TRUE NYMPHALIDS

Family Nymphalidae
Subfamily Nymphalinae

Soldier Pansy
(Junonia terea)
The True Nymphalids (Subfamily Nymphalinae) form a rather diverse group within the large family Nymphalidae. Up until about two decades ago, Nymphalinae was considered as a rather unnatural group of genera that could not be made to fit elsewhere. However, recently molecular phylogenies have largely solved the problem, and several genera that used to be placed in Nymphalinae have now been assigned to new subfamilies. As the True Nymphalids are so diverse, it is very difficult to assign a shared set of criteria to recognise all members of this subfamily. Most of them are medium to large species, often with colourful wing patterns that are quite easy to tell apart. This makes them an ideal first group for a beginner to learn about, especially as many of the species are among the most common of all West African butterflies.
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This project is dedicated to the memory of Dr. Torben B. Larsen. Without his early support I would probably never have begun my work with Nigerian butterflies.
PHOTOGRAPHERS

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TRUE NYMPHALALIDS
Family Nymphalidae
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INCLUDED GENERA
(CLIKABLE LINKS)

Hypolimnas
Precis
Junonia
Protogoniomorpha
Salamis

Kallimoides
Vanessula
Catacroptera
Antanartia
Vanessa
The Diadem (*Hypolimnas misippus*) is a common and widespread butterfly that can be found all across Africa, through southern Asia and all the way to Australia. The male has an unmistakable pattern, with large white spots surrounded by dark, shiny blue. The female mimics the poisonous African Monarch (*Danaus chrysippus*), and for an untrained observer the two species can easily be confused. The Diadem (*H. misippus*) is not poisonous itself, but instead gets protection by fooling predators into thinking that it is (Batesian mimicry), without having to produce any toxins. Nigerian females are variable; there can be white areas on the hindwings, and the forewing black and white pattern is sometimes significantly reduced.
Like many other *Hypolimnas* species, the **Variable Eggfly** (*H. anthedon*) relies on *Batesian mimicry* to fool its predators. Both sexes of this common butterfly are similar, but both occur in four distinct morphs. In savannah habitats, the two most common morphs (right) have multiple white spots on the forewing, and mimic local poisonous butterflies. Further south, another morph (below left) with large white markings is normally the most common. In Nigeria the species is found from the southernmost forest zone, all the way north as far as the Kaduna area. It is very similar to the much rarer **Large Variable Eggfly** (*Hypolimnas dinarcha*).
The **Large Variable Eggfly** (*Hypolimnas dinarcha*) can be hard to tell apart from the much more common **Variable Eggfly** (*H. anthedon*). Both species have a range of morphs and are good examples of **Batesian Mimicry**. However, there are two characters that in combination should make it possible to accurately identify the **Large Variable Eggfly** (*H. dinarcha*). The main difference is the larger size and more angled shape of the forewing tip that can be seen from even at some distance in stationary specimens. Another difference is the presence of a full row of small **submarginal** spots on the **dorsal** hindwing. Such spots are frequently seen on the **ventral** hindwing in some morphs of the **Variable Eggfly** (*H. anthedon*). However, in the latter species they are only rarely present along the full length on the **dorsal** hindwing.
Predators often learn by trial-and-error which types of prey are edible, and which are not. For visually guided predators, the striking warning colours of many poisonous prey species act as strong signals that they very quickly learn to avoid. Among butterflies, a phenomenon known as Batesian Mimicry is common. Mimicry means to copy something else, and in this special case a non-poisonous species (the Mimic) has evolved to have the same wing pattern as that of a poisonous species (the Model). If predators are not able to spot the difference between them, both species gain protection from attacks. However, the cost of this benefit is higher for the Model species as it has to produce toxins for the warning signal to be effective to begin with. Both the patterns and the response of the predators change slowly all the time due to evolution.

In the butterfly genus Hypolimnas, there are many mimics that all look like different poisonous butterfly species from the subfamily Danainae. The match between Mimic and Model is so accurate that it can fool even a trained entomologist!

Batesian Mimicry Scroll down for some examples of mimicry

MIMICS MODELS

Hypolimnas anthedon
Amauris niarius

Hypolimnas anthedon
Amauris hecate

Hypolimnas anthedon
Amauris tartarea

Hypolimnas misippus
Danaus chrysippus

The female of the Diadem Hypolimnas misippus has three different morphs in Nigeria. These all mimic three different morphs of the poisonous African Monarch Danaus chrysippus. In West Africa, almost all African Monarchs (over 99%) have mostly white hindwings as shown above. However, the two most common morphs of the Diadem have orange hindwings, looking more like the East African morphs of the African Monarch. This might be due to a recent shift in the morph frequency of the model in West Africa, leading to a mismatch in the local mimics.

The Variable Eggfly Hypolimnas anthedon has three different morphs in Nigeria. These all mimic different poisonous species from the genus Amauris. The frequency of these morphs varies depending on the habitat, as the frequency of the model species also changes. The upper pair is the most common in rainforest habitats, while the two lower pairs are more common in savannah habitats.
The Blue Diadem (*Hypolimnas salmacis*) is a large and quite common butterfly. It is normally found at the edge of forests, rarely penetrating intact rainforest, but it can also sometimes be found in dense savannah areas. During unfavourable weather conditions, or at night, the species usually rests low down, perched underneath large leaves, and will therefore often be encountered when flushed out of its resting place. The general patterns of the sexes are similar, but the male has much more extensive blue colouration. The female can sometimes be completely black and white. The Scarce Blue Diadem (*Hypolimnas monteironis*) looks very similar, but always lacks the small white apical spots on the forewing.
Chapman’s Eggfly (H. chapmani) is a very rare butterfly, only known to occur in Nigeria and Cameroon. The wings are distinctively cinnamon-brown and semi-translucent. It can not be mistaken for any other species.

Hypolimnas monteironis monteironis (Druce, 1874)

Scarce Blue Diadem

The Scarce Blue Diadem (Hypolimnas monteironis) looks almost exactly like the common Blue Diadem (H. salmacis), but it lacks the white apical forewing spots that are always present on both sides of the wings in the latter. It has been found a few times in Cross River, but is more common in central Africa.

Hypolimnas chapmani (Hewitson, 1873)

Chapman’s Eggfly

TRUE NYMPHALIDS (NYMPHALINAE – NYMPHALIDAE)
The **Gaudy Commodore** (*Precis octavia*) displays one of the most striking examples of seasonal dimorphism found in butterflies. The dry season morph has shiny blue and red markings. It is often found resting on the dry ground with wings open, and despite its strong pattern, it blends in well with rocks and gravel, suggesting it is a camouflage pattern. The wet season morph is smaller and the orange and black pattern looks similar to the **Darker Commodore** (*P. antilope*), but it lacks the pronounced toothed extension at the end of the forewing cell found in the latter. The ventral surface is similar to the dorsal in the wet season, while that of the dry season morph is darker, with a camouflaged pattern.
The **Darker Commodore** (*Precis antilope*) is a fairly common savannah species. The seasonal morphs are quite different, with the dry season morph being larger, with drawn out falcate forewing tips and less pronounced dark markings. The wet season morph can easily be confused with that of the **Gaudy Commodore** (*P. octavia*), but the latter has less extensive black basal markings on the ventral hindwing. It also lacks the pronounced tooth at the end of the forewing cell. In the dry season the ventral side has a leaf-like camouflage pattern with a thin light discal line.
The **Toothed Commodore** (*Precis frobeniusi*) is a rare and local savannah butterfly endemic to West Africa. It is found in hilly areas across northern Nigeria as far south as Jos and Kagoro. The distinct dorsal pattern makes it an easy butterfly to recognise in the field. Seasonal variation is less pronounced than in most other *Precis* species. It looks very similar to the rare **Ocellated Commodore** (*P. coelestina*) that in Nigeria has been found on the Mambilla Plateau and in the Zaria area. The band of the latter species is broken up into separate spots and the outer edge of the hindwing is smoother.
The **Marsh Commodore** (*Precis ceryne*) is the smallest of the West African *Precis* species. Just as the name implies, it is normally found by swamps and rivers in savannah habitats. It is patchily distributed, but can be locally common. The seasonal morphs are similar on the dorsal side, but the dry season morph has more falcate forewings and its ventral side is highly camouflaged. It can be confused with the **Toothed Commodore** (*P. frobeniusi*), but the latter species has a more uniform red tone to the light dorsal pattern. It is also quite similar to the next four species (*Precis pelarga, P. sinuata, P. milonia* and *P. rauana*), but the dorsal forewing discal bands of those species do not split into two in the apical area.
**Precis pelarga** (Fabricius, 1775)

**Common Commodore**

This is by far the most common, as well as the most ecologically tolerant of four similar species (the other three are found on the following two pages). The **Common Commodore** (*Precis pelarga*) is a highly variable butterfly, but can be told apart from similar species by the presence of multiple light dots and streaks around the wing margins, as well as the more pronounced markings in the forewing cell. As in many other *Precis* species, there is considerable seasonal variation. Compared to the wet season morph, the dry season morph has more falcate forewings, a better camouflaged ventral pattern, and often has substantial blue scaling in the dorsal red bands.
These two rather rare forest species can easily be confused with each other. The Wide-banded Commodore (*Precis sinuata*) is the more common of the two, and its reddish wing-bands are narrower than those of the Broad-banded Commodore (*P. milonia*). The latter species usually has an additional dark spot in the forewing band. Both sexes of the Wide-banded Commodore (*P. sinuata*) usually have red markings in the basal area of the dorsal forewing (more pronounced in males). In both species, males have narrower bands than females.
As the name implies, the **Montane Commodore** (*Precis rauana*) is a species found only in high-elevation habitats. In Nigeria, the species is found on both the Mambilla and Obudu Plateaux at altitudes above 900 metres. Compared to similar Nigerian *Precis* species, the **Montane Commodore** has the broadest forewing bands. The sexes can easily be told apart, as the male forewing band stops well before reaching the costa, but extends all the way to the leading edge in the female. There is much less seasonal variation than what is normally seen in similar species.
The Dark Blue Pansy (*Junonia oenone*) is a very common butterfly in lush savannah habitats all over sub-Saharan Africa. It is also a very capable coloniser of degraded habitats and must be one of the most frequently seen species in West Africa. Fortunately, it is very easy to recognise in the field. The shiny dark-blue patch on the dorsal hindwing stand out clearly against the almost completely black base-colour. The female has larger red ringed eyespots on both wings, but a smaller and less shiny blue patch on the hindwing. In contrast to the highly conspicuous dorsal pattern, the ventral side has a light camouflage pattern that is quite similar to many other *Junonia* species.
The **Blue Pansy** (*Junonia orithya*) looks quite similar to the **Dark Blue Pansy** (*J. oenone*), but instead of a clearly defined dark blue spot found at the base of the dorsal hindwing in the latter species, the **Blue Pansy** (*J. orithya*) has the whole outer half of the hindwing covered in a shiny light blue colour. The blue colouration also extends to parts of the forewing. It is a rather common butterfly typically found in the Sudan Savannah zone, but with a strong capability of colonising degraded habitats, and some migratory tendencies. Females have substantially larger eyespots on all wings compared to males. The ventral side has a light camouflage pattern, quite similar to many other *Junonia* species.
The **Yellow Pansy** (*Junonia hierta*) is a fairly common savannah species. It usually rests on bare ground, with wings held almost fully open, making the pattern easy to see. The sexes are similar, but females have larger eyespots and a smaller blue hindwing patch (sometimes missing completely). The somewhat similar **Soldier Pansy** (*J. terea*) lacks the blue patch, and the yellow pattern forms a continuous band across both wings, not broken up by dark markings. The males of the **Blue-spot Pansy** (*J. westermanni*) also have a blue hindwing patch, but this species is both larger and more orange. It is also much rarer and linked to forest habitats, but sometimes they can co-occur.
The Little Pansy (*Junonia sophia*) is the smallest member of its genus. It is a common species found along forest edges and degraded forest habitats, but only rarely inside intact rainforest. It can also be found quite far into savannah habitats along dense riverine vegetation, as well as in gardens, even in major cities. The dorsal surface has a distinctive pattern making it easy to recognise and the ventral surface is similar, but much paler. The sexes are similar, but females are typically lighter and have less pointed forewings than males. The ventral surface is similar to the much larger Blue-spot Pansy (*J. westermannii*), but dorsally the two species look completely different.
The **Blue-spot Pansy** (*Junonia westermanni*) is a quite uncommon forest butterfly, with a patchy distribution. It is usually found in slightly drier forests, at the edge of the wet forest zone. Unusually for a *Junonia* species, it shows strong sexual dimorphism (meaning the sexes look different). The male dorsal pattern has some similarity to that of the **Yellow Pansy** (*J. hierta*), but the light patches have a more orange tone, and the forewings are more pointed. The female looks similar to a female of the **Common Red Glider** (*Cymothoe coccinata*), but with a row of small black hindwing spots. The ventral surface of both sexes is quite similar to that of the **Little Pansy** (*J. sophia*).
The Soldier Pansy (*Junonia terea*) is a distinctive species with broad yellow bands on both pairs of wings that continue uninterrupted from forewing to hindwing. The somewhat similar Yellow Pansy (*Junonia hierta*) has the yellow pattern broken up by black markings, together with a distinctive shiny-blue patch (sometimes missing in the female) on the base of the hindwing that is missing in the Soldier Pansy (*Junonia terea*). The ventral side is straw coloured with faint markings, similar to many other *Junonia* species. The sexes are quite similar, but females are often lighter than males. It is a very common butterfly that thrives in degraded forest areas, and human disturbance has possibly been beneficial to this species by creating more fragmented habitats than what was available in the past. It is common in drier forests and dense savannahs, but the species is highly adaptable and has colonised many other types of habitats.
The **Golden Pansy** (*Junonia chorimene*) is a common savannah butterfly found all over West Africa. It is also found inside cleared areas across the forest zone. The dorsal pattern is somewhat similar to the **Brown Pansies** (*J. stygia* and *J. gregorii*), but as the name implies, the **Golden Pansy** (*J. chorimene*) has a warmer, golden brown colour. The ventral surface shows strong seasonal dimorphism, and the dry season morph is superbly camouflaged. It often rests on the ground or on low vegetation with the wings held flat, making the pattern easy to see. If disturbed, it quickly takes shelter in the shade of dense vegetation, making it hard to catch with a net.

**Junonia chorimene** (Guérin-Méneville, 1844)

**Golden Pansy**

Wet season morph

Dry season morph
These two forest species are quite similar, but luckily they rarely co-occur in Nigeria as **Gregori’s Brown Pansy** (*Junonia gregorii*) is only found on the Obudu and Mambilla plateaux. The **Brown Pansy** (*Junonia stygia*) is much more widespread and is commonly found in forests across southern Nigeria. It is only rarely found at the same high altitudes as the former species. The two species can be told apart fairly easily by the dorsal forewing bands, as the inner dark band is much broader in the **Brown Pansy** (*Junonia stygia*).
The wing shape and pattern of the Blue Leaf Pansy (Junonia cymodoce) differs from all other Junonia species. The almost black wings have a dark shiny-blue area close to the body. Females always have a yellow or orange apical band on the dorsal forewing. In western Nigeria, males always lack this band, but it is sometimes present in males found east of the Niger River. The species is tied to forest, and while other Junonia species tend to seek out sunny areas, it generally stays in the shade. The ventral surface has a camouflaged pattern, resembling a dead leaf, but there is sometimes a clear white costal spot on the hindwing. This unmistakable large species is not common.
The **Forest Mother-of-pearl** (*Protogoniomorpha parhassus*) is a large butterfly that is common in most types of forest in Nigeria, and also ventures out into wet savannah habitats and gardens. Apart from the much rarer **Clouded Mother-of-pearl** (*P. anacardii*), no other Nigerian butterfly looks even remotely similar. Compared to the latter, the forewing tip of the **Forest Mother-of-pearl** (*P. parhassus*) has a small, hook-like protrusion and the dark pattern is less developed. The ventral side of both sexes has a greenish sheen, and the male has a violet dorsal sheen. Males are territorial, and normally seen perching high up on top of large leaves.
The Clouded Mother-of-Pearl (*Protogoniomorpha anacardii*) is a smaller and rarer species than the Forest Mother-of-pearl (*P. parhassus*). It is normally found in drier forests than its larger relative, and can be told apart by a combination of characters. However, as both species are quite variable, some individuals can turn out to be very challenging to accurately identify. The Clouded Mother-of-pearl (*P. anacardii*) has a better developed dark pattern, lacks any strong violet or green sheen on either side of the wings, and the forewing tip has a less developed hook. Additionally, the upper of the two dorsal hindwing eyespots is normally quite prominent.
The **Eastern Blue Beauty** (*Protogoniomorpha temora*) is a large spectacular butterfly that has been named after the strong violet-blue dorsal sheen. It is an adaptable forest species that survives well in degraded habitats and has been found as far north in Nigeria as Kagoro Forest. However, because of recent large-scale logging activities in Kagoro, it is now likely to be missing from that area. It is only rarely seen west of the Niger River, but in the south-eastern forests it is a more common sight. Females look similar to the males, but their blue colouration is slightly less intense so that more of the underlying brown pattern is visible on the dorsal side.
The **Lilac Beauty** (*Salamis cacta*) is a distinctive forest butterfly that can survive well in degraded habitats. The dorsal pattern is overlaid with a strong violet sheen that is only seen when viewed at specific angles. The ventral surface has a leaf-like camouflage and is highly variable. Some examples of this variation are shown in the specimens below. The sexes are similar, but females have better developed, and lighter, apical spots on the dorsal forewing. It is fairly common in southern Nigeria.
The **African Leaf Butterfly** (*Kallimoides rumia*) is a very common sight in most African forests, except the very driest. The dorsal surface is highly dissimilar between the sexes, while the ventral surface looks more or less the same. However, females tend to have a row of white spots on the discal forewing area, either missing or highly reduced in males. The dorsal hindwing of Nigerian females sometimes lack the creamy white patch seen in the photo. Males often sit on leaves about two metres up at the edge of forests, along paths and in clearings. If a similar sized butterfly flies past a perched male, he will aggressively try to chase it away before returning to the very same spot.
The **Lady’s Maid** (*Vanessula milca*) is a small, but very distinctive butterfly that is normally found in highland areas across tropical Africa. In Nigeria, it is very common on the Obudu and Mambilla Plateaux, but can sometimes be found locally in the lowland forests of Cross River. The sexes are similar, but the female has broader red wing-bands. The species looks so different from any other *Nymphalidae*, that when it was first described in 1873 it was considered to be a *Lycaenidae* closely related to the genus *Telipna* (example of that genus shown below to the left). Despite being locally common, no one has managed to find out what hostplant(s) the species uses. Something to keep an eye open for!
At a first glance, the Pirate \((\text{Catacroptera cloanthe})\) looks somewhat similar to the Commodores \((\text{Precis})\) and Pansies \((\text{Junonia})\), but recent molecular work has verified that it indeed represents a genus very much of its own. The even row of blue spots on the dorsal hindwing makes it possible to tell it apart from similar species. The ventral surface is covered by short, stiff hairs, making it look almost furry on close inspection. The sexes look similar, but males have more angled wings, with a tiny tail-like projection on both hind and forewing. The dry season morph has much more reduced black markings compared to the wet season morph.
The **Forest Admiral** (*Antanartia delius*) is a medium-sized, powerfully built butterfly, with prominent hindwing tails. The pattern on both sides is quite characteristic, and no other Nigerian species looks similar. The female is normally lighter than the male, and has less pointed forewings and tails. However, melanic (much darker) specimens of both sexes are frequently found. The species is normally seen along forest edges and in secondary habitats, but rarely inside intact rainforest. Males defend their territories aggressively, and typically perch in exposed spots inside small forest clearings, ready to chase away any intruding butterflies. Once a fight has finished, the winner usually returns again to the same perch.
The Mountain Admiral (Vanessa dimorphica) used to be placed in the same genus as the Forest Admiral (Antanartia delius). However, about ten years ago, genetic analyses led its reassignment to the genus Vanessa. As the name implies, it is found in montane environments and in Nigeria it is limited to the Obudu and Mambilla Plateaux. Here it can be quite common and can be found flying along the edges of montane forests. With the aggressive male guarding of territories, its behaviour is similar to that of the larger Forest Admiral (Antanartia delius). Very few Nigerian species look similar, but it could potentially be confused with the somewhat similar Lady’s Maid (Vanessula milca) that is frequently found in the same montane habitats. However, the latter species has broader, more basally placed red wing-bands and a quite different wing-shape. The sexes look similar.
The **Painted Lady** (*Vanessa cardui*) is the most widespread butterfly species in the world, and has an amazing capacity for migration. The West African populations are linked with those found in Europe, crossing the Sahara Desert twice each year in a similar way to migratory birds, but with separate generations flying each direction of the route. In Nigeria, the species is normally more common in savannahs and in the dry season, but it is somewhat unpredictable and can be found at almost any time of the year, in any habitat except intact rainforest. The ground colour is orange, with a pinkish flush and covered by lots of merged black spots. The ventral hindwing has a greyish-brown camouflaged pattern, and when sitting on the ground it usually folds the forewings down so that they are hidden out of view, making it hard to detect against the substrate. It is normally a very cautious butterfly that is hard to approach close without startling it.