Nimba Western Range Iron Ore Project, Liberia

Biodiversity Conservation Programme 2011-2015

Butterflies of the Nimba Mountains, Liberia

Report on the butterfly surveys (2013-2014)

for ArcelorMittal, Liberia

Photo by André Coetzer

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VERSION DATE: DEC 2014

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List of Abbreviations

AML	ArcelorMittal Liberia
CF	Community Forest
ENNR	East Nimba Nature Reserve
ESIA	Environmental and Social Impact Assessment
FDA	Forestry Development Authority
GIS	Geographic Information System
IUCN	International Union for the Conservation of Nature
LAMCO	Liberian American Swedish Minerals Company
NTFP	Non Timber Forest Products
RDA	Redundance Analysis
TMF	Tailings Management Facility

Acknowledgements

Szabolcs Sáfián is most grateful to his field assistants Martin Strausz, Ádám Kőrösi and Ágnes Horváth, also to Linda Dolo, Korvah Vayambah, Suah Saye who helped in various ways the field. The expeditions could not have been successful without the safe driving of Emmanuel and the delicious food prepared by Mamie Dolo.

Szabolcs Kókay drawn the beautiful illustrations for the proposed educational poster.

John Howell and Wing-Yunn Crawley professionally organised and supervised the butterfly surveys. This study could not be carried out without the continuous support of the Co-Management Committee of the East Nimba Nature Reserve and the Joint Community Forest Management Board of Gba, Blei and Zor Community Forests.

EXECUTIVE SUMMARY

A series of butterfly surveys resulted in 610 butterfly species recorded and positively identified from the Nimba Mountains and the surrounding lowland forest areas. Of these 479 species were recorded from the East Nimba Nature Reserve (ENNR). Beside the high butterfly diversity in the Nimba Mountains a number of endemic or restricted range species were also recorded: *Hypolimnas aubergeri*, *Euriphene taigola*, *E. leonis*, *Euphaedra aubergeri*. During the surveys several species later proved also new to science were found: *Aslauga larseni*, *Cephetola wingae*. *Stempfferia katikae*, *Stempfferia* sp. 2., *Aphnaeus mirabilis*, *A. nimbaensis*, *Pilodeudorix* sp. 1., *Pilodeudorix* sp. 2, *Pilodeudorix* sp 3., *Mesoxantha* sp.n., *Andronymus* cf. *fenestrella*. Many of these will probably prove restricted to the Liberian sub-region or even to the upland-sub-montane zone of the Nimba Mountains.

In order to establish a long term butterfly monitoring in the ENNR a proposed method was also tested using banana-baited traps along transects. Three transects were set in each of the three sampled elevational zones between 600 and 1370 metres, in each transects eight traps were used to capture butterflies for 14 day in each dry and wet seasons, using altogether 72 traps, operated for 28 days. The trapping resulted in 4203 specimens belonging to 116 species of fruit-feeding butterflies (mainly Satyrinae and Limenitinae in the Nymphalidae family). The results of the analysis (species richness, diversity, abundance, similarity) shown that the collected data is sufficient to community ecological comparisons and the methods used could be used also for long term monitoring of the fruit-feeding butterfly communities in the Nimba Mountains.

Based on the results, it is recommended that the ENNR and the surrounding lowland forests should be treated as a single ecological unit. More effective protection of ENNR would also be important to prevent poaching and illegal farming inside the protected area. Mt. Beeton (Gba Community Forest) and Mt. Bele (Blei Community Forest) also proved of high conservation importance hosting endemic and newly discovered species as well as strong populations of the IUCN red-listed Giant African Swallowtail – *Papilio antimachus*. The lowland forest area linking up Mt. Bele and the southern area of ENNR is an important corridor for butterflies and other wildlife, the rehabilitation of the Gbapa-Zortapa road is not therefore recommended. To support conservation of the butterflies and their habitats, eco-tourism activities could be organised in the Nimba Mountains, including butterfly-watching tours and volunteer research programs. However, implementation of such programs require infrastructural development, including the establishment of an eco-tourism-research centre. Further research programs are also proposed, including a radio-tracking project to study the habitat utilisation of *P. antimachus* and the in depth moth diversity study. An educational poster presenting butterflies of conservation importance and a Nimba butterfly atlas are also proposed.

1. INTRODUCTION

A survey to assess butterfly diversity in ArcelorMittal, Liberia's (AML) Phase 2 in the Nimba Mountains (Western Range) was carried out in 2012. The study covered the still un-mined areas of Mt. Tokadeh, the proposed Tailings Management Facility (TMF) facilities near Gbapa and the proposed mining pits on Mt. Gangra and Mt. Yuelliton. The other aim of the study was to assess the butterfly fauna outside of the impact area, especially in the Gba Community Forest (CF), which could possibly serve as an offset for the biodiversity loss caused by mining activities. The assessment revealed that the butterfly diversity is not just outstandingly high in the surveyed areas, but various species of conservation concern and even species unknown to science have been recorded both in the impact area and in Gba CF. Interestingly, this was not fully reflected in the results of the previous biodiversity studies, which included also the East Nimba Nature Reserve (ENNR) and AML requested an in-depth re-assessment of the butterfly fauna of ENNR with special focus on the species of conservation concern recorded during the survey in 2012.

The in-depth survey began in the rainy season in 2013 and ended in January 2014. The author and assistants spent over 70 field days in selected localities within and around the ENNR. As part of the study, a butterfly monitoring scheme using fruit-baited traps was also tested, comparing fruit-feeding butterfly communities in three elevational zones in the ENNR. In this report results of the of the in-depth biodiversity survey are presented in detail, including records also from the previous butterfly studies. The methods and results of the test monitoring program are also discussed, with special focus on the establishment and sustainability of a long-term butterfly monitoring in the Nimba Mountains. Present study confirmed the previous assessment as the Nimba area is among the most important butterfly habitats in West Africa with outstandingly high butterfly diversity and a number or endemic or restricted range species. This report discusses various recommendations towards effective protection of the outstandingly rich butterfly fauna with the involvement of AML, the Forestry Development Authority (FDA) and local communities.

2. METHODS AND MATERIALS

2.1 Survey areas and habitats

In 2012 the butterfly survey focused on the proposed Phase 2 impact area in Tokadeh, Gpaba, Mt. Gangra and Mt. Yuelliton. Potential offset areas were also included, such as the lowland forests in Gba CF and Mt. Beeton. Based on the survey results in 2012, and assessment of the butterfly fauna in the surveyed habitats, a full inventory of the ENNR and butterfly diversity surveys in other CFs were proposed to be surveyed in 2013-14. The detailed list of surveyed areas (2013-14) and short description of the habitat types they represent are as follows. The survey localities are presented on Figure 1.

East Nimba Nature Reserve (ENNR)

LiberCell road and hilltops

Coordinates: 07°31'47.42"N 08°31'33.51"W

The area covers the forests along the road to the radio masts over 850 m and also the hilltops studied. Above 850 m the lowland forest that covers the lower slopes of the range of Mt. Nimba is replaced by upland forest and further up by sub-montane (*Parinari*) forest and secondary savannah grasslands. This latter vegetation type occurs mainly on the mined ridgelines and hilltops.

Blue Lake road

Coordinates: 07°33'14.23"N 08°29'53.15"W

The paved road to Blue Lake crosses through younger and old grown secondary forest, mainly lowland forest, probably with patches of upland forest in a smaller extent. The sampling was carried out mainly between 650-850 m, using the road verges and narrow smuggling or hunting footpaths. A few species were also recorded at Blue Lake in secondary grassland.

Secondary forest and farmland

Coordinates: 07°33'48.27"N 08°31'7.20"W

A path that follows a small stream from the old concentrator at lower elevations on the Blue Lake Road was sampled on several occasions. The path was mostly going through younger secondary forest, but many smaller banana farms were also present, showing continuous farming activities.

Grassfield

Coordinates: 07°28'25.69"N 08°34'0.02"W

Grassfield gained its name from the grassy air-strip lying just outside the ENNR, which was cleared and maintained by Lamco to transport goods by plane from Monrovia. Since the abandonment of the mines, the air-strip itself and the immediate surroundings have undergone a successional change and are now overgrown by taller shrubby vegetation and weeds. Still larger grassy patches exist, where no soil has formed on the graded rocks, maintaining the secondary savannah and its butterfly fauna. In contrast, the vicinity of the air-strip was covered with high forest until the recent exclusion of farmlands west of Gbapa village, due to construction of the Phase 2 TMF. Many families who previously utilised land in the TMF area have now moved to Grassfield and cleared forest for farming. The majority of the forest around Grassfield is now very degraded and only small mosaics remain to support the forest butterfly fauna.

Coldwater

Coordinates:07°24'47.56"N 08°35'27.31"W

The Coldwater area lies on the boundary between the ENNR and Blei CF. However it was easier for practical reasons to list the locality under ENNR because it is adjoined to the reserve, and list all Blei CF records from the upland zone of Mt. Bele. The Coldwater area covers lowland forest, both young and old secondary growth, also the patchy grasslands at the old log storage spot and the disturbed road verges along the track to Zortapa, where farmlands, fallow and younger secondary forest habitats are also present.

Gba Community Forest

Bonlah

Coordinates: 07°34'06"N 08°40'04"W

The degraded lowland forests around Bonlah were briefly sampled during trekking in and out of Mt. Beeton. The habitat is mainly active farm areas, fallows, young regenerating secondary growth and patches of mature lowland secondary forests.

Mt. Beeton

Coordinates: 07°31'52"N 08°39'22"W

Mt. Beeton was selected as one of the most interesting butterfly areas during the Phase 2 butterfly survey. The mountain is covered by old secondary lowland and upland forest, but the northwest-facing slope was burnt down straight to the highest summit, due to illegal burning of farms on its lower slopes some 8-10 years back. The vegetation is regenerating quickly, however illegal farming has not ceased yet and burning is still among the greatest threats to the forest vegetation.

Mt. Bele (Blei Community Forest)

Coordinates: 07°23'57.3"N 08°36'10.2"W

Mt. Bele (basically equivalent to Blei CF) is the southernmost summit of the Nimba Mountains separated from the main mountain range by the Grassfield – Zortapa road. The mountain constitutes a horseshoe-shaped narrow ridgeline and the depression in the middle covered entirely by good quality forest. The summit and the higher sub-summits reach over 900 metres, covered by unique upland rainforest (many patches are probably primary), while others were previously logged, or damaged by storms and landslides.

Zor Community Forest (Dulay)

Coordinates: 07°30'16"N 08°26'40.95"W

This CF is one of the most intact lowland forests in the Nimba area, and it is contiguous with the ENNR in the north-east. The majority of the area is covered by mature secondary forest, which was logged during the civil conflicts, but according to local guides even primary patches are found further away from the old logging roads.

Yekepa residential area and Club House hill

Coordinates:07°34'48.47"N 08°32'0.91"W and 07°35'4.86"N 08°31'25.09"W respectively

As part of the biodiversity survey, we intended to sample all available habitat types, and therefore the parklands, the secondary grasslands and the disturbed fallow vegetation of Yekepa and along the road leading to the Club House were also sampled, including a small patch of young secondary growth woodlands at the pump house.

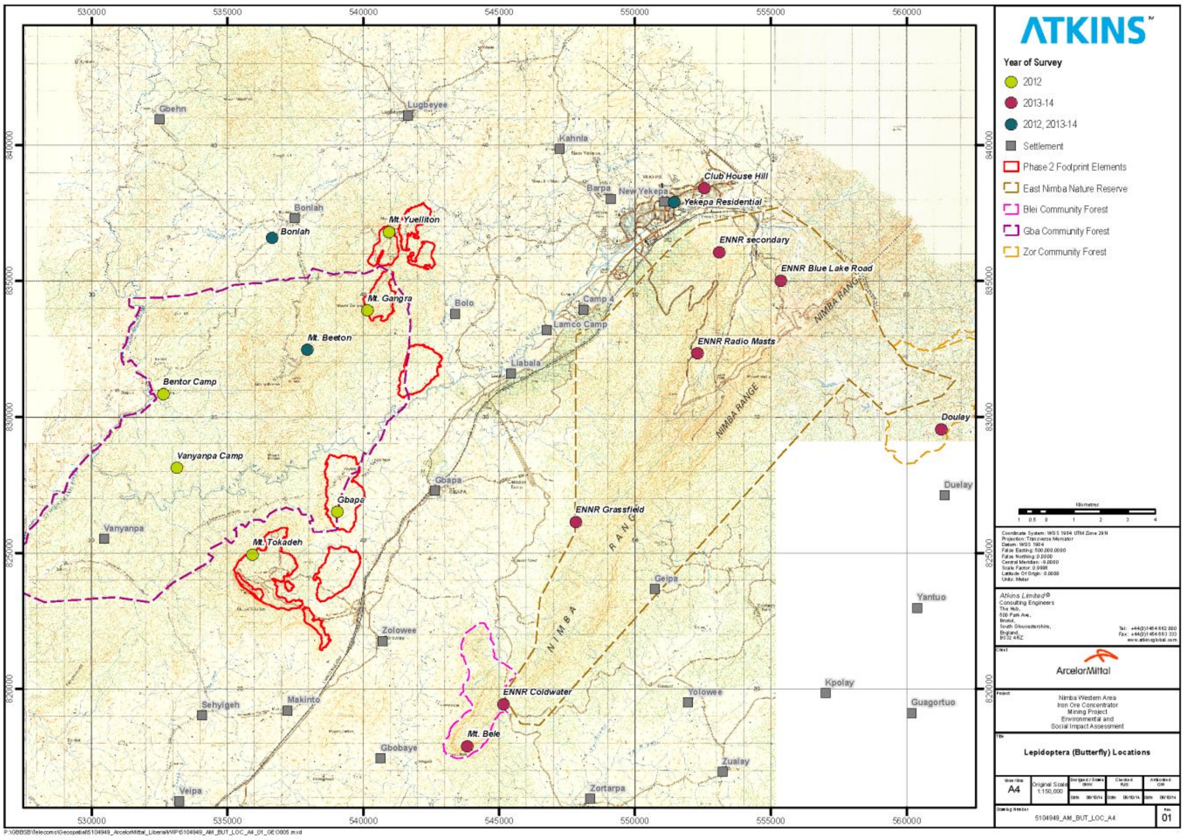

Figure 1. Butterfly survey localities in the Nimba Mountains. Yellow – only 2012. Red – 2013-14. Dark blue – 2012, 2013-14. The impact areas of Phase 2 are outlined by red continuous line. The ENNR and the community forests are marked with differently coloured dashed lines. A multi-layered, magnifiable PDF version of this map is available at ArcelorMittal Liberia, Biodiversity Conservation Program office, Yekepa.

2.2 Survey methods

2.2.1 *Faunal surveys (non-standardised methods)*

To record species richness in the various sampled habitats, conventional sweep-netting, visual observation and photography were used. The length of sampling varied from the habitat types and quality, but it could begin as early as 8.00 a.m. when weather permitted, and on various occasions the recording finished about 6.00 p.m. especially on hill-tops, open areas or at western-faced forest edges, where the sun still lit the vegetation late afternoon. Obviously, sampling was suspended in heavy rain or in full cloud cover (apart from emptying traps – see below), when all butterfly activities cease. As butterflies could occur basically everywhere, careful observation is necessary, also knowledge on the various behavioural specialties in the different groups, such as feeding-habits, resting etc. It is also important to identify ecologically important micro-habitats or temporarily utilised habitats, both of which are associated with various aspects of ecology and behaviour or butterflies. For example, male butterflies often appear on wet soil during the dry season, where they intake dissolved minerals. This phenomenon is commonly known as mud-puddling. Another important micro-habitat is a high point within the survey location, as male butterflies often congregate on the highest available point, waiting for passing females. Hill-topping cannot just reveal higher number of species recorded, but sometimes otherwise very rarely detected species can also appear on hilltops.

Figure 2. Surveying butterflies with conventional butterfly net (Photo: Erika Zakar).

Capture of butterflies with baited net-traps was also used to record fruit-feeding butterfly communities. Fermented banana bait was used to attract species in the Nymphalidae family both for diversity recording and during the test-baseline sampling period of the butterfly monitoring scheme. For more detailed information see below at butterfly monitoring.

Interestingly, using moth (light) traps to record butterflies could also collect important data as quite a few species groups are known to attend at artificial light. On several occasions 75 W energy saving bulb, run from a 1 kW portable generator was used to attract butterflies.

Beside recording imagos, butterflies were also found in larval stage. On several occasions butterflies were collected as caterpillars and were bred through “ex-situ”, in plastic food storage boxes. They were provided the same food plants they were found on, until pupation.

Figure 3. Artificial light also attracts rare butterflies in Africa. It is an indication of crepuscular or nocturnal activities in a few butterfly groups (Photo: Erika Zakar).

2.2.2 *Butterfly monitoring (standardised methods)*

Butterflies or rather butterfly communities are often used as indicators of biological diversity and also of various ecological factors or habitats. To assess and monitor the quality of the forest habitats in the Nimba Mountains and to monitor changes in the butterfly community, a butterfly monitoring scheme was developed, using fruit-baited net-traps. The traps used were modified from IKEA's Fångst children's toy storage net (Fig. 4), where the separators between compartments were cut out, the holes on the side were covered by fabric and a gap for entrance was cut near the bottom of the net to allow entry of butterflies. These traps were hung along the transects with the mouth not higher than 10-15 cm from the ground. Traps were hung so as not touch vegetation or the ground to minimise other animals entering the traps, eating the bait or the captured butterflies. The traps were placed at a minimum distance of 30 metres from each other, the first and the last trap were at least 30 metres away from habitat edges (roads, habitat boundaries). Transects for monitoring were selected in three elevation zones: 1. lowland forest (500-650 m), 2. mid-elevation forest (850-950 m), 3. sub-montane (*Parinari*) forest (1150-1350 m). One transect comprised eight traps and three transects were established in each elevation zone, using altogether a total of 76 traps. In each transect, sampling started with setting and baiting traps, and continued for 15 consecutive days. The butterfly samples were taken from each trap every day during the sampling period and the banana bait was refreshed every fourth day, except in the case of heavy rain, when the bait had to be refreshed or changed the following day. All specimens from each trap were removed from the population (killed by pinching the thorax) to avoid bias of sampling by returning specimens and were stored in paper envelops until identification. The date of collecting and the trap ID was written on the envelope (e.g. T1/t1 – transect 1/trap 1). After identification, specimen data were entered in an Excel sheet for further analysis.

Figure 4. Modified Ikea trap baited with mashed banana (Photo: Ádám Kőrösi).

2.2.3 *Hilltop survey*

In order to evaluate hilltop habitats and the ecological speciation of butterflies using hilltops to locate mates, six sites (display grounds) were selected on the summit and a sub-summit of Mt. Bele (three on each hill-top) to observe the spatial and temporal pattern of butterflies in a standardised way. During the wet season survey, butterflies, belonging to Adoliadini (Nymphalidae) were observed for one day during their display activities to ensure the survey could be carried out during the dry season, when clouds do not interrupt full sunshine (as most butterflies, including Adoliadini are not active in cloudy weather). The actual survey was carried out in January, when Adoliadini were observed between 8.00 a.m. and 17.00 p.m. in several three-minute intervals in each site. During each three minute period, all specimens present were recorded, also their display position (the actual object the butterfly settled on) and the height of the sitting specimen from the ground. Spatial and temporal pattern were intended to draw from the data collected, unfortunately the survey had to be canceled due to unexpected cloudy weather at the end of December 2013 and the first week of January 2014.

2.2.4 *Statistical analysis (species richness, abundance, diversity and similarity)*

To evaluate results of the butterfly monitoring species richness and abundance were compared between transects in both seasons, including estimation of total species richness (species pool) for each transect in each elevational range in both seasons, using different estimators (CHAO1, CHAO2, ACE, Jacknife1, Bootstrap). Rarified species accumulation graphs were used to assess expected richness in the samples and also the intensity of sampling. Species diversity were calculated in each transect in both seasons, using various diversity indices: Shannon-Weaver, Fisher α, Simpson and Pielou's evenness index. Diversity values were compared by Rényi diversity ordering. Seasonality of butterflies were emphasized using abundance values of selected indicator species and abundance profiles of the butterfly communities in each sample. Seasonality and elevational pattern were assessed by redundance analysis (RDA), where correlation between principal components and environmental variables (constraints) were maximized. Dis-similarity (or ecological distance) between samples was analysed via cluster analysis, using Jaccard and Bray-Curtis similarity indices.

3. RESULTS

3.1 Diversity in the Nimba Mountains and notable taxa

During three field surveys in February-March 2012, August-October 2013 and November 2013 – January 2014 in the Nimba Mountains, Liberia 613 butterfly species were collected and identified. This number is higher than the recorded species richness in the Gola Rainforest National Park (576), which had the highest number of butterfly species recorded from a single location in West Africa, west of the Dahomey Gap (Sáfián 2013a). Actually, in the Nimba Mountains 77% of all butterflies found in Liberia were recorded (Sáfián unpublished), showing its ecological importance, also the high number or endemic or restricted range species (including several undescribed ones) confirms the role of the Nimbas as a biogeographically significant ecological unit, probably also as a former refuge area. It is important to mention that the surveys did not cover the montane grasslands and some of the high elevation forests (above 1500 m) in Guinea, which could host further butterfly species unique to the Nimba Mountains. Despite the high number of species recorded, it would be very difficult to assess the expected species richness of butterflies in the Nimba Mountains, since many species during the present surveys were recorded completely unexpectedly from this part of West Africa, and the occurrence of further undescribed species is also probable. Still, the butterfly fauna is expected to exceed 700 species in the Nimba Mountains in broader context (including also the lowland community forests at the foothills of the Nimba Massif and in the Western Range).

3.1.1 *New taxa*

During the surveys, a surprisingly high number of taxa collected, which certainly belong to undescribed species, others are similar to but differ from existing species These most probably also represent undescribed taxa, but their specific status needs clarification, which could take several months or years, as the process includes examination of the type series of their respective relatives, which might be deposited in various European or African museum collections. The high number of undescribed taxa recorded also indicate that the Nimba Mountains probably host even higher species richness and endemicity of butterflies than was projected by the previous works (Condamin & Roy 1963, Larsen 2005).

Aslauga larseni Sáfián, 2015

Two males and a female of this most extraordinary new species were caught on the hilltop at the LiberCell telecommunication tower on the last days of August. It belongs to the small group (*A. ernesti*-group), which, apart from the one collected in the Nimba Mountains, consist of four other species between southern Congo, Northeastern Uganda, Cameroon and Ghana. All of them were found very locally on hilltops in upland-submontane areas. They usually fly during the wet season and are very rare.

Cephetola wingae Sáfián, 2015

A single specimen of this undescribed species was caught on the top of Mt. Beeton during the wet season survey. During the dry season visit it was also targeted and a small series was subsequently obtained also on Mt. Beeton. Two specimens were also found on the top of Mt. Bele. It might prove unique to the upland forests of the Nimba Mountains and other sub-montane areas in the Liberian sub-region.

Stempfferia katikae Sáfián, 2015

A large *Stempfferia* was collected in a small series on the top of Mt. Beeton during the dry season survey in December 2013. Examining long series of related species in the ABRI collection revealed that the species is undescribed. It might prove unique to the Nimba Mountains and the other montane areas in the Liberian sub-region.

Stempfferia sp. (*Stempfferia* cf. *zelza*)

A single female specimen of a small *Stempfferia* near *S. zelza* was collected at Coldwater. Examination of longer series of *S. zelza* in the ABRI also in SZS collection revealed that the Liberian specimen belongs to an undescribed taxon, but a single specimen might not be sufficient for description.

Iolaus cf. *parasilanus* Rebel, 1914

Three males and a female, resembling *I. parasilanus* were collected at Gbapa in the extreme dry season in 2012 at mud. Strangely, in appearance, the female is more similar to the Central African sub-species spp. *mabillei* than the West African ssp. *maesseni*. It could, therefore easily represent a distinct undescribed taxon, but its status needs clarification. Its only known locality was already damaged by the construction works for the TMF in 2013.

Pilodeudorix 1. sp. n (*Pilodeudorix mano*)

A single specimen of this most unique looking new species was caught in January along the Cellcom Road. As it was found in the sub-montane zone, it is possible that this species is endemic to the Nimba Mountains. The description of the species is in progress, along with other new *Pilodeudorix* discovered also during the Nimba surveys.

Piodeudorix 2 sp. n. (*Pilodeudorix putu*)

The first specimen of this new species was collected on Mt. Gangra in February 2012. Although it looked curious, but no sufficient material was available for a decision on its identity. Further material was caught during the 2013-14 surveys, when it was also found on Mt. Bele. The species is close to *P. aurivilliusi*, but is smaller and the black area in the forewing apex is broader, also the veins near the apex are strongly blackened. So far it is known from the sub-montane zone of the Nimba Mountains.

Figure 5. New species discovered during the butterfly survey in the Nimba Mountains: *Aslauga larseni* male upperside - A, underside - E, female upperside - B, underside - F, *Stempfferia katikae* male upperside - C, underside - G, *Cephetola wingae* male upperside - D, underside - H, *Stempfferia* sp. 2. female upperside - I, underside - M, *Pilodeudorix* sp. 1. male upperside - J, underside - N, *Pilodeudorix* sp. 2 male upperside - K, underside - O, *Pilodeudorix* sp. 3. male upperside - L, underside - P.

Pilodeudorix 3. sp. n. (*Pilodeudorix intermedia*)

This species was previously recorded from the unique upland forests of the Putu Range, but could not be properly identified due to insufficient material available. Another specimen was collected on the top of Mt. Gangra during the first survey, and was subsequently caught also on the ridge of Mt. Bele in December 2013.

Mesoxantha sp. (*Mesoxantha liberiana*)

A single specimen belonging to an unidentified species of *Mesoxantha*, close to the Central-East African *M. ethosea reducta* was recorded in the Gola Forest Reserves in Sierra Leone during a biodiversity survey in 2008 (Sáfián 2010). It was subsequently collected on Mt. Swa (Nimba County) as new to Liberia in 2012. During the present survey it was also found in the Zor Community Forest (Dulay). It most probably represents an undescribed species, endemic to the Liberian sub-region of West Africa, which inhabits lowland forests rather than upland or sub-montane forest formations. It will be described in upcoming the revision of the genus.

Andronymus cf. *fenestrella* Bethune-Baker, 1908

The species is known from a couple of specimens collected by Claudio Belcastro in Sierra Leone and Guinea, but is not described yet. A single female specimen was also collected at Coldwater as new to Liberia during the wet season survey. It is probably endemic to the Liberian sub-region.

3.1.2 *Nimba and Liberian-sub region endemics*

Aphnaeus mirabilis Sáfián & Collins, 2013

The species was found in lowland forest at Gbapa during the butterfly survey for Phase 2 (Sáfián & Larsen 2012). No further specimens of this newly described species were found during the present survey. It is still known only from its type locality, which is inside the Phase 2 TMF area. Re-visiting the site revealed that the habitats around the type locality are already seriously damaged, if not completely destroyed by the earthworks for the Phase 2 TMF.

Aphnaeus nimbaensis Sáfián & Libert, 2013

The species was found on the top of Mt. Gangra during the butterfly survey for Phase 2 ESIA (Sáfián & Larsen 2012). It was subsequently found in the ENNR (LiberCell tower) (single specimens) and on the top of Mt. Beeton (several specimens observed hill-topping).

Uranothauma belcastroi Larsen, 1997

Liberian sub-region endemic species, which occurs only in sub-montane and montane habitats. It was previously known only from a few specimens collected in the Loma Mts. (Sierra Leone), the Nimba Mountains (Guinea, Ivory Coast) and on Mt. Péko (Ivory Coast). Boireau (2009) found it as new to Liberia in the ENNR. During the present survey it was found between 850 m and 1370 m at various localities (e.g. Blue Lake Road, Radio Masts) in the ENNR.

Hypolimnas aubergeri Hecq, 1987

According to our knowledge this species is strictly endemic to the Nimba area, the first series was collected near Danané in Ivory Coast. It was subsequently found also in the Guinea Nimbas, while the first Liberian specimens were collected by Boireau (2009) in Tokadeh mine. The present survey confirmed its presence also in the ENNR, both from Cellcom Road and Coldwater area.

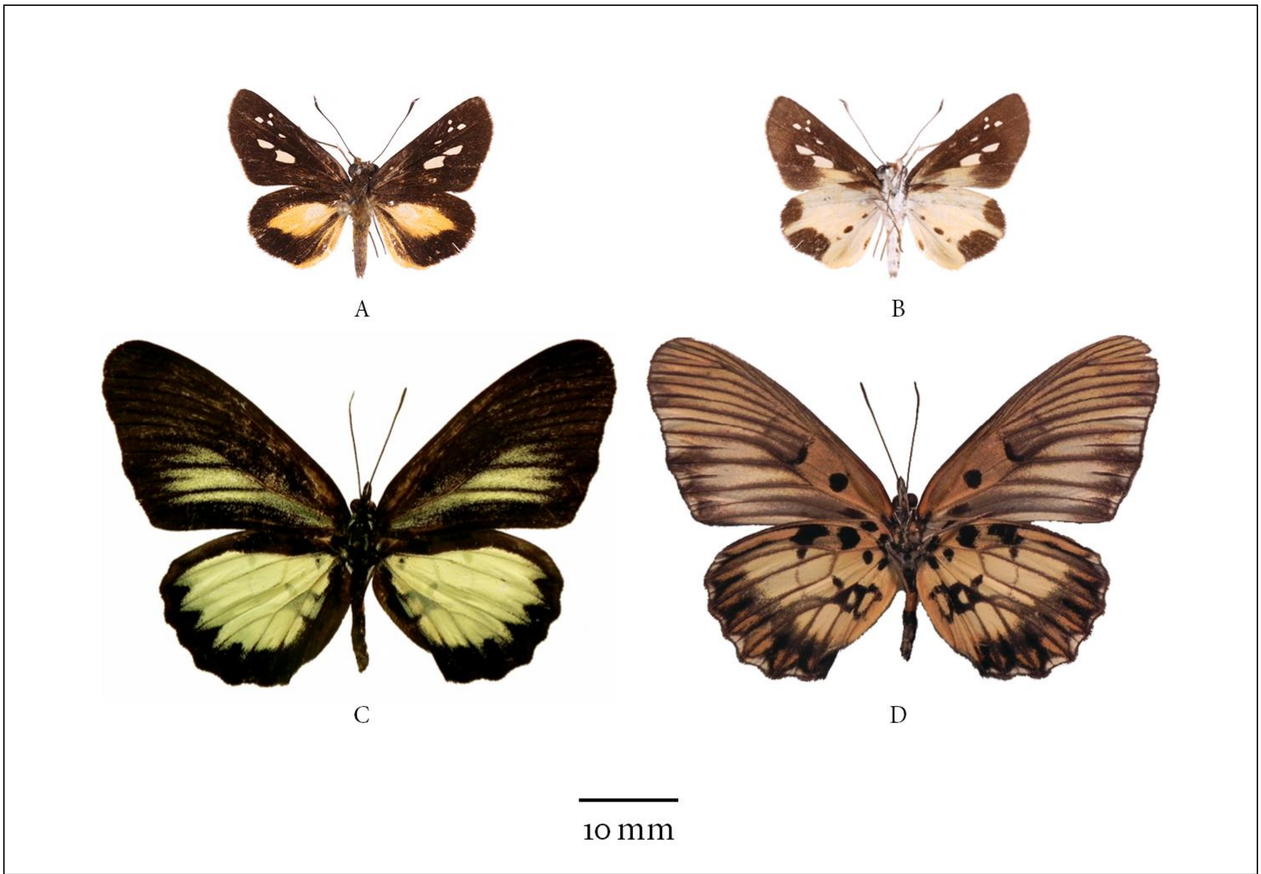

Figure 6. Further undescribed species found during the butterfly survey. *Andronymus* sp. female upperside - A, underside - B, *Mesoxantha* sp. male upperside - C, underside - D.

Cymothoe hartigi Belcastro, 1990

This Liberian sub-region endemic species was found in the Phase 2 TMF area during the 2012 study, also in the Gba CF (Bonlah, Mt. Beeton). The most recent survey confirmed its presence also in the ENNR (Radio Masts).

Euriphene lomaensis Belcastro, 1986

This Liberian sub-region endemic species was known only from a few localities in Sierra Leone and Ivory Coast, before it was found in Liberia (Brattström 2010). Its first record from the Nimba Mountains came from Mt. Tokadeh during the 2012 butterfly survey (Sáfián & Larsen 2012), but it was subsequently found also in the ENNR and the Blei CF during the present survey.

Euriphene taigola Sáfián & Warren-Gash, 2009

This Liberian sub-region endemic species was recorded during 2012 from the TMF area, also from the Gba CF (Sáfián & Larsen 2012). During the current survey its presence was also confirmed from the ENNR (Coldwater).

Euriphene leonis (Aurivillius, 1899)

This Liberian sub-region endemic species was previously found only in the Gba CF in the Nimba Area (Sáfián & Larsen 2012). The present surveys confirmed its presence on Mt. Bele (Blei CF) and at Coldwater (ENNR).

Euphaedra aubergeri Hecq, 1977

This strictly endemic species was known only from a small series collected near Danané (Ivory Coast), thus found only in the Nimba area. It was recorded as new to Liberia on the summit of Mt. Beeton.

Apallaga belcastroi Libert, 2014

A newly described species, which – according to present knowledge – is restricted to wet lowland forests of the Liberian sub-region (Type locality: Guma Valley, Freetown, Sierra Leone). Recent records indicate that the species is rather widespread in Liberia, known from Lake Piso, Gola National Forest, the Putu Range and the Nimba Mountains (Libert 2014).

Apallaga confusa occidentalis Libert, 2014

C. confusa is a newly described species (Libert, 2014); the ssp. *occidentalis* is restricted to the Liberian sub-region. It is known only from wetter types of forest in good condition, in Liberia, it was recorded from the Putu Range and the Nimba Mountains (Western Range).

Apallaga perconfusa Libert, 2014

A newly described species (Libert, 2014), which – according to present knowledge – is restricted to the Liberian sub-region. It is known only from a few confirmed recent records from eastern Sierra Leone and the Liberian, Nimba Mountains, Western Range (Mt. Tokadeh, Mt. Gangra).

Apallaga safiani Libert, 2014

A newly described species (Libert 2014), which is probably restricted to wet forests of the Liberian sub-region in good condition. In Liberia it was found only recently on Mt. Swa and in the Nimba Mountains displaying on hilltops (Sáfián 2014).

3.1.3 *Further species of interest*

Papilio antimachus Drury, 1782

Already in the report (Sáfián & Larsen 2012) P. antimachus was mentioned as one of the species of conservation concern, with unexpectedly high abundance in the Nimba Mountains (Western Range). During the present surveys special effort was made to map this species also in the ENNR, and we succeeded in detecting it at a number of new localities. We also identified hilltops, which are regularly visited by males as described in Sáfián (2013b). As P. antimachus is among the species with Data Deficient status on the IUCN redlist (www.iucn-redlist.org), and our studies indicate that P. antimachus could prove as an umbrella species in conservation areas, where no big mammals which are regularly used as umbrella species (e.g. Forest Elephant) are present, further studies are proposed below to acquire more knowledge on the life-cycle and ecology of the species.

Iridana hypocala Eltringham, 1929

Iridana hypocala was among the most surprising records of the 2012 survey, as Ghana's Volta Region was known to be its western boundary of distribution. The species was recorded only from the summit of Mt. Gangra. The present survey confirmed its presence also from the summit of Mt. Beeton (Gba CF).

Pseudaletis jolyana Libert, 2007

This extremely rare and probably canopy-dwelling Lycaenid was previously known only from a handful of specimens collected in the Atewa Range and the Bunso Arboretum, Ghana. All of them are males and were collected at artificial light. The first Liberian specimen is a male, also collected at moth light at Coldwater.

Abantis taigola Collins & Larsen, 2005

This extremely rare skipper species was believed to be endemic to the Ghana sub-region of West Africa before the first Liberian record from Mt. Beeton. Surprisingly it was also recorded in the ENNR during the present survey.

Fresna maesseni Miller, 1971

The species is among the rarest butterflies in West Africa and could be found only in good quality forest. The specimens found on the top of Mt. Beeton are the second and third from Liberia, its occurrence is a great range extension to the west.

3.2 Conservation value of the sampled areas-habitats

Although neither the time, nor the efficiency of sampling could be standardised, recorded species richness from each locality is usually a good indicator of conservation value of an area. Along with the presence or absence of butterfly species of conservation concern, the recorded number of species is also presented below for each locality. Tables 1-4. summarise the recorded species in the impact and mitigation areas, also in the ENNR and other surveyed localities, including those surveyed in 2012.

Impact area			
Gbapa	**Mount Gangra**	**Tokadeh**	**Yuelliton**
255	128	205	59

Table 1. Recorded species richness in Phase 2 impact area – based on the 2012 surveys (Sáfián & Larsen 2012) and Boireau (2009).

3.2.1 *ENNR*

Airtel road and hilltops

The upland forests around Airtel road and sub-montane forests on higher slopes and mountain tops are top priority conservation areas. They do not just host an extremely high diversity of butterflies, but several species new to science or endemic to the Nimba Mountains have been also recorded from the area, including *Aslauga larseni*, *Aphnaeus nimbaensis*, *Pilodeudorix* sp. 1. *Uranothauma belcastroi*, *Hypolimnas aubergeri*, *Euriphene lomaensis*. Ecologically speaking, the hilltops in the area are also very important because they serve as mating localities of the IUCN red-listed *Papilio antimachus*, which can commonly be observed displaying, occasionally also courting on these grassy or partially forested hilltops. During the 2013-14 survey 324 butterfly species were recorded from the upland and sub-montane region of ENNR.

Blue Lake road

The forests around Blue Lake road are in rather good condition and host a diverse butterfly community. Only a single priority species was captured here: *Uranothauma belcastroi*, which was also found near the radio masts at higher elevation. During the 2013-14 survey 149 butterfly species were recorded, mostly from the upland forests along the Blue Lake road.

ENNR					
ENNR Radio Masts	Coldwater	Blue Lake Road	Grassfield	Secondary forest	ENNR total
324	357	149	70	65	480

Table 2. Recorded species richness in the ENNR during the 2013-14 surveys.

Coldwater

Coldwater is among the few localities in the ENNR, where lowland forest in good condition still occurs. Many lowland forest specialists were found exclusively in the area, including two undescribed species: *Stempfferia* cf. *zelza*, *Andronymus* cf. *fenestrella*. Other species of conservation concern have been also recorded from Coldwater, such as the Nimba endemic *Hypolimnas aubergeri*, and the Liberian sub-region endemic *Euriphene taigola* and *E. leonis*. Coldwater also serves as an important corridor area between the upland forests of Mt. Bele (Blei) and Mt. Nimba range. During the 2013-14 survey 357 butterfly species were recorded in the lowland forests of Coldwater, which is the highest recorded species richness in the Nimba Mountains.

Grassfield

Grassfield, with its secondary grassland and the surrounding degraded forest has low priority for conservation. Although a few butterflies inhabiting grasslands might be special to this area regionally, to a wider context it is very improbable that unique species or species of conservation concern would be found in the area. However, under protection, the secondary forest patches between the boundary line of the ENNR and the Yekepa-Sanniquellie road could serve a green corridor between ENNR and the Western Range, which would be important for the dispersal of species or to secure continuous gene flow between populations. During the 2013-14 survey 70 species were recorded in two brief visits in Grassfield.

Secondary forest and farmland

Originally, the valley probably hosted a unique wet forest along the creek, which could have been home for many larger skipper species (*Katreus*, *Caenides*, *Leona*), which are largely missing from the Nimba samples. Unfortunately, it is degraded to the level where due to previous clearings and recent illegal farming activities, the deep forest fauna has disappeared. With efficient protection, the forest will probably be able to regenerate to the stage that these deep forest species could recolonize the area from existing patches of suitable habitats. During the 2013-14 survey 65 species were recorded in two brief visits in the secondary forest and farmland below the lookout point.

3.2.2 *Community Forests*

Gba Community Forest - Mt. Beeton

Mt. Beeton was referred to as a very important butterfly habitat in the previous report by Sáfián & Larsen (2012). The authors emphasise the importance of the hilltop area due to the extremely high diversity and density of butterflies, including the highest observed number of the IUCN red-listed *Papilio antimachus*. The present survey confirmed the importance of the mountain, during the two surveys (wet season and dry season), two species new to science: *Cephetola wingae*, *Stempfferia katikae*, and permanent colonies of the Nimba endemic *Aphnaeus nimbaensis* were recorded. Surprisingly, the Nimba endemic *Euphaedra aubergeri* was also found on Mt. Beeton for the first time in Liberia, as well as *Geritola subargentea continua*, which was highlighted by Boireau as second record to West Africa and *Iridana hypocala*, a species of biogeographic interest. *P. antimachus* has been also repeatedly observed on the top of Mt. Beeton. During the surveys in 2012 and 2013 284 butterfly species were recorded.

Mitigation area (Gba Community Forest)				
Bentor Camp	Vanyampa Camp	Mount Beeton	Bonlah	Gba CF total
159	239	284	63	410

Table 3. Recorded species richness in Gba Community Forest during the 2013 – 14 surveys.

Blei Community Forest – Mt. Bele

Mt Bele (basically equivalent to Blei CF) is the southernmost summit of the Nimba Mountains separated from the main mountain range by the Grassfield – Zortapa road. The mountain constitutes a horseshoe-shaped narrow ridgeline and the depression in the middle is covered entirely by good quality forest. The summit and the higher sub-summits reach over 900 metres, covered by unique upland rainforest (many patches are probably primary), while others were previously logged, or damaged by storms and landslides. The new *Cephetola* species, first found on Mt. Beeton was also recorded on the summit of Mt. Bele, as well as *Pilodeudorix* sp. 2 and *Pilodeudorix* 3, both undescribed. *Papilio antimachus* and *Euriphene lomaensis* were also observed on the summit of Mt. Bele. During the 2013-14 survey 226 butterfly species were recorded from the upland forests of Mt. Bele.

Zor Community Forest (Dulay)

The community forest is one of the most intact lowland forests in the Nimba area, it is contiguous with the ENNR in the north-west. The majority of the area is covered by mature secondary forest, which was logged during the civil conflict, but according to local guides even primary patches are found further away from the old logging roads. During a single brief visit in the dry season in 2013 an undescribed species, *Mesoxantha* sp. was found here among the 104 butterfly species recorded.

3.2.3 *Other sites*

Yekepa residential area and Club House hill

As part of the biodiversity survey, we intended to sample all available habitat types, and therefore the parklands, the secondary grasslands and the disturbed fallow vegetation of Yekepa and along the road leading to the Club House were also sampled, including a small patch of young secondary growth woodlands at the pump house. It is not surprising that the conservation value of the area and the sampled habitats proved low, however a few interesting butterflies were recorded from the area, including the majority of savannah species recorded during the surveys. The two *Lepidochrysops*: *L. parsimon* and *L. synchrematiza* were found exclusively in the grasslands of the residential area.

Yekepa and Blei and Zor Community Forests			
Mount Bele	**Dulay**	**Club House Hill**	**Yekepa Residential Area**
226	104	37	49

Table 4. Recorded species richness in Yekepa and Blei and Zor Community Forests during the 2013 – 2014 survey.

3.3 Butterfly monitoring (Szabolcs Sáfián & Ádám Kőrösi)

The butterfly monitoring using fruit-baited traps has been successfully tested during two sampling periods (one in the dry season and one in the wet season) in 2013-2014. The test sampling proved that trapping of fruit-feeding butterflies along transects could collect a representative sample to predict species richness (of fruit-feeding butterflies) and find differences between butterfly communities along elevation gradients in the Nimba Mountains. Seasonality between species communities in all elevation zones could also be detected. From the present results we can predict that long term monitoring of the fruit-feeding butterfly communities could provide important information on changes in the butterfly communities caused by seasonality, climate change or even other ecological factors and could therefore be used as a tool of measuring the success of the protection or conservation management of the ENNR.

3.3.1 *Species richness and diversity*

During the one month field study (two weeks in rainy or wet season and two weeks in dry season), 4203 specimens belonging to 116 species of fruit-feeding butterflies were recorded: 1248 specimens, belonging to 89 species in rainy season and 2955 specimens belonging to 100 in dry season. They represent approximately 15% of all butterflies positively recorded in Liberia and 19% of all species found in the Nimba Mountains (Liberia). Comparison of observed species richness of fruit-feeding butterflies shows that lowland forests are by far the richest habitats (62 in rainy season and 84 in dry season), followed by the mid-elevation forests by little difference between the two seasons (53 in rainy season, 60 in the dry season). The observed species richness is significantly lower in the sub-montane zone compared to the other zones, regardless to season (41 in the rainy season, 33 in the dry season).

Seasonally, species richness was significantly higher in all lowland forest transects in the dry season, the samples were more even at mid-elevation and in the sub-montane zone. In some transects even higher species richness was detected in the rainy season (Table 5). The rarefaction curves indicate lower species richness in the sub-montane zone in both seasons, however they predict little differences between mid-elevation and lowland forests. The species richness estimation shown large variation, however Chao 1 and Chao 2 had rather high error compared to ACE, Jackknife1 and bootstrap methods and the latter are therefore should be more accurate estimates (Table 5).

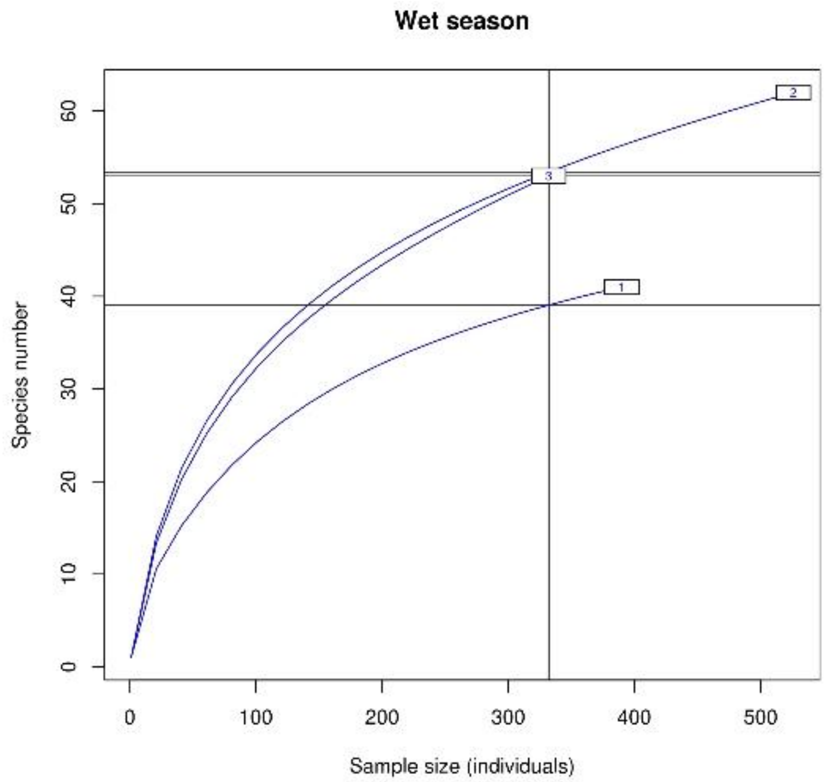

Figure7. Rarefaction curve estimating total species richness in wet season. 1. submontane forest, 2. mid – eleveation forest, 3. lowland forest

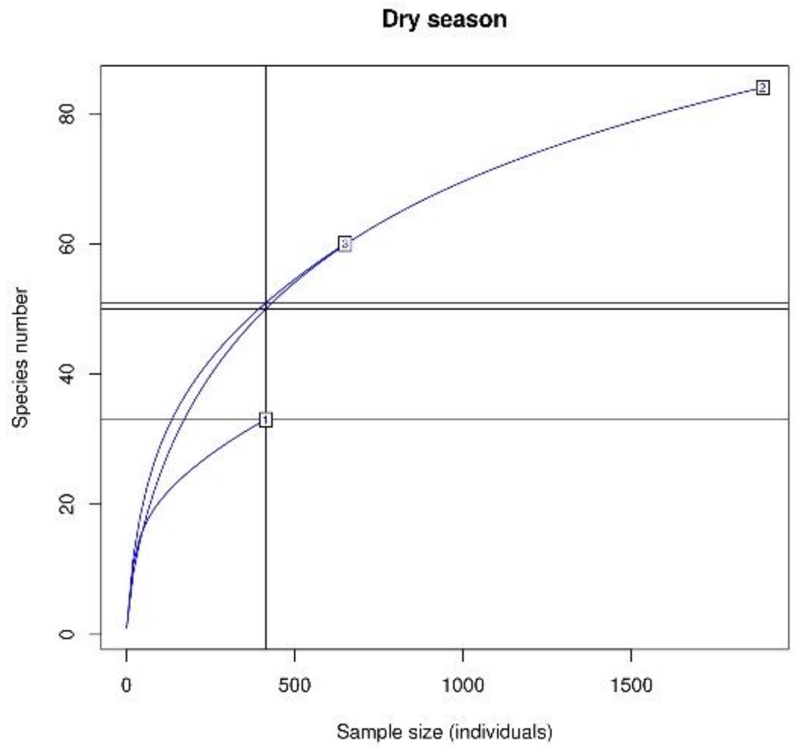

Figure 8. Rarefaction curve estimating total species richness in dry season. 1. sub-montane forest, 2. mid-elevation forest, 3. lowland forest.

Species accumulation graphs indicate sufficient sampling (showing observed species richness, shown also on Table 5 and Fig. 9) and test the sufficiency of sampling in both seasons. The steepness of the graphs indicates that the sampling effort was sufficient to record the majority of species present in the sub-montane zone in both seasons. However, additional sampling will reveal further species according to the graphs showing low elevation and mid-elevation samples, especially in the rainy season. This is also well reflected in the abundance records (Fig. 14), as species accumulation is much lower where the general abundance of butterflies is low. In the dry season, species accumulation graphs flattened significantly in the mid-elevation samples, indicating sufficient sampling effort.

Season	Altitude	Transect ID	Chao1	Chao2	ACE	Jacknife1	bootstrap	observed
Wet	low	7	64.8 (16.2)	63.4 (19.3)	67.8 (4.7)	57.8 (5)	47.1 (2.7)	39
		8	45.1 (5.9)	43.6 (5.9)	45.1 (3.1)	47.9 (3.7)	42.9 (2.3)	38
		9	59.6 (14.4)	55.2 (14.4)	53 (3.5)	53.9 (4)	46 (2.2)	40
	mid	1	error	55.3 (44)	50.65 (4.75)	39.86 (4.09)	30.84 (2.07)	25
		2	61.1 (20.9)	54 (20.9)	52.9 (3.9)	47.9 (4.1)	39.3 (2.2)	33
		3	53 (7.6)	52.3 (8.3)	63.1 (5.3)	57.8 (4.5)	49 (2.7)	41
	high	4	29.7 (10.3)	26 (10.3)	29.2 (3.1)	26.9 (3.1)	22.5 (1.7)	19
		5	42.2 (5.5)	42.3 (6.8)	48.5 (3.7)	46.9 (3.7)	41 (2.2)	35
		6	20.2 (4.9)	18.5 (4.9)	20.4 (2.1)	21 (2.2)	18.3 (1.3)	16
Dry	low	7	60.5 (5.6)	60 (6)	64.1 (3.8)	67.9 (5.4)	60.2 (3)	52
		8	73.9 (15.5)	70.1 (15.5)	72.5 (4.3)	68.8 (5.4)	56.6 (2.8)	47
		9	103.8 (18)	102.5 (20.3)	99.6 (5.2)	95.8 (5.8)	81.3 (3.3)	70
	mid	1	55.8 (6.8)	54.3 (6.8)	59.6 (3.8)	59.9 (3.7)	52.7 (2.2)	46
		2	102.2 (45)	99 (76.7)	65.5 (4)	60.8 (4.6)	49.6 (2.3)	42
		3	52.2 (23.2)	43.5 (23.2)	48.2 (3.9)	36.9 (3.6)	29.3 (2)	24
	high	4	22.3 (7.6)	19.3 (7.6)	20.2 (2.2)	21 (2.2)	18.2 (1.3)	16
		5	43 (14.4)	32.5 (8.4)	39.8 (3.8)	36.9 (3.4)	30.1 (1.9)	25
		6	44.3 (20.2)	36 (20.2)	36.7 (3.3)	32.9 (3)	27.7 (1.5)	24

Table 5. Observed and estimated species richness in the different elevation zones.

Species accumulation graphs indicate sufficient sampling (showing observed species richness, shown also on Figs. 10-11.) and test the sufficiency of sampling in both seasons. The steepness of the graphs indicates that the sampling effort was sufficient to record the majority of species present in the sub-montane (high) zone in both seasons. However, additional sampling will reveal further species according to the graphs showing low elevation and mid-elevation samples, especially in the rainy season. This is also well reflected in the abundance records (Fig. 14), as species accumulation is much lower where the general abundance of butterflies is low. In the dry season, species accumulation graphs flattened significantly in the mid-elevation samples, indicating sufficient sampling effort.

Shannon diversity values indicate similarly high diversity in the lowland and mid-elevation (upland) wet season samples, and only slightly lower diversity in the sub-montane zone

(Table 6). However, mid-elevation forests seem to be more diverse in the dry season, compared to the lowland and sub-montane zones.. Fisher Alpha and Simpson indices show different patterns (Table 7). The Simpson index shows a pattern similar to that of Shannon diversity in the dry season sample, but the sub-montane zone has only slightly lower diversity than the mid-elevation zone (Tables 6-7). Fisher Alpha diversity indicates a continuous decrease of diversity along the elevation gradient from lowland forests towards the sub-montane zone (Table 7). The samples show rather equal evenness in the wet season samples, being more heterogene in the dry season, where lowland forest sample shows the lowest evenness values (Table 7), in correspondence to the rather numerous species with high abundance.

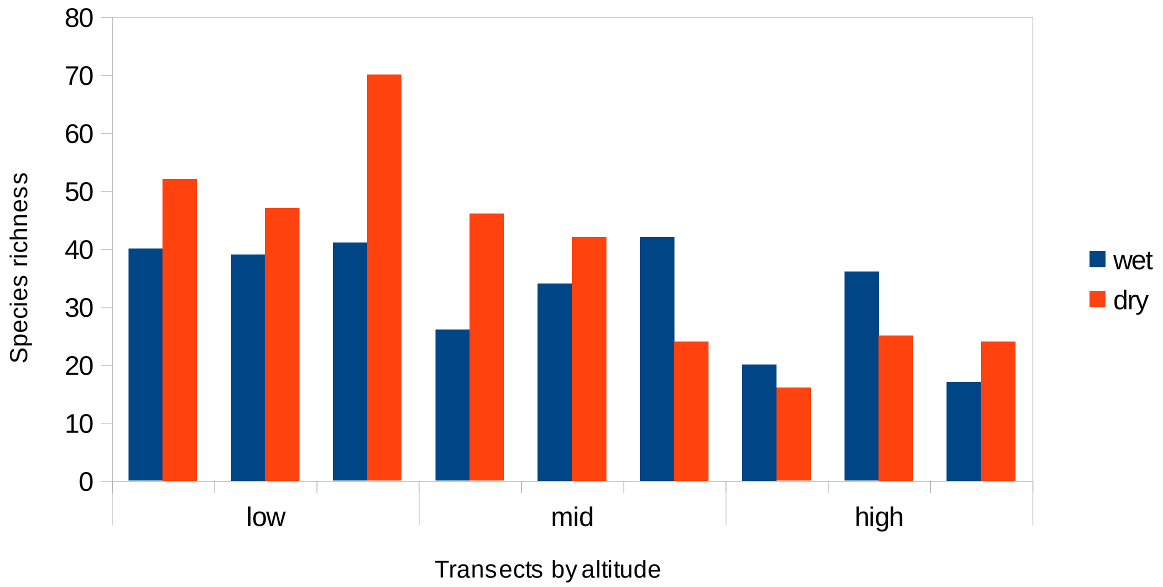

Figure 9. Species richness in samples from the three altitudinal zones in the ENNR. Including both rainy and dry season.

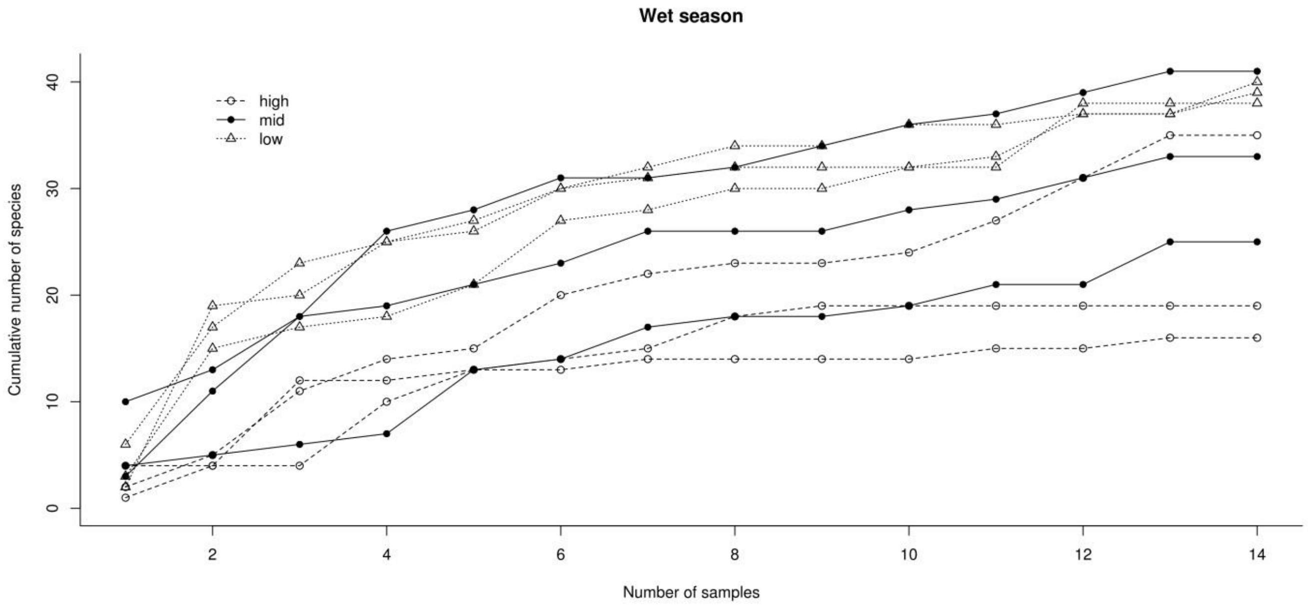

Figure 10. Species accumulation in each transect in the wet season.

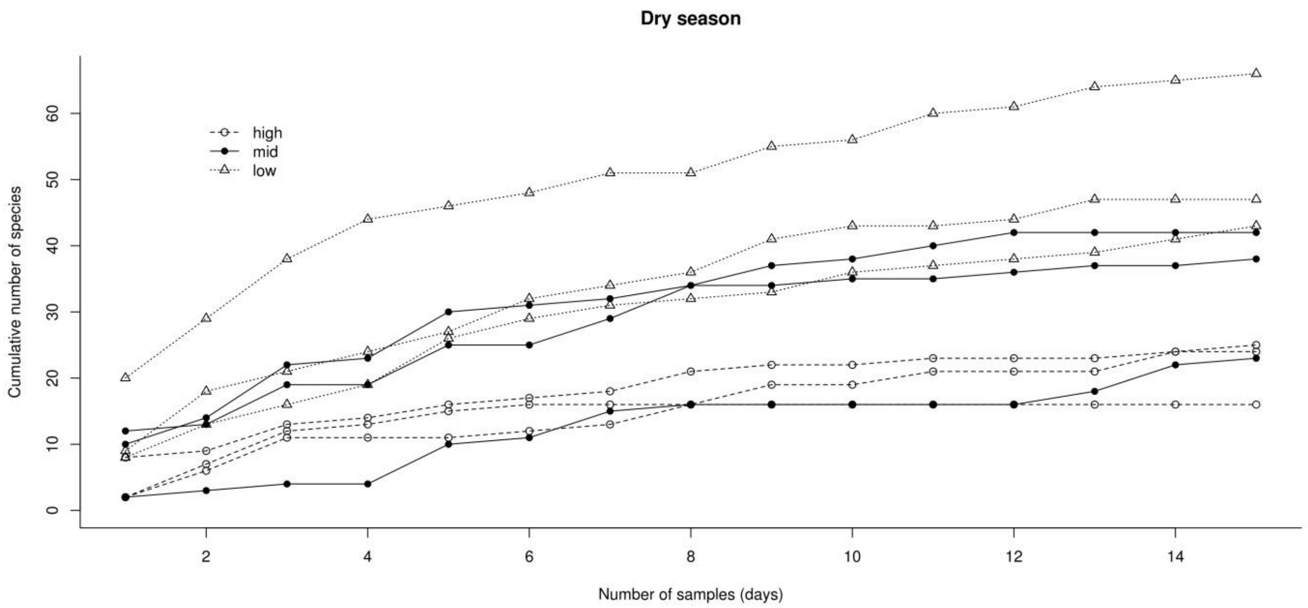

Figure 11. Species accumulation in each transects in the dry season.

Season	Altitude	Transect ID	Species richness		Abundance		Shannon	
			Per transect	Per altitude	Per transect	Per altitude	Per transect	Per altitude
		7	39		127		3,17	
	lowland	8	38	62	200	526	3,13	3,39
		9	40		199		3,22	
		1	25		66		2,83	
wet	upland	2	33	53	125	332	3,03	3,23
		3	41		141		3,19	
		4	19		70		2,40	
	sub-montane	5	35	41	159	390	2,84	2,73
		6	16		161		2,13	
		7	52		561		2,29	
	lowland	8	47	84	422	1891	2,16	2,59
		9	70		908		2,79	
		1	46		279		3,05	
dry	upland	2	42	60	300	650	2,80	3,02
		3	24		71		2,74	
		4	16		99		2,32	
	sub-montane	5	25	33	116	414	2,58	2,72
		6	24		199		2,52	

Table 6. Species richness, abundance and Shannon diversity index of fruit-feeding butterflies in three elevational zones in the Nimba Mountains, Liberia.

Season	Altitude	Transect ID	Simpson		Fisher's alpha		Pielou's evenness	
			Per transect	Per altitude	Per transect	Per altitude	Per transect	Per altitude
		7	0,936		19,22		0,865	
	lowland	8	0,937	0,947	13,90	18,27	0,862	0,823
		9	0,945		15,08		0,872	
		1	0,919		14,66		0,880	
wet	upland	2	0,932	0,937	14,63	17,79	0,865	0,820
		3	0,937		19,42		0,858	
		4	0,856		8,58		0,815	
	sub-montane	5	0,895	0,893	13,88	11,56	0,799	0,738
		6	0,850		4,42		0,767	
		7	0,750		13,99		0,579	
	lowland	8	0,734	0,818	13,54	18,01	0,562	0,584
		9	0,873		17,69		0,657	
		1	0,912		15,68		0,797	
dry	upland	2	0,893	0,907	13,29	16,12	0,750	0,738
		3	0,910		12,75		0,861	
		4	0,870		5,40		0,837	
	sub-montane	5	0,887	0,906	9,79	8,43	0,801	0,777
		6	0,889		7,14		0,794	

Table 7. Simpson, Fisher Alpha diversity indices' and Pielou's evenness index of fruit-feeding butterflies in three elevational zones in the Nimba Mountains, Liberia.

Rényi's diversity ordering, using a wide family of diversity indices, found also an evenly decreasing diversity from lowland to sub-montane zone in the dry season, but the diversity in the dry season proved incomparable due to uneven diversity distribution (Figs. 12-13).

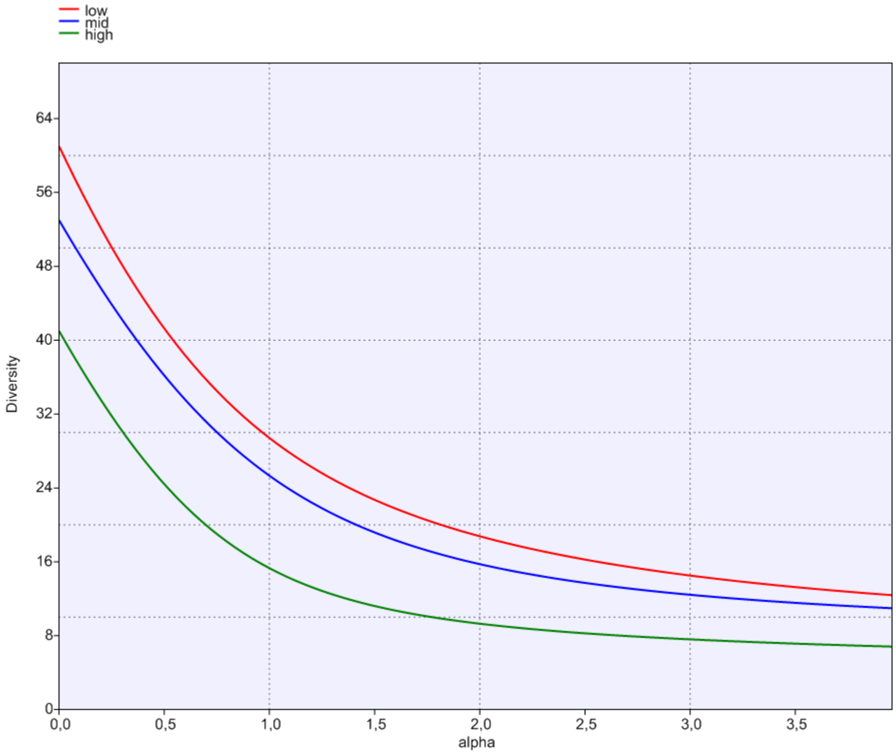

Figure 12. Rényi diversity ordering show clearly comparable profiles in the rainy season.

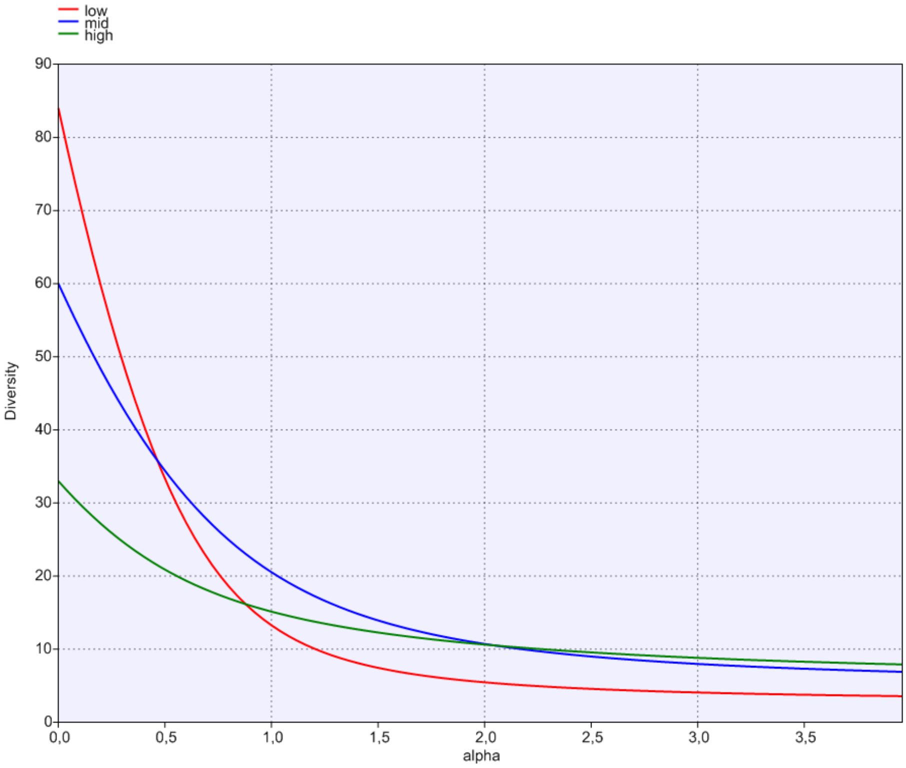

Figure 13. The dry season diversity profiles are not comparable by Rényi diversity ordering.

3.3.2 *Abundance*

The abundance profiles show very different patterns in wet and dry season in the lowland and mid-elevation forests. The wet season samples are much more even with generally lower abundance of species and no species in the sample proved exceptionally abundant. In both samples, even the most abundant species remained below 100 specimens per sample. In the dry season, some butterfly species became extremely abundant in the lowland forest sample, e.g. *Bicyclus funebris* dominated practically the entire sample with over 900 specimens. A couple of other co-dominant species also reached over a hundred specimens in the sample (see species abundance data below, also in Appendix II). The pattern is similar but less extreme in the mid-elevation sample, as the abundance of the dominant species does not reach 150 specimens, while another co-dominant species reaches only near 100 (Appendix II). In the sub-montane zone, no real dominance of any butterfly species could be detected, as the samples remained of low-abundance even during the dry season (Appendix II) The very high proportion of singletons (rare species) should also be mentioned, as this was common in practically all samples (over 30% in all, but two samples, where it was just below 30%), including those of sub-montane forests, although the proportion of singletons in lowland and mid-elevation forests proved higher in the rainy season, while it was opposite in the sub-montane zone. A few factors causing high proportion of singletons were identified. Species that do not belong to the family Nymphalidae are not normally attracted by fermenting fruit, however, in the dry season some could be captured in fruit-baited traps.

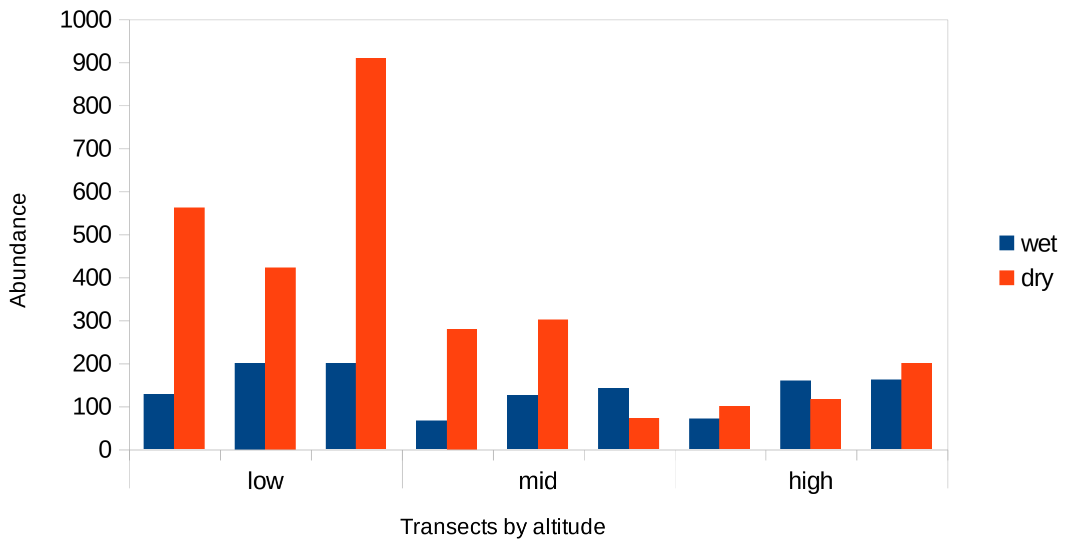

Figure 14. Abundance values in samples from the three altitudinal zones in the ENNR. Including both rainy and dry season.

Non Nymphalidae specimens caught in the fruit-baited traps were probably seeking moisture, as is the case for *Mylothris poppea* or *Acraea peneleos*. *Ypthima impura* is essentially savannah-dwelling species, inhabiting the sub-montane secondary grasslands of the Nimba

Mountains, but a single specimen found its way into the forest undergrowth seeking food. Probably the same applied to various strong flying *Charaxes* species, which inhabit the canopy and sub-canopy level of rainforests, but which are fond of fermented fruit and descend from the canopy readily in gaps of more open woodlands. The occasional presence of single specimens of *Charaxes* in basically all samples is obviously caused by random migration between micro habitats towards available food source.

A unique property of the samples is that practically all but one species with high abundance belong to the sub-family Satyrinae of Nymphalidae, with the majority of them belonging to the genus *Bicyclus* with the following cumulative abundance values: *Bicyclus funebris*: 943, *Bicyclus vulgaris*: 378, *Melanitis leda*: 250, *Heteropsis decira*: 245, *Bicyclus zinebi*: 179, *Gnophodes betsimena*: 174, *Bicyclus procora*: 169, *Bicyclus mandanes*: 167, *Bicyclus sangmelinae*: 156, *Bicyclus madetes*: 146 and *Bicyclus martius*: 115. *Kallimoides rumia* is the only non-Satyrine species with an abundance value above 100 (104). Some species of extreme abundance also show strong seasonality, as *Bicyclus funebris*, *Bicylus mandanes*, *Melanitis leda* and *Gnophodes betsimena* have not even recorded during the wet season sampling (Appendix II).

High, but not outstanding is the proportion and general abundance of species belonging to the genus *Charaxes*, especially in the dry season samples. Although the majority of these highly mobile and strong flying species are essentially canopy and sub-canopy dwellers, they are fond of fermented fruit, and could they could occasionally appear even in the understorey seeking food. This also depends on the seasons, as abundance of *Charaxes* are significantly higher in the dry season, when food-source is limited, especially in the higher elevation zones. The stratification of the habitat can also affect attraction of *Charaxes*, as the forest has only a single, semi open high canopy in the sub-montane zone, with lower than average height of trees (25-35 m), and the bait could be more easily detected by *Charaxes* flying in the canopy, compared to the multi-layered canopy lowland forests, where the emergent trees could easily reach 50-60 m height and the bait remain undetectable for high-flying *Charaxes*.

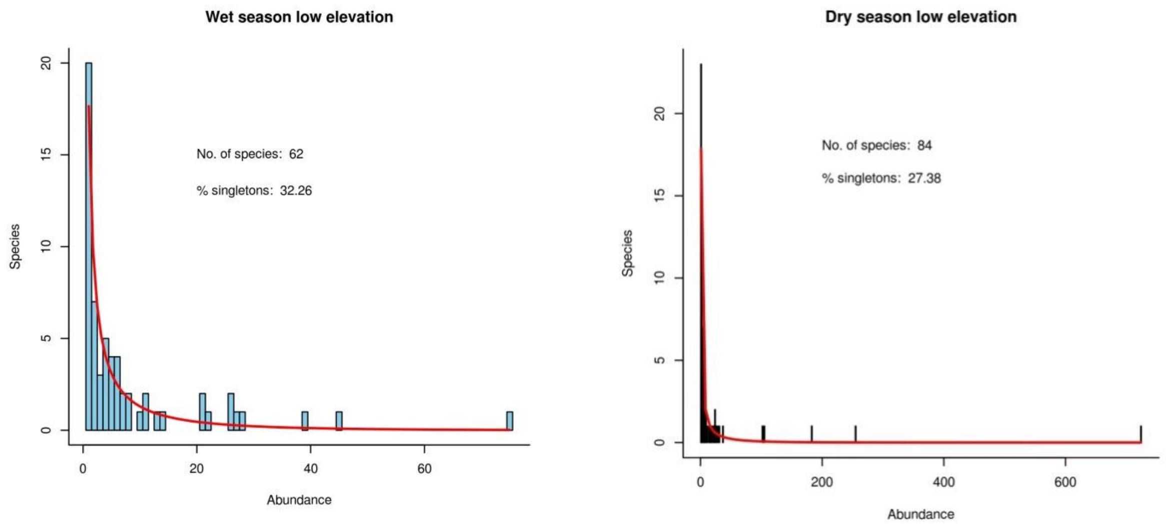

Figure 15. Abundance profiles in the lowland forest samples in both wet (left) and dry (right) seasons with the number of observed species richness and the proportion of singletons.

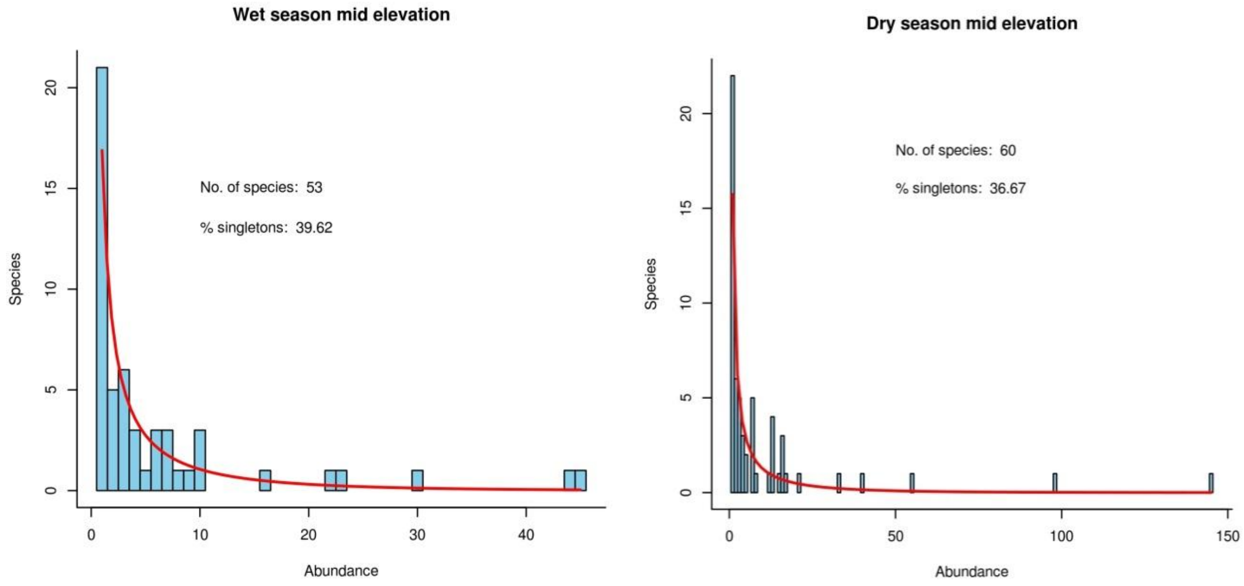

Figure 16. Abundance profiles in the mid-elevation forest samples in both wet (left) and dry (right) seasons with the number of observed species richness and the proportion of singletons.

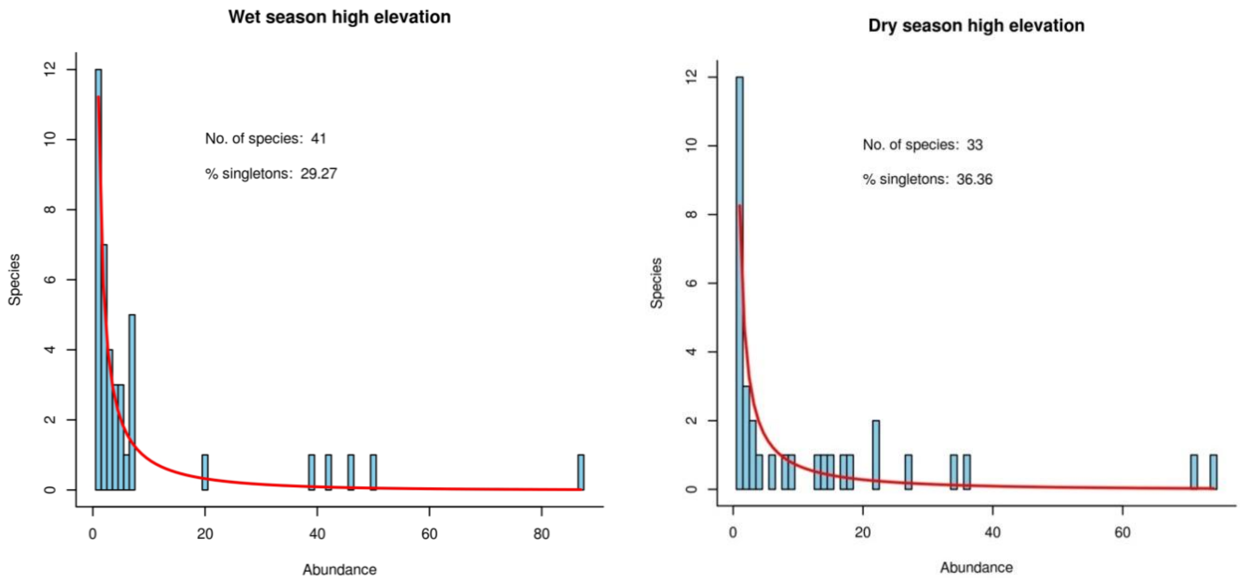

Figure 17. Abundance profiles in the sub-montane forest samples in both wet (left) and dry (right) seasons with the number of observed species richness and the proportion of singletons.

3.3.3 *Seasonal and elevational patterns*

As already mentioned, seasonality could be recognised in fruit-feeding butterfly communities, although it would not be possible to draw a general pattern, as seasonality is often more specific, appearing in small differences in the examined parameters. For example, the abundance of butterflies in lowland forests is significantly higher in each transect in the dry season, although it is more controversial in the mid-elevation as more butterflies were captured in two transects during the dry season, but the abundance was lower in the third transect. In the sub-montane samples, no significant difference in abundance could be detected between rainy season and dry season samples, possible regulated by the weather as cloudy weather is very common, and occasionally rain can also occur even during the dry season above 1100 metres in the Nimba Mountains. Specific seasonal and elevational pattern was revealed using redundance analysis (RDA) in a few commoner species, where the abundance were high enough to be interpreted by the model, as singletons, doubletons and rare species with only a few records could not be included in the RDA (Table 8). Several butterflies were found associated with lowland forests, especially in the dry season, including some of the most abundant *Bicyclus* species. Also, the most abundant *Euphaedra* seems also to be concentrated in the lowland forests, especially in the wet season. Both *Gnophodes*, *G. betsimena* and *G. chelys* show preference to lowland forests but in different seasons. Interestingly, only two butterflies were found in association with sub-montane forests: *Charaxes pollux* and *Heteropsis decira*, but only in the wet season. No elevational preference was found in the relatively common *Melanitis libya*, *Bicyclus sangmelinae* and *Bebearia arcadius* using RDA.

		Elevational pattern		
		no	**high**	**low**
Seasonal pattern	**no**			*Euphaedra phaetusa, Kallimoides rumia*
	dry	*Melanitis libya*		*Bicyclus auricruda, Bicyclus funebris, Bicyclus mandanes, Bicyclus vulgaris, Euriphene gambiae, Melanitis leda, Gnophodes betsimena*
	wet	*Bebearia arcadius, Bicyclus sangmelinae*	*Charaxes pollux, Heteropsis decira*	*Bicyclus taenias, Bicyclus zinebi, Euphaedra ceres, Gnophodes chelys*

Table 8. Elevational and seasonal pattern of fruit-feeding butterflies.

Seasonality pattern could also be recognised through habitat similarity, as the cluster analysis based on Jaccard similarity index indicates higher differences between seasonal pattern than between elevation zones in the lowland and mid-elevation forests (Fig. 18). In the sub-montane zone the samples in the dry and wet season are quite similar. The reasons for this are likely to be the mitigation effect of the frequent cloud cover and the consequent permanent humidity also in the dry season in the sub-montane zone, but also that the Jaccard index does not calculate with abundance, only with species identity.

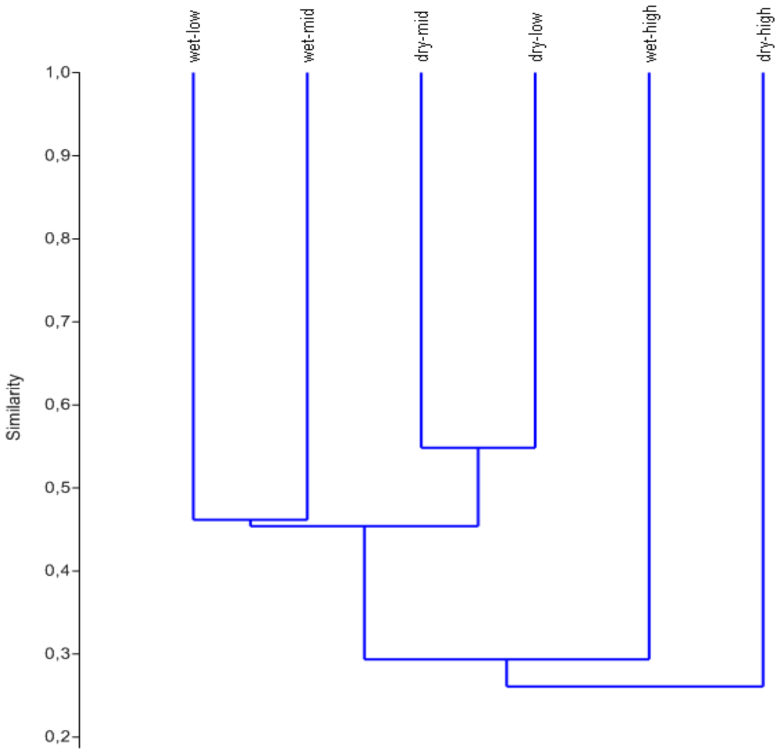

Figure 18. Cluster analysis based on Jaccard similarity index, which uses only species identity but excludes abundance.

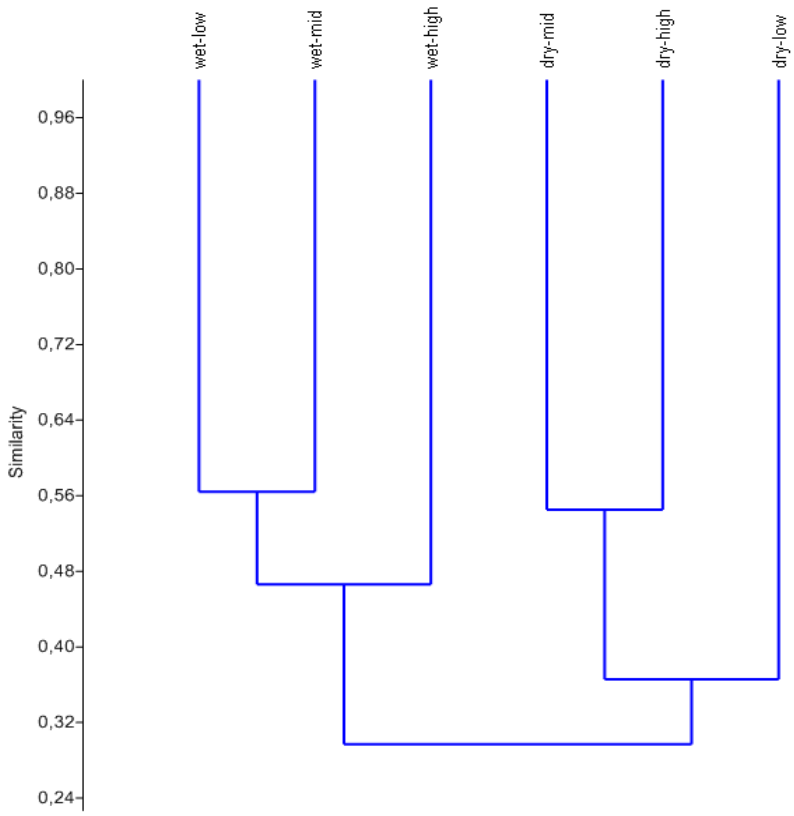

Figure 19. Cluster analysis based on Bray-Curtis distance index, which considers both species identity and abundance.

When the data was analysed by Bray-Curtis similarity index, which considers also abundance, we receive much less controversial results (Fig. 19). The analysis shows clear seasonality between the two seasons in all elevation zones with variable distance between each elevation zones in the two seasons.

3.3.4 *Hilltop Survey*

The hilltop survey designed to last for four consecutive days in each selected area on Mt. Bele was unfortunately cancelled due to unexpected cloudy weather on the last week of December 2013 and the first week of January 2014, as butterfly activity ceased completely on the hilltops. Still, during the two full field days, 238 behavioural records were collected involving 20 and 23 butterfly species from the two hilltops, respectively. All species belong to the tribe Adoliadini (Nymphalidae: Limenitinae) and none were recorded as expressing hill-topping behaviour. It is hoped that the hilltop survey could later be completed, as it would be the first documented proof of high ecological and conservation importance of hilltops in rainforests, which should be considered in following best practice of mining and/or logging activities in hilly or mountainous areas. The full list of Adoliadini recorded during the hilltop survey and their temporal and spatial pattern is presented in Appendix III.

4. SUMMARY AND CONCLUSIONS

A series of butterfly surveys uncovered the diversity of ENNR and the surrounding areas, including three community forests (Gba CF, Blei CF and Zor CF). The checklist of butterflies now contains a total of 610 species, which is 77% of all butterflies ever recorded from Liberia. Among many new country records and other rare species, 9 were found as new to science (*Aslauga larseni*. *Cephetola wingae*, *Stempfferia katikae*., *Stempfferia* sp.2. *Pilodeudorix* sp.n. 1, *Pilodeudorix* sp.n. 2, *Pilodeudorix* sp.n. 3, *Mesoxantha* sp.n., *Andronymus* cf. *fenestrella*) Some of these are probably upland or sub-montane specialists and could prove restricted to the Nimba Mountains or the Guinea Highlands. *Papilio antimachus*, which probably has the strongest West African population in the Nimba Mountains is listed as Data Deficient (DD) on IUCN's redlist. These results support the conservation importance not only the ENNR but the entire Nimba area, which host an extreme diversity of butterflies, also a good number of species of conservation concern (including endemics and restricted range species). The majority of these species were recorded inside the ENNR and/or in the surrounding CFs, but *Aphnaeus mirabilis* and *Iolaus* cf. *parasilanus* are known only from the TMF area (Gbapa).

The test butterfly monitoring recorded 116 butterfly species in fruit-baited traps. This is approximately 80% of the estimated richness of fruit-feeding butterflies. The two times two weeks sampling test protocol collected relevant data, which proved sufficient to compare species richness, diversity, abundance and even to identify seasonal and elevation pattern of the fruit-feeding butterfly communities. Based on these results, the monitoring protocol could be used on a long term to detect changes in fruit-feeding butterfly communities, which could be indicators for various ecological factors including habitat disturbance or regeneration, climate change etc.

Unfortunately the hilltop surveys could not reveal sufficient information about the ecology of hill-topping species, due to unexpected unfavourable weather in the dry season. Still, it recorded over 20 species of Adoliadini, none of them were previously documented as hill-toppers. This strengthen the theory of importance of hilltops in invertebrate conservation in rainforests, as many species, especially butterflies use hilltop for mate location.

5. RECOMMENDATIONS

As AML Liberia is among the main stakeholders in the Nimba area, it is also their responsibility to support the effective protection of the natural habitats in the ENNR and the CFs. To help AML's work in implementing its Biodiversity Conservation Program (including the offset program for Phase 2 mining activities) with special focus on the butterfly fauna, the following recommendations are given.

Despite the fact that the forests of Nimba belong to various administrational units (e.g. ENNR, CFs) for conservation and planning and protection, these areas should be considered as a single ecological unit, and thus should be managed and financed together. It is also very important that the lowland forests that surround the Nimba Massif are also of very high conservation concern as they host high butterfly richness.

5.1 Specific recommendations

More effective protection of ENNR

During the butterfly surveys continuous illegal activities were encountered in the ENNR. Some people were collecting only scrap metal but illegal farming was also observed, and wood collectors and armed poachers were permanently present in the ENNR. To reduce human activities in the ENNR it is recommended to build posts on the two main access roads with barriers and preferably with permanent presence of forest rangers and security guards. This way the commercialisation of poaching and wood collecting could be ceased with immediate effect, as vehicles will not be able to enter ENNR uncontrolled. These posts should be managed by the ENNR Co-Management Committee and could be co-financed by AML, FDA and the telecommunication companies, which have permanent station on various summits inside ENNR. Beyond the two posts, permanent forest guards should be assigned to patrol the areas near Yekepa, and Gbapa, as many illegal farmers and poachers come from these highly populated towns and with control of the activities the majority of encroachment would cease almost immediately. The security guards of the telecommunication masts should also be regularly checked by forest guards, as on one occasion they were observed poaching with a shotgun inside the reserve. Even if they do not hunt regularly, they can occasionally use their shotgun to shoot at big birds of prey, just to entertain themselves. These security guards should be completely disarmed. Wild fires (or bush fires) are quite common in the grassland areas of the ENNR, especially during dry season. In drier years these fires can even penetrate forest areas, effecting important butterfly habitats. The burning of grassland also retrain forest regeneration. Some wild fires are actually caused by illegal farmers and therefore elimination of illegal farming activities would also lower the risk of habitat degradation caused by uncontrolled wild fires.

Establishment of green corridors to link up the protected habitats in the Nimba Mountains.

It is recommended that the various blocks of natural habitats should be kept connected by so-called green corridors, connecting corridors consist of natural habitats on non-protected land linking up protected areas. This applies particularly to areas, which are or will be affected by mining and/or construction activities. At present, the important habitats in the Gba CF (and generally in the Western Range) are not sufficiently connected to those in the ENNR resulting in isolation of butterfly populations. This isolation could prevent gene flow completely between the two areas, which could result in decrease of genetic variability and vitality of butterfly populations and on a long term this could also contribute to extinction of butterfly populations in the Nimba Area (despite protection of their actual habitats). These corridors should be established in a network of relatively narrow (cc. 200-500 m wide) forest belts stretching from Gba CF to ENNR. It is important that these corridors should be set aside from both construction and agricultural utilization.

Establishment of medicinal (ethno-botanical) plant collections or plantations

The lower slopes of Mt. Nimba were planted with an introduced and highly invasive tree species *Gmelina arborea* mostly to provide local people with timber and firewood. This plantation is rather useless, as the wood of this tree is soft for timber, not durable and it cannot therefore be used either for building construction or to produce charcoal. Part of these plantations could be converted into medicinal plant collections or plantation at a relatively low cost to assure that people could get controlled access to their traditional medicines (leaves, flowers, shoots, bark and roots) preventing illegal collection of these NTFPs from the ENNR. As the majority of these medicinal plants are actually native forest trees, bushes and climbers, this way, the area of natural forest habitats are also expanded, providing also a rather biodiverse buffer to the forests of ENNR. These medicinal plantation could be established at the mouth of Cellcom road (right across the railway bridge) and further down along the main road towards Liabala and Gbapa. They could be well marked and supplemented by information boards and could be used also for education purposes. It is recommended that all seeds and cuttings for propagation should be collected in the ENNR and the surrounding forest areas to use local genetic material with the help of local herbalists or herbalist families, who might also be trained as custodians of the plantations. These medicinal plantations could be proposed as to become sections of the green corridors that link up ENNR with the natural habitats of the Western Range.

Grassfield-Zortapa road and Coldwater

It was discussed that the presently impassable road between Grassfield and Zortapa will be cleared and reconstructed and the broken bridges will be re-built to allow traffic between the two towns. The survey at Coldwater revealed that the old road is not only densely overgrown by secondary forest but also that butterflies commonly use this as dispersal corridor, and the muddy road surface also serves as feeding spots for many species during the dry season. Basically, this road section is the only connection point between Mt. Bele and the Blei CF and the ENNR, and any construction work will significantly increase the isolation of the butterfly populations of Mt. Bele, which are presently interconnected to the Nimba Range through the lowland corridor of Coldwater. Coldwater is also important for amphibian conservation due to the diversity and number of threatened amphibian species recorded (Penner, 2010).

In addition, a rehabilitated road will allow numerous people to access to the protected forest to collect wood and NTFPs and transport them to towns illegally, also poachers will also be able to reach the forest boundaries much more easily, potentially increasing the rate of killing of wild animals. As recent studies shown that that the strongest population of Western Chimpanzee live on Mt. Bele, which is strongly connected to the families in the southern part of the ENNR (Sorrel Jones pers. comm.). The rehabilitation of the road could result in separation and isolation of these Chimpanzee families.

An alternative solution would be to establish a ranger station and ecological research and eco-tourism centre at Coldwater, which would allow continuous presence of forest rangers near the forest, and would provide livelihood to local people, who can work with the visiting researchers. In the long term, these facilities could also be used by tourists, who could easily spend a few days trekking to Mt. Bele and the Nimba Range or watching birds or butterflies around Coldwater. As the road from Zortapa to the station (but not further towards Gbapa) will be rehabilitated, farmers of Zortapa could also benefit with getting easier access to and faster transport of goods from their farms. The research station could be built on the degraded grassy area, which was cleared to store logs some 30 years ago. The station could be run by an NGO with support from AML's Biodiversity Conservation Programme (for eco-tourism activities see also below).

Mt. Beeton

Considering butterfly diversity and high number of species of conservation concern, Mt. Beeton should be regarded as a priority conservation area, worthy of strict protection. Although it is inside the Gba CF, its status is unclear as the mountain is also within AML concession area. Also, as observed during the surveys in 2012 and 2013 some local farmers do not respect the community forest status and the volume of clearing for illegal farms increased inside the reserve since the first visit. It is therefore recommended that AML should help strengthen the protection level of Mt. Beeton, including support to establish a legally protected area as a biodiversity reserve. AML should continue to work in close collaboration with the Gba CFMB, community leaders and Forestry Development Authority to help prevent illegal activities. Mt. Beeton could also be developed for eco-tourism, centred on Bonlah community, as the mountain has a potential also for bird watching and has a viable chimpanzee population. The old logging tracks could be used by visiting tourists very easily and a forest camp could be developed at the old logging camp (used recently by the researchers). The hilltop could host a lookout tower, with beautiful view to the lowlands and the Mt. Nimba Range.

5.2 Further research potentials

Butterfly monitoring program

Based on the results of pilot monitoring, it is recommended that the monitoring, using fruit-feeding butterflies should continue on a regular basis to evaluate changes in the butterfly composition, habitat disturbance or even certain aspects of climate change. The field sampling could be done using trained local assistants both from FDA and from local communities. The identification of the material and analysis could be done by the author of this report, provided that the material is couriered to Europe. This way, the monitoring would more cost-effective compared to using expatriate consultants even for field work. The recommended sampling period is 15 days (including setting of traps and emptying them in 14 consecutive days) in each season (dry and wet), and the monitoring could be repeated in each year.

Radio Tracking Program

A pilot radio tracking program has been extensively discussed, supporting effective protection of the strongest known West African population of the Giant African Swallowtail – *Papilio antimachus*. The discussions involved the proposed survey area, technique used and also costing. The season and weather are usually the main factors for timing of the pilot survey and the months April or November were found to be most suitable for capturing, equipping and tracking *P. antimachus*. Technical details and proposed budget will be sent submitted separately from this report.

Moth Diversity Program

The butterfly surveys in the Nimba Mountains resulted in an extraordinary diversity of butterflies, including several species previously unknown to science, distributed across habitats from lowland forests to sub-montane cloud-forests and grasslands. Their value to nature cannot even be estimated, as they are part of many natural processes including food-chain, pollination etc. It is also widely known that the majority of species in the order Lepidoptera actually belong to the largely nocturnal moths (Micro- and Macroheterocera), which are even much more under-recorded in West Africa and it is possible that the Nimba Mountains host approximately 10, 000 species of moth, which could be uncovered only during a series of extensive surveys carried out by an experienced team of field researchers, who will distribute the collected material to experts, allowing identification of species in their respective groups. It would be a unique chance for AML to establish an in-depth moth diversity program, giving the opportunity to explore the Nimba Mountain's Lepidoptera diversity further. It could be done on a long-term basis, starting with a pilot expedition and discussed further, when the first results are presented and evaluated.

5.3 Other proposed programs

Butterfly poster – education

For educational purposes, a colour poster, illustrating the majority of the butterflies special to the Nimba Mountains could be designed and printed. Selected species of interest could be illustrated on full colour drawings, as high quality drawing are either easier to produce, even from set specimens, also, they are more familiar to children and youth (the two major target groups) than photographs. The illustrations could be supplemented by short description of the species, where they were found and why they are important to nature and the local communities. This poster could not only be screened at the community houses in and around the concession, but could be distributed to primary and secondary schools. It could be produced also in French (or produced bilingual), as these species have the same importance in Guinea and Ivory Coast in the communities fringing the Nimba Mountains. It could be even printed in high quality in lower quantities on digital printer or plotter, according to budget and demand. Illustrations and sample of description is found in Appendix I.

Butterfly (Lepidoptera) based eco-tourism

There is a growing interest in Lepidoptera in the developed world, especially in Britain and Europe. As the Nimba Mountains harbours extremely high Lepidoptera richness, it could also attract tourists, who are interested in seeing-studying Lepidoptera in the Nimbas. Various butterfly-related activities could be organised with the help of AML including guided butterfly-watching trips, volunteer programs or even academic student programs, when a group of university students could carry out short term research projects on Lepidoptera. These activities could involve people also from local communities, who could support these programs in various ways (forest rangers, guides, assistants etc.). Obviously, these sorts of activities require further development of infrastructure and capacity building, which could be supervised by a local NGO, who can also organise the activities.

Butterflies of the Nimba Mountains - annotated checklist and atlas

With the completion of the in-depth research on the butterfly fauna, the Liberian Nimba Mountains became one of the best surveyed areas in West Africa. The research collected a large amount of information worthy of publication in a form, which could be used for both scientific and educational purposes. With the help of GIS experts, good quality distribution maps could be produced to show occurrences of each species found in the Nimba Mountains, supplemented by a short description, and photographic illustration of each species could be included. A similar book on important plants of the Nimba area was already produced by Marshall & Hawthorne (2013) published by AML.

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APPENDIX I. Sample illustrations and descriptions for the proposed educational poster.

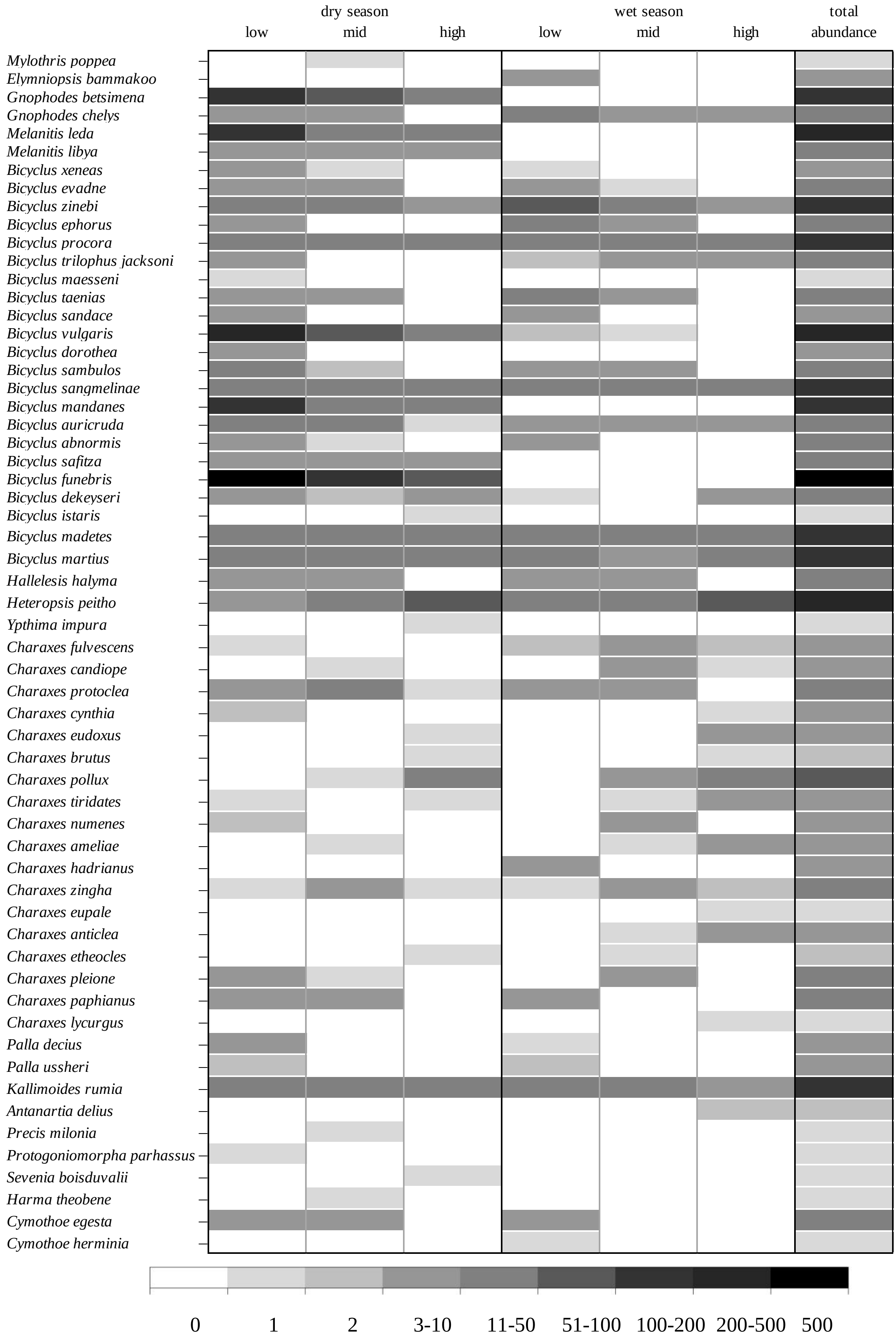
The Beautiful Highflier (*Aphnaeus mirabilis*) is known only from the single specimen captured near Gbarpa (Western Range). It was found during a drought in the dry season, when many butterflies came to drink from muddy water near a swamp. The species, similarly to other Highfliers probably flies in the canopy of rainforest, and only very rarely descends to ground level. It might be endemic to the Nimba Mountains

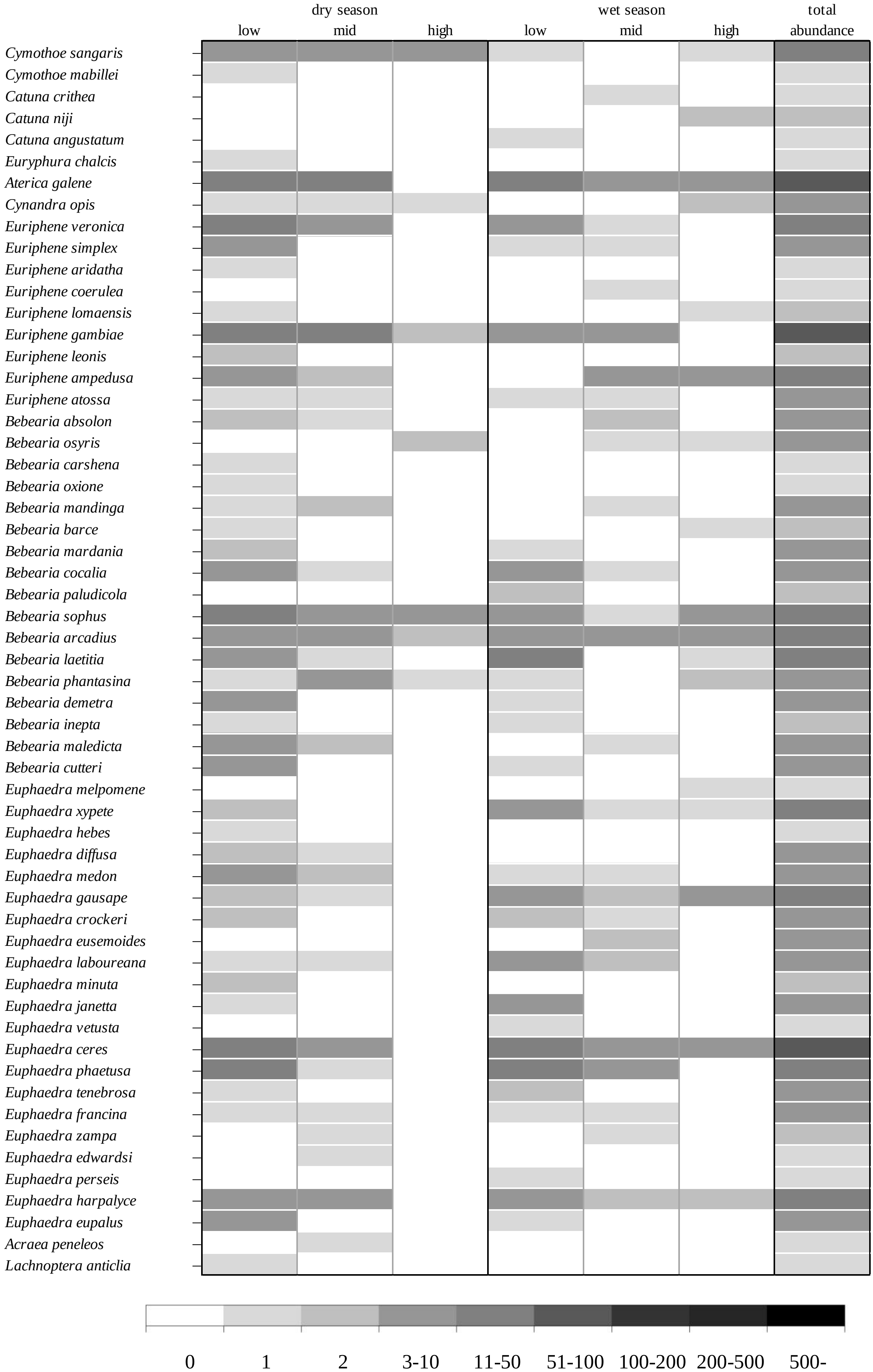
The Loma Nymph (*Euriphene lomaensis*) is a very rare butterfly, which could be found only in untouched primary forest in Liberia. The males usually visit hilltops, where they display their beautiful blue colour to attract the female, which is much less colourful, but it can hide from predators with sitting still on the dry leaves in the forest. This butterfly is fond of rotter fruit, and could be seen also under fruit-trees during fruiting season. It is very rare in the East Nimba Nature Reserve and Blei Community Forest.

The Giant African Swallowtail (*Papilio antimachus*) is the largest butterfly on the African continent. Still this butterfly is rarely seen, as they like to fly above the canopy of the high rainforest. Freshly hatched males sometimes appear at water, where they intake dissolved minerals from wet soil. Males also congregate on hilltops, flying around in big circles, waiting for the female. They chase away other males and often chase swifts and swallows, believing they are other butterflies. This species is endangered by deforestation in other African countries, still widespread in Liberia. The population in the East Nimba Nature Reserve and the surrounding community forests is probably the strongest in the country and in entire West Africa.

Illustrations by Szabolcs Kókay

APPENDIX II. Abundance values of the recorded species in fruit-baited traps in wet and dry season in the different elevation zones.




dry season
wet season
total abundance
low
mid
high
low
mid
high
Cymothoe sangaris
Cymothoe mabillei
Catuna crithea
Catuna niji
Catuna angustatum
Euryphura chalcis
Aterica galene
Cynandra opis
Euriphene veronica
Euriphene simplex
Euriphene aridatha
Euriphene coerulea
Euriphene lomaensis
Euriphene gambiae
Euriphene leonis
Euriphene ampedusa
Euriphene atossa
Bebearia absolon
Bebearia osyris
Bebearia carshena
Bebearia oxione
Bebearia mandinga
Bebearia barce
Bebearia mardania
Bebearia cocalia
Bebearia paludicola
Bebearia sophus
Bebearia arcadius
Bebearia laetitia
Bebearia phantasina
Bebearia demetra
Bebearia inepta
Bebearia maledicta
Bebearia cutteri
Euphaedra melpomene
Euphaedra xypete
Euphaedra hebes
Euphaedra diffusa
Euphaedra medon
Euphaedra gausape
Euphaedra crockeri
Euphaedra eusemoides
Euphaedra laboureana
Euphaedra minuta
Euphaedra janetta
Euphaedra vetusta
Euphaedra ceres
Euphaedra phaetusa
Euphaedra tenebrosa
Euphaedra francina
Euphaedra zampa
Euphaedra edwardsi
Euphaedra perseis
Euphaedra harpalyce
Euphaedra eupalus
Acraea peneleos
Lachnoptera anticlia
0
1
2
3-10
11-50
51-100
100-200
200-500
500-

APPENDIX III. Adoliadini recorded during the hilltop survey on Mt. Bele. The species list is in order of appearance.

	species nr.	species	first appearence	last seen
Hilltop 1 28.12.2013	1	*Euphaedra laboureana*	9,24	9,58
	2	*Bebearia osyris*	10,11	11,17
	3	*Euphaedra gausape*	10,25	11,43
	4	*Bebearia sophus*	10,40	12,02
	5	*Euryphura chalcis*	10,49	11,39
	6	*Bebearia barce*	11,29	11,40
	7	*Bebearia demetra*	11,40	12,24
	8	*Bebearia oxyone*	11,39	13,10
	9	*Euriphene simplex*	11,48	
	10	*Bebearia mandinga*	12,02	15,06
	11	*Euriphene aridatha*	12,41	
	12	*Catuna oberthueri*	12,41	13,14
	13	*Cynandra opis*	12,51	cc 14.53
	14	*Euphaedra phaetusa*	12,52	13.20
	15	*Bebearia arcadius*	12,55	13,41
	16	*Aterica galene*	13,14	14,44
	17	*Euriphene atossa*	13,15	13,25
	18	*Euphaedra medon*	14,05	15,12
	19	*Euphaedra hebes*	14,05	14.50
	20	*Euriphene ampedusa*	14,57	16.05
Hilltop 2 29.12.2013	1	*Euphaedra laboureana*	8,55	9,29
	2	*Euphaedra gausape*	9,22	11,04
	3	*Bebearia osyris*	9,41	11,00
	4	*Euryphura chalcis*	9,30	11,36
	5	*Bebearia phantasina*	10,16	11,25
	6	*Bebearia sophus*	10,30	12,30
	7	*Bebearia barce*	10,38	11,42
	8	*Bebearia cutteri*	10,46	11,25
	9	*Euphaedra eupalus*	11,07	11,26
	10	*Euriphene veronica*	11,10	12,03
	11	*Bebearia demetra*	11,18	11,51
	12	*Bebearia oxyone*	11,29	12,55
	13	*Cynandra opis*	12,00	15,15
	14	*Euphaedra phaetusa*	11,32	12,46
	15	*Euriphene aridatha*	12,07	13,25
	16	*Bebearia arcadius*	12,20	13,19
	17	*Bebearia mandinga*	12,36	12,55

18	*Aterica galene*	12,52	15,00
19	*Euphaedra tenebrosa*	12,54	13,25
20	*Euphaedra hebes*	13,09	14,52
21	*Euphaedra medon*	13,40	15,18
22	*Euphaedra gambie*	14,51	15,15
23	*Euphaedra ampedusa*	14,52	15,38

APPENDIX IV. Checklist of the butterflies recorded in the Nimba Mountains 2012-2014

The numbers refer to the species ID in the book Butterflies of West Africa by Torben B. Larsen (Larsen 2005)

--- indicates species which were not known at the time of publication of Larsen (2005)

BIOPA shows records from 2008-2009 by Boireau

TOTAL shows records from Sáfián & Larsen (2012)

NIMBA TOTAL shows all species recorded from the Nimba Mountains (Liberia)

Superfamily PAPILIONOIDEA Latreille, 1802

Family PAPILIONIDAE Latreille, 1802

Subfamily Papilioninae Latreille, 1802

PAPILIO Linnaeus, 1758

1	*P. antimachus*		Drury, 1782	BIOPA	TOTAL	NIMBA TOTAL
2	*P. zalmoxis*		Hewitson, 1864			
4	*P. dardanus*		Brown, 1776	BIOPA	TOTAL	NIMBA TOTAL
5	*P. phorcas*		Cramer, 1775	BIOPA	TOTAL	NIMBA TOTAL
7	*P. horribilis*		Butler, 1874	BIOPA	TOTAL	NIMBA TOTAL
9	*P. chrapkowskoides*	*nurettini*	Koçak, 1983	BIOPA	TOTAL	NIMBA TOTAL
10	*P. sosia*		Rothschild & Jordan, 1903			NIMBA TOTAL
11	*P. nireus*		Linnaeus, 1758	BIOPA	TOTAL	NIMBA TOTAL
12	*P. menestheus*		Drury, 1773	BIOPA	TOTAL	NIMBA TOTAL
13	*P. demodocus*		Esper, 1798	BIOPA	TOTAL	NIMBA TOTAL
15	*P. cyproeofila*		Butler, 1868	BIOPA	TOTAL	NIMBA TOTAL
16	*P. zenobia*		Fabricius, 1775		TOTAL	NIMBA TOTAL
17	*P. nobicea*		Suffert, 1904			
18	*P. cynorta*		Fabricius, 1793	BIOPA	TOTAL	NIMBA TOTAL
	GRAPHIUM Scopoli, 1777					
20	*G. angolanus*	*baronis*	Ungemach, 1932			NIMBA TOTAL
22	*G. tynderaeus*		Fabricius, 1793	BIOPA	TOTAL	NIMBA TOTAL
23	*G. latreillianus*		Godart, 1819	BIOPA	TOTAL	NIMBA TOTAL
24	*G. almansor*					
25	*G. adamastor*		Boisduval, 1836			
26	*G. agamedes*		Westwood, 1842			
28	*G. rileyi*		Berger, 1950			

29	*G. leonidas*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
30	*G. illyris*		Hewitson, 1873			
31	*G. policenes*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
32	*G. liponesco*		Suffert, 1904			
34	*G. antheus*		Cramer, 1779	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Family PIERIDAE Swainson, 1820					
	Subfamily Pseudopontiinae Reuter, 1896					
	PSEUDOPONTIA Plötz, 1870					
35	*P. gola*		Felder & Felder, 1869			
	Subfamily Coliadinae Swainson, 1821					
	CATOPSILIA Hübner, 1819					
36	*C. florella*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	EUREMA Hübner, 1819					
38	*E. senegalensis*		Boisduval, 1836	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
39	*E. hecabe*	*solifera*	Butler, 1875	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
40	*E. floricola*	*leonis*	Butler, 1886	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
41	*E. hapale*		Mabille, 1882			
42	*E. desjardinsii*	*regularis*	Butler, 1876			
43	*E. brigitta*		Stoll, 1780	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Subfamily Pierinae Swainson, 1820					
	Tribe Pierini Swainson, 1820					
	PINACOPTERYX Wallengren, 1857					
44	*P. eriphia*	*tritogenia*	Klug, 1829			
	NEPHERONIA Butler, 1870					
45	*N. argia*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
46	*N. thalassina*		Boisduval, 1836	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
47	*N. pharis*		Boisduval, 1836			**NIMBA TOTAL**
	COLOTIS Hübner, 1819					
51	*C. amata*		Fabricius, 1775			
52	*C. phisadia*		Godart, 1819			
54	*C. vesta*	*amelia*	Lucas, 1852			
56	*C. halimede*		Klug, 1829			
57	*C. celimene*	*sudanicus*	Aurivillius, 1905			
58	*C. ione*		Godart, 1819			
60	*C. danae*	*eupompe*	Klug, 1829			
61	*C. aurora*	*evarne*	Klug, 1829			
62	*C. antevippe*		Boisduval, 1836			
63	*C. euippe*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
65	*C. evagore*	*antigone*	Boisduval, 1836			
66	*C. liagore*		Klug, 1829			
67	*C. eris*		Klug, 1829			

	***BELENOIS* Hübner, 1819**					
68	*B. aurota*		Fabricius, 1793			**NIMBA TOTAL**
69	*B. creona*		Cramer, 1776			
70	*B. gidica*		Godart, 1819			
72	*B. subeida*	*frobeniusi*	Strand, 1909			
73	*B. calypso*		Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
74	*B. theora*		Doubleday, 1846	**BIOPA**		
76	*B. hedyle*	*ianthe*	Doubleday, 1842			
	***DIXEIA* Talbot, 1932**					
78	*D. doxo*		Godart, 1819			
79	*D. orbona*		Geyer, 1832			
80	*D. cebron*		Ward, 1871			
81	*D. capricornus*		Ward, 1871			
	***PONTIA* Fabricius, 1807**					
82	*P. daplidice*		Linnaeus, 1758			
83	*P. glauconome*		Klug, 1829			
	***APPIAS* Hübner, 1819**					
84	*A. sylvia*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
85	*A. phaola*		Doubleday, 1847	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
86	*A. sabina*		Felder & Felder, 1865	**BIOPA**		**NIMBA TOTAL**
87	*A. epaphia*		Cramer, 1779			
	***LEPTOSIA* Hübner, 1818**					
88	*L. alcesta*		Stoll, 1781		**TOTAL**	**NIMBA TOTAL**
90	*L. hybrida*		Bernardi, 1952			**NIMBA TOTAL**
91	*L. medusa*		Cramer, 1777		**TOTAL**	**NIMBA TOTAL**
92	*L. marginea*		Mabille, 1890			
93	*L. wigginsi*	*pseudalcesta*				
	***MYLOTHRIS* Hübner, 1819**					
95	*M. chloris*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
100	*M. dimidiata*		Aurivillius, 1898		**TOTAL**	**NIMBA TOTAL**
103	*M. aburi*		Collins & Larsen, 2004			
105	*M. hilara*		Karsch, 1892			
106	*M. poppea*		Cramer, 1777	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
107	*M. spica*		Möschler, 1884			**NIMBA TOTAL**
109	*M. rhodope*		Fabricius, 1775		**TOTAL**	**NIMBA TOTAL**
110	*M. jaopura*		Karsch, 1893			**NIMBA TOTAL**
111	*M. schumanni*		Suffert, 1904			
112	*M. atewa*		Berger, 1980			
	***Family LYCAENIDAE* Leach, 1815**					
	***Subfamily Miletinae* Reuter, 1896**					
	***Tribe Liphyrini* Doherty, 1889**					

	EULIPHYRA Holland, 1890				
114	*E. hewitsoni*	Aurivillius, 1898			
115	*E. mirifica*	Holland, 1890			
116	*E. leucyania*	Hewitson, 1874			**NIMBA TOTAL**
	ASLAUGA Kirby, 1890				
117	*A. ernesti*	Karsch, 1895			
---	*A. sp. n.*				**NIMBA TOTAL**
118	*A. marginalis*	Kirby, 1890		**TOTAL**	**NIMBA TOTAL**
123	*A. guineensis*	Collins & Libert, 1997			**NIMBA TOTAL**
124	*A. imitans*	Libert, 1994			
---	*Aslauga. sp.*				
	Tribe Miletini Reuter, 1896				
	MEGALOPALPUS Röber, 1886				
127	*M. zymna*	Westwood, 1851		**TOTAL**	**NIMBA TOTAL**
129	*M. metaleucus*	Karsch, 1893		**TOTAL**	**NIMBA TOTAL**
	Tribe Spalgini Toxopeus, 1929				
	SPALGIS Moore, 1879				
130	*S. lemolea* *pilos*	Druce, 1890		**TOTAL**	**NIMBA TOTAL**
	Tribe Lachnocnemini Clench, 1955				
	LACHNOCNEMA Trimen, 1887				
131	*L. vuattouxi*	Libert, 1996			
133	*L. emperamus*	Snellen, 1872			
135	*L. disrupta*	Talbot, 1935			
136	*L. reutlingeri*	Holland, 1892			
137	*L. luna*	Druce, 1910			
139	*L. albimacula*	Libert, 1996			
	Subfamily Lipteninae				
	Tribe Pentilini				
	PTELINA Clench, 1965				
141	*P. carnuta*	Hewitson, 1873	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	PENTILA Westwood, 1852				
142	*P. pauli*	Staudinger, 1888	**BIOPA**		**NIMBA TOTAL**
144	*P. petreoides*	Bethune-Baker, 1915			**NIMBA TOTAL**
145	*P. bennetti*	Collins & Larsen, 2004			
147	*P. petreia*	Hewitson, 1874			**NIMBA TOTAL**
148	*P. cf condamini*	Stempffer, 1963			**NIMBA TOTAL**
149	*P. preussi*	Staudinger, 1888			
152	*P. picena*	Hewitson, 1874			
	P. cf. picena				
153	*P. abraxas*	Hewitson, 1852	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
155	*P. phidia*	Hewitson, 1874			

157	*P. hewitsoni*		Grose-Smith & Kirby, 1887			
	TELIPNA Aurivillius, 1895					
159	*T. acraea*		Westwood, 1851			**NIMBA TOTAL**
160	*T. semirufa*		Grose-Smith & Kirby, 1889			
161	*T. maesseni*		Stempffer, 1970			
	ORNIPHOLIDOTOS Bethune-Baker, 1914					
170	*O. sylviae*		Stempffer, 1964			
171	*O. onitshae*		Stempffer, 1962			
172	*O. irwini*		Collins & Larsen, 1998			
173	*O. issia*		Stempffer, 1969			**NIMBA TOTAL**
174	*O. tiassale*		Stempffer, 1969			**NIMBA TOTAL**
175	*O. nympha*		Libert, 2000			**NIMBA TOTAL**
---	*Ornipholidotos sp.*					
	TORBENIA Libert, 2000					
177	*T. wojtusiaki*		Libert, 2000			
	Tribe Mimacraeini					
	MIMACRAEA Butler, 1872					
179	*M. neurata*		Holland, 1895			**NIMBA TOTAL**
181	*M. darwinia*		Butler, 1872	**BIOPA**		**NIMBA TOTAL**
182	*M. maesseni*		Libert, 2000			
	MIMERESIA Stempffer, 1961					
184	*M. libentina*		Hewitson, 1866		**TOTAL**	**NIMBA TOTAL**
185	*M. moyambina*		Bethune-Baker, 1904		**TOTAL**	**NIMBA TOTAL**
186	*M. debora*	*catori*	Bethune-Baker, 1904			**NIMBA TOTAL**
187	*M. semirufa*		Grose-Smith, 1902			
190	*M. cellularis*		Kirby, 1890			
191	*M. issia*		Stempffer, 1969			**NIMBA TOTAL**
	Tribe Liptenini					
	PSEUDERESIA Butler, 1874					
192	*P. eleaza eleaza Hewitson, 1873*					
	ERESIOMERA Clench, 1965					
193	*E. bicolor*		Grose-Smith & Kirby, 1890	**BIOPA**		**NIMBA TOTAL**
194	*E. isca*	*occidentalis*	Collins & Larsen, 1998			**NIMBA TOTAL**
195	*E. jacksoni*		Stempffer, 1969			
197	*E. petersi*		Stempffer & Bennett, 1956		**TOTAL**	**NIMBA TOTAL**
	CITRINOPHILA Kirby, 1887					
199	*C. marginalis*		Kirby, 1887			**NIMBA TOTAL**
200	*C. similis*		Kirby, 1887			**NIMBA TOTAL**
202	*C. erastus*		Hewitson, 1866	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	ERESINA Aurivillius, 1898					
204	*E. maesseni*		Stempffer, 1956			**NIMBA TOTAL**

205	*E. fusca*		Cator, 1904		**TOTAL**	**NIMBA TOTAL**
206	*E. pseudofusca*		Stempffer, 1961			**NIMBA TOTAL**
208	*E. fontainei*		Stempffer, 1956			
209	*E. jacksoni*		Stempffer, 1961			
210	*E. saundersi*		Stempffer, 1956			
211	*E. rougeoti*		Stempffer, 1956			
212	*E. theodori*		Stempffer, 1956			
	ARGYROCHEILA Staudinger, 1892					
213	*A. undifera*		Staudinger, 1892			
	LIPTENA Westwood, 1851					
216	*L. submacula*		Lathy, 1903		**TOTAL**	**NIMBA TOTAL**
217	*L. griveaudi*		Stempffer, 1969			**NIMBA TOTAL**
218	*L. simplicia*		Möschler, 1887	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
222	*L. tiassale*		Stempffer, 1969			
224	*L. albicans*		Cator, 1904			
225	*L. alluaudi*		Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
226	*L. fatima*		Kirby, 1890			
227	*L. pearmani*		Stempffer, Bennettt & May, 1974			
229	*L. ferrymani*	*bigoti*	Stempffer, 1964			
231	*L. septistrigata*		Bethune-Baker, 1903			
232	*L. evanescens*		Kirby, 1887			
234	*L. xanthostola*	*coomassiensis*	Hawker-Smith, 1933		**TOTAL**	**NIMBA TOTAL**
236	*L. rochei*		Stempffer, 1951	**BIOPA**		**NIMBA TOTAL**
237	*L. flavicans*	*oniens*	Talbot, 1935			
239	*L. seyboui*		Larsen & Warren-Gash, 2001			
240	*L. similis*		Kirby, 1890			
241	*L.modesta*		(Kirby, 1890)		**TOTAL**	**NIMBA TOTAL**
242	*L. helena*		Druce, 1888			**NIMBA TOTAL**
243	*L. catalina*		Grose-Smith & Kirby, 1887		**TOTAL**	**NIMBA TOTAL**
	Liptena sp.					
	KAKUMIA Collins & Larsen, 1998					
246	*K. otlauga*		Grose-Smith & Kirby, 1890		**TOTAL**	**NIMBA TOTAL**
	FALCUNA Stempffer & Bennett, 1963					
249	*F. leonensis*		Stempffer & Bennett, 1963	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
252	*F. campimus*		Holland, 1890			
	TETRARHANIS Karsch, 1893					
254	*T. symplocus*		Clench, 1965		**TOTAL**	**NIMBA TOTAL**
255	*T. baralingam*		Larsen, 1998		**TOTAL**	**NIMBA TOTAL**
257	*T. diversa*		Bethune-Baker, 1904			**NIMBA TOTAL**
260	*T. stempfferi*		Berger, 1954		**TOTAL**	**NIMBA TOTAL**

	LARINOPODA Butler, 1871					
265	*L. eurema*		Plötz, 1880	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	MICROPENTILA Aurivillius, 1895					
266	*M. adelgitha*		Hewitson, 1874	**BIOPA**		**NIMBA TOTAL**
267	*M. adelgunda*		Staudinger, 1892			
268	*M. dorothea*		Bethune-Baker, 1903			**NIMBA TOTAL**
270	*M. brunnea*		Kirby, 1887			**NIMBA TOTAL**
---	*M. 'safiani'*					
273	*M. nigeriana*		Stempffer & Bennett, 1965			
274	*M. mabangi*		Bethune-Baker, 1904			
275	*M. mamfe*		Larsen, 1986			
	Tribe Epitolini Jackson, 1962					
	TERATONEURA Dudgeon, 1909					
276	*T. isabellae*		Dudgeon, 1909			
	IRIDANA Aurivillius, 1921					
277	*I. incredibilis*		Staudinger, 1891			
278	*I. rougeoti*		Stempffer, 1964			
279	*I. ghanana*		Stempffer, 1964			
280	*I. exquisita*		Grose-Smith, 1898			
281	*I. nigeriana*		Stempffer, 1964			
282	*I. hypocala*		Eltringham, 1929		**TOTAL**	**NIMBA TOTAL**
	HEWITSONIA Kirby, 1871					
283	*H. boisduvalii*		Hewitson, 1869			
284	*H. occidentalis*		Bouyer, 1997			
285	*H. danane*		Stempffer, 1969			
286	*H. inexpectata*		Bouyer, 1997			
	CERAUTOLA Libert, 1999					
289	*C. crowleyi*		Sharpe, 1890		**TOTAL**	**NIMBA TOTAL**
291	*C. ceraunia*		Hewitson, 1873		**TOTAL**	**NIMBA TOTAL**
293	*C. miranda*		Staudinger, 1889			**NIMBA TOTAL**
	EPITOLA Westwood, 1851					
294	*E. posthumus*		Fabricius, 1793	**BIOPA**		**NIMBA TOTAL**
295	*E. uranoides*	*occidentalis*	Libert, 1999			**NIMBA TOTAL**
296	*E. urania*		Kirby, 1887	**BIOPA**		
	CEPHETOLA Libert, 1999					
297	*C. cephena*		Hewitson, 1873		**TOTAL**	**NIMBA TOTAL**
298	*C. maculata*		Hawker-Smith, 1926			
299	*C. pinodes*		Druce, 1890			
	C. pinodes	*budduana*	Talbot, 1937			
300	*C. subcoerulea*		Roche, 1954			
301	*C. nigra*		Bethune-Baker, 1903			

302	*C. mercedes*	*ivoriensis*	Jackson, 1967			
303	*C. obscura*		Hawker-Smith, 1933		**TOTAL**	**NIMBA TOTAL**
305	*C. sublustris*		Bethune-Baker, 1904			
306	*C. maesseni*		Libert, 1999			
307	*C. collinsi*		Libert & Larsen, 1999			
---	*C. sp. n.*					**NIMBA TOTAL**
	HYPOPHYTALA Clench, 1965					
308	*H. hyettoides*		Aurivillius, 1895			
309	*H. ultramarina*		Libert & Collins, 2004			
310	*H. hyettina*		Aurivillius, 1897			**NIMBA TOTAL**
311	*H. henleyi*		Kirby, 1890			
312	*H. benitensis*		Holland, 1890			
	PHYTALA Westwood, 1851					
314	*P. elais*	*catori*	Bethune-Baker, 1903			**NIMBA TOTAL**
	P. elais		Westwood, 1851			
	GERITOLA Libert, 1999					
315	*G. gerina*		Hewitson, 1878			**NIMBA TOTAL**
317	*G. albomaculata*		Bethune-Baker, 1903			**NIMBA TOTAL**
320	*G. virginea*		Bethune-Baker, 1904			
321	*G. subargentea*	*continua*	Libert, 1999	**BIOPA**		**NIMBA TOTAL**
	Geritola sp.					
	STEMPFFERIA Jackson, 1962					
322	*S. cercene*		Hewitson, 1873			**NIMBA TOTAL**
323	*S. baoule*		Libert, 1999			
324	*S. moyambina*		Bethune-Baker, 1903		**TOTAL**	**NIMBA TOTAL**
326	*S. dorothea*		Bethune-Baker, 1904			**NIMBA TOTAL**
330	*S. leonina*		Staudinger, 1888			**NIMBA TOTAL**
334	*S. ciconia*		Grose-Smith & Kirby, 1892		**TOTAL**	**NIMBA TOTAL**
335	*S. zelza*		Hewitson, 1873			
---	*S. cf zelza*					**NIMBA TOTAL**
340	*S. michelae*		Libert, 1999	**BIOPA**		**NIMBA TOTAL**
342	*S. kholifa*		Bethune--Baker, 1904			**NIMBA TOTAL**
344	*S. staudingeri*		Kirby, 1890			
---	*S. sp. n.*					**NIMBA TOTAL**
	AETHIOPANA Bethune-Baker, 1915					
346	*A. honorius*	*divisa*	Butler, 1901		**TOTAL**	**NIMBA TOTAL**
	EPITOLINA Aurivillius, 1895					
347	*E. dispar*		Kirby, 1887		**TOTAL**	**NIMBA TOTAL**
348	*E. melissa*		Druce, 1888		**TOTAL**	**NIMBA TOTAL**
349	*E. collinsi*		Libert, 2000			
350	*E. catori*		Bethune-Baker, 1904			

	NEAVEIA Druce, 1910					
352	*N. lamborni*		Druce, 1910			
	Subfamily Theclinae Swainson, 1830					
	Tribe Amblypodiini Doherty, 1886					
	MYRINA Fabricius, 1807					
354	*M. silenus*		Fabricius, 1775	**BIOPA**		**NIMBA TOTAL**
355	*M. subornata*		Lathy, 1903		**TOTAL**	**NIMBA TOTAL**
	Tribe Oxylidini Eliot, 1973					
	OXYLIDES Hübner, 1819					
356	*O. faunus*		Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Tribe Loxurini Swinhoe, 1910					
	DAPIDODIGMA Karsch, 1895					
359	*D. hymen*		Fabricius, 1775		**TOTAL**	**NIMBA TOTAL**
360	*D. demeter*		Clench, 1961			**NIMBA TOTAL**
	Tribe Aphnaeini Distant, 1884					
	APHNAEUS Hübner, 1819					
361	*A. orcas*		Drury, 1782		**TOTAL**	**NIMBA TOTAL**
362	*A. argyrocyclus*		Holland, 1890		**TOTAL**	**NIMBA TOTAL**
363	*A. asterius*		Plötz, 1880			
364	*A. brahami*		Lathy, 1903			
365	*A. jefferyi*		Hawker-Smith, 1928			
366	*A. charboneli*		Bouyer & Libert, 1996			
367	*A. gilloni*		Stempffer, 1966			
---	*A. mirabilis*		Sáfián & Collins, 2013		**TOTAL**	**NIMBA TOTAL**
---	*A. nimbaensis*		Sáfián & Libert, 2013		**TOTAL**	**NIMBA TOTAL**
	APHARITIS Riley, 1925					
368	*A. nilus*		Hewitson, 1865			
	SPINDASIS Wallengren, 1857					
369	*S. mozambica*		Bertolini, 1850			
370	*S. avriko*		Karsch, 1893			
371	*S. crustaria*		Holland, 1890			
372	*S. iza*		Hewitson, 1865		**TOTAL**	**NIMBA TOTAL**
373	*S. menelas*		Druce, 1907			
	ZERITIS Boisduval, 1836					
374	*Z. neriene*		Boisduval, 1836			
	AXIOCERSES Hübner, 1819					
375	*A. harpax*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
377	*A. amanga*		Westwood, 1881			
	LIPAPHNAEUS Aurivillius, 1916					
378	*L. leonina*		Sharpe, 1890		**TOTAL**	**NIMBA TOTAL**
	L. leonina	*ivoirensis*	Stempffer, 1966			

379	*L. aderna*		Plötz, 1880		
	PSEUDALETIS Druce, 1888				
380	*P. agrippina*		Druce, 1888		
381	*P. cf agrippina*				
383	*P. catori*		Bethune-Baker, 1926		
386	*P. subangulata*		Talbot, 1935		
387	*P. malangi*		Collins & Larsen, 1995		
388	*P. richardi*		Stempffer, 1953		
389	*P. batesi*		Druce, 1910		
390	*P. dardanella*		Riley, 1922		
391	*P. leonis*		Staudinger, 1888	**TOTAL**	**NIMBA TOTAL**
	P. jolyana				**NIMBA TOTAL**
	Tribe IOLAINI Riley, 1958				
	IOLAUS Hübner, 1819				
	Subgenus Iolaus Hübner, 1819				
392	*I. eurisus*		Cramer, 1779		**NIMBA TOTAL**
	Subgenus Iolaphilus Stempffer & Bennett, 1958				
393	*I. menas*		Druce, 1890		
395	*I. carolinae*		Collins & Larsen, 2000		
396	*I. alexanderi*		Warren-Gash, 2004		
397	*I. iulus*		Hewitson, 1869		**NIMBA TOTAL**
	Subgenus Argiolaus Druce, 1891				
398	*I. ismenias*		Klug, 1834		
399	*I. newporti*		Larsen, 1994		
400	*I. alcibiades*		Kirby, 1871	**TOTAL**	**NIMBA TOTAL**
401	*I. parasilanus*	*maesseni*	Stempffer & Bennett, 1958		**NIMBA TOTAL**
402	*I. paneperata*		Druce, 1890		**NIMBA TOTAL**
403	*I. lukabas*		Druce, 1890		**NIMBA TOTAL**
404	*I. mane*		Collins & Larsen, 2004		**NIMBA TOTAL**
405	*I. theodori*		Stempffer, 1970	**TOTAL**	**NIMBA TOTAL**
406	*I. likpe*		Collins & Larsen, 2004		
407	*I. calisto*		Westwood, 1851	**TOTAL**	**NIMBA TOTAL**
408	*I. laonides*		Aurivillius, 1898		**NIMBA TOTAL**
	Subgenus Tanuetheira Druce, 1891				
410	*I. timon*		Fabricius, 1787		**NIMBA TOTAL**
	Subgenus Epamera Druce, 1891				
411	*I. alienus*	*bicaudatus*	Aurivillius, 1905		
412	*I. sudanicus*		Aurivillius, 1905		
414	*I. scintillans*		Aurivillius, 1905		
415	*I. laon*		Hewitson, 1878		
417	*I. moyambina*		Stempffer & Bennett, 1959		**NIMBA TOTAL**

418	*I. banco*		Stempffer, 1966			
420	*I. leonis*		Riley, 1928			
421	*I. pollux*	*oberthueri*	Riley, 1929		**TOTAL**	**NIMBA TOTAL**
422	*I. djaloni*		Collins & Larsen, 1998			
424	*I. longicauda*	*haydoni*	Collins & Larsen, 2000		**TOTAL**	**NIMBA TOTAL**
425	*I. normani*	*meamui*	Collins & Larsen, 2005			
	I. normani		Larsen, 1986			
426	*I. sappirus*		Druce, 1902		**TOTAL**	**NIMBA TOTAL**
432	*I. fontainei*		Stempffer, 1956			**NIMBA TOTAL**
434	*I. aethria*		Karsch, 1893		**TOTAL**	**NIMBA TOTAL**
435	*I. farquharsoni*		Bethune-Baker, 1922			**NIMBA TOTAL**
436	*I. iasis*		Hewitson, 1865		**TOTAL**	**NIMBA TOTAL**
437	*I. maesa*		Hewitson, 1862			
	ETESIOLAUS Stempffer & Bennett, 1959					
439	*E. catori*		Bethune-Baker, 1904			
440	*E. kyabobo*		Larsen, 1996			
	STUGETA Druce, 1891					
441	*S. marmoreus*		Butler, 1866			
442	*S. occidentalis*		Stempffer & Bennett, 1958			
	Tribe Hypolycaenini Swinhoe, 1910					
	HYPOLYCAENA Felder, 1862					
443	*H. philippus*		Fabricius 1793			
444	*H. kadiskos*		Druce, 1890			
445	*H. liara*		Druce, 1890		**TOTAL**	**NIMBA TOTAL**
446	*H. lebona*		Hewitson, 1865			**NIMBA TOTAL**
447	*H. clenchi*		Larsen, 1997			
449	*H. scintillans*		Stempffer, 1957		**TOTAL**	**NIMBA TOTAL**
450	*H. dubia*		Aurivillius, 1895		**TOTAL**	**NIMBA TOTAL**
451	*H. kakumi*		Larsen, 1997			**NIMBA TOTAL**
452	*H. antifaunus*		Westwood, 1851	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
453	*H. hatita*		Hewitson, 1865		**TOTAL**	**NIMBA TOTAL**
454	*H. anara*		Larsen, 1986			
455	*H. nigra*		Bethune-Baker, 1914		**TOTAL**	**NIMBA TOTAL**
456	*H. condamini*		Stempffer, 1956			
	Tribe Deudorigini Doherty, 1887					
	PILODEUDORIX Druce, 1891					
457	*P. camerona*		Plötz, 1880		**TOTAL**	**NIMBA TOTAL**
458	*P. diyllus*		Hewitson, 1878		**TOTAL**	**NIMBA TOTAL**
460	*P. caerulea*		Druce, 1890			
461	*P. zela*		Hewitson, 1869		**TOTAL**	**NIMBA TOTAL**
462	*P. catori*		Bethune-Baker, 1903		**TOTAL**	**NIMBA TOTAL**

464	*P. hamidou*		Libert, 2004			
465	*P. mera*		Hewitson, 1873			
467	*P. otraeda*		Hewitson, 1863			
468	*P. leonina*		Bethune-Baker, 1904		**TOTAL**	**NIMBA TOTAL**
469	*P. virgata*		Druce, 1891		**TOTAL**	**NIMBA TOTAL**
473	*P. deritas*		Hewitson, 1874			
474	*P. aucta*		Karsch, 1895		**TOTAL**	**NIMBA TOTAL**
475	*P. pseudoderitas*		Stempffer, 1964			
476	*P. laticlavia*		Clench, 1965			
477	*P. aurivilliusi*		Stempffer, 1954		**TOTAL**	**NIMBA TOTAL**
478	*P. kiellandi*		Congdon & Collins, 1998			**NIMBA TOTAL**
479	*P. corruscans*	*kakumi*	Larsen, 1994			
480	*P. violetta*		Aurivillius, 1897		**TOTAL**	**NIMBA TOTAL**
481	*P. fumata*		Stempffer, 1954			
---	*Pilodeudorix intermedia*				**TOTAL**	**NIMBA TOTAL**
---	*Pilodeudorix putu*					**NIMBA TOTAL**
---	*Pilodeudorix mano*					**NIMBA TOTAL**
	PARADEUDORIX Libert, 2004					
484	*P. eleala*	*viridis*	Stempffer, 1964			
	P. eleala		Hewitson, 1865		**TOTAL**	**NIMBA TOTAL**
485	*P. petersi*		Stempffer & Bennett, 1956			**NIMBA TOTAL**
487	*P. moyambina*		Bethune-Baker, 1904			
	HYPOMYRINA Druce, 1891					
491	*H. mimetica*		Libert, 2004			
492	*H. nomion*		Staudinger, 1891		**TOTAL**	**NIMBA TOTAL**
	DEUDORIX Hewitson, 1863					
494	*D. antalus*		Hopffer, 1855			**NIMBA TOTAL**
495	*D. livia*		Klug, 1834			
	D. lorisona	*abriana*	Libert, 2004			
496	*D. lorisona*		Hewitson, 1862		**TOTAL**	**NIMBA TOTAL**
497	*D. cf. kayonza*		Stempffer, 1956			**NIMBA TOTAL**
498	*D. dinochares*		Grose-Smith, 1887			
499	*D. dinomenes*		Jackson, 1966			
500	*D. odana*		Druce, 1887		**TOTAL**	**NIMBA TOTAL**
501	*D. galathea*		Swainson, 1821	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
502	*D. caliginosa*		Lathy, 1903			**NIMBA TOTAL**
	CAPYS Hewitson, 1865					
506	*C. vorgasi*		Larsen & Collins, 2004			
	Subfamily Polyommatinae Swainson, 1827					
	Tribe Lycaenesthini Toxopeus, 1929					
	ANTHENE Doubleday, 1847					

507	*A. rubricinctus ssp.*		Holland, 1891	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
508	*A. ligures*		Hewitson, 1874			
510	*A. sylvanus*		Drury, 1773		**TOTAL**	**NIMBA TOTAL**
512	*A. liodes*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
513	*A. definita*		Butler, 1899			
514	*A. princeps*		Butler, 1876		**TOTAL**	**NIMBA TOTAL**
515	*A. starki*		Larsen, 2005			
516	*A. amarah*		Guérin-Méneville, 1847			**NIMBA TOTAL**
517	*A. lunulata*		Trimen, 1894		**TOTAL**	**NIMBA TOTAL**
518	*A. kikuyu*		Bethune-Baker, 1910			
519	*A. talboti*		Stempffer, 1936			
520	*A. wilsoni*		Talbot, 1935			
521	*A. levis*		Hewitson, 1878			
522	*A. irumu*		Stempffer, 1948		**TOTAL**	**NIMBA TOTAL**
523	*A. larydas*		Cramer, 1780	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
524	*A. crawshayi*		Butler, 1899		**TOTAL**	**NIMBA TOTAL**
525	*A. lachares*		Hewitson, 1878			**NIMBA TOTAL**
527	*A. lysicles*		Hewitson, 1874	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
530	*A. atewa*		Larsen & Collins, 1998			
531	*A. flavomaculatus*		Grose-Smith & Kirby, 1893			
532	*A. radiata*		Bethune-Baker, 1910			
534	*A. locuples*		Grose-Smith, 1898			
535	*A. mahota*		Grose-Smith, 1887			
537	*A. scintillula*	*aurea*	Bethune-Baker, 1910			**NIMBA TOTAL**
538	*A. helpsi*		Larsen, 1994			
539	*A. juba*		Fabricius, 1787		**TOTAL**	**NIMBA TOTAL**
	NEURYPEXINA Bethune-Baker, 1910					
540	*N. lyzanius*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
	NEURELLIPES Bethune-Baker, 1910					
542	*N. lusones*		Hewitson, 1874	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
543	*N. fulvimacula*		Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
---	*N. kampala incerta*				**TOTAL**	**NIMBA TOTAL**
544	*N. fulvus*		Stempffer, 1962			
545	*N. staudingeri*		Grose-Smith & Kirby, 1894			
546	*N. gemmifera*		Neave, 1910		**TOTAL**	**NIMBA TOTAL**
	TRICLEMA Karsch, 1893					
547	*T. rufoplagata*		Bethune-Baker, 1910			**NIMBA TOTAL**
548	*T. lucretilis*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
549	*T. lamias*		Hewitson, 1878		**TOTAL**	**NIMBA TOTAL**
550	*T. fasciatus*		Aurivillius, 1895			**NIMBA TOTAL**
551	*T. obscura*		Druce, 1910		**TOTAL**	

552	*T. inconspicua*		Druce, 1910			
554	*T. hades*		Bethune-Baker, 1910			
555	*T. phoenicis*		Karsch, 1893		**TOTAL**	**NIMBA TOTAL**
556	*T. nigeriae*		Aurivillius, 1905			**NIMBA TOTAL**
	Triclema sp.					
	CUPIDESTHES Aurivillius, 1895					
559	*C. salvatoris*		Belcastro & Larsen, 2005			
560	*C. jacksoni*		Stempffer, 1969		**TOTAL**	**NIMBA TOTAL**
561	*C. henryi*		Libert, 2010			
562	*C. lithas*		Druce, 1890		**TOTAL**	**NIMBA TOTAL**
564	*C. leonina*		Bethune-Baker, 1903			
564a	*C. pungusei*		Collins & Larsen, 2005			
	Tribe Polyommatini Swainson, 1827					
	PSEUDONACADUBA Stempffer, 1944					
565	*P. sichela*		Wallengren, 1857		**TOTAL**	**NIMBA TOTAL**
	LAMPIDES Hübner, 1819					
567	*L. boeticus*		Linnaeus, 1767	**BIOPA**		**NIMBA TOTAL**
	URANOTHAUMA Butler, 1895					
568	*U. falkensteini*		Dewitz, 1879	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
570	*U. belcastroi*		Larsen, 1997	**BIOPA**		**NIMBA TOTAL**
	PHLYARIA Karsch, 1895					
574	*P. cyara*	*stactalla*	Karsch, 1895	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	CACYREUS Butler, 1898					
575	*C. lingeus*		Stoll, 1782	**BIOPA**		**NIMBA TOTAL**
576	*C. virilis*		Stempffer, 1936			
577	*C. audeoudi*		Stempffer, 1936			
	LEPTOTES Scudder, 1876					
578	*L. pirithous*		Linnaeus, 1767		**TOTAL**	**NIMBA TOTAL**
579	*L. babaulti*		Stempffer, 1935			
580	*L. jeanneli*		Stempffer, 1935			
581	*L. brevidentatus*		Tite, 1958			
582	*L. pulchra*		Murray, 1874			
	TUXENTIUS Larsen, 1982					
583	*T. cretosus*	*nodieri*	Oberthür, 1883			
584	*T. carana*	*kontu*	Karsch, 1893		**TOTAL**	**NIMBA TOTAL**
	TARUCUS Moore, 1881					
586	*T. ungemachi*		Stempffer, 1942			
587	*T. theophrastus*		Fabricius, 1793			
588	*T. rosacea*		Austaut, 1885			
589	*T. kiki*		Larsen, 1976			
590	*T. legrasi*		Stempffer, 1948			

591	*T. balkanicus*		Freyer, 1843			
	ACTIZERA Chapman, 1910					
592	*A. lucida*		Trimen, 1883			
	EICOCHRYSOPS Bethune-Baker, 1924					
593	*E. hippocrates*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
594	*E. dudgeoni*		Riley, 1929			
	CUPIDOPSIS Karsch, 1895					
595	*C. jobates*	*mauritanica*	Riley, 1932			
596	*C. cissus*		Godart, 1824	**BIOPA**		**NIMBA TOTAL**
	EUCHRYSOPS Butler, 1900					
598	*E. albistriata*	*greenwoodi*	D'Abrera, 1980			
600	*E. reducta*		Hulstaert, 1924			
601	*E. malathana*		Boisduval, 1833	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
602	*E. nilotica*		Aurivillius, 1904			
604	*E. osiris*		Hopffer, 1855			
605	*E. barkeri*		Trimen, 1893			
606	*E. sahelianus*		Libert, 2001			
	LEPIDOCHRYSOPS Hedicke, 1923					
607	*L. victoriae*	*occidentalis*	Libert & Collins, 2001			
608	*L. parsimon*		Fabricius, 1775			**NIMBA TOTAL**
610	*L. labeensis*		Larsen & Warren-Gash, 2000			
611	*L. synchrematiza*		Bethune-Baker, 1923			**NIMBA TOTAL**
612	*L. polydialecta*		Bethune-Baker, 1923			
615	*L. quassi quassi*		Karsch, 1895			
	THERMONIPHAS Karsch, 1895					
617	*T. micylus*		Cramer, 1780	**BIOPA**		**NIMBA TOTAL**
	OBORONIA Karsch, 1893					

622	*O. punctatus*	Dewitz, 1879			**NIMBA TOTAL**
623	*O. liberiana*	Stempffer, 1950			
625	*O. guessfeldti*	Dewitz, 1879			
626	*O. ornata*	Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
	AZANUS Moore, 1881				
627	*A. ubaldus*	Cramer, 1782			
628	*A. jesous*	Guérin-Méneville, 1847			
629	*A. moriqua*	Wallengren, 1857			
630	*A. mirza*	Plötz, 1880	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
631	*A. natalensis*	Trimen, 1887			
632	*A. isis*	Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	CHILADES Moore, 1881				
633	*C. eleusis*	Demaison, 1888			
634	*C. trochylus*	Freyer, 1843			
	ZIZEERIA Chapman, 1910				
635	*Z. knysna*	Trimen, 1862			**NIMBA TOTAL**
	ZIZINA Chapman, 1910				

636	*Z. antanossa*		Mabille, 1877			**NIMBA TOTAL**
	ZIZULA Chapman, 1910					
637	*Z. hylax*		Fabricius, 1775		**TOTAL**	**NIMBA TOTAL**
	Family RIODINIDAE Grote, 1895					
	Subfamily Nemeobiinae Bates, 1868					
	ABISARA Felder & Felder, 1860					
638	*A. intermedia*		Aurivillius, 1895			
639	*A. tantalus*		Hewitson, 1861			
642	*A. gerontes*		Fabricius, 1781			
	Family NYMPHALIDAE Swainson, 1827					
	Subfamily Libytheinae Boisduval, 1833					
	LIBYTHEA Fabricius, 1807					
646	*L. labdaca*		Westwood, 1851	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Subfamily Danainae Boisduval, 1833					
	Tribe Danaini Boisduval, 1833					
	DANAUS Kluk, 1802					
647	*D. chrysippus*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	TIRUMALA Moore, 1880					
648	*T. petiverana*		Doubleday, 1847	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	AMAURIS Hübner, 1816					
650	*A. niavius*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
651	*A. tartarea*		Mabille, 1876	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
652	*A. hecate*		Butler, 1866			**NIMBA TOTAL**
653	*A. damocles*		Fabricius, 1793		**TOTAL**	**NIMBA TOTAL**
	Subfamily Satyrinae Boisduval, 1833					
	Tribe Melanitini Reuter, 1896					
	GNOPHODES Westwood, 1849					
656	*G. betsimena*	*parmeno*	Doubleday, 1849	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
657	*G. chelys*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	MELANITIS Fabricius, 1807					
658	*M. leda*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
659	*M. libya*		Distant, 1882	**BIOPA**		**NIMBA TOTAL**
660	*M. ansorgei*		Rothschild, 1904			
	Tribe Elymniini Herrich-Schäffer, 1864					
	ELYMNIOPSIS Fruhstorfer, 1907					
661	*E. bammakoo*		Westwood, 1851		**TOTAL**	**NIMBA TOTAL**
	BICYCLUS Kirby, 1871					
663	*B. xeneas*	*occidentalis*			**TOTAL**	**NIMBA TOTAL**
665	*B. evadne*		Cramer, 1779		**TOTAL**	**NIMBA TOTAL**
669	*B. ephorus*		Weymer, 1892	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
672	*B. italus*		Hewitson, 1865			

673	*B. zinebi*		Butler, 1869	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
674	*B. uniformis*		Bethune-Baker, 1908			
678	*B. procora*		Karsch, 1893		**TOTAL**	**NIMBA TOTAL**
679	*B. pavonis*		Butler, 1876			
680	*B. milyas*		Hewitson, 1864			
681	*B. trilophus*	*jacksoni*	Condamin, 1961			**NIMBA TOTAL**
683	*B. maesseni*		Condamin, 1971			**NIMBA TOTAL**
684	*B. larseni*		van de Weghe, 2009		**TOTAL**	**NIMBA TOTAL**
687	*B. taenias*		Hewitson, 1877	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
690	*B. vulgaris*		Butler, 1868	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
691	*B. dorothea*		Cramer, 1779	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
692	*B. sandace*		Hewitson, 1877		**TOTAL**	**NIMBA TOTAL**
693	*B. sambulos*	*unicolor*	Condamin, 1971		**TOTAL**	**NIMBA TOTAL**
694	*B. sangmelinae*		Condamin, 1963		**TOTAL**	**NIMBA TOTAL**
695	*B. mandanes*		Hewitson, 1873		**TOTAL**	**NIMBA TOTAL**
696	*B. auricruda*		Butler, 1868	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
697	*B. campa*		Karsch, 1893			
698	*B. angulosa*		Butler, 1868			**NIMBA TOTAL**
699	*B. sylvicolus*		Condamin, 1965			
700	*B. abnormis*		Dudgeon, 1909		**TOTAL**	**NIMBA TOTAL**
701	*B. safitza*		Hewitson, 1851	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
702	*B. funebris*		Guérin-Méneville, 1844	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
704	*B. dekeyseri*		Condamin, 1958		**TOTAL**	**NIMBA TOTAL**
705	*B. istaris*		Plötz, 1880		**TOTAL**	**NIMBA TOTAL**
707	*B. madetes*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
709	*B. martius*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	HALLELESIS Condamin, 1961					
712	*H. halyma*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	HENOTESIA Butler, 1879					
713	*H. elisi*		Karsch, 1893			
	HETEROPSIS Westwood, 1850					
714	*H. peitho*		Plötz, 1880	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Tribe Satyrini Boisduval, 1833					
	YPTHIMA Hübner, 1818					
715	*Y. asterope*		Klug, 1832			
716	*Y. condamini*	*nigeriae*	Kielland, 1982			
717	*Y. antennata*	*cornesi*	Kielland, 1982			
718	*Y. vuattouxi*		Kielland, 1982			
719	*Y. doleta*		Kirby, 1880		**TOTAL**	**NIMBA TOTAL**
720	*Y. lamto*		Kielland, 1982			
721	*Y. pupillaris*		Butler, 1888			

722	*Y. impura*		Elwes & Edwards, 1893			**NIMBA TOTAL**
	YPTHIMOMORPHA van Son, 1955					
724	*Y. itonia*		Hewitson, 1865			
	Subfamily Charaxinae Guenée, 1865					
	Tribe Charaxini Guenée, 1865					
	CHARAXES Ochsenheimer, 1816					
725	*C. varanes*	*vologeses*	Mabille, 1876	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
726	*C. fulvescens*	*senegala*	van Someren, 1975		**TOTAL**	**NIMBA TOTAL**
728	*C. candiope*		Godart, 1824	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
729	*C. protoclea*		Feisthamel, 1850	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
730	*C. boueti*		Feisthamel, 1850		**TOTAL**	**NIMBA TOTAL**
731	*C. cynthia*		Butler, 1866	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
732	*C. lucretius*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
733	*C. lactetinctus*		Karsch, 1892			
734	*C. epijasius*		Reiche, 1850			
735	*C. legeri*		Plantrou, 1978			
736	*C. castor*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
737	*C. brutus*		Cramer, 1779	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
738	*C. pollux*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	C. eudoxus	*goubandana*	Nicat, 2002			
740	*C. eudoxus*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
741	*C. tiridates*		Cramer, 1777	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
742	*C. bipunctatus*		Rothschild, 1894			
743	*C. numenes*		Hewitson, 1859	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
744	*C. smaragdalis*	*butleri*	Rothschild, 1900	**BIOPA**		**NIMBA TOTAL**
745	*C. imperialis*		Butler, 1874	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
746	*C. ameliae*	*doumeti*	Henning, 1989	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
747	*C. pythodoris*	*davidi*	Plantrou, 1973			
748	*C. hadrianus*		Ward, 1871		**TOTAL**	**NIMBA TOTAL**
750	*C. nobilis*	*claudei*	le Moult, 1933			**NIMBA TOTAL**
752	*C. fournierae*	*jolybouyeri*	Vingerhoedt, 1998			
753	*C. zingha*		Stoll, 1780	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
754	*C. etesipe*		Godart, 1824	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
755	*C. achaemenes*	*atlantica*	van Someren, 1970	**BIOPA**		**NIMBA TOTAL**
756	*C. eupale*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
757	*C. subornatus*	*couilloudi*	Plantrou, 1976	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
758	*C. anticlea*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
759	*C. hildebrandti*	*gillesi*	Plantrou, 1973			**NIMBA TOTAL**
760	*C. etheocles*		Cramer, 1777		**TOTAL**	**NIMBA TOTAL**
762	*C. petersi*		van Someren, 1969		**TOTAL**	**NIMBA TOTAL**
763	*C. angelae*		Minig, 1975			

765	*C. bocqueti*		Minig, 1975			
766	*C. dreuxi*		Bouche & Minig, 1977			
767	*C. virilis*		van Som. & Jackson, 1952		**TOTAL**	**NIMBA TOTAL**
768	*C. cedreatis*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
769	*C. plantroui*		Minig, 1975			
770	*C. viola*		Butler, 1866			**NIMBA TOTAL**
771	*C. northcotti*		Rothschild, 1899			
772	*C. pleione*		Godart, 1824	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
773	*C. paphianus*	*falcata*	Butler, 1872	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
774	*C. nichetes*	*bouchei*	Grose-Smith, 1883	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	C. nichetes	*leopardinus*	Plantrou, 1974			
775	*C. porthos*	*gallayi*	Grose-Smith, 1883			**NIMBA TOTAL**
776	*C. zelica*		Butler, 1869			**NIMBA TOTAL**
777	*C. lycurgus*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
778	*C. mycerina*		Godart, 1824			**NIMBA TOTAL**
779	*C. doubledayi*		Aurivillius, 1898			
	Tribe Euxanthini Rydon, 1971					
	EUXANTHE Hübner, 1819					
780	*E. eurinome*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Tribe Pallini Rydon, 1971					
	PALLA Hübner, 1819					
783	*P. violinitens*		Crowley, 1890	**BIOPA**		**NIMBA TOTAL**
784	*P. decius*		Cramer, 1777	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
785	*P. ussheri*		Butler, 1870	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
786	*P. publius*		Staudinger, 1892	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Subfamily APATURINAE Boisduval, 1840					
	APATUROPSIS Aurivillius, 1898					
786a	*A. cleochares*		Hewitson, 1873			
	Subfamily Nymphalinae Swainson, 1827					
	Tribal status uncertain					
	KALLIMOIDES Shirôzu & Nakanishi, 1984					
787	*K. rumia*		Doubleday, 1849	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	VANESSULA Dewitz, 1887					
788	*V. milca*	*angustifascia*		**BIOPA**		**NIMBA TOTAL**
	Tribe Nymphalini Swainson, 1827					
	ANTANARTIA Rothschild & Jordan, 1903					
789	*A. delius*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	VANESSA Fabricius, 1807					
791	*V. cardui*		Linnaeus, 1758	**BIOPA**		**NIMBA TOTAL**
	Tribe Junoniini Reuter, 1896					
	PRECIS Hübner, 1819					

792	*P. octavia*		Cramer, 1777	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
793	*P. antilope*		Feisthamel, 1850			
794	*P. frobeniusi*		Strand, 1909			
795	*P. coelestina*		Dewitz, 1879			
796	*P. ceryne*	*ceruana*	Rothschild & Jordan, 1903			
797	*P. pelarga*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
798	*P. sinuata*		Plötz, 1880	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
799	*P. milonia*				**TOTAL**	**NIMBA TOTAL**
	HYPOLIMNAS Hübner, 1819					
801	*H. misippus*		Linnaeus, 1764	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
802	*H. anthedon*		Doubleday, 1845	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
803	*H. dinarcha*		Hewitson, 1865			**NIMBA TOTAL**
805	*H. aubergeri*		Hecq, 1987			**NIMBA TOTAL**
806	*H. salmacis*		Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	SALAMIS Boisduval, 1833					
808	*S. cacta*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	PROTOGONIOMORPHA Wallengren, 1857					
809	*P. cytora*		Doubleday, 1847	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
811	*P. parhassus*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
812	*P. anacardii*		Linnaeus, 1758			
	JUNONIA Hübner, 1819					
813	*J. orithya*	*madagascariensis*				**NIMBA TOTAL**
814	*J. oenone*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
815	*J. hierta*	*cebrene*	Trimen, 1870	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
816	*J. cymodoce*		Cramer, 1777			
817	*J. westermanni*		Westwood, 1870			
818	*J. hadrope*		Doubleday, 1847			
819	*J. sophia*		Fabricius,1793		**TOTAL**	**NIMBA TOTAL**
820	*J. stygia*		Aurivillius, 1894	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
822	*J. chorimene*		Guérin-Méneville, 1844		**TOTAL**	**NIMBA TOTAL**
823	*J. terea*		Drury, 1773		**TOTAL**	**NIMBA TOTAL**
	CATACROPTERA Karsch, 1894					
824	*C. cloanthe*	*ligata*	Rothschild & Jordan, 1903	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Subfamily Cyrestinae Guenée, 1865					
	Tribe Cyrestini Guenée, 1865					
	CYRESTIS Boisduval, 1832					
825	*C. camillus*		Fabricius, 1781		**TOTAL**	**NIMBA TOTAL**
	Subfamily Biblidinae Boisduval, 1833					
	Tribe Eurytelini Doubleday, 1845					
	BYBLIA Hübner, 1819					
826	*B. anvatara*	*crameri*	Aurivillius, 1894	**BIOPA**	**TOTAL**	**NIMBA TOTAL**

827	*B. ilithyia*		Drury, 1773			
	MESOXANTHA Aurivillius, 1898					
828	*M. ethosea*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	M. liberiana					**NIMBA TOTAL**
	ARIADNE Horsfield, 1829					
829	*A. enotrea*		Cramer, 1779		**TOTAL**	**NIMBA TOTAL**
830	*A. albifascia*		Joicey & Talbot, 1921			**NIMBA TOTAL**
	NEPTIDOPSIS Aurivillius, 1898					
833	*N. ophione*		Cramer, 1777	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	EURYTELA Boisduval, 1833					
834	*E. dryope*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
836	*E. hiarbas*		Drury, 1782		**TOTAL**	**NIMBA TOTAL**
	Tribe Epicaliini Guenée, 1865					
	SEVENIA Koçak, 1996					
837	*S. occidentalium*		Mabille, 1876	**BIOPA**		**NIMBA TOTAL**
838	*S. boisduvali*	*omissa*	Rothschild, 1918		**TOTAL**	**NIMBA TOTAL**
839	*S. umbrina*		Karsch, 1892			
	Subfamily Limenitidinae Behr, 1864					
	Tribe Limenitidini Behr, 1864					
	HARMA Doubleday, 1848					
843	*H. theobene*		Doubleday, 1848	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	CYMOTHOE Hübner, 1819					
846	*C. fumana*		Westwood, 1850		**TOTAL**	**NIMBA TOTAL**
851	*C. egesta*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
853	*C. lurida*		Butler, 1871			
857	*C. adela*		Staudinger, 1890			
858	*C. aubergeri*		Plantrou, 1977			
859	*C. herminia*	*gongoa*	Fox, 1965		**TOTAL**	**NIMBA TOTAL**
860	*C. weymeri*	*mulatta*	Suffert, 1904		**TOTAL**	**NIMBA TOTAL**
863	*C. druryi*		van Velzen and Larsen, 2009	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
866	*C. althea*		Cramer, 1776			
868	*C. jodutta*		Ward, 1850		**TOTAL**	**NIMBA TOTAL**
870	*C. hartigi*		Belcastro, 1990		**TOTAL**	**NIMBA TOTAL**
	C. hartigi	*vanessae*	Warren-Gash, 2004			
872	*C. coccinata*		Hewitson, 1874			
873	*C. mabillei*		Overlaet, 1944		**TOTAL**	**NIMBA TOTAL**
878	*C. sangaris*		Godart, 1824	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
878a	*C. cf. sangaris*					
	PSEUDONEPTIS Snellen, 1882					
879	*P. bugandensis*	*ianthe*	Hemming, 1964	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	PSEUDACRAEA Westwood, 1850					

880	*P. eurytus*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
884	*P. boisduvalii*		Doubleday, 1845	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
887	*P. lucretia*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
888	*P. warburgi*		Aurivillius, 1892	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
889	*P. hostilia*		Drury, 1782		**TOTAL**	**NIMBA TOTAL**
900	*P. semire*		Cramer, 1779	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	NEPTIS Fabricius, 1807					
901	*N. nemetes*		Hewitson, 1868	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
903	*N. metella*		Doubleday, 1848	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
905	*N. serena*		Overlaet, 1955			**NIMBA TOTAL**
906	*N. kiriakoffi*		Overlaet, 1955			
907	*N. morosa*		Overlaet, 1955			**NIMBA TOTAL**
908	*N. loma*		Condamin, 1971		**TOTAL**	**NIMBA TOTAL**
909	*N.constantiae*					**NIMBA TOTAL**
910	*N. angusta*		Condamin, 1966			**NIMBA TOTAL**
911	*N. alta*		Overlaet, 1955		**TOTAL**	**NIMBA TOTAL**
912	*N. seeldrayersi*		Aurivillius, 1895			
913	*N. puella*		Aurivillius, 1894			**NIMBA TOTAL**
914	*N. conspicua*		Neave, 1904		**TOTAL**	**NIMBA TOTAL**
915	*N. najo*		Karsch, 1893			**NIMBA TOTAL**
916	*N. metanira*		Holland, 1892			
917	*N.* cf. *continuata*				**TOTAL**	**NIMBA TOTAL**
918	*N. nysiades*		Hewitson, 1868		**TOTAL**	**NIMBA TOTAL**
---	*N. nigra*		Pierre-Baltus, 2007		**TOTAL**	**NIMBA TOTAL**
---	*N. stellata*		Pierre-Baltus, 2007			
---	*N. viridis*					**NIMBA TOTAL**
---	*N. lamtoensis*					**NIMBA TOTAL**
---	*N. rosa*					**NIMBA TOTAL**
---	*N. amieti*					**NIMBA TOTAL**
921	*N. nicomedes*		Hewitson, 1874			
922	*N. quintilla*		Mabille, 1890	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
926	*N. paula*		Staudinger, 1896	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
927	*N. strigata*		Aurivillius, 1894			**NIMBA TOTAL**
929	*N. nicoteles*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**
930	*N. nicobule*		Holland, 1892		**TOTAL**	**NIMBA TOTAL**
931	*N. mixophyes*		Holland, 1892			
933	*N. nebrodes*		Hewitson, 1874			
934	*N. trigonophora*	*melicertula*	Strand, 1912		**TOTAL**	**NIMBA TOTAL**
935	*N. vindo*		Pierre-Baltus, 1978			
936	*N. agouale*		Pierre-Baltus, 1978		**TOTAL**	**NIMBA TOTAL**
937	*N. melicerta*		Drury, 1773			

938	*N. troundi*		Pierre-Baltus, 1978			
	Tribe Adoliadini Doubleday, 1845					
	CATUNA Kirby, 1871					
941	*C. crithea*		Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
942	*C. niji*		Fox, 1965	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
943	*C. oberthueri*		Karsch, 1894		**TOTAL**	**NIMBA TOTAL**
944	*C. angustatum*		Felder & Felder, 1867	**BIOPA**		**NIMBA TOTAL**
	EURYPHURA Staudinger, 1891					
946	*E. togoensis*		Suffert, 1904		**TOTAL**	**NIMBA TOTAL**
948	*E. chalcis*		Felder & Felder, 1860	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	EURYPHURANA Hecq, 1992					
950	*E. nobilis*		Staudinger, 1891			
	HAMANUMIDA Hübner, 1819					
951	*H. daedalus*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	ATERICA Boisduval, 1833					
953	*A. galene*		Brown, 1776	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	CYNANDRA Schatz, 1887					
954	*C. opis*		Drury, 1773	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	EURIPHENE Boisduval, 1847					
959	*E. incerta*		Aurivillius, 1912			
960	*E. barombina*		Aurivillius, 1894			
961	*E. veronica*		Stoll, 1870		**TOTAL**	**NIMBA TOTAL**
964	*E. grosesmithi*	*muehlenbergi*	Hecq, 1995			
968	*E. simplex*		Staudinger, 1891		**TOTAL**	**NIMBA TOTAL**
974	*E. amicia*	*gola*	Fox, 1965		**TOTAL**	**NIMBA TOTAL**
	E. amicia		Hewitson, 1871			
976	*E. aridatha*	*feronia*	Staudinger, 1891		**TOTAL**	**NIMBA TOTAL**
	E. aridatha	*transgressa*	Hecq, 1994			
---	*E. taigola*		Sáfián & Warren-Gash, 2010		**TOTAL**	**NIMBA TOTAL**
978	*E. coerulea*		Boisduval, 1847		**TOTAL**	**NIMBA TOTAL**
982	*E. lomaensis*		Belcastro, 1986		**TOTAL**	**NIMBA TOTAL**
985	*E. ernestibaumanni*		Karsch, 1895			
986	*E. gambiae*		Feisthamel, 1850			
	E. gambiae	*vera*	Hecq, 2002	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
987	*E. ampedusa*		Hewitson, 1866	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
988	*E. leonis*		Aurivillius, 1898		**TOTAL**	**NIMBA TOTAL**
989	*E. atossa*		Hewitson, 1865		**TOTAL**	**NIMBA TOTAL**
990	*E. doriclea*		Drury, 1782		**TOTAL**	**NIMBA TOTAL**
	BEBEARIA Hemming, 1960					
994	*B. lucayensis*		Hecq, 1996			
995	*B. tentyris*		Hewitson, 1866			

996	*B. osyris*		Schultze, 1920		**TOTAL**	**NIMBA TOTAL**
997	*B. dallastai*		Hecq, 1994			
998	*B. carshena*		Hewitson, 1871	**BIOPA**		**NIMBA TOTAL**
999	*B. absolon*		Fabricius, 1793			**NIMBA TOTAL**
1001	*B. zonara*		Butler, 1871			
1002	*B. mandinga*		Felder & Felder, 1860			**NIMBA TOTAL**
1003	*B. oxione*		Hewitson, 1866	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1004	*B. abesa*		Hewitson, 1869			
1006	*B. barce*		Doubleday, 1847		**TOTAL**	**NIMBA TOTAL**
1008	*B. mardania*		Fabricius, 1793		**TOTAL**	**NIMBA TOTAL**
1011	*B. cocalia*		Fabricius, 1793		**TOTAL**	**NIMBA TOTAL**
1012	*B. paludicola*	*blandi*	Holmes, 2001			
1013	*B. senegalensis*		Herrich-Schäffer, 1858			
1014	*B. sophus*	*phreone*	Feisthamel, 1850			
	B. sophus		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1017	*B. arcadius*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1021	*B. laetitia*		Plötz, 1880		**TOTAL**	**NIMBA TOTAL**
1027	*B. phantasina*	*ultima*	Hecq, 1990			
	B. phantasina		Staudinger, 1891		**TOTAL**	**NIMBA TOTAL**
1029	*B. demetra*		Godart, 1824		**TOTAL**	**NIMBA TOTAL**
	B. demetra	*obsolescens*	Talbot, 1928			
1030	*B. warrengashi*		Hecq, 2000			
1031	*B. inepta*		Hecq, 2001			**NIMBA TOTAL**
1033	*B. maledicta*		Strand, 1912		**TOTAL**	**NIMBA TOTAL**
1035	*B. ashantina*		Dudgeon, 1913			
1037	*B. cutteri*	*harleyi*	Fox, 1968			
	B. cutteri		Hewitson, 1865			**NIMBA TOTAL**
	EUPHAEDRA Hübner, 1819					
	Subgenus Proteuphaedra Hecq, 1976					
1042	*E. aubergeri*		Hecq, 1977			**NIMBA TOTAL**
	Subgenus Medoniana Hecq, 1976					
1046	*E. medon*	*pholus*	van der Hoeven, 1840			
	E. medon		Linnaeus, 1763	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Subgenus Gausapia Hecq, 1976					
1047	*E. gausape*		Butler, 1866	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1047a	*E. mariaechristinae*		Hecq & Joly, 2003			
1048	*E. judith*		Weymer, 1892			
1049	*E. melpomene*		Hecq, 1981		**TOTAL**	**NIMBA TOTAL**
1051	*E. hastiri*		Hecq, 1981			
1052	*E. plantroui*		Hecq, 1981			
	Subgenus Xypetana Hecq, 1976					

1055	*E. xypete*		Hewitson, 1865	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1057	*E. hebes*		Hecq, 1980		**TOTAL**	**NIMBA TOTAL**
1059	*E. diffusa*	*albocoerulea*	Hecq, 1976			**NIMBA TOTAL**
1060	*E. crossei*	*akani*	Hecq & Joly, 2004			
1061	*E. crockeri*		Butler, 1869	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	E. crockeri	*umbratilis*	Hecq, 1987			
	Subgenus Radia Hecq, 1976					
1062	*E. eusemoides*		Grose-Smith & Kirby, 1889			**NIMBA TOTAL**
	Subgenus Euphaedra Hübner, 1819					
1064	*E. cyparissa*	*nimbina*	Cramer, 1775			**NIMBA TOTAL**
	E. cyparissa	*tai*	Hecq, 1986			
1065	*E. sarcoptera*	*ferrea*	Butler, 1871	**BIOPA**		**NIMBA TOTAL**
	E. sarcoptera	*styx*	Larsen & Warren-Gash, 2004			
	Subgenus Euphaedrana Hecq, 1976					
1066	*E. themis*	*composita*	Hecq, 1982			
	E. themis		Hübner, 1807	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1067	*E. laboureana*		de Toulgoët, 1957			
	E. laboureana	*eburnensis*	Hecq, 1979	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1071	*E. minuta*		Hecq, 1982			**NIMBA TOTAL**
1072	*E. modesta*		Hecq, 1982			
1073	*E. laguerrei*		Hecq, 1979			
1074	*E. dubreka*		Collins & Larsen, 2005			
1075	*E. janetta*		Butler, 1871	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1076	*E. splendens*	*ghanaensis*	Hecq & Joly, 2004			
1078	*E. vetusta*		Butler, 1871			**NIMBA TOTAL**
1079	*E. aberrans*		Staudinger, 1891			
1083	*E. ceres*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	E. ceres	*lutescens*	Hecq, 1979			
1084	*E. afzelii*		Felder & Felder, 1867			
1085	*E. phaethusa*	*aurea*	Hecq, 1983			
	E. phaethusa		Butler, 1866		**TOTAL**	**NIMBA TOTAL**
1086	*E. inanum*		Butler, 1873			
1087	*E. villiersi*		Condamin, 1964			
1088	*E. delera*		Hecq, 1989			
1096	*E. ignota*		Hecq, 1996			
1097	*E. tenebrosa*		Hecq, 1983			**NIMBA TOTAL**
1103	*E. velutina*		Hecq, 1997			
1106	*E. francina*		Godart, 1824	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	E. francina	*exuberans*	Collins & Larsen, 2005			
1108	*E. eleus*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**

1112	*E. zampa*		Westwood, 1850	**BIOPA**		**NIMBA TOTAL**
1115	*E. edwardsii*		van der Hoeven, 1845	**BIOPA**		**NIMBA TOTAL**
1116	*E. ruspina*		Hewitson, 1865			
1117	*E. perseis*		Drury, 1773		**TOTAL**	**NIMBA TOTAL**
1118	*E. harpalyce*		Cramer, 1777		**TOTAL**	**NIMBA TOTAL**
1119	*E. eupalus*		Fabricius, 1781	**BIOPA**		**NIMBA TOTAL**
	EUPTERA Staudinger, 1891					
1121	*E. crowleyi*		Kirby, 1889			
1122	*E. elabontas*		Hewitson, 1871			
1123	*E. dorothea*		Bethune-Baker, 1904			
	E. dorothea	*warrengashi*	Libert, 2002			
1124	*E. zowa*		Fox, 1965			
1125	*E. pluto*	*occidentalis*	Chovet, 1998			
1132	*E. plantroui*		Chovet & Collins, 1998			
	PSEUDATHYMA Staudinger, 1891					
1133	*P. falcata*		Jackson, 1969			
1134	*P. sibyllina*		Staudinger, 1890		**TOTAL**	**NIMBA TOTAL**
1137	*P. neptidina*		Karsch, 1894			
1138	*P. martini*		Collins, 2002			
	Subfamily Heliconiinae Swainson, 1822					
	Tribe Acraeini Boisduval, 1833					
	ACRAEA Fabricius, 1807					
	Subgenus Actinote Hübner, 1816					
1139	*A. perenna*		Doubleday, 1847	**BIOPA**		**NIMBA TOTAL**
1144	*A. circeis*		Drury, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1147	*A. translucida*		Eltringham, 1912			
1148	*A. peneleos*		Ward, 1871	**BIOPA**		**NIMBA TOTAL**
1149	*A. parrhasia*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1150	*A. orina*		Hewitson, 1874	**BIOPA**		**NIMBA TOTAL**
1152	*A. pharsalus*		Ward, 1871	**BIOPA**		**NIMBA TOTAL**
1153	*A. encedon*		Linnaeus, 1758		**TOTAL**	**NIMBA TOTAL**
1154	*A. encedana*		Pierre, 1976	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1155	*A. alciope*		Hewitson, 1852	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1156	*A. aurivillii*		Staudinger, 1896			
1157	*A. jodutta*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1158	*A. lycoa*		Godart, 1819	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1159	*A. serena*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1160	*A. acerata*		Hewitson, 1874			**NIMBA TOTAL**
1161	*A. pseudepaea*		Dudgeon, 1909		**TOTAL**	**NIMBA TOTAL**
1165	*A. bonasia*		Fabricius, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1167	*A. orestia*		Hewitson, 1874		**TOTAL**	**NIMBA TOTAL**

1168	*A. polis*		Pierre, 1999	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1169	*A. vesperalis*		Grose-Smith, 1890			
	Subgenus Acraea Fabricius, 1807					
1172	*A. kraka*	*kibi*	Usher, 1986			
1173	*A. rogersi*			**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1174	*A. abdera*	*eginopsis*	Aurivillius, 1898			
1176	*A. egina*		Cramer, 1775	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1178	*A. pseudegina*		Westwood, 1852		**TOTAL**	**NIMBA TOTAL**
1179	*A. caecilia*		Fabricius, 1781	**BIOPA**		**NIMBA TOTAL**
1180	*A. zetes*		Linnaeus, 1758	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1181	*A. endoscota*		le Doux, 1928	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1182	*A. leucographa*		Ribbe, 1889			
1184	*A. quirina*		Fabricius, 1781	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1185	*A. neobule*		Doubleday, 1847		**TOTAL**	**NIMBA TOTAL**
1186	*A. eugenia*		Karsch, 1893			
1187	*A. camaena*		Drury, 1773		**TOTAL**	**NIMBA TOTAL**
1188	*A. vestalis*		Felder & Felder, 1865	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1189	*A. macaria*		Fabricius, 1793	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1190	*A. umbra*	*carpenteri*	le Doux, 1937		**TOTAL**	**NIMBA TOTAL**
	A. umbra		Drury, 1782			
1191	*A. alcinoe*		Felder & Felder, 1865	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1192	*A. consanguinea*	*sartina*	Jordan, 1910			
1196	*A. epaea*		Cramer, 1779	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Tribe Vagrantini Pinratana & Eliot, 1996					
	LACHNOPTERA Doubleday, 1847					
1199	*L. anticlia*		Hübner, 1819	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	PHALANTA Horsfield, 1829					
1200	*P. phalantha*	*aethiopica*	Rothschild & Jordan, 1903			**NIMBA TOTAL**
1201	*P. eurytis*		Doubleday, 1847	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	Superfamily HESPERIOIDEA Latreille, 1809					
	Family HESPERIIDAE Latreille, 1809					
	Subfamily Coeliadinae Evans, 1937					
	COELIADES Hübner, 1818					
1203	*C. chalybe*		Westwood, 1852		**TOTAL**	**NIMBA TOTAL**
1204	*C. bixana*		Evans, 1940			
1205	*C. aeschylus*		Plötz, 1884			
1206	*C. libeon*		Druce, 1875			
1207	*C. forestan*		Stoll, 1782	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1208	*C. pisistratus*		Fabricius, 1793		**TOTAL**	**NIMBA TOTAL**
1209	*C. hanno*		Plötz, 1879		**TOTAL**	**NIMBA TOTAL**
	PYRRHIADES Lindsey & Miller, 1965					

1210	*P. lucagus*		Cramer, 1777			
	PYRRHOCHALCIA Mabille, 1904					
1211	*P. iphis*		Drury, 1773			
	Subfamily Pyrginae Burmeister, 1878					
	LOXOLEXIS Karsch, 1895					
1212	*L. holocausta*		Mabille, 1891			
1213	*L. dimidia*		Holland, 1896			
1214	*L. hollandi*		Druce, 1909			
	KATREUS Watson, 1893					
1215	*K. johnstonii*		Butler, 1888	**BIOPA**		**NIMBA TOTAL**
	CELAENORRHINUS Hübner, 1819					
1216	*C. rutilans*		Mabille, 1877		**TOTAL**	**NIMBA TOTAL**
1217	*C. sagamase*		Collins & Larsen, 2005			
1219	*C. leona*		Berger, 1975	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1222	*C. nimba*		Collins & Larsen, 2000			
1223	*C. ankasa*		Larsen & Miller, 2005			
1224	*C. galenus*		Fabricius, 1793	**BIOPA**		**NIMBA TOTAL**
1225	*C. cf galenus*					**NIMBA TOTAL**
1226	*C. meditrina*		Hewitson, 1877			
1227	*C. ovalis*		Evans, 1937		**TOTAL**	**NIMBA TOTAL**
1230	*C. proxima*	*maesseni*	Berger, 1976	**BIOPA**		**NIMBA TOTAL**
1231	*C. plagiatus*		Berger, 1976	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
---	*C. sagamase*					
	TAGIADES Hübner, 1819					
1232	*T. flesus*		Fabricius, 1781	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	EAGRIS Guenée, 1863					
1233	*E. denuba*		Plötz, 1879	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1234	*E. decastigma*		Mabille, 1891			**NIMBA TOTAL**
1235	*E. tigris*	*liberti*	Larsen & Collins, 2005			
1236	*E. subalbida*		Holland, 1893			
1237	*E. hereus*	*quaterna*	Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
1238	*E. tetrastigma*	*subolivescens*	Holland, 1892			**NIMBA TOTAL**
	CALLEAGRIS Aurivillius, 1925					
1239	*C. lacteus*	*dannatti*	Mabille, 1877		**TOTAL**	**NIMBA TOTAL**
1240	*C. landbecki*		Druce, 1910		**TOTAL**	**NIMBA TOTAL**
	PROCAMPTA Holland, 1892					
1241	*P. rara*		Holland, 1892		**TOTAL**	**NIMBA TOTAL**
	ERETIS Mabille, 1891					
1242	*E. lugens*		Rogenhofer, 1891			**NIMBA TOTAL**
1243	*E. plistonicus*		Plötz, 1879		**TOTAL**	**NIMBA TOTAL**
1244	*E. melania*		Mabille, 1891			**NIMBA TOTAL**

	SARANGESA Moore, 1881					
1245	*S. laelius*		Mabille, 1877			
1246	*S. phidyle*		Walker, 1870			
1247	*S. tertullianus*		Fabricius, 1793		**TOTAL**	**NIMBA TOTAL**
1248	*S. majorella*		Mabille, 1891			
1249	*S. tricerata*		Mabille, 1891		**TOTAL**	**NIMBA TOTAL**
1250	*S. thecla*		Plötz, 1879		**TOTAL**	**NIMBA TOTAL**
1251	*S. bouvieri*		Mabille, 1877		**TOTAL**	**NIMBA TOTAL**
1252	*S. brigida*		Plötz, 1879			**NIMBA TOTAL**
	CAPRONA Wallengren, 1857					
1253	*C. adelica*		Karsch, 1892			
1254	*C. pillaana*		Wallengren, 1857			
	NETROBALANE Mabille, 1903					
1255	*N. canopus*		Trimen, 1864			
	ABANTIS Hopffer, 1855					
1256	*A. bismarcki*		Karsch, 1892			
1257	*A. leucogaster*		Mabille, 1890			
1258	*A. nigeriana*		Butler, 1901			
1259	*A. pseudonigeriana*		Usher, 1984			
1261	*A. lucretia*		Druce, 1909		**TOTAL**	**NIMBA TOTAL**
1262	*A. elegantula*		Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
1263	*A. ja*	*usheri*	Collins & Larsen, 2008			
1263a	*A. tanobia*		Collins & Larsen, 2005			**NIMBA TOTAL**
	SPIALIA Swinhoe, 1912					
1265	*S. spio*		Linnaeus, 1767			
1266	*S. doris*	*daphne*	Evans, 1949			
1267	*S. diomus*		Hopffer, 1855			
1268	*S. dromus*		Plötz, 1884			
1269	*S. ploetzi*	*occidentalis*	de Jong, 1977	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
	GOMALIA Moore, 1879					
1270	*G. elma*	*elma*	Trimen, 1862			
	Subfamily Heteropterinae Aurivillius, 1925					
	METISELLA Hemming, 1934					
1274	*M. tsadicus*		Aurivillius, 1905			
	Subfamily Hesperiinae Latreille, 1809					
	ASTICTOPTERUS Felder & Felder, 1860					
1276	*A. anomoeus*		Plötz, 1879			**NIMBA TOTAL**
1277	*A. abjecta*		Snellen, 1872			**NIMBA TOTAL**
	PROSOPALPUS Holland, 1896					
1278	*P. debilis*		Plötz, 1879			
1279	*P. styla*		Evans, 1937			**NIMBA TOTAL**

1280	*P. saga*		Evans, 1937			
	KEDESTES Watson, 1893					
1281	*K. protensa*		Butler, 1901			
	GORGYRA Holland, 1896					
1284	*G. aretina*		Hewitson, 1878			
1285	*G. heterochrus*		Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
1286	*G. mocquerysii*		Holland, 1896		**TOTAL**	**NIMBA TOTAL**
1287	*G. aburae*		Plötz, 1879			
1289	*G. bina*		Evans, 1937		**TOTAL**	**NIMBA TOTAL**
1290	*G. sola*		Evans, 1937			
1291	*G. afikpo*		Druce, 1909			
1292	*G. diversata*		Evans 1937			
1293	*G. bule*		Miller, 1964			
1294	*G. minima*		Holland, 1896			
1295	*G. sara*		Evans, 1937		**TOTAL**	**NIMBA TOTAL**
1296	*G. subfacatus*		Mabille, 1889		**TOTAL**	**NIMBA TOTAL**
1297	*G. pali*		Evans, 1937		**TOTAL**	**NIMBA TOTAL**
	GYROGRA Lindsey & Miller, 1965					
1299	*G. subnotata*		Holland, 1894		**TOTAL**	**NIMBA TOTAL**
	CERATRICHIA Butler, 1870					
1301	*C. phocion*		Fabricius, 1781		**TOTAL**	**NIMBA TOTAL**
1302	*C. semilutea*		Mabille, 1891			**NIMBA TOTAL**
1303	*C. clara*		Evans, 1937			
1305	*C. crowleyi*		Riley, 1925		**TOTAL**	**NIMBA TOTAL**
1306	*C. nothus*		Fabricius, 1787		**TOTAL**	**NIMBA TOTAL**
	C. nothus	*enantia*	Karsch, 1893			
1307	*C. argyrosticta*		Plötz, 1879			
1308	*C. maesseni*		Miller, 1971		**TOTAL**	**NIMBA TOTAL**
	TENIORHINUS Holland, 1892					
1309	*T. watsoni*		Holland, 1892		**TOTAL**	**NIMBA TOTAL**
1310	*T. ignita*		Mabille, 1877			
	PARDALEODES Butler, 1870					
1311	*P. incerta*	*murcia*	Plötz, 1883	**BIOPA**	**TOTAL**	**NIMBA TOTAL**
1312	*P. edipus*		Stoll, 1781		**TOTAL**	**NIMBA TOTAL**
1313	*P. sator*		Westwood, 1852		**TOTAL**	**NIMBA TOTAL**
1314	*P. tibullus*		Fabricius, 1793			**NIMBA TOTAL**
1315	*P. xanthopeplus*		Holland, 1892			
	XANTHODISCA Aurivillius, 1925					
1317	*X. rega*		Mabille, 1890		**TOTAL**	**NIMBA TOTAL**
1318	*X. astrape*		Holland, 1892			
	PAROSMODES Holland, 1896					

1320	*P. morantii*	*axis*	Evans, 1937			
1321	*P. lentiginosa*		Holland, 1896			NIMBA TOTAL
	***RHABDOMANTIS* Holland, 1896**					
1322	*R. galatia*		Hewitson, 1868	BIOPA	TOTAL	NIMBA TOTAL
1323	*R. sosia*		Mabille, 1891		TOTAL	NIMBA TOTAL
	***OSMODES* Holland, 1892**					
1324	*O. laronia*		Hewitson, 1868		TOTAL	NIMBA TOTAL
1325	*O. omar*		Swinhoe, 1916			NIMBA TOTAL
1326	*O. lux*		Holland, 1892			
1328	*O. thora*		Plötz, 1884			NIMBA TOTAL
1329	*O. distincta*		Holland, 1896		TOTAL	NIMBA TOTAL
1330	*O. adon*		Mabille, 1890			
1332	*O. adosus*		Mabille, 1890		TOTAL	NIMBA TOTAL
1333	*O. lindseyi*	*occidentalis*	Miller, 1971		TOTAL	NIMBA TOTAL
1334	*O. costatus*		Aurivillius, 1896			
1335	*O. banghaasi*		Holland, 1896			
	***OSPHANTES* Holland, 1896**					
1336	*O. ogowena*		Mabille, 1891			
	***PARACLEROS* Berger, 1978**					
1337	*P. placidus*		Plötz, 1879			NIMBA TOTAL
1338	*P. biguttulus*		Mabille, 1890			NIMBA TOTAL
1339	*P. substrigata*		Holland, 1893			NIMBA TOTAL
1340	*P. maesseni*		Berger, 1978			
	***ACLEROS* Mabille, 1885**					
1341	*A. ploetzi*		Mabille, 1890		TOTAL	NIMBA TOTAL
1342	*A. mackenii*	*olaus*	Plötz, 1884			NIMBA TOTAL
1343	*A. nigrapex*		Strand, 1913		TOTAL	NIMBA TOTAL
	***SEMALEA* Holland, 1896**					
1345	*S. pulvina*		Plötz, 1879			NIMBA TOTAL
1346	*S. sextilis*		Plötz, 1886			
1347	*S. atrio*		Mabille, 1891		TOTAL	NIMBA TOTAL
1349	*S. arela*		Mabille, 1891			NIMBA TOTAL
	***HYPOLEUCIS* Mabille, 1891**					
1350	*H. ophiusa*		Hewitson, 1866			NIMBA TOTAL
1351	*H. tripunctata*		Mabille, 1891		TOTAL	NIMBA TOTAL
1352	*H. sophia*		Evans, 1937			
	***MEZA* Hemming, 1939**					
1353	*M. indusiata*		Mabille, 1891			NIMBA TOTAL
1354	*M. meza*		Hewitson, 1877		TOTAL	NIMBA TOTAL
1355	*M. mabea*		Holland, 1893			
1356	*M. leucophaea*	*bassa*	Lindsey & Miller, 1965			NIMBA TOTAL

1357	*M. elba*		Evans, 1937		**TOTAL**	**NIMBA TOTAL**
1358	*M. mabillei*		Holland, 1894		**TOTAL**	**NIMBA TOTAL**
1359	*M. cybeutes*	*volta*	Miller, 1971			**NIMBA TOTAL**
	PARONYMUS Aurivillius, 1925					
1361	*P. xanthias*		Mabille, 1891		**TOTAL**	**NIMBA TOTAL**
1363	*P. ligora*		Hewitson, 1876			
1364	*P. nevea*		Druce, 1910		**TOTAL**	**NIMBA TOTAL**
	ANDRONYMUS Holland, 1896					
1365	*A. neander*		Plötz, 1884			**NIMBA TOTAL**
1367	*A. caesar*		Fabricius, 1793			**NIMBA TOTAL**
1368	*A. hero*		Evans, 1937			**NIMBA TOTAL**
1369	*A. helles*		Evans, 1937			**NIMBA TOTAL**
1370	*A. evander*		Mabille, 1890			**NIMBA TOTAL**
----	*A.cf.fenestrella*					**NIMBA TOTAL**
	ZOPHOPETES Mabille, 1904					
1373	*Z. ganda*		Evans, 1937			
1374	*Z. cerymica*		Hewitson, 1867		**TOTAL**	**NIMBA TOTAL**
1375	*Z. haifa*		Evans, 1937			
1376	*Z. quaternata*		Mabille, 1876			
	GAMIA Holland, 1896					
1377	*G. buchholzi*		Plötz, 1879			
1378	*G. shelleyi*		Sharpe, 1890			
	ARTITROPA Holland, 1896					
1379	*A. comus*		Stoll, 1782		**TOTAL**	**NIMBA TOTAL**
	MOPALA Evans, 1937					
1380	*M. orma*		Plötz, 1879			
	GRETNA Evans, 1937					
1381	*G. waga*		Plötz, 1886			**NIMBA TOTAL**
----	*G.dargei*					**NIMBA TOTAL**
1382	*G. carmen*		Evans, 1937			
1383	*G. cylinda*		Hewitson, 1876		**TOTAL**	**NIMBA TOTAL**
1385	*G. lacida*		Hewitson, 1876			
1386	*G. balenge*	*zowa*	Lindsey & Miller, 1965			
	PTEROTEINON Watson, 1893					
1387	*P. laufella*		Hewitson, 1868			**NIMBA TOTAL**
1388	*P. iricolor*		Holland, 1890			
1389	*P. laterculus*		Holland, 1890			**NIMBA TOTAL**
1390	*P. capronnieri*		Plötz, 1879			
1391	*P. caenira*		Hewitson, 1867	**BIOPA**		**NIMBA TOTAL**
1392	*P. ceucaenira*		Druce, 1910			
1393	*P. concaenira*		Belcastro & Larsen, 1996			

1394	*P. pruna*	Evans, 1937		
	LEONA Evans, 1937			
1395	*L. binoevatus*	Mabille, 1891		
1396	*L. maracanda*	Hewitson, 1876		
1397	*L. lota*	Evans, 1937		
1398	*L. lena*	Evans, 1937		
1399	*L. leonora*	Plötz, 1879		
1400	*L. na*	Lindsey & Miller, 1965		
1401	*L. stoehri*	Karsch, 1893		
1402	*L. meloui*	Riley, 1926		
1403	*L. halma*	Evans, 1937		
1405	*L. luehderi*	Plötz, 1879		
	CAENIDES Holland, 1896			
1406	*C. soritia*	Hewitson, 1876		**NIMBA TOTAL**
1407	*C. kangvensis*	Holland, 1896		
1408	*C. xychus*	Mabille, 1891		**NIMBA TOTAL**
1409	*C. benga*	Holland, 1891		
1410	*C. otilia*	Belcastro, 1990		
1411	*C. dacenilla*	Aurivillius, 1925		
1412	*C. dacela*	Hewitson, 1876	**TOTAL**	**NIMBA TOTAL**
1413	*C. hidaroides*	Aurivillius, 1896		**NIMBA TOTAL**
1414	*C. dacena*	Hewitson, 1876		**NIMBA TOTAL**
	MONZA Evans, 1937			
1415	*M. alberti*	Holland, 1896	**TOTAL**	**NIMBA TOTAL**
1416	*M. cretacea*	Snellen, 1872	**TOTAL**	**NIMBA TOTAL**
	MELPHINA Evans, 1937			
1417	*M. noctula*	Druce, 1909	**TOTAL**	**NIMBA TOTAL**
1418	*M. melphis*	Holland, 1893	**TOTAL**	**NIMBA TOTAL**
1419	*M. unistriga*	Holland, 1893		
1420	*M. tarace*	Mabille, 1891	**TOTAL**	**NIMBA TOTAL**
1421	*M. flavina*	Lindsey & Miller, 1965	**TOTAL**	**NIMBA TOTAL**
1422	*M. statirides*	Holland, 1896		
1423	*M. statira*	Mabille, 1891	**TOTAL**	**NIMBA TOTAL**
1425	*M. malthina*	Hewitson, 1876	**TOTAL**	**NIMBA TOTAL**
1426	*M. maximiliani*	Belcastro & Larsen, 2005		
	FRESNA Evans, 1937			
1427	*F. netopha*	Hewitson, 1878	**TOTAL**	**NIMBA TOTAL**
1428	*F. maesseni*	Miller, 1971		**NIMBA TOTAL**
1429	*F. nyassae*	Hewitson, 1878	**TOTAL**	**NIMBA TOTAL**
1430	*F. cojo*	Karsch, 1893		
1431	*F. carlo*	Evans, 1937	**TOTAL**	**NIMBA TOTAL**

	***PLATYLESCHES* Holland, 1896**				
1432	*P. galesa*		Hewitson, 1877	**TOTAL**	**NIMBA TOTAL**
1433	*P. robustus*	*fofi*	Larsen & Mei, 1998		
1434	*P. moritili*		Wallengren, 1857		
1435	*P. rossii*		Belcastro, 1986	**TOTAL**	**NIMBA TOTAL**
1436	*P. langa*		Evans, 1937		
1437	*P. picanini*		Holland, 1894	**TOTAL**	**NIMBA TOTAL**
1438	*P. lamba*		Neave, 1910		
1439	*P. affinissima*		Strand, 1921	**TOTAL**	**NIMBA TOTAL**
1440	*P. chamaeleon*		Mabille, 1891	**TOTAL**	**NIMBA TOTAL**
----	*P.morigambia*				**NIMBA TOTAL**
1441	*P. batangae*		Holland, 1894		
1442	*P. iva*		Evans, 1937		
	***PELOPIDAS* Walker, 1870**				
1444	*P. mathias*		Fabricius, 1798		**NIMBA TOTAL**
1445	*P. thrax*		Hübner, 1821		**NIMBA TOTAL**
	***BORBO* Evans, 1949**				
1446	*B. fallax*		Gaede, 1916		
1447	*B. fanta*		Evans, 1937		
1448	*B. perobscura*		Druce, 1912	**TOTAL**	**NIMBA TOTAL**
1449	*B. micans*		Holland, 1896		
1450	*B. borbonica*		Boisduval, 1833		**NIMBA TOTAL**
1451	*B. gemella*		Mabille, 1884		**NIMBA TOTAL**
1452	*B. binga*		Evans, 1937		
1453	*B. fatuellus*		Hopffer, 1855	**TOTAL**	**NIMBA TOTAL**
1454	*B. holtzi*		Plötz, 1883		
1455	*B. liana*		Evans, 1937		
	***PARNARA* Moore, 1881**				
1456	*P. monasi*		Trimen, 1889		
	***GEGENES* Hübner, 1819**				
1457	*G. 'pumilio'*	*gambica*	Mabille, 1878		
1458	*G. nostrodamus*		Fabricius, 1793		
1459	*G. niso*	*brevicornis*	Plötz, 1884		**NIMBA TOTAL**
1460	*G. hottentota*		Latreille, 1824		**NIMBA TOTAL**