceae) for South Africa (Pringle *et al.*, 1994), and “doubtless Loranthaceae” for Tanzania (Kielland, 1990).

In Bahir Dar, we found egg clusters of the species on a parasitic *Loranthus* sp. (Loranthaceae). The species inhabits various deciduous woodland, forest clearings and parks and gardens up to 2400 m a.s.l. The flight period lasts throughout the year by several generations.

**Distribution.** It is widespread from Cameroon and Gabon in the west to Sudan/Ethiopia and Somalia in the east and South Africa and Swaziland in the south. In Ethiopia it was recorded from Harar (Butler, 1899; Dufrane, 1947); Gambella, Chilimo Forest (as Djem-Djem forest) (Carpenter, 1935); Awasa, Wendo, Arba Minch (as a subspecies of *M. chloris*) (Rougeot, 1977); Abobo (as a subspecies of *M. chloris*) (Gorbunov and Tuzov, 1989; 2000). We also found this species in Addis Ababa and Bahir Dar.

**Material examined.** 3 males, 1 female, Ethiopia, West Shewa, Menagesha-Suba Forest, 2400 m, 08°57.67'N, 038°32.35'E, 15.XI.2015.

**Note.** Some investigators contend that this taxon is a subspecies of *M. chloris* (Fabricius, 1775) but Berger (1981) recorded that both of them fly together in the northeastern Zair and should therefore be cited as distinct species. At present this species is divided into two subspecies, of which the nominotypical one populates Ethiopia.

### ***Mylothris erlangeri* Pagenstecher, 1902**



Fig. 57. *Mylothris erlangeri* Pagenstecher, 1902. Male, recto. Wingspan 53 mm. Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 08.XI.2009. RHOPALOCERA varia Picture № 0177–2017.



Fig. 58. Ditto, verso. RHOPALOCERA varia Picture № 0178–2017.



Fig. 59. *Mylothris erlangeri* Pagenstecher, 1902. Female, recto. Wingspan 53 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 27.X.2013. RHOPALOCERA varia Picture № 0503–2015.



Fig. 60. Ditto, verso. RHOPALOCERA varia Picture № 0504–2015.



“*M.[ylothris] erlangeri*, nov. spec.” — Pagenstecher, 1902: 163, Taf. 2, Fig. 7, 8. Type locality: “Gewidscha 14.XII.1900, von Moldscha 28.XII.00, von Wolu 30.I.01; ... von Laku 12, XII.00 und Goldscha 19.I.01.” [= Ethiopia: the vicinities of the Lake Abaya, Leku].

**Bionomics.** The host-plant is unknown. It inhabits various deciduous woodland, forest clearings and margins up to 2400 m a.s.l. All specimens known to us were collected from October to January.

**Distribution.** This species seems to be endemic to Ethiopia. It was known from the vicinities of the Lake Abaya and Leku (Pagenstecher, 1902); Gambella, Chilimo Forest (as Djem-Djem forest) (Carpenter, 1935); Addis Ababa, Kofele, Kebre Mengist, and Fisiha Genet (Rougeot, 1977); Wondo Genet (Cross, 2003). We found this species in Ambo and in the forests of Chilimo, Munesa and Harena.

**Material examined.** 1 male, Ethiopia, West Shewa, 2 km S Ambo, PPRC, 2160 m, 08°58'N, 037°51'E, 08.XI.2009; 1 male, Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 23.X.2013; 1 male, 1 female, same locality, 27.X.2013.

**Note.** At present, this species does not have an intraspecies division into subspecies.

***Mylothris mortoni* Blachier, 1912**



Fig. 61. *Mylothris mortoni* Blachier, 1912. Male, recto. Wingspan 52 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 23.X.2013. RHOPALOCERA varia Picture № 0497–2015.



Fig. 62. Ditto, verso. RHOPALOCERA varia Picture № 0498–2015.



Fig. 63. *Mylothris mortoni* Blachier, 1912. Female, recto. Wingspan 51 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2370 m, 09°03.99'N, 038°08.14'E, 24.X.2015. RHOPALOCERA varia Picture № 0257–2017.



Fig. 64. Ditto, verso. RHOPALOCERA varia Picture № 0258–2017.

“*Mylothris mortoni* nov. sp.” — Blachier, 1912: 173, pl. 15, fig. 1. Type locality: “Kaffa, dans l’Abyssinie meridionale” [= Ethiopia: Kaffa Province].

= *Mylothris mortoni balkis* — Ungemach, 1932: 23. Type locality: “Alenga” [= Ethiopia: West Shewa region, Alenga].

**Bionomics.** The host-plant is unknown. It inhabits various deciduous forests. All known specimens were collected in October.

**Distribution.** This species seems to be endemic to Ethiopia. It was known from the province of Kaffa (Blachier, 1912); Gambella, Chilimo Forest (as Djem-Djem forest) (Carpenter, 1935); Kebre Mengist (Rougeot, 1977). We also found it in the forest of Chilimo near Ginchi.

**Material examined.** 1 male, Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04’N, 038°08’E, 23.X.2013; 8 males, 1 female, same locality, 24.X.2015; 1 male, same locality, 25.X.2015.

**Note.** At present, this species does not have an intraspecies division into subspecies.

### *Mylothris sagala* Grose-Smith, 1886



Fig. 65. *Mylothris sagala* Grose-Smith, 1886. Male, recto. Wingspan 50 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04’N, 038°08’E, 23.X.2013. RHOPALOCERA varia Picture № 0501–2015.



Fig. 66. Ditto, verso. RHOPALOCERA varia Picture № 0502–2015.



Fig. 67. *Mylothris sagala* Grose-Smith, 1886. Female, recto. Wingspan 52 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 23.X.2013. RHOPALOCERA varia Picture № 0499–2015.



Fig. 68. Ditto, verso. RHOPALOCERA varia Picture № 0500–2015.

- “*Mylothris sagala*.” — Grose-Smith, 1886: 32. “Sagala, about 100 miles inland west from Zanzibar.” [= Tanzania: Dodoma Region, Sagala].
- = “*Mylothris narcissus*, sp. n.” — Butler, 1888: 95. Type locality: “[Kilimanjaro] Forests of Tiveta (Hannington).” [= Tanzania: Mount Kilimanjaro].
- = “*Mylothris narcissus*, var. *dentatus*.” — Butler, 1896: 124, pl. 6, fig. 3. Type locality: “Kantorongondo Mt., Nyika, 5900 feet alt. April 15th, 1895.” [= Malawi: Nyika Plateau].
- = “*Mylothris neumanni*, sp. n.” — Sharpe, 1896: 125. Type species: “Near Mount Kenia.” [= Kenya: Mount Kenya].
- = “*Mylothris swaynei*, sp. n.” — Butler, 1899: 822. Type locality: “Harar Highlands.” [= Ethiopia: environs of Harar].
- = “[*Mylothris narcissus* Butl.] var. *dulcis* n.” — Thureau, 1903: 141. Type locality: “Wege von Poroto-Rungwe, ... Hochplateau von Langenburg (Ukinga, Buanyi-Poroto) ...” [=Tanzania: Kipengere Range].
- = “*Mylothris sagala albissima* subsp. n.” — Talbot, 1944: 170. Type locality: “N.E. Rhodesia: Mpica district, 4000 feet, March-April, 1921 ...” [= Zimbabwe].
- = “*Mylothris sagala* Gr.-Sm. f. *umtaliana*, f. nov.” — Van Son, 1949: 228, pls 22-23, figs 66, 67. Type locality: “Vumba, Umtali District, Southern Rhodesia, 28 February, 1928” [= Zimbabwe: Bvumba Mountains].
- = “[*Mylothris sagala* Grose-Smith, 1886] Ssp. *mahale* nov.” — Kielland, 1990: 69, pl. 14. Type locality: “Tanzania, Kigoma, Mahale Mt., Ujamba, 2000 m., 28-X-1969, J. Kielland.”
- = “[*Mylothris sagala* Grose-Smith, 1886] Ssp. *oldeanensis* nov.” — Kielland, 1990: 69, pl. 14. Type locality: “Tanzania, Oldeani Mt., 10-III-1963, J. Kielland.”

**Bionomics.** The exact host-plants of the species are unknown for Ethiopian populations. The following plants were mentioned as foodplants for the species from East Africa (Someren, 1974): *Erianthemum dregei* (Loranthaceae), *Oncocalyx sulphureus*, *O. fischeri* (Loranthaceae), *Phragmanthera usuiensis* (Loranthaceae), and *Viscum* species (Viscaceae). It inhabits various types of montane deciduous forests up to 2400 m a.s.l.

The butterflies willingly visit flowers. It seems the flight period lasts throughout the year by several generations.

**Distribution.** This species occurs from the Democratic Republic of Congo in the west to Ethiopia and Kenya in the north and east and Mozambique and Zimbabwe in the south. From Ethiopia, it was mentioned from Harar (Butler, 1899); Gambella and Chilimo Forest (as Djem-Djem) (Carpenter, 1935); Kebr Mengist (Rougeot, 1977). We observed it in the forest of Chilimo near Ginchi.

**Material examined.** 1 male, 1 female, Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 23.X.2013.

**Note.** Currently this species is divided into 11 subspecies, which we think it is hardly justified. In Ethiopia the subspecies *swaynei* Butler, 1899 is known to occur.

### ***Mylothris jacksoni* Sharpe, 1891**



Fig. 69. *Mylothris jacksoni* Sharpe, 1891. Male, recto. Wingspan 48 mm. Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2370 m, 09°03.99'N, 038°08.14'E, 24.X.2015. RHOPALOCERA varia Picture № 0259–2017.



Fig. 70. Ditto, verso. RHOPALOCERA varia Picture № 0260–2017.



Fig. 71. *Mylothris jacksoni* Sharpe, 1891. Female, recto. Wingspan 50 mm. Ethiopia, Oromia Region, Arsi Zone, Munesa Forest, 2130 m, 07°28.02'N, 038°52.12'E, 09.XI.2015. RHOPALOCERA varia Picture № 0287–2017.



Fig. 72. Ditto, verso. RHOPALOCERA varia Picture № 0288–2017.

“*Mylothris jacksoni*, sp. n.” — Sharpe, 1891: 190, pl. 16, fig. 3. Type locality: “Kavirondo, Oct. 1889; Kikuyu, Aug. 1889.” [= Kenya:

Lake Victoria, Winam Gulf; Central province: Kikuyu].

- = "*Mylothris knutsoni* n. sp." — Aurivillius, 1891: 222. Type locality: "Camerun; ..." [= Cameroon].
- = "*Mylothris sagala nagichota* subsp. n." — Talbot, 1944: 160 (key), 170. Type locality: "Southern Sudan: Didinga Mtns., Nigichot Station, ..." [= South Sudan: Namorunyang State, Didinga Hills].
- = *Mylothris sagala cephisus* — Talbot, 1946: 33. Type locality: "Chyulu Hills (southern)" [= Kenya: Chyulu Hills].
- = "*Mylothris sagala sagitta* Clifton subsp. nov." — Clifton, 1980: 95, figs. Type locality: "Mt Nyiro, 7000 ft, N.F.D., Kenya, Feb. 1946, ..." [= Kenya: Samburu County, Mt. Nyiro].
- = "*Mylothris jacksoni cederici* subspec. nov." — Collins, 1997: 108. Type locality: Equatorial Guinea: Bioko Island.

**Bionomics.** The host-plants are unknown for the populations from Ethiopia. Kielland (1990: 67), in his book on the butterflies of Tanzania, simply pointed out "Foodplant: (Lorantaceae)". Apparently, the exact host-plant remains unknown until now. It inhabits montane and submontane forests up to 2400 m a.s.l. In Ethiopia we observed this species in October and November only.

**Distribution.** It is known that this species is spread by a narrow band from Nigeria, Cameroon and Equatorial Guinea in the west to Sudan, Ethiopia and Kenya in the east. In Ethiopia we found it in the Chilimo forest near Ginchi and in the Munesa Forest in the Arsi Zone.

**Material examined.** 1 male, Ethiopia, West Shewa, 4 km N Ginchi, Chilimo Forest, 2360 m, 09°04'N, 038°08'E, 14.X.2015.

**Note.** Larsen (2005: 105) wrote "The taxon usually occurs in the literature as a subspecies of *M. sagala* Grose-Smith, 1886, but *M. jacksoni* is certainly a distinct species". We found this species flying along with *M. sagala* in the forest of Ginchi near Ginchi. This also confirms the species rank of *M. jacksoni*. At present this species is divided into at least six subspecies. The subspecific position of the Ethiopian populations remains unclear.

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