LepSoc AFRICA

METAMORPHOSIS

LEPIDOPTERISTS' SOCIETY OF AFRICA

Volume 31(1): 104–128

ISSN 1018–6490 (PRINT)
ISSN 2307–5031 (ONLINE)

Butterfly diversity (Lepidoptera: Papilionoidea) in the Ziama Massif in Guinea and the adjacent Wonegizi and Wologizi Mountains in Liberia (West Africa): A transboundary conservation approach

Published online: 30 November 2020

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Abstract: Five field surveys targeting the butterfly fauna across the transboundary landscape that encompasses the Ziama Massif in Guinea and the Wologizi and Wonegizi Mountains in Liberia (collectively called as the Ziama-Wonegizi-Wologizi Transboundary Forest Landscape) were conducted between November 2017 and April 2019. Altogether 564 species of butterfly were recorded from the research area, with 450 species from the Wologizi Mountains, 254 from the Wonegizi Mountains and 429 from the Ziama Massif. An additional five species recorded in Ziama were added to the list as literature data. The surveys revealed several taxa new to science as well as a high number of restricted-range species, endemic either to the Guinea Highlands or to the broader forest area of the Liberian subregion. The results of the ecological classification of the butterfly fauna in Ziama and Wologizi show intact forest fauna with 90% and 92% of the recorded species associated with forest habitats, respectively. These results, along with the high species richness and the outstanding number of restricted-range species, make this landscape one of the most important conservation areas for butterflies in the Liberian biogeographical subregion including the Nimba Mountains and the Greater Gola Landscape on the Liberia-Sierra Leone border.

Key words: Checklist, butterfly fauna, species richness, rapid biodiversity surveys, Upper Guinean Forest, Guinea Highlands, endemism, restricted range species, ecological composition.

Citation: Sáfián, Sz., Koïvogui, S., Simonics, G & Florczyk, K.J. 2020. Butterfly diversity (Lepidoptera: Papilionoidea) in the Ziama Massif in Guinea and the adjacent Wonegizi and Wologizi Mountains in Liberia (West Africa): A transboundary conservation approach. *Metamorphosis* **31(1)**: 104–128. DOI: https://dx.doi.org/10.4314/met.v31i1.21

INTRODUCTION

The Upper Guinean Forest was once a single block of lowland rainforest area stretching from Central Sierra Leone to the western edge of the Dahomey Gap in South-Central Ghana. The majority of the forest has now been cleared and converted into agricultural land in Sierra Leone and Ivory Coast. The once continuous forest area is completely fragmented in the Forest Region of Guinea (south-east) and in south-central and south-western Ghana (Hawthorne & Abu-Juam, 1995). In Liberia, there are still over 4 000 000 hectares of forest in variable condition found in two more or less large unfragmented forest areas, but continuous pressure from forestry and agricultural interests and the need for fertile farmland from the growing local communities threatens the integrity of these forests, especially along roads and in the proximity of settlements (Christie *et al.*, 2007).

Higher hills and mountainous areas are rather scarce in the eastern and central part of Upper Guinea and most of them are scattered over a vast area in the eastern Guinea Highlands between north-western Ivory Coast, north-western Liberia and eastern Guinea. Two significant isolated mountains are found in Sierra Leone, including the highest mountain in West Africa, west of the Dahomey Gap (Mount Bintumani in the Loma Mountains). Several of these mountains used to be connected by lowland forest even in recent times, but deforestation has already resulted in complete isolation of the Tingi and Loma Mountains in Sierra Leone and other higher mountains in western Ivory Coast (e.g. Mount Tonkoui, Mount Péko).

The butterfly fauna of West Africa's higher hills and mountains has not been extensively studied, only a few, single-area checklists are available from the Atewa Range (Ghana) (Larsen, 2006a) and the Liberian part of the Nimba Mountains (Sáfián, 2014). Larsen (2005) also summarised the knowledge on the West African butterfly fauna, and he listed many interesting butterfly species from the Loma Mountains in Sierra Leone, the Fouta Djallon plateau in Guinea, Mount Péko and Mount Tonkoui in Ivory Coast and Tano Ofin in Ghana (Larsen, 2005, 2006a) including quite a few endemic species (e.g. *Mylothris atewa* Berger 1980, *Iolaus djalloni* Collins & Larsen, 1998).

No previous checklists or other publications are available on the butterfly fauna of the current study area, despite the book published on Liberian butterflies by Fox *et al.*

Received: 1 October 2020
Published: 30 November 2020
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(1965), the active work of IFAN (for acronyms see below) scientists in Guinea in the nearby Nimba Mountains (e.g. Stempffer, 1953; Bernardi, 1954; Evans, 1954; Stempffer, 1954; Bernardi & Condamin, 1963; Condamin, 1963; Condamin & Roy, 1963; Stempffer, 1963), and many records from Diecké Forest (Larsen, 2005). Only a few mentions of Ziama appear in scientific works on butterflies. In his comprehensive work on West African butterflies, Larsen (2005) lists *Hypolimnas aubergeri* from Sérédou, but the locality was misattributed to the Nimba Mountains. Sáfián & Takano (2019) corrected this error in their note on the updated distribution of *H. aubergeri* with further records also from Ziama. Belcastro & Oremans (2016) described a new species of skipper butterfly, *Abantis fabiana* Belcastro, 2016 with the type locality being Sérédou (uplands 1 000 m.a.s.l.), Forêt de Ziama. Claudio Belcastro also communicated a number of his previously unpublished records to Michel Libert (Libert, 2010), including a potentially new subspecies of *Neurellipes helpsi* (Larsen, 1994). Some of Belcastro's records also appear in the revisions of African *Celaenorrhinus* (s.l.) (Libert, 2014) and Liphyrini (Libert, 2016).

A rather comprehensive checklist of the butterfly fauna exists of the nearby Gola Forests (Greater Gola Landscape) across Liberia and Sierra Leone (Belcastro & Larsen, 2006; Sáfián, 2012) and from the Liberian side of the Nimba Mountains (Sáfián, 2014). Another, yet unpublished butterfly list was compiled by Sáfián from the Foya Proposed Protected Area, which is a lowland forest contiguous with the southern section of lowland forests of the Wologizi Proposed Protected Area.

In this paper, the authors summarise their data collected over five field surveys conducted across the Ziama-Wonegizi-Wologizi Transboundary Forest Landscape (ZWW) between November 2017 and April 2019, highlighting the most interesting findings and also the biogeographical and conservation importance of the area.

MATERIAL AND METHODS

Acronyms and abbreviations

ABRI – African Butterfly Research Institute, Nairobi, Kenya
ANHRT – African Natural History Research Trust, Leominster, UK
CEP-MZUJ – Nature Education Centre, Jagiellonian University, Kraków, Poland
CFZ – Centre Forestier de N'Zérékoré, Guinea
FFI – Fauna and Flora International, Guinea and Liberia
IFAN – Institut Fondamental d'Afrique Noire, Dakar, Senegal
WA BiCC – West Africa Biodiversity and Climate Change
SCNL – Society for the Conservation of Nature, Liberia
USAID – United States Agency for International Development
ZWW – Ziama-Wonegizi-Wologizi Transboundary Forest Landscape, that encompasses the Ziama Biosphere Reserve (Massif de Ziama, Forêt Classée de Ziama) in Guinea and the Wonegizi (Mountains) and Wologizi (Mountains) Proposed Protected Areas in Liberia

Study area and sampling sites

The study area is described below and shown in Figure 1.

Wologizi Mountains

The Wologizi Mountains are part of the Wologizi Proposed Protected Area in Lofa County, also one of Liberia's Important Bird Areas (BirdLife International, 2020a) of approximately 20 000 hectares (excluding the large tract of lowland forest east of the mountain range). Not much further information is found in publications, except that the mountain formations are metamorphic, sedimentary and volcanic rocks rich in iron ore (White, 1973). Its highest peak Mount Wutewe (other spellings are also used, such as Wuteve or Wutuwi) is also the highest point of Liberia, with variable altitude given in the few references between 1 350 and 1 447 m.a.s.l. (Peal & Kranz, 1990; BirdLife International, 2020a). The mountains consist of two roughly south-north, long and narrow independent ridges, separated by a deep valley. The southern ridge is lower with its highest peak reaching about 1 050 m.a.s.l. The higher and longer northern ridge harbours two prominent peaks: Mount Wutewe (cc. 1 400 m.a.s.l.) and Mount Belegizi (cc. 1 186 m.a.s.l.). It branches to multiple massive spurs to both east and west and has a small plateau a few kilometres north of Mount Wutewe lying at about 1 100 m.a.s.l. The mountain slopes are very steep with several deeply incised valleys. Numerous water-courses are found below 800 m.a.s.l., and almost none above. Almost the entire mountain range is covered with primary forest, mainly of wet evergreen forest below and upland evergreen forest above 800 m.a.s.l. The peak area of Mount Wutewe is covered by a woodland thicket of shorter trees and shrubs. Rather large edaphic grassland savannah patches are found at the foothills of Wologizi around Lisco village on iron ore sedimentation. The forests on the main ridgeline and part of the Belegizi Ridge were damaged by wildfire during the extensive dry season in 2015, where regenerating secondary vegetation is overgrowing the damaged upland forest.

Wonegizi Mountains

Very little information could be gathered about the Wonegizi Mountains. They are encompassed by the Wonegizi Proposed Protected Area of approximately 20 000 hectares of forest land in Lofa County, situated north-east of Wologizi. The two were once connected, but an increasingly wider gap is being opened up by human activities for the growing need of agricultural land. The majority of the proposed protected area is covered by lowland forest, while the mountains, probably with upland forest at higher altitude, emerge mainly in the south-eastern and north-eastern parts with the northern ridges directly connected and being part of the Ziama Massif. The highest peak is Mount Wonegizi (1 110 m.a.s.l.).

Ziama Massif (Massif de Ziama)

Ziama is the largest, single block rainforest area in Guinea, covering 119 019 hectares in the Ziama Massif and the surrounding lowland area. Administratively, the classified forest (Forêt Classée de Ziama) lies in the

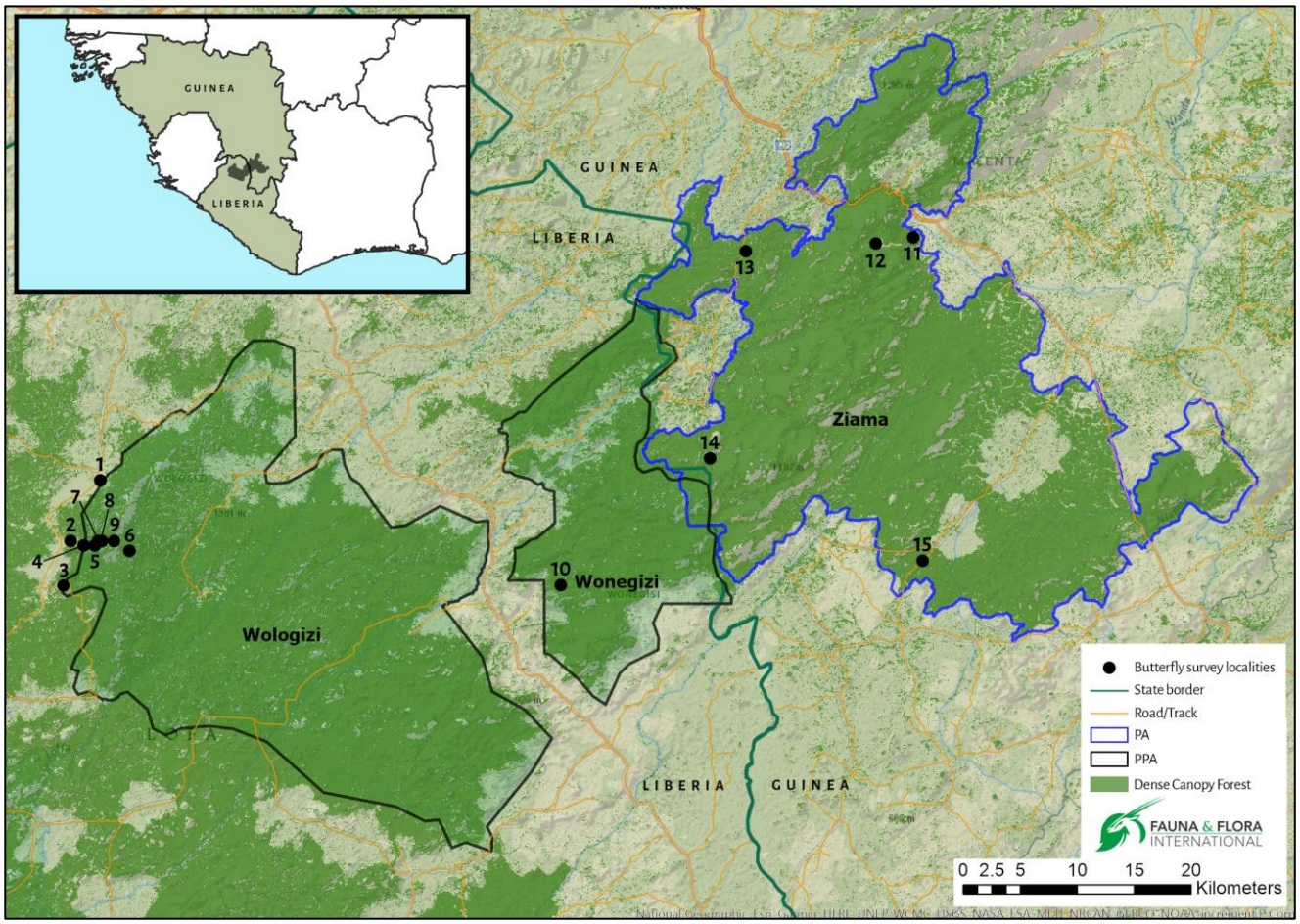

Figure 1 – The study area and the butterfly survey localities in the ZWW transboundary landscape (Liberia and Guinea). PA – protected area, PPA – protected area/proposed protected are boundary.

Macenta Prefecture of the Guineé Forestiére region and stretches for about 50 km from the Liberian border north-east towards Kerouane and Beyla Prefectures. It is part of the seven classified forests under the management of the CFZ.

Ziama has long been recognised for its intrinsic value, particularly for the internationally important population of forest elephant (Barnes & Awo, 2005), pygmy hippopotamus (Butzler, 1994), various species of endangered primates, the rich avifauna of over 280 species (BirdLife International, 2020b) and over 1 300 species of vascular plants, with most samples preserved in the Ziama Herbarium, Sérédou. Ziama also serves as a regionally important water catchment area. The forest reserve (forêt classée) was established in 1932 and designated as a Biosphere Reserve (Massif de Ziama) in 1980 (Brugiere & Kormos, 2008; www.unesco.org).

A significant part of Ziama Forest is covered by lowland rain forest of variable quality, mainly secondary forest in various stages of regeneration, interspersed with patches of forest plantations of native or in some cases non-indigenous species. The lowland forest remains relatively untouched, only a few kilometres away from human settlements and the inaccessible lower slopes of the massif. The upland zone of Ziama Massif, usually above 800 m, remains largely untouched, logged only above Sérédou town and large areas still qualify as primary upland evergreen forest. The entire forest is very densely interwoven by natural water courses, which support the formation of various microhabitats, including stretches of riverine forest, lowland and upland marshes and swamps, also swamp forests. At higher altitudes, rocky outcrops often prevent the formation of deep soil and here closed canopy forest is interspersed with more open canopy drier forest patches on hilltops, while on the highest ridges even open, grassy patches occur.

Sampling localities

The sampling localities are described below and shown in Figure 1.

Wologizi Mountains

1. LISCO grassland and anthropogenic habitat (LIS). 8°9'56.1"N, 9°57'7"W (8.165586, -9.951939); 578 m.a.s.l.; 08–10.xii.2018.

The Lisco village is an old mining exploration settlement situated at the western foothills of Wologizi Mountains with extensive tall-grass savannah grassland, formed on iron rock sediments that originate from the mountains. Near and inside the settlement a variety of anthropogenic habitats are found, including old-grown mango trees, cassava, plantain and vegetable farms and fallow land.

2. Wologizi savannah/forest edge (WSA). 8°7'9.4"N, 9°58'15.4"W (8.119278, -9.970944); 610 m.a.s.l.; 20–30.xi.2017.

Tall-grass savannah habitat on iron sedimentation, similar

to that of Lisco and the lowland forest edge.

3. Dabu Road (DAB). 8°5'15.5"N, 9°58'21.6"W (8.087653, -9.972681); 530 m.a.s.l.; 30.xi.2017.

Secondary forest in different stages of regeneration and smaller patches of grassland (of the same character as above) alongside the road verges.

4. Base (Lowland) Camp (WOB). 8°7'16.5"N, 9°57'41.5"W (8.121244, -9.961533); 603 m.a.s.l.; 20–30.xi.2017.

Lowland secondary forest with dense undergrowth, with numerous signs of recent human activities (tree-felling, pole-cutting). Maranthaceae thickets are found along the old mining-exploration track near creeks.

5. Rosewood Camp (ROS). 8°6'14.8"N, 9°57'27.2"W (8.104131, -9.957569); 577 m.a.s.l.; 18–25.xi.2018.

Old-grown, natural looking secondary lowland forest with primary patches, with virtually no signs of logging or other disturbance. The landscape is very diverse with gentle hills interspersed with creeks and swamps and the deep valley between the two main ridges with untouched riverine vegetation (Fig. 2), except alongside the old LISCO exploration road.

Figure 2 – The deep and narrow river valley between the two main ridges in the Wologizi Mountains is outstandingly beautiful and harbours a very rich butterfly community with multiple rare and restricted-range species.

6. Elephant Ridge (ELR). 8°7'1.5"N, 9°55'24.2"W (8.117072, -9.923383); 1 002 m.a.s.l.; 23–28.xi.2018.

The northern section of the lower ridge of the Wologizi Mountains is frequently visited by forest elephants. It is covered entirely by primary upland rainforest, with obvious presence of local disturbance (playground, tree-felling) caused by elephants on flatter hilltops or depressions.

7. Ridge Camp 1 (RC1). 8°7'10.3"N, 9°57'10.1"W (8.119517, -9.952817); 840 m.a.s.l.; 24–30.xi.2017.

Untouched upland forest on the ridge and the steep slope of a minor spur of the Belegizi Ridge, dominated by *Lophura alata*.

8. Ridge Camp 2 (RC2). 8°7'20.8"N, 9°56'50.7"W (8.122442, -9.947431); 880 m.a.s.l.; 22–30.xi.2018.

Disturbed upland forest on the ridge and untouched primary upland forest on the steep slopes of the lower section of the Belegizi Ridge.

9. Belegizi Ridge and Summit (BEL). 8°7'27.2"N, 9°56'10.9"W (8.124233, -9.936364); 1 086 m.a.s.l.; 28.xi.2017, 01–07.xii.2018.

The massive spur that leads to the Belegizi Summit where it connects the main northern ridge is a narrow mountain ridge with very steep slopes on both sides. Originally the entire ridge was covered by upland forest, but during a long-lasting wildfire at the end of the dry season (February to April) in 2015 the entire ridge burned down, destroying large tracts of this unique habitat type (Fig. 3). Now the ridge and the upper slopes are covered by herbaceous and woody secondary vegetation with a strong presence of various invasive plants (e.g. *Chromolaena odorata*) and those native but very successful in the initial stage of regeneration (e.g. sword-grass).

Figure 3 – Upland forest in the Wologizi Mountains. Note the burned twin-summits of Mount Belegizi. A large tract of upland forest has been destroyed or damaged by wildfire in 2015.

Wonegizi Mountains

10. Wetezu Camp (WET). 8°4'57.1"N, 9°34'47.9"W (8.082531, -9.579961); 550–711 m.a.s.l.; 19–27.iii.2019.

The single area surveyed in Wonegizi lies in hilly country with peaks between 500–600 m.a.s.l. The habitat inside the reserve is primary forest with mosaic patches of formerly farmed secondary forest along the forest edges. Disturbed habitats, including young regenerating fallow land, recently cleared and burned farmland and shaded cocoa-farms were also surveyed during trekking in and out the reserve.

Ziama Massif

11. Sérédou lowland forest (SEL). 8°21'25.7"N, 9°17'48.4"W (8.357144, -9.296772); 626 m.a.s.l.; 28–31.iii.2019.

The forest at the foothills of Ziama Massif is rather degraded due to decades of logging. There are large stands

of planted *Terminalia ivorensis* at lower altitude and forest quality gradually improves further away from Sérédou town.

12. Sérédou upland zone (SER). 8°21'14.5"N, 9°19'31.9"W (8.354036, -9.325536); 900–1 000 m.a.s.l.; 24.ii–07.iii.2019.

The upland zone of the Ziama Massif above Sérédou is covered largely by primary upland forest reaching over 1 000 m.a.s.l., with areas of logged secondary forest and several smaller watercourses and upland swamps, some of which have been converted into rice paddies and small vegetable farms (Fig. 4).

Figure 4 – Formerly upland swamp forest in Ziama above Sérédou. A strictly endangered habitat type drained and converted into plantain and banana farm and rice paddies. All wetlands in the upland zone should be treated as a prime conservation area.

13. Massadou lowland forest (MAS). 8°20'55.1"N, 9°26'8.0"W (8.343403, -9.437417); 555 m.a.s.l.; 08–17.iii.2019.

The lowland forest along the Massadou-Dopamaï road is old-grown secondary forest with patches of untouched primary lowland forest. Even from the public road which crosses this section of the forest the habitat looks very diverse with recognisable natural strata of high canopy rainforest, including the old emergent trees, as well as lowland swamps and temporary watercourses with swamp/riverine vegetation. The vegetation along the road-verges is regularly cut, occasionally burned, creating secondary open habitats with young, regenerating scrub.

14. Dopamaï lowland forest (DOP). 8°11'3.7"N, 9°27'38.9"W (8.184361, -9.460806); 550 m.a.s.l.; 11, 16.iii.2019.

The lowland forest is more secondary around the village with old-grown patches, also a unique-looking semi-open canopy dry forest type is found in the summit area of the rocky hills.

15. Baignema lowland forest (BAI). 8°6'21.0"N, 9°17'39.3"W (8.105839, -9.294239); 500 m.a.s.l.; 28.iii–04.iv.2019.

The forest between Baignema and Fassankoni is a stretch of lowland secondary forest, which was heavily logged in the past. Its quality varies according to the intensity of past forest use. Some areas were planted with *T. ivorensis*, which still dominate the higher canopy layer. The closed canopy secondary forest is often interspersed with more open canopy swamp forest and palm-thicket.

Limitations of the study

A near complete faunal checklist of butterflies from a high diversity African tropical forest area is difficult to accomplish. Up to now, only a few examples could be found, where the knowledge of the butterfly fauna could be considered comprehensive. All these examples are results of years, but usually decades, of data collecting by one or more authors, often supplemented by published literature records or museum collection data. In the Kakamega Forest in Kenya, the first published checklist contained only relatively few observations and it was published as a report of a field expedition by Emmel & Warren (1993) listing 223 identified species with a few that remained undetermined. Kühne *et al.* (2004) have published a much more comprehensive checklist of 491 butterfly species, correcting some of the previous mistakes of determination. However, this list needed the contribution of Steve Collins of ABRI, who has spent years conducting field work in Kakamega in the last four decades. An updated checklist was published just four years later (Collins, 2008), with critical revision of all previous published records. In West Africa, a near comprehensive list was produced by Larsen *et al.* (2007) in the Bobiri Forest Reserve and Butterfly Sanctuary, where multiple recorders have contributed to the checklist of 456 butterfly species, accounting approximately 75% of the estimated species richness, compiled over nine field trips in different seasons between 2003 and 2007. The compilation of the 644 butterfly species positively recorded and identified in the Liberian Nimba Mountains is a result of ten months of field work by Sáfián and various field assistants and collaborators (Sáfián, 2014; Sáfián, unpublished data).

The current ZWW butterfly checklist was compiled from records of expeditions to the Wologizi Mountains: two weeks in November – December 2017 and three weeks in November – December 2018, a 10-day field survey at a single location in the Wonegizi Mountains (March 2019) and two rapid field surveys in the Ziama Massif, three weeks in February – March 2019 and one week in March – April 2019. The field teams altogether spent ten weeks in the study area.

From the limited time and resources available, the teams were not able to sample the butterfly fauna in multiple seasons in each survey location: Wologizi was sampled only at the beginning of the dry season (in two consecutive years), Wonegizi was sampled at the beginning of the transition season (from dry to wet), while Ziama was sampled only during the last three weeks of the dry season and one week during the transition season (from dry to wet).

Logistical constraints also limited the study to the lowland and mid-altitude (upland) localities in both Wologizi and Ziama. The highest altitude forests above 1 200 m.a.s.l. were inaccessible and were therefore completely excluded from the sampling.

Identification, taxonomy and nomenclature

Identification of more difficult taxa was aided by various literature sources, including Larsen (2005, unpublished manuscript), Libert (1999, 2010, 2014, 2016, 2020), as well as examination of museum specimens in the ABRI, ANHRT and CEP-MZUJ scientific collections, supplemented by dissection and examination of male genitalia in various cases.

The generic order of the checklist of Rhopalocera largely follows the latest work of Williams (2015). *Brakefieldia* Aduse-Poku, Lee & Wahlberg, 2016 has replaced the genus *Heteropsis* in mainland Africa (Aduse-Poku *et al.*, 2016) with a single species in Ziama. *Haydonia* Pyrcz & Collins, 2020 was erected for a few former members of *Gnophodes* Westwood, 1849 (Pyrcz *et al.*, 2020). The establishment of the new Hesperiid genera *Isoteinon* Felder & Felder, 1862, *Argemma* Grishin, 2019 and *Lissia* Grishin, 2019 is a result of molecular revision of a large number of African and Asian taxa (Cong *et al.*, 2019).

The species order within each genus largely follows the comprehensive work on West African butterflies by Larsen (2005), except in genera where the revisions were published after Larsen's work, some with complete re-ordering of species (e.g. Henning & Williams, 2010; Libert, 2010, 2014; Pyrcz *et al.*, 2020). Richardson's (2019) revision of *Neptis* was consulted and considered while compiling the list of *Neptis*, however in the cases of *N. loma* Condamin, 1971 and *N. cf. constantiae* Carcasson, 1961 (*N. loma* was synonymised with *N. constantiae*) and the similar *N. metanira* Holland, 1892 and *N. cf. continuata* Holland, 1892, the names with respective records are left as they were originally identified because of taxonomic uncertainties. Two further *Neptis* species could not be assigned to any described taxa.

Field methods

Conventional non-standardised capture with butterfly nets was used to record the majority of species. Field recorders collected specimens in sunny weather, usually between 08h30 and 16h30. This general collecting was supplemented by capture with fruit-baited net-traps, using modified IKEA PS FÅNGST storage nets, as described in detail in Sáfián *et al.* (2010), Maicher *et al.* (2018) for sampling in the understorey, while classical van Someren-Rydon traps (Rydon, 1964) were used to collect canopy-dwelling fruit-feeding butterflies.

Ecological classification

The ecological classification of West African butterflies is used to assess ecological position, intactness and conservation potential of an assessed habitat, survey area or even a country using the categories established by Larsen (1994) and further developed by Larsen (2006a) and also by Sáfián (2012, unpublished) with the inclusion of new West African taxa, based on the distribution pattern and observed habitat preferences of each species occurring in the area. The species in each category do not necessarily occur solely in one particular habitat, but are centred on it, sometimes with high fidelity, therefore they are much less likely to be found or appear very rarely outside of their ecological niche, except during migration, dispersal or occasionally due to other, unexplained ecological factors.

Forest-dwelling butterfly species are further sub-divided according to forest types, which are generally distributed following precipitation patterns and altitude in the following groups: Wet Forest Species (WET) are centred on lowland hyper-wet and wet evergreen rainforest, a widely distributed forest type in Liberia which occurs also in parts of Guinea. The group Mesophilous Forest Species (MEF) contains a large number of butterflies, which have wider ecological tolerance towards wetter climatic conditions but occur commonly also in the moist- and dry semi-deciduous forests of the Ghana subregion in the Upper Guinea forest zone. Dry Forest Species (DRF) are most commonly found along the rather narrow forest-savannah transition zone in West Africa, also in drier forest formations in the Dahomey Gap (Togo Mountains), the drier coastal forests of Ghana, Ivory Coast and south-eastern Liberia and in the north in mountainous areas in Ivory Coast and Guinea. They usually express little ecological tolerance and many of them are localised.
Upland Forest Species (UPF) occur only in mid-altitude (upland) evergreen forest, a special habitat type in West Africa, which harbours several restricted-range, often narrowly endemic, butterfly species. Only a few of such upland localities exist in Ghana and eastern Liberia, more in the Guinea Highlands. Montane Forest Species (MTF) are extremely restricted to the very few unique forest areas in the Guinea Highlands above 1 400 m.a.s.l. Currently, only a single species is known to be associated with high altitude montane forest habitats in West Africa west of the Dahomey Gap (Sáfián, 2018). Many forest butterfly species with a wide ecological tolerance and distribution are not usually restricted to any of the forest types mentioned above, but occur across the forest zone, also penetrating the Guinea savannah zone along rivers. They are listed under All Forest Species (ALF). West African butterflies associated with open habitat formations are sorted into the following categories: Guinea Savannah Species (GUI) inhabit the rather broad, wooded-savannah zone north of the Upper Guinean forest and also the savannah area in the Dahomey Gap including the savannah slopes of the Togo Mountains. The butterfly fauna of mid-altitude wooded-savannah area of the Nimba Mountains also show strong similarities with those inhabiting Guinea savannah habitats. A high proportion of butterfly species in this group express moderate tolerance to habitat degradation and some could survive in cleared areas or in disturbed, open canopy habitats in the forest zone. Sudan Savannah Species (SUD) inhabit the dry, grassy-scrubby savannah zone, between the Guinea savannah and the arid Sahel zone, these species usually have little tolerance to habitat degradation, are often connected with specialised food plants and only a few can penetrate the forest zone by migration or by dispersal to the south during the dry season. Species associated with special microhabitats (SPE), such as swamps or other wetlands are often found only locally in more open habitat formations. The Ubiquitous group of butterflies (UBQ) consists of generally mobile species, often with migratory tendencies, and they can establish colonies in all kinds of habitat from dry grasslands to forest glades or in degraded areas inside the forest zone, also in and around human

settlements. The habitat preference of a few butterfly species is insufficiently known (INS) for accurate classification.

RESULTS

Faunistic results

In the three study areas across the ZWW, altogether 564 butterfly species were recorded during five field surveys between November 2017 and April 2019. When including literature data, the total number of species recorded from the ZWW is 569 (see references below). In the Wologizi Mountains 450 butterfly species were recorded, 360 in 2017 and 362 in 2018 with 90 new area records. During the surveys in Ziama Forest in February and April 2019 altogether 429 species were positively recorded and identified, while records of another 5 species were found in literature sources (Libert, 2010, 2014; Belcastro & Oremans, 2016; Libert, 2016) making the total recorded species 434. During the one-week survey in Wonegizi Nature Reserve, 254 species were found from a single locality.

In Wologizi, 108 species were found that were not in the other two study areas. A further 93 species were found only in Ziama Forest, and thus recorded only from Guinea, and only seven species were recorded only from Wonegizi. Another 15 species were recorded only in Wologizi and Wonegizi, making the total of 134 species recorded only from Liberia.

A checklist of the species found in each area is given in Appendix 1.

Taxonomic novelties

From the collected material, eight potentially new taxa were identified, five species and three subspecies. Three of them are already formally described: *Eagris tetrastigma lomana* Belcastro & Sáfián, 2020, *Gorgyra ziama* Belcastro & Sáfián, 2020 and *Telchinia pseudepaea ziama* Belcastro, Boireau & Sáfián, 2020 (Sáfián *et al.*, 2020a,c), while the others await description: *Pseudathyma cf. neptidina*, *Neurellipes helpsi* ssp. nov., *Eresiomera* sp. nov., *Stempfferia michelliberti* sp. nov. and *Cephetola wologizi* sp. nov. (manuscript names).

Eagris tetrastigma (Mabille, 1891) is now divided into three rather easily recognisable subspecies between Central Africa and the Ghana subregion of West Africa. Subspecies *subolivescens* previously represented the species in West Africa. It was recognised by Belcastro (1986) that the westernmost population is morphologically nearer to the nominate subspecies with its more yellow hindwing underside and a firm and narrow, black marginal line. Male specimens of the populations occurring in the Liberian subregion show consistent differences and were recently described as subspecies *lomana* Belcastro & Sáfián, 2020 (Sáfián *et al.*, 2020a). Specimens in the type series were found in hyper-wet and wet lowland forests in Liberia and in both lowland and upland forest in the Loma Mountains, Sierra Leone and in Ziama.

Gorgyra ziama Belcastro & Sáfián, 2020 is a Liberian subregion endemic butterfly, which appears to be the western vicariant of the Congolian forest species *G. kalinzu* Evans, 1949. The latter is distributed between Uganda and eastern Nigeria (Larsen, 2005). *Gorgyra ziama* was first collected in the Ziama Forest in Guinea by Claudio Belcastro but was later found also in Liberia (Putu Range, Wologizi Mountains) and Sierra Leone (Tonkolili Forest Reserve) (Sáfián *et. al.*, 2020a).

One *Cephetola* species in the family Lycaenidae, subfamily Poritiinae, collected only in Wologizi on the Belegizi Ridge, is identified as new to science, close to *Cephetola aureliae* Libert, 1999. The latter is known only from Eastern DRC (North Kivu and Ituri Forest) (Ducarme, 2018) and no closely related species was known previously from Upper Guinea.

Eresiomera sp. was also collected only in upland forest in Wologizi. It is currently under investigation whether the Liberian population is conspecific with the very poorly known *E. jacksoni* or whether it represents an undescribed species. Belcastro (pers. comm.) collected a series of females in the Gola Rainforest National Park, Sierra Leone.

Stempfferia nr. *zelza* (*S. michelliberti* sp. nov.) is recognised as new to science, recorded previously only as a few specimens from western Ivory Coast (Sáfián *et al.*, in prep.), a single female from the Nimba Mountains in Liberia (Sáfián, 2014) and from a single male specimen collected in the Gola Forest, Sierra Leone (Belcastro, pers. comm.).

The Ziama population of the rare and very local lycaenid *Neurellipes helpsi* (Larsen, 1994) (Fig. 5), first illustrated in Libert (2010), certainly represents an undescribed taxon as recognised by Belcastro (pers. comm., teste Libert, 2010).

Figure 5 – Male of *Neurellipes helpsi* ssp. nov., a unique butterfly, found only in upland wetland (creeks, swamps) habitats in Ziama: a) upper side and b) underside.

The population of *Pseudathyma cf. neptidina* from Mount Tonkoui (western Ivory Coast), the Ziama Forest and from the higher plateaus of Fouta Djallon could well represent an undescribed western vicariant, rather than a disjunct population of a Guineo-Congolian species – as mentioned in Larsen (2005).

A new subspecies *Telchinia pseudepaea ziama* Belcastro, Boireau & Sáfián, 2020 was also collected and recognised by Belcastro from Ziama. It is also known from a few specimens collected in the Nimba Mountains in Guinea, Ivory Coast and Liberia and Mount Tonkoui in Ivory Coast (Sáfián *et al.*, 2020c).

Taxa of conservation concern

Restricted-range butterfly taxa are often of conservation concern (https://www.iucnredlist.org; Mecenero *et al.*, 2013), including potentially narrowly distributed endemics, as well as endemics to the Guinea Highlands and Liberian subregion. All potentially new taxa fall in one of these categories, however the knowledge on the distribution of many of them is still limited and their status could change as a result of further research.

Narrowly endemic taxa are often found in a single locality or a discreet ecological or biogeographical unit. Usually very few butterflies in the West African butterfly fauna fall into this category. Currently, two undescribed taxa collected at a single locality during the surveys fall in this category: *Cephetola wologizi* sp. nov. was collected only in the Wologizi Mountains on an individual hilltop in undisturbed upland forest. *Neurellipes helpsi* ssp. nov. is known only from a single locality in upland swamp forest in Ziama. Both taxa would currently fall in the Critically Endangered (CR) category according to the IUCN Red List criteria (IUCN, 2012): both have a single population with an area of occupancy less than 10 km^2 and the habitats of both are directly threatened by human activities causing wildfires and drainage/clearance of upland wetland habitats, respectively, matching criteria B2b (see details below, under Conservation issues and implications).

Guinea Highlands endemic taxa are sporadically distributed in the mountainous area between north-western Ivory Coast across north-western Liberia, northern Sierra Leone and the Fouta Djallon landscape to the Senegal border. Multiple West African butterfly species are known to be restricted to the pre-montane, upland and sub-montane forest habitats of one or more of the mountains ranges and several of them were collected in the ZWW landscape.

Bettonula bettoni nimba Collins & Larsen, 2005, previously known only from two specimens collected in the Nimba Mountains (Larsen, 2005), was caught in Liberia for the first time (Wologizi Mountains). A strong colony of *Hypolimnas aubergeri* Hecq, 1987 was found near Rosewood Camp in Wologizi. Definitely the largest known population of *Euphaedra aubergeri* Hecq, 1977 was discovered in the upland forest of Wologizi (Fig. 6), where males were observed hill-topping in small numbers on each surveyed hilltop between 800–1000 m.a.s.l with natural forest cover. For decades, this species was recorded only around its type locality, Danané (Ivory Coast), but most natural forest habitats have already disappeared due to deforestation (Larsen, 2005) and the species is now presumably extinct from that area. Only one quite recent record is known from Liberia, collected on Mount Beeton in West Nimba (Sáfián, 2014). This species was also found during the survey in Wonegizi.

Figure 6 – *Euphaedra aubergeri*, a Guinea Highlands endemic butterfly.

Mylothris melita sp. nov. Belcastro & Warren-Gash (manuscript name) (Warren-Gash, in press) was previously collected only at its type locality, on the summit of Mount Kakoulima near Conakry in Guinea and in the Fouta Djallon plateau. The species was also found in Wologizi, a new country record for Liberia.

Uranothauma belcastroi Larsen, 1997 is locally abundant in the upland forest above Sérédou in Ziama Forest but was not recorded from Wologizi or Wonegizi (Fig. 7). It was previously known only from Mount Tonkoui in Ivory Coast, the Nimba Mountains (Liberia, Guinea and Ivory Coast), the Loma Mountains in Sierra Leone and from a recent unpublished record (Sáfián, pers. obs.) from the Fouta Djallon, Guinea.

Figure 7 – *Uranothauma belcastroi* is a Guinea Highland endemic butterfly.

Two recently described *Epitola* sensu lato, *Cephetola wingae* Sáfián, 2015, *Stempfferia katikae* Sáfián, 2015 and a Theclinae *Pilodeudorix mano* Sáfián, 2015 were recorded in the upland forest in Wologizi. All were described from the Nimba Mountains and were previously known only from the Nimba area (Sáfián, 2015b; Sáfián *et al.*, 2015a), but a single male specimen of *P. mano* was

also collected in the upland forest above Sérédou in Ziama Forest (Sáfián, 2020). *Pseudathyma cf. neptidina* and *Telchinia pseudepaea ziama* Belcastro, Sáfián & Boireau, 2020 were recorded from the upland forest zone of Ziama. The latter was collected only in a few other localities in Northern Liberia (Haut Cavally, Nimba Mountains) and on the Ivory Coast/Guinea border (Nimba Mountains), while the former is known to occur only in a few upland/sub-montane forests in the Guinea Highlands: Loma Mountains in Sierra Leone (Larsen, 2005) and Fouta Djallon in Guinea (Sáfián, unpublished).

Liberian subregion endemic taxa are distributed in a poorly defined, narrow forest area between the Sassandra River in Western Ivory Coast and Central Sierra Leone, sometimes referred to as the Liberia Forest Region (Larsen, 2005). This forest area receives higher annual precipitation compared to the eastern part of the Upper Guinean forest zone (CILSS, 2016) and evidence shows that this area has been one of the West African refuges during the drier periods in the Pleistocene (e.g. Van Rompaey, 1993; Plana, 2004). Some of these taxa also occur in the Guinea Highlands but quite a few are confined to the lowland forests and do not or only slightly penetrate the Guinea Highlands. *Ceratrichia crowleyi* Riley, 1925 is generally common in wet lowland forest in the Liberian subregion, it has a disjunct population also in south-western Ghana (Ankasa National Park) (Larsen, 2005). *Euriphene lomaensis* Belcastro, 1986 was found exclusively in the Liberian subregion, while *E. leonis* (Aurivillius, 1899) is also known from a couple of specimens from south-western Ghana and Eastern Ivory Coast. Larsen (2005) still considers it as a Liberian subregion endemic species. *Parasiomera alfa* Sáfián, 2015 and *Geritola pacifica* Sáfián & Libert, 2015 were discovered and described recently from the hyper-wet lowland forest of Gola in western Liberia (Sáfián *et al.*, 2015; Sáfián & Collins, 2015). The latter one was found also in the neighbouring Foya Proposed Protected Area (Sáfián, 2020). Their records from Wologizi are currently the northernmost occurrences for both species. *Neurellipes ferenczi* Libert, 2010 is known only from three specimens, all collected in Guinea. The holotype was found in Coyah (Libert, 2010), the second specimen in the Nimba Mountains (Sáfián, unpublished), while the third near Baignema in secondary lowland forest in Ziama. The distribution of the three localities indicate its presence also in Liberia. *Iolaus liberiana* Sáfián, 2017 is known only from a few specimens in lowland forest in Liberia's Nimba Mountains (Sáfián, 2017) and Ziama. *Gorgyra ziama*, *Stempfferia* nr. *zelza* and *Eagris tetrastigma lomana* are also considered as Liberian subregion endemic butterflies.

New country records and other records of biogeographic interest

Twelve species are reported for the first time in Liberia, since the publication of Larsen (2005) and the subsequent publications and biodiversity survey reports by Brattström (2010), Sáfián (2012, 2014, 2015a,b), Sáfián & Collins (2015) and Sáfián *et al.* (2013, 2015a,b, 2019),

For Guinea, 82 species are new country records since the publications of Larsen (2005, 2006b), the taxonomic revisions by Libert (2010, 2014, 2016) and the three short taxonomic papers by Belcastro and Oremans (2016), Sáfián (2018) and Sáfián *et al.* (2020a).

Several of the new country records are also of biogeographical interest as they represent either a unique occurrence in an ecologically different area or a significant range extension.

Bicyclus uniformis (Bethune-Baker, 1908) is widely distributed in Central Africa but is rare and local in the Upper Guinean forest, known mainly from localities in Ghana (Larsen, 2005). More recently Brattström *et al.* (2016) list it from Guinea (Nimba Mountains), the first record for this country. It was also found in Wologizi (upland forest) and Wonegizi (lowland forest), the first Liberian specimens. Quite a few also came to banana-baited traps in both lowland and upland forest in Ziama. The Wologizi specimens represent the westernmost occurrence of the species with a significant range extension. The reason why the species was not found elsewhere in Liberia is unknown.

Bicyclus mesogenina (Grünberg, 1912) was not known to occur in West African until a couple of specimens collected in Ziama Forest during the current field surveys were identified as *Bicyclus mesogenina*, based on the wing morphology and male genitalia. *Bicyclus mesogenina* was recently resurrected from synonymy (Aduse-Poku *et al.*, 2016). So far, the species is known from Guinea as two male specimens collected in upland forest above Sérédou in Ziama (Florczyk *et al.*, in prep.).

Apaturopsis cleochares (Hewitson, 1873) is rare in West Africa, and is difficult to collect, because imagos mostly stay in the canopy. The butterfly is more easily captured by fruit-baited traps, set at canopy level (Larsen, 2005). The first Liberian specimen was collected in a canopy trap in Wonegizi.

Euryphurana nobilis (Staudinger, 1891) was recorded from Liberia (Larsen, 2005) but with no precise locality shown. In Wologizi, a female was observed in the deep valley between the two main ridges in the afternoon hours but could not be collected. It was investigating a sun-lit leaf low down in the thick undergrowth, opening its wings, turning and then jumping onto another leaf just some 20 cm away.

Bebearia ashantina (Dudgeon, 1913) is a rare Upper Guinean endemic species, previously recorded only in Ghana and Ivory Coast (Larsen, 2005). It was first recorded in Liberia in the Putu Mountains in 2012 but the record remained unpublished (Sáfián, pers. obs.). *B. ashantina* was found in upland forest both in Wologizi and Ziama, also in lowland forest near Massadou and Dopamaï.

Iridana agneshorvathae Collins, Larsen & Sáfián, 2008 is a very poorly known species, which was known as three specimens from Ghana and Benin. The first Liberian record from Wologizi is the first for the Liberian subregion, a significant range extension. The recent knowledge on the species was summarised in Sáfián *et al.* (2020b).

Pilodeudorix mera (Hewitson, 1873) was previously

collected only on Mount Péko, Ivory Coast in West Africa west of the Dahomey Gap (Larsen, 2005). The two specimens found in upland forest in Wologizi are of great interest and indicate the species' presence elsewhere in the Guinea Highlands. These populations could represent an undescribed taxon, but further specimens and application of molecular methods are needed before a conclusion can be reached on its taxonomic status.

Ecological composition and patterns

More complete datasets are available from Wologizi and Ziama to allow for a comparison of ecological patterns. However, for Wonegizi, all butterflies came from a single locality collected during a one-week rapid survey Therefore, the Wonegizi dataset was excluded from the comparison, because insufficient data could cause significant bias in the ecological composition towards more easily recordable open habitat species and widespread and common generalists.

Despite the huge difference in species recorded and the surveys conducted in completely different seasons in each area, the ecological composition of the butterflies of Wologizi and Ziama show surprisingly similar patterns (Figs 8–10).

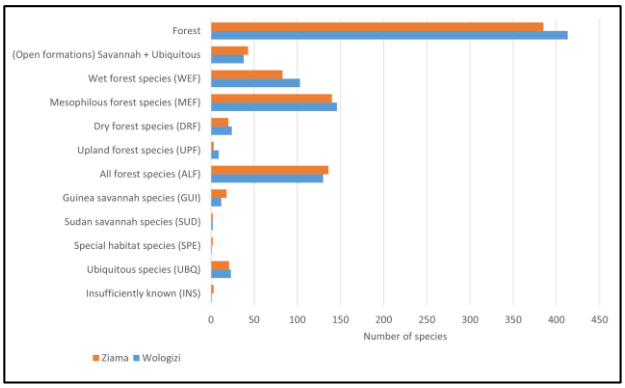

Figure 8 – Number of butterfly species in each ecological group.

The dominance of forest-dwelling butterfly species in both areas was expected, with 92% in Wologizi and 90% in Ziama This, together with the 8% and 10%, respectively, of combined open area species (savannah-dwelling and ubiquitous species), corresponds to the butterfly fauna in the transboundary landscape of Gola Forests (Sierra Leone and Liberia), a diverse forest landscape of outstanding conservation value (Sáfián, 2012).

The differences at a finer scale are more significant, particularly in the WEF and DRF groups where species have a rather narrow ecological tolerance and they rarely occur outside their optimal habitats.

Although the proportion of DRF is almost equal in both samples (5% in Wologizi, 4.5% in Ziama), the proportion of WEF is higher in Wologizi (23%) than Ziama (19%). This is probably a bias caused by the time of sampling as the microclimatic conditions are still much more favourable for WEF in the beginning of the dry season, when Wologizi was sampled. Towards the end of the dry season, when Ziama was sampled the forest interior often dries out, and the activity of WEF is generally low. In the Gola Forests, WEF represent 20% of the butterfly fauna, and does not differ significantly from those recorded in Ziama and Wologizi. Although the overall proportion of WEF is not outstandingly high – it is 26% of the Ghanaian butterfly fauna (Larsen, 2006a) – it indicates an intact forest interior with a low level of disturbance and a healthy forest ecosystem.

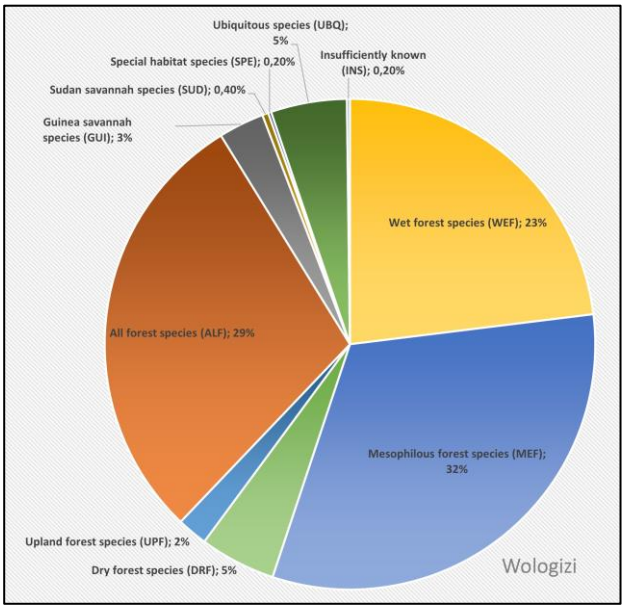

Figure 9 – The proportion of butterfly species in each ecological group found at Wologizi.

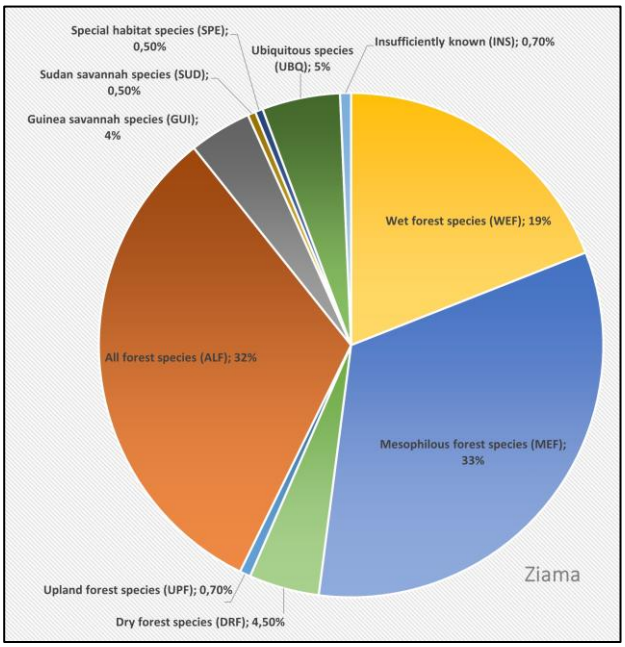

Figure 10 – The proportion of butterfly species in each ecological group found at Ziama.

The MEF group is rather tolerant to seasonality and not surprisingly they are represented equally in both Wologizi (32%) and Ziama (33%). In Gola, the proportion of MEF is even higher, reaching 35% (Sáfián, 2012).

Species in the ALF group have a wide ecological tolerance, the majority being generally common. They are equally represented in Ziama (32%) and the Gola Forest Landscape (32%) (Sáfián, 2012), compared to Wologizi (29%).

The West African UPF group often represents species with narrow distributions (see above, under Taxa of conservation concern). The 2% of UPF in Wologizi is an outstanding value, which is comparable only to the Nimba Mountains (Sáfián, 2014), an area of global conservation importance for its high biodiversity and high rate of endemism. The low value and proportion of UPF in Ziama does not necessarily reflect the actual situation, since during the survey, the upland forests were unusually dry in March 2019 and UPF could have been simply out of season or present only in low densities. Apparently, as expected, no UPF were reported in the Gola Forests landscape (Sáfián, 2012).

Although species from the MNF group are not expected to occur in Wologizi and Ziama, it should be noted that the highest altitude areas (above 1 100 m.a.s.l.) were excluded from the surveys in both areas.

Both the GUI and SUD groups were slightly better represented in Ziama (4.5% and 0.5%), probably because the northernmost sampling point is almost 30 km further north from the southernmost surveyed point in Wologizi, and the Ziama Massif is already extending into the forest-savannah transition zone in the north. Towards the end of the dry season, climatic conditions were also more favourable for several GUI and SUD species to disperse into open areas inside the forest, mainly along roads. In Wologizi, the majority of GUI and the few SUD (3% and 0.4%) species were actually recorded in the edaphic savannah grassland areas at the foothills. In the Gola Forests, the proportion of open habitats species (GUI+SUD) were even lower, represented by only 3% of the species associated with Guinea savannah habitats and a single species associated with Sudan savannah.

The proportion of species in the UBQ group (5% for both Wologizi and Ziama) is relatively high for rainforest areas but was only 3% in the Gola Forest landscape (Sáfián, 2012). They clearly indicate habitat degradation, also explained in more detail below among other conservation issues.

The proportion of species in both the SPE and INS groups was insignificant in both areas.

DISCUSSION

Butterfly diversity of ZWW in a West African context

Generally, the butterfly fauna of the Upper Guinean forest zone are significantly poorer compared to those in Lower Guinea or in the Congo Basin, but are still considerably rich with approximately 1 000 species (Larsen, 2005). In the same work, the estimated species richness in Korup National Park on the Nigerian border in Cameroon exceeds 1 000 butterfly species, while in the Ituri Forest in the eastern DRC 1 105 species were recorded over a 40 year period by Ducarme (2018) and his local assistants. In contrast, not even the highest predicted species richness exceeds 700 species in Upper Guinea and is usually lower between 500 and 670 in a single forest area of substantial size in good condition (Larsen, 2006a; Larsen *et al.*, 2007, 2009; Sáfián, 2012, 2014).

Compared to other forest areas in West Africa, west of the Dahomey Gap, the recorded species richness (569 species) in the ZWW does not appear to be outstanding at first sight. Larsen *et al.* (2009) estimate the species richness to slightly exceed 600 species in major protected forest areas in Ghana (e.g. Bia, Kakum, Ankasa National Parks, Bobiri Butterfly Sanctuary), while only in the unique upland forests of Atewa Range does species richness approach approximately 700 species (Larsen, 2007), based on meticulous species-to-species level analysis.

In the Liberian subregion (the once continuous forest area between western Ivory Coast and central Sierra Leone) of West Africa, the species richness of butterflies seems to be considerably higher, similar to that of Atewa. In the Nimba Mountains alone Sáfián (2014) estimates approximately 700 species with 644 species positively recorded and identified. However, this estimate excludes the specialist butterflies that are confined to mid-altitude savannah, high-altitude grassland and the high-altitude forest habitats in the Guinean and Ivorian part of Nimba.

Results of the only other transboundary study on West African butterflies across the Gola Forest Landscape (Gola Rainforest National Park, Sierra Leone and Gola Forest National Park, Liberia) (Belcastro & Larsen, 2006; Sáfián, 2012) show similar figures of recorded and estimated species richness (576 and 700, respectively). However, it should be stressed that both Ziama and Wologizi were visited only during a single-season period at the beginning and at the end of the dry season (Wologizi: November – December, Ziama: February – April), and the higher altitude habitats above 1 200 m.a.s.l. were excluded from the field studies due to logistical constraints in both areas. Wonegizi was surveyed only for one week at a single site (March 2019). The species composition and in particular the high recorded number of restricted range species observed during these short surveys suggest a higher species richness with the presence of many more, yet unrecorded, generally common and widespread forest butterflies in these areas, but further comprehensive studies are necessary to establish more accurate estimates.

The conservation value of ZWW as judged from the butterfly fauna

The ZWW is probably the only area in West Africa which could protect a wide range of forest habitats from lowland forest to upland forest (maybe just reaching the sub-montane zone above 1 300 m.a.s.l.), and to the drier woodlands on rocky outcrops, also important micro-habitats such as upland creeks and swamps. The ZWW also extends across an ecological gradient from the hyper-wet lowland forest area of western Liberia to the southern edge of the forest-Guinea savannah transition zone. The diverse butterfly fauna clearly corresponds to this diversity of habitats, with multiple species of conservation concern, including seven undescribed or newly described taxa, two of which have not been recorded elsewhere (*Cephetola wologizi* sp. nov. and *Neurellipes helpsi* ssp. nov.). The richness of endemic species is also outstanding with a mixture of Liberian subregion endemic lowland forest specialists (with records of *Geritola pacifica* and *Parasiomera alfa*) and pre-montane or upland forest butterflies previously known only from the Nimba

Mountains (*Pilodeudorix mano*, *Cephetola wingae* and *Stempfferia katikae*), or those distributed in a slightly wider area in the Guinea Highlands (*Hypolimnas aubergeri* and *Euphaedra aubergeri*) (Sáfián & Takano, 2019; Sáfián, 2020). The outstanding richness of endemic and restricted range species could be a result of the ZWW being part of a refuge area for forest butterflies, where some species were able to move along both the ecological and altitudinal gradient, while others could remain restricted to their respective micro-habitats, when drier periods caused disconnection of forest areas in West Africa. It would not be surprising, as the area overlaps with one of the hypothetical Pleistocene forest refugia identified by Guillaumet (1967) cited in Van Rompaey (1993), also highlighted by Leal (2001).

The ecological composition in both Wologizi and Ziama clearly shows an intact forest butterfly fauna, where the adverse effects of habitat disturbance is almost negligible, only enriching the butterfly communities with ubiquitous species or savannah elements with better dispersal abilities (*Junonia hierta cebrene*, *Catacroptera cloanthe*, *Telchinia serena* and *Acraea caecilia*). The presence of quite a few dry forest and savannah species with rather narrow tolerance to ecological conditions (*Graphium adamastor* and *Bicyclus campa*) reflect the proximity of zonal Guinea Savannah. Actually, the scattered mountains of the Guinea Highlands play an important role in conserving the Ziama forest, as their geographic position result in precipitation much higher than elsewhere further east in West Africa (CILSS, 2016).

The third major importance of the ZWW landscape is its size. With its 114 000 hectares, Ziama is by far the largest protected area in Guinea. The three forest areas cover well over 200 000 hectares of natural habitats, Wonegizi being contiguous with Ziama and Wologizi is also proposed to be re-connected via wildlife corridors. Although the Nimba Mountains harbour a similarly unique butterfly fauna (Sáfián, 2014), its size is about the quarter of that of the ZWW landscape and that already includes the Zor, Blei and Gba Community Forests, whose protection status is very fragile and they suffer from continuous human disturbance. With its size, the ZWW landscape could most probably effectively mitigate the increasing extremities of global climate change, providing a buffer for the protection of the numerous special butterfly habitats.

Conservation issues and implications

Currently within the ZWW, only the Massif du Ziama Man and Biosphere Reserve is formally protected, although both Wonegizi and Wologizi appear on the list of proposed protected areas (PPA) in Liberia. The Wologizi Mountains are rich in iron ore and could easily become a target for mining prospection, as happened previously in the 1960s (White, 1973). Without formal protection, Wologizi is also threatened by a range of human activities. Although hunting would not directly affect butterfly populations, it was reported by local communities that the devastating wildfire in 2015, which caused the destruction of upland forest on the main Wologizi ridge and also partially on the Belegizi ridge (Fig. 3) had originated from a poachers' camp, who had settled inside the forest for several months, smoking their meat on site. Unfortunately, this fire coincided with an extremely long dry season, previously unprecedented in the region, but recently longer and more severe dry seasons appear more frequently. The regeneration of the upland forest will take several decades even without any further negative effect of wildfire events. Further damage in Wologizi is caused by illegal wood-cutting and logging. Serving the international demand, rosewood (*Pterocarpus* spp.) poachers cause regular damage by opening new roads into the forest and thinning out rosewood individuals (Fig. 11). During our field survey, illegal logging of *Terminalia superba* and *T. ivorensis* trees (pit-sawing) in commercial quantities were observed in Wologizi. Both *Pterocarpus* and *Terminalia* species are known larval food plants for various butterflies in West Africa (Larsen, 2005) and their disappearance from the arboraceous vegetation could influence the abundance of butterfly populations.

Figure 11 – Poaching of rosewood (*Pterocarpus* spp.) and other timber species in Wologizi reduces food-source availability for a number of butterflies and opens up the forest for other illegal activities.

Inside Wonegizi, no illegal logging or farming activities have been observed, however, the clearance of forest habitats outside the PPA is approaching its boundary. As visible also on the map of Figure 1, the connection between Wologizi and Wonegizi is lost due to recent deforestation along the main Zorzor-Voinjama road. From the ZWW landscape conservation perspective, the importance of the re-establishment of connection between the forest areas by a number of re-forested corridors should be a priority. In the corridors, the canopy cover should be unbroken, and the forest interior microclimate should be maintained (to approach natural forest structure). The present disjunction of the two forest areas causes further fragmentation of forest butterfly populations, which in extreme cases could lead to complete isolation. It is well known that a significant proportion of forest interior butterflies have little ability to penetrate or fly through eroded forest habitats and some of them will completely avoid flying into or through open areas (e.g. Elbers & Bossart, 2009; Sáfián *et al.*, 2010).

Large areas of lowland forest in Ziama were extensively logged and later re-planted with multiple timber tree species, such as *T. ivorensis*, but non-indigenous forest stands also exist in the lowland areas along the N'Zérékoré – Sérédou road. Although the butterfly studies in the ZWW focused on more natural forest communities

with low disturbance, it should be mentioned that these forest stands maintain lower butterfly diversity and are therefore of lower conservation concern compared to natural primary and old-grown secondary forest.

It is a general practice that lowland marshes and swamps inside Ziama Forest were provided to local communities for wood harvest and subsequent food production. However, in certain areas this has become so excessive that virtually all forest in the wetlands was completely cleared and the land converted into intensively managed farms, disregarding plant and animal communities directly associated with wetland habitats. This practice should be strictly controlled, and only limited wetland areas should be selected for agriculture utilisation. The same practice was observed in upland forest above Sérédou village (Fig. 4). The wetlands in the upland zone are not only part of the water-catchment area of Sérédou and other communities, but they belong to a unique and endangered biotope, upland swamp, which is known to occur in West Africa only in the Atewa Range in Ghana (small plateau swamps), worthy of strict protection (McCullough *et al.*, 2007), and in the central depressions of the Ziama Massif (possibly other undocumented locations also exist in the Loma Mountains in Sierra Leone). Two butterflies found are directly associated with this habitat type. *Neurellipes helpsi* is known only from the Atewa Range as well as from a possible record from Banco forest in Ivory Coast and now also from Ziama Forest (both confirmed records are upland localities). The latter population is taxonomically distinct from the Ghana population and thus endemic to Ziama. The other species is *Pseudathyma cf. neptidina*, which is known from a few mountainous areas in West Africa between western Ivory Coast and Fouta Djallon in Guinea. Larsen (2005) already mentioned that this species could be strictly associated with permanent water courses. The populations in the Guinea Highlands are possibly taxonomically distinct from the Central African one and thus endemic to the mountainous areas in Sierra Leone, Guinea and Ivory Coast. For the protection of the populations of these butterflies, further utilisation of upland wetland Ziama should be completely avoided and the land previously moved into utilisation should be reclaimed for conservation purposes and abandoned for natural processes to restore upland forest habitats.

Another conservation issue observed in Ziama is unnecessarily wide forest clearance alongside the road verges between Massadou and Sedimaï communities. Larger trees were already felled several years ago, but the regenerating young arboraceous vegetation seems to be cut back every few years on both sides by a variable width between 10–20 metres, leaving the area completely open. This practice exposes the forest to drought and further edge effects. Invasive plants, such as *Chromolaena odorata* have already established along the road verges, also various savannah butterflies with the ability to penetrate open areas inside the forest zone (e.g. *Colotis euippe*, *Junonia hierta cebrene*) already appear, following the widely open road verges. Here the vegetation is also regularly burned in the dry season, making the forest even more exposed to climatic effects. Following the clearing and burning, various crops are planted alongside the road. The continuity of such practices would virtually bisect the forest, preventing or reducing gene-flow and dispersal of deep forest-dwelling butterflies (and probably other immobile insects) between the two sections (e.g. *Euphaedra* and *Euriphene* species), as mentioned above regarding the lack of corridors between Wologizi and Wonegizi. The road maintenance in the communities around Ziama seems to be dependent solely on local practice, as road verges through Ziama Forest from Baignema to Fassankoni are well maintained, preserving the arboraceous vegetation. It is also very similar in Diecké Classified Forest some 80 km southeast of Ziama, where disturbance of the forest is minimised even along the main road to Liberia.

Conclusions

It is almost certain that with further surveys in the ZWW the butterfly checklist will continue to grow from the current, already considerably high number. This is indicated by the limitations of the current studies since each survey locality was visited only during a single season while seasonality of butterflies is usually well pronounced. Also, the highest altitude habitats were completely excluded from the surveys in all three areas. Other studies in mountainous areas in the region indicate the presence of several upland specialist butterflies, which could be targeted in future studies.

The high number of recently described and some still undescribed taxa, presumably of restricted-range species, the outstanding representation of Liberian subregion and Guinea Highlands endemics and various species having not been found in Liberia or in Guinea during previous studies are all clear indicators of the outstanding natural value of the area.

Although conservation work faces various challenges in all three areas, the ecological composition of the butterfly fauna clearly shows an intact forest butterfly community with little signs of disturbance and alteration of natural habitats.

There is no doubt, that the ZWW is amongst the most important ecosystems in the Liberian subregion of the Upper Guinean forest zone with altogether 200 000 hectares of forest habitats. Furthermore, the three areas represent a faunal transition between the hyper-wet lowland forests of Sierra Leone-Liberia in the south, towards the northern dry forest and transitional forest zone in Guinea, as well as a complete altitudinal gradient from lowland to upland forest and its diverse geological features that allowed the formation of microhabitats, where butterflies could establish highly localised populations.

ACKNOWLEDGEMENTS

The field work in Ziama Forest was carried out under the auspices of the Conserving and Connecting the Ziama-Wonegizi-Wologizi Transboundary Forest Landscape between Guinea and Liberia of Fauna & Flora International (FFI) and in partnership with USAID's West Africa Biodiversity and Climate Change Programme (WA BiCC) and Centre Forestier de N'Zérékoré (CFZ), Guinea with funding from the USAID West Africa Biodiversity and Climate Change Program (USAID WA BiCC). Staff

of FFI Liberia and FFI Guinea and CFZ have been instrumental in the organisation of the field work and we are thankful to Wing-Yunn Crawley, Toupou Koighae, Alan Deverell, Madam Wata Kamara and Colonel Dumbouya for their assistance. The author is grateful to the African Natural History Research Trust, Leominster, UK and its trustee Richard H. Smith for additional funding, that allowed the butterfly team to survey Wologizi in 2017 and 2018, Wonegizi in 2019 and also allowed the butterfly team to return in Ziama at the end of March 2019. Without the help of Marios Aristophanous, Lydia Mulvaney (ANHRT), Rolland Warner, Emmanuel Loqueh (SNCL), Jacques Suah Doré (University of N'zérékoré) and our drivers Paul Annue and Sagno Suleiman also our cooks Lucy Dolo and Bintu Keita the field works would not have been so successful. The specimens were collected and exported from Guinea using permit (Code: 100 No. 008) issued by 'Ministère Délégué á L'Environnement, Eaux et Forêts, Direction Nationale des Eaux et Forêts', Republic of Guinea. Specimens collected and exported from Liberia with the permit issued by the Forestry Development Authority (FDA). Our peer reviewers, Oskar Brattsttöm (University of the West of Scotland, UK) and Haydon Warren-Gash (London, UK) and the co-editor of Metamorphosis, Silvia Kirkman (South Africa) also contributed to the improvement of the manuscript making corrections and giving valuable comments.

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APPENDIX 1

Checklist of butterflies recorded in the Wologizi Mountains, the Wonegizi Mountains and in the Ziama Massif. Subspecific names are listed only when they are not represented by the nominate subspecies in the study area.

† – New records for Liberia (since the publication of Sáfián (2014).
* – New records for Guinea (since the publication of Larsen (2005).
Green highlight – Species found only in Ziama Forest during the field surveys and thus recorded only in Guinea.
Blue highlight – Species found only in the Wologizi Mountains during the field surveys and thus recorded only in Liberia.
Red highlight – Species found only in the Wonegizi Mountains during the field surveys and thus recorded only in Liberia.
Ochre highlight – Species found in both Wologizi and Wonegizi during the field surveys, and thus recorded only in Liberia.

PAPILIONIDAE

Graphium angolanus baronis (Ungemach, 1932) – **ZIA**: MAS
Graphium tynderaeus (Fabricius, 1793) – **WOL:** WOB, ROS, ELE, BEL; **ZIA:** SER, BAI
Graphium latreillianus (Godart, 1819) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SER, MAS
Graphium adamastor (Boisduval, 1836) – **ZIA:** SER
Graphium leonidas (Fabricius, 1793) – **WOL:** DAB, WOB, ROS, RC2, ELE, BEL; **ZIA:** SER, MAS, DOP, BAI
Graphium illyris (Hewitson, 1873) – **WOL:** ROS, ELE; **ZIA:** SER, BAI
Graphium policenes (Cramer, 1775) – **WOL:** WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Graphium antheus (Cramer, 1779) – **WOL:** ROS; **WON:** WET; **ZIA:** SER, MAS, BAI
Papilio antimachus Drury, 1782 – **WOL:** ELE, BEL
Papilio dardanus Brown, 1776 – **WOL:** RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Papilio phorcas Cramer, 1775 – **WOL:** DAB, WOB, ROS, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS
Papilio horribilis Butler, 1874 – **WOL:** WOB, ROS; **ZIA:** SEL, SER, MAS, DOP, BAI
Papilio chrapkowskoides nurettini Koçak, 1983 – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Papilio sosia Rotschild & Jordan, 1903 - **WOL:** WOB; **ZIA** – SEL
Papilio nireus Linnaeus, 1758 – **WOL:** WOB, ROS, RC2, ELE, BEL; **ZIA:** SER, MAS, BAI
Papilio menestheus Drury, 1773 – **WOL:** WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Papilio demodocus Esper, [1798] – **WOL:** LIS, BEL; **WON:** WET; **ZIA:** DOP
Papilio cyproeofila Butler, 1868 – **WOL:** DAB, WOB, ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Papilio zenobia Fabricius, 1775 – **WOL:** WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Papilio cynorta* Fabricius, 1793 – **WOL: ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS

HESPERIIDAE
COELIADINAE

Coeliades chalybe (Westwood, 1852) – **WOL:** ELE; **ZIA:** SEL, SER, MAS, DOP, BAI
Coeliades forestan (Stoll, [1782]) – **WOL:** BEL, WOB, ROS, RC1, RC2, ELE, BEL; **ZIA:** SEL, SER
Coeliades hanno (Plötz, 1879) – **ZIA:** MAS, DOP
Katreus johnstoni (Butler, 1888) – **WOL:** ROS, RC2, ELE
†*Ortholexis dimidia* (Holland, 1896) – **WOL:** ROS
Ortholexis hollandi* (Druce, 1909) – **WOL: RC1; **ZIA:** MAS

PYRGINAE

Celaenorrhinus maesseni Berger, 1976 – **WOL:** WOB, ROS
Celaenorrhinus plagiatus Berger, 1976 – **WOL:** WOB, ROS; **ZIA:** SEL, SER
†*Bettonula bettoni nimba* (Collins & Larsen, 2000) – **WOL:** ROS, ELE; **ZIA:** SER
Apallaga safiani Libert, 2014 – **WOL:** WOB, ROS, RC1, RC2, ELE; **ZIA:** SER, MAS
Apallaga leona Berger, 1975 – **WOL:** ROS, RC2
Apallaga ankasa (Larsen & Miller, 2005) – **WOL:** WOB
Apallaga galenus (Fabricius, 1793) – **WOL:** WOB, ROS, ELE; **ZIA:** SEL, SER, MAS, DOP, BAI
Apallaga galkasa Libert, 2014 – **WOL:** ROS, RC1, ELE; **ZIA:** MAS
Apallaga confusa occidentalis Libert, 2014 – **WOL:** WOB, ROS, RC1, ELE, BEL
Apallaga perconfusa Libert, 2014 – **WOL:** RC2
Tagiades flesus (Fabricius, 1781) – **WOL:** BEL, WOB, ROS, RC1, RC2, ELE, BEL; **ZIA:** SEL, SER, MAS, DOP, BAI
Eagris denuba (Plötz, 1879) – **WOL:** RC1, ELE, BEL; **ZIA:** SEL, SER
Eagris decastigma decastigma Mabille, 1891 – **WOL:** WOB, RC2
Eagris subalbida (Holland, 1893) – **WOL:** WOB, ROS
Eagris hereus quaterna (Mabille, 1890) – **ZIA:** SER, MAS
Eagris tetrastigma lomana Belcastro & Sáfián, 2020 – **WOL:** WOB, ROS; **ZIA:** SER
Procampta rara Holland, 1892 – **ZIA:** MAS, DOP
Calleagris lacteus dannatti (Ehrmann, 1893) – **WOL:** WOB
Eretis plistonicus (Plötz, 1879) – **WOL:** WOB; **ZIA:** SER
Sarangesa tertullianus (Fabricius, 1793) – **WOL:** WOB, ELE; **ZIA:** SER
Sarangesa tricerata (Mabille, 1891) – **ZIA:** SER, DOP
Sarangesa thecla (Plötz, 1879) – **WOL:** WOB, ROS; **ZIA:** SER
Sarangesa bouvieri (Mabille, 1877) – **ZIA:** SER
Sarangesa brigida (Plötz, 1879) – **ZIA:** SEL
Abantis fabiana Belcastro, 2016 – **ZIA:** SER
Spialia ploetzi occidentalis de Jong, 1977 – **ZIA:** SER
Astictopterus anomoeus (Plötz, 1879) – **ZIA:** SER
Prosopalpus styla Evans, 1937 – **WOL:** WOB, ROS

HESPERIINAE

Gorgyra heterochrus (Mabille, 1890) – **WOL:** WOB; **ZIA:** SER
Gorgyra aburae (Plötz, 1879) – **ZIA:** DOP
Gorgyra ziama* Belcastro & Sáfián, 2020 – **WOL: ELE; **ZIA:** SER, DOP
Gorgyra bina* Evans, 1937 – **WOL: WOB, RC2; **ZIA:** SER, DOP
Gorgyra afikpo* Druce, 1909 – **ZIA: BAI
Gorgyra diversata Evans, 1937 – **WOL:** WOB
Gorgyra sara* Evans, 1937 – **ZIA: SER, DOP
Gorgyra pali* Evans, 1937 – **WOL: RC1, ELE; **ZIA:** SEL, SER, MAS
Ceratrichia phocion (Fabricius, 1781) – **WOL:** WOB, ROS, BEL; **ZIA:** SER, MAS
Ceratrichia crowleyi* Riley, 1925 – **WOL: WOB, ROS; **ZIA:** SEL, MAS
Ceratrichia nothus (Fabricius, 1787) – **WOL:** WOB, ROS, RC1, ELE; **ZIA:** SEL
Argemma argyrosticta* (Plötz, 1879) – **WOL: WOB, ROS; **ZIA:** BAI
Argemma maesseni* (Miller, 1971) – **WOL: WOB; **ZIA:** MAS
Ceratricula semilutea (Mabille, 1891) – **WOL:** RC1, RC2; **ZIA:** SER, DOP
Teniorhinus watsoni Holland, 1892 – **WOL:** RC1, RC2, ELE
Teniorhinus ignita* (Mabille, 1877) – **WOL: RC2; **ZIA:** MAS
Pardaleodes incerta murcia (Plötz, 1883) – **ZIA:** MAS
Pardaleodes edipus (Stoll, 1781) – **ZIA:** SER
Pardaleodes sator (Westwood, 1852) – **WOL:** WOB, RC1, RC2, ELE, BEL; **ZIA:** SER
Pardaleodes tibullus (Fabricius, 1793) – **WOL:** WOB, BEL; **ZIA:** MAS
Xanthodisca rega (Mabille, 1890) – **WOL:** WOB, RC1, RC2, ELE, BEL; **ZIA:** SER
Rhabdomantis galatia (Hewtison, 1868) - **WOL:** ELE, BEL
Rhabdomantis sosia (Mabille, 1891) – **WOL:** WOB
Osmodes laronia (Hewitson, 1868) – **WOL:** WOB; **ZIA:** SER, MAS
Osmodes thora (Plötz, 1884) – **WOL:** BEL; **ZIA:** SEL
Osmodes distincta Holland, 1896 – **WOL:** WOB, RC2, ELE; **ZIA:** SER
Osmodes adon (Mabille, 1890) – **WOL:** RC2
Osmodes lindseyi occidentalis Miller, 1971 – **WOL:** WOB; **ZIA:** MAS
Osmodes costatus Aurivillius, 1896 – **WOL:** WOB; **ZIA:** SER, BAI
Paracleros biguttulus* (Mabille, 1890) – **WOL: WOB; **ZIA:** MAS
Paracleros substrigata* (Holland, 1893) – **WOL: WOB; **ZIA:** SER
Paracleros maesseni Berger, 1978 – **WOL:** WOB
Acleros ploetzi Mabille, 1890 – **WOL:** WOB; **ZIA:** SER, MAS
Acleros mackeni olaus (Plötz, 1884) – **ZIA:** SEL, MAS
Acleros nigrapex Strand, 1913 – **WOL:** WOB, RC1, RC2; **ZIA:** SER, MAS
Semalea pulvina (Plötz, 1879) – **WOL:** WOB, BEL; **ZIA:** SER
Semalea atrio* (Mabille, 1891) – **WOL: ROS, BEL; **ZIA:** MAS
Semalea arela (Mabille, 1891) – **WOL:** WOB, ROS
Hypoleucis ophiusa (Hewitson, 1866) – **WOL:** WOB, ROS
Hypoleucis tripunctata Mabille, 1891 – **WOL:** WOB; **ZIA:** SER
Meza indusiata* (Mabille, 1891) – **WOL: RC1, ELE; **ZIA:** MAS
Meza meza (Hewitson, 1877) – **ZIA:** SER
Meza elba (Evans, 1937) – **WOL:** RC2
Meza cybeutes volta Miller, 1971 – **WOL:** RC1, RC2, ELE, BEL; **ZIA:** SER
Paronymus xanthias (Mabille, 1891) – **WOL:** WOB, ELE; **ZIA:** SEL
Paronymus ligora (Hewitson, 1876) – **ZIA:** MAS, DOP, BAI
Paronymus nevea (Druce, 1910) – **WOL:** RC2, ELE; **ZIA:** MAS
Andronymus caesar (Fabricius, 1793) – **ZIA:** MAS
Andronymus hero Evans, 1937 – **WOL:** WOB, RC1, ELE; **ZIA:** SEL, SER
Andronymus helles Evans, 1937 – **WOL:** RC1
Andronymus evander (Mabille, 1890) – **WOL:** WOB; **ZIA:** SEL, MAS, DOP
Mopala orma (Plötz, 1879) – **ZIA:** SER, MAS, DOP
Gretna carmen* Evans, 1937 – **WOL: ROS; **ZIA:** MAS
Gretna cylinda (Hewitson, 1876) – **WOL:** WOB, ROS; **ZIA:** SER
Gretna lacida (Hewitson, 1876) – **ZIA:** SER
Pteroteinon laufella (Hewitson, 1868) – **ZIA:** MAS
Pteroteinon iricolor (Holland, 1890) – **WOL:** ROS
Pteroteinon laterculus* (Holland, 1890) – **WOL: WOB; **ZIA:** SER, MAS, BAI
Pteroteinon capronnieri* (Plötz, 1879) – **ZIA: MAS

Pteroteinon caenira (Hewitson, 1867) – **WOL:** RC1; **ZIA:** SER
Pteroteinon ceucaenira* (Druce, 1910) – **ZIA: SER
Leona leonora (Plötz, 1879) – **WOL:** WOB; **ZIA:** SER
Leona luehderi (Plötz, 1879) – **WOL:** RC2, ELE
Caenides soritia (Hewitson, 1876) – **ZIA:** BAI
Caenides benga* (Holland, 1891) – **WOL: WOB; **ZIA:** SEL
Caenides dacela (Hewitson, 1876) – **WOL:** WOB
Caenides hidaroides Aurivillius, 1896 – **WOL:** BEL
Caenides dacena (Hewitson, 1876) – **WOL:** ROS
Monza alberti (Holland, 1896) – **WOL:** WOB, BEL; **ZIA:** SER, MAS
Monza cretacea (Snellen, 1872) – **WOL:** WOB; **ZIA:** SER
Noctulana noctula (Druce, 1909) – **WOL:** WOB, BEL; **ZIA:** SER
Melphinyet unistriga* (Holland, 1893) – **ZIA: MAS
Melphinyet tarace* (Mabille, 1891) – **ZIA: DOP
Melphina melphis (Holland, 1893) – **WOL:** ELE, BEL
Melphina statira* (Mabille, 1891) – **WOL: RC1, ELE; **ZIA:** DOP
Melphina malthina* (Hewitson, 1876) – **ZIA: DOP
Fresna netopha (Hewitson, 1878) – **WOL:** ELE
Fresna cojo (Karsch, 1893) – **ZIA:** BAI
Fresna carlo Evans, 1937 – **WOL:** WOB
Platylesches galesa (Hewitson, 1877) – **WOL:** RC1, ELE; **ZIA:** SER
Platylesches rossii Belcastro, 1986 – **WOL:** BEL; **ZIA:** MAS
Platylesches picanini (Holland, 1894) – **WOL:** WOB,

ELE; **ZIA:** SER, MAS, DOP
Platylesches lamba* Neave, 1910 – **ZIA: SER
Pelopidas mathias (Fabricius, 1798) – **ZIA:** SER
Borbo fanta (Evans, 1937) – **ZIA:** SER
Borbo borbonica (Boisduval, 1833) – **WOL:** WOB
Borbo fatuellus (Hopffer, 1855) – **WOL:** WOB, ROS, RC2, ELE, BEL; **ZIA:** SEL, SER, DOP
Larsenia perobscura (Druce, 1912) – **WOL:** BEL; **ZIA:** SEL, SER, MAS, DOP
Larsenia gemella (Mabille, 1884) – **WOL:** BEL

NYMPHALIDAE
DANAINAE

Danaus chrysippus (Linnaeus, 1758) – **WOL:** LIS, DAB, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Tirumala petiverana (Doubleday, 1847) – **ZIA:** SER, BAI
Amauris niavius (Linnaeus, 1758) – **WOL:** WSA, DAB, WOB, ELE, BEL; **ZIA:** SER, MAS
Amauris tartarea Mabille, 1876 – **WOL:** LIS, ELE, BEL; **ZIA:** SER
Amauris hecate (Butler, 1866) – **WON:** WET; **ZIA:** SER, BAI
Amauris damocles (Fabricius, 1793) – **WOL:** DAB; **ZIA:** SER

LIBYTHIINAE

Libythea labdaca Westwood, 1851 – **ZIA:** SEL, SER, MAS, BAI

SATYRINAE

Gnophodes parmeno Doubleday, 1849 – **WOL:** WOB, ROS, RC1, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Haydonia pythia* (Fabricius, 1793) – **WOL: ROS; **ZIA:** SER, MAS
†*Haydonia harpa* Karsch, 1893 – **WOL:** ROS
Melanitis leda (Linnaeus, 1758) – **WOL:** ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SER, MAS
Melanitis libya Distant, 1882 – **WOL:** ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** MAS
Elymniopsis bammakoo (Westwood, [1851]) – **WOL:** ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Bicyclus xeneas occidentalis Condamin, 1965 – **WON:** WET; **ZIA:** SER, MAS
Bicyclus evadne (Cramer, 1779) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Bicyclus ephorus Weymer, 1892 – **WOL:** RC1, ELE; **WON:** WET; **ZIA:** MAS
Bicyclus zinebi (Butler, 1869) – **WOL:** ROS, RC1, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS
†*Bicyclus uniformis* (Kirby, 1887) – **WOL:** ELE; **WON:** WET; **ZIA:** SER, MAS
Bicyclus procora (Karsch, 1893) – **WOL:** WOB, ROS, ELE; **WON:** WET; **ZIA:** SER
Bicyclus trilophus jacksoni Condamin, 1961 – **WOL:** ROS
Bicyclus maesseni* Condamin, 1971 – **WOL: ROS; **ZIA:** BAI
Bicyclus larseni Vande weghe, 2009 – **WOL:** WOB; **WON:** WET; **ZIA:** MAS, BAI
Bicyclus taenias (Hewitson, 1877) – **WOL:** WOB, ROS, RC1, BEL; **WON:** WET; **ZIA:** MAS
Bicyclus vulgaris (Butler, 1868) – **WOL:** WOB, ROS, RC1, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Bicyclus dorothea (Cramer, 1779) – **WOL:** DAB, WOB, ROS, ELE; **ZIA:** SEL, SER, MAS, DOP, BAI
Bicyclus sandace (Hewitson, 1877) – **WOL:** DAB, WOB; **ZIA:** MAS
Bicyclus sambulos unicolor* Condamin, 1971 – **WOL: ELE; **WON:** WET; **ZIA:** SER, MAS
Bicyclus sangmelinae Condamin, 1963 – **WOL:** WOB, ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Bicyclus mesogenina* Grünberg, 1912 – **ZIA: SER
Bicyclus mandanes Hewitson, 1873 – **WOL:** RC1, RC2; **ZIA:** SER
Bicyclus auricruda (Butler, 1868) – **WOL:** WOB, ROS, RC1; **WON:** WET; **ZIA:** SEL, SER, MAS
Bicyclus campa (Karsch, 1893) – **ZIA:** SER
Bicyclus angulosa (Butler, 1868) – **WON:** WET; **ZIA:** SER
Bicyclus abnormis (Dudgeon, 1909) – **WOL:** ROS, RC1; **WON:** WET; **ZIA:** SER, MAS, BAI
Bicyclus safitza (Westwood, 1850) – **ZIA:** SER
Bicyclus funebris (Guérin-Méneville, 1844) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Bicyclus dekeyseri (Condamin, 1958) – **WOL:** WOB, ROS, BEL; **ZIA:** SER
Bicyclus madetes (Hewitson, 1874) – **WOL:** ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Bicyclus martius (Fabricius, 1793) – **WOL:** DAB, WOB, ROS, RC1, ELE; **WON:** WET; **ZIA:** SER, MAS, BAI
Hallelesis halyma (Fabricius, 1793) – **WOL:** DAB, WOB, ROS; **WON:** WET; **ZIA:** SER, DOP, BAI
Brakefieldia decira (Plötz, 1880) – **WOL:** WOB, ROS, RC1, RC2, BEL; **WON:** WET; **ZIA:** SER, MAS

Ypthima doleta Kirby, 1880 – **WOL:** LIS, DAB, WOB; **ZIA:** SER, DOP

CHARAXINAE

Charaxes varanes vologeses (Mabille, 1876) – **WOL:** WSA
Charaxes fulvescens senegala van Someren, 1975 – **WOL:** DAB, WOB, ELE; **WON:** WET; **ZIA:** SER, MAS, BAI
Charaxes candiope (Godart, 1824) – **ZIA:** SER
Charaxes protoclea Feisthamel, 1850 – **WOL:** LIS, DAB, WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes boueti Feisthamel, 1850 – **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes cynthia Butler, 1866 – **WOL:** WOB, ROS, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes lucretius Cramer, [1775] – **WOL:** DAB, ROS, RC1; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes castor (Cramer, 1775) – **WOL:** ROS, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes brutus (Cramer, 1779) – **WOL:** WOB, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes pollux (Cramer, 1775) – **WOL:** DAB, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS
Charaxes eudoxus (Drury, 1782) – **WOL:** BEL
Charaxes tiridates (Cramer, 1777) – **WOL:** DAB, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes numenes (Hewitson, 1859) – **WOL:** WOB,

RC1, ELE, BEL**; WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes smaragdalis butleri Rothschild, 1900 – **WOL:** ROS, RC1, RC2
Charaxes imperialis Butler, 1874 – **WOL:** RC2; **WON:** WET; **ZIA:** MAS, DOP
Charaxes ameliae doumeti Henning, 1989 – **WOL:** DAB, WOB, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes hadrianus Ward, 1871 – **WOL:** WOB, RC2, ELE; **WON:** WET; **ZIA:** SER, MAS
Charaxes nobilis claudei le Moult, 1933 – **ZIA:** SEL
Charaxes zingha (Stoll, 1780) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes etesipe (Godart, 1824) – **WOL:** LIS, WOB, ROS, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, BAI
Charaxes achaemenes atlantica van Someren, 1970 – **ZIA:** SEL
Charaxes eupale (Drury, 1782) – **WOL:** LIS, DAB, WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes subornatus couilloudi Plantrou, 1976 – **WOL:** ROS, ELE
Charaxes anticlea (Drury, 1782) – **WOL:** WOB, RC1, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS
Charaxes hildebrandti gillesi* Plantrou, 1973 – **WOL: ROS; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Charaxes etheocles (Cramer, 1777) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Charaxes petersi* van Someren, 1969 – **WON: WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes virilis van Someren & Jackson, 1952 – **ZIA:** SEL, SER, MAS
Charaxes cedreatis Hewitson, 1874 – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Charaxes pleione (Godart, 1824) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SER
Charaxes paphianus falcata (Butler, 1872) – **WOL:** WOB, ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Charaxes nichetes bouchei* Plantrou, 1974 – **WOL: ROS; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Charaxes porthos gallayi van Someren, 1968 – **WON:** WET; **ZIA:** SEL, MAS
Charaxes zelica Butler, 1869 – **WON:** WET; **ZIA:** SER, SEL, MAS, BAI
Charaxes lycurgus (Fabricius, 1793) – **WON:** WET; **ZIA:** MAS
Charaxes mycerina* (Godart, 1824) – **WOL: RC2; **WON:** WET; **ZIA:** SEL, MAS
Charaxes doubledayi Aurivillius, 1899 – **ZIA:** SER
Charaxes eurinome (Cramer, 1775) – **WOL:** BEL; **WON:** WET; **ZIA:** SER, MAS, BAI
Palla violinitens* (Crowley, 1890) – **WOL: WOB, ROS; **WON:** WET; **ZIA:** SEL, MAS, BAI
Palla decius (Cramer, 1777) – **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Palla ussheri (Butler, 1870) – **WOL:** WOB, ROS, RC1, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Palla publius* Staudinger, 1892 – **WOL: ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP

APATURINAE

†*Apaturopsis cleochares* (Hewitson, 1873) – **WON:** WET

NYMPHALINAE

Kallimoides rumia (Doubleday, 1849) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Vanessula milca (Hewitson, 1873) – **ZIA:** SER
Antanartia delius (Drury, 1782) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **ZIA:** SER, MAS, DOP, BAI
Precis octavia (Cramer, 1777) – **WOL:** BEL; **ZIA:** SER, MAS, BAI
Precis pelarga (Fabricius, 1775) – **WOL:** DAB, WOB, ROS, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP
Precis sinuata Plötz, 1880 – **WON:** WET; **ZIA:** SEL, SER, DOP, BAI
Precis milonia Felder & Felder, 1867 – **WOL:** WOB, ROS, ELE, BEL
Hypolimnas misippus (Linnaeus, 1764) – **WOL:** WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Hypolimnas anthedon (Doubleday, 1845) – **WOL:** DAB, WOB, ROS, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, BAI
Hypolimnas dinarcha (Hewitson, 1865) – **WOL:** WOB, ROS, ELE; **WON:** WET; **ZIA:** SER, BAI
Hypolimnas aubergeri Hecq, 1987 – **WOL:** ROS; **ZIA:** MAS
Hypolimnas salmacis* (Drury, 1773) – **WOL: DAB, WOB, ROS, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Salamis cacta (Fabricius, 1793) – **WOL:** ROS, ELE; **ZIA:** MAS, BAI

Protogoniomorpha cytora (Doubleday, 1847) – **WOL:** WOB; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Protogoniomorpha parhassus (Drury, 1782) – **WOL:** DAB, WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Junonia orithya madagascariensis Guenée, 1865 – **WOL:** LIS, WSA
Junonia oenone (Linnaeus, 1758) – **WOL:** BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Junonia hierta cebrene Trimen, 1870 – **ZIA:** MAS
Junonia sophia (Fabricius, 1793) – **ZIA:** SER, MAS, DOP
Junonia stygia (Aurivillius, 1894) – **WOL:** WOB**; WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Junonia chorimene (Guérin-Méneville, 1844) – **WOL:** BEL, **WON:** WET
Junonia terea (Drury, 1773) – **WOL:** DAB, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Catacroptera cloanthe (Stoll, 1781) – **WON:** WET; **ZIA:** BAI

CYRESTINAE

Cyrestis camillus (Fabricius, 1781) – **WOL:** WOB, ROS, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI

BIBLIDINAE

Biblya anvatara crameri Aurivillius, 1894 – **WOL:** WSA; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Mesoxantha ethosea (Drury, 1782) – **WOL:** WOB, ROS,

RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, DOP, BAI
Ariadne enotrea* (Cramer, 1779) – **WOL: DAB, WOB; **WON:** WET; **ZIA:** SER, DOP, BAI
Ariadne albifascia* (Joicey & Talbot, 1921) – **WOL: DAB, ROS; **ZIA:** SEL, SER, MAS, DOP
Neptidopsis ophione (Cramer, 1777) – **WOL:** DAB, WOB, RC1, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Eurytela hiarbas* (Drury, 1782) – **WOL: WOB, ROS, RC2; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI

HELICONINAE

Acraea camaena (Drury, 1773) – **WOL:** WOB
Acraea endoscota Le Doux, 1928 – **WOL:** BEL; **WON:** WET
Acraea leucographa jolyi Pierre, 2009 – **WOL:** ELE
Acraea quirina (Fabricius, 1781) – **WOL:** ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Acraea zetes (Linnaeus, 1758) – **WOL:** BEL; **ZIA:** SER, MAS, DOP, BAI
Acraea abdera eginopsis Aurivillius, [1899] – **WOL:** RC1; **ZIA:** DOP
Acraea egina (Cramer, 1775) – **WOL:** DAB, BEL; **WON:** WET; **ZIA:** SER, DOP *Acraea caecilia* (Fabricius, 1781) – **WOL:** WSA, BEL; **ZIA:** MAS
Acraea pseudegina Westwood, 1852 – **WOL:** DAB
Acraea rogersi Hewitson, 1873 – **WOL:** RC2, ELE, BEL; **ZIA:** SER
Acraea alcinoe Felder & Felder, [1865] – **ZIA:** SER
Acraea epaea* (Cramer, [1779]) – **WOL: WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Acraea macaria (Fabricius, 1793) – **ZIA:** SEL, SER, MAS
Acraea umbra (Drury, 1782) – **WOL:** RC1, BEL; **ZIA:** SER, MAS
Acraea vestalis Felder & Felder, [1865] – **WOL:** BEL, WOB; **WON:** WET; **ZIA:** SER
Telchinia alciope/aurivillii – **WOL:** DAB, WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Telchinina bonasia (Fabricius, 1775) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, DOP
Telchinia circeis (Drury, 1782) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL
Telchinia encedana (Pierre, 1976) – **WOL:** WOB, WSA; **ZIA:** SER
Telchinia encedon (Linnaeus, 1758) – **WOL:** LIS, DAB; **ZIA:** SER
Telchinia jodutta (Fabricius, 1793) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER
Telchinia lycoa Godart, 1819 – **WOL:** DAB, WOB, RC1, RC2, ELE, BEL; **WON:** WET
Telchinia pharsalus (Ward, 1871) – **WOL:** BEL; **ZIA:** SER
Telchinia polis (Pierre, 1999) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Telchinia pseudepaea ziama* Belcastro, Boireau & Sáfián, 2020 – **ZIA: SER
Telchinia serena (Fabricius, 1775) – **WOL:** LIS, DAB, WOB, SOR, BEL; **ZIA:** SER
Telchinia perenna* (Doubleday, [1847]) – **WOL: LIS; **ZIA:** SER
Lachnoptera anticlia (Hübner, 1819) – **WOL:** WOB, RC2; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Phalanta eurytis (Doubleday, 1847) – **WOL:** LIS, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI

LIMENITINAE (LIMENITIDINAE)

Harma theobene Doubleday, 1848 – **WOL:** ELE; **WON:** WET; **ZIA:** SER, MAS
Cymothoe fumana (Westwood, 1850) – **WOL:** WOB, ROS, ELE; **WON:** WET; **ZIA:** MAS, DOP, BAI
Cymothoe egesta (Cramer, 1775) – **WOL:** ROS; **WON:** WET; **ZIA:** SEL, MAS, DOP, BAI
Cymothoe druryi van Velzen & Larsen, 2009 – **WON:** WET
Cymothoe althea (Cramer, 1776) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Cymothoe jodutta (Fabricius, 1793) – **WOL:** WOB, ROS, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Cymothoe mabillei Overlaet, 1944 – **WOL:** RC1, ELE; **WON:** WET; **ZIA:** MAS
Cymothoe sangaris (Godart, 1824) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Pseudoneptis bugandensis ianthe Hemming, 1964 – **WOL:** WOB, ROS, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Pseudacraea eurytus (Linnaeus, 1758) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Pseudacraea boisduvalii (Doubleday, 1845) – **WOL:** BEL; **ZIA:** SEL, SER, MAS
Pseudacraea lucretia (Cramer, [1775]) – **WOL:** WOB, ROS, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Pseudacraea warburgi Aurivillius, 1892 – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** DOP, BAI
Pseudacraea semire (Cramer, 1779) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Neptis nemetes Hewitson, 1868 – **WOL:** DAB, WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP
Neptis metella (Doubleday, 1848) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Neptis serena Overlaet, 1955 – **WOL:** LIS, BEL; **ZIA:** SER
Neptis loma* Condamin, 1971 – **ZIA: SER, MAS
Neptis cf. *constantiae* Carcasson, 1961 – **WOL:** BEL
Neptis alta Overlaet, 1955 – **WOL:** ROS, ELE; **ZIA:** SEL, SER
Neptis puella* Aurivillius, 1894 – **ZIA: SEL, SER, MAS, DOP
Neptis metanira Holland, 1892 – **WOL:** ROS; **ZIA:** MAS
Neptis cf. *continuata* Holland, 1892 – **WOL:** ROS
Neptis lamtoensis Pierre-Baltus, 2007 – **WOL:** BEL
Neptis quintilla Mabille, 1890 – **WOL:** BEL; **ZIA:** SER, DOP
Neptis strigata* Aurivillius, 1894 – **WOL: ELE; **ZIA:** SER
Neptis nicoteles* Hewitson, 1874 – **WOL: ROS; **WON:**

WET; **ZIA:** MAS
Neptis nicobule* Holland, 1892 – **ZIA: MAS, DOP
Neptis mixophyes* Holland, 1892 – **WOL: RC1; **ZIA:** MAS
Neptis trigonophora melicertula* Strand, 1912 – **ZIA: MAS
Neptis agouale Pierre-Baltus, 1978 – **WOL:** WOB; **WON:** WET
Neptis troundi* Pierre-Baltus, 1978 – **ZIA: SER, DOP
Neptis sp. 1. – **WOL:** WOB
Neptis sp. 2. – **WOL:** WOB
Evena crithea (Drury, 1773) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SER, MAS, DOP
Evena niji* (Fox, 1965) – **WOL: WOB, ROS; **ZIA:** SER, MAS
Evena oberthueri (Karsch, 1894) – **WOL:** WOB, ROS, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS
Evena angustatum (Felder & Felder, 1867) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, DOP, BAI
Euryphura togoensis Suffert, 1904 – **WOL:** RC2, ELE; **WON:** WET
Euryphura chalcis (Felder & Felder, 1860) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Euryphurana nobilis (Staudinger, 1891) – **WOL:** ROS
Hamanumida daedalus (Fabricius, 1775) – **ZIA:** BAI
Aterica galene (Brown, 1776) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Cynandra opis (Drury, 1773) – **WOL:** WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** DOP
Euriphene veronica (Stoll, 1780) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Euriphene simplex (Staudinger, 1891) – **WOL:** RC1, RC2, ELE; **WON:** WET; **ZIA:** SER, MAS, BAI
Euriphene amicia gola Fox, 1965 – **WOL:** WOB; **WON:** WET; **ZIA:** DOP
Euriphene aridatha feronia (Staudinger, 1891) – **WOL:** WOB, RC1, RC2, ELE; **WON:** WET; **ZIA:** DOP
Euriphene coerulea Boisduval, 1847 – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Euriphene lomaensis* Belcastro, 1986 – **WOL: ELE; **ZIA:** SER, MAS
Euriphene gambiae vera Hecq, 2002 – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** DOP, BAI
Euriphene ampedusa (Hewitson, 1866) – **WOL:** RC1, ELE; **WON:** WET; **ZIA:** SER, MAS
Euriphene leonis (Aurivillius, 1899) – **WOL:** RC1, RC2, ELE; **WON:** WET
Euriphene atossa (Hewitson, 1865) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** MAS, DOP, BAI
Euriphene doriclea* (Drury, 1782) – **WOL: WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SER, MAS, BAI
Bebearia osyris (Schultze, 1920) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER
Bebearia carshena* (Hewitson, 1871) – **WOL: WOB; **WON:** WET; **ZIA:** MAS
Bebearia absolon (Fabricius, 1793) – **WOL:** WOB, ROS; **WON:** WET
Bebearia mandinga (Felder & Felder, 1860) – **WOL:** WOB, RC2, ELE; **WON:** WET; **ZIA:** SER
Bebearia oxione* (Hewitson, 1866) – **WOL: RC1, ELE, BEL; **WON:** WET; **ZIA:** SER, DOP
Bebearia barce (Doubleday, 1847) – **WOL:** ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SER
Bebearia mardania (Fabricius, 1793) – **WON:** WET; **ZIA:** SER
Bebearia cocalia (Fabricius, 1793) – **WOL:** WOB, ROS, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Bebearia sophus (Fabricius, 1793) – **WOL:** WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Bebearia arcadius (Fabricius, 1793) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Bebearia laetitia (Plötz, 1880) – **WOL:** WOB, ROS, RC2, ELE; **ZIA:** MAS, DOP
Bebearia phantasina (Staudinger, 1891) – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **ZIA:** SEL, SER, MAS
Bebearia demetra (Godart, 1824) – **WOL:** RC1, ELE, BEL; **WON:** WET; **ZIA:** SEL, MAS
Bebearia maledicta (Strand, 1912) – **WOL:** WOB
Bebearia ashantina* (Dudgeon, 1913) – **WOL: ELE; **ZIA:** SER, MAS, DOP
Bebearia cutteri harleyi Fox, 1968 – **WON:** WET
Euphaedra aubergeri Hecq, 1977 – **WOL:** ROS, RC1, RC2, ELE; **WON:** WET
Euphaedra medon (Linnaeus, 1763) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Euphaedra gausape (Butler, 1866) – **WOL:** DAB, WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Euphaedra judith Weymer, 1892 – **WOL:** WOB, ROS
Euphaedra xypete (Hewitson, 1865) – **WOL:** WOB, ROS, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI

Euphaedra hebes Hecq, 1980 – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, MAS, BAI
Euphaedra diffusa albocoerulea Hecq, 1976 – **WOL:** WOB, ROS, ELE; **ZIA:** MAS, DOP, BAI
Euphaedra crockeri (Butler, 1869) – **WOL:** WOB, ROS, RC1; **WON:** WET; **ZIA:** MAS, BAI
Euphaedra eusemoides (Grose-Smith & Kirby, 1889) – **WOL:** RC2; **ZIA:** MAS
Euphaedra sarcoptera sarcoptera (Butler, 1871) – **WOL:** WOB, RC2
Euphaedra cyparissa cyparissa (Cramer, 1775) – **WOL:** WOB, ELE
Euphaedra themis (Hübner, 1807) – **WOL:** WOB, ROS, RC1
Euphaedra labouerana eburnensis Hecq, 1979 – **WOL:** WOB, ROS, RC1, RC2, ELE, BEL; **WON:** WET
Euphaedra minuta Hecq, 1982 – **WOL:** RC1; **WON:** WET
Euphaedra modesta Hecq, 1982 – **WOL:** WOB, RC2
Euphaedra janetta (Butler, 1871) – **WOL:** WOB, RC1; **WON:** WET; **ZIA:** MAS, DOP
Euphaedra vetusta (Butler, 1871) – **WOL:** WOB
Euphaedra ceres (Fabricius, 1775) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Euphaedra phaethusa (Butler, 1866) – **WOL:** WOB, ROS, RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Euphaedra tenebrosa Hecq, 1983 – **WON:** WET
Euphaedra francina* (Godart, 1824) – **WOL: WOB, ROS; **ZIA:** SEL, BAI

Euphaedra eleus (Drury, 1782) – **WOL:** WOB, ROS, ELE; **ZIA:** MAS, BAI
Euphaedra zampa* (Westwood, 1850) – **WOL: WOB, ROS, ELE; **ZIA:** SEL
Euphaedra edwardsi (van der Hoeven, 1845) – **WOL:** ROS; **WON:** WET
Euphaedra perseis (Drury, 1773) – **WOL:** WOB, ROS; **WON:** WET
Euphaedra harpalyce (Cramer, 1777) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** SEL, MAS, DOP, BAI
Euphaedra eupalus (Fabricius, 1781) – **WOL:** RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL, MAS
Pseudathyma sibyllina (Staudinger, 1890) – **ZIA:** SER, MAS, DOP
Pseudathyma cf. *neptidina* Karsch, 1894 – **ZIA:** SER

PIERIDAE
COLIADINAE

Catopsilia florella (Fabricius, 1775) – **WOL:** LIS, DAB, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Eurema senegalensis (Boisduval, 1836) – **WOL:** WOB, ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Eurema hecabe solifera (Butler, 1875) – **WOL:** DAB, WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Eurema floricola leonis (Butler, 1886) – **WOL:** DAB, WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Eurema brigitta Stoll, 1780 – **WOL:** WOB

PIERINAE

Nepheronia argia (Fabricius, 1775) – **WOL:** WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Nepheronia thalassina (Boisduval, 1836) – **WOL:** DAB, WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Nepheronia pharis (Boisduval, 1836) – **WOL:** ROS; **WON:** WET; **ZIA:** SEL, SER, DOP, BAI
Colotis euippe (Linnaeus, 1758) – **WOL:** LIS; **WON:** WET; **ZIA:** MAS, DOP, BAI
Belenois calypso (Drury, 1773) – **WOL:** WOB, RC2, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Appias sylvia (Fabricius, 1775) – **WOL:** ROS, RC1, ELE, BEL; **WON:** WET; **ZIA:** SER, MAS, BAI
Appias phaola* (Doubleday, 1847) – **ZIA: SER
Appias sabina (Felder & Felder, [1865]) – **WOL:** LIS, ROS, ELE, BEL; **WON:** WET
Leptosia alcesta (Stoll, [1782]) – **WON:** WET; **ZIA:** SER, DOP, BAI
Leptosia medusa (Cramer, 1777) – **WOL:** DAB, WOB, ROS, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Mylothris chloris (Fabricius, 1775) – **WOL:** LIS, WOB, ROS, RC1, RC2, ELE, BEL; **ZIA:** SER, DOP
Mylothris dimidiata Aurivillius, 1898 – **WOL:** ROS, RC1; **WON:** WET; **ZIA:** SER
†*Mylothris melita* Belcastro & Warren-Gash, 2020 (manuscript name) – **WOL:** ROS, RC2
Mylothris poppea (Cramer, 1777) – **WOL:** WOB, BEL; **ZIA:** DOP
Mylothris boireaui Warren-Gash (manuscript name) – **ZIA:** SER
Mylothris rhodope (Fabricius, 1775) – **WOL:** DAB, WOB, ROS, ELE; **ZIA:** SER
Mylothris spica (Möschler, 1884) – **WOL:** BEL
Mylothris jaopura Karsch, 1893 – **WOL:** ROS, BEL; **WON:** WET
Mylothris schumanni Suffert, 1904 – **WOL:** RC2; **ZIA:** MAS

LYCAENIDAE
PORITIINAE

Ptelina carnuta (Hewitson, 1873) – **WOL:** ROS, WOB, RC1; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Pentila petreia* Hewitson, 1874 – **WOL: WOB, ROS, RC1, RC2; **ZIA:** MAS
Pentila condamini Stempffer, 1963 – **WOL:** WOB, RC1
Pentila abraxas (Westwood, 1851) – **WOL:** RC2; **ZIA:** MAS, DOP
Telipna acraea (Westwood, [1851]) – **WOL:** WOB, ROS, RC1, RC2, ELE; **ZIA:** SER
Telipna semirufa (Grose-Smith & Kirby, 1889) – **ZIA:** MAS, DOP
Ornipholidotos nympha Libert, 2000 – **WOL:** ROS, RC1
Mimacraea neurata Holland, 1895 – **WOL:** RC1, RC2; **ZIA:** BAI
Mimacraea darwinia* Butler, 1872 – **WOL: RC1, ELE; **WON:** WET; **ZIA:** SER, MAS, BAI
Mimeresia libentina* (Hewitson, 1866) – **ZIA: DOP
Mimeresia moyambina (Bethune-Baker, 1904) – **WOL:** RC1, RC2, ELE
Mimeresia debora catori (Bethune-Baker, 1904) – **WOL:** RC1
Mimeresia issia Stempffer, 1969 – **WOL:** RC1, RC2
Eresiomera bicolor (Grose-Smith & Kirby, 1890) – **WOL:** RC1, RC2, ELE, BEL; **WON:** WET
Eresiomera petersi (Stempffer & Bennett, 1956) – **WOL:** RC1
†*Eresiomera* sp. – **WOL:** RC1
Parasiomera alfa Sáfián, 2015 – **WOL:** RC2
Citrinophila marginalis Kirby, 1887 – **WOL:** ROS; **ZIA:** MAS
Citrinophila similis (Kirby, 1887) – **WOL:** WOB
Citrinophila erastus* (Hewitson, 1866) – **WOL: RC1, RC2, BEL; **ZIA:** SER, MAS
Eresina maesseni Stempffer, 1956 – **WOL:** BEL; **ZIA:** SER
Eresina fusca (Cator, 1904) – **WOL:** WOB, BEL
Liptena griveaudi Stempffer, 1969 – **WOL:** WOB, ROS; **ZIA:** SER
Liptena alluaudi Mabille, 1890 – **WOL:** RC1, ELE; **ZIA:** MAS
Liptena xanthostola coomassiensis Hawker-Smith, 1933 – **ZIA:** SER
Liptena septistrigata (Bethune-Baker, 1903) – **WOL:** BEL
Liptena bia Larsen & Warren-Gash, 2008 – **WOL:** WOB, RC2, BEL
†*Liptena seyboui* Warren-Gash & Larsen, 2003 – **WOL:** CR2
Liptena flavicans* (Grose-Smith & Kirby, 1891) – **WON: WET; **ZIA:** SER, MAS
Liptena helena (Druce, 1888) – **WOL:** WOB, ROS, RC1; **WON:** WET; **ZIA:** SER, MAS, DOP
Liptena catalina* (Grose-Smith & Kirby, 1887) – **WOL: WOB, ROS, ELE; **WON:** WET; **ZIA:** DOP

Kakumia otlauga (Grose-Smith & Kirby, 1890) – **WOL:** WOB, ROS; **WON:** WET; **ZIA:** MAS, DOP
Falcuna leonensis Stempffer & Bennett, 1963 – **WOL:** DAB, ROS, RC1; **WON:** WET; **ZIA:** SER, MAS, DOP
Falcuna campimus (Holland, 1890) – **ZIA:** SER, MAS, DOP
Tetrarhanis symplocus Clench, 1965 – **WOL:** WOB, ROS, RC1, RC2; **WON:** WET; **ZIA:** SER, MAS
Tetrarhanis baralingam* (Larsen, 1998) – **WOL: WOB; **ZIA:** SER, MAS, DOP
Tetrarhanis stempfferi* (Berger, 1954) – **WOL: RC1, RC2; **ZIA:** SER
Larinopoda eurema (Plötz, 1880) – **WOL:** WOB, RC1, RC2, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Micropentila brunnea (Kirby, 1887) – **WOL:** WOB, RC1, RC2, BEL; **ZIA:** MAS
†*Iridana agneshorvathae* Collins, Larsen & Sáfián, 2008 – **WOL:** BEL
Cerautola ceraunia (Hewitson, 1873) – **WOL:** RC1, RC2, ELE, BEL
Cerautola crowleyi (Sharpe, 1890) – **WOL:** RC1, RC2, ELE, BEL
Cerautola miranda (Staudinger, 1889) – **WOL:** BEL
Cerautola subargentea continua Libert, 1999 – **WOL:** RC2, BEL
Epitola posthumus (Fabricius, 1793) – **WOL:** ELE, BEL
Epitola occidentalis Libert, 1999 – **WOL:** WOB, RC1, RC2
Phytala elais catori Bethune-Baker, 1903 – **WOL:** WOB
Cephetola doleta (Kirby, 1890) – **WOL:** BEL
Cephetola pinodes (Druce, 1890) – **WOL:** BEL
Cephetola subcoerulea (Roche, 1954) – **WOL:** BEL
Cephetola sublustris (Bethune-Baker, 1904) – **WOL:** BEL
Cephetola obscura (Hawker-Smith, 1933) – **WOL:** RC2
Cephetola wingae Sáfián, 2015 – **WOL:** RC1
†*Cephetola* cf *aureliae* – **WOL:** BEL
Geritola gerina (Hewitson, 1878) – **WOL:** RC1
Geritola albomaculata (Bethune-Baker, 1903) – **WOL:** RC1, RC2, ELE, BEL
Geritola pacifica Sáfián & Libert, 2015 – **WOL:** RC1, RC2
Stempfferia dorothea* (Bethune-Baker, 1904) – **ZIA: SER
Stempfferia moyambina (Bethune-Baker, 1903) – **WOL:** ROS, RC1, RC2, ELE
Stempferia katikae Sáfián, 2015 – **WOL:** BEL
Stempfferia leonina (Staudinger, 1888) – **WOL:** ELE; **ZIA:** DOP
Stempfferia ciconia (Grose-Smith & Kirby, 1892) – **WOL:** RC2, ELE, BEL
Stempfferia* cf. *zelza* (Hewitson, 1873) – **ZIA: DOP
Stempfferia michelae Libert, 1999 – **ZIA:** DOP
Aethiopana honorius divisa (Butler, 1901) – **WOL:** RC1, RC2, ELE; **ZIA:** SER, BAI
Epitolina dispar (Kirby, 1887) – **WOL:** WOB, ROS, RC1; **WON:** WET; **ZIA:** SER, MAS, DOP
Epitolina melissa (Druce, 1888) – **WOL:** WOB, ROS, RC1, ELE; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI

MILETINAE

?*Euliphyra mirifica* Holland, 1890 – **ZIA:** SER
Euliphyra leucyania (Hewitson, 1874) – **ZIA:** SER
Aslauga marginata marginalis Kirby, 1890 – **WOL:** RC1, RC2, ELE; **WON:** WET; **ZIA:** SEL
Spalgis lemolea pilos Druce, 1890 – **WOL:** RC2; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP
Megalopalpus zymna (Westwood, 1851) – **WOL:** WOB; **WON:** WET
Megalopalpus metaleucus* Karsch, 1893 – **WOL: ROS; **ZIA:** SER, BAI

APHNAEINAE

Aphnaeus orcas (Drury, 1782) – **ZIA:** SER, MAS, BAI
Aphnaeus nimbaensis Sáfián & Libert, 2013 – **WOL:** RC1
Cigaritis iza (Hewitson, 1865) – **ZIA:** SER
Pseudaletis leonis (Staudinger, 1888) – **WOL:** RC1

POLYOMMATINAE

Anthene larydas (Cramer, 1780) – **WOL:** LIS, DAB, WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Anthene sylvanus (Drury, 1773) – **WOL:** WOB, ELE, BEL; **ZIA:** BAI
Anthene yevui Libert, 2010 – **ZIA:** SER
Anthene rubricinctus derubescens Libert, 2010 – **WOL:** WOB, ROS, ELE, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Anthene agumatsa Libert, 2010 – **WOL:** ROS; **WON:** WET; **ZIA:** MAS
Anthene liodes (Hewitson, 1874) – **WOL:** WOB, ROS, BEL; **ZIA:** SER
Anthene princeps (Butler, 1876) – **ZIA:** SER, MAS, BAI
Anthene irumu (Stempffer, 1948) – **WOL:** DAB; **ZIA:** MAS

Neurellipes lusones (Hewitson, 1874) – **WOL:** ROS; **ZIA:** SER
Neurellipes fulvimacula (Mabille, 1890) – **WON:** WET
Neurellipes juba (Fabricius, 1787) – **WOL:** WOB; **WON:** WET; **ZIA:** SER
Neurellipes helpsi* Larsen, 1994 – **ZIA: SER
Neurellipes lyzanius (Hewitson, 1874) – **WOL:** WOB, RC1, ELE; **WON:** WET; **ZIA:** SEL, MAS, DOP, BAI
Neurellipes ferenczi Libert, 2010 – **ZIA:** BAI
Neurellipes lachares (Hewitson, [1878]) – **WOL:** ROS; **WON:** WET; **ZIA:** BAI
Neurellipes atewa (Larsen & Collins, 1998) – **ZIA:** SER
Neurellipes lysicles (Hewitson, 1874) – **WOL:** BEL; **ZIA:** SEL, SER, MAS, DOP
Triclema lucretilis (Hewitson, 1874) – **WOL:** ROS, ELE
Triclema lamias (Hewitson, 1878) – **ZIA:** MAS
Triclema fasciatus* (Aurivillius, 1895) – **ZIA: SER, MAS
†*Triclema staudingeri* (Grose-Smith & Kirby, [1894]) – **WOL:** WOB, ROS; **ZIA:** SER
Triclema phoenicis Karsch, 1893 – **ZIA:** SER, MAS, DOP, BAI
Cupidesthes lithas (Druce, 1890) – **ZIA:** BAI
Cupidesthes jacksoni* Stempffer, 1969 – **ZIA: MAS
Pseudonacaduba sichela (Wallengren, 1857) – **WOL:** LIS, DAB, ROS; **ZIA:** SER, MAS
Lampides boeticus (Linnaeus, 1767) – **WOL:** WSA, WOB, BEL
Uranothauma falkensteini (Dewitz, 1879) – **WOL:** DAB, WOB, ROS; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI

Uranothauma belcastroi Larsen, 1997 – **ZIA:** SER
Uranothauma cyara stactalla (Karsch, 1895) – **WOL:** WOB, ROS; **ZIA:** SER, MAS, BAI
Cacyreus lingeus (Stoll, 1782) - **WOL:** WOB
Leptotes pirithous (Linnaeus, 1767) – **WOL:** DAB, BEL; **WON:** WET; **ZIA:** SEL, SER, MAS, DOP, BAI
Tuxentius carana kontu (Karsch, 1893) – **WOL:** WOB, ROS; **ZIA:** SER, MAS
Eicochrysops hippocrates (Fabricius, 1793) – **WOL:** LIS, WSA, DAB, WOB, RC2; **ZIA:** SER, MAS
Euchrysops malathana (Boisduval, 1833) – **WOL:** LIS, DAB, BEL; **ZIA:** SER
Euchrysops osiris (Hopffer, 1855) – **WOL:** WSA; **ZIA:** SER
Lepidochrysops parsimon Fabricius, 1775 – **WON:** WET
Thermoniphas micylus (Cramer, 1780) – **WOL:** DAB, WOB; **ZIA:** DOP
Oboronia punctatus (Dewitz, 1879) – **ZIA:** SEL, SER, BAI
Oboronia ornata (Mabille, 1890) – **WOL:** DAB, WOB, ROS; **ZIA:** SER, DOP, BAI
Azanus mirza (Plötz, 1880) – **WOL:** LIS, DAB, WOB, ROS, ELE; **WON:** WET; **ZIA:** SEL, SER, MAS, BAI
Azanus isis (Drury, 1773) – **WOL:** DAB, ROS, RC1, BEL; **WON:** WET; **ZIA:** SER, MAS, BAI

THECLINAE

Myrina silenus (Fabricius, 1775) – **ZIA:** SER
Iolaus eurisus (Cramer, 1779) – **WOL:** RC2; **WON:** WET; **ZIA:** SER, DOP
Iolaus iulus Hewitson, 1869 – **WOL:** RC2, BEL; **ZIA:** SER, MAS
Iolaus alcibiades Kirby, 1871 – **WOL:** BEL; **ZIA:** MAS, DOP
Iolaus calisto (Westwood, 1851) – **WOL:** BEL; **ZIA:** MAS
Iolaus laonides Aurivillius, 1898 – **WOL:** BEL
Iolaus liberiana* Sáfián, 2017 – **ZIA: MAS
Iolaus timon (Fabricius, 1787) – **WOL:** RC1, RC2, ELE
Iolaus moyambina* (Stempffer & Bennett, 1959) – **ZIA: MAS, DOP
Iolaus pollux oberthueri* (Riley, 1929) – **ZIA: DOP
Iolaus sappirus* (Druce, 1902) – **WON: WET; **ZIA:** DOP
Iolaus bellina* (Plötz, 1880) – **ZIA: MAS New record for Guinea
Iolaus fontainei* (Stempffer, 1956) – **ZIA: DOP
Iolaus aethria Karsch, 1893 – **WOL:** WOB; **ZIA:** SEL, SER, MAS
Iolaus iasis Hewitson, 1865 – **WON:** WET; **ZIA:** SER
Hypolycaena philippus (Fabricius, 1793) – **ZIA:** MAS
Hypolycaena liara Druce, 1890 – **WOL:** RC1, RC2, ELE, BEL
Hypolycaena lebona* (Hewitson, 1865) – **ZIA: DOP
Hypolycaena scintillans Stempffer, 1957 – **WON:** WET; **ZIA:** SEL, DOP
Hypolycaena dubia Aurivillius, 1895 – **WON:** WET; **ZIA:** SEL, BAI
Hypolycaena antifaunus (Westwood, 1851) – **WOL:** WOB, ROS; **ZIA:** SER, BAI
Hypolycaena hatita Hewitson, 1865 – **WOL:** ROS, ELE; **WON:** WET; **ZIA:** SER
Hypolycaena nigra* Bethune-Baker, 1914 – **WOL: WOB, ROS, BEL; **ZIA:** SER, MAS, DOP, BAI
Dapidodigma hymen (Fabricius, 1775) – **ZIA:** MAS, DOP
Dapidodigma demeter Clench, 1961 – **WOL:** WOB
Oxylides faunus (Drury, 1773) – **WOL:** ROS, RC2; **WON:** WET; **ZIA:** SER, MAS, DOP, BAI
Deudorix antalus (Hopffer, 1855) – **WOL:** BEL
Deudorix lorisona (Hewitson, 1862) – **WOL:** RC1; **ZIA:** SER, DOP, MAS
Hypomyrina mimetica Libert, 2004 - **WOL:** RC1, ELE
Paradeudorix eleala (Stempffer, 1964) – **WOL:** ROS, RC1, RC2, ELE; **ZIA:** SER, MAS
Pilodeudorix mano* Sáfián, 2015 – **WOL: RC2, **ZIA:** SER
Pilodeudorix virgata (Druce, 1891) – **WOL:** RC1, ELE; **ZIA:** MAS, DOP
Pilodeudorix camerona (Plötz, 1880) – **WOL:** RC1, RC2, BEL; **ZIA:** SER
Piloeudorix zela (Hewitson, 1869) – **ZIA:** SER, MAS, DOP
†*Pilodeudorix mera* (Hewitson, 1873) – **WOL:** ELE
Pilodeudorix otraeda (Hewitson, 1863) – **ZIA:** SER
Pilodeudorix leonina (Bethune-Baker, 1904) – **WOL:** RC1
Pilodeudorix aurivilliusi (Stempffer, 1954) – **WOL:** RC1
Pilodeudorix kiellandi (Congdon & Collins, 1998) – **WON:** WET
Pilodeudorix violetta (Aurivillius, 1897) – **WON:** WET; **ZIA:** DOP