

## NOTES ON THE SPECIES OF *HYPOLYCAENA* (LEPIDOPTERA: LYCAENIDAE, THECLINAE) KNOWN TO OCCUR IN ANGOLA

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**Abstract:** New data are presented on the species of *Hypolycaena* (Lepidoptera: Lycaenidae, Theclinae) known to occur in Angola. Two species are reported from the country for the first time: *H. nigra* in Kuanza Norte and *H. spurcus* ssp. in Huila.

**Key words:** Lepidoptera, Lycaenidae, *Hypolycaena*, new records, new data, Angola.

**El género *Hypolycaena* (Lepidoptera: Lycaenidae: Theclinae) en Angola. Notas y descripción de una nueva subespecie de Huila**

**Resumen:** Se presentan nuevos datos sobre las especies de *Hypolycaena* (Lepidoptera: Lycaenidae, Theclinae) conocidas de Angola. Dos especies se señalan por la primera vez del país: *H. nigra* en Kuanza Norte y *H. spurcus* ssp. en Huila.

**Palabras clave:** Lepidoptera, Lycaenidae, *Hypolycaena*, nuevos registros, nuevos datos, Angola.

**O género *Hypolycaena* (Lepidoptera: Lycaenidae, Theclinae) em Angola. Notas e descrição de uma nova subespécie da Huila**

**Resumo:** Apresentam-se novos dados sobre as espécies de *Hypolycaena* (Lepidoptera: Lycaenidae, Theclinae) conhecidas de Angola. Duas espécies são registadas pela primeira vez no país: *H. nigra* no Cuanza Norte e *H. spurcus* ssp. na Huila.

**Palavras-chave:** Lepidoptera, Lycaenidae, *Hypolycaena*, novos registos, novos dados, Angola.

### Introduction

Genus *Hypolycaena* Felder, 1862 (Lepidoptera: Lycaenidae, Theclinae) is known along Afrotropical Region by ca. 25 species (Stempffer, 1967, D’Abrera, 1980, 2009, Ackery *et al.*, 1995). Among them, five (?) were noticed till now in Angola, namely *H. antifaunus*, *H. lebona*, *H. naara*, *H. spurcus* (?) and *H. philippus*.

In the present contribution, new samples of *H. antifaunus*, *H. hatita* and *H. philippus* are reported from the country and *H. nigra* and *H. spurcus* ssp. are registered by the first time in Angola in the Kuanza Norte and Huila Provinces. Notes concerning the references to other taxa assigned to fly in Angola are presented and discussed.

### Material and methods

Studied material belongs mostly to the junior author collection (BS in the text) though a few specimens, mainly those collected by the EAU Mission (the Missão de Estudos Apícolas do Ultramar), are part of the entomological collection of the Instituto de Investigação Científica Tropical / Jardim Botânico Tropical – Zoologia, the former Centro de Zoologia (CZ in the text). Further specimens were collected by Lieutenant Colonel António Figueira and are deposited in his personal collection (AF in the text) and by the late Colonel Mário Macedo (assigned as MM) – these last ones offered by his widow, Mrs. Cândida Macedo, to the Museu Nacional de História Natural / Museu Bocage, also in Lisbon, where they are deposited (MB in the text). A few more specimens integrate the collection held by the late Capt. Gastão Pessoa Guerreiro, recently offered to the CZ though they maintain their own registration numbers (in the text PG). The collecting date is represented by the month and

year (two last digits) only or by the year when no more data exist.

To each one of the localities from where *Hypolycaena* specimens are known in Angola, which are presented by alphabetical order in Table I, the administrative Province, the approximate coordinates and the number of the correspondent aero-photogrammetric map of Angola according to the Carta de Angola (1969), are added.

### Taxonomy

*Hypolycaena antifaunus antifaunus* (Westwood, 1851)  
(Fig. 1-3).

MATERIAL EXAMINED: Duque de Bragança, 04.74, 2♂♂ (BS-17553, 26264). Golungo Alto, 1962, MM, 1♀ (MB-17209). Inga, 12.64, 1♀ (BS-14413). Salazar, 05.71, 1♂ (AF-LYC16201); id, 01.73, 1♂2♀♀ (AF-LYC16202-LYC16204); id, 02.73, 6♂♂ (BS-15053, 17560, 17561, 26190, 26193, 26265); id, 12.73, 3♂♂ (BS-17562, 26191, 26193). Teixeira de Sousa, 03.65, 1♀ (BS-14415).

Druce (1875), Aurivillius (1928 *in* Seitz), Savelle (2008) and Williams (2008) assign the presence of the species in Angola, and Stempffer (1957) reports that Angola is its southernmost limit, but precise Angolan localities were always omitted.

The species was reported by Aurivillius (1928 *in* Seitz), Sierra Leone to Angola and Uganda; D’Abrera (1980) and Ackery *et al.* (1995) and Kielland (1990) assign Liberia to Zaire and Angola and note that the specimens from Uganda, Kenya and Tanzania belong to a second subspecies.

It is common in forest (as it happens with almost all the studied material and as registered by Kielland, 1990) and sometimes in heavy wood (as for the Moxico sample).

**Table I. Administrative Province and approximate coordinates for each one of the localities from where Angolan known samples of *Hypolycaena* were studied.**

Locality	Province	Latitude	Longitude	Altitude	Map. n
Belas	Luanda	08° 55' S	13° 10' E	< 50 m	89
Béu	Uíge	06° 13' S	15° 29' E	850 m	23
Buco Zao	Cabinda	04° 46' S	12° 34' E	50 m	---
Cabinda (town)	Cabinda	05° 33' S	12° 11' E	< 50 m	---
Cacuaco	Bengo	08° 47' S	13° 21' E	< 50 m	89
Cassoalala	Kuanza Norte	09° 29' S	14° 22' E	< 50 m	73
Catete	Bengo	08° 35' S	13° 42' E	< 50 m	72
Duque de Bragança <sup>(1)</sup>	Kuanza Sul	09° 06' S	15° 57' E	1110 m	112
Golungo Alto	Kuanza Norte	09° 08' S	14° 46' E	ca 600 m	110
Grafanil	Luanda	08° 53' S	13° 18' E	90 m	89
Inga	Uíge	07° 27' S	14° 27' E	ca 600 m	42
Loanda	= Luanda	---	---	---	---
Luanda (town) <sup>(2)</sup>	Luanda	08° 50' S	13° 15' E	50-70 m	89
Nova Oeiras	Kuanza Norte	09° 26' S	14° 25' E	120-200 m	109
Panguila	Bengo	08° 42' S	13° 27' E	< 50 m	89
"Quanza" <sup>(3)</sup>	Undeterminable	---	---	---	---
Quedas da Hunguéria	Huíla	15° 11' S	13° 37' E	1500 m	355
Quiminha	Bengo	08° 58' S	13° 47' E	120 m	90
Roça Chitonde	Kuanza Sul	11° 46' S	14° 07' E	ca 900 m	207
Roça Rio Bimbe	Kuanza Sul	11° 05' S	14° 13' E	ca 400 m	185
Salazar <sup>(4)</sup>	Kuanza Norte	09° 18' S	14° 55' E	780 m	110
Teixeira de Sousa <sup>(5)</sup>	Moxico	10° 42' S	22° 14' E	1110 m	180
Zenza do Itombe	Kuanza Norte	09° 17' S	14° 13' E	95 m	109

<sup>(1)</sup> Duque de Bragança is nowadays Calandula; <sup>(2)</sup> Luanda concerns the capital town and its neighbouring areas; <sup>(3)</sup> "Quanza" remains impossible to locate – see text; <sup>(4)</sup> Salazar was the old Portuguese name of Dalatando (or N'Dalatando); <sup>(5)</sup> Teixeira de Sousa is named today Dilolo. Map. n: Number of the aero-photogrammetric map of Angola main territory (such maps were never accomplished in what the Cabinda Territory is concerned).

### *Hypolycaena hatita hatita* Hewitson, 1865 (Fig. 4-6)

MATERIAL EXAMINED: Béu, 02.62, 1♀ (BS-14414). Inga, 12.64, 1♂ (BS-14412); id, 01.65, 1♂ (BS-14407). Roça Rio Bimbe, 02.63, 1♂ (BS-14410). Salazar, 03.73, 1♀ (AF-LYC16232); id, 12.73, 1♂1♀ (BS-17562, 17563).

Druce (1875, as *Lycæna hatlila*) and Aurivillius (1928 in Seitz) report the species from Angola though none precise location was registered.

Aurivillius (1928 in Seitz) assigns the subspecies flies from Sierra Leone to Angola and Congo, D'Abbrera (1980) and Ackery *et al.* (1995) report the subspecies from Central and Southern Zaire, Uganda, Western Tanzania and Zimbabwe also, but Larsen (2005) assigns Senegal to Nigeria, Cameroon, Gabon, Congo and former Zaire only and enhances that other subspecies live in Uganda, Kenya, Shaba, Zambia, Tanzania, Malawi and Ethiopia. None of them (Aurivillius excluded, as reported) considers the species presence in Angola, as it happens also with Kielland (1990) who points the Zaire as the south-western limit of the species range.

After Kielland (1990) it is common in forest – all the studied samples were obtained, for true, inside forest – and Larsen (2005) reports that in Nigeria the caterpillars live on *Syzygium* (Myrtaceae).

### *Hypolycaena lebona lebona* (Hewitson, 1865)

MATERIAL EXAMINED: None

*H. lebona* was reported from Angola only once (Druce, 1875) to the "Quanza", though this reference remains impossible to trace with precision: indeed, river Cuanza or Quanza, which source is in the Bihé Province, flows along ca 1000 Km being formerly the border between the Provinces of Bihé and Malanje, Kuanza Sul and Malanje, Kuanza Sul and Kuanza Norte, Bengo and Kuanza Norte and, after that, it

"cuts" the Bengo Province, and flows between the Provinces of Bengo and Luanda; otherwise, localities named Quanza or Cuanza are diverse and extend at least from the 06° 03' S, 14° 08' E (near the small river with the same name) in the Zaire Province, to the 09° 03' S, 15° 54' E, not far from Duque de Bragança (now Calandula) in the Malanje Province. The species was from then on, never more assigned in Angola, what means that its only reference from the country dates from more than 140 years (field work performed by J. J. Monteiro, from 1859 to 1869 – see Crawford-Cabral & Mesquita, 1989).

D'Abbrera (1980) and Ackery *et al.* (1995) report *H. lebona* to range from Sierra Leone, Nigeria and Cameroon to Zaire, and after Larsen (2005) the subspecies extends from Sierra Leone to Nigeria, Cameroon, Congo, Gabon, Central African Republic and Congo (Zaire); however, none objective reference was made to its presence in Angola.

After Williams (2008) the species occurs in good quality forest and the caterpillars are phytophagous and associated with workers of *Pheidole* sp. ants (Formicoidea: Myrmicidae) (Ackery *et al.*, 1995).

► **Fig. 1-3.** *Hypolycaena a. antifaunus* (Westwood, 1851). 1. ♂ dorsal. 2. ♂ ventral 3. ♀ dorsal. **Fig. 4-6.** *Hypolycaena h. hatita* (Hewitson, 1865). 4. ♂ dorsal. 5. ♂ ventral 6. ♀ dorsal. **Fig. 7-8.** *Hypolycaena nigra* Bethune-Baker, 1914. 7. ♂, dorsal. 8. ♂ ventral. **Fig. 9-11.** *Hypolycaena p. philippus* (Fabricius, 1793). 9. ♂ dorsal. 10. ♂ ventral. 11. ♀ dorsal. **Fig. 12-13.** *Hypolycaena spurcus* ssp. 12. ♀ dorsal. 13. ♀ ventral.



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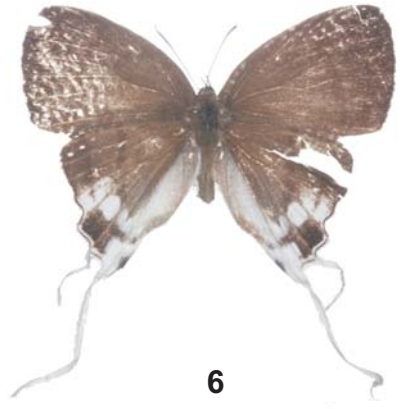
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***Hypolycaena naara*** Hewitson, 1873

MATERIAL EXAMINED: None.

Aurivillius (1928, *in* Seitz), Stempffer (1957), Savela (2008) and Williams (2008) assign the species to Angola, from where it was originally described, but none precise location was ever registered.

D'Abbrera (1980) and Ackery *et al.* (1995) note that this (at least apparently) quite rare species range from Cameroon, Gabon and Congo to Zaire and Angola.

***Hypolycaena nigra*** Bethune-Baker, 1914

Fig. 7-8.

MATERIAL EXAMINED: Salazar, 04.72, 1♂ (AF-LYC16231)

The species is new to Angola. It was registered (D'Abbrera, 1980, Ackery *et al.*, 1995), from Sierra Leone to Cameroon, Zaire and Uganda and Larsen (2005) details its range and points Sierra Leone to Nigeria, Cameroon, Congo, Gabon, Central African Republic, Congo (Zaire), Uganda and Tanzania.

The species is known in forest, from where come also the two specimens obtained near Salazar. After Ackery *et al.* (1995) the caterpillars are tended by workers of *Pheidole* sp. ants (Formicoidea: Myrmicidae).

***Hypolycaena philippus philippus*** (Fabricius, 1793)

Fig. 9-11.

MATERIAL EXAMINED: Belas, 05.72, 2♀♀ (AF-LYC16305, LYC16307). Buco Zao, 03.72, 2♀♀ (PG-0084, 0085). Cabinda town, 03.72, 1♂ (PG-0083). Cacuo, 02.71, 1♂ (BS-17552); id, 10.71, 1♀ (AF-LYC16303). Cassoalala, 12.72, 1♂ (BS-17556). Catete, 06.72, 1♂ (BS-17551). Golungo Alto, 1962, MM, 2♂♂3♀♀ (MB-17178, 17190, 17194, 17207, 17210). Grafanil, 07.71, 1♂1♀ (AF-LYC16301, LYC16302). Luanda and surroundings, 07.57, EAU, 1♂ (CZ-2856) 1♂ (BS-17548); id, 09.71, 1♂ (BS-17544); id, 04.72, 1♂ (BS-17022); id, 05.72, 1♀ (AF-LYC16306); id, 11.73, 1♂ (BS-17535); id, 06.74, 2♂♂ (BS-17542, 17549); id, 07.74, 2♂♂ (BS-17532, 17534); id, 08.74, 3♂♂ (BS-17530, 17531, 17543); id, 09.74, 5♂♂ (BS-17533, 17537-17539, 17545); id, 10.74, 4♂♂ (BS-17540, 17541, 17546, 17547); id, 12.74, 1♂ (BS-14416). Nova Oeiras, 09.73, 2♂♂ (BS-17554, 17555). Panguila, Morro da Cal, 07.57, EAU, 1♀ (CZ-2853). Quiminha, 11.73, 1♂ (BS-17550). Roça Chitonde, 11.72, 1♂ (BS-17558). Roça Rio Bimbe, 12.62, 1♂1♀ (BS-14409, 14417). Salazar, 04.72, 1♀ (BS-26263). Zenza do Itombe, 05.71, 1♀ (BS-26176); id, 10.71, 1♀ (AF-LYC16304).

Druce (1875) and Bacelar (1948) report *H. p. philippus* to the country though none precise location was registered till now in Angola.

The species is known along most of Africa South of the Sahara (Stempffer, 1957, D'Abbrera, 1980, Kielland, 1990, Ackery *et al.*, 1995, Larsen, 2005, Savela, 2008, Williams, 2008) and extends to south-western Arabia and (with a distinct subspecies) to Madagascar and (?) Aldabra.

It is typical from deciduous woods and open areas (Kielland, 1990) – as it happens with the samples obtained in the Provinces of Bengo and of Luanda; however, the material from Kuanza Norte and Kuanza Sul Provinces comes from inside forest, apparently a quite abnormal biotope.

Opposite to *H. antifaunus*, *H. hatita* and *H. nigra* collected in Angola from December to May only (so, exclusively during the wet-season), *H. p. philippus* seems to fly in the country all along the year.

The wide geographical range of the species, agrees with the quite different plant species where oviposition occurs – *Milingtonia* (Bignoniaceae), *Coccinia* (Cucurbitaceae), *Lo-*

*ranthus* (Loranthaceae) and several species of Fabaceae – and to the polyphagy of the caterpillars, known to feed on *Ximonia* (Olacaceae), *Punica* (Punicaceae), *Ixora*, *Vangueria* (Rubiaceae), *Allophylus*, *Deinbollia* (Sapindaceae) and *Clerodendron* (Verbenaceae). They seem to live always in association with *Camponotus* sp. (Formicidae) and *Pheidole* sp. (Myrmicidae) ants' workers.

***Hypolycaena spurcus*** ssp.

Fig. 12-13.

MATERIAL EXAMINED: Serra da Chela (Quedas da Hunguéria), 04.73, coll. J. A. Quartau, 1♀ (BS-17557).

Forewing length: 17.2 mm. Dorsal and ventral colour pattern of the wings as in Figs. 13-14, no bluish shine present.

The studied female agrees fairly with *H. spurcus* Talbot, 1929 (status according to Kielland, 1990) mainly in what the light (cream or whitish) patches on the forewing dorsal surface and the general aspect of the ventral surface are concerned. Indeed, *H. spurcus* was considered as a good species by Kielland (1990) only, as it was accepted by other authors (e.g. D'Abbrera, 1980, Ackery *et al.*, 1995, Savela, 2008 and Williams, 2008) as being the westernmost subspecies of *H. buxtoni* Hewitson, 1874 – so, *H. buxtoni spurcus*, ranging in Zambia, Zaire (Shaba) and South-western Tanzania. The species was never assigned from the neighbouring countries, neither from Namibia nor from Botswana (Larsen, *inf. pers.*).

Main differences from the Huila specimen relatively to *H. spurcus* s.s. (or *H. buxtoni spurcus*), concern especially the dorsal hind-wing, viz. the complete lack of bluish shine on its inner area, the not extended and not very conspicuous orange area close to the black dot on space 2, the smaller and less visible black dots, and the clearly more parallel limits of the whitish inner band.

Relatively to *H. buxtoni* considered as a species independent from *H. spurcus* (two subspecies, *H. b. buxtoni* Hewitson, 1874 from South Africa, Zimbabwe and Malawi, and *H. b. rogersi* Bethune-Baker, 1924 from Eastern Kenya and Eastern Tanzania), the most striking difference concerns the brown discal band of *H. spurcus* ssp., quite indistinct, less arched and confluent to (sometimes almost indistinct from) the lateral and apical dark area in this species.

*H. buxtoni* was formerly registered to occur in Loanda (= Luanda) by Weymer (1901) upon one single specimen (sex not noticed) said to be collected in the 4<sup>th</sup> August 1899, more than 110 years ago; no other sample possible to consider in the species was ever obtained and the correction of Weimer' identification and of the exact collecting location could not be rectified. We strongly suspect that Weimer' sample should include one male and that confusion could have been established between *H. buxtoni*, unknown in the area, and the somewhat similar (in what the male sex is concerned) *H. philippus* which, as assigned behind, is the most abundant *Hypolycaena* in non-forested areas in Angola and the only one objectively known to fly in and around Luanda.

Biotope: The only studied female comes from the "durilignosa forest" (see Gossweiler & Mendonça, 1939), ca 1500 m altitude, in the Angolan Escarpment, and we believe that it will represent a completely isolated population of *H. spurcus*, that is, an independent not described subspecies. The Hunguéria waterfalls are, indeed, ca 1000 km west/southwest from the Zambian border from where *H. buxtoni* is known, and ecologically quite isolated; none Angolan sample of this taxon (shall it be considered under *H. spurcus* or under *H.*

*buxtoni*) is known, indeed, from the Angolan provinces of Bihé, Moxico nor Lunda Sul, which are covered mainly by the brachystegia woods (the “miombos”, especially of *Brachistegya spiciformis*, *B. bakerana*, *B. floribunda*, *B. gossweileri*, *Burkea africana* and *Julbernardia paniculata*) and by herbaceous savanna.

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