

Genus *Hemiolaus* Aurivillius, [1922] Hairstreaks

In: Seitz, [1908-25]. *Die Gross-Schmetterlinge der Erde*, Stuttgart (2) **13** *Die Afrikanischen Tagfalter*: 386 (614 pp.).

Type-species: *Jolaus caeculus* Hopffer, by subsequent designation (Stempffer & Bennett, 1958. *Bulletin de l'Institut Français d'Afrique Noire* (A) **20**: 1254 (1243-1347).).

The genus *Hemiolaus* belongs to the Family Lycaenidae Leach, 1815; Subfamily Polyommatinae Swainson, 1827; Tribe Hypolycaenini Swinhoe, 1910; Subtribe Hemiolaina Grishin, 2023. (see Zhang *et al.* 2023. Butterfly Classification and Species Discovery Using Genomics. *The Taxonomic Report of the International Lepidoptera Survey* **11** (3): 41). The other genera in the Tribe Hypolycaenini in the Afrotropical Region are *Hypolycaena* and *Leptomyrina*.

Hemiolaus (Hairstreaks) is an Afrotropical genus comprising five species, three of these species in Madagascar. Stempffer & Bennett (1958: 1254) treated *Hemiolaus* as a subgenus of *Iolaus*. Its status was revised by Henning (1994) [*In*: Pringle, Henning, & Ball [eds.] *Pennington's butterflies of southern Africa* 2nd edition: 161 (800pp.). Struik-Winchester, South Africa], who transferred it from *Iolaus* Hübner to *Hypolycaena* Felder, at subgeneric level. Larsen (1991c: 201) treats *Hemiolaus* as a full genus as do Lees *et al.* (2003).

Species in the genus *Hemiolaus* Aurivillius, [1922]

H. caeculus
H. ceres

H. maryra
H. cobaltina

H. vividus

**Hemiolaus caeculus* (Hopffer, 1855) Azure Hairstreak (#)



Hemiolaus caeculus. Left: Male. Right: Female.
Images courtesy Herbert Otto.



Hemiolaus caeculus. Left: Wet season form underside. Right: Dry season form underside.
Images courtesy Herbert Otto.

Jolaus caeculus Hopffer, 1855. *Berichte über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin* **1855**: 642 (639-643).
Hypolycaena caeculus (Hopffer, 1855). Trimen & Bowker, 1887b.
Hypolycaena caeculus Hopffer. Swanepoel, 1953a.
Iolaus caeculus Hopffer, 1855. Dickson & Kroon, 1978.
Hemiolaus coeculus (Hopffer, 1855). Kielland, 1990d. [Misspelling of species name].
Hemiolaus caeculus (Hopffer, 1855). Larsen, 1991c: 201.
Hypolycaena (Hemiolaus) caeculus (Hopffer, 1855). Pringle *et al.*, 1994: 161.
Iolaus (Hemiolaus) caeculus (Hopffer, 1855). Ackery *et al.*, 1995.
Hemiolaus caeculus (Hopffer, 1855). Lees *et al.*, 2003.
Hemiolaus coeculus Hopffer, 1855. D'Abrera, 2009: 762. [misspelling of species name; should be *caeculus*].



Hemiolaus caeculus caeculus. Male (wet season form) (Wingspan 33 mm). Left – upperside; right – underside.
 Laurenceville, Zimbabwe. 9 December 2002. J. Dobson.
 Images M.C. Williams ex Dobson Collection.



Hemiolaus caeculus caeculus. Male (dry season form) (Wingspan 34 mm). Left – upperside; right – underside.
 Manouts Park, Mpumalanga, South Africa. 13 July 1998. M. Williams.
 Images M.C. Williams ex Williams Collection.



Hemiolaus caeculus caeculus. Female (wet season form) (Wingspan 36 mm). Left – upperside; right – underside.
Laurenceville, Zimbabwe. 9 December 2002. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type data: Mozambique: “Mossambique”.

Diagnosis: In the dry-season form the red stripes on the underside of the wings are much narrower and the ground-colour on the underside is much darker (Pringle *et al.*, 1994).

Taxonomy: *Hemiolaus caeculus* is probably either a sister species or, more likely, a paraspecies (see Ackery & Vane-Wright, 1984) to the Madagascan *Hemiolaus ceres* (Lees *et al.*, 2003).

Distribution: Democratic Republic of Congo, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Eswatini.

Misattributed to the Madagascar fauna by Mabille (1887: 233).

Habitat: Savanna and margins of coastal forest. Also found in bushy vegetation on coastal dunes, just above the high water mark at Inhambane in Mozambique (MCW, unpublished). In Tanzania the nominate subspecies occurs at altitudes from 600 to 1 150 m, subspecies *littoralis* from sea-level to the slopes of the Usambara Mountains (Kielland, 1990d).

Habits: The flight is slow and leisurely, usually around or near the larval foodplant, or other low bushes. Both sexes are fond of flowers (Pringle *et al.*, 1994).

Flight period: All year, with distinct dry- and wet-season forms.

Early stages:

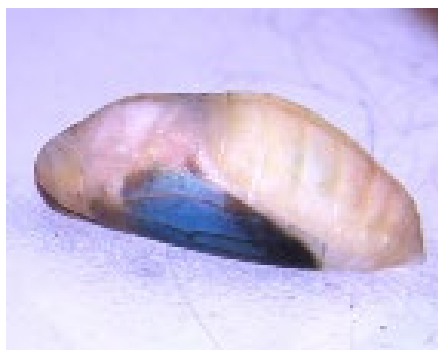
Larsen, 1991c: 201.

“The bright sky-blue eggs are said to be laid in clusters (I have not been able to retrace the source of this interesting observation).”

Migdoll, 1987: 184; fig. 103a [as *Hemiolaus caeculus caeculus*].

Pringle *et al.*, 1994: 162.

“The pupa is green, smoothly rounded and similar to that of *Hypolycaena philippus*. It pupates on the leaves of the foodplant.”



Hemiolaus caeculus caeculus. Left: Final instar larva. Right: Pupa.
Images courtesy Herbert Otto.

Larval food:

Olax dissitiflora Oliv. (Olacaceae) [Migdoll, 1987: 184].

Olax obtusifolia De Wild. (Olacaceae) [Pringle *et al.*, 1994: 162].

Hemiolaus caeculus caeculus (Hopffer, 1855)

Azure Hairstreak (#)

Jolaus caeculus Hopffer, 1855. *Berichte über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin* **1855**: 642 (639-643).



Hemiolaus caeculus caeculus. Male (wet season form) (Wingspan 33 mm). Left – upperside; right – underside.
Laurenceville, Zimbabwe. 9 December 2002. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Hemiolaus caeculus caeculus. Male (dry season form) (Wingspan 34 mm). Left – upperside; right – underside.
Manoutsa Park, Mpumalanga, South Africa. 13 July 1998. M. Williams.
Images M.C. Williams ex Williams Collection.



Hemiolaus caeculus caeculus. Female (wet season form) (Wingspan 36 mm). Left – upperside; right – underside.
Laurenceville, Zimbabwe. 9 December 2002. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type data: Mozambique: “Mossambique”.

Note: There is a population in the Uzungwa Range (Lukozi River, Mlawi River, Irindi) and at Madibira, which is paler and more violet tinged than subspecies *caeculus* and subspecies *littoralis* (Kielland, 1990d).

Distribution: Democratic Republic of Congo (Kwango, Kasai, Sankurur, Lomani, Lualaba, Shaba, Tanganika, Maniema, and rarely Kinshasa and Uele), Tanzania (south-east; south-west), Malawi, Zambia (east and south-east), Mozambique, Zimbabwe, Botswana (north and east), South Africa (Limpopo Province, Mpumalanga, KwaZulu-Natal), Eswatini.

Recorded, in error, from the Cape Province, South Africa by Kielland (1990d).

Specific localities:

Democratic Republic of Congo – Muana River (Dufrane, 1953).

Tanzania – Mhonda (Suffert, 1904). Rondo Plateau; Madaba, north of Songea; Masukulu Forest in Tukuyu (Kielland, 1990d).

Malawi – Nyika N.P. (J. Timberlake, pers. comm., 2019).

Zambia – Victoria Falls; Lusaka (Heath *et al.*, 2002).

Mozambique – Maputo; Beira; Dondo (Pringle *et al.*, 1994). Mt Inago; Mt Namuli (Congdon *et al.*, 2010). Mt Mecula [-12.0772 37.6297]; Mt Yao [-12.4432 36.5114] (Congdon & Bayliss, 2013). Inhambane (Williams).

Zimbabwe – Victoria Falls (Pringle *et al.*, 1994).

Botswana – Savuti; Kasane; Tswapong Hills (Larsen, 1991).

South Africa –

Limpopo Province – Wyliespoort; Masequa’s Poort; Waterpoort; Saltpan; Blouberg (Swanepoel, 1953). Abel Erasmus Pass (Williams). Gundani.

Mpumalanga – Barberton (Swanepoel, 1953). Mariepskop area (Henning, 1994c). Malelane (Williams).

KwaZulu-Natal – Ndumo Nature Reserve (Pringle & Kyle, 2002).

Eswatini – Stegi (Swanepoel, 1953). Singceni (Pringle *et al.*, 1994. Mlawula Nature Reserve (www.sntc.org.sz).

dolores Suffert, 1904 (as sp. of *Hypolycaena*). *Deutsche Entomologische Zeitschrift, Iris* **17**: 57 (12- 107). [Tanzania]: “Mhonda, Deutsch-Ost-Africa”.

obscurus Suffert, 1904 (as ssp. of *Hypolycaena caeculus*). *Deutsche Entomologische Zeitschrift, Iris* **17**: 60 (12-107). [Tanzania]: “Mhonda, Deutsch-Ost-Africa”.

duponti Dufrane, 1953 (as ab. of *Hypolycaena caeculus*). *Bulletin et Annales de la Société Royale Entomologique de Belgique* **89**: 53 (41-57). [Democratic Republic of Congo]: “rivière Muana”.

Hemiolaus caeculus littoralis Stempffer, 1954 Coastal Azure Hairstreak

Hemiolaus caeculus littoralis Stempffer, 1954. *Annales du Musée Royal du Congo Belge* (8) (Sciences zoologique) **27**: 25 (48 pp.).

Hemiolaus caeculus littoralis Stempffer, 1954. Larsen, 1991c: 201.

Iolaus (Hemiolaus) caeculus littoralis (Stempffer, 1954). Ackery *et al.*, 1995.

Hemiolaus caeculus littoralis Stempffer, 1954. Lees *et al.*, 2003.

Hemiolaus coeculus littoralis Stempffer, 1954. D’Abrera, 2009: 762. [misspelling of species name; should be *caeculus*]

Type data: Kenya: “Kwale, Mombasa coast”.

Distribution: Kenya (coast), Tanzania (coast, inland to the Usambara Mountains).

Specific localities:

Kenya – Kwale, Mombasa (TL). Shimba Hills (Larsen, 1991c).

Tanzania – Dendene Forest; Pugu Hills; Dar es Salaam; Kiono Forest; Usambara Mountains (Kielland, 1990d).

***Hemiolaus caeculus tsodiloensis* (Pinhey, 1969)**
Kalahari Azure Hairstreak

Iolaus caeculus tsodiloensis Pinhey, 1969. *Arnoldia (Rhodesia)* 4 (8): 1 (4 pp.).
Iolaus caeculus tsodiloensis Pinhey, 1969. Dickson & Kroon, 1978.
Hypolycaena (Hemiolaus) caeculus tsodiloensis Pinhey, 1969. Pringle *et al.*, 1994: 162.
Iolaus (Hemiolaus) caeculus tsodilensis Pinhey, 1969. Ackery *et al.*, 1995. [misspelling of subspecies name]
Hemiolaus caeculus tsodiloensis (Pinhey, 1969). Lees *et al.*, 2003.
Hemiolaus coeculus tsodilensis Pinhey, 1959. D'Abrera, 2009: 762. [misspelling of species name, subspecies name and erroneous date of authorship; should be *caeculus*, *tsodiloensis* and 1969, respectively].

Type data: Botswana: “On thorn trees around the base of the Tsodilo Hill, These hills lie south-west of Sepopa in Western Okavango, Botswana”.

Diagnosis: The distinctive feature of this subspecies is the dark, rather than red, stripes on the underside of the wings (Pringle *et al.*, 1994).

Distribution: Botswana (north-west), Namibia.

Specific localities:

Botswana – Tsodilo Hills (TL; Pinhey). Xaore near Shakawe (Larsen, 1991).

Namibia – Mashari (Ball).

****Hemiolaus ceres* (Hewitson, [1865])**
Malagasy Hairstreak

Myrina ceres Hewitson, [1865]. *In*: Hewitson, [1862-78]. *Illustrations of diurnal lepidoptera. Lycaenidae*: 39 (1: 1-228; 2: 95 pp.; Supplement: 1-48.). London.
Iolaus (Hemiolaus) ceres (Hewitson, 1865). Ackery *et al.*, 1995: 600.
Hemiolaus ceres (Hewitson, 1865). Lees *et al.*, 2003 **comb. nov.**
Hemiolaus ceres Hewitson, 1865. D'Abrera, 2009: 762.



Hemiolaus ceres. Male. Left – upperside; right – underside.
 Zombitse, Madagascar. 17 April 2018. J. Dobson.
 Images M.C. Williams ex Dobson Collection.

Type data: [Madagascar]: “Amazoulou [in South Africa]”. [False locality.]
 Erroneously recorded for South Africa by Trimen & Bowker, 1887b (MCW).

Distribution: Madagascar.

Habitat: Forest (Lees *et al.*, 2003).

mabillei Aurivillius, 1923. *In*: Seitz, 1908-25 (as ssp. of *Hypolycaena maryra*). *Die Gross-Schmetterlinge der Erde*, Stuttgart (2) 13 *Die Afrikanischen Tagfalter*: 387 (614 pp.). Madagascar: “Madagascar”.

****Hemiolaus maryra* (Mabille, [1887])**
Zombitse Hairstreak

Hypolycaena maryra Mabille, [1887]. In: Grandidier, [1885-7]. *Histoire, Physique, Naturelle et Politique de Madagascar*: 230 [1887], pl. 30 [1885] (**18** [1887]: 364 pp.; **19** [1885]: 55pls.).
Iolaus (Hemiolaus) maryra (Mabille, [1887]). Ackery *et al.*, 1995: 600.
Hemiolaus maryra (Mabille, [1887]). Lees *et al.*, 2003 **comb. nov.**
Hemiolaus maryra Mabille, 1887. D'Abrera, 2009: 762.



Hemiolaus species close to *maryra* [Taxon identified by S. Collins, ABRI]. Female. Left – upperside; right – underside.
 Zombitse, Madagascar. 16 Apr. 2018. J. Lawrence.
 Images M.C. Williams ex Lawrence Collection.

Type data: Madagascar: “Madagascar”.

Distribution: Madagascar.

Habitat: Forest (Lees *et al.*, 2003).

****Hemiolaus cobaltina* (Aurivillius, [1899])**
Cobalt Hairstreak

Hypolycaena cobaltina Aurivillius, [1899]. In: Aurivillius, [1898-9]. *Kungliga Svenska Vetenskapakademiens Handlingar* **31** (5): 317 (1-561).
Iolaus (Hemiolaus) cobaltina (Aurivillius, 1899). Ackery *et al.*, 1995: 600.
Hemiolaus cobaltina (Aurivillius, 1899). Lees *et al.*, 2003 **comb. nov.**
Hemiolaus cobaltina Aurivillius, 1898. D'Abrera, 2009: 762. [date of authorship erroneous; should be 1899].



Hemiolaus cobaltina. Male. Left – upperside; right – underside.
 Zombitse, Madagascar. 17 April 2018. J. Dobson.
 Images M.C. Williams ex Dobson Collection.

Type data: Madagascar: “Madagaskar”. Holotype in the Swedish Natural History Museum (images available at www2.nrm.se/en/lep_nrm/c).

Distribution: Madagascar (north and north-west).

Specific localities:

Madagascar – Diego Suarez; Isokitra; Antakares; Mandritsara (Stempffer & Bennett, 1958).

Habitat: Forest (Lees *et al.*, 2003).

Early stages:

Congdon *et al.*, 2017 [final instar larva].

Larval food:

Olax sp. (Olacaceae) [Congdon *et al.*, 2017; Mts Francaise, Madagascar].

margites Mabille, 1899 (as sp. of *Hypolycaena*). *Bulletin du Muséum d'Histoire Naturelle. Paris* **5**: 375 (373-375).
Madagascar: “Madagascar”. Given in Ackery *et al.* (1995: 600) as *Iolaus (Hemiolaus) margites*. Stempffer & Bennett (1958: 1260-61) aver that *margites* is in all probability a seasonal form of *cobaltina*. Lees *et al.* (2003) regard *margites* to be a synonym of *cobaltina*. D’Abrera (2009: 762) treats *margites* as a good species, obviously being unaware of Lees *et al.*, 2003, who synonymized it with *cobaltina*.

varnieri Stempffer, 1942 (as f. of *Hypolycaena cobaltina*). *Annales de la Société Entomologique de France* **111**: 118 (117-134). Madagascar: “Madagascar”.

varnieri Stempffer & Bennett, 1958 (as sp. of *Hemiolaus*). *Bulletin de l’Institut Français d’Afrique Noire (A)* **20**: 1261 (1243-1347). Madagascar: “Madagascar nord et nord-ouest: Diego Suarez, Isokitra, Antakares, 7^e réserve naturelle, Mandritsara”. Given in Ackery *et al.* (1995: 600) as *Iolaus (Hemiolaus) varnieri*. Lees *et al.* (2003) regard *varnieri* to be a synonym of *cobaltina*. D’Abrera (2009: 762) treats *varnieri* as a good species, obviously being unaware of Lees *et al.*, 2003, who synonymized it with *cobaltina*.

****Hemiolaus vividus* Pinhey, 1962** **Miombo Azure Hairstreak**



Hemiolaus vividus.
Image courtesy Steve Woodhall.

Hemiolaus caeculus vividus Pinhey, 1962. *Occasional Papers of the National Museum of Southern Rhodesia* **3**: 887 (871- 891).

Iolaus (Hemiolaus) caeculus vividus (Pinhey, 1962). Ackery *et al.*, 1995.

Hemiolaus caeculus vividus Pinhey, 1962. Lees *et al.*, 2003.

Hemiolaus coeculus vividus Pinhey, 1962. D’Abrera, 2009: 762. [misspelling of species name; should be *caeculus*].

Hemiolaus vividus Pinhey, 1962. Gardiner, 2010b: 152. **stat. nov.**



Hemiolaus vividus. Male. Left – upperside; right – underside.
Mutundu, Zambia. 7 January 1982. A. Gardiner.
Images M.C. Williams ex Gardiner Collection.



Hemiolaus vividus. Female. Left – upperside; right – underside.
Ndola Hill, Zambia. 14 January 1982. A. Gardiner.
Images M.C. Williams ex Gardiner Collection.

Type data: [Zambia]: “Ndola”.

Diagnosis: Features differentiating *vividus* from *caeculus* are given by Gardiner, 2010b.

Distribution: Tanzania (south-west), Zambia (Copperbelt, westwards), Angola (Mendes *et al.*, 2018).

Specific localities:

Zambia – Ndola (TL). Ikelenge; Mwinilunga; Chingola; Mufulira (Heath *et al.*, 2002). Chembe Bird Sanctuary, Kalulushi.

Habitat: Miombo Woodland (Gardiner, 2010b).

Habits: Widespread and common in Zambia (Gardiner, 2010b).