

## A new subspecies of *Telchinia* Hübner, [1819] (Lepidoptera: Nymphalidae: Heliconiinae) from West Africa

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**Abstract:** A morphologically distinct subspecies of *Telchinia pseudepaea* from the Guinea Highlands, Liberian subregion is described. Although male genitalia show no differences among the examined populations, both external morphology and geographic distribution support the recognition of the Liberian subregion population as a new subspecies.

**Key words:** Liberian subregion, Guinea Highlands, endemism, *Acraea* s.l., *Telchinia pseudepaea* zياما ssp.nov.

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### INTRODUCTION

The African *Acraeini* are species-rich and exhibit infraspecific variation in appearance, morphology, behaviour and ecology. The generic and sub-generic level taxonomy of *Acraea* sensu lato is also problematic, with no scientific consensus on the systematics, not even on the placement of several species or species-groups into genera.

*Telchinia pseudepaea* was originally described from Ila in Western Nigeria as *Acraea pseudepaea* by Dudgeon (1909), but was downgraded to a subspecies (geographic form) of *Acraea althoffi* Dewitz, 1889 just a few years after its description by Eltringham (1912), who gave a very precise redescription of the taxon, with special mention of the orange stripes on the hindwings, which reach the wing margin. Its full species status was later reinstated as *A. pseudepaea* by Pierre *et al.* (2003). On the basis of molecular evidence it was transferred to *Telchinia* by Silva-Brandão *et al.* (2008). Henning & Williams (2010) concurred with the placement of the taxon in the genus *Telchinia*, although Pierre & Bernaud (2014) listed *T. pseudepaea* in the genus *Acraea* (subgenus: *Actinote* Hübner, [1819]), without making any formal taxonomic change.

The type locality of *T. pseudepaea* was given by Dudgeon as Ila (a district which covers a quite large area of the Western Region of Nigeria). Unfortunately, apart from the

type, no further specimens of *T. pseudepaea* are known from Western Nigeria. The landscape of the Ila district on Google Earth satellite image seems to be a rather hilly country where upland forest existed in the past, but sadly most of it is now destroyed.

It was recently recognised that specimens of *T. pseudepaea* collected in the Zياما Forest (Forêt Classée de Zياما) in Guinea's Forest Region (Guinée Forestière) differed consistently in the hindwing marginal area from topotypical specimens originating from the Atewa Range, Ghana. The Atewa Range specimens were also compared with other available material from the broader area of the Guinea Highlands in Ivory Coast, Liberia, and Guinea in the Liberian sub-region (see Fig. 1), and consistent morphological differences were apparent between the Atewa Range population and those from further west. A morphologically distinct subspecies of *T. pseudepaea* from the Guinea Highlands, Liberian sub-region is therefore described in this paper.

### MATERIAL AND METHODS

#### Abbreviations and acronyms

ABRI: African Butterfly Research Institute, Nairobi, Kenya.

ANHRT: African Natural History Research Trust, Leominster, UK.

ams!: Above mean sea level.

CB: Claudio Belcastro's reference collection, Rome, Italy.

CEP-MZUJ: Nature Education Centre, Jagellonian University (formerly Zoological Museum), Kraków, Poland.

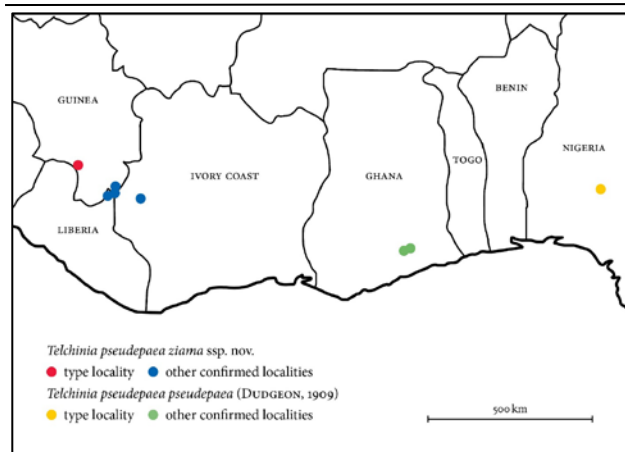
NHM: Natural History Museum, London, UK.

PB: Patrick Boireau's reference collection, Abidjan, Ivory Coast.

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**Figure 1** – Known distribution of *T. pseudepaea pseudepaea* and *T. pseudepaea ziama* in West Africa. The locality of the literature record of *T. pseudepaea* in Liberia (Haut Cavally) could not be accurately identified and is therefore not illustrated.

### Comparative material

*Telchinia pseudepaea pseudepaea* Dudgeon, 1909 (Figs 2 C & F; 3B): 1♂, 1♀ GHANA, Eastern Region, Atewa Range, Potroase 20; 27.i.1979; legit C. Belcastro. Deposited in CB. 3♂♂ GHANA, Eastern Region, Atewa Range, Sagyimaase trail 6°13'50.54"N, 0°34'43.29"W, 500–745 m; 29.iii–04.iv.2005; legit Sz. Sáfián, G. Csontos, B. Kormos; Deposited in ANHRT. 2♂♂, 3♀♀ GHANA; In collection D. Bernaud ([www.acraea.com](http://www.acraea.com)).

The above comparative material was inspected in the collections of CB, PB, ABRI and ANHRT. Relevant literature with high quality illustrations (Larsen, 2005) and the online image database on *Acraea* by Dominique Bernaud ([www.acraea.com](http://www.acraea.com)) were also consulted.

The numbering of wing venation in the descriptions follows the simplified English numeric system (Miller, 1970). For dissection of male genitalia, abdomens were removed and soaked in boiling 10% KOH solution for 5–10 minutes to soften abdominal tissue. Dissected genitalia were cleaned using 90% and 95% ethanol solutions. A Nikon digital camera DS-Fi1 and an Olympus SZX9 stereomicroscope were used for imaging, and images were processed in Combine ZP and Corel PHOTO-PAINT X3 programmes to enhance focus and improve quality. Genitalia were preserved in glycerol-filled vials pinned under the corresponding specimens. Male genitalia terminology largely follows Klots (1956) and Razowski (1996).

## DESCRIPTION OF NEW SUBSPECIES

### Genus *Telchinia* Hübner, [1819]

Hübner, [1816–[1826]. *Verzeichniss bekannter Schmettlinge* (2): 27 (432 + 72 pp.), Augsburg. Type species: *Papilio serena* Fabricius, 1775, by subsequent designation (Scudder, 1875. *Proceedings of the American Academy of Arts and Sciences* 10: 91–293).

### *Telchinia pseudepaea ziama* Belcastro, Boireau & Sáfián ssp. nov.

urn:lsid:zoobank.org:act:DF8F3D3B-1CBD-424F-A979-300F88CBCB67 (Figs 2 A, B, D & E; 3A)

**Holotype:** ♂ GUINEA, Forêt de Ziama; vii.2008; legit C. Belcastro. Temporarily stored in CB; will later be deposited in NHM.

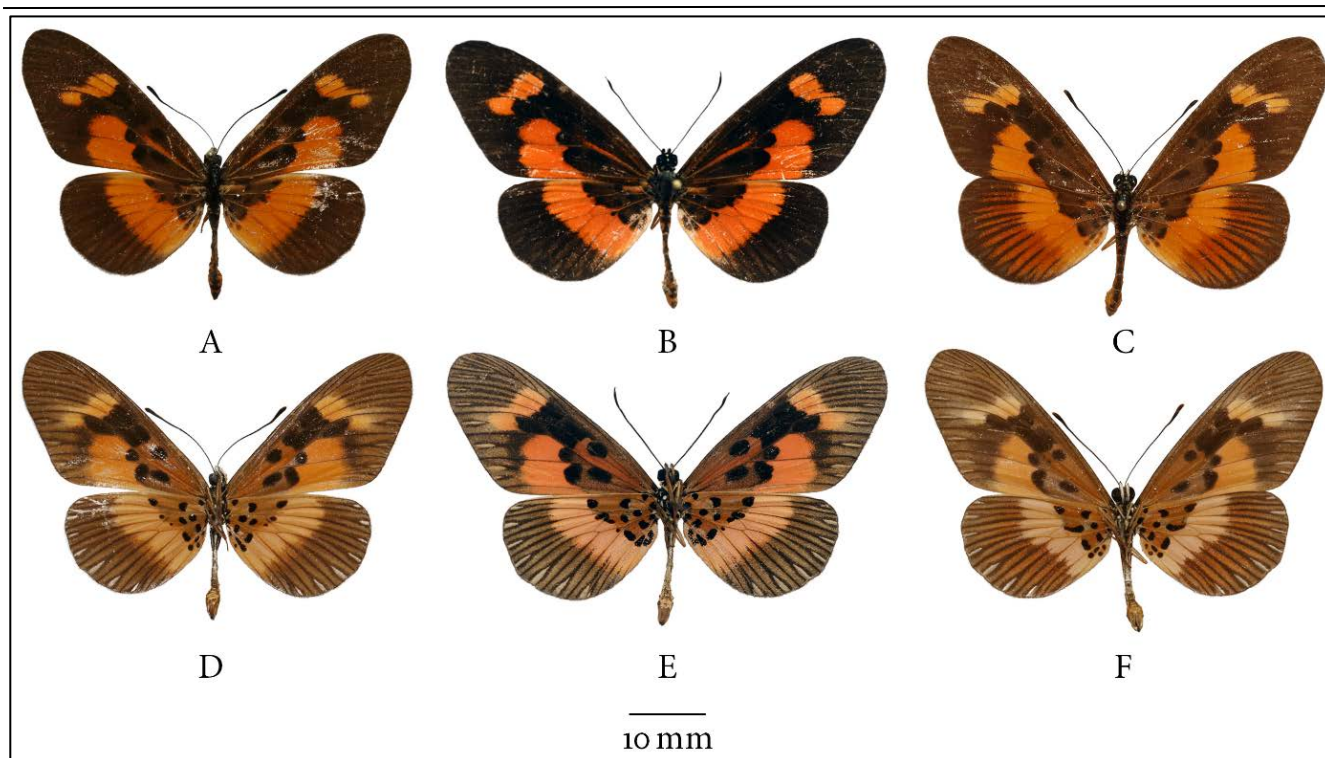
**Paratypes:** 1♂ LIBERIA, Nimba Mountains, Nimba West, Gbarpa (Gbarpa), 07°28'38"N 08°38'46"W; 8–13.ii.2012; legit Sz. Sáfián & M. Strausz; Deposited in ABRI. 1♂ LIBERIA, Nimba Mountains, Nimba West, Mount Gangra saddle 7°33'34.10"N, 8°37'58.10"W, 710 m; 08.vii.2008; legit P. Boireau; Deposited in PB collection. 3♂♂ GUINEA, Forêt de Ziama; 24.i.2007; legit C. Belcastro. Deposited in CB. 1♂ GUINEA, Nzérékoré, Guinea Conakry; iv.1996; legit M. Mané & S.C.Collins; Deposited in ABRI. 1♂ GUINEA, Gba River source, Réserve Naturelle Intégrale du Mont Nimba, Vallée du Gba, 7°40'39.10"N, 8°23'18.93"W, 1085 m amsl; 03.x.2019; legit P. Boireau; Deposited in PB collection. 1♂ IVORY COAST, Mount Tonkoui forêt ombrophile, 7°27'6.99"N, 7°38'5.83"W, 1150 m; 05–12.iii.2016; legit P. Boireau; Deposited in PB collection. **Other material examined:** ♂ GUINEA, Kerouane; In collection D. Bernaud ([www.acraea.com](http://www.acraea.com)).

### Description and diagnosis

The general appearance of males of *T. pseudepaea ziama* is as for *T. p. pseudepaea*. They have a dark brown/black ground colour on the upper side, a large orange spot in the middle of the forewing in spaces 1a, 1b and 2, which appears as a continuation of the hindwing's orange band, and also a sub-apical orange band which is divided by vein 4 into a larger upper part with the lower edge drawn out towards the margin. The outer half of the hindwing is very dark brown, only with traces of the nominate subspecies' characteristic orange striping, sharply cut away from the orange band that covers the basal half of the wing. The underside has a brown/black ground colour with extensive orange pattern, with four black spots in the basal half of the forewing (one round spot and one oval in space 1b, one round spot in the cell and one at the base of space 2, conjoined with the larger, rather squat black spot that covers the outer quarter of the discal cell and the base of spaces 3–6). The upper side's basal orange band appears as a slightly paler version on the underside. A fan-like row of narrow pale orange stripes run over the ground colour across the wing parallel to the veins. Seven narrow paler triangles appear in the hindwing margin in the forks of the orange stripes. Male genitalia of *T. p. ziama* are of *Acraeini* type, simple with a narrow upcurving crescent-shaped valva, hooded tegumen and rather short and slender beaked uncus. The saccus is broad, weakly sclerotized, its length is approximately two-thirds of the length of the valva. It tapers down into a narrow but blunt tip. The aedeagus is straight with a blunt base. It tapers down into a spear-like tip. The male genitalia do not differ in the examined specimens between the new subspecies and the nominate one. Female is still unknown.

### Etymology

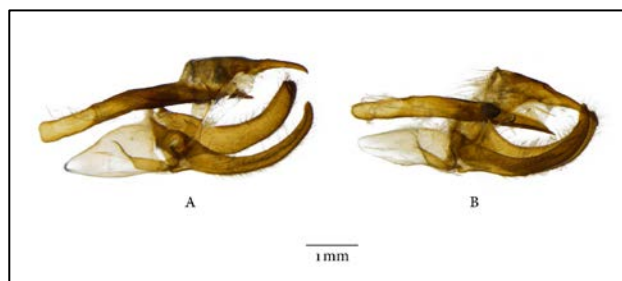
The authors wish to emphasise the conservation importance of the Ziama Massif (also known as Ziama Forest, Ziama Biosphere Reserve and Forêt Classée de Ziama) by naming the new subspecies after the type locality of *T. p. ziama* ssp. nov. Ziama is the largest single



**Figure 2** – *Telchinia pseudepaea* males: *T. p. ziama* (holotype) upper side – A, underside – D; *T. p. ziama* (paratype, Nimba Mountains, Guinea) upper side – B, underside – E; *T. p. pseudepaea* (Atewa Range, Ghana) upper side – C, underside – F.

block forest area in Guinea with a diverse butterfly fauna including several biogeographically important, restricted range taxa, including an undescribed subspecies of *Neurellipes helpsi* Larsen, 1994, *Hypolimnas aubergeri* Hecq, 1987, *Pseudathyma cf. neptidina* Karsch, 1894, and *Gorgyra cf. kalinzu* Evans, 1949 (Larsen, 2005; Libert, 2010; Belcastro, unpublished records).

distribution, as both mentioned species were collected also in the Wologizi Mountains, and *H. aubergeri* was found as far west as in the Loma Mountains in Sierra Leone. *T. p. pseudepaea* is known only from the Ghana subregion, where it is local, and all records seem to be concentrated on the Atewa Range (Larsen, 2005), except for the holotype, which was collected in Western Nigeria.



**Figure 3** – A) Male genitalia of *Telchinia pseudepaea pseudepaea* (Atewa Range, Ghana); B) *T. pseudepaea ziama* (holotype) (lateral view).

## DISCUSSION

*Telchinia p. ziama* ssp. nov. is most likely distributed sporadically in upland forests and in forests around the foothills of higher mountains in the broader Guinea Highlands, although older records of *T. pseudepaea* were also found in lowland forest in the upper Cavally River area on the border between Liberia and Ivory Coast (the authors could not examine specimens from this locality, and their taxonomic placement therefore remains uncertain). The new known records correspond with other species of restricted range in the Liberian subregion, e.g. *H. aubergeri* Hecq, 1987 and the recently described *Pilodeudorix mano* Sáfián, 2015 (Sáfián *et al.*, 2015; Sáfián & Takano, 2019). This also indicates a broader

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