Genus *Papilio* Linnaeus, 1758

*Systema Naturae* 1, Regnum Animale, 10th edition: 458 (824 pp.). Holmiae.

Type-species: *Papilio machaon* Linnaeus, by subsequent designation (Latreille, 1810).

*Considerations générales sur l’ordre naturelle des animaux composant les classes des Crustacés, des Arachnides et des Insectes* 350, 440 (444 pp.). Paris.) [extralimital].

A cosmopolitan genus of 192 species. Fifty-nine species occur in the Afrotropical Region, two of which extend extralimitally.

Swallowtails are large to very large insects and include the largest butterfly in the Afrotropical Region (*Papilio antimachus*). Although the common name of the group would lead one to expect that all Swallowtails have tails on their hindwings, tails are in fact absent in species such as the White-banded, Citrus and Green-banded Swallowtails, as well as in females of the Mocker Swallowtail. All Swallowtails are showy butterflies, with predominantly black and yellow patterns on their wings. Generally the male and female of a particular species are similar in appearance, with the striking exception of the mimetic females of the Mocker Swallowtail and the White-banded Swallowtail. The Swallowtails are closely related to the Swordtails, both groups belonging to the Swallowtail family (see above). Most species of Swallowtail are found in subtropical and temperate forests but the familiar Citrus Swallowtail and, to a lesser extent, the Green-banded Swallowtail are more widespread, particularly the former, which is even found in the Karoo of South Africa. All Swallowtails are active and fairly strong fliers, prefer sunny warm weather, and spend a lot of time in search of flowers from which to feed. They appear to be especially fond of red and blue flowers. While feeding at flowers they characteristically flutter their wings as if in constant readiness to fly off at the first sign of danger. Also noticeable, when they are feeding, are their long, spindly legs, which create the impression that they are hovering in mid-air above the flower from which they are sipping nectar. The males of some species, particularly those of the Citrus and Green-banded Swallowtails, often congregate in small groups on damp sand or on mud, where they sit motionless for many minutes, sucking up the fluids (mud-puddling). Male Swallowtails are also very inquisitive and will momentarily interrupt their random flight to inspect a realistic decoy, or a dead specimen of the same species, placed on the ground. In Swallowtails mate locating behaviour is generally of the searching type – the outstanding exception is the male Citrus Swallowtail which shows strong territorial behaviour. Female Swallowtails are slower fliers and are less conspicuous than the males. They tend to keep to the forest understorey, where they fly about in search of flowers, or plants on which to lay their eggs. Trees and shrubs belonging to the Citrus family (Rutaceae) are the usual larval foodplants for Swallowtails. The early stages are described under the family heading, above.

**Relevant literature:**

Kunte, 2009 [Diversity and evolution of Batesian mimicry].
Otis *et al*., 2006 [Local enhancement of mud-puddling].
Zakharov *et al*., 2004 [Historical phylogeography].
Mallet, 2003 [Role in development of the species concept].
Bryk, 1930 – Catalogue of the genus.
Bryk, 1928 – Mimicry in the genus.
**Subgenus Papilio** Linnaeus, 1758

_Systema Naturae_ 1, Regnum Animale, 10th edition: 458 (824 pp.). Holmiae.

Type-species: _Papilio machaon_ Linnaeus, by subsequent designation (Latreille, 1810. _Considerations générales sur l’ordre naturelle des animaux composant les classes des Crustacés, des Arachnides et des Insectes_ 350, 440 (444 pp.). Paris.) [extralimital].

Relevant literature:
Pellecchia et al., 2004  [Papilio machaon complex – mitochondrial DNA].

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**Papilio (Papilio) saharae** Oberthür, 1879

_Saharan Swallowtail_


Type locality: Algeria: “Laghouat”.

Distribution: Extralimital (North Africa, Sinai), extending into Arabia.

Habitat: Subspecies _rathjensi_ occurs in the high mountains of western Arabia (Larsen, 1983b). It occurs in both wet and dry mountains, above about 2 300 m (Larsen, 1983b).

Habits: Subspecies _rathjensi_ is quite common on the green mountains of Ibb and Taizz Provinces in Yemen (Larsen, 1983b). Males are avid hilltoppers; females arriving on hilltops are courted and mated and the couple then fly down to the breeding grounds at lower altitudes (Larsen, 1983b).

Early stages:

Larsen, 1983b: 345.

“All instars of the larva are different from those of _P. machaon_. Young larvae are darker and have white markings only on the flanks, lacking the typical saddle of _P. machaon_. Mature larvae have a much more complex, crenellated pattern of black stripes than _P. machaon_. … In many respects the larvae resemble those of _P. hospiton Géné from Corsica_.”

Larval food:
*Ferula communis* (Umbelliferae) [Larsen, 1983b; Jabal Sabr, Yemen; Libya; Hejaz].

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**Papilio (Papilio) saharae saharae** Oberthür, 1879


Type locality: Algeria: “Laghouat”.

Distribution: Largely Palaearctic, extending into Saudi Arabia (north-west).

Specific localities:

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**Papilio (Papilio) saharae rathjensi** Warnecke, 1932


Type locality: Yemen: “Bāb el Mendjjil; San ‘a”.

Diagnosis: Darker than the nominate subspecies (Larsen, 1983b).

Distribution: Yemen, Saudi Arabia (south-west).
Specific localities:
Yemen – Bab el Mendjjil, San a (TL; Warnecke, 1932); Sana’a-Hodeida Rd (Larsen, 1983b); Taiz area (Larsen, 1983b); Jabal Sabr (Larsen, 1983b); Jabal Badu’an (Larsen, 1983b); Jabal Masnah (Naumann, vide Larsen, 1983b); Mahwit area (Naumann, vide Larsen, 1983b); Asir Mountains (Pittaway, vide Larsen, 1983b).

Subgenus Princeps Hübner, [1807]

Type-species: Papilio demodocus Esper, by subsequent designation (Opinion 179, 1946. Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature 2: (557-568)).

= Orpheides Hübner, 1819 in Hübner, [1816-[1826]. Verzeichniss bekannter Schmettlinge 86 (432 + 72 pp.). Augsburg. Type-species: Papilio demodocus Esper, by subsequent designation (Opinion 179, 1946. Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature 2: (557-568)).


= Iterus Donitz, 1899. Berliner Entomologische Zeitschrift 44: (22) (21)-(24). [Replacement name for Icarus Röber.]


Species groups of Afrotropical Princeps (58 species)

Papilio antimachus group
P. antimachus
Papilio zalmoxis group
  P. zalmoxis

Papilio nireus group
  P. nireus
  P. aristophontes
  P. charopus
  P. chrapkowskii
  P. chrapkowskoides
  P. desmondi
  P. hornimani
  P. interjectana
  P. nerminae
  P. sosia
  P. thuraui
  P. ufipa
  P. wilsoni

Papilio cynorta group
  P. cynorta
  P. arnoldiana
  P. plagiatus

Papilio dardanus group
  P. dardanus
  P. constantinus
  P. delalandei
  P. phorcas
  P. rex

Papilio zenobia group
  P. zenobia
  P. cyproeolfa
  P. fernandus
  P. filaprae
  P. gallienus
  P. mechowi
  P. mechowianus
  P. nobicea (=maesseni)

Papilio demodocus group
  P. demodocus
  P. erithonioides
  P. grossmithi
  P. morondava

Papilio echerioides group
  P. echerioides
  P. fuelleborni
P. sjoestedti
P. jacksoni

**Papilio oribazus group**
- P. oribazus
- P. epiphorbas
- P. nobilis

**Papilio hesperus group**
- P. hesperus
- P. euphranor
- P. horribilis
- P. pelodurus

**Papilio menestheus group**
- P. menestheus
- P. lormieri
- P. ophidicephalus

**Incertae sedis**
- P. andronicus
- P. chitondensis
- P. leucotaenia
- P. mackinnoni
- P. mangoura
- P. manlius
- P. microps
- P. phorbanta

**Papilio antimachus group**

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*Papilio (Princeps) antimachus* Drury, [1782]

Giant African Swallowtail
Male Giant African Swallowtail (*Papilio antimachus*).
Foret de Ngota, Central African Republic.
Images courtesy Barbara Ruda (‘Anna Mandrill’).

*Papilio antimachus* Drury, 1782. *Illustrations of Natural History* 3: index et l (76 pp.). London.
*Papilio antimachus* Drury, 1782. Aurivillius, 1899.

**Published images:** Larsen, 2005a (male upperside).

**Type locality:** Sierra Leone: “Sierra Leon”.

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Gabon, Congo, Central African Republic, Angola (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo, Sudan, Uganda.

**Habitat:** Primary forest.

**Habits:** Much rarer in the west of its range (Guinea to Cameroon) than in the eastern parts of its range (Larsen, 2005a). Probably spends much of its time in the forest canopy but males come down to mud-puddle. Specimens sometimes mud-puddle together with those of *P. zalmoxis*, but usually avoid places where there are large numbers of other papilionids and pierids (Larsen, 2005a). St Leger, *vide* Larsen, 2005a once noted a male inspecting the
chrome bumper of his vehicle.

**Flight period:** October (Larsen, 2005a).

**Early stages:** Nothing published.

**Larval food:**

On phylogenetic grounds Hancock (1988) posits that the larval foodplant belongs to the family Piperaceae. Rothschild & Reichstein (Anon, 1994) isolated cardiac glycosides from the larva and, on the basis of this finding, speculated that the larval foodplant is an asclepiad vine, Asclepiadaceae (now Apocynaceae).

**Relevant literature:**

Anonymous, 1994 – Isolation of cardiac glycosides from larva.

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**Papilio (Princeps) antimachus antimachus** Drury, [1782]

*Papilio antimachus* Drury, 1782. *Illustrations of Natural History* 3: index et 1 (76 pp.). London.

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**Published images:** Larsen, 2005a (male upperside).

**Type locality:** Sierra Leone: “Sierra Leon”.

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria (south), Cameroon, Gabon, Congo, Central African Republic, Democratic Republic of Congo (west), Sudan (south), Angola (north) (Bivar de Sousa & Fernandes, 1966).

**Specific localities:**

- **Liberia** – Mt Gangra (Safian *et al.*, 2013).
- **Ivory Coast** – Bingerville (Talbot, 1936).
- **Ghana** – Atewa Range (Larsen, 2005a); Amedzofe (Maessen, *vide* Larsen, 2005a); Bobiri Butterfly Sanctuary (Larsen *et al.*, 2007).
- **Nigeria** – Oni Creek, 100 km east of Lagos (Larsen, 2005a), Cross River Loop (Larsen, 2005a); Oban Hills (St Leger, *vide* Larsen, 2005a).
- **Cameroon** – Bipindi (Le Cerf, 1924).
- **Gabon** – Sindara (van de Weghe, 2010); Lambarene (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Kinguele (van de Weghe, 2010); Langoue (van de Weghe, 2010); Minkebe (van de Weghe, 2010).
- **Democratic Republic of Congo** – Djamba (Dufrane, 1929).

**plagiata** Stichel, 1903 (as ab. of *Druryia antimachus*). *Insektenbörse* 20: 165 (164-165). Cameroon: “Kamerun”.

**parvus** Reuss, 1922 (as f. of *Papilio antimachus*). *Archiv für Naturgeschichte* 87 (A.11.): 232 (230-241). Sierra Leone.

**karschi** Reuss, 1922 (as f. of *Papilio antimachus*). *Archiv für Naturgeschichte* 87 (A.11.): 233 (230-241). Togo: “Togo, etc.”.

**rothschildiana** Reuss, 1922 (as f. of *Papilio antimachus*). *Archiv für Naturgeschichte* 87 (A.11.): 234 (230-241). No locality given.

**staudingeri** Reuss, 1922 (as f. of *Papilio antimachus*). *Archiv für Naturgeschichte* 87 (A.11.): 234 (230-241). Gabon: “Gabun”.

**centrispila** Le Cerf, 1924 (as f. of *Papilio antimachus*). *Bulletin of the Hill Museum, Witley* 1: 372 (369-399, 576, 578, 580, 582, 584). Cameroon: “French Cameroon, Bipindi”.


**congolanus** Dufrane, 1929 (as ssp. of *Papilio antimachus*). *Lambillionea* 29: 138 (138-139). Democratic Republic of Congo: “Congo Belge”.

**vreuricki** Dufrane, 1929 (as ab. of *Papilio antimachus congolanus*). *Lambillionea* 29: 138 (138-139). Democratic Republic of Congo: “Congo Belge”.

**pupillata** Dufrane, 1929 (as ab. of *Papilio antimachus congolanus*). *Lambillionea* 29: 138 (138-139). Democratic Republic of Congo: “Congo Belge”.

**obsoleta** Dufrane, 1929 (as ab. of *Papilio antimachus congolanus*). *Lambillionea* 29: 138 (138-139). Democratic Republic of Congo: “Congo Belge, Djamba”.

**lagai** Dufrane, 1929 (as ab. of *Papilio antimachus congolanus*). *Lambillionea* 29: 139 (138-139). Democratic Republic of Congo: “Congo Belge”.

**virgularia** Dufrane, 1929 (as ab. of *Papilio antimachus congolanus*). *Lambillionea* 29: 139 (138-139). Democratic Republic of Congo: “Congo Belge”.

**coffea** Talbot, 1936 (as ssp. of *Papilio antimachus*). *Entomologist* 69: 113 (112-114). Ivory Coast: “Bingerville”.


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**Papilio (Princeps) antimachus parva** Jackson, 1956


Synonym of *Papilio antimachus* Drury, 1782. Ackery et al., 1995: 139 syn. nov.


**Type locality:** Uganda: “Kigezi, Kayonza”.

**Distribution:** Democratic Republic of Congo (east), Uganda (west).

**Specific localities:**
Papilo zalmoxis group

*Papilio (Princeps) zalmoxis* Hewitson, [1864]
Giant Blue Swallowtail


**Published images:** Larsen, 2005a (male upperside).

**Type locality:** Nigeria: “Calabar”.

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, ?Togo, Nigeria (south), Cameroon, Gabon, Congo, Angola (Bivar de Sousa, 1983), Central African Republic, Democratic Republic of Congo, Sudan (south), Uganda.

**Specific localities:**
- *Nigeria* – Calabar (TL); Oni Creek, 100 km east of Lagos (Larsen, 2005a); Cross River Loop (Larsen, 2005a); Okwangwo (Larsen, 2005a).
- *Cameroon* – Mundam on the Mango River (Schultze, 1913).
- *Gabon* – Alen Nkoma (van de Weghe, 2010); Kinguele (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Rabi (van de Weghe, 2010); Waka (van de Weghe, 2010); Bitam (van de Weghe, 2010); Nouna (van de Weghe, 2010); Bakouaka (van de Weghe, 2010); Franceville (van de Weghe, 2010); Bateke Plateau (van de Weghe, 2010); Lope (van de Weghe, 2010); Ivindo (van de Weghe, 2010); Abeilles (van de Weghe, 2010).

**Habitat:** Primary forest.

**Habits:** This is the second largest Afrotropical butterfly (Larsen, 2005a). It is rare west of the Dahomey Gap (Larsen, 2005a). Both sexes fly in the forest canopy but males are known to mud-puddle. Like the males of *P. antimachus* they do not join the large communal mud-puddling assemblages (Larsen, 2005a).

**Flight period:** December (Larsen, 2005a).

**Early stages:** Nothing published.

**Larval food:** Nothing published.


*ripponi* Röber, 1898 (as f. of *Icarus zalmoxis*). *Entomologische Nachrichten. Dresden* 24: 186 (185-187). Nigeria, etc.: “Calabar, Congo, etc.”.

*cinereus* Schultze, 1913 (as ab. of *Papilio zalmoxis*). *Archiv für Naturgeschichte* 79 (A.7.): 4 (4-5). Cameroon: “Nordwestkamerun, Mundame am Mangofluss”.

Papilio nireus group

*Papilio (Princeps) nireus* Linnaeus, 1758#
Green-banded Swallowtail
Narrow Green-banded Swallowtails (*Papilio nireus*). Left and centre – two males feeding from flowers (images courtesy Steve Woodhall). Right – massed male Narrow Green-banded Swallowtails mud-puddling (image courtesy Raimund Schutte).


*Papilio nireus* Linnaeus. Trimen, 1862c. [Referable to subspecies *lyaeus* Doubleday, 1845]

*Papilio nireus* L., 1758. Aurivillius, 1899.


Alternative common names: Narrowly Green-banded Swallowtail; Narrow Green-banded Swallowtail.
Type locality: [W. Africa]: “Indiis”. [False locality.]
Published images: Larsen, 2005a (male upperside x2 and underside).
Habitat: Forest and frost-free savanna. Kielland (1990) states that ssp. nireus occurs in Brachystegia woodlands and forest margins, sometimes penetrating forests along roads, but not actually inhabiting forests. Also found flying over open montane country. In Tanzania the nominate subspecies is found at altitudes of 780 to 2 000 m. In Tanzania, subspecies lyaeus is found from sea-level to 1 500 m (Kielland, 1990dd).
Habits: This is a common butterfly (Larsen, 2005a). The flight is fast and direct. Both sexes readily feed from flowers and males are avid mudpuddlers, often congregating in large numbers on damp patches. Males have also been recorded feeding from animal droppings. Males appear not to be territorial and fly randomly around the habitat, from a few to many metres above the ground. Females are most often encountered in and around denser bush and in the undergrowth of forests. On cool mornings specimens may be seen perched low down basking with opened wings (Larsen, 1991c). Tree-topping assemblages of up to half a dozen males were noted at Aburi Botanical Gardens by Larsen (2005a). P. Namkana once observed a male hovering over an emerging female, mating with her before her wings had dried (Larsen, 1991c).
Flight period: All year in warmer climates and September to April in colder areas. Peak emergence is in mid-summer.
Early stages:

Barber, 1874: 519 (Trans, Ent. Soc. Lond.).

Trimen & Bowker, 1889: 240 [as Papilio Lyaeus Doubleday].

Larva. Deep yellowish-green. Widest portion of back, on third thoracic and first abdominal segments, occupied by a subovate patch or shield of pale bluish-green, crossed mesially by a thin whitish line, closely irrorated generally with white dots, and bearing near its posterior edge a transverse row of four small pinkish-lilac spots. Anteriorly a greenish-yellow, posteriorly a narrow ochreous-yellow, edging borders this patch, the anterior edging being marked with four double (concentric) very small, thin, blackish rings, and at each extremity by a small black yellow-pupilled ocellus, surrounded by a separate, thin, imperfect blackish ring. All the green of the back posterior to the patch is mottled irregularly with greenish-yellow. From second to last abdominal segment a lower-lateral white stripe; on each side of back more or less distinct traces of a thin yellowish stripe, which in some examples is crossed obliquely by a short whitish inferiorly dark-bordered streak. Projections on back of first thoracic segment yellow, shorter and blunter than in P. Demoleus [P. demodocus], but those on back of anal segment pale-yellow, longer, farther apart, and with a straight creamy-white connecting streak between their bases. Head and thoracic legs pale bluish-green; pro-legs very pale-greyish with a greenish tinge. Described from larvae found on the Orange at Highlands, near Grahamstown. Mrs. Barber informed me that the native food-trees in that locality were Vepris lanceolata and Calodendron [Calodendrum] capense. The dorsal green (excepting the ovate patch of a blue tint) assimilates very closely to that of the upper surface of the leaves of the orange, upon which the caterpillar is always found resting; but Mrs. Barber (Trans. Ent. Soc. Lond., 1874, p. 519) has pointed out that when the larva feeds on Vepris it is of a lighter green, so as to resemble in tint the leaves of that tree. (Plate II fig. 5, 5.).

Pupa. Length, 1 lin. 3 lin. Somewhat attenuated anteriorly, cephalic processes short and directed laterally outward (not obliquely forward, as in Demoleus [demodocus]), so that frontal line of head is widened and but slightly concave. Thoracic lateral angles moderately acute; dorsal prominence also elevated acutely, but not inclined forward. Sides of abdomen widely flattened, and so extended as to form a very marked angle on each side of third abdominal segment; whence the abdomen narrows very rapidly and greatly to the extremity. Infra-pectoral region, where wing-covers meet, very strongly convex. A marked constriction dorsally at junction of thorax and abdomen. In its natural position, attached vertically or nearly so, head uppermost, the anterior portion of this pupa is seen to be very much bent backward than it is in Demoleus [demodocus]. Usually pale bluish-green, inclining to yellowish on under surface of abdomen, but very variable in tint. Point of dorso-thoracic prominence, two spots below it (at abdominal base), and edge of abdominal lateral angles, creamy-reddish.
A row of minute indistinct blackish spots on each side of back of abdomen. This chrysalis, though usually pale-green, is variable in colouring, specimens that I reared near Grahamstown pupating in the same wooden box (on the sides) within a day or two of each other, varying from that tint to a more or less ochreous-tinged, much duller hue. Mrs. Barber was so fortunate as to observe the extreme susceptibility of this pupa to colour influences, as pointed out in her paper above quoted. From these most interesting observations it appears that the colour of the object on which a larva pupated was very closely reproduced in the pupa. Pupae among orange twigs were of the ordinary green colour; others, among half-dried leaves of the “bottle-brush”, were pale yellowish-green; one attached to the wooden frame of the case was of the yellowish tint of the wood; and another, attached to a part of the frame where wood and purplish-brown brick joined each other, was coloured on the under surface like the wood and on the upper surface like the brick. The experiment of causing a larva to pupate on scarlet cloth had no effect except that the ordinary small red spots were brighter than usual; but this is not to be wondered at, considering that the environment of these insects could never, through endless generations in the past, have rendered the assumption of a scarlet colour of any advantage in concealment.

Colonel Bowker, in 1874, sent me from King William’s Town four pupae, three of the ordinary green colour, and the fourth (which had been purposely placed when changing on the mud-mortar of a wall) of a dull greenish-yellow, much clouded dorsally with dull creamy ferruginous-grey. These were winter pupae; two became perfect insects in July (1st and 24th), one on October 1st, and the last on December 21st."

Clark, in Van Son, 1949: 32 [as Papilio (Papilio) nireus lyaeus].

Egg. Spherical with flat base, 1.15 mm in diameter by 0.95 mm high, pale cream-coloured when laid, later with reddish-brown spots around the sides; surface plain, but slightly rough, giving the appearance of very fine pubescence. The eggs are laid singly. Egg-stage five days. Larva. There are five larval instars. First instar black and brown with two pairs of setose processes on each of first four segments, and single pair on each of the remaining segments; second and third instars are yellow with black, fourth instar green with black, white and salmon markings; the final instar is green, finely irrorated with white, with yellowish latero-dorsal streak and a white lateral line from second to last abdominal segments, and with a brown, black or white diagonal line cutting across the 7th, 8th and 9th segments (4th to 6th abdominal segments); there is a bluish-green, broad subovate patch on the last thoracic and first abdominal segments, irregularly irrorated with whitish lines and bordered anteriorly by a transverse row of six posteriorly incomplete narrow black rings, the two lateral ones enclosing white-pupilled black circular spots; posteriorly the dorsal patch is bordered with a narrow transverse purplish or reddish line; osmeterium reddish-purple, with the branches spreading horizontally; paired processes on first segment yellow, short and blunt, those on the 11th segment very light yellow, sharp and spreading horizontally. Head and sclerotized parts of the legs and prolegs light bluish-green or yellowish-green. The colour of the larva is variable in adaptation to the colour of the leaves of the food-plant. Pupa. A little over an inch in length, ventrally strongly convex, dorsally almost straight along the abdomen, but with a high dorso-thoracic prominence. Head with laterally spreading projections. Abdomen much widened up to the end of the wingcases where the margins are roundly excurved, thence attenuate to the posterior end. Colour rather variable, but usually light bluish-green, the ventral surface of the abdomen more yellowish; the dorso-thoracic prominence, two spots on anterior part of thorax, two similar spots on first abdominal segment and the expanded parts of the lateral margin are pale reddish; two rows of small black spots along the dorsal side of abdomen. The colour of the pupa varies in adaptation to the colour of the objects on which the larva pupates.”

Henning, S.F., 1984: 32.

Clark, in Pringle et al., 1994: p. 406; plate 34 [as Papilio nireus lyaeus].

“The eggs are laid singly on the leaves of the foodplant. They are a pale cream colour when first laid, developing reddish-brown spots around the sides, and are 0.95 mm high by 1.15 mm in diameter. The egg stage lasts about five days. There are five larval instars. The colour of the larva varies depending on the leaf colour of the foodplant. The pupa is attached by the cremastral hooks to a silken pad and is held upright by a silken girdle. The colour is variable in accordance with where the larva pupates.”


**Larval food:**

*Calodendrum capense* Thunb. (Rutaceae) [Mrs Barber, *in* Trimen & Bowker, 1889: 240; as *Calodendron capense*; Grahamstown, Eastern Cape].

*Citrus* species (Rutaceae) [Trimen & Bowker, 1889: 240; as "Orange"; Grahamstown, Eastern Cape].

*Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Dickson & Kroon, 1978].

*Clausena* species (Rutaceae) [Van Someren, 1974: 316].

*Oricia bachmannii* (Engl.) I.Verd. (Rutaceae) [Henning, Henning, Joannou & Woodhall, 1997: 230].

*Oricia bachmannii* (Engl.) I.Verd. (Rutaceae) [Van Son, 1949: 32; as *Teclea swynnertonii*].

*Teclea natalensis* (Sond.) Engl. (Rutaceae) [Van Son, 1949: 32; as *Todalia natalensis*].

*Todalia asiatica* (L.) Lam. (Rutaceae) [Van Son, 1949: 32; as *Todalia aculeata* Pers.].

*Vepris lanceolata* (Lam.) G.Don (Rutaceae) [Mrs Barber, *in* Trimen & Bowker, 1889: 240; Grahamstown, Eastern Cape].

*Zanthoxylum capense* (Thunb.) Harv. (Rutaceae) [Van Son, 1949: 32; as *Fagara capensis* Thunb.].

*Zanthoxylum delagoense* P.G.Waterman (Rutaceae) [Dickson & Kroon, 1978].

*Zanthoxylum gilletii* (De Wild.) P.G.Waterman (Rutaceae) [Larsen, 2005a (Korup, Cameroon); as *Fagara macrophylla*].

**Relevant literature:**

Vukusic & Hooper, 2005  [Fluorescence emission].

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**Papilio (Princeps) nireus nireus** Linnaeus, 1758


**Published images:** Larsen, 2005a (male upperside x2 and underside).

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**Papilio nireus nireus.** Female. Left – upperside; right – underside. 

**Type locality**: [W. Africa]: “Indiis”. [False locality.]

**Distribution**: Senegal, Gambia, Guinea-Bissau, Guinea, Burkina Faso, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin (Fermon et al., 2001), Nigeria (south), Cameroon, Equatorial Guinea, Gabon, Congo, Angola (Bivar de Sousa & Fernandes, 1966), Central African Republic, Democratic Republic of Congo, Uganda (west – Bwamba), Tanzania (west), Zambia.

**Specific localities**:

- **Senegal** – Ziguinchov (Storace, 1952); Basse Casamance (Larsen, 2005a).
- **Guinea** – Boffa (Storace, 1952); Farmorea (Storace, 1952).
- **Liberia** – Ogrugra (Storace, 1952).
- **Ivory Coast** – Man (Dufrane, 1946); Dimbroko (Storace, 1952); Elmina (Storace, 1952).
- **Ghana** – Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
- **Togo** – Klouto [6°57’15.07"N 0°34’54.40"E] (Safian et al., 2009).
- **Benin** – Noyau Central, Lama Forest (Fermon et al., 2001); Lokoli (Tchibozo et al., 2008).
- **Cameroon** – Bonaberi (Strand, 1915); Korup (Larsen, 2005a).
- **Gabon** – Malibe (van de Weghe, 2010); Alen Nkoma (van de Weghe, 2010); Kinguele (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Waka (van de Weghe, 2010); Mimong (van de Weghe, 2010); Bitam (van de Weghe, 2010); Abeilles (van de Weghe, 2010); Langoue (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Franceville (van de Weghe, 2010); Ekouyi (van de Weghe, 2010); Bateke Plateau (van de Weghe, 2010).
- **Democratic Republic of Congo** – Luebo Kasai (Dufrane, 1946); Kafakumba (Storace, 1952).
- **Uganda** – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- **Tanzania** – Western Tanzania, from Lake Rukwa in the south to the Ugandan border in the north (Kielland, 1990dd).
- **Zambia** – Mwindulunga (Heath et al., 2002); Mbala (Heath et al., 2002); Lusaka (Heath et al., 2002); Mumbwa (Heath et al., 2002).


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**Papilio (Princeps) nireus lyaeus** Doubleday, 1845#


Type locality: Southern Africa: “Africa Australiori”.

Diagnosis: Smaller than the nominate subspecies and with narrower green bands (Kielland, 1990dd).

Distribution: Sudan (south – Didinga Mountains), Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia (Caprivi), South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, Free State Province – north, KwaZulu-Natal, Eastern Cape Province, Western Cape Province – south-east), Swaziland.

Specific localities:

Uganda – Jinja (Storace, 1952).
Tanzania – Throughout, except western and north-western parts (Kielland, 1990dd); between Mori and Mangati (Suffert, 1904); Semdoe Forest Reserve (Doggart et al., 2001).
Malawi – Mt Mulanje (Congdon et al., 2010); Zomba Mountain (Congdon et al., 2010).
Zambia – Zambezi Valley, from Kariba to Feira (Heath et al., 2002).
Mozambique – Mount Chiperone (Timberlake et al., 2007); Njesi Plateau (Congdon et al., 2010); Mt Inago (Congdon et al., 2010); Mt Namuli (Congdon et al., 2010); Mt Mabu (Congdon et al., 2010); Mt Mecula [-12.0772 37.6297] (Congdon & Bayliss, 2013).
Zimbabwe – Gwanda (Van Son, 1949); Bulawayo (Van Son, 1949); Harare (Van Son, 1949); Mutare (Van Son, 1949); Chirinda Forest (Van Son, 1949); Melsetter (Van Son, 1949); Vumba (Van Son, 1949).
Namibia – Waterberg (Van Son, 1949).
Limpopo Province – Warmbaths (Swanepoel, 1953); Potgietersrus (Swanepoel, 1953); Blouberg (Swanepoel, 1953); Lekgalameetse Nature Reserve (“Malta Forest”) (Swanepoel, 1953); Tubex (Swanepoel, 1953); Chuniespoort (Swanepoel, 1953); Woodbush (Swanepoel, 1953); Duivelskloof (Swanepoel, 1953); Mokeetzi (Swanepoel, 1953); Sibasa (Swanepoel, 1953); Punda Maria (Swanepoel, 1953); Entabeni Forest (Swanepoel, 1953); Louis Trichardt (Swanepoel, 1953); Wyliespoort (Swanepoel, 1953); Waterpoort (Swanepoel, 1953); Saltpan (Swanepoel, 1953); Messina (Swanepoel, 1953); Alldays (Swanepoel, 1953); Doorndraai Dam Nature Reserve (Warren, 1990); Percy Fyfe Nature Reserve (Warren, 1990); Highlands Wilderness (Bode & Bode, unpublished checklist); Soetdoring Farm [-24.561 28.233] (A. Mayer, pers comm. 2015); Bateleur Nature Reserve (Williams & Dobson, unpub., 2015).
Mpumalanga – Barberton (Swanepoel, 1953); Graskop (Swanepoel, 1953); Ohrigstad (Swanepoel, 1953); Maries Kop (Swanepoel, 1953); Verloren Vallei Nature Reserve (Warren, 1990); Sterkspruit Nature Reserve (Williams); Buffelspoort Nature Reserve (Williams).
North West Province – Kagswane Mountain Reserve (Williams); Utopia Resort (C. Dobson, 2006).
Gauteng – Pretoria (Van Son, 1949); Witwatersrand Botanical Gardens (J. Dobson, unpublished checklist, 2001).
Free State Province – Sasolburg (Kroon).
KwaZulu-Natal – Oribi Gorge (Swanepoel, 1953); Durban (Swanepoel, 1953); Pietermaritzburg (Swanepoel, 1953); Eshowe (Swanepoel, 1953); St. Lucia Bay (Swanepoel, 1953); Magut (Swanepoel, 1953); Kosi Bay Nature Reserve (Swanepoel, 1953); Tembe Nature Reserve (Pringle & Kyle, 2002); Ndumo Nature Reserve (Pringle & Kyle, 2002).
Eastern Cape Province – Uitenhage (Van Son, 1949); Grahamstown (Van Son, 1949); East London (Van Son, 1949); Katberg (Van Son, 1949); Humansdorp (Swanepoel, 1953); Port Alfred (Swanepoel, 1953); King William’s Town (Swanepoel, 1953); Stutterheim (Swanepoel, 1953); Butterworth (Swanepoel, 1953); Bashee River (Swanepoel, 1953); Port St. Johns (Swanepoel, 1953).
Western Cape Province – Knysna (Van Son, 1949); Plettenburg Bay (Van Son, 1949); Cape Town (occasional specimens); George (Swanepoel, 1953); Mossel Bay (Pringle et al., 1994).
Swaziland – Throughout (Swanepoel, 1953); Mlawula N. R. (www.sntc.org.sz); Malolotja N. R. (www.sntc.org.sz).


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**Papilio (Princeps) nireus pseudonireus** Felder & Felder, [1865]


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Images M.C. Williams ex Dobson Collection.

**Type locality**: [Ethiopia]: “Africa Septentroniali Oriental, Bogos”. Paratype in the Royal Museum for Central Africa, Tervuren, Belgium.

**Distribution**: Kenya (extreme north-east), Uganda (extreme north), Sudan (south), Somalia, Ethiopia, Eritrea.

**Specific localities**:
- **Somalia** – Darro Mountains (Sharpe, 1896); Meo (Sharpe, 1896).
- **Ethiopia** – Bogos (TL); Adua (Cannaviello, 1900); Dorfu (Storace, 1952); Ascalena (Storace, 1952).
- **Kenya** – Moyale (Hancock, 1984).


- **abyssinica** Cannaviello, 1900 (as var. of *Papilio nireus*). *Bollettino della Società Entomologica Italiana* 32: 292 (289-308). Ethiopia: “Adua”.


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*Papilio (Princeps) aristophontes* Oberthür, 1897


**Type locality:** Comoro Islands: “Grand Comore”.

**Distribution:** Comoro Islands (Grand Comore).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

**Note:** Larsen (2005a) treats aristophontes as a subspecies of *P. nireus* but does not formally change its status.

*Papilio (Princeps) charopus* Westwood, [1843]

**Tailed Green-banded Swallowtail**

Resting female of the Tailed Green-banded Swallowtail (*Papilio charopus montuosus*).

Kibale Forest, Uganda. Image courtesy Raimund Schutte.

*Papilio charopus* Westwood, 1843 in Westwood, [1842-3]. Arcana Entomologica; or illustrations of new, rare, and interesting species 1: 189 (192 pp.). London.


**Published images:** Larsen, 2005a (male upperside).

**Type locality:** “Gold Coast” [False locality.]. Larsen (2005a) states that the type locality is actually Cameroon.

**Distribution:** Nigeria, Cameroon, Equatorial Guinea, Democratic Republic of Congo, Uganda, Rwanda, Burundi. Recorded, in error, from Ghana by Mathot, 1990 (Larsen, 2005a).

**Habitat:** Nominate subspecies strictly limited to submontane dense forest, from 1 300 m and higher (Larsen, 2005a).

**Habits:** The flight is fast, in the forest canopy. On occasion it flies lower down where a small river opens the canopy. Females are rarely seen (Larsen, 2005a).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

*Papilio (Princeps) charopus charopus* Westwood, [1843]

*Papilio charopus* Westwood, 1843 in Westwood, [1842-3]. Arcana Entomologica; or illustrations of new, rare, and interesting species 1:
Papilio charopus Westw., 1843. Aurivillius, 1899.

**Published images:** Larsen, 2005a (male upperside).

**Type locality:** “Gold Coast” [False locality.]. Larsen (2005a) states that the type locality is actually Cameroon.

**Distribution:** Nigeria, Cameroon, Equatorial Guinea (Island of Bioko).

**Specific localities:**
- Nigeria – Obudu Plateau (Larsen, 2005a); Mambilla Plateau (Larsen, 2005a).
- Equatorial Guinea (Bioko) – Luba (San Carlos) (Schultze et al., 1917-1923); Riaba (Biapa, Concepcion) (Spearman et al., 2000); Moca (Moka) (Spearman et al., 2000); Malabo (Sta. Isabel) (Spearman et al., 2000).

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Papilio (Princeps) charopus montuosus Joicey & Talbot, 1927


**Type locality:** [Democratic Republic of Congo]: “N.W. Kivu, Upper Iowa Valley, near Masisi, 5000-6000 ft., forest and long grass country”.

**Distribution:** Democratic Republic of Congo (Ituri, Kivu), Uganda (west), Rwanda, Burundi.

**Specific localities:**
- Democratic Republic of Congo – Upper Iowa Valley, near Masisi (TL); Semliki Valley (Le Cerf, 1924).
- Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001); Kibale Forest (R. Schutte, unpublished).

*Papilio (Princeps) chrapkowskii* Suffert, 1904

Chrapkowski’s Green-banded Swallowtail


**Alternative common name:** Broad Green-banded Swallowtail.

**Type locality:** [Kenya]: “Brit.-Ost.-Africa, Nairobi”.

**Diagnosis:** According to Kielland (1990) the satiny markings on the underside of the wings are better developed than in *P. chrapkowskoides*.

**Distribution:** Uganda (east and central), Kenya (highlands), Tanzania.

**Specific localities:**
- Kenya – Nairobi (TL); Nong Forest (Storace, 1951).
- Tanzania – Amani (Strand, 1911); Oldeani (Kielland, 1990dd); Ngorongoro (Kielland, 1990dd); Marang and Nou Forests of Mbulu (Kielland, 1990dd); Kwaraha Mountain at Babati (Kielland, 1990dd).

**Habitat:** In Tanzania, montane forest and forest margins from 1 500 to 2 200 m (Kielland, 1990dd).

**Habits:** Locally common in Tanzania (Kielland, 1990dd). Flight fast and weaving. Flowers, damp patches and even carrion are visited by the species (Larsen, 1991c).

**Early stages:** Nothing published.

**Larval food:**
- *Teclea* species (Rutaceae) [Kielland, 1990dd: 37].

*brontia* Strand, 1911 (as var. of *Papilio bromius*). Deutsche Entomologische Zeitschrift, Iris 25: 120 (110-121). Tanzania: “Sigiund Amani”.

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**Papilio (Princeps) chrapkowskoides** Storace, [1952]

Broadly Green-banded Swallowtail


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*Papilio chrapkowskoides chrapkowskoides*. Male. Wingspan 75 mm. Left – upperside; right – underside.

Images M.C. Williams ex Dobson Collection.

**Type locality:** [Uganda]: “Kalinzu Forest, Uganda occidental; Entebbe”; [etc.].

**Diagnosis:** In the male of *P. chrapkowskoides* there are broad white postdiscal spots on the forewing underside; in *P. sosia* there are small submarginal white spots (as in *chrapkowskoides*) but there are no discal spots; in *P. nireus* the forewing underside is usually without spotting (Larsen, 2005a). Females are more difficult to tell apart (Larsen, 2005a).

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin (Fermon et al., 2001), Nigeria, Cameroon, Equatorial Guinea, Gabon, Congo, Angola (Bivar de Sousa & Fernandes, 1966), Central African Republic, Democratic Republic of Congo, Uganda, Rwanda, Burundi, Tanzania.

**Habitat:** In Tanzania the nominate subspecies is found in evergreen forest and forest margins, at altitudes from 780 to 2 000 m (Kielland, 1990d). In West Africa it also occurs in degraded forest and has been noted in the suburbs of Lagos (Larsen, 2005a).

**Habits:** This is a common forest butterfly (Larsen, 2005a). It is a common species in Tanzania (Kielland, 1990d). The flight is fast and weaving (Larsen, 2005a). Both sexes feed from flowers and males mud-puddle. Males also feed at fresh animal carcasses, and elephant and human urine. Females are most often found in the forest understorey (Larsen, 2005a).

**Early stages:** Nothing published.

**Larval food:**
- *Calodendrum capense* Thunb. (Rutaceae) [Van Someren, 1974: 316].
- *Teclea* species (Rutaceae) [Van Someren, 1974: 316].
- *Vepris* species (Rutaceae) [Larsen, 2005a].
- *Citrus* species (Rutaceae) [Larsen, 2005a].
Papilio (Princeps) chrapkowskoides chrapkowskoides Storace, [1952]


Type locality: [Uganda]: “Kalinzu Forest, Uganda occidental; Entebbe”; [etc.].

Distribution: Democratic Republic of Congo (east), Uganda (south-west), Rwanda, Burundi, Tanzania (west).

Specific localities:
Democratic Republic of Congo – Rutschuru, east Kivu (Storace, 1961); Altouelle (Storace, 1961); Faradje (Storace, 1961); Itimbiri (Storace, 1961).

Uganda – Kalinzu Forest (TL); Entebbe (Storace, 1952); Bukassa Island (Storace, 1952); Kibale N.P. (Davenport, 1996).

Images M.C. Williams ex Dobson Collection.

Papilio (Princeps) chrapkowskoides nurettini Koçak, 1983

Papilio bromius Doub., 1845. Aurivillius, 1899.

Published images: Larsen, 2005a (male upperside; male underside; female underside).
Type locality: [Ghana]: “Ashanti”.

Specific localities:
Ivory Coast – Man (Dufrane, 1946); Dimbroki (Storace, 1951).
Ghana – Ashanti (TL); Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
Togo – Klouto [6°57'15.07"N 0°34'54.40"E] (Safian et al., 2009).
Nigeria – Lagos (Larsen, 2005a).
Cameroon – Edea (Strand, 1913); Lolodorf (Strand, 1913); Korup (Larsen, 2005a).
Equatorial Guinea (Rio Muni) – Makomo (Strand, 1913).
Equatorial Guinea (Bioko) – Bioko (Viejo, 1984).
Gabon – Waka (van de Weghe, 2010); Langoue (van de Weghe, 2010); Kinguele (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Bitam (van de Weghe, 2010); Nouna (van de Weghe, 2010); Ivindo (van de Weghe, 2010).
Togo – Klouto [6°57'15.07"N 0°34'54.40"E] (Safian et al., 2009).
Nigeria – Lagos (Larsen, 2005a).
Cameroon – Edea (Strand, 1913); Lolodorf (Strand, 1913); Korup (Larsen, 2005a).
Equatorial Guinea (Rio Muni) – Makomo (Strand, 1913).
Equatorial Guinea (Bioko) – Bioko (Viejo, 1984).
Gabon – Waka (van de Weghe, 2010); Langoue (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Kinguelle (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Bitam (van de Weghe, 2010); Nouna (van de Weghe, 2010); Ivindo (van de Weghe, 2010).

Bromius Doubleday, 1845 (as sp. of Papilio). Annals and Magazine of Natural History (1) 16: 176 (176-182). Ghana: “Ashanti”. [Strictly invalid – Ackery et al., 1995: 140 propose to apply to the I.C.Z.N. to set aside the principle of priority in order to maintain stability. However, since the name bromius is still currently used for a Neotropical skipper it will not be possible to set aside the principle of priority in order to maintain nomenclatural stability (Larsen, 2005a).]


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**Papilio (Princeps) desmondi** van Someren, 1939

Desmond’s Green-banded Swallowtail

Type locality: Kenya: “Chyulu Range, 6800 feet”.

Diagnosis: Appearance on upperside similar to *P. chrapkowskii* but on the underside of the wings the satiny sheen is absent in *P. desmondi* (Kielland, 1990d).

Distribution: Kenya, Tanzania, Malawi, Zambia, Mozambique (Congdon et al., 2010).

Habitat: Montane forest. In Tanzania subspecies *usambaraensis* is found as low down as 300 m, at the foot of the Uzungwa Mountains, Kilombero District. It occurs up to 2 600 m (Kielland, 1990d). Subspecies *magdae* occurs at altitudes of 1 600 to 2 600 m in Tanzania (Kielland, 1990d).

Habits: The flight is strong, as in other members of the species group. Specimens of subspecies *magdae* visit flowers in gardens and are very fond of the blossoms of the exotic *Bougainvillea* (Kielland, 1990d).

Early stages: Nothing published.

Larval food:
- *Calodendrum* species (Rutaceae) [Larsen, 1991c: 113].
- *Citrus* species (Rutaceae) [Larsen, 1991c: 113].
- *Claudina* species (Rutaceae) [Larsen, 1991c: 113].
- *Tealea* species (Rutaceae) [Van Someren, 1974: 316].
- *Vepris eugeniifolia* (Engl.) I. Verd. (Rutaceae) [Van Someren, 1974: 316].
- *Zanthoxylum* species (Rutaceae) [Van Someren, 1974: 316; as *Fagara*].

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**Papilio (Princeps) desmondi desmondi** van Someren, 1939

Type locality: Kenya: “Chyulu Range, 6800 feet”.

Distribution: Kenya (south-east).

Specific localities:
- Kenya – Chyulu Hills (TL).

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**Papilio (Princeps) desmondi magdae** Gifford, 1961

Type locality: Kenya/Tanzania: “Kilimanjaro, in forest country at 5000 ft”.

Distribution: Tanzania (north).

Specific localities:
- Tanzania – Mount Kilimanjaro (TL); Mount Meru (Kielland, 1990d); North Pare Mountains (Kielland, 1990d); Arusha; Ngorongoro.

*brontes* Godman, 1885 (as sp. of *Papilio*). *Proceedings of the Zoological Society of London* 1885: 540 (537-541). Kenya/Tanzania: “Kilimanjaro, in forest country at 5000 ft”. [Invalid; junior primary homonym of *Papilio brontes* Denis & Schiffermüller, 1775 [Hesperiidae]; *Papilio brontes* Fabricius, 1787 [Hesperiidae]; and *Papilio brontes* Hübner, [1803] [Hesperiidae].]

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**Papilio (Princeps) desmondi teita** van Someren, 1960

**Type locality:** Kenya: “Wandanyi-Mabida, Teita Range”.
**Distribution:** Kenya (south-east).
**Specific localities:**
Kenya – Wandanyi-Mabida, Teita Hills (TL); Mount Sagala.

**Note:** Included in the IUCN red data book on swallowtail butterflies (Collins & Morris, 1985). Larsen (1991) regards this to be an inaccurate assessment.

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**Papilio (Princeps) desmondi usambarae**nsis (Koçak, 1980)


**Type locality:** [Tanzania]: “Tanganyika Territory, Usambara Range”.
**Distribution:** Tanzania (east and south), Malawi (north), Zambia (north-east), Mozambique.
**Specific localities:**
Tanzania – From the Usambaras in the north-east, to the Njombe Highlands and Mount Rungwe near Mbeya (Kielland, 1990d).
Zambia – Mafinga Mountains (Heath et al., 2002); Makutu Mountains (Heath et al., 2002).
Mozambique – Mt Namuli (Congdon et al., 2010); Mt Mabu (Congdon et al., 2010).

*Papilio (Princeps) hornimani* Distant, 1879
Horniman’s Green-banded Swallowtail

Papilio Hornimani Distant, 1879. Aurivilius, 1899.
**Alternative common name:** Horniman’s Swallowtail.

**Type locality:** [Tanzania]: “Magila, East Africa”.

**Distribution:** Kenya, Tanzania.

**Habitat:** Forest. In Tanzania the nominate subspecies is found in heavy forest, from 400 to 2 200 m, subspecies *mwanihanae* from 300 to 1 300 m, and subspecies *mbulu* from 1 400 to 2 400 m (Kielland, 1990d).

**Habits:** The flight is powerful. Both sexes visit flowers and males frequently mudpuddle. Females are not encountered nearly as often as males (Kielland, 1990d).

**Early stages:** Nothing published.

**Larval food:**
- *Citrus* species? (Rutaceae) [Kielland, 1990d: 40].
- *Teclea* species (Rutaceae) [Kielland, 1990d: 40].

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**Papilio (Princeps) hornimani hornimani** Distant, 1879


*Papilio Hornimani* Distant, 1879. Aurivillius, 1899.

**Type locality:** [Tanzania]: “Magila, East Africa”.

**Distribution:** Kenya (south-east), Tanzania (east and west Usambara, South Pare Mountains).

**Specific localities:**
- **Kenya** – Chyulu Hills, northern parts (Larsen, 1991c).
- **Tanzania** – Magila (TL).

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**Papilio (Princeps) hornimani mbulu** Kielland, 1990


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Mount Meru, Tanzania. 31 August 2011. S. Collins.

Images M.C. Williams ex Dobson Collection.

**Type locality:** Tanzania: “Mbulu, Mamahisara, Hasama Forest, 2000 m”. Holotype male in the Natural History Museum, London.

**Description:** “A smaller insect than ssp. *hornimani*, and less variable in the width and shape of the blue median band. Male. F.w. blue median band generally wider and straighter than in the nominate race, almost of even width, greenish to
bluish-green; h.w. tails shorter; blue median band wide, more even in width and its distal border much more even than in ssp. hornimani. Underside f.w. with the distal border of the submarginal silver-white spots only slightly indented or nearly straight (in ssp. hornimani strongly concave, making the spots look sickle-shaped). Length of f.w. Mbulu-Oldeani specimens 53-56 mm; average 55 mm; Meru-Kilimanjaro specimens 54-57 mm; average 56 mm. The latter populations have slightly longer tails. Female. Upperside very variable, but differs from ssp. hornimani in the markings being much greener (not blue as in hornimani), and h.w. median band not being strongly indented as it is in hornimani; tails shorter. Underside f.w. submarginal grey-white spots less concave distally than in hornimani. Length of f.w. 57 mm in the Mbulu population (only one); 63 mm in Mt Meru population (only one). Females are rare in collections.”

**Distribution**: Tanzania (northern highlands).

**Specific localities**:
- Tanzania – Mbulu forests (Hasama, Marang) (TL);
- Ngorongoro (Kielland, 1990d);
- Oldeani (Kielland, 1990d);
- Mount Kwaraha (Kielland, 1990d);
- Mount Meru (Kielland, 1990d);
- Mount Kilimanjaro (Kielland, 1990d).

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**Papilio (Princeps) hornimani mwanihanae** Kielland, 1987


**Type locality**: Tanzania: “Kilombero, Sanje, 300 m”. The female is unknown (Kielland, 1990d: 40).

**Distribution**: Tanzania (south-east).

**Specific localities**:
- Tanzania – Mwanihana National Park, in Kilombero District (TL).

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**Papilio (Princeps) interjectana** Vane-Wright, 1995

*Van Someren’s Green-banded Swallowtail*


**Type locality**: Kenya: “Kaimosi Forest”.

**Distribution**: Uganda, Kenya (west).

**Specific localities**:
- Uganda – Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- Kenya – Kaimosi Forest (TL); Mount Elgon (Larsen, 1991c); South Kavirondo (Larsen, 1991c).

**Habitat**: Forest. Only undisturbed forest in good condition is inhabited.

**Habits**: A common species in western Kenyan forests (Larsen, 1991c). Specimens appear to spend most of the time in the forest canopy, only coming down to drink from damp patches (Larsen, 1991c). Indistinguishable, on the wing, from the sympatric *P. chrapkowskii*.

**Early stages**: Nothing published.

**Larval food**: Nothing published.

*interjecta* van Someren, 1960 (as sp. of *Papilio*). *Boletim de Sociedade de Estudos (da Colónia) de Moçambique* 29 (No. 123): 70 (61-93). Kenya: “Kaimosi Forest”. [Invalid; junior primary homonym of *Papilio leucothoe* var. *interjectus* Honrath, 1892 [Papilionidae].]

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**Papilio (Princeps) nerminae** Koçak, 1983


**Type locality**: Sao Thome and Principe: “Island of Sao Thomé, West Africa”.

**Distribution**: Sao Tome & Principe (Island of Sao Tome).

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Early stages: Nothing published.
Larval food: Nothing published.


*Papilio (Princeps) sosia* Rothschild & Jordan, 1903
Medium Green-banded Swallowtail


Published images: Larsen, 2005a (male upperside).

Type locality: Sierra Leone.

Diagnosis: Specimens of *P. sosia*, occurring sympatrically with *P. chrapkowskoides* in western Tanzania, can only be separated with certainty by examination of the genitalia (Kielland, 1990d).


Habitat: Lowland forest. Only occurs in good quality wet or drier forests (Larsen, 2005a). In Tanzania ssp. debilis occurs at altitudes from 800 to 1,500 m (Kielland, 1990d).

Habits: Much scarcer than *P. chrapkowskoides* but the behaviour is similar (Larsen, 2005a).

Early stages: Nothing published.

Larval food:
(possibly) Citrus species (Rutaceae) [Larsen, 2005a].
(probably) Teclea species (Rutaceae) [Kielland, 1990d: 45].
(probably) Toddalia species (Rutaceae) [Kielland, 1990d: 45].

Zanthoxylum gilletii (De Wild.) P.G.Waterman (Rutaceae) [Larsen, 2005a (Ankasa, Ghana); as Xanthoxylon gillesi].

*Papilio (Princeps) sosia sosia* Rothschild & Jordan, 1903


Published images: Larsen, 2005a (male upperside).

Type locality: Sierra Leone.

Distribution: Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin, Nigeria (south), Cameroon (west).

Specific localities:
Ghana – Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
Cameroon – Korup (Larsen, 2005a).

*Papilio (Princeps) sosia debilis* Storace, [1951]

**Type locality:** Uganda: “Bussa-Busoga; route Jinja-Iganga (Busoga); Kakindu; Butiaba (Lac Albert, Uganda), Forêt de Budongo, 1200 m.”.

**Distribution:** Uganda, Tanzania (north-west).

**Specific localities:**
- **Uganda** – Bussa-Busoga (TL); Kakindu (Storace, 1951); Butiaba (Storace, 1951); Budongo Forest (Storace, 1951); Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise *et al*., 2001).
- **Tanzania** – forests near Lake Tanganyika (Kielland, 1990d); Ntakatta Forest (Kielland, 1990d).

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**Papilio (Princeps) sosia pulchra** Berger, 1950


**Type locality:** Democratic Republic of Congo: “Stanleyville, Secteur de Basoka”. Holotype and allotype in the Royal Museum for Central Africa, Tervuren, Belgium.

**Distribution:** Cameroon, Gabon, Congo, Central African Republic, Angola (north) (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo.

**Specific localities:**
- **Cameroon** – Makak station (Birket-Smith, 1960).
- **Gabon** – Tchimbele (van de Weghe, 2010); Waka (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Langoue (van de Weghe, 2010).
- **Congo** – Etoumbi (Storace, 1951).
- **Democratic Republic of Congo** – Stanleyville (TL).


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**Papilio (Princeps) thuraui Karsch, 1900**


**Type locality:** [Tanzania]: “Ostafrika, auf der Route von Ubena nach Langenburg”.

**Distribution:** Democratic Republic of Congo, Tanzania, Malawi, Zambia.

**Habitat:** Montane forest. In Tanzania occurs at altitudes from 1 300 to 2 600 m (Kielland, 1990d).

**Habits:** Both sexes are strongly attracted to flowers, even visiting those in gardens. The flight is fast and powerful. Males are sometimes found mud-puddling (Kielland, 1990d).

**Early stages:** Nothing published.

**Larval food:**
- *Toddalia* species (Rutaceae) [Congdon, vide Kielland, 1990d: 45].
- *Toddalia asiatica* (L.) Lam. (Rutaceae) [Heath *et al*., 2002: 24].

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**Papilio (Princeps) thuraui thuraui** Karsch, 1900

**Type locality**: [Tanzania]: “Ostafrika, auf der Route von Ubena nach Langenburg”.

**Distribution**: Tanzania (south), Malawi (north).

**Specific localities**:
- Tanzania – Between Ubena and Langenburg (TL); from Luhombero Mountain in the Uzungwa Range to Mufindi (Kielland, 1990d); Njombe (Kielland, 1990d); Livingstone Mountains (Kielland, 1990d); Mount Rungwe (Kielland, 1990d); mountains surrounding the Tukuyu basin (Kielland, 1990d).

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**Papilio (Princeps) thuraui cyclopis** Rothschild & Jordan, 1903


**Type locality**: Malawi: “Kasungu Mt., Nyika, Nyassaland, 7450 ft.”.

**Distribution**: Malawi (Nyika Plateau), Zambia.

**Specific localities**:
- Malawi – Kasungu Mountain (TL).
- Zambia – Nyika Plateau (Heath *et al*., 2002); Chowa Forest (male illustrated above).

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**Papilio (Princeps) thuraui heathi** (Hancock, 1984)


*Papilio thuraui heathi* (Hancock, 1984). Hancock, 1993: 563.

**Type locality**: Malawi: “Mlanje”

**Distribution**: Malawi.

**Specific localities**:
- Malawi – Mt Mulanje (TL).
**Papilio (Princeps) thuraui ngorongoro (Hancock, 1984)**


**Type locality:** Tanzania: “Ngorongoro Crater, 3° 15’S, 35° 30’E, NW of Lake Manyara”.

**Distribution:** Tanzania (north).

**Specific localities:**
- Tanzania – Ngorongoro Crater (TL).

**Note:** Kielland (1990: 37) states that *ngorongoro* is a synonym of *P. chrapkowskii* but does not officially sink it.

**Papilio (Princeps) thuraui occidua Storace, [1951]**


**Type locality:** [Democratic Republic of Congo]: “Congo Belge, Kasai”.

**Distribution:** Democratic Republic of Congo (Kasai), Malawi, Zambia (north-east).

**Specific localities:**
- Democratic Republic of Congo – Kasai (TL).
- Zambia – Bwingi Mfumu (Heath et al., 2002).

*occidentale* van Someren, 1960 (as ssp. of *Papilio brontes*). *Boletim de Sociedade de Estudos (da Colônia) de Moçambique* 29 (No. 123): 69 (61-93). [Lapsus for *occidua* Storace.]

**Papilio (Princeps) thuraui viphya (Hancock, 1984)**


**Type locality:** Malawi: “Musamba, Viphya, 1570 m”.

**Distribution:** Malawi.
**Specific localities:**
Malawi – Musamba, Viphya (TL).

*Papilio (Princeps) ufipa* Carcasson, 1961


**Type locality:** [Tanzania]: “Mbisi forest, Sumbawanga, Ufipa, south-west Tanganyika”.

**Diagnosis:** Distinguished on the forewing underside by the very large white postdiscal markings (Kielland, 1990d).

**Distribution:** Tanzania (south-west – Ufipa district).

**Specific localities:**
Tanzania – Mbisi Forest, Ufipa, Rukwa region (TL).

**Habitat:** Riparian and montane forest at altitudes from 1 000 to 2 400 m (Kielland, 1990d).

**Habits:** The flight is rapid but males will swoop down to investigate dead specimens placed on the ground as decoys. The males are territorial, patrolling a specific area. Females are seldom seen (Kielland, 1990d).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

ufipa Carcasson, 1960 (as ssp. of *Papilio bromius*). Journal of the East African Natural History Society Special Supplement No. 6: 16 (33 pp.). [Nomen nudum.]

*Papilio (Princeps) wilsoni* Rothschild, 1926

*Papilio wilsoni* Rothschild, 1926. Annals and Magazine of Natural History (9) 17: 113 (112-114).

**Synonym of** *P. nireus pseudonireus*. Ackery et al., 1995: 153.

**Type locality:** Ethiopia: “Nubar Hills, Taldi, 10° 39’N, 1625 ft.”

**Distribution:** Ethiopia.

**Specific localities:**
Ethiopia – Nubar Hills, Taldi (TL).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

Papilio cynorta group

*Papilio (Princeps) cynorta* Fabricius, 1793

Mimetic Swallowtail

*Papilio cynorta* Fabricius, 1793. Entomologia Systematica emendata et aucta 3 (1): 37 (488 pp.).
**Papilio cynorta.** Male. Wingspan 74 mm. Left – upperside; right – underside.
Mabira Forest, Uganda. 15 June 2009. J. Dobson.
Images M.C. Williams ex Dobson Collection.

**Papilio cynorta.** Female. Wingspan 74 mm. Left – upperside; right – underside.
Mabira Forest, Uganda. 15 June 2009. J. Dobson.
Images M.C. Williams ex Dobson Collection.

**Published images:** Larsen, 2005a (male upperside and underside; female upperside).

**Type locality:** No locality given. Larsen (2005a) gives the type locality as Uganda.

**Diagnosis:** The female is a near perfect mimic of *Acraea epea* (Larsen, 2005a).

**Distribution:** Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria (south), Cameroon, Equatorial Guinea (Bioko island), Gabon, Congo, Angola (Bivar de Sousa & Fernandes, 1966), Central African Republic, Democratic Republic of Congo, Uganda, Tanzania.

**Specific localities:**
- **Ghana** – Cape Coast (Larsen, 2005a); Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
- **Cameroon** – Bié (Le Cerf, 1924); Korup (Larsen, 2005a).
- **Equatorial Guinea (Bioko)** – Luba (San Carlos) (Schultze et al., 1917-1923).
- **Gabon** – Akaka (van de Weghe, 2010); Pointe Pongara (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Mboumie (van de Weghe, 2010); Waka (van de Weghe, 2010); Lope (van de Weghe, 2010); Langoue (van de Weghe, 2010); Kongou (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Nouna (van de Weghe, 2010).
- **Democratic Republic of Congo** – Between Epuru and Ituri River (Le Cerf, 1924).
- **Uganda** – Entebbe (Neave, 1904); Bujaka (Ehrmann, 1918); Mabira Forest (Bryk, 1928); Semuliki N.P. (Davenport & Howard, 1996); Kibale N.P. (Davenport, 1996); Moroto (Davenport, 1996); Nyanga-Napore (Davenport, 1996); Maramogamo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- **Tanzania** – Kigoma District and extreme northern parts of Mpanda District (Kielland, 1990d).

**Habitat:** In Tanzania it occurs in evergreen forest at elevations of 780 to 1400 m, rarely at the latter altitude.
(Kielland, 1990d). Larsen (2005a) found it in drier forests in West Africa.

**Habits:** This is a fairly common butterfly (Larsen, 2005a). It is locally common where it occurs (Kielland, 1990d). It keeps strictly to the forest understorey, weaving its way through tangled undergrowth. It even feeds from flowers growing in very shady places (Larsen, 2005a). Females have the slow wandering flight of their acraeine model (Larsen, 2005a). The flight is low down and rather erratic. The males mud-puddle.

**Early stages:**

Schultze, 1917 [pupa].

**Larval food:**

*Clausena* species (Rutaceae) [Van Someren, 1974: 316].

*Vepris* species (Rutaceae) [Kielland, 1990d: 38].

*Clausena* species (Rutaceae) [Kielland, 1990d: 38].

*Calodendrum* species (Rutaceae) [Larsen, 2005a].

*Citrus* species (Rutaceae) [Larsen, 2005a].

*Fagara* species (Rutaceae) [Larsen, 2005a].

*Tecelea* species (Rutaceae) [Larsen, 2005a].

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**zerynthius** Boisdouval, 1836 (as sp. of *Papilio*). *In:* [Roret, Suites à Buffon] Histoire naturelle des Insectes. Species général des Lépidopteres 1: 370 (690 pp.). Paris. Sierra Leone.

**boisduvallianus** Westwood, 1842 *in* Westwood, [1842-3] (as sp. of *Papilio*). Arcana Entomologica; or illustrations of new, rare, and interesting species 1: 151 (192 pp.). London. Sierra Leone.

**norcyla** Suffert, 1904 (as ssp. of *Papilio cynorta*). Deutsche Entomologische Zeitschrift, Iris 17: 94 (12-107). Togo.


**triptolemus** Ehrmann, 1918 (as sp. of *Papilio*). Lepidoptera, Forest Hills 2: 21 (21-22). Uganda: “Bujaka”.

**lavochrea** Le Cerf, 1924 (as f. of *Papilio cynorta*). Bulletin of the Hill Museum, Witley 1: 391 (369-399, 576, 578, 580, 582, 584). Cameroon: “Cameroon, Bîje, Ja River, 2,000 ft.”.


**acraeaminus** Bryk, 1928 (as female f. of *Papilio cynorta*). Societas Entomologica 43: 15 (13-16). Uganda: “Mabira Forest”.

**albofurculatus** Bryk, 1928 (as f. of *Papilio cynorta*). Societas Entomologica 43: 15 (13-16). No locality given.


**agayana** Stoneham, 1951 *in* Stoneham, 1951-65 (as f. of *Papilio cynorta cynorta*). The butterflies of western Kenya with notes on allied forms, etc. 20 (180 pp.). Nairobi. No locality given.

**bwambensis** Stoneham, 1951 *in* Stoneham, 1951-65 (as f. of *Papilio cynorta cynorta*). The butterflies of western Kenya with notes on allied forms, etc. 20 (180 pp.). Nairobi. No locality given.

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*Papilio (Princeps) arnoldiana* Vane-Wright, 1995

*Papilio cynorta arnoldi* Poulton, 1926. Invalid (see below).

*Papilio (Princeps) arnoldiana* Vane-Wright, 1995. *In:* Ackery et al., 1995: 139. Replacement name for *arnoldi* Poulton, 1926.
**Type locality**: Ethiopia: “S.W. Abyssinia, Grine, 4000 ft”.

**Distribution**: Ethiopia (south-west).

**Specific localities**: Ethiopia – Grine (TL).

**Early stages**: Nothing published.

**Larval food**: Nothing published.


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**Papilio (Princeps) plagiatus** Aurivillius, 1898

*Mountain Mimetic Swallowtail*


*Papilio plagiatus* Auriv., 1898. Aurivillius, 1899.

**Published images**: Larsen, 2005a (male upperside and female upperside).

**Type locality**: [Democratic Republic of Congo]: “Congogebiet, Sassa am oberen Ubangi”. Holotype and allotype in the Royal Museum for Central Africa, Tervuren, Belgium.

**Diagnosis**: The male differs from *P. cynorta* in that the discal bands are pure white without any trace of ivory (Larsen, 2005a). The female is an excellent mimic of *Acraea* species, such as *A. macaria* and *A. alcinoe* (Larsen, 2005a).

**Distribution**: Nigeria (east), Cameroon, Central African Republic, Democratic Republic of Congo (Mongala, Uele, Ituri), Sudan (south), Uganda.

**Specific localities**:
- Nigeria – Gashaka-Gumpti (Larsen, 2005a); Obudu Plateau (Larsen, 2005a); Oban Hills (Larsen, 2005a).
- Democratic Republic of Congo – Sassa (TL).

**Habitat**: Submontane forest but also flying in lowland forest (Larsen, 2005a).

**Habits**: A reasonably common butterfly, which flies slowly through tangled forest undergrowth. Males are known to mud-puddle (Larsen, 2005a).

**Early stages**: Nothing published.

**Larval food**: Nothing published.

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**Papilio dardanus group**

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**Papilio (Princeps) dardanus** Brown, 1776

*Mocker Swallowtail*

Mocker Swallowtail (*Papilio dardanus*). Left and centre – males. Right – female form *trophonius*. 35
Papilio dardanus Brown, 1776. Aurivillius, 1899.

Alternative common name: Flying Handkerchief.
Published images: Larsen, 2005a (male upperside; usual female form; female form dionysos).


Type locality: No locality given [West Africa].
A single sighting of a specimen of an unknown subspecies from Aldabra Atoll, Seychelles; most probably a vagrant (Legrand, 1965).
**Diagnosis:** The many female forms are easily confused with their respective danaine, heliconine and day-flying moth models. Females from Madagascar and the Comoros Islands are non-mimetic, resembling the males, while those from Ethiopia, while being tailed like males, show mimetic wing patterns in some of the female forms (Pringle et al., 1994). In West Africa the usual female form is a mimic of *Amauris niavius*. A second, rare, female form (f. *dionysos* Doubleday, 1846) has much more white on the forewing and the hindwings are mainly orange-yellow – this form appears to mimic day-flying moths of the type also mimicked by *Cymothoe beckeri* (Larsen, 2005a). Polymorphism and mimicry is reviewed in detail, in French, by Bernardi et al., 1985.

**Habitat:** Evergreen forest, both primary and secondary. Also in riparian forest. Larsen (2005a) notes that it prefers drier forests in West Africa, not penetrating wetter forests to any extent. In West Africa its ability to utilize species of cultivated citrus has led to it being common in large cities such as Lagos and Freetown (Larsen, 2005a). In Tanzania the nominate subspecies is found at altitudes between 780 and 1 700 m, subspecies *tibullus* from sea-level to 2 100 m, and subspecies *meseres* above 1 400 m (Kieland, 1990d).

**Habits:** A common to very common species. Males are conspicuous on the wing and have a fairly leisurely but rather erratic flight pattern. They alight on a leaf, with closed wings, as soon as a cloud obscures the sun. Females have a slow, wandering flight pattern, usually keeping low down in the forest undergrowth. Both sexes are attracted to flowers and males mudpuddle (Pringle et al., 1994). Males are also attracted to foul matter (Larsen, 2005a). Males patrol large territories, flying about two metres above the ground, along forest edges and in forest clearings. A large body of literature, mainly by Clarke & Sheppard, has accumulated with respect to the genetics of mimicry in this species (see Bibliography for references). Larsen (1991) states that there is some evidence that *P. dardanus* is distasteful to some birds, indicating that mimicry may be partly Müllerian rather than wholly Batesian.

**Flight period:** All year, with peaks in December-January, and April in southern Africa (Pringle et al., 1994).

**Early stages:**

Mansel Weale, 1874: 131 (*Trans Ent. Soc. Lond.*).

Trimen & Bowker, 1889: 250 [as *Papilio Cenea* Stoll].

“**Larva.** 1st Stage.** Black, with white filamentous tubercles on second segment and anal segment. 2nd Stage.** Two pairs of filamentous tubercles on same segments, the first and last pairs longest; a white transverse lunular band, connected with the head laterally, across sixth and seventh segments. Laterally a broad white band above spiracles. Last two segments whitish. From this growth to the last change but one, the filamentous tubercles grow longer, and the ground colour changes from greenish-brown to greenish, and the white markings grow less distinct. Full-grown larva. Bluish-green, like larva of *Philognoma Varanes* [*Charaxes varanes*]. Tubercles very short, those next head yellowish, on anal segment whitish; very much like a slug in shape. Y-like organ crimson-lake at base, tapering to greenish-white. On fourth segment, two small black spots, bordered by a narrow white line; sixth and seventh segments festooned with delicate whitish zigzag lines. A double row of bluish-white dots along back. Lateral borders above spiracles white. Head and true legs green, false legs pale-ochreous. ⅜ to ⅛ inch long.”

“**Pupa.** Anteriorly much attenuated, but about middle greatly expanded laterally; posteriorly tapering rather abruptly to a point. Inferior side strongly convex, especially about broadest part of wing-covers; superior side moderately concave from tail to disco-thoracic prominence, which is acute but not much elevated; lateral line along expansion forming a sharp thin ridge. Head very prominent; the two ordinary points not being divergent, but directed straight forward with their inner edges closely contiguous, so as to form a single forward projection tapering together to one point. Bright yellowish-green on back and rather dull-green on under side. Along back, a median whitish-ferruginous streak, commencing with a small spot on thoracic elevation, and gradually becoming slightly wider and better defined until it reaches anal extremity. On each side of this streak on fifth abdominal segment, a subquadrilateral reddish-white spot, external to which is a dot of the same colour (the second and most apparent in a longitudinal row of four). Expansion of lateral margin bounded by yellow (here and there varied with whitish-ferruginous) along the ridge separating the dorsal and ventral aspects, from head to tail. Spiracles situated just above this thin lateral ridge. On ventral aspect a narrow longitudinal streak defines the line of the median convex ridge. On wing-covers, besides some very fine pale lines indicating the neuration, some similar transverse lines on each side of the same length. On sixth segment of abdomen, on each side of median streak, a sub-ovate whitish ferruginous spot. Length, 1 in. 3½ and 1 in. 4½ lin.; greatest width (across third abdominal segment) 6 lin.; greatest depth (at junction of second and third abdominal segments) from breast to back 4 lin. and 5 lin. (Described from two pupae forwarded by Mr. J.P. Mansel Weale from the neighbourhood of King William’s Town.)

Mr. Weale [1874] observes “that the larva about to pupate generally fixes its anal legs below the axil of a leaf-stalk, and fastens itself below sixth” [actually metathoracic] “segment with a double thread to the petiole.” In this position the ventral or under side of the pupa, which is darker than the dorsal or upper side, is uppermost; and the general resemblance of the insect to the leaflets of its food-plant, which in outline is very remarkable, is thus completed, *V. lanceolata* having the leaflets darker above and paler below. Mr. Weale further points out that such minutae as the more glossy upper surface of the
leaflets, the slight inflections of their margins, the slightly ferruginous tint of the mid-rib, and the reticulated venation, are all to some extent imitated in this chrysalis. The modifications of shape and outline which combine with the colouring to complete this deceptive resemblance are unusually great, when the pupa is compared with those of the other species of *Papilio*. Not only is the whole pupa much flattened, and the convexity of the ventral and pectoral region balanced by an unusual concavity of the dorsal region (with almost a suppression of the dorso-thoracic prominence), but the development and expansion of the lateral longitudinal ridges is very pronounced. The cephalic projections, however, exhibit the most unique form. If these had retained the customary conspicuous divergence into two prominent processes, as in *P. Demoleus* [*demodocus*], *P. Lyaeus* [*P. nireus lyaeus*], etc., it is obvious that the general resemblance to a leaf would have been greatly lessened, and the object of concealment to some extent frustrated. These projections are, however, brought closely together, so that their inner edges touch throughout their length to the very extremity, and their outer edges converge to a common point; and in this manner the top of the leaf is accurately represented.”

Clark, in Van Son, 1949: 14 [as *Papilio (Papilio) dardanus cenea*].

**Egg.** 1.5 mm in diameter, white with reddish brown spots in upper half, which are confluent around middle, forming a ring; egg stage 9 days. **Larva.** Five larval instars taking 35-40 days. **First instar larva.** 3 mm long on hatching; blackish brown except dorsal half of two anterior and two posterior segments, W-shaped mark on dorsum of 6th segment and some marks at bases of dorsal processes, which are white; a double outer row of setate processes dorsally on each side, those of first and last segments being longest, and inner row of smaller processes on 1st to 5th segments; head black; thickest at 3rd segment. **Second instar larva.** Lighter brown (some larvae greenish); wider white marking on 6th segment; only anterior pair and last two posterior pairs of setate processes remain, a small inner pair on first, and two small outer pairs on second and third. **Third instar larva.** Only differs from 2nd instar in absence of smaller setate processes of first three segments, and in presence of a double row of small blue tubercles on 3rd, 4th and 7th to 9th segments; white mark on 6th segment enlarged and extending laterally over sides of 2nd and dorsally a little over 4th segment; posterior white part partially covers 11th segment; dorsum lighter brown than in 2nd instar, and sides and head greenish. **Fourth instar larva.** Ground colour green; processes smooth, with second last pair much reduced; blue dorsal tubercles on all abdominal segments except last, with additional rows on thoracic segments. **Fifth (final) instar larva.** 35 mm long; green with all white markings broken up into small spots or lines; ventral half of sides light blue with oblique white lines; anterior edge of 1st segment rusty yellow; 3rd segment with two small dorso-lateral black spots edged with white; head and thoracic legs yellowish green; prolegs green; body much thickened and humped at 3rd segment, tapering to posterior end; 1st and last segments with pairs of small projections; blue tubercles as in 4th instar but more prominent. **Pupa.** Anteriorly much attenuated, with paired cephalic processes contiguous along their inner edges; greatly widened at middle and attenuated posteriorly; thorax raised dorsally; abdomen dorso-ventrally flattened, with lateral edges forming sharp ridge; colour yellowish green dorsally, dull green ventrally, with rusty brown dorso-medial and lateral markings; a spot at middle of thoracic hump; series of streaks on middle of abdomen; lateral patches on 5th to 7th segments and smaller ones on 9th and 10th segments; ventral surface with only a few dark markings on abdomen near wing-cases.

Carcasson, 1981 [larva and pupa].


Clark, in Pringle et al., 1994: p.398; plate 30 [as *Papilio dardanus cenea*].

“The eggs are laid singly on the leaves of the foodplant. They are 1.5 mm in diameter. The egg stage lasts about nine days. The larvae at first eat holes out of the leaves, but later eat from the edge. They rest along the midrib of the leaf. The larval stage lasts about 40 days. Larvae usually pupate on the stem. The pupae are held upright by a silken girdle and are attached by cremastral hooks to a silken pad. The pupal stage may vary in length from a couple of weeks to several months.”

Papilio dardanus cenea fourth (left) and final (right) instar larvae. Images courtesy Allison Sharp (left) and Raimund Schutte (right)

Papilio dardanus cenea pupa. Image courtesy Raimund Schutte

Larval food:

1Clausena anisata (Willd.) Hook.f. ex Benth. (Rutaceae) [Van Son, 1949: 14; as Clausena inaequalis (DC.) Benth.].

Calodendrum capense Thunb. (Rutaceae) [Kielland, 1990d: 38].

Citrus species (Rutaceae) [Van Son, 1949: 15; Van Someren, 1974: 315].

Macrostylis villosa (Thunb.) Sond. (Rutaceae) [Van Someren, 1974: 315; as Teclea villosa N.R.F. Tayler].

Oricia bachmannii (Engl.) I.Verd. (Rutaceae) [Van Son, 1949: 15; as Teclea swynnertoni].

Oricia bachmannii (Engl.) I.Verd. (Rutaceae) [Williams, 1994: ; Williams, 1996: 134; Lekgalameetse Nature Reserve, Limpopo Province].

Teclea natalensis (Sond.) Engl. (Rutaceae) [Van Son, 1949: 15; as Toddalia natalensis].

Teclea stuhlmanni Engl. (Rutaceae) [Van Someren, 1974: 315].

Toddalia asiatica (L.) Lam. (Rutaceae) [Van Son, 1949: 15; as Toddalia aculeata Pers; Van Someren, 1974: 315].

Vepris eugeniifolia (Engl.) I.Verd. (Rutaceae) [Van Someren, 1974: 315].

Vepris lanceolata (Lam.) G.Don (Rutaceae) [Henning, G.A. et al., 1997; Vepris undulata].

Vepris lanceolata (Lam.) G.Don (Rutaceae) [J.P. Mansel Weale, 1874: 133].

Vepris nobilis (Delile) Mziray (Rutaceae) [Van Someren, 1974: 315; Mullin, in Pringle et al., 1994: 302; as Teclea nobilis Delile].

Vepris simplicifolia (Engl.) Mziray (= viridis) (Rutaceae) [Van Someren, 1974: 315; as Teclea simplicifolia (Engl.) Verdoorn].

Xyonalos monospora (Harv.) Baill. (Monimiaceae) [Wykeham, in: Dickson & Kroon, 1978].

Zanthoxylum species (Rutaceae) (syn. Fagara) [Larsen, 1991c: 110].

1Unpublished observations:

I have tried, on several occasions, to rear the larvae of *P. dardanus cenea* on *Clausena anisata*, and have found that they do not thrive. A few larvae managed to pupate but the resulting adults were severely runted. Additionally, I have never observed *dardanus cenea* ovipositing on *C. anisata* in nature and although I have found many larvae of *P. ophidicephalus* and *P.
echerioides on C. anisata, in the wild, I have never found dardanus cenea larvae on this plant.

**Relevant literature:**
- Davis, 2009 [Literature and historical review; mutation; evolution; mimicry].
- Clark *et al*., 2008 [Genetics of mimicry colour patterns].
- McLeod & McLeod, 2004 [Description of ab. obscura].
- Cieslak *et al*., 2003 [Variation and adaptation].
- Madzvamuse *et al*., 2003 [Mathematical models of wing patterns].
- Nijhout, 2003 [Polymorphic mimicry].
- Sekimura *et al*., 2003 [Pattern formation in wings].
- Nijhout *et al*., 2003 [Pigmentation and pattern formation].
- Cohen, 2002 [Historical account of taxonomy].
- Clarke *et al*., 1987 [Crosses between subspecies].
- Clarke, 1986 [Experimental hybridization with Papilio phorcas].
- Bernardi *et al*., 1985 [Review of polymorphism and mimicry].
- Clarke & Sheppard, 1963 [Genetics of mimetic patterns in].
- Clarke & Sheppard, 1962 [Genetics of various subspecies].
- Clarke & Sheppard, 1960a [Genetics of various subspecies].
- Clarke & Sheppard, 1960b [Genetics of ssp. antinorii and meriones].
- Clarke & Sheppard, 1960c [Evolution of mimicry in].
- Clarke & Sheppard, 1960d [Super-genes and mimicry in].
- Clarke & Sheppard, 1960e [Evolution of dominance patterns in].
- Clarke & Sheppard, 1959 [Genetics of ssp. cenea].
- Barker, 1917b [Descriptions of varieties of Papilio dardanus cenea].

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**Papilio (Princeps) dardanus dardanus** Brown, 1776


**Papilio dardanus dardanus** female form *planemoides*. Left – upperside; right – underside. 

**Type locality**: No locality given [West Africa].

**Distribution**: Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Burkina Faso, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea (Bioko), Gabon, Congo, Central African Republic, Angola (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo, Uganda (excluding western shores of Lake Victoria), Kenya (extreme west), Zambia (north).

Erroneously recorded from South Africa, as *Papilio merope* Cramer, by Trimen, 1862c (MCW).

**Specific localities**:
- **Senegal** – Basse Casamance (Larsen, 2005a).
- **Sierra Leone** – Freetown (Larsen, 2005a).
- **Ivory Coast** – Sassandra Forest (Poutlon, 1923).
- **Ghana** – Aburi (Larsen, 2005a); Shai Hills (Larsen, 2005a); Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
- **Burkina Faso** – Ougadougou (A. Prost, vide Larsen, 2005a); Banfora (A. Prost, vide Larsen, 2005a).
- **Togo** – Klouto [6°57'15.07"N 0°34'54.40"E] (Safian et al., 2009).
- **Benin** – Lokoli (Tchibozo et al., 2008).
- **Nigeria** – Calabar (Aurivillius, 1899); Lagos (Larsen, 2005a); Kaduna (Larsen, 2005a); Jos (Larsen, 2005a).
- **Cameroon** – Victoria (Suffert, 1904); Barombi Station (Suffert, 1904); Edea (Dufrane, 1933).
- **Equatorial Guinea** – San Carlos South (Shultz, 1913).
- **Gabon** – Almost throughout (van de Weghe, 2010).
- **Central African Republic** – Bangui (Basquin & Turlin, 1986).
- **Angola** – Chinchoxo (Suffert, 1904).
- **Democratic Republic of Congo** – Ituri (Aurivillius, 1907); Luebo (Dufrane, 1946).
- **Uganda** – Mpolegoma (Bryk, 1928); Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001); Kayonza Forest (male illustrated above); Kampala (female illustrated above).
- **Kenya** – Kakamega Forest (Larsen, 1991c).
- **Tanzania** – Mpenda to Kigoma and Bukoba (Kielland, 1990d).
- **Zambia** – Ikelenge (Heath et al., 2002); Kasangezhi (Heath et al., 2002); Mwinilunga (Heath et al., 2002); Chilabombwe (Heath et al., 2002); Mufulira (Heath et al., 2002); Ndola (Heath et al., 2002); Chisamba (Heath et al., 2002); Kundalila Falls (Heath et al., 2002); Samfya (Heath et al., 2002); Lunzua Falls (Heath et al., 2002); Bwingi Mfumu (Heath et al., 2002); Kalungwishi River (Heath et al., 2002); Mbala (Heath et al., 2002).

*merope* Cramer, 1777 (as sp. of *Papilio*). *Die Uitlandsche Kapellen voorkomende in de drie waereld-deelen Asia, Africa en America* 2: 87 (151 pp.). Amsteldam & Utrecht. [West Africa]: “Java and Amboina”. [False locality]. [Invalid; junior primary homonym of *Papilio merope* Fabricius, 1775 [Satyrinae].]
brutus Fabricius, 1781 (as sp. of Papilio). *Species Insectorum* 2: 13 (499 pp.). Hamburgi & Kilonii. West Africa: “in Africa aequinoctiali”. [Invalid; junior primary homonym of *Papilio brutus* Cramer, 1779 [Nymphalidae].]

hippocoon Fabricius, 1793 (as sp. of Papilio). *Entomologia Systematica emendata et aucta* 3 (1): 38 (488 pp.). Sierra Leone: “Sierra Leon”.


punctata Dufrane, 1933 (as ab. of Papilio dardanus dardanus). *Lambillionea* 33: 165 (164-166). Democratic Republic of Congo: “Congo Belge”.

divisa Dufrane, 1933 (as ab. of Papilio dardanus dardanus). *Lambillionea* 33: 165 (164-166). Cameroon: “Edéa”.

bipunctata Dufrane, 1933 (as ab. of Papilio dardanus dardanus). *Lambillionea* 33: 165 (164-166). Democratic Republic of Congo: “Congo Belge”.


**semimelas** Basquin & Turlin, 1986 (as f. of *Papilio dardanus*). Bulletin de la Société Scientifique Naturelles as s 116 (2): 60 (60). Locality and subspecies?.

**obscura** McLeod & McLeod, 2004 (as ab. of *Papilio dardanus*). Entomologist’s Record and Journal of Variation as s 116 (2): 60 (60). Locality and subspecies?.

**Papilio (Princeps) dardanus antinorii** Oberthür, 1883


**Type locality**: Ethiopia: “Abissinia, Felekle and Sciotalit”.

**Distribution**: Ethiopia (highlands).

**Specific localities**:

- **Ethiopia** – Felekle (TL); Sciotalit (Oberthür, 1883); Korata (Kheil, 1890); Yumbo (Boullet & Le Cerf, 1912); Got River (Poulton, 1926); Apeny River (Poulton, 1926); Gore (Poulton, 1927); Oumbi (Ungemach, 1932); Wallega Valley, Ghedo (Gabriel, 1949); Seio, Mantek (Storace, 1963); Awasa (Mollet, 1975); Yabelo (Mollet, 1975); Bonga (Mollet, 1975); Arba Minch (Mollet, 1975); Guebre Mengist (Mollet, 1975); Bedele (Mollet, 1975); Hossana (Mollet, 1975).

**niavioides** Kheil, 1890 (as female ab. of *Papilio antinorii*). *Deutsche Entomologische Zeitschrift, Iris* 3: 335 (333-336). Ethiopia: “Abessynien, Korata am Tana-See”.

**ruspinae** Kheil, 1890 (as female ab. of *Papilio antinorii*). *Deutsche Entomologische Zeitschrift, Iris* 3: 336 (333-336). Ethiopia: “Abessynien, Korata am Tana-See”.


**alticola** Boullet & Le Cerf, 1912 (as var. of *Papilio dardanus antinorii*). *Bulletin de la Société Entomologique de France* 1912: 141 (141-143). Ethiopia: “Abyssinie, Yumbo, province de Gaba, 1485 m”.

**hodsoni** Poulton, 1926 (as ssp. of *Papilio dardanus*). *Proceedings of the Entomological Society of London* 1: 6 (6-7). Ethiopia: “S.W. Abyssinia, Got River, 1700 ft; Apeny River, 1700 ft”.


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**alameitu** Gabriel, 1949 (as female f. of *Papilio dardanus antinorii*). *Proceedings of the Royal Entomological Society of London* (B) **18**: 212 (207-216). Ethiopia: “Abyssinia, Wallega Valley, Ghedo, 7000 ft”.

**conjunctiflava** Stoneham, 1951 in Stoneham, 1951-65 (as male f. of *Papilio dardanus*). *The butterflies of western Kenya with notes on allied forms, etc.* 12 (180 pp.). Nairobi. Ethiopia: “South-west Abyssinia”.


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**Papilio (Princeps) dardanus byatti** Poulton, 1926

**Type locality:** Somalia: “Near the summit of Wager mountain (6000 ft), Golis range, 45 m. S.E. of Berera, Somaliland”.

**Distribution:** Somalia (highlands in north).

**Specific localities:**
- Somalia – Wager Mountain, Golis Range (TL).

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**Papilio (Princeps) dardanus cenea** Stoll, [1790]*#*


*Papilio cenea* Stoll. Trimen, 1862c.

*Papilio cenea* Stoll, 1791. Trimen & Bowker, 1889.

*Papilio cenea* Stoll, 1791. Aurivillius, 1899.

*Papilio dardanus cenea* Stoll. Swanepoel, 1953a.


*Papilio dardanus cenea* Stoll, 1790. Pringle et al., 1994: 301.

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*Papilio dardanus cenea*. Male (Wingspan 90 mm). Left – upperside; right – underside.
Images M.C. Williams ex Williams Collection.

*Papilio dardanus cenea*. Female form *cenea* (Wingspan 100 mm). Left – upperside; right – underside.


Papilio dardanus cenea. Female f. natalica. Left – upperside; right – underside.
Woodbush, Limpopo Province, South Africa. 1 April, 1968. W. Henning.
Images M.C. Williams ex Henning Collection.

Papilio dardanus cenea. Female form cephonius (Wingspan 100 mm). Left – upperside; right – underside.
Port St Johns, Eastern Cape Province, South Africa. 23 March 2008. J. Dobson
Images M.C. Williams ex Dobson Collection.

Papilio dardanus cenea. Female form trophonius (Wingspan 100 mm). Left – upperside; right – underside.
Port St Johns, Eastern Cape Province, South Africa. 23 March 2008. J. Dobson
Images M.C. Williams ex Dobson Collection.

Papilio dardanus cenea. Female form hypolimnides (Wingspan 100 mm). Left – upperside; right – underside. Port St Johns, Eastern Cape Province, South Africa. 5 July 2008. J. Dobson Images M.C. Williams ex Dobson Collection.

Type locality: South Africa: “Päis des Caffres”.

Distribution: Mozambique (south), Zimbabwe (east), Botswana (single record – probably a vagrant), South Africa (Limpopo Province, Mpumalanga, KwaZulu-Natal, Eastern Cape Province, Western Cape Province – south-east), Swaziland.

Specific localities:
Mozambique – Delagoa Bay (Le Cerf, 1924).
Zimbabwe – Chirinda Forest (Van Son, 1949); Umtali (Van Son, 1949); Vumba Mountains (Van Son, 1949); Christmas Pass (Van Son, 1949); Lomagundi district (Van Son, 1949); Honde Valley (Pinhey).
Limpopo Province – Zoutpansberg (Swanepoel, 1953); Lekgalaameetse Nature Reserve (“Malta Forest”) (Van Son, 1949); Woodbush (Van Son, 1949); Entabeni (Van Son, 1949); Naboomspruit (Van Son, 1949 – single record); Haenertsburg (Van Son, 1949); Duiwelskloof (Swanepoel, 1953); Sibasa (Swanepoel, 1953); Louis Trichardt (Swanepoel, 1953); Wyliespoort (Swanepoel, 1953); Saltpan (Swanepoel, 1953); Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015).
Mpumalanga – Barberton (Van Son, 1949); Mariepskop (Van Son, 1949); Nelspruit (Swanepoel, 1953); Sabie (Swanepoel, 1953); Graskop (Swanepoel, 1953); Buffalospoort Nature Reserve (Williams).
KwaZulu-Natal – Karkloof (Van Son, 1949); Pinetown (Van Son, 1949); Durban (Van Son, 1949); Pietermaritzburg (Van Son, 1949); Eshowe (Van Son, 1949); St. Lucia (Van Son, 1949); Kosi Bay Nature Reserve (Van Son, 1949); Sarnia (Van Son, 1949); Umgeni (Van Son, 1949); Oribi Gorge (Swanepoel, 1953); Port Shepstone (Swanepoel, 1953); Umkomaas (Swanepoel, 1953); Tembe Nature Reserve
(Pringle & Kyle, 2002); Ndumo Nature Reserve (Pringle & Kyle, 2002).

**Eastern Cape Province** – Bathurst (Van Son, 1949); East London (Van Son, 1949); Grahamstown (Van Son, 1949); King William’s Town (Van Son, 1949); Pirie (Van Son, 1949); Port St Johns (Van Son, 1949); Ngqeleni (Van Son, 1949); Bashee River (Van Son, 1949); Manubie Forest (Van Son, 1949); Port Elizabeth (Van Son, 1949); Hogsback (Van Son, 1949); Zuurberg (Swanepoel, 1953) Cintsa East (the Dobsons and Williams, 2002).

**Western Cape Province** – George (Van Son, 1949); Knysna (Van Son, 1949); Coldstream (Van Son, 1949); Plettenberg Bay (Van Son, 1949); Storms River (Van Son, 1949); Mossel Bay (G. van den Berg).

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**Papilio (Princeps) dardanus figinii** Storace, 1962

Type locality: Ethiopia: “Eritrea centrale, Dorfù, m. 1500 s.l.m. (Zona delle pendici orientali, presso Asmara)”.

Distribution: Eritrea (highlands).

Specific localities:
Eritrea -- Dorfu (TL).

\textit{vaccaroi} Storace, 1947 (as female f. of \textit{Papilio dardanus antinorii}). \textit{Annali del Museo Civico di Storia Naturale (di Genova) Giacomo Doria} \textit{63}: 116 (116-119). Ethiopia: “Eritrea, Dorfù, m. 1500 s.m. (presso Asmara)”.

\textit{protoniavioides} Storace, 1962 (as female f. of \textit{Papilio dardanus antinorii}). \textit{Bollettino della Società Entomologica Italiana} \textit{92}: 72 (68-73). Ethiopia: “Dorfù in Eritrea (zona delle pendici orientali, presso Asmara, m. 1500 s.l.m.).”

\textit{protomima} Storace, 1962 (as female f. of \textit{Papilio dardanus figinii}). \textit{Doriana} \textit{3} (120): 3 (4 pp.). Ethiopia: “orientale eritree presso Asmara (Dorfù)”.

\begin{quote}
\noindent \textbf{Papilio (Princeps) dardanus flavicornis} Carpenter, 1947
\end{quote}


Type locality: Kenya: “Kenya Colony, Mount Kulal, northern frontier, 6500 ft”.

Diagnosis: As the subspecific name indicates, this subspecies is characterized by its yellow antennae.

Distribution: Kenya (north-west).

Specific localities:
Kenya -- Mount Kulal (TL).

\begin{quote}
\noindent \textbf{Papilio (Princeps) dardanus humbloti} Oberthür, 1888
\end{quote}


Type locality: Comoro Islands: “Grande-Comoro”.

Distribution: Comoro Islands (Grand Comore).

\begin{quote}
\noindent \textbf{Papilio (Princeps) dardanus meriones} Felder & Felder, [1865]
\end{quote}


\textit{Papilio meriones} Felder, 1865. Aurivillius, 1899.

Type locality: Madagascar: “Region de Toamasina”.

Distribution: Madagascar.

Specific localities:
Madagascar -- Toamasina (TL); Maroansetra (Le Cerf, 1924).


\begin{quote}
\noindent \textbf{Papilio (Princeps) dardanus meseres} Carpenter, 1948
\end{quote}

**Type locality**: Kenya: “Kenya Colony, South Kavirondo, Suna”.

**Diagnosis**: Forewing upperside of male lacks submarginal yellow spots; upperside hindwing band narrowly entire (Congdon & Collins, 1998).

**Distribution**: Uganda, Kenya (south-west), Tanzania (western, southern and south-eastern shores of Lake Victoria).

**Specific localities**:
- **Uganda** – Mabira Forest (Le Cerf, 1924).
- **Kenya** – Suna (TL); N.E. of Nyanza (Aurivillius, 1907); Nyangori (Poulton, 1929); Kitale (Stoneham, 1932); Soy (Stoneham, 1933); Kakamega Forest (Stoneham, 1934); Masai Mara (Larsen, 1991c).
- **Tanzania** – Kibara (Aurivillius, 1907); Ukerewe Island (Aurivillius, 1907); Kakindu Hill (Poulton, 1929); southern and eastern shores of Lake Victoria: Mwaya (Kielland, 1990d); Mwanza (Kielland, 1990d); Bukoba (Kielland, 1990d); Ukerewe Island (Kielland, 1990d).


*dionysoides* Aurivillius, 1907 (as female f. of *Papilio dardanus*). *Arkiv för Zoologi* 3 (23): 1 (7 pp.). Tanzania: “Kibara; von der Insel Ukerewe in Victoria Nyanza”.

*pemtolipus* Aurivillius, 1907 (as female f. of *Papilio dardanus*). *Arkiv för Zoologi* 3 (23): 2 (7 pp.). Tanzania: “Kibara”.


*xanthocaudatus* Stoneham, 1932 (as male f. of *Papilio dardanus*). *Bulletin of the Stoneham Museum* (13): 1 ([3 pp.]). Kenya: “Kitale”.


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**Papilio (Princeps) dardanus ochraceana** Vane-Wright, 1995

*Papilio dardanus ochracea* Carpenter, 1948. Invalid.


**Type locality:** Kenya: “Marsabit”.

**Diagnosis:** Similar to ssp. *flavicorns* but with black antennae (Larsen, 1991c).

**Distribution:** Kenya (north).

**Specific localities:**
Kenya – Mount Marsabit (TL); Mount Nyiro.


*ochracea* Carpenter, 1948 (as ssp. of *Papilio dardanus*). *Proceedings of the Royal Entomological Society of London* (B) 17: 16 (11-17). Kenya: “Marsabit”. [Invalid: junior primary homonym of *Papilio woodfordi var. ochracea* Ribbe, 1897 [Papilionidae].]


**Papilio (Princeps) dardanus polytrophus** Rothschild & Jordan, 1903


**Type locality:** Kenya: “Kikuyu Escarpment, British East Africa”.

**Distribution:** Kenya (highlands east of the Rift Valley). Material from Loliondo in Tanzania appears to be intermediate between *polytrophus* and *meseres* (Congdon & Collins, 1998).

**Specific localities:**
Kenya – Kikuyu Escarpment (TL); Nairobi (Trimen, 1909); Kijabe (Le Cerf, 1912); Elmenteita (Bryk & Peebles, 1932).


*hippocooninus* Reuss, 1921 (as female f. of *Papilio dardanus polytrophus*). *Entomologische Rundschau* 38: 23 (23-24). No locality given.

*albescens* Reuss, 1921 (as female f. of *Papilio dardanus polytrophus*). *Entomologische Rundschau* 38: 23 (23-24). No locality given.

*nigrescens* Reuss, 1921 (as female f. of *Papilio dardanus polytrophus*). *Entomologische Rundschau* 38: 23 (23-24). No locality given.
akechia Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus nairobianus). The butterflies of western Kenya with notes on allied forms, etc. 8 (180 pp.). Nairobi. Kenya: “Nairobi”.
neria Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus nairobianus). The butterflies of western Kenya with notes on allied forms, etc. 8 (180 pp.). Nairobi. No locality given.
millari Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus). The butterflies of western Kenya with notes on allied forms, etc. 9 (180 pp.). Nairobi. No locality given.
babingtonia Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus). The butterflies of western Kenya with notes on allied forms, etc. 9 (180 pp.). Nairobi. No locality given.
akechiana Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus nairobianus ). The butterflies of western Kenya with notes on allied forms, etc. 10 (180 pp.). Nairobi. No locality given. [Nairobi].
neriana Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus nairobianus ). The butterflies of western Kenya with notes on allied forms, etc. 11 (180 pp.). Nairobi. No locality given. [Nairobi].
harmonia Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus). The butterflies of western Kenya with notes on allied forms, etc. 11 (180 pp.). Nairobi. No locality given.
ariadne Stoneham, 1951 in Stoneham, 1951-65 (as female f. of Papilio dardanus). The butterflies of western Kenya with notes on allied forms, etc. 11 (180 pp.). Nairobi. No locality given.

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**Papilio (Princeps) dardanus sulfurea** Palisot de Beauvois, [1806]


**Type locality:** Sao Tome & Principe: “Isle-du-Prince”.

**Distribution:** Sao Tome & Principe (Island of Principe), Equatorial Guinea (Island of Bioko).

**Specific localities:**
*Equatorial Guinea (Bioko)* – Luba (San Carlos) (Schultze et al., 1917-1923); Malabo (Sta. Isabel) (Viejo, 1984).

**storacei** Gauthier, 1984 (as ssp. of Papilio dardanus). Entomologische Zeitschrift. Frankfurt. a.M. 94: 314 (314-
Equatorial Guinea: “Central Bioko, 1500 m, l.” [syn. n. (Ackery et al., 1995: 145)].

*Papilio (Princeps) dardanus tibullus* Kirby, 1880


**Papilio (Princeps) dardanus tibullus** Kirby, 1880


**Papilio dardanus tibullus**. Male. Left – upperside; right – underside. 

**Papilio dardanus tibullus**. Female. Left – upperside; right – underside.

*Type locality:* Tanzania: “Zanzibar”.

*Distribution:* Kenya (east), Tanzania (east), Malawi, Zambia, Mozambique (Congdon et al., 2010). Kemal (2004) records this subspecies from the Soutpansberg Mountains, Limpopo Province, South Africa. This is highly dubious (Ed.).

*Specific localities:*
- **Kenya** – Mombasa (Stoneham, 1951); Bamburi (Stoenham, 1951); Shimba Hills (male illustrated above); Diani Forest (female illustrated above).
- **Tanzania** – Zanzibar (TL); Dar-es-Salaam (Suffert, 1904); Gomja (Strand, 1911); Ufiomi (Poulton, 1918); Coastal areas, inland to the Northern Highlands, the Ruhebo Mountains and Southern Highlands; also Pemba
Island (Kielland, 1990d); Semdoe Forest Reserve (Doggart et al., 2001).

Malawi – Mt Mulanje (Congdon et al., 2010); Zomba Mountain (Congdon et al., 2010).

Zambia – Mafinga Mountains (Heath et al., 2002).

Mozambique – Mount Chipereone (Timberlake et al., 2007); Mt Inago (Congdon et al., 2010); Mt Namuli (Congdon et al., 2010); Mt Mabu (Congdon et al., 2010).


gomia Strand, 1911 (as ab. of Papilio dardanus var. tibullus). Deutsche Entomologische Zeitschrift, Iris 25: 121 (110-121). Tanzania: “Gomja”.

lamborni Poulton, 1918 (as female f. of Papilio dardanus tibullus). Transactions of the Entomological Society of London 1917: 335 (322-337). Tanzania: “Ufiomi, 35° 50'E., 4° 16'S.”.


*Papilio (Princeps) constantinus* Ward, 1871

Constantine’s Swallowtail

Constantine’s Swallowtail (Papilio constantinus) females on flowers. Images on sides courtesy Steve Woodhall. Central image courtesy Raimund Schutte.


Papilio constantinus constantinus.  Male (Wingspan 80 mm).  Left – upperside; right – underside.  
Images M.C. Williams ex Williams Collection.

Papilio constantinus constantinus.  Female (Wingspan 87 mm).  Left – upperside; right – underside.  
Images M.C. Williams ex Williams Collection.

**Type locality**: [Kenya]: “Ribé, East Africa”.

**Diagnosis**: Similar to one of the female forms of *Papilio phorcas* but the latter lacks the cream spot in the forewing cell and the underside is very different (Larsen, 1991c).

**Distribution**: Congo, Democratic Republic of Congo, Ethiopia, Somalia, Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, South Africa, Swaziland.

**Habitat**: Frost-free savanna and forest. In Tanzania the nominate subspecies occurs in heavy woodland, forests and forest margins. Found from sea-level to 1 200 m. There is a single record from Rubeho (1950 m). Subspecies *mweruanus* occurs at altitudes of 780 to 1 400 m (Kielland, 1990d).

**Habits**: The flight is low down, wandering and fairly leisurely. Both sexes regularly feed from flowers and males mudpuddle. Males are not territorial and fly randomly through the bush and along forest roads in search of females and flowers. Females tend to remain in the forest undergrowth (Larsen, 1991c). In Tanzania it is
commonest in certain coastal forests, such as the Kiono Forest near Sadani (Kielland, 1990d).

**Flight period:** September to April, with peak abundance from December to March (Pringle et al., 1994).

### Early stages:

Joannou, 1992: 89 [as *Papilio constantinus constantinus*; ex Chuniespoort, Limpopo Province, South Africa].

- **Egg.** Approximately spherical, pale yellow, measuring 1.2 mm in diameter and laid singly on either surface of the leaf. Later if fertile the egg develops a brown spot in the area of the micropyle (although no such structure is actually visible) and two uneven rings develop, the upper of which is more pronounced. The egg stage lasts 4 days. See plate 2a. 1st instar: On hatching, the 3mm larva consumes only a portion of the egg shell. The head is brown and tucked in below a fold of the 1st segment making it visible only when extended for feeding. NB This habit is consistently adopted by all the larval stages. The ground colour of the 1st, 2nd, 6th, 7th, 11th, 12th and last segments is yellow, dorsally marbled with various shades of brown. The 3rd, 4th and 5th segments are brown variegated by lighter shades of the same colour. Laterally the 5th segment is invaded by the yellow colour of the 6th and 7th. The 8th, 9th and 10th segments are again brown with burnt orange dorsal markings. As with the 5th segment, the 10th is laterally invaded by the yellow colour of the last three segments. The 1st segment bears two pairs of setose processes, one small and insignificant, the other very pronounced. Due to the larva’s habit of head tucking these are projected forwards. The setal papillae of the 2nd, 3rd and 4th segments although smaller than the processes of the 1st, are also prominent. The 12th segment bears a pair of posterior projecting processes whose ends are setose. Duration of the first instar is 4 days growing to 8 mm. See plate 2b. 2nd instar: The larva now has a waxy appearance with the markings much the same as previously. There are however colour changes, the head is pea green while the previously brown and yellow portions are now olive and off white respectively. There is also the appearance of an additional smaller pair of posterior processes on the 11th segment. Sky blue dots develop dorsally and sub-dorsally, adjoining the setae but only on the dark coloured areas. These remain present in all the latter instars. The second instar lasts 4 days and grows to 15mm. See plate 2c. 3rd instar: The 2nd, 3rd and 4th segments are enlarged. The larva now has a lustrous appearance and is darkly blotched olive green in colour with white markings. These only extend dorsally on the 6th and 7th segments, but laterally also occur on the 1st, 2nd, 5th, 6th, 7th, 10th, 11th and 12th segments. The processes on the 1st, 11th and 12th segments are pale yellow. The 3rd instar grows to 21mm in 4 days. See plate 2d. 4th instar: No major differences occur in the 4th instar apart from a lightening of the green and reduction in the extent of the white. This stage last 5 days and attains a length of 26mm. See plate 2e. 5th instar: The final instar is finely mottled green with remnant white markings laterally on the 5th, extending dorsally to the 6th and 7th segments. The processes on the 12th segment remain prominent but are now glabrous whilst those on the 11th are reduced to small moles. The smaller pair of processes of the 1st segment disappear and the remaining pair become glabrous and lemon yellow in colour. They are adjoined by a lateral white stripe of the same width extending to the prothoracic segment. There is a small lateral ocellus on the 3rd segment. Sky blue dots develop dorsally and sub-dorsally, and 7th instar: The pupa is held in a horizontal position by a girdle. It is tapered at both ends and depressed dorso-ventrally particularly at the margins. The head is well defined and bears a bifid appearance and is darkly blotched olive green in colour with white markings. These only extend dorsally on the 6th and 7th segments, but laterally also occur on the 1st, 2nd, 5th, 6th, 7th, 10th, 11th, 12th and last segments. The processes on the 1st, 11th and 12th segments are again brown with burnt orange dorsal markings. As with the 5th segment, the 10th is laterally invaded by the yellow colour of the last three segments. The 1st segment bears two pairs of setose processes, one small and insignificant, the other very pronounced. Due to the larva’s habit of head tucking these are projected forwards. The setal papillae of the 2nd, 3rd and 4th segments although smaller than the processes of the 1st, are also prominent. The 12th segment bears a pair of posterior projecting processes whose ends are setose. Duration of the first instar is 4 days growing to 8 mm. See plate 2b. 2nd instar: The larva now has a waxy appearance with the markings much the same as previously. There are however colour changes, the head is pea green while the previously brown and yellow portions are now olive and off white respectively. There is also the appearance of an additional smaller pair of posterior processes on the 11th segment. Sky blue dots develop dorsally and sub-dorsally, adjoining the setae but only on the dark coloured areas. These remain present in all the latter instars. The second instar lasts 4 days and grows to 15mm. See plate 2c. 3rd instar: The 2nd, 3rd and 4th segments are enlarged. The larva now has a lustrous appearance and is darkly blotched olive green in colour with white markings. These only extend dorsally on the 6th and 7th segments, but laterally also occur on the 1st, 2nd, 5th, 6th, 7th, 10th, 11th and 12th segments. The processes on the 1st, 11th and 12th segments are pale yellow. The 3rd instar grows to 21mm in 4 days. See plate 2d. 4th instar: No major differences occur in the 4th instar apart from a lightening of the green and reduction in the extent of the white. This stage last 5 days and attains a length of 26mm. See plate 2e. 5th instar: The final instar is finely mottled green with remnant white markings laterally on the 5th, extending dorsally to the 6th and 7th segments. The processes on the 12th segment remain prominent but are now glabrous whilst those on the 11th are reduced to small moles. The smaller pair of processes of the 1st segment disappear and the remaining pair become glabrous and lemon yellow in colour. They are adjoined by a lateral white stripe of the same width extending to the prothoracic segment. There is a small lateral ocellus on the 3rd segment. The 5th instar grows to 33mm in 7 days. See plate 2f. Pupa: Pupation occurs in a suitable site on the foodplant, often a stem or leaf petiole inclined at 45 degrees to the vertical. The cremaster is attached to a pad and the pupa is held in a horizontal position by a girdle. It is light green in colour with a pale yellow lateral stripe extending from the cremaster to just short of the eye. The pupa is tapered at both ends and depressed dorso-ventrally particularly at the margins. The head is well defined and bears a bifid process. Measured laterally as a straight line the length from cremaster to tip of the cephalic process is 33mm. The pupal stage lasts 13 days. See plate 2g. Resulting imagos were within the size range of wild caught individuals.


### Larval food:

- *Citrus* species (Rutaceae) [Williams, 1983: 1].
- *Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Dickson & Kroon, 1978].
- *Clausena* species (Rutaceae) [Van Someren, 1974: 316].
- *Teclea gerrardii* I.Verd. (Rutaceae) [Nichols, 1995].
- *Teclea* species (Rutaceae) [Van Someren, 1974].
- *Teclea trifoliatum* (Rutaceae) [Larsen, 1991c: 111].
- *Vepris lanceolata* (L.) G.Don (Rutaceae) [Joannou, 1992: 89; in captivity; as *Vepris undulata* Verdoorn & Smith].
- *Vepris lanceolata* (Lam.) G.Don. (Rutaceae) [Pringle et al., 1994: 303].
- *Vepris nobilis* (Delile) Mziray (Rutaceae) [Mullin, in Pringle et al., 1994: 303; as *Teclea nobilis* Del.].

### Unpublished observations:

I reared this species in captivity, from eggs, on *Citrus* sp. (lemon). The resulting adults were as large as those reared on *Vepris reflexa* (a natural larval host), from the same batch of eggs. However, larvae placed on *Clausena anisata* did not thrive; eventually all of them died. I very much doubt that *P. constantinus* utilizes *Clausena*
aniata in nature. [Comment on the references to C. anisata, above]. P. constantinus was found by me to use V. reflexa as a larval foodplant at Nelspruit (Mpumalanga) and Chuniespoort (Limpopo Province).

Relevant literature:

### Papilio (Princeps) constantinus constantinus Ward, 1871


*Papilio constantinus constantinus*. Male (Wingspan 80 mm). Left – upperside; right – underside.
Images M.C. Williams ex Williams Collection.

*Papilio constantinus constantinus*. Female (Wingspan 87 mm). Left – upperside; right – underside.
Images M.C. Williams ex Williams Collection.

_Type locality:_ Kenya: “Ribé, East Africa”.
_Distribution:_ Ethiopia (south-east), Somalia (south), Uganda, Kenya (coast), Tanzania, Malawi, Zambia (south and north-east), Mozambique, Zimbabwe, Botswana (north-east), South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, KwaZulu-Natal – north), Swaziland.
Specific localities:
Uganda – Moroto (Davenport, 1996); Nyangea-Napore (Davenport, 1996).
Kenya – Ribe (TL); Kibwezi (Stoneham, 1931).
Tanzania – Coastal areas from Tanga Region to the Rondo Plateau near Lindi, inland to the Rubeho Mountains, Uluguru Mountains, Nguru Mountains and Madibira near Mufundi (Kielland, 1990d); Kioni Forest (Kielland, 1990d).
Malawi – Mt Mulanje (Congdon et al., 2010).
Zambia – Mumbwa (Heath et al., 2002); Kafue (Heath et al., 2002); Livingstone (Heath et al., 2002); Victoria Falls (Heath et al., 2002); Luangwa Bridge (Heath et al., 2002); Kasaba Bay (Lake Tanganyika) (Heath et al., 2002).
Mozambique – Maputo (Van Son, 1949); Rikatla (Van Son, 1949); Beira (Van Son, 1949); Mt Mecula [-12.0772 37.6297] (Congdon & Bayliss, 2013).
Zimbabwe – Victoria Falls (Pringle et al., 1994); Bulawayo (Pringle et al., 1994); Save Valley (Pringle et al., 1994); Mount Selinda (Pringle et al., 1994); Mutare (Pinhey).
Botswana – Bamangwato territory (Van Son, 1949); Palapye Road (Van Son, 1949); Kasane area (Larsen, 1991i); Tswapong Hills (Larsen, 1991i).
Limpopo Province – Lekgalameetse Nature Reserve ("Malta Forest") (Swanepoel, 1953); Matlapetsi River (Swanepoel, 1953); Malipsdrift (Swanepoel, 1953); Zoutpansberg (Swanepoel, 1953); Saltpan (Swanepoel, 1953); Louis Trichardt (Swanepoel, 1953); Pietersburg District (Van Son, 1949).
Mpumalanga – Barberton (Van Son, 1949); Lydenburg district (Van Son, 1949); Nelspruit (Williams); Buffelspoort Nature Reserve (Williams).
North-West Province – Rustenburg (Van Son, 1949); Brits (Van Son, 1949); Magaliesberg (Swanepoel, 1953).
Gauteng – Pretoria District (Van Son, 1949); Baviaanspoort (Williams).
KwaZulu-Natal – Durban (Van Son, 1949); Estcourt (Van Son, 1949); False Bay (Swanepoel, 1953); St. Lucia Bay (Swanepoel, 1953); Tugela River Valley; Mooi River Valley (Pringle et al., 1994); Umhlanga Rocks (Brauer and Dickson); Kosi Bay Nature Reserve (Pringle & Kyle, 2002); Tembe Nature Reserve (Pringle & Kyle, 2002); Ndumo Nature Reserve (Pringle & Kyle, 2002); Sodwana Bay (Williams).

chrysothemis Stoneham, 1931 (as f. of Papilio constantinus). Bulletin of the Stoneham Museum (3): 1 ([1 p.]).
Kenya: “Kibwezi”.

Papilio (Princeps) constantinus lecerfi Koçak, 1996

Papilio constantinus monticolus Le Cerf, 1924. Invalid (see below).
Papilio (Princeps) constantinus alticola Le Cerf. Ackery et al., 1995: 141. Invalid (see below).

Type locality: [Kenya]: “Escarpment, B.E.A., 6,500-9,000 ft”.
Distribution: Kenya (central highlands and Mau Escarpment).
Specific localities:


**Papilio (Princeps) constantinus mweruanus** Joicey & Talbot, 1927


**Type locality**: Democratic Republic of Congo: “S.E. Congo, Kasenga, west bank of Luapala River, S.W. Lake Mweru district”.

**Diagnosis**: Yellow markings on the upperside of the wings larger than in the nominate subspecies (Kielland, 1990d).

**Distribution**: Democratic Republic of Congo (Lomami, Shaba), Tanzania (west), Zambia (Copperbelt).

**Specific localities**:
- Democratic Republic of Congo – Kasenga (TL); Sankishia (Dufrane, 1946); Mabwe, Upemba National Park (Berger, 1981).
- Tanzania – Kigoma and Mpanda Districts, in western Tanzania: Gombe Stream (Kielland, 1990d); Kibweza Point (Kielland, 1990d); Ikola (Kielland, 1990d); Mishamu (Kielland, 1990d) (single records from each of these localities).
- Zambia – Ndola (Heath et al., 2002); Mufulira (Heath et al., 2002); Chingola (Heath et al., 2002); Sumba, Mporokoso (male illustrated above).


**Papilio (Princeps) delalandei** Godart, [1824]


**Type locality**: [Madagascar]: “Cafrerie, sur les bords de Groot Fisch Rivier”. [False locality.] Erroneously recorded from South Africa by Trimen, 1862c (MCW).
**Distribution**: Madagascar (east).

**Specific localities**:
- Madagascar – Perinet (R. Schutte, pers. comm., April 2010);
- Analamazoatra Forest (R. Schutte, pers. comm., April 2010).

**Habitat**: Forest (Lees et al., 2003).

**Habits**: Occasionally seen, exhibiting extremely rapid and erratic flight up and down the outer forest canopy and in clearings, even while rain was falling. However, settles as soon as the sun was obscured by cloud (R. Schutte, pers. comm., April 2010).

**Early stages**: Nothing published.

**Larval food**: Nothing published.

*Papilio (Princeps) phorcas* Cramer, [1775]

Apple-green Swallowtail

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*Papilio phorcas* Cramer, 1775. Aurivillius, 1899.

**Alternative common name**: Green-banded Swallowtail (Larsen, 1991c).

**Published images**: Larsen, 2005a (male upperside; female upperside yellow morph; female upperside green morph).

**Type locality**: Sierra Leone: “Sierra Leona”.

**Diagnosis**: There are two distinct female forms. The one with yellow bands (*thersander* Fabricius) is somewhat rarer than the male-like female but is the dominant female form in the Democratic Republic of Congo (Larsen, 1991c). In West Africa (Freetown) about 75% of the females are of the yellow-banded form, yet all of the early records appear to be of male-like females. It has thus been speculated that the proportions have changed over time (Owen & Owen, 1972). In Kenya the proportions of female forms vary from place to place (Larsen, 1991c). In the Chyulu Hills in south-east Kenya and southwards through Tanzania and Malawi all females have the male wing pattern (Larsen, 1991c). Vane-Wright (1984) hypothesizes that green females may evoke a long-distance male competitive response from conspecific males, while yellow-banded females may possess some unknown protective advantage. Larsen (1991) suggests that yellow-banded females are “Swynnertonian” mimics i.e. are partially protected from attacks from birds due to their resemblance to the larger *P. lormieri* and *P. ophidicephalus*.

Natural hybrids of *Papilio phorcas* and *P. dardanus* are occasionally found. Male hybrids resemble small versions of *P. phorcas*, with the coloration of *P. dardanus*, and were described as a distinct species, *Papilio nandina* Rothschild & Jordan, 1901 (Larsen, 1991c). Female hybrids have been reared in the laboratory but have,
so far, not been encountered in nature (Larsen, 1991c).

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin (Tchibozo, 2002), Nigeria, Cameroon, Equatorial Guinea, Bioko, Gabon, Angola (Bivar de Sousa & Fernandes, 1966), Congo, Democratic Republic of Congo, Central African Republic, Sudan, Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique.

In West Africa the distribution appears to be patchy as it is absent from many forests that seem to be suitable (Larsen, 2005a).

**Habitat:** Forest and heavy woodland. In Tanzania ssp. *congoanus* occurs at altitudes of 800 to 1,800 m; ssp. *nyikanus* is found at altitudes from 300 to 2,200 m; ssp. *tenuifasciatus* has been recorded at altitudes from 1,700 to 2,400 m (Kielland, 1990d).

**Habits:** A relatively common tropical species with a patchy distribution (Larsen, 2005a). Males will patrol up and down forest streams in search of females (Larsen, 2005a). Males are known to mudpuddle on river banks, sometimes in large aggregations (Kielland, 1990d). Males also regularly visit cow-pats and decomposing matter (Larsen, 1991c). Females spend most of their time in the forest understorey, searching for plants on which to oviposit (Larsen, 2005a). Early in the morning, in montane forests, when it is still cool, both sexes perch low down, with open wings, basking before taking to the wing (Larsen, 1991c). Both sexes are fond of flowers (Kielland, 1990d).

**Early stages:** Nothing published.

**Larval food:**
- *Calodendrum* species (Rutaceae) [Larsen, 2005a].
- *Citrus* species (Rutaceae) [Larsen, 2005a].
- *Clusa* species (Rutaceae) [Larsen, 2005a].
- *Fagara* species (Rutaceae) [Larsen, 2005a].
- *Macrostylis villosa* (Thunb.) Sond. (Rutaceae) [Van Someren, 1974: 315; Kielland, 1990d; 44; as *Teclea villosa*].
- *Oriopiopsis* species (Rutaceae) [Bampton et al., 1991].
- *Todalia* species (Rutaceae) [Larsen, 2005a].
- *Vepris nobilis* (Delile) Mziray (Rutaceae) [Van Someren, 1974: 315; as *Teclea nobilis* Delile].
- *Vepris simplicifolia* (Engl.) Mziray (Rutaceae) [Van Someren, 1974: 315; as *Teclea simplicifolia* Verdoorn].

**Relevant literature:**
- Tchibozo, 2002 [First record for Benin].
- Clarke, 1986 [Experimental hybridization with *P. dardanus*].
- Clarke et al., 1991 [Phylogenetic relationship with *P. dardanus* and *P. constantinus*].

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**Papilio (Princeps) phorcas phorcas** Cramer, [1775]


**Published images:** Larsen, 2005a (male upperside; female upperside yellow morph; female upperside green morph).

**Type locality:** Sierra Leone: “Sierra Leon”.

**Distribution:** Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Benin (Tchibozo, 2002), Nigeria.

**Specific localities:**
- Nigeria – Gambari Forest, Ibadan (Larsen, 2005a);

**doreus** Fabricius, 1775 (as sp. of *Papilio*). _Systema Entomologiae_ 457 (832 pp.). Flensburgi & Lipsiae. Sierra Leone: “Sierra Leon”.

**thersander** Fabricius, 1793 (as sp. of *Papilio*). _Entomologia Systematica emendata et aucta_ 3 (1): 32 (488 pp.). Sierra Leone: “Sierra Leon”.

**media** Le Cerf, 1924 (as female f. of *Papilio phorcas*). _Bulletin of the Hill Museum, Witley_ 1: 381 (369-399, 576, 578, 580, 582, 584). Sierra Leone.
**Papilio (Princeps) phorcas ansorgei** Rothschild, 1896


**Type locality:** [Kenya]: “Uganda Protectorate, Man”.

**Distribution:** Kenya (highlands east of the Rift Valley, including the Loita Hills), Tanzania (north – Loliondo).

**Specific localities:**
- Kenya – Man (TL); Nairobi (Suffert, 1904); Loita Hills.
- Tanzania – Loliondo.


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**Papilio (Princeps) phorcas bardamu** Canu, 1994


**Type locality:** Equatorial Guinea – Bioko Island.

**Distribution:** Equatorial Guinea (Bioko Island).

**Specific localities:**
- Equatorial Guinea (Bioko) – Luba (San Carlos) (Schultze et al., 1917-1923).


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**Papilio (Princeps) phorcas congoanus** Rothschild, 1896


Papilio phorcas congoanus. Female A. Left – upperside; right – underside.

Papilio phorcas congoanus. Female B. Left – upperside; right – underside.
Wingspan: 85mm. Bangui, R. C. A. 81.01.03. R.P. Godart. (Curle Trust Collection – 3).
Type locality: Congo/Democratic Republic of Congo: “Upper Congo, Lukolele”.

Diagnosis: Larger than the nominate subspecies and has smaller marginal spots on the hindwing (Larsen, 2005a).


Specific localities:

Cameroon – Korup (Larsen, 2005a).

Gabon – Kinguele (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Bitam (van de Weghe, 2010); Lope (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Kongou (van de Weghe, 2010); Franceville (van de Weghe, 2010).

Central African Republic – Dzanga (Noss, 1998); Bangui (specimens illustrated above).

Democratic Republic of Congo – Lukolele (TL); Kassai River (Strand, 1916); Kakakumba (Storace, 1955); Tshiboe (Storace, 1955); Kinda (Storace, 1955); Mutumba (Storace, 1955).

Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001); Kibale Forest (R. Schutte, unpublished).

Tanzania – Mpanda and Kigoma districts (Kielland, 1990d); Tabora (Suffert, 1904).

Zambia – Ikelenge (Heath et al., 2002); Chibwika (Heath et al., 2002); South Mutundu River (Mufulira) (Heath et al., 2002); Kalungwishi River (Heath et al., 2002).

caspor Suffert, 1904 (as ssp. of Papilio phorcas). Deutsche Entomologische Zeitschrift, Iris 17: 97 (12-107).


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**Papilio (Princeps) phorcas nyikanus** Rothschild & Jordan, 1903

**Papilio phorcas nyikanus.** Male. Left – upperside; right – underside.

**Type locality:** Malawi: “Nyassaland, Kasunga Mts., Nyika”.

**Diagnosis:** Smaller than ssp. *congoanus* and with narrower green bands. Only the green-banded (male-like) female form is known in this subspecies (Kielland, 1990d).

**Distribution:** Tanzania (east), Malawi, Zambia (north-east), Mozambique.

**Specific localities:**
- **Tanzania** – Eastern parts, from Lake Malawi, the Njombe Highlands, the Unzungwa Range, the Ulugurus and Nguru Mountains, to the Usambaras, inland to the Rubehos and south-west to Mount Rungwe (Kielland, 1990d); between Mori and Mangati (Suffert, 1904); Amani (Strand, 1911); Mount Meru (male specimen illustrated above).
- **Malawi** – Kasunga Mountains, Nyika (TL); Mt Mulanje (Congdon *et al*., 2010); Zomba Mountain (Congdon *et al*., 2010).
- **Zambia** – Nyika Plateau (Heath *et al*., 2002); Mafinga Mountains (Heath *et al*., 2002).
- **Mozambique** – Mt Inago (Congdon *et al*., 2010); Mt Namuli (Congdon *et al*., 2010); Mt Mabu (Congdon *et al*., 2010).

**leopoldi** Suffert, 1904 (as ssp. of *Papilio phorcas*). *Deutsche Entomologische Zeitschrift, Iris* 17: 97 (12-107). Tanzania: “Deutsch-Ost-Africa, Walde zwischen Mori und Mangati”.

**phorcadius** Strand, 1911 (as ab. of *Papilio phorcas*). *Deutsche Entomologische Zeitschrift, Iris* 25: 121 (110-121). Tanzania: “Amani I.”.

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**Papilio (Princeps) phorcas ruscoei** Krüger, 1928


Specific localities:
- Uganda – Mount Elgon (TL); Mabira Forest (Le Cerf, 1924); Busoga (Storace, 1955).


- polyxena Stoneham, 1951 in Stoneham, 1951-65 (as f. of Papilio phorcas). The butterflies of western Kenya with
notes on allied forms, etc. 14 (180 pp.). Nairobi. No locality given [? W. Kenya].


Uganda: “Busoga”.


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**Papilio (Princeps) phorcas sudanicola** Storace, 1965


**Type locality:** Sudan: “S.E. Sudan, Didina, Nagichot”.

**Distribution:** Sudan (south).

**Specific localities:**

Sudan – Didina (TL); Nagichot (Storace, 1965).

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**Papilio (Princeps) phorcas tenuifasciatus** Kielland, 1990


**Type locality:** Tanzania: “Ngorongoro, 2200 m”. Holotype male in the Natural History Museum, London.

**Diagnosis:** Compared to ssp. *nyikanus* the bands on the upperside are narrower and more bluish green; hindwing tail more slender (Kielland, 1990d).

**Description:**

“**Male.** Upperside pale band narrower and generally more bluish-green than in ssp. *nyikanus*; f.w. usually with well developed submarginal spots (except in f. *meto* in which they are faint or lacking); h.w. tail more slender than in ssp. *nyikanus*. Underside green band as on the upperside; h.w. distal half paler than in *nyikanus*; length of f.w. 42-47 mm.

**Female.** Differs from ssp. *nyikanus* in the generally narrower green band on both wings. Length of f.w. 46-51 mm. Male genitalia. Valva similar to that of ssp. *nyikanus*, but dorsally more convex, giving it a wider appearance. Form *meto* nov. lacks f.w. submarginal white spots and the subapical spot is tiny or almost lacking; h.w. with a large, triangular green spot just beyond the end of cell; there is also a second green spot below it.”

**Distribution:** Tanzania (highlands in the north), Kenya (south-east).

**Specific localities:**

Kenya – Chyulu Hills.

Tanzania – Oldeani-Ngorongoro (TL); the Mbulu forests (Kielland, 1990d); Mount Kwaraha (Kielland, 1990d); Mount Meru (Kielland, 1990d); Mount Kilimanjaro (Kielland, 1990d); Mount Longido (Kielland, 1990d); Meto Hills (Kielland, 1990d); North Pare Mountains (Kielland, 1990d); Mount Lolkisale (Kielland, 1990d); Mount Lossoganeu (Kielland, 1990d).


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*Papilio (Princeps) rex* Oberthür, 1886

Regal Swallowtail
Regal Swallowtail (Papilio rex) mudpuddling in Uganda.
Images courtesy Raimund Schutte.

Papilio rex Oberthür, 1886. Aurivillius, 1899.

Images M.C. Williams ex Henning Collection.

Type locality: Tanzania: “Mhonda, dans l’Ouzigoua”.
Habitat: Semi-montane and montane forest. In Kenya it occurs above 1 300 m (Larsen, 1991c). In Tanzania the nominate subspecies is found at altitudes from 1 400 to 2 600 m (Kielland, 1990d) and ssp. mimeticus from 1 150 to 1 800 m (Congdon & Collins, 1998).
Habits: A relatively common species (Larsen, 1991c). Both sexes usually keep to the forest canopy, the males above it and the females within it (Larsen, 1991c). The flight is slow and soaring but intruders into the territory of a male are vigorously chased (Kielland, 1990d). In the early morning and late afternoon specimens descend from the forest canopy to feed from the flowers of plants, such as Lantana, Balsaminum and Bougainvillea (Larsen, 1991c). Males will also come down, from midday and in the afternoon, to suck at damp spots (Kielland, 1990d). Males hilltop (e.g. at Kakamega in Kenya and Kere Hill in Tanzania), but only in the early morning hours. Schultze (vide Larsen, 2005a) noted subspecies schultzei hilltopping on rounded, bare granite outcrops. This butterfly is an excellent mimic of the danaine Tirumala formosa (Godman). Apparently the putative model, Tirumala formosa morgeni, is absent from the north of the species range (Larsen, 2005a). Males are much larger than females and, unlike other papilios, carry the female when in copula (Kielland, 1990d). Despite the very different colour pattern, P. rex is most closely related to P. dardanus and P. phorcas (Larsen, 2005a).
Early stages: Nothing published.
Larval food: Calodendrum species (Rutaceae) [Larsen, 1991c: 109; East Africa].

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Citrus species (Rutaceae) [Larsen, 1991c: 109; East Africa].
Clausena species (Rutaceae) [Larsen, 1991c: 109; East Africa].
Fagara species (Rutaceae) [Larsen, 1991c: 109; East Africa].
Teclea stuhlmanni Engl. (Rutaceae) [Van Someren, 1974: 316].
Vepris trichocarpa (Engl.) Mizray (Rutaceae) [Van Someren, 1974: 316; as Teclea tricocarpa Engler].
Toddalia species (Rutaceae) [Larsen, 1991c: 109; East Africa].
Vepris heterophylla (Engl.) Letouzey (Rutaceae) [Libert et al., 2000; suspected to be a foodplant].

**Papilio (Princeps) rex rex Oberthür, 1886**


Mount Meru, Tanzania. 31 August 2008. S. Collins.
Images M.C. Williams ex Henning Collection.

**Type locality:** Tanzania: “Mhonda, dans l’Ouzigoua”.

**Distribution:** Tanzania (central and north-east).

**Specific localities:**
- Tanzania – Mhonda (TL);
- Oldeani-Ngorongoro Highlands (Kielland, 1990d);
- Mount Meru (Kielland, 1990d);
- Mount Kilimanjaro (Kielland, 1990d);
- Mount Longido (Kielland, 1990d);
- the Mbulu forests (Kielland, 1990d);
- Kwaraha Mountain (Kielland, 1990d);
- Uluguru Mountains (Kielland, 1990d);
- Nguru Mountains (Kielland, 1990d).


**Papilio (Princeps) rex abyssinicana** Vane-Wright, 1995

*Papilio abyssinicicus* Poulton, 1926. Invalid.

**Type locality:** Ethiopia: “S. W. Abyssinia, Ganji River, Nado’s Prov., 5500 ft.”

**Distribution:** Ethiopia (south-east).

**Specific localities:**
- Ethiopia – Ganji River (TL).

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**Papilio (Princeps) rex alinderi** Bryk, 1928


**Type locality**: Kenya: “Northern Victoria Nyanza”.

**Diagnosis**: Basal colouring on the forewings lighter than in the other subspecies (Larsen, 1991c).

**Distribution**: Kenya (highlands west of the Rift Valley).

**Specific localities**:
- Kenya – Mount Elgon (Aurivillius, 1908); Nyangori (Bryk, 1930); Kisumu (Bryk, 1930); Kaptega Estate, Mount Elgon (Bryk, 1953); Kakamega (Larsen, 1991c), Elgon (Larsen, 1991c), Kitale (Larsen, 1991c).


Found to be a homonym by Kemel & Kocak, 2005, who replaced it with *alinderi* Bryk, 1928.


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**Papilio (Princeps) rex franciscae** Carpenter, 1928


**Type locality**: Sudan: “Didinga”.

**Distribution**: Sudan (south), Ethiopia (south-west).

**Specific localities**:
- Sudan – Didinga (TL).

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**Papilio (Princeps) rex mimeticus** Rothschild, 1897


*Papilio mimeticus* Rothschild, 1897. Aurivillius, 1899.
**Type locality:** Uganda: “Msarosaro”.

**Diagnosis:** Darker than the other subspecies, with upperside basal areas and hindwing discal areas reddish brown. An accurate mimic of *Tirumala formosa mercedonia* (Congdon & Collins, 1998).

**Distribution:** Democratic Republic of Congo (Ituri, Kivu), Uganda, Rwanda, Burundi, Tanzania (north-west), Kenya (extreme west).

**Specific localities:**
- Democratic Republic of Congo – Upper Lowa Valley, west of Masisi (Le Cerf, 1924).
- Uganda – Msarosaro (TL); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- Tanzania – Minziro Forest (Congdon & Collins, 1998); Rumanyika Game Reserve (Congdon & Collins, 1998).

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**Papilio (Princeps) rex regulana** Vane-Wright, 1995

**Type locality:** Kenya: “Kijabé (Kikuyu Escarpment), 2100 m”.

**Diagnosis:** Base of forewing cinnamon coloured (Larsen, 1991c).

**Distribution:** Kenya (highlands east of the Rift Valley).
- Kenya – Kijabé (TL); Nairobi (Stoneham, 1951); Kitale (Stoneham, 1951); Mount Kenya (Larsen, 1991c); Meru (Larsen, 1991c); Thomson’s Falls (Larsen, 1991c); Nyeri (Larsen, 1991c); Namanga (Larsen, 1991c); Maralal (Larsen, 1991c).

**Note:** The population at Maralal is probably subspecifically distinct (Larsen, 1991c: 109).

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endymion Stoneham, 1951 in Stoneham, 1951-65 (as f. of Papilio rex). The butterflies of western Kenya with notes on allied forms, etc. 5 (180 pp.). Nairobi. Kenya: “[Nairobi], Nairobi and Kitale”.

Papilio (Princeps) rex schultzei Aurivillius, 1904

Papilio rex schultzei Aurivillius, 1904. Ackery et al., 1995.

Published images: Larsen, 2005a (male upperside).
Type locality: Nigeria: “Hossere Uba, Nord Adamana”.
Diagnosis: Lacks the basal chestnut patch on the upperside of the forewings (present in the nominate subspecies), thus corresponding to its co-occurring model Tirumala formosa morgeni (Larsen, 2005a).
Distribution: Nigeria (east), Cameroon (highlands).
Specific localities:
Nigeria – Mandara Mountains, Uba (09.30N) in Adamawa (Schultze; TL); Pella, near Mubi (Larsen, 2005a); Alantika Mountains, south of Yola (Larsen, 2005a).
Cameroon – see Libert et al., 2000; Tschabal Mbabo (Larsen, 2005a).

Papilio zenobia group

*Papilio (Princeps) zenobia* Fabricius, 1775
Zenobia Swallowtail

Papilio zenobia Fabricius, 1775. Systema Entomologiae Flensburgi & Lipsiae: 503 (832 pp.).
Papilio zenobia Fabr., 1775. Aurivillius, 1899.

Published images: Larsen, 2005a (male upperside).
Type locality: Sierra Leone: “Sierra Leon”.
Diagnosis: Similar to *P. cyproeofila* but lacks white marginal spots on the hindwings. Also close to *P. nobicea* but differs in its cream bands, which are also of a different shape (Larsen, 2005a).
Distribution: Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Nigeria (south), Cameroon, Equatorial Guinea (Bioko island), Gabon, Congo, Angola (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo, Uganda (west).

Erroneously recorded from South Africa, as *Papilio zenobius* and *Papilio messalina*, by Trimen, 1862c (MCW).
Specific localities:
Guinea – Conakry (Larsen, 2005a); Nimba (Larsen, 2005a).
Ghana – Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007).
Nigeria – Calabar (Westwood, 1872).
Cameroon – Korup (Larsen, 2005a).
Equatorial Guinea (Bioko) – Basiloa, Malabo (Sta. Isabel) (Schultze et al., 1917-1923).
Equatorial Guinea – Sta Isabel (Schultze, 1913); Basile (Schultze, 1913); Nkolentangen (Schultze, 1913).
Gabon – Camp Lonmin (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Waka (van de Weghe, 2010); Bitam (van de Weghe, 2010); Kongou (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Franceville (van de Weghe, 2010).
Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
Habitat: Wetter forest in good to reasonable condition (Larsen, 2005a).
Habits: Much scarcer than *P. cyproeofila* but otherwise has similar habits (Larsen, 2005a).
Early stages: Nothing published.
Larval food:
*Papilio (Princeps) cyproeofila* Butler, 1868  
Common White-banded Swallowtail


*Papilio cypraefolia* Butler, 1869.  Aurivillius, 1899.  [misspelling of species name]

Images M.C. Williams ex Dobson Collection.

Published images: Larsen, 2005a (male upperside).
Type locality: [Ghana]: “Ashantee”.
Diagnosis: See *P. gallienus* for differentiatin features.
Distribution: Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Central African Republic.
Habitat: Forest, with some tolerance for degraded forest (Larsen, 2005a).
Habits: Fairly common. Often seen flying down forest paths with an effortless but rapid flight (Larsen, 2005a). Both sexes are fond of flowers, sometimes up to half a dozen can be found feeding together at a patch of flowers (Larsen, 2005a).
Early stages: Nothing published.
Larval food:
*Papilio (Princeps) bacelarae* (Biver de Sousa & Mendes, 2009)


**Type locality:** Angola: “Cabinda: Buco Zau, dia, 27-VII-1952 (CZ-5639)”.

**Distribution:** Angola.

**Specific localities:**

Angola – Buco Zau (TL).
**Etymology:** Named for Miss Amelia Bacelar, the first Portuguese entomologist to study the Lepidotera of Angola (Bivar de Sousa & Fernandes, 2009).

**Early stages:** Nothing published.
**Larval food:** Nothing published.

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**Papilio (Princeps) ferdanus** Fruhstorfer, 1903


**Type locality:** Equatorial Guinea: “Fernando Po”.
**Distribution:** Equatorial Guinea (Bioko).
**Specific localities:**
- Equatorial Guinea – Bioko (TL).
**Early stages:** Nothing published.
**Larval food:** Nothing published.

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*Papilio (Princeps) filaprae* Suffert, 1904


**Type locality:** Cameroon: “Camerun, Barombi Station”.
**Distribution:** Cameroon, Gabon, Congo, Democratic Republic of Congo, Angola, Equatorial Guinea.
**Early stages:** Nothing published.
**Larval food:** Nothing published.

**Note:** Larsen, 2005a: 77 doubts that this is a valid taxon, intimating that it is the equatorial subspecies of *P. cypraeofila* (p.78).

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*Papilio (Princeps) filaprae filaprae* Suffert, 1904


**Type locality:** Cameroon: “Camerun, Barombi Station”.
**Distribution:** Cameroon (south-east), Gabon, Congo, Democratic Republic of Congo (south-west), Angola.
**Specific localities:**
- Cameroon – Barombi Station (TL); Bitje (Le Cerf, 1924).
- Gabon – Mondah (van de Weghe, 2010); Mimengo (van de Weghe, 2010).

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*Papilio (Princeps) filaprae musolanus* (Hancock, 1988)

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Equatorial Guinea – Bioko.

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Papilio (Princeps) filaprae musolanus (Hancock, 1988)
**Type locality:** Equatorial Guinea: “Fernando Po”.

**Distribution:** Equatorial Guinea (Island of Bioko), Cameroon (west).

**Specific localities:**

- Equatorial Guinea (Bioko) – Luba (San Carlos) (Schultze, 1913)

  *insularis* Schultze, 1913 (as f. of *Papilio cypraeafila* [sic]). *Entomologische Rundschau* **30**: 49 (49-50). Equatorial Guinea: “Fernando Po”. [Invalid; junior primary homonym of *Papilio agetes insularis* Staudinger, 1895 [Papilionidae].]

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**Papilio (Princeps) gallienus** Distant, 1879

*Narrow-banded Swallowtail*


*Papilio gallienus* Dist., 1879. Aurivillius, 1899.

**Published images:** Larsen, 2005a (male upperside).

**Type locality:** Nigeria: “Isuubu, Mongu-ma-lobah and Calabar district”.

**Diagnosis:** Similar to *P. cyproeofila* but has creamy yellow rather than creamy white bands, and hindwing band much narrower and curved on inner edge (Larsen, 2005a).

**Distribution:** Nigeria (Cross River loop), Cameroon, Gabon, Congo, Central African Republic, Democratic Republic of Congo (central).

**Specific localities:**

- Nigeria – Isuubu and Calabar district (TL).
- Gabon – Ipassa (van de Weghe, 2010).
- Democratic Republic of Congo – Salonga River (Dufrane, 1936); Flandria, Tshuapa (Berger, 1950).

**Habitat:** Strictly limited to wetter forests in good condition (Larsen, 2005a).

**Habits:** Localized and rare (Schultze, 1917). The flight is more persistent and faster than in other members of the group. It begins to fly early in the morning and shuns the company of other swallowtails (Schultze, 1917).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

  *vreuricki* Dufrane, 1936 (as ab. of *Papilio gallienus gallienus*). *Lambillionea* **36**: 40 (40-42). “Congo”.


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**Papilio (Princeps) mechowi** Dewitz, 1881


**Type locality:** Angola: “Westafrika, Quango”.

**Distribution:** Cameroon, Congo, Central African Republic, Sudan, Democratic Republic of Congo, Angola, Uganda.

**Early stages:** Nothing published.

**Larval food:** Nothing published.
Papilio (Princeps) mechowi mechowi Dewitz, 1881


**Type locality:** Angola: “Westafrika, Quango”.

**Distribution:** Cameroon, Congo, Central African Republic, Sudan (south – around Tambura), Uganda, Democratic Republic of Congo, Angola.

**Specific localities:**
- Sudan – Tambura.
- Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).


Papilio (Princeps) mechowi whitnalli Neave, 1904


**Type locality:** Uganda: “Entebbe”.

**Distribution:** Uganda (east and central).

**Specific localities:**
- Uganda – Entebbe (TL).

*Papilio (Princeps) mechowianus* Dewitz, 1885


Type locality: Democratic Republic of Congo/Sudan: “Niam Niam Ländern”.

Distribution: Angola (north), Democratic Republic of Congo, Central African Republic, Sudan?

Specific localities:
Democratic Republic of Congo – Niam Niam (TL); Stanley Falls (Grose-Smith, 1900); Salonga River (Dufrane, 1936).

Early stages: Nothing published.

Larval food: Nothing published.

*Papilio (Princeps) nobicea* Suffert, 1904

Volta Swallowtail


Published images: Larsen, 2005a (male upperside).

Type locality: Togo.

Diagnosis: The chief difference between *P. nobicea* and *P. zenobia* lies in the colour of the discal bands; pure white with no cream tinge in the former (Larsen, 2005a).

Distribution: Ghana, Togo.

Berger (1974) states that *P. nobicea* and *P. zenobia* are sympatric but this is apparently not true (Larsen, 2005a).

Specific localities:
Ghana – Likpe (Larsen, 2005a); Wli Falls (Larsen, 2005a); Kyabobo (Larsen, 2005a).

Habitat: Forest in mountainous terrain (Larsen, 2005a).

Habits: Where it occurs this can be a common species (Larsen, 2005a).

Early stages: Nothing published.

Larval food: Nothing published.

Papilio demodocus group

Relevant literature:
Zakharov et al., 2004 [Phylogeography].

*Papilio (Princeps) demodocus* Esper, [1798]#

Citrus Swallowtail


Papilio demoleus Linnaeus. Trimen, 1862c. [misidentification]
Papilio demoleus Linnaeus, 1764. Trimen & Bowker, 1889. [misidentification]
Papilio demodocus Esper, 1798. Aurivillius, 1899.

Images M.C. Williams ex Williams Collection.

**Alternative common names:** Citrus Butterfly; Christmas Butterfly; Orange Dog; African Lime Butterfly.

**Type locality:** [Africa]: “China”; “Bengalen”. [False localities.]

**Distribution:** Sub-Saharan Africa, including Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Mali, Burkina Faso, Ghana, Togo, Benin (Fermon et al., 2001), Niger, Nigeria, Cameroon, Equatorial Guinea, Gabon, Angola (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo, Central African Republic, Ethiopia, Somalia, Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa, Swaziland, Lesotho. Also in Saudi Arabia, Yemen, Oman, Cape Verde Islands, Comoro Islands, Madagascar, Mauritius, Reunion, Socotra.

Recorded in Belgium by Cluck & Rousseaux in 2003.

**Diagnosis:** Similar to the Oriental *P. demoleus* Linnaeus, 1758 but the two species apparently diverged from each other between 10 and 20 million years ago (Zakharov et al., 2004).

**Habitat:** Tolerates a very wide range of habitats, being absent only from desert and afro-alpine habitats. It is often found in gardens and parks (Pringle et al., 1994). In Tanzania from sea-level to 2 600 m (Kielland, 1990d).

Larsen (2005a) records that he found a small population in the middle of the Kalahari, breeding on domesticated *Citrus* species. In Madagascar in forest margins and anthropogenic environments (Lees et al., 2003).

**Habits:** This is a very common butterfly throughout the Afrotropical Region. Although the flight pattern has a relaxed and almost casual look to it, *demodocus* is capable of powerful flight. Both sexes frequently feed from flowers and males are avid mudpuddlers. Larsen (1983b) noted a specimen in Yemen, trapped by its proboscis when it tried to feed on a flower of *Kahania laniflora* (Asclepiadaceae). Larsen (2005a) found old females with the hindwing underside completely covered by the pollen of the flowers of *Delonix regia*, amongst others, so much so that they often had difficulty flying. Larsen (1991c) records large numbers on fresh elephant dung in the Shimba Hills, Kenya. Males show pronounced hilltopping behaviour, patrolling a hill or ridge almost incessantly. Males also establish and defend territories on the flats, often in the vicinity of a female pupa that is about to eclose. Here they patrol about with a leisurely, floating flight, a few metres above the ground. On encountering an unmated female the male will pursue her relentlessly until she tires and perches. Courtship is short and mating soon follows. The species is a well known participant in mixed butterfly migrations in eastern Africa. Communal roosting at night has been noted by Gibson & Panchen (1975); specimens settle in groups on grass stems beneath trees (Pringle et al., 1994).

**Flight period:** All year but commonest from September to May in cooler areas (Pringle et al., 1994).

**Early stages:**

Trimen, 1862c: 18 and 1866: plate 1 [(*Rhop. Afr. Aust.* i, p.18 and ii, pl.1, figs 1, 1a)].

Trimen & Bowker, 1889: 225 [as *Papilio Demoleus* Linnaeus].

**“Larva.”** Pale yellowish-green, marbled with purple or purplish-grey, running in irregular transverse, and in places irregularly confluent, markings on the sides. Numerous pale-ferruginous, small, ocellate spots sprinkled about purple
Clark, in Van Son, 1949: 23 [as Papilio (Papilio) demodocus].

**Egg.** Spherical with flattened base; smooth; 1.3 mm diameter by 1.1 mm high; white when laid, becoming pale yellow, and after 24 hours variegated with light brown markings; laid singly on underside of leaf or young shoot; shortly before hatching turns black; egg stage about 5 days. **Larva.** Five instars, lasting about 24 days. First instar larva. Brownish black, with whitish marking at middle and on 1st and two last segments; body covered with numerous setose processes, three pairs on 1st segment, four pairs each on 2nd to 4th segments, two pairs each on 5th to 10th segment, lower processes much shorter than upper (dorsolateral) ones, and one pair each on last two segments; longest processes are dorso-lateral ones on 1st and last segments; processes become smaller with each consecutive instar and are absent in final instar, there being only an anterior and posterior pair of small plain tubercles on 1st and last segments. Two distinct colour forms – larvae feeding on Rutaceae at first nearly black with conspicuous whitish markings at middle and on posterior abdominal segments, resembling bird-dropping; head and posterior extremity of body yellowish; final instar green, irrorated at sides with purplish reticulated lines and small ocellate reddish spots; broad white lateral line above spiracles; anterior edge of swollen 3rd thoracic segment with transverse row of small black rings, two central ones circular, complete and separate, those next to them nearly quadrangular, followed by small anteriorly rounded ones, then by trace of smaller ring, beyond which a large ocellate black spot crossed by narrow longitudinal white line; two central rings bordered anteriorly by two narrow black semi-circular lines united at middle and continued posteriorly to constitute sides of nearly quadrangular rings mentioned above; whole of these markings bordered anteriorly by transverse purplish stripe along posterior edge of 2nd thoracic segment; transverse velvety black line along anterior edge of 1st abdominal segment; paired reticulate oblique purplish or blackish fasciae from upper edge of white lateral line of 3rd abdominal segment to upper side of 4th segment and from there backwards to posterior edge of 5th segment; similar but smaller fasciae at lower sides of 5th abdominal segment. Larvae feeding on Umbelliferae white with brownish or blackish longitudinal stripes which, in final instar, are broader and are edged and spotted with light orange-red. Anterior and posterior tubercles brownish; osmeterium crimson, with short base and long horizontally spreading branches; length of final instar 40 mm. **Pupa.** Surface rough, with scattered small acute tubercles anteriorly on underside; length about 36 mm; colour varies according to colour of support (green, brown, black or combinations of these colours); pupal period about 2 weeks but considerably longer under adverse conditions.”

Darlow, 1949b.

Van Son, 1959: 54

Larvae found in the Kagaligadi Transfrontier Park were of the “Fennel” type, and were feeding on a member of the Apiaceae.

Clarke et al., 1963: 130.

Dickson & Kroon, 1978: 177.
Carcasson, 1981 [larva and pupa].


“The larvae on the Salalah plain [on Haplophyllum] have a colour pattern which differs completely from the typical African form. Their ground colour is light green or yellow with extensive dark brown markings broken up into mottled patches. They resemble the form described from South Africa by Clark, Dickson & Sheppard (1963) which has so far been recorded nowhere else. The typical form co-exists with the atypical and there is some evidence that the atypical form is genetically adapted to feeding on Umbelliferae where it is better camouflaged than the typical form. In May 1981 A.R. Pittaway (pers. comm.) found the species on Citrus in Dhofar [Arabian Peninsula], where this plant must be a very recent introduction. About 5% of the larvae were of the typical African form, the remainder were of the lighter mottled form and were very evident on the dark green, glossy Citrus foliage. This represents a promising research topic.”

Henning, S.F., 1984: 32.


Larvae in the Dhofar province of Oman are dimorphic, those feeding on Haplophyllum (Rutaceae) being variegated in black and cream instead of the usual green.


Clark, in Pringle et al., 1994: p.404; plate 33 [as Papilio demodocus demodocus].

“The eggs are laid singly on the undersides of leaves or on young shoots. They are 1.3 mm in diameter and white when first laid, turning pale yellow. After about 24 hours they become variegated with light brown markings. The egg stage lasts about five days. There are five larval instars lasting about 24 days. Two distinct colour forms are apparent, one feeds on Rutaceae (citrus) and the other on Apiaceae (fennel). In the Rutaceae-feeding form, the first four instars mimic a bird dropping while the final instar looks leaf-like. The pupa resembles a piece of bark or a twig and varies in colour depending on where the larva pupated. The pupal stage can last from two weeks to several months.”

Henning, Henning, Joannou, & Woodhall, 1997: 222, 223 [photographs of early instar larva, final instar larva (both colour forms) and pupa].
Early stages of *Papilio demodocus*. Aberrant 4th and final instar larvae. Images courtesy Raimund Schutte

Larval food:

*Archangelica officinalis* (Rutaceae) [Henning, Henning, Joannou & Woodhall, 1997: 223].

*Asteraceae* [Larsen, 1991c: 114].

*Calodendrum capense* Thunb. (Rutaceae) [Bowker, in Trimen & Bowker, 1889: 225; as *Calodendron capense*; KwaZulu-Natal].

*Citopsis daweana* Swingle & M. Kellerm. (Rutaceae) [Larsen, 1991; Shakawe, Botswana].

*Citrus microcarpa* x *C. citrofortunella* (Rutaceae) [Kroon, 1999: 23].

*Citrus* species (Rutaceae) [Trimen & Bowker, 1889: 225; as "the orange and lemon"].

*Clusatia anisata* (Wild.) Hook. f. ex Bentham (Rutaceae) [Van Son, 1949: 24; as *Clausena inequalis* (DC.) Benth.].

*Deverra burchelli* (DC.) Eckl. & Zeyh. (Apiaceae) [Dickson & Kroon, 1978].

*Deverra denuidata* subsp. *aphylla* (Cham. & Schltldl.) Pfister & Podlech (Apiaceae) [Van Son, 1959: 54; as *Pituranthos aphyllus*].

*Fagaropsis angolensis* (Engl.) Dale (Rutaceae) [Van Someren, 1974: 316].

*Foeniculum vulgare* Mill. (Apiaceae) (exotic) [Trimen & Bowker, 1889: 225; as "the fennel"].

*Haplophyllum* species (Rutaceae) [Larsen, 1983b; Dhofar province in Oman].

*Hippobromus pauciflorus* (L.f.) Radlk. (Sapindaceae) [Mrs Barber, in Trimen & Bowker, 1889: 225; as *Hippobromus alata*; Grahamstown, Eastern Cape].

*Oricia bachmanni* (Engl.) I. Verdel. (Rutaceae) [Van Son, 1949: 24; as *Teacea swynnertoni*].

*Oricia bachmannii* (Engl.) I. Verdel. (Rutaceae) [Henning, Henning, Joannou & Woodhall, 1997: 223].

*Peucedanum galbanum* (L.) Drude (Apiaceae) [Trimen & Bowker, 1889: 225; as *Bubon galbanum*].

*Peucedanum gummiiferum* (L.) Wijnands (Apiaceae) [Trimen & Bowker, 1889: 225; as *Bubon gummiiferum*].


*Pseudospondias* species (Anacardiaceae) [Dahlgren & Van Wyk, 1988].

*Ptaeroxylon obliquum* (Thunb.) Radlk. (Ptaeroxylaceae) [Dickson & Kroon, 1978].
*Ruta* species (Rutaceae) [Larsen, 1983b; Yemen].

*Teclea* species (Rutaceae) [Larsen, 1983b; Yemen].

*Teclea natalensis* (Sond.) Engl. (Rutaceae) [Van Son, 1949: 24; as *Toddalia natalensis*].

*Teclea pilosa* (Engl.) I. Verd. (Rutaceae) [Otto *et al*., 2013: 72].

*Toddalia asiatica* (L.) Lam. (Rutaceae) [Van Son, 1949: 24; as *Toddalia aculeata* Pers.].

*Vepris lanceolata* (Lam.) G.Don (Rutaceae) [Mrs Barber, *in* Trimen & Bowker, 1889: 225; Grahamstown, Eastern Cape].

*Zanthoxylum capense* (Thunb.) Harv. (Rutaceae) [Pringle *et al*., 1994: 303].

*Zanthoxylum delagoense* P.G. Waterman (Rutaceae) [Dickson & Kroon, 1978].

**Relevant literature:**

Cluck & Rousseaux, 2003  [Recorded in Belgium].

Curle, 2002  [Mimicry with *Aeropetes tulbaghia*].


Clarke *et al*., 1963  – Larval colour patterns in.

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**Papilio (Princeps) demodocus demodocus** Esper, [1798]*


*Papilio demoleus* Linnaeus. Trimen, 1862c.  [misidentification]

*Papilio demoleus* Linnaeus, 1764. Trimen & Bowker, 1889.  [misidentification]


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Type locality: [Africa]: “China”; “Bengalen”. [False localities.]

Distribution: Sub-Saharan Africa, including Mauritania, Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Mali, Burkina Faso, Ghana, Togo, Benin (Fermon et al., 2001), Niger, Nigeria, Cameroon, Equatorial Guinea, Gabon, Angola (Bivar de Sousa & Fernandes, 1966), Democratic Republic of Congo, Central African Republic, Ethiopia, Somalia, Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, Botswana, Namibia, South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, Free State Province, KwaZulu-Natal, Eastern Cape Province, Western Cape Province, Northern Cape Province), Swaziland, Lesotho. Also in Saudi Arabia (south-west), Yemen, Oman, Cape Verde Islands, Comoro Islands, Madagascar, Mauritius, Reunion.

Specific localities:
- Mali – Bamako (Dufrane, 1936).
- Burkina Faso – Bobo (Dufrane, 1936); Diolasso (Dufrane, 1936).
- Benin – Noyau Central, Lama Forest (Fermon et al., 2001); Lokoli (Tchibozo et al., 2008).
- Ghana – Accra (Storace, 1963); Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
- Togo – Klouto [6°57’15.07”N 0°34’54.40”E] (Saffian et al., 2009).
- Cameroon – Barombi (Suffert, 1904); Akoafim (Schultze, 1914); Duala (Strand, 1914); Korup (Larsen, 2005a).
- Equatorial Guinea (Bioko) – Malabo (Sta. Isabel) (Schultze et al., 1917-1923); Basile (Spearmen et al., 2000).
- Gabon – Throughout (van de Weghe, 2010); Aghwey (Capronnier, 1881).
- Democratic Republic of Congo – North Kalule (Dufrane, 1936); Elisabethville (Dufrane, 1946); Luebo (Dufrane, 1946); Leopoldville (Dufrane, 1946); Doruma-Sili (Berger, 1950); Kafakumba (Storate, 1963).
- Ethiopia – Asmara (Storace, 1963); Himberti (Storace, 1963); Dalle (Storace, 1963).
- Somalia – Belet Amin sul basso Giuba (Storace, 1963).
- Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- Tanzania – Throughout (Kielland, 1990d); Tabora (Suffert, 1904); Bismarckburg (Strand, 1911); Karema (Strand, 1911); Kilwa (Strand, 1911); Malwe (Strand, 1911); Mtanga (Strand, 1911); Sokosi (Strand, 1911); Kitungulu (Strand, 1911); Sempoe Forest Reserve (Doggart et al., 2001); Katavi National Park (Fitzherbert et al., 2006).
- Malawi – Mt Mulanje (Congdon et al., 2010); Zomba Mountain (Congdon et al., 2010).
- Zambia – Throughout (Heath et al., 2002).
- Mozambique – Njesi Plateau (Congdon et al., 2010); Mt Imago (Congdon et al., 2010); Mt Mabu (Congdon et al., 2010); Mt Mecula [-12.0772 37.6297] (Congdon & Bayliss, 2013).
1990); Lekgalameetse Nature Reserve (“Malta Forest”); Highlands Wilderness (Bode & Bode, unpublished checklist); Bateleur Nature Reserve (Williams); Soetdoring Farm [-24.561 28.233] (A. Mayer, pers comm. 2015); Bateleur Nature Reserve (Williams & Dobson, unpub., 2015).

Mpumalanga – Verloren Vallei Nature Reserve (Warren, 1990); Lekgalameetse Nature Reserve (“Malta Forest”); Highlands Wilderness (Bode & Bode, unpublished checklist); Bateleur Nature Reserve (Williams); Soetdoring Farm [-24.561 28.233] (A. Mayer, pers comm. 2015); Bateleur Nature Reserve (Williams); Malelane (female illustrated above).

North West Province – Kgawane Mountain Reserve (male illustrated above); Mountain Sanctuary N.R. (Williams); Utopia Resort (C. Dobson, 2006); Borakalalo Nature Reserve (J. Dobson, unpublished, 2009).

Gauteng – Pretoria (Vári, 1976); Witwatersrand Botanical Gardens (J. Dobson, unpublished checklist, 2001); Buffelsdrif Conservancy (Williams).


Northern Cape Province – Kagaligadi Transfrontier Park (van Son, 1959).


Arabian Peninsula
Hejaz: Medina (Larsen, 1983b).
Asir: Jeddah (Larsen, 1983b); Azzan (Larsen, 1983b); Abha (Larsen, 1983b).
Yemen: Jabal Sabr (Larsen, 1983b); Ibib (Larsen, 1983b); Jabal Bada’an (Larsen, 1983b); Wadi Dur (Larsen, 1983b); Wadi Annah (Larsen, 1983b); Dalil (Larsen, 1983b).
Aden: Dhala (Larsen, 1983b); Jabal Jihaf (Larsen, 1983b).
Hadramaut: Ras Fartak (Larsen, 1983b).
Dhofar: Ain Arzat (Larsen, 1983b); Salalah (Larsen, 1983b); km 7 and 12 Thamarit Rd (Larsen, 1983b); Darbat (Larsen, 1983b).

Madagascar – Tananarive (Storace, 1963).

Mauritius – Widespread and common (Davis & Barnes, 1991). Probably accidentally introduced between 1865 and 1900, following its deliberate introduction into Reunion from Madagascar in 1863 (Davis & Barnes, 1991); Curepipe (Le Cerf, 1913); Moka (Le Cerf, 1927).


conflua Strand, 1914 (as ab. of Papilio demodocus). Archiv für Naturgeschichte 80 (A.2.): 158 (139-161). Cameroon: “Duala”.


juncta Dufrane, 1936 (as ab. of Papilio demodocus demodocus). Lambillionea 36: 40 (40-42). Mali: “Bamako,
S.O. Soudan, sur les bords du Niger”.

*semijuncta* Dufrane, 1936 (as ab. of *Papilio demodocus demodocus*). *Lambillionea* 36: 40 (40-42). Burkina Faso: “Côte d’Ivoire (ancienne Haute Volta), Bobo, Diolasso”.


*oblongula* Berio, 1941 (as f. of *Papilio demodocus*). *Bollettino della Società Entomologica Italiana* 73: 91 (90-92). Ghana: “Ascianti”.

*adla* Berio, 1941 (as f. of *Papilio demodocus*). *Bollettino della Società Entomologica Italiana* 73: 92 (90-92). Democratic Republic of Congo: “Congo Belgr”.


*atromaculatus* Storace, 1963 (as f. of *Papilio demodocus*). *Bollettino della Società Entomologica Italiana* 92: 102 (102-104). Ethiopia: “Eritrea, Dorfù presso Asmara, m. 1500 s.l.m.”.


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**Papilio (Princeps) demodocus bennetti** Dixey, 1898


**Type locality**: Yemen: “Jebel Dryet, 4900 ft.”.

**Diagnosis**: Characterised by the narrow yellow bands on all four wings, compared to the nominate subspecies (Larsen, 1983b).

**Distribution**: Yemen (Island of Socotra).

**Specific localities**:

- Yemen – Jebel Dryet, Socotra (TL).

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*Papilio (Princeps) erithonioides* Grose-Smith, 1891

*Papilio erithonioides* Grose-Smith, 1891. *Annals and Magazine of Natural History* (6) **7**: 122 (122-128).

**Type locality**: Madagascar: “North-west coast of Malagasy Republic”.

**Habitat**: Forest (Lees et al., 2003).

**Early stages**: Nothing published.

**Larval food**: Nothing published.

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*Papilio (Princeps) grosesmithi* Rothschild, 1926

*Papilio grosesmithi* Rothschild, 1926. *Annals and Magazine of Natural History* (9) **17**: 113 (112-114).

**Type locality**: Madagascar: “N.W. Madagascar”.

**Distribution**: Madagascar.

**Habitat**: Forest (Lees et al., 2003).

**Early stages**: Nothing published.

**Larval food**: Nothing published.


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*Papilio (Princeps) morondavana* Grose-Smith, 1891

*Papilio morondavana* Grose-Smith, 1891. *Annals and Magazine of Natural History* (6) **8**: 78 (78-81).

*Papilio morondavana* Smith, 1891. *Aurivillius*, 1899.
Type locality: Madagascar: “West Madagascar, Mahobo, Morondava River”.
Distribution: Madagascar.
Specific localities:
Madagascar – Mahobo, Morondava River (TL).
Habitat: Forest (Lees et al., 2003).
Early stages: Nothing published.
Larval food: Nothing published.

_Papilio echerioides_ group

*Papilio (Princeps) echerioides* Trimen, 1868

White-banded Swallowtail

_Papilio echerioides_ Trimen, 1868. Trimen & Bowker, 1889.
_Papilio echerioides_ Trimen, 1868. Aurivillius, 1899.

_Papilio echerioides echerioides_. Male (Wingspan 70 mm). Left – upperside; right – underside.
Images M.C. Williams ex Williams Collection.
**Papilio echerioides echerioides.** Female (Wingspan 70 mm). Left – upperside; right – underside.  
Woodbush, Limpopo Province, South Africa. 23 February 2003. J. Dobson  
Images M.C. Williams ex Dobson Collection.

**Type locality:** [South Africa]: “Perie Bush, Sogana and Boolo forests near the river Tsomo, in Kaffraria; Tunjumbili, Tugela frontier of Natal”.

**Diagnosis:** Females mimic the unpalatable *Amauris echeria*. When at rest the underside pattern of the closed wings resembles that of the distasteful acraeine, *Acraea agaice*. This is therefore a remarkable instance of dual mimicry (Pringle *et al.*, 1994).

**Distribution:** Cameroon, Equatorial Guinea, Angola, Democratic Republic of Congo, Sudan, Ethiopia, Uganda, Rwanda, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland.

**Habitat:** Temperate and montane evergreen forest. In Tanzania subspecies *wertheri* occurs at altitudes of 1 400 to 2 200 m (one female from 2 400 m); subspecies *pseudowertheri* is found as low as 250 m (Magombera Forest) to 1 300 m, occasionally up to 1 600 m (Nguru Mountains); ssp. *joiceyi* is found at altitudes from 700 to 1 700 m (Kielland, 1990d). Subspecies *kiellandi* is found at altitudes of 1 800 to 2 400 m in Tanzania (Congdon & Collins, 1998).

**Habits:** Compared to other swallowtails the flight is weak, especially in the female. Both sexes fly low down, seldom more than two metres above the ground, with a fluttering flight pattern. Females keep almost exclusively to the shady undergrowth of the forest. Both sexes are fond of flowers, especially *Impatiens* species, and males occasionally mud-puddle. Males sometimes come to horse manure or cow pats (Larsen, 1991c). Males do not seem to establish defended territories.

**Flight period:** In the nominate subspecies this is from September to April, with peak emergences in September and October, and again from February to April in KwaZulu-Natal. In the Eastern Cape Province the two broods are in November and from January to March (Pringle *et al.*, 1994).

**Early stages:**

Fountaine, 1911: 49 [*Papilio echerioides echerioides* as *Papilio echerioides*].

Clark, *in* Van Son, 1949: 16 [as *Papilio (Papilio) echerioides echerioides*].

**Egg.** Spheroidal, with flattened base; pale yellow, with a few small reddish brown spots; 1.2 mm in diameter by 1 mm high; smooth; laid singly on underside of leaf; egg stage about 5 days. **First instar larva.** 3 mm long; black, with 1st and last two segments white; structurally resembling *P. dardanus* but with setate processes slightly shorter. **Second and third instar larva.** Light brown; setate processes somewhat reduced and with shorter setae. **Fourth instar larva.** Olive brown, variegated with white and closely resembles bird dropping; no setate processes and only a pair of slight elevations on 8th segment. **Fifth (final) instar larva.** 32 mm long; bright green, with brownish transverse band along posterior half of 4th segment, widened laterally to merge with similarly coloured lower half of body, and a peculiar band resembling two brown triangles, apices of which touching in mid-dorsal line, and posterior sides of which are deeply and roundly excised; this band also merging laterally into the yellowish brown sides, which become abruptly lighter below spiracles; both bands finely edged with whitish; anterior one with transverse row of small bluish-pupilled ocellate spots and with a larger median incision between inner two spots, and a smaller one on each of their outer sides; posterior band has two similar ocellate spots near middle line, and both bands variegated posteriorly with small whitish dots; osmeterium bright pink throughout; larval stage
35 days. **Pupa.** Resembles partly detached piece of lichen, variegated with greenish, brown, pinkish and whitish markings; two diverging, shortly furcate anterior processes; dorsum markedly raised, with anterior part forming sharply raised keel, rounded in side-view; wing-cases laterally expanded in posterior half, with edges crenulate; whole body curved in S-shape as seen from side; abdominal segments with raised tubercles, except at posterior end; pupal stage about two weeks.

**Henning, S.F., 1984:** 31.

**Clark, in Pringle et al., 1994:** p. 400; plate 31 [as *Papilio echerioides echerioides*].

“Eggs are laid singly on the undersides of the leaves of the foodplant. They are 1 mm high by 1.2 mm in diameter and pale yellow with a few small, reddish-brown spots. The egg stage lasts about five days. There are five larval instars lasting about 35 days. Larvae in the first four resemble a bird dropping, while those in the final instar are leaf-like. The pupa resembles a partly detached piece of lichen and the coloration is somewhat variable depending on where the larva pupates. The pupal stage lasts about two weeks.”

**Henning, Henning, Joannou, & Woodhall, 1997:** 233 (photograph of early instar larva, final instar larva and pupa).

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**Larval food:**

*Citrus* species (Rutaceae) [Pringle et al., 1994: 302].

*Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Fountaine, 1911: 50; as *Clausena inaequalis* (DC.) Benth.; Dargle, KwaZulu-Natal, South Africa].

*Teclea* species (Rutaceae) [Kielland, 1990d: 46; for ssp. *joiceyi*].

*Toddalia asiatica* (L.) Lam. (Rutaceae) [Van Someren, 1974: 316].

*Vepris lanceolata* (Lam.) G.Don (Rutaceae) [Pringle et al., 1994: 302].

*Zanthoxylum capense* (Thunb.) Harv. (Rutaceae) [Van Son, 1949: 17; as *Fagara capensis* Thunb.].

*Zanthoxylum delagoense* P.G.Waterman (Rutaceae) [Dickson & Kroon, 1978].

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**Papilio (Princeps) echerioides echerioides** Trimen, 1868#


*Papilio echerioides echerioides*. Male (Wingspan 70 mm). Left – upperside; right – underside.
Images M.C. Williams ex Williams Collection.

*Papilio echerioides echerioides*. Female (Wingspan 70 mm). Left – upperside; right – underside.
Woodbush, Limpopo Province, South Africa. 23 February 2003. J. Dobson
Images M.C. Williams ex Dobson Collection.

**Type locality**: [South Africa]: “Perie Bush, Sogana and Boolo forests near the river Tsomo, in Kaffraria; Tunjumbili, Tugela frontier of Natal”.

**Distribution**: South Africa (Limpopo Province, Mpumalanga, KwaZulu-Natal, Eastern Cape Province), Swaziland.

**Specific localities**:
- **Limpopo Province** – Haenertsburg (Van Son, 1949); Woodbush (Van Son, 1949); Lekgalameetse Nature Reserve (“Malta Forest”) (Van Son, 1949); Hanglip Forest, Louis Trichardt (Van Son, 1949); Entabeni (Van Son, 1949); Duivelskloof (Swanepoel, 1953); Sibasa (Swanepoel, 1953); Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015).
- **Mpumalanga** – Barberton (Van Son, 1949); Marieps Kop (Van Son, 1949); Malelane (Van Son, 1949); Waterval Onder (Van Son, 1949); Sabie (Swanepoel, 1953); Graskop (Swanepoel, 1953); Buffelspoort Nature Reserve (Williams).
- **KwaZulu-Natal** – Tunjumbili (Trimen, 1868); Tugela River (Van Son, 1949); Oribi Gorge (Swanepoel, 1953); Port Shepstone (Swanepoel, 1953); Umkomaas (Swanepoel, 1953); Durban (Swanepoel, 1953); Pietermaritzburg (Swanepoel, 1953); Karkloof (Swanepoel, 1953); Eshowe (Swanepoel, 1953).
- **Eastern Cape Province** – Pirie Forest (Trimen, 1868); Sogana Forest (Trimen, 1868); Boolo Forest (Trimen, 1868); Stutterheim (Van Son, 1949); Hogsback (Van Son, 1949); King William’s Town (Van Son, 1949); Katberg (Van Son, 1949); Tsomo River (Van Son, 1949); Port St. Johns (Swanepoel, 1953); Amatola Mountains (Pringle *et al*., 1994).
- **Swaziland** – Malolotja N. R. ([www.sntc.org.sz](http://www.sntc.org.sz)).
**Papilio (Princeps) echerioides ambangulu** Clifton & Collins, 1997


**Type locality:** Tanzania: Ambagulu, West Usambara.

**Diagnosis:** Larger than ssp. wertheri. Male with narrower white forewing band; female with larger white spots, those on hindwing placed further from margin (Congdon & Collins, 1998).

**Distribution:** Tanzania.

**Specific localities:**
- Tanzania – Ambagulu (TL); West Usambara Mountains; Pare Mountains?; Mount Lossoganeu?.

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**Papilio (Princeps) echerioides chirindanus** van Son, 1956


**Type locality:** [Zimbabwe]: “S. Rhodesia, Mount Selinda”.

**Diagnosis:** Smaller than the nominate subspecies, and the male has purer white bands on the upperside of the wings. In males, on the hindwing upperside, the marginal spots are positioned further outwards and in females the light spots are smaller (Pringle et al., 1994).

**Distribution:** Mozambique (Mt Gorongosa); Zimbabwe (east).

**Specific localities:**
- Mozambique – Mount Gorongosa.
- Zimbabwe – Chirinda Forest, Mount Selinda (TL); Melsetter (Van Son, 1949); Vumba Mountains (Van Son, 1949); Umtali (Van Son, 1949).

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**Papilio (Princeps) echerioides homeyeri** Plötz, 1880


**Type locality:** North Mutundu, Mufulira, Copperbelt Prov., Zambia. 1250 m. 8-IX-1978. M.A. Newport (Newport Collection).
**Papilio echerioides homeyeri**. Female. Left – upperside; right – underside.
Wingspan: 90mm. South Mutundu River, Mufulira, Copperbelt Prov., Zambia. 1250 m. 2-V-1983.
M.A. Newport (Newport Collection).

**Type locality**: Angola: “Pungo-Adongo”.

**Distribution**: Angola, Democratic Republic of Congo (Lomami, Shaba, Lualaba, Tanganika), Tanzania (south-west), Zambia (north)

**Specific localities**:
- **Angola** – Pungo-Adongo (TL).
- **Tanzania** – Geri (Ssubuso) (Karsch, 1895).
- **Zambia** – Mwinilunga Township (Heath *et al.*., 2002); Ikelenge (Heath *et al.*, 2002); Kanongesha (Heath *et al.*, 2002); Kanyama (Heath *et al.*, 2002); Kakoma (Heath *et al.*, 2002); Kabompo Gorge (Heath *et al.*, 2002); (Heath *et al.*, 2002); Mpongwe (Heath *et al.*, 2002); Samfya (Heath *et al.*, 2002); Mutundu River (Mufulira) (male and female illustrated above).

**neumanni** Karsch, 1895 (as sp. of *Papilio*). *Entomologische Nachricten. Berlin 21*: 226 (225-227). Tanzania: “Geri (Ssubuso)”.

**tanganikae** Oberthür, 1897 (as sp. of *Papilio*). *Bulletin de la Société Entomologique de France 1897*: 190 (188-194). Tanzania: “aux bords du lac Tanganikae”.

**subtanganikae** Strand, 1916 *in* Strand, 1916-8 (as ab. of *Papilio zoroastres neumanni*). *Lepidoptera Niepeltiana 2*: 24 (1-26 (1916); 1-4 (1918)). Tanzania: “Deutsch Ost Afrika”.

**zoroastrides** Strand, 1916 *in* Strand, 1916-8 (as ab. of *Papilio zoroastres neumanni*). *Lepidoptera Niepeltiana 2*: 24 (1-26 (1916); 1-4 (1918)). Tanzania: “Deutsch Ost Afrika”.

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**Papilio (Princeps) echerioides joiceyi** Gabriel, 1945

**Papilio echerioides joiceyi**. Male. Wingspan 72 mm. Left – upperside; right – underside.
Images M.C. Williams ex Dobson Collection.

**Type locality**: Sudan: “S. Sudan, Opare Forest and Imatong Mts., 3-4000 ft”.

**Distribution**: Sudan (south), Uganda, Kenya (west), Tanzania (west), Rwanda, Democratic Republic of Congo (North Kivu).

**Specific localities**:
- **Sudan** – Opare Forest (TL); Imatong Mountains (Gabriel, 1945).
- **Uganda** – Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001; as *P. zoroastres*).
- **Kenya** – Mount Elgon (Stoneham, 1944); Kakamega Forest (Larsen, 1991c).
- **Tanzania** – forests from Mpanda to the Bukoba Region in western and north-western Tanzania (Kielland, 1990d).


**Papilio (Princeps) echerioides kiellandi** Clifton & Collins, 1997


**Type locality**: Tanzania: Kingarama Forest Reserve, Loliondo.

**Distribution**: Kenya (south), Tanzania (north).

**Specific localities**:
- **Kenya** – Teita Hills; Chyulu Hills.
- **Tanzania** – Kingarama Forest Reserve (TL); Loliondo District (Congdon & Collins, 1998).

**Papilio (Princeps) echerioides leucospilus** Rothschild, 1902


**Type locality**: Ethiopia: “Gara Mulata near Harar”.

**Distribution**: Ethiopia (highlands south-east of Rift Valley).

**Specific localities**:
- **Ethiopia** – Gara Mulata, near Harar (TL).

**Papilio (Princeps) echerioides nioka** (Hancock, 1989)


**Type locality:** Democratic Republic of Congo: “Nioka, Ituri district”.

**Distribution:** Democratic Republic of Congo. Known only from the type locality. Holotype in the Royal Museum for Central Africa, Tervuren, Belgium.

**Specific localities:** Democratic Republic of Congo – Nioka, Ituri district (TL).


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**Papilio (Princeps) echerioides nyiro** Carcasson, 1962


**Type locality:** Kenya: “Northern Frontier District, Mt. Nyiro, 7000 ft.”.

**Distribution:** Kenya (north-west).

**Specific localities:** Kenya – Mount Nyiro (TL).

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**Papilio (Princeps) echerioides oscari** Rothschild, 1902


**Type locality:** Ethiopia: “Kaffa and Djima”.

**Distribution:** Ethiopia (highlands west of the Rift Valley).

**Specific localities:** Ethiopia – Kaffa (TL); Djima (Rothschild, 1902).

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**Papilio (Princeps) echerioides pseudowertheri** Kielland, 1990


**Type locality:** Tanzania: “Ulanga District, Muhulu Forest, 1500 m.”. Holotype (male) in the Natural History Museum, London.

**Description:** “MALE. Black with creamy-white markings; f.w. post-discal band very wide near inner margin, sharply, but evenly tapering to small dots in spaces 6 and 7; distal part of the band generally narrower than in ssp. *wertheri*; h.w. white band very wide, as that of *wertheri*; submarginal white spots often touching margin, but in some specimens separated from the margin by a black line. Underside f.w. postdiscal spot in space 6 diffuse or lacking, but the one in 7 is present. Length of f.w. 41-48 mm. FEMALE. All markings white to creamy-white, more extended than in ssp. *rectofasciata* (= *wertheri*); f.w. white median spot in space 2 oblong; cell spot rather large; subapical spots comparatively large, but smaller than in *wertheri*; h.w. submarginal spots closer to the margin than in *rectofasciata* (= *wertheri*); median patch creamy-white with nearly even distal border (in *wertheri* ochreous, and often with strongly indented distal border). Length of f.w. 40-46 mm.”

**Distribution:** Tanzania (east and south-east).

**Specific localities:** Tanzania – Muhulu Forest, Ulanga District (TL); Mwanihana Forest, Ifakara (Kielland, 1990d); Kimboza Forest (Kielland, 1990d); Magombera Forest (Kielland, 1990d); Nguru Mountains (Kielland, 1990d); Masagati Forest (Kielland, 1990d); Nguu Forests (Kielland, 1990d); Uluguru Forests (Kielland, 1990d).
**Papilio (Princeps) echerioides shirensis** (Hancock, 1987)

_**Type locality**_: Malawi: “Mlanje, 2000’’.
_**Distribution**_: Malawi (south – Shire Highlands), Mozambique (Timberlake _et al._, 2007).
_**Specific localities**_
- Malawi – Mt Mulanje (TL); Zomba Mountains (Congdon _et al._, 2010).
- Mozambique – Mount Chiporone (Timberlake _et al._, 2007); Mt Namuli (Congdon _et al._, 2010); Mt Mabu (Congdon _et al._, 2010).

**Papilio (Princeps) echerioides wertheri** Karsch, 1898

_Papilio echerioides var. wertheri_ Karsch, 1898. _In_: Werther, C.W., _Die mittleren Hochländer des nördlichen Deutsch-Ost-Afrika_: 315 (311-317), Berlin.

_**Type locality**_: Tanzania: “Mangati”.
_**Distribution**_: Kenya (east); Tanzania (east and north).
_**Specific localities**_
- **Tanzania** – Modji (Suffert, 1904); Mangati (TL); The Oldeani-Ngorongoro Range (Kielland, 1990d); Mount Meru (Kielland, 1990d); Mount Kilimanjaro (Kielland, 1990d); Mbulu Forests (Kielland, 1990d); Mount Kwaraha at Babati (Kielland, 1990d); Mount Longido (Kielland, 1990d); Meto Hills (Kielland, 1990d); Mount Lolkisale (Kielland, 1990d).

_rideschi_ Suffert, 1904 (as ssp. of _Papilio echerioides_). _Deutsche Entomologische Zeitschrift, Iris_ 17: 93 (12-107). Tanzania: “Modji an Fusse des Kilima-Ndjaro”.

_rectofasciata_ Kielland, 1990 (as ssp. of _Papilio echerioides_). _Butterflies of Tanzania_ 39 (363 pp.). Melbourne. Tanzania: “Oldeani, 1900 m.”.

**Papilio (Princeps) echerioides zoroastres** Druce, 1878

_Papilio zoroastres_ Druce, 1878. Aurivillius, 1899.

_**Type locality**_: [Cameroon]: “Fernando Po”. [False locality.] Description of female by Canu, 1994 (as _Papilio zoroastres gabrieli)._ _Lampliionea_ 94 (3) (Tome I): 316 (311-320).
_**Distribution**_: Cameroon, Equatorial Guinea (Bioko).
_**Specific localities**_
- **Cameroon** – Buea (Karsch, 1893); Mussahe (Strand, 1914); Soppo (Strand, 1914).
- **Equatorial Guinea (Bioko)** – Bioko (Gabriel, 1945).


_zoroastroides_ Strand, 1914 (as ab. of _Papilio zoroastres_). _Archiv für Naturgeschichte_ 80 (A.2.): 159 (139-161). Cameroon: “Mussahe”.

_Sapponis_ Strand, 1914 (as ab. of _Papilio zoroastres_). _Archiv für Naturgeschichte_ 80 (A.2.): 159 (139-161). Cameroon: “Soppo”.

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**Papilio (Princeps) fuelleborni** Karsch, 1900


*Papilio fuelleborni* Karsch, 1900. *Smith et al., 2008*.

**Type locality:** [Tanzania]: “zwischen Uhehe und Iringa; zwischen Idunda und Iringa in Uhehe”.

**Distribution:** Tanzania (east and south), Malawi (north).

**Specific localities:**
- Tanzania – Mount Rungwe (Kielland, 1990d); Njombe (Kielland, 1990d); Livingstone Mountains (Kielland, 1990d); Uzungwa Range (Kielland, 1990d); Rubehe Mountains (Kielland, 1990d); Uka-guru Mountains (Kielland, 1990d); Nguru Mountains (Kielland, 1990d); Nguu Mountains (Kielland, 1990d); Kanga Mountain (Smith et al., 2008); Iringa (including Mafinga mountains) (Smith et al., 2008); Songea (Smith et al., 2008); Kitesa Forest (Smith et al., 2008); Mbinga (Smith et al., 2008); Bundali Hills (Smith et al., 2008); Udzungwa mountains (Smith et al., 2008); Ngamo (Smith et al., 2008).
- Malawi – Misuku Hills (Gifford, 1965); Matipa Forest.

**Note:** The population in the South Pare Mountains may constitute a distinct population (only one male available) (Kielland, 1990d: 40).

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**Papilio (Princeps) fuelleborni fuelleborni** Karsch, 1900


*Papilio fuelleborni* Karsch, 1900. *Smith et al., 2008*.

**Type locality:** [Tanzania]: “zwischen Uhehe und Iringa; zwischen Idunda und Iringa in Uhehe”.

**Distribution:** Tanzania (east and south), Malawi (north).

**Specific localities:**
- Tanzania – Mount Rungwe (Kielland, 1990d); Njombe (Kielland, 1990d); Livingstone Mountains (Kielland, 1990d); Uzungwa Range (Kielland, 1990d); Rubehe Mountains (Kielland, 1990d); Uka-guru Mountains (Kielland, 1990d); Nguru Mountains (Kielland, 1990d); Nguu Mountains (Kielland, 1990d); Kanga Mountain (Smith et al., 2008); Iringa (including Mafinga mountains) (Smith et al., 2008); Songea (Smith et al., 2008); Kitesa Forest (Smith et al., 2008); Mbinga (Smith et al., 2008); Bundali Hills (Smith et al., 2008); Udzungwa mountains (Smith et al., 2008); Ngamo (Smith et al., 2008).
- Malawi – Misuku Hills (Gifford, 1965); Matipa Forest.
Note2: The taxa *fuelleborni fuelleborni* and *fuelleborni rydoni* may have overlapping ranges and, if so, would merely be infrasubspecific forms (Smith et al., 2008).

**Papilio (Princeps) sjoestedti** Aurivillius, [1908]


*Papilio sjoestedtii* Aurivillius, 1908. Smith et al., 2008.

**Type locality**: Tanzania: “German East Africa, Meruberg”. Holotype in the Swedish Natural History Museum (images available at www2.nrm.se/en/lep_nrm/s).

**Diagnosis**: Differs from *fuelleborni* in the much narrower white median bands on the upperside of the wings (Kielland, 1990d).

**Distribution**: Tanzania (north).

**Habitat**: Montane forest. Occurs at altitudes above 2 000 m (common at 2 200 – 2 600 m but rarely seen as low as 1 700 m) (Kielland, 1990d).

**Habits**:

**Early stages**: Nothing published.

**Larval food**: Nothing published.

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**Papilio (Princeps) sjoestedtii sjoestedtii** Aurivillius, [1908]


*Papilio sjoestedtii* Aurivillius, 1908. Smith et al., 2008.

**Type locality**: Tanzania: “German East Africa, Meruberg”. Holotype in the Swedish Natural History Museum (images available at www2.nrm.se/en/lep_nrm/s).

**Diagnosis**: Differs from *fuelleborni* in the much narrower white median bands on the upperside of the wings (Kielland, 1990d).

**Distribution**: Tanzania (north).

**Specific localities**:

- Tanzania – Mount Meru (TL); Oldeani-Ngorongoro Highlands (Kielland, 1990d); the Mbulu forests (Marang, Nou Forest, Hasama Forest) (Kielland, 1990d); Mount Kwaraha at Babati (Kielland, 1990d); Mount Hanang? (Kielland, 1990d).

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**Papilio (Princeps) sjoestedtii atavus** Le Cerf, 1912


*Papilio fuelleborni neocesa* Kemal & Kocak, 2005: 10; nom. nov.

*Papilio sjoestedtii atavus* Le Cerf, 1912. Smith et al., 2008.

**Type locality**: Tanzania: “Afrique orientale allemande, Forêt du Kilimandjaro, au-dessus du Narangui, versant Sud-est alt. 1800 à 200 m”.

**Diagnosis**: Males differ from those of ssp. *sjoestedtii* in that the hindwing upperside white band is wider (Kielland, 1990d).

**Distribution**: Tanzania (north).

**Specific localities**:

- Tanzania – Mount Kilimanjaro (TL). Endemic to this mountain (Kielland, 1990d).

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*Papilio (Princeps) jacksoni* Sharpe, 1891
Jackson’s Swallowtail


**Type locality:** Kenya: “Kikuyu”.

**Distribution:** Sudan, Democratic Republic of Congo, Uganda, Rwanda, Burundi, Kenya, Tanzania, Malawi, Zambia.

**Habitat:** Montane forest, usually above 1 600 m. In Tanzania subspecies *kungwe* occurs from 1 300 to 2 200 m (Kielland, 1990d).

**Habits:** Common in Kenya (Larsen, 1991c) but uncommon in Tanzania (Kielland, 1990d). Flies on forest margins, along forest paths and in fairly open forest. Feeds from low-growing flowers and is rather shy; flies quite fast (Kielland, 1990d).

**Early stages:** Nothing published.

**Larval food:**
- *Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Van Someren, 1974: 316].
- *Toddalia* species (Rutaceae) [Larsen, 1991c: 116].

**Relevant literature:**
Berger, 1954b – Notes on.

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**Papilio (Princeps) jacksoni jacksoni** Sharpe, 1891


**Type locality:** Kenya: “Kikuyu”.

**Distribution:** Uganda (east), Kenya (highlands).

**Specific localities:**
- Kenya – Ngong Forest (Larsen, 1991c); Nandi Escarpment (Larsen, 1991c); Mount Elgon (Larsen, 1991c).

*multimaculata* Stoneham, 1951 in Stoneham, 1951-65 (as female f. of *Papilio jacksoni*). The butterflies of western Kenya with notes on allied forms, etc. 19 (180 pp.). Nairobi. No locality given.

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**Papilio (Princeps) jacksoni hecqui** Berger, 1954


**Type locality:** Democratic Republic of Congo: “Kibale-Ituri, Nioka”. Holotype and allotype in the Royal Museum for Central Africa, Tervuren, Belgium.

**Distribution:** Democratic Republic of Congo (north-east – restricted to an area on the north-west shores of Lake Albert).

**Specific localities:**
- Democratic Republic of Congo – Nioka (TL).
**Papilio (Princeps) jacksoni imatonga** Clifton & Collins, 1997


**Type locality:** Sudan: Imatong Mountains.
**Distribution:** Sudan.
**Specific localities:**
Sudan – Imatong Mountains (TL).

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**Papilio (Princeps) jacksoni kungwe** Cottrell, 1963


**Type locality:** [Tanzania]: “Tanganyika, western Province, Mt. Kungwe”.
**Distribution:** Tanzania (Kigoma, Mpanda and Ufipa Districts).
**Specific localities:**
Tanzania – Mount Kungwe (TL); Mount Sitebi (Kielland, 1990d); Mweze Highlands (Kielland, 1990d); Ntakatta Forest (Kielland, 1990d); Wanzizi (Kielland, 1990d); Mahale Mountain (Kielland, 1990d); Mbuzi Mountain (Kielland, 1990d); Chulwe Mountain (Kielland, 1990d); Bizi Forest (Kielland, 1990d).

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**Papilio (Princeps) jacksoni nyika** Cottrell, 1963


Wingspan: 78mm. Bred 24.9.78 on *Clausena anistata* [anisata], Uzumara Forest, Malawi. I. Hampton.
(Henning collection – H88).

**Type locality:** Malawi: “Nyassaland, Nyika Plateau, and Northern Rhodesia border”.
**Distribution:** Malawi (Nyika Plateau), Zambia (Nyika Plateau).
**Specific localities:**
Malawi – Nyika Plateau (TL); Uzumara Forest (male illustrated above).
Zambia – Nyika (Heath et al., 2002); Mafinga Mountains (Heath et al., 2002); Makutu Mountains (Heath et al., 2002).
Papilio (Princeps) jacksoni ruandana Le Cerf, 1924


**Type locality:** Democratic Republic of Congo: “Congo belge oriental, Masisi, N.W. Kivu, 5,000 ft.”

**Distribution:** Democratic Republic of Congo (Kivu), Uganda (south-east shore of Lake Albert), Rwanda, Burundi.

**Specific localities:**
Democratic Republic of Congo – Masisi (TL).

Papilio oribazus group

**Papilio (Princeps) oribazus** Boisduval, 1836


*Papilio oribazus* Boisd., 1836. Aurivillius, 1899.

**Type locality:** Madagascar.

**Distribution:** Madagascar (east).

**Habitat:** Forest and forest margins (Lees *et al*., 2003).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

**Papilio (Princeps) epiphorbas** Boisduval, 1833


*Papilio epiphorbas* Boisd., 1833. Aurivillius, 1899.

**Type locality:** Madagascar: “Sainte-Marie and Madagascar”.

**Distribution:** Madagascar, Comoro Islands.

**Habitat:** Forest, forest margins and anthropogenic environments (Lees *et al*., 2003). Confined to thickly wooded areas and forest, even degraded forest and farmlands (R. Schutte, pers comm., April 2010).

**Habits:** A common resident displaying typical rapid Papilio flight (R. Schutte, pers comm., April 2010).

**Early stages:** Nothing published.

**Larval food:** Females seen ovipositing on cultivated Citrus, and larvae were common (R. Schutte, pers comm., April 2010).

Papilio (Princeps) epiphorbas epiphorbas Boisduval, 1833


*Papilio epiphorbas* Boisd., 1833. Aurivillius, 1899.

**Type locality:** Madagascar: “Sainte-Marie and Madagascar”.

**Distribution:** Madagascar.
**Specific localities:**
Madagascar – Tamatave (Le Cerf, 1924); Tananarive (Le Cerf, 1924); Nosy Iranje (R. Schutte, pers comm., April 2010); Anjajavy Peninsula (R. Schutte, pers comm., April 2010); Perinet Forest (R. Schutte, pers comm., April 2010).


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**Papilio (Princeps) epiphorbas guyonnaudi** Turlin & Guilbot, 1990


**Type locality**: Comoro Islands: “Ajaho, 50, Ile d’Anjouan, Comores”.

**Distribution**: Comoro Islands (Anjouan).

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**Papilio (Princeps) epiphorbas praedicta** Turlin & Guilbot, 1990


**Type locality**: Comoro Islands: “Trou de Prophète, Mitsamiouli, Littoral nord de Grande Comore”.

**Distribution**: Comoro Islands (Grand Comore).

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**Papilio (Princeps) nobilis** Rogenhofer, 1891

*Noble Swallowtail*


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*Papilio nobilis nobilis*. Male. Wingspan 89 mm. Left – upperside; right – underside.
Images M.C. Williams ex Dobson Collection.
**Type locality:** [Tanzania]: “Africa Orientalis, Pare”.

**Distribution:** Sudan, Democratic Republic of Congo, Uganda, Kenya, Tanzania.

**Habitat:** Montane forest. Also common in riverine forest, such as the Masai Mara (Larsen, 1991c). In Tanzania specimens of the nominate subspecies have been noted at 2 100 m. Subspecies *mpanda* inhabits riparian forest at altitudes of 1 300 to 1 800 m (Kielland, 1990d).

**Habits:** Flies several metres above the ground. Both sexes feed from flowers. Females are apparently uncommon, most often being seen in the early morning when feeding from flowers. Males are sometimes attracted to the urine and dung of elephants (Kielland, 1990d). They apparently have quite strong powers of dispersal and may be found, on occasion, far from their forest habitats (Larsen, 1991c).

**Early stages:** Nothing published.

**Larval food:** *Warburgia ugandensis* Sprague (Canellaceae) [Van Someren, 1974: 316].

**Relevant literature:**
Bryk, 1929 – Sexual dimorphism in. 

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**Papilio (Princeps) nobilis nobilis** Rogenhofer, 1891


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**Type locality:** [Tanzania]: “Africa Orientalis, Pare”.

**Distribution:** Uganda (east), Kenya (central highlands, Masai Mara and shores of Lake Victoria), Tanzania (north-west).

**Specific localities:**
- **Kenya** – Mount Kenya (Larsen, 1991c); Masai Mara (Larsen, 1991c); Ngong Forest, Nairobi (Larsen, 1991c).
- **Tanzania** – Mount Lossoganeu, south of Arusha (Kielland, 1990d); Usambara Mountains (Kielland, 1990d); Kahe Forest, south of Moshi (Rydon, vide Kielland, 1990d).


**mariabonaparte** Bryk, 1929 (as f. of *Papilio nobilis*). *Societas Entomologica* 44: 22 (22-23). Tanzania: “Deutsch-Ostafrika”.

**nobilissima** Bryk, 1929 (as f. of *Papilio nobilis*). *Societas Entomologica* 44: 22 (22-23). Uganda: “Zentral-Afrika”.

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**Papilio (Princeps) nobilis crippsianus** Stoneham, 1936


**Type locality**: Uganda: “Western Uganda Protectorate, Kalinzu Forest”.

**Diagnosis**: In this subspecies the brown apical markings in the forewing of the nominate subspecies are replaced by cream (Larsen, 1991c).

**Distribution**: Democratic Republic of Congo (Kivu), Uganda (west – Ruwenzori, Ankole, Kigezi), Kenya (extreme western border), Tanzania? (north-west).

**Specific localities**:
- Uganda – Kalinzu Forest (TL); Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- Tanzania – near Kasulu (Kielland, 1990d); near Biharamulo (Kielland, 1990d).


**Papilio (Princeps) nobilis didingensis** Carpenter, 1928


**Type locality**: Sudan: “Didinga”.

**Distribution**: Sudan (south).

**Specific localities**:
- Sudan – Didinga (TL).

**Papilio (Princeps) nobilis mpanda** Kielland, 1990


**Type locality**: Tanzania: “Mpanda, Kampisa River, 1500 m”.

**Description**: “Male. Upperside pale yellow (the nominate race more ochreous); all markings brown; f.w. brown margin and apex more extended than in ssp. *nobilis*; both apical yellow spots are small and enclosed by the brown area (in *nobilis* the spot in space 7 is larger and only separated from the yellow part of the wing by vein 7); inner half of costa and part of cell distinctly outlined in brown (much more diffuse in *nobilis*), ending almost like a distinctly outlined “golf club” before cell-end; h.w. with a large postdiscal spot in space 7 and a smaller one in 6, of the same shade of brown as the rest of the markings (in *nobilis* the spot in 7 is darker brown); marginal brown spots more extended into the internervular spaces; markings on the lower part of the h.w. as in *nobilis*. Underside as in *nobilis*. Length of f.w. 52-55 mm. Female unknown.”

**Distribution**: Tanzania (west – Mpanda district).

**Specific localities**:
- Tanzania – Kampisa River (TL); Mkulya River in the Mweze Highlands (Kielland, 1990d); Katuma River
(Kielland, 1990d); Ntakatta Forest (Kielland, 1990d).

Papilio hesperus group

\*Papilio (Princeps) hesperus Westwood, [1843]
Hesper’s Bush Kite Swallowtail

Hesper’s Swallowtail (Papilio hesperus) males in Uganda feeding on dung (left) and moist sand (right).
Images courtesy Raimund Schutte.

Papilio hesperus Westwood, 1843 in Westwood, [1842-3]. Arcana Entomologica; or illustrations of new, rare, and interesting species 1: 189 (192 pp.). London.

Alternative common name: Emperor Swallowtail (Larsen, 2005a). This is also the common name for P. ophidicephalus. I suggest using the name ‘Hesper’s Bush Kite Swallowtail’ for Papilio hesperus (MCW).
Published images: Larsen, 2005a (male upperside).

Images M.C. Williams ex Dobson Collection.
Type locality: Ghana: “Gold Coast”. False locality: Larsen (2003, 2005a) states that the type locality is Cameroon.


Habitat: Submontane forest. In Nigeria/Cameroon at 1 400 m (Larsen, 2005a). Forest and heavy woodland, at altitudes up to 1 700 m (near Mt. Sitebi) in Tanzania (Kielland, 1990d). Scarce in West Africa (Larsen, 2005a).

Habits: Flies high up, often visiting flowers in the forest canopy. Specimens have been seen feeding on the flowers of *Mussaenda* species (Larsen, 2005a). Males frequently mud-puddle on river banks, single specimens often joining aggregations of other butterflies (Kielland, 1990d; Larsen, 2005a). Larsen (2005a) has also seen males on decomposing fish. Females oviposit on low plants in the forest understorey (Larsen, 2005a).

Early stages:

Thiery & Vingerhoedt, 1991 (*Lambillionea* 91: 178; larva and pupa; Burundi).

Larval food:

*Beilschmiedia ugandensis* Rendle (Lauraceae) [Van Someren, 1974: 316 (as *Tylostemon ugandensis*); Kielland, 1990d: 40 (as *Tylostemon ugandensis*); Thiery & Vingerhoedt, 1991: 178; Burundi].

*Beilschmiedia* species (Lauraceae) [Lees, 1989; Korup, Nigeria].

Relevant literature:

ICZN, 2013 [Conservation of the name *Papilio hesperus* Westwood, [1843].

Larsen, 2003b [Notes].

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**Papilio (Princeps) hesperus hesperus** Westwood, [1843]


Published images: Larsen, 2005a (male upperside).
**Type locality:** Ghana: “Gold Coast”. False locality: Larsen (2005a) states that the type locality is Cameroon.

**Distribution:** Nigeria, Cameroon, Equatorial Guinea (Bioko), Gabon, Congo, Angola (Bivar de Sousa & Fernandes, 1966), Central African Republic, Democratic Republic of Congo, Uganda, Burundi, Tanzania (north-west), Zambia (north).

**Specific localities:**
- **Nigeria** – Isubu (Distant, 1879); Cross River Loop (Larsen, 2005a); Agege near Lagos (Larsen, 2005a; stray specimen).
- **Cameroon** – Ndian (Suffert, 1904); Duala (Strand, 1914); Korup (Larsen, 2005a).
- **Gabon** – Almost throughout (van de Weghe, 2010).
- **Central African Republic** – Dzanga (Noss, 1998); Bangui (male illustrated above).
- **Democratic Republic of Congo** – Confluence of Louébo and Loangué Rivers (Moreau, 1917); Luluabourg (Le Cerf, 1924); Longatshimo (Dufrane, 1946); Punia (Dufrane, 1946); Muana River (Dufrane, 1953).
- **Uganda** – Mabira Forest (Stoneham, 1944); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- **Tanzania** – Bukoba (Strand, 1913); Mpanda District (Kielland, 1990d); Kigoma District (Kielland, 1990d).
- **Zambia** – Ikelangete (Heath et al., 2002); Mwinilunga (Heath et al., 2002); Shiwa Ngandu (Heath et al., 2002); Kalungwishi River (Heath et al., 2002); Lofu (Lofubu) River (Heath et al., 2002); Mpika (Heath et al., 2002).

**calabaricus** Distant, 1879 (as var. of *Papilio horribilis*). *Proceedings of the Zoological Society of London* 1879: 649 (647-649). Nigeria: “Isubu, Mongo-ma-lohah”. This taxon is an aberration of *P. hesperus* (Larsen, 2005a).

**maculatissimus** Suffert, 1904 (as ssp. of *Papilio hesperus*). *Deutsche Entomologische Zeitschrift, Iris* 17: 95 (12-107). Cameroon: “Nordwest Camerun, Ndian”.

**additionis** Strand, 1913 (as f. of *Papilio hesperus*). *Archiv für Naturgeschichte* 79 (A.2.): 175 (171-175). Tanzania: “Bukoba”.


**dualana** Strand, 1914 (as ab.? of *Papilio hesperus*). *Archiv für Naturgeschichte* 80 (A.2.): 160 (139-161). Cameroon: “Duala, Kamerun”.

**kassaiensis** Moreau, 1917 (as var. of *Papilio hesperus*). *Bulletin de la Société Entomologique de France* 1917: 126 (126). Democratic Republic of Congo: “Congo Belge, district de Kassai, entre les rivières Louébo et Loangué”.

**embodinus** Ehrmann, 1921 (as sp. of *Papilio*). *Lepidoptera, Forest Hills* 5: 18 (17-19). Uganda: “E. Africa”.


**Papilio (Princeps) hesperus feae** Storace, 1963


**Type locality**: Equatorial Guinea: “Punta Frailes”.

**Distribution**: Equatorial Guinea (Island of Bioko).

**Specific localities**:
- Equatorial Guinea – Punta Frailes, Bioko (TL); Luba (San Carlos) (Schultze *et al*., 1917-1923); Malabo (Sta. Isabel) (Spearman *et al*., 2000).

**Papilio (Princeps) hesperus sudana** Gabriel, 1945


**Type locality**: Sudan: “Lotti Forest”.

**Distribution**: Sudan (south).

**Specific localities**:
- Sudan – Lotti Forest (TL).

*Papilio (Princeps) euphranor* Trimen, 1868

**Bush Kite Swallowtail**

Bush-kite Swallowtails (*Papilio euphranor*). Male left; female right. Images courtesy Steve Woodhall.


*Papilio euphranor* Trimen, 1868.  Trimen & Bowker, 1889.

*Papilio euphranor* Trimen, 1868.  Aurivillius, 1899.


**Type locality:** [South Africa]: “Kaffraria Proper, Boolo Forest, near Tsomo, a tributary of the Kei.”

**Distribution:** South Africa (Limpopo Province, Mpumalanga, KwaZulu-Natal, Eastern Cape Province), Swaziland (Duke et al., 1999).

**Specific localities:**
- **Limpopo Province** – Woodbush (Van Son, 1949); Lekgalameetse Nature Reserve (“Malta Forest”) (Van Son, 1949); Duiwelskloof (Swanepoel, 1953); Soutpansberg (Swanepoel, 1953); Entabeni Forest (Swanepoel, 1953).
- **Mpumalanga** – Barberton District (Van Son, 1949); Mariepskop (Van Son, 1949); Sabie (Swanepoel, 1953); Graskop (Swanepoel, 1953).
- **KwaZulu-Natal** – Impetenyeni Forest (Le Cerf, 1924); Tunjumbili, Tugela River (Van Son, 1949); Karkloof (Van Son, 1949); Town Bush, Pietermaritzburg (Van Son, 1949); Oribi Gorge (Swanepoel, 1953); Balgowan (Swanepoel, 1953); Worlds View, Pietermaritzburg (Williams).
- **Eastern Cape Province** – Boolo Forest, near Tsomo River (Bowker; TL); Tsomo River (Swanepoel, 1953); Port St. Johns (Swanepoel, 1953); Kokstad (Swanepoel, 1953); Ngele Forest (Swanepoel, 1953); Stutterheim (Pringle et al., 1994).

**Habitat:** Temperate evergreen forest.

**Habits:** Males defend territories in clearings between tall forest trees, sometimes day after day. They glide
around, high up in these clearings, and the floating flight has given rise to their common name. Short periods are spent resting on a leaf, high up, at the edge of the clearing. Both sexes feed from flowers, with a particular preference for those with red blooms. A small, red-flowered, forest tree that is commonly utilized is *Burchellia bubalina* (L.f.) Sims (wild pomegranate), which belongs to the gardenia family (Rubiaceae) (Williams, unpublished). Besides red flowers, *euphranor* is also attracted to anything else that is red, such as a red hat or even a red motor vehicle (Pringle et al., 1994). Females are often found flying on forest edges, or along forest paths, where they feed from flowers.

**Flight period:** August to May, with peak emergences in September and October, and February to April (Pringle et al., 1994).

**Early stages:**

Trimen & Bowker, 1889: 236 [as *Papilio Euphranor* Trimen; Eastern Cape].

“A living specimen of the pupa was forwarded to me, but the perfect insect emerged on the journey, so that only the pupal skin reached me. Colonel Bowker describes its colouring as “bright green beneath and pale green with bright spots above.” In shape it somewhat resembles the pupa of *P. Nireus* (L.), but is more attenuated anteriorly (with the cephalic prominences much shorter, and scarcely bent outwardly at all), and very much broader abdominally; the superior part of abdominal margin not angulated, but prominently convex.”

Wells, 1957: 117 [as *Papilio euphranor*].

“**Egg:** Spherical, smooth, pale yellow when laid, turning later to pale green, oviposited on underside of leaf. [egg stage 10 days]. 1st Instar: larva black save for three transverse white patches on dorsal portions of head and the 4th, 6th, 7th, 10th and 11th segments. Protuberances in pairs from all segments, black except when from white patches in which case they are yellow. Processes are hairy. The 1st instar lasts 6 days, the larva remaining entirely on underside of the leaf. 2nd Instar: larval colouration dark brown instead of black, white patches as in 1st instar, processes spiny, not hairy. Duration of instar 4 days. 3rd Instar: colouration and processes as for 2nd instar. 4th Instar: complete change in colouration to entirely bluish-green, no white patches. One red and one black spot on each side of 3rd segment. Processes in pairs on each segment, black. Larva in this instar remains always on the upper side of the leaf which tones well with the blue-green colour. Duration of instar 3 days. 5th Instar: General colour change to velvety olive green. No protuberances save anal pair, which are short, black. Row of small circular markings at forward edge of 3rd segment. These markings are black rings save for orange-red spots, one on each side. Between 3rd and 4th segments a transverse row of orange-red spots, five or six in number backed by a cream strip. White line running from 3rd segment longitudinally at junction of claspers with body and passing across top of anal segment. Duration of instar 12 days. Pupa: Pupal stage begun on 24th November after quiescent period of 3 days suspended by single thread and cremaster attachment from underside of leaf. Upper side deep green to tone with upper side of *C. latifolia* and better still with that of *C. woodii*. Underside light green as in leaf. Pupa widest across middle and tapering markedly towards each end. Thoracic portion raised, two short protuberances anteriorly. Two white dots on upper side of thorax matched by two reddish brown dots on underside. Underside has also line of reddish-brown dots arranged longitudinally and centrally on last five segments. Pupa outline margined with thin reddish-brown line. Imago: Emerged 18th December. Total period from hatching of larva to appearance of imago 71 days.”

Clark, in Pringle et al., 1994: p.402; plate 32 [as *Papilio euphranor*].

“The eggs, laid singly on the leaves of the foodplant, are a very pale yellowish green at first, later developing a central ring of salmon-brown spots with scattered spots on the dorsal half and a cluster of spots around the micropyle. They are 1.3 mm in diameter and 1.1 mm high. When it emerges the larva eats some of the discarded shell. The young larva eats the edges of the leaves or bites a hole in the leaf. The osmeterium in the 3rd instar is watery yellow and in the final instar becomes tinged with pale green. The final instar larva is a green colour which reduces to pale green at the ridge; later, the dorsum darkens with sooty patches on each segment. The white stripe of the fourth segment turns a dull yellow and the decorative colours are almost obliterated by the sooty patches. Legs two to four are particularly heavily sooted. The white stripe on the 12th segment is touched with reddish-brown blotches. Later, the larva turns dull yellow over the dorsum and is paler towards the spiracles where it changes to pale green. The sooty markings become brown. Egg duration six to 10 days. Larva: 1st instar 3.0 mm, growing to 6.0 mm in five days; 2nd instar growing to 11.0 mm in four days; 3rd instar growing to 16.0 mm in four days; 4th instar growing to 25.0 mm in six days; 5th instar growing to 42.0 mm in nine days. Pupa 27.5 mm, hatching after 22 days. The pupa is attached, head upwards, by the cremaster hooks and a silken girdle around the middle.”


**Larval food:**

*Cryptocarya latifolia* (Lauraceae) [Wells, 1957].
*Cryptocarya woodii* Engl. (Lauraceae) [Wells, 1957].
*Papilio (Princeps) horribilis* Butler, [1874]

**Western Bush Kite Swallowtail**


**Alternative common name:** Western Emperor Swallowtail.

**Published images:** Larsen, 2005a (male upperside and underside).

**Type locality:** Ghana: “Cape Coast, Fantee”.

**Diagnosis:** Differs from *P. hesperus* in that there are four large round cream submarginal spots on the hindwing (only three in *P. hesperus*) (Larsen, 2005a). There are small differences between the genitalia (Condamin & Roy, 1963).

**Distribution:** Guinea (south), Sierra Leone, Liberia, Ivory Coast, Ghana.

  Recorded, in error, from east of Ghana by Fox, 1965 (Larsen, 2005a).

**Specific localities:**
- Liberia – Cavally Forest (Boullet & Le Cerf, 1912).
- Ghana – Fantee (TL); Kakum National Park (Larsen, 2005a).

**Habitat:** Wetter forest in good condition (Larsen, 2005a).

**Habits:** Not rare in suitable habitat (Larsen, 2005a). Flight fast and winding. Males dive down from the forest canopy with the wings held still and open at an angle of about 40 degrees. They readily move between the canopy and ground level, often visiting flowers such as those of *Mussaenda*. They may also roost low down. They are therefore not as closely linked to the canopy as *P. hesperus*. Males float high up in forest clearings, chasing rival males, between 10:00 and 12:00 (Larsen, 2005a).

**Early stages:** Nothing published.

**Larval food:**
Probably *Beilschmiedia manni* (Meisn.) Benth. & Hook.f. (Lauraceae) [Larsen, 2005a; Kakum, Ghana].

**Relevant literature:**
Larsen, 2003b [Notes].


*pellax* Boullet & Le Cerf, 1912 (as var. of *Papilio hermes*). *Bulletin de la Société Entomologique de France* 1912: 142 (141-143). Liberia: “Haut Cavally, hinterland franco-libérien, Mission franco-libérienne”.

*Papilio (Princeps) pelodurus* Butler, 1896

**Eastern Bush Kite Swallowtail**


**Type locality:** [Malawi]: “Nyasaland, Zomba”.

**Diagnosis:** Similar to *P. hesperus* but the hindwing upperside row of yellow postdiscal spots is entire (Kielland, 1990d).

**Distribution:** Tanzania, Malawi, Zambia, Mozambique (Congdon & Bampton, 2009).

**Habitat:** Forest. In Tanzania, subspecies *vesper* occurs at altitudes from 300 to 2 000 m (Kielland, 1990d).

**Habits:** Both sexes are frequently found feeding from flowers in forest glades as well as in the forest canopy.
(Kielland, 1990d).

**Early stages**: Nothing published.

**Larval food**:
- *Ocotea usambarensis* Engl. (Lauraceae) [Congdon & Bampton, unpublished 2003; Bundali Hills, Tanzania].

**Relevant literature**:
- Larsen, 2003b [Notes].

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**Papilio (Princeps) pelodurus pelodurus** Butler, 1896


**Type locality**: [Malawi]: “Nyasaland, Zomba”.

**Distribution**: Malawi (south), Mozambique (north) (Congdon & Bampton, 2009).

**Specific localities**:
- Malawi – Zomba Mountain (TL); Mt Mulanje (Le Cerf, 1924).
- Mozambique – Mount Mabu (Congdon & Bampton, 2009); Mt Inago (Congdon *et al*., 2010); Mt Namuli (Congdon *et al*., 2010).


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**Papilio (Princeps) pelodurus vesper** Le Cerf, 1924


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**Type locality**: [Tanzania]: “German East Africa”.

**Distribution**: Tanzania (east and south), Malawi (north), Zambia (north-east).

**Specific localities**:
**Papilio (Princeps) menestheus** Drury, 1773

Western Emperor Swallowtail


**Common name:** Western Emperor Swallowtail (this is the same name given to _P. horribilis_ by Larsen, 2005a).

**Published images:** Larsen, 2005a (male upperside).

**Type locality:** Sierra Leone: “Sierra Leon”.

**Distribution:** Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Equatorial Guinea, Gabon.

   - Erroroneously recorded from South Africa by Trimen, 1866a (MCW).

**Habitat:** Though essentially a forest butterfly it has the capacity to survive a considerable amount of forest degradation (Larsen, 2005a).

**Habits:** A common forest butterfly with some tolerance of degraded habitats, so long as the canopy remains more or less intact (Larsen, 2005a). The flight is fast and direct, usually from one to six metres above the ground; occasionally they fly in the canopy (Larsen, 2005a). Both sexes visit flowers and males mud-puddle or come to foul matter, such as animal droppings (Larsen, 2005a).

**Early stages:**

Schultze, 1917. (larva and pupa).

**Larval food:**

_Citrus_ species (Rutaceae) [Owen & Owen, 1972].

_Zanthoxylum gilletii_ (De Wild.) P.G. Waterman (Rutaceae) [Lees, 1989 (Korup, Cameroon); Larsen, 2005a, (Kakum, Ghana); as _Fagara macrophylla_].
Specific localities:
Senegal – Basse Casamance (Larsen, 2005a).
Ghana – Kakum National Park (Larsen, 2006d); Bobiri Butterfly Sanctuary (Larsen et al., 2007); Boabeng-Fiema Monkey Sanctuary (Larsen et al., 2009).
Togo – Klouto [6°57'15.07"N 0°34'54.40"E] (Safian et al., 2009).
Cameroon – Duala (Strand, 1914); Bipindi (Schultze, 1917); Korup (Larsen, 2005a).
Gabon – Mondah (van de Weghe, 2010); Malibe (van de Weghe, 2010).

*Papilio (Princeps) lormieri* Distant, 1874
Central Emperor Swallowtail

Sunbathing male of the Central Emperor Swallowtail (*Papilio lormieri semlikana*). Kibale Forest, Uganda. Image courtesy Raimund Schutte.


**Alternative common name:** Lormier’s Emperor Swallowtail.

**Type locality:** [French West Africa]: “Madagascar”. [False locality.]

**Diagnosis:** Similar to *P. ophidicephalus* but the median pale band on the upperside of the wings is much narrower (Kielland, 1990d).

**Distribution:** Cameroon, Gabon, Central African Republic, Democratic Republic of Congo, Angola (Bivar de
Sousa & Fernandes, 1966), Sudan, Uganda, Kenya, Tanzania.

Given, erroneously, as occurring in Nigeria (Congdon & Collins, 1998). Larsen (2005a) states that it does not occur in Nigeria, but instead ranges eastwards from the Sanaga River in central Cameroon. According to Libert (vide Larsen, 2005a) it does not even occur in western Cameroon. Mistakenly reported from Madagascar by Saalmüller (1884: 60) and Paulian (1951: 15) (Lees et al., 2003).

**Habitat:** Undisturbed primary forest.

**Habits:** Flight powerful and weaving, sometimes high above the ground but also quite low down. Both sexes come down to feed on low-growing flowers, a low-growing wild balsam being a favourite (Larsen, 1991c). Males are sometimes attracted to animal dung (Larsen, 1991c). Males sometimes mudpuddle in large assemblages and patrol forest paths. Females are less seldom encountered than the males, either feeding from flowers or searching for larval host-plants on which to oviposit (Congdon & Collins, 1998).

**Early stages:** Nothing published.

**Larval food:**
- *Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Van Someren, 1974: 316].
- *Fagaropsis* species (Rutaceae) [Van Someren, 1974: 316].
- *Teclea* species (Rutaceae) [Van Someren, 1974: 316].
- *Zanthoxylum gilletii* (De Wild.) P.G. Waterman (Rutaceae) [Kielland, 1990d: 41; as *Fagara macrophylla*].

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**Papilio (Princeps) lormieri lormieri** Distant, 1874


**Type locality:** [French West Africa]: “Madagascar”. [False locality.]

**Distribution:** Cameroon (south and east), Gabon, Central African Republic, Democratic Republic of Congo (excluding southern Shaba and the extreme north-east), Angola (north) (Bivar de Sousa & Fernandes, 1966), Sudan (south-west).

**Specific localities:**
- **Gabon** – Throughout (van de Weghe, 2010); Mondah (van de Weghe, 2010); Kinguele (van de Weghe, 2010); Tchimbele (van de Weghe, 2010); Alembe (van de Weghe, 2010); Waka (van de Weghe, 2010); Mimongo (van de Weghe, 2010); Mikongo (van de Weghe, 2010); Masouna 2000 (van de Weghe, 2010); Ipassa (van de Weghe, 2010); Franceville (van de Weghe, 2010); Nouna (van de Weghe, 2010).
- **Democratic Republic of Congo** – Confluence of Louébo and Loangué Rivers (Moreau, 1917); Punia (Dufrane, 1946).


- **aureus** Moreau, 1917 (as var. of *Papilio menestheus*). *Bulletin de la Société Entomologique de France* **1917**: 126 (126). Democratic Republic of Congo: “Congo belge, district de Kassai comprise entre les rivières Louébo et Loangué”.


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**Papilio (Princeps) lormieri neocrocea** Koçak, 1983

*Papilio lormieri crocea* Storace, 1955. Invalid (see below).


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**Type locality**: Uganda: “Entebbe; Mabera Forest; Kibanga; Kyetume; Mubango”.

**Distribution**: Uganda (central and east), Kenya (west).

**Specific localities**:
- **Uganda**: Entebbe (TL); Mabira Forest (Stoneham, 1951); Kibanga (Storace, 1955); Kyetume (Storace, 1955); Mubango (Storace, 1955).
- **Kenya**: Kakamega Forest (Larsen, 1991c).

*Papilio ophidicephaloides* Stoneham, 1951 in Stoneham, 1951-65 (as f. of *Papilio lormieri*). The butterflies of western Kenya with notes on allied forms, etc. 18 (180 pp.). Nairobi. Uganda: “Mabira Forest”.

*Papilio rufopunctata* Stoneham, 1951 in Stoneham, 1951-65 (as f. of *Papilio lormieri*). The butterflies of western Kenya with notes on allied forms, etc. 18 (180 pp.). Nairobi. No locality given.

*Papilio lormieri crocea* Storace, 1955 (as ssp. of *Papilio lormieri*). Memorie della Società Entomologica Italiana 33: 132 (120-137). Uganda: “Entebbe; Mabera Forest; Kibanga; Kyetume; Mubango”. [Invalid; junior primary homonym of *Papilio croceus* Fourcroy, 1785 [Pieridae].]

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**Papilio (Princeps) lormieri semlikana** Le Cerf, 1924


**Type locality**: Democratic Republic of Congo: “Semliki River”.

**Distribution**: Democratic Republic of Congo (eastern Kivu), Uganda (west), Tanzania (north-west).

**Specific localities**:
- **Democratic Republic of Congo**: Semliki River (TL); Kibale Forest (R. Schutte, unpublished).
- **Uganda**: Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001).
- **Tanzania**: Mihumu (900 m), Kigoma District (a single sighting) (Kielland, 1990d); Minziro Forest, Bukoba District (Congdon & Collins, 1998).

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*Papilio (Princeps) ophidicephalus* Oberthür, 1878

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Emperor Swallowtails (*Papilio ophidicephalus*). Left – male; middle – female; right – male mudpuddling. Images courtesy Steve Woodhall (left & middle) and Raimund Schutte (right).


*Papilio ophidicephalus* Oberthür, 1878. Trimen & Bowker, 1889.


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**Type locality:** [Tanzania]: “aux montagnes de Schimba, sur la Côte, en face de l’île de Zanzibar”; [South Africa]: “Bashee River, Kaffraria”.

**Distribution:** Democratic Republic of Congo, Kenya, Tanzania, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Swaziland.

**Habitat:** Temperate evergreen forest. In Tanzania it is found from sea-level to altitudes of 2 000 m (Kielland, 1990d).

**Habits:** Frequents especially kloofs and streams in forest. The flight is rather heavy and undulating, usually a few metres, but sometimes many metres, above the ground. Males are very partial to patrolling up and down streams or dry stream beds. Both sexes feed from flowers, especially those of *Impatiens* species. Males mud-puddle, especially in the afternoon, often sitting motionless in small groups of up to a half dozen individuals. Females keep to the shady undergrowth.

**Flight period:** September to March, with peak emergences in October and January in southern Africa (Pringle *et al.*, 1994).
Early stages:

Millar, *in Trimen & Bowker*, 1889: 231 [as *Papilio ophidicephalus* Oberthür; near Durban, KwaZulu-Natal].

“…. The young larvae are very similar to those of *P. Demoleus* [*P. demodocus*].”

Fountaine, 1911: 48 [*Papilio ophidicehalus zuluensis* as *Papilio ophidicephalus*].

Clark, *in Van Son*, 1949: 29 [as *Papilio (Papilio) ophidicephalus phalusco*].

Egg. 1.3 mm in diameter by 1.3 mm high; spherical with flattened base; smooth; light watery yellow when laid, darkening to pale dull yellow; laid singly on the upper- or underside of a leaf of the food-plant, preferably a young sapling; duration of egg stage unrecorded. First instar larva. Black with white marking at posterior end; structurally similar to *P. demodocus* but thoracic segments comparatively wider and setose processes blunter. Second instar larva. Dark olivaceous brown with last three segments white and sometimes showing traces of central white marking on 6th to 8th segments; setose processes a little reduced but present on all segments; dorsal pair on 8th segment more prominent than rest. Third instar larva. Setose processes reduced to mere tubercles except largest anterior pair, which is much reduced compared to previous stage and pair of dorsal tubercules on 8th segment larger; thoracic segments conspicuously swollen and white markings more extensive, giving larva strong resemblance to bird-dropping, especially when it lies curled up on upper surface of leaf. Fourth instar larva. A further reduction of anterior processes but paired dorsal tubercules on 8th segment more prominent; white markings more conspicuous, central ones extended forward at sides to form V-like patch, with paired yellowish maculae near middle of 5th and 6th segments. Fifth (final) instar larva. Bluish green with narrow transverse blackish bands on first three segments and large somewhat H-shaped marking on 6th to 10th segments, the cross-bar occupying posterior half of 8th segment and sides produced obliquely downwards both in front and behind; underside of six anterior segments blackish, remainder, including all prolegs except first pair, whitish tinged with pinkish; tubercles on 8th segment very prominent, blunt and coriaceous at tips and same colour as dark band on which they are situated; two small whitish dots directly behind tubercles; osmeterium blackish, branches spreading obliquely, upcurved distally and with yellowish tips; full-grown larva 40-43 mm; larval period about five weeks.

Pupa. Narrow and elongate, ventrally convex, dorsally concave, with sides parallel from head to 4th segment, then evenly widened to 8th segment, behind which gradually tapers to broadly truncate posterior end; dorso-thoracic prominence rather inconspicuous, straight in side view, the anterior slope at right angles to dorsal edge; cephalic processes widely separated, parallel, broad and slightly downcurved at tips; dorsal surface of abdomen with four rows of tubercles, dorsal ones of 8th segment very prominent and curved backwards; whole surface of pupa rather rough, with numerous small tubercles; colour a mixture of greenish, brownish and pinkish-white designs giving it an extraordinary likeness to piece of rotten wood or lichen-covered bark; length about 34 mm; diapause in pupal stage.


Clark, *in Pringle et al.*, 1994: p. 408; plate 35 [as *Papilio ophidicephalus phalusco*].

“The eggs are laid singly on the leaves of the foodplant. They are 1.6 mm in diameter and 1.6 mm high and are a light, watery yellow when laid, later darkening to pale, dull yellow. There are five larval instars with a duration of about five weeks. Larvae in the first four instars resemble bird droppings while the final instar is leaf-like. The pupa resembles a piece of lichen-covered bark or a broken twig. It is attached by cremastral hooks to a silk pad and is supported in an upright position by a silken girdle. The pupal stage varies in length from about two weeks to about three months.”

Henning, Henning, Joannou, & Woodhall, 1997: 226 (photographs of early instar larvae, intermediate instar larva, final instar larvae (two forms) and pupa).
Papilio ophidicephalus pupa
Image courtesy Raimund Schutte

Larval food:
*Calodendrum capense* Thunb. (Rutaceae) [Dickson & Kroon, 1978].
*Citrus* species (Rutaceae) [Dickson & Kroon, 1978].
*Clausena anisata* (Willd.) Hook.f. ex Benth. (Rutaceae) [Fountaine, 1911: 48; as *Clausena inaequalis* (DC) Benth.; Eshowe, KwaZulu-Natal, South Africa].
*Zanthoxylum capense* (Thunb.) Harv. (Rutaceae) [Pringle et al., 1994: 304].
*Zanthoxylum davyi* (I.Verd.) P.G.Waterman (Rutaceae) [Williams, 1994: ; Williams, 1996: 134; Hanglip Forest, near Louis Trichardt, Limpopo Province; ssp. *entabeni*].
*Zanthoxylum delagoense* P.G.Waterman (Rutaceae) [Dickson & Kroon, 1978].
*Zanthoxylum* species (Rutaceae) [Bowker & Millar, in Trimen & Bowker, 1889: 231; near Durban; as *Zanthoxylon* species].

**Papilio (Princeps) ophidicephalus ophidicephalus** Oberthür, 1878


**Type locality:** [Tanzania]: “aux montagnes de Schimba, sur la Côte, en face de l’île de Zanzibar”; [South Africa]: “Bashee River, Kaffiraria”.

**Distribution:** Democratic Republic of Congo (south-east), Kenya (east), Tanzania, Zambia (extreme north-east), Mozambique (Congdon *et al*., 2010).

**Specific localities:**

Kenya – Shimba Hills (Larsen, 1991c); Mount Sagala (Larsen, 1991c); Meru (Larsen, 1991c; male illustrated above); Kibwezi (Larsen, 1991c); Arabuko-Sokoke (Larsen, 1991c); Nairobi (Larsen, 1991c).

Tanzania – Virtually all forests, except those in the Tukuyu basin (Kielland, 1990d).

Zambia – Mbala (Heath *et al*., 2002); Sumbu (Heath *et al*., 2002).

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**Papilio (Princeps) ophidicephalus ayresi** van Son, 1939


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Diagnosis: In this subspecies the discal spots are very small, uniform in size, and are separate in both sexes. The spots are arranged in a straighter line than in ssp. tranvaalensis (Pringle et al., 1994).

Distribution: South Africa (Mpumalanga, KwaZulu-Natal – north-west), Swaziland.

Specific localities:
- Mpumalanga – Marieps Kop (TL); Barberton (Van Son, 1949); Sabie (Swanepoel, 1953); Graskop (Swanepoel, 1953); Sterkspruit Nature Reserve (Williams); Buffelspoort Nature Reserve (Williams).
- KwaZulu-Natal – Vryheid (Curle).

Papilio (Princeps) ophidicephalus chirinda van Son, 1939

Type locality: [Zimbabwe]: “South-eastern Rhodesia, Chirinda Forest”.

Diagnosis: In this subspecies the discal spots on the forewing upperside are fused from vein 3 to vein 9 in the male, and in the female are fused into a continuous band (Pringle et al., 1994).

Distribution: Mozambique (west-central); Zimbabwe (east).

Specific localities:
- Mozambique – Dondo (Van Son, 1949); Amatongas (Pringle et al., 1994).
- Zimbabwe – Christmas Pass (Trimen, 1894); Vumba Mountains (Van Son, 1939); Chirinda Forest (Van Son, 1949); Nyanga (Van Son, 1949).


Papilio (Princeps) ophidicephalus cottrelli van Son, 1966

Type locality: South Africa: “Springwaters Forest, Mpumalanga, South Africa. 21 February 2003. J. Dobson Images M.C. Williams ex Dobson Collection.”

Diagnosis: In this subspecies the discal spots are very small, uniform in size, and are separate in both sexes. The spots are arranged in a straighter line than in ssp. tranvaalensis (Pringle et al., 1994).

Distribution: South Africa (Mpumalanga, KwaZulu-Natal – north-west), Swaziland.

Specific localities:
- Mpumalanga – Marieps Kop (TL); Barberton (Van Son, 1949); Sabie (Swanepoel, 1953); Graskop (Swanepoel, 1953); Sterkspruit Nature Reserve (Williams); Buffelspoort Nature Reserve (Williams).
- KwaZulu-Natal – Vryheid (Curle).

Papilio ophidicephalus cottrelli. Female. Left – upperside; right – underside.
M.A. Newport (Newport Collection).

Type locality: [Zambia]: “N. Rhodesia, Kamaila Forest Reserve, Chisamba”.
Distribution: Zambia (south-central).

Specific localities:
Zambia – Kamaila Forest Reserve near Chisamba (TL); 140 km south of Mwinilunga (Heath et al., 2002); South Mutundu River (Heath et al., 2002; female illustrated above); Ndola (Heath et al., 2002); Luongo River (Heath et al., 2002); Kafue (Heath et al., 2002); Luapula River (Heath et al., 2002); 50 km west of Mumbwa (Heath et al., 2002).

Papilio (Princess) ophi dicephalus entabeni van Son, 1939#


Papilio ophi dicephalus entabeni. Male (Wingspan 110 mm). Left – upperside; right – underside.
Mphupi Nature Reserve, Limpopo Province, South Africa. 30 April 2011. J. Dobson Images M.C. Williams ex Dobson Collection.
Papilio ophidicephalus entabeni. Female. Left – upperside; right – underside.
Images M.C. Williams ex Henning Collection.

Type locality: South Africa: “Northern Transvaal, Entabeni, Zoutpansberg range”. Holotype male in the Transvaal Museum, Pretoria.

Diagnosis: On the forewing upperside the discal spots are smaller than in ssp. chirinda. In males these spots are weakly fused from veins 4 to 8 and in females they are only weakly fused (Pringle et al., 1994).

Distribution: South Africa (Limpopo Province).

Specific localities:
Limpopo Province – Entabeni Forest (TL); Mooiplaats, north of Louis Trichardt (Van Son, 1949); Sibasa (Swanepoel, 1953); Goedehoop (Swanepoel, 1953); Louis Trichardt (Swanepoel, 1953); Blouberg (Pringle et al., 1994); Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015).

Conservation status: Classified as Rare – Habitat Specialist by Mecenero et al., 2013.

Papilio (Princeps) ophidicephalus mkuwadzi Gifford, 1961

Type locality: [Malawi]: “Nyasaland, Mkuwadzi forest, Nkata Bay District”.
Distribution: Tanzania (south-west), Malawi (north), Zambia (north-east).
Specific localities:
Tanzania – Tukuyu, 1 200 m (Congdon, vide Kielland, 1990d).
Malawi – Mkuwadzi Forest (TL).
Zambia – Mafinga Mountains (Heath et al., 2002); Makutu Mountains (Heath et al., 2002); Nyika (Heath et al., 2002).

Papilio (Princeps) ophidicephalus niassicola Storace, 1955


Type locality: Malawi: “Niassa, Linderdale”.
Distribution: Malawi (south and central).
Specific localities:
Malawi – Niassa, Linderdale (TL); Mt Mulanje (Congdon et al., 2010); Zomba Mountain (Congdon et al., 2010).
Mozambique – Mt Mabu (Congdon et al., 2010).

Papilio (Princeps) ophidicephalus phalusco Suffert, 1904


**Type locality:** [South Africa]: “Natal”.

**Diagnosis:** In this subspecies the discal spots are arranged in a nearly straight line, showing their greatest enlargement near the costa of the forewing (Pringle *et al*., 1994).

**Distribution:** South Africa (KwaZulu-Natal – south, Eastern Cape Province).

**Specific localities:**
KwaZulu-Natal – Karkloof (Van Son, 1949); Pietermaritzburg (Van Son, 1949); Balgowan (Van Son, 1949); Durban (Swanepoel, 1953); Pinetown (Swanepoel, 1953); Tugela River Valley (Pringle *et al*., 1994).

Eastern Cape Province – Gonubie River (Van Son, 1949); Bashee River (Van Son, 1949); Tsomo River (Van Son, 1949); Pirie Forest (Van Son, 1949); King William’s Town (Van Son, 1949); Katberg (Van Son, 1949); Hogsback (Van Son, 1949); Stutterheim (Van Son, 1949); Port St Johns (Van Son, 1949); Ngqeleni (Van Son, 1949); Amatola Mountains (Swanepoel, 1953); East London (Swanepoel, 1953).
Papilio (Princeps) ophidicephalus transvaalensis van Son, 1939.


Diagnosis: On the forewing upperside the discal spots are separated and those in areas 1B and 2 are distinctly enlarged. On the hindwing upperside, in addition, the discal area is heavily irrorated with yellow scales (Pringle et al., 1994).
Distribution: South Africa (Limpopo Province).
Specific localities: Limpopo Province – Woodbush (TL); Lekgalameetse Nature Reserve (“Malta Forest”) (Van Son, 1949); Elim Hospital (Ball; specimens are intermediate between ssp. transvaalensis and entabeni) (Pringle et al., 1994).
Conservation status: Classified as Rare – Habitat Specialist by Mecenero et al., 2013.

Papilio (Princeps) ophidicephalus zuluensis van Son, 1939


Diagnosis: Discal spots larger than in ssp. ayersii and weakly fused in females. The spots in areas 1B and 2 are comparatively elongated (Pringle et al., 1994).
Distribution: South Africa (KwaZulu-Natal – north-east).
Specific localities: KwaZulu-Natal – Eshowe (TL); Dlinza Forest in Eshowe (Van Son, 1949); Nkandla Forest near Mtunzini (Van Son, 1949); Ngoye Forest (Pringle et al., 1994).
Conservation status: Classified as Rare – Habitat Specialist by Mecenero et al., 2013.

Incertae sedis
**Papilio (Princeps) andronicus** Ward, 1871

Type locality: Cameroon: “Camaroons”.
Distribution: Cameroon, Gabon.
Specific localities:
Cameroon – Barombi Station (Karsch, 1893).
Gabon – Mimongo (van de Weghe, 2010); Tchimbele (van de Weghe, 2010).
Early stages: Nothing published.
Larval food: Nothing published.

Note: Considered, by Bivar de Sousa & Mendes (2009) to belong to the *zenobia* species group.

**Papilio (Princeps) chitondensis** Bivar de Sousa & Fernandes, 1966

Distribution: Angola.
Specific localities:
Early stages: Nothing published.
Larval food: Nothing published.
Relevant literature:
Bouyer, 2005b [Notes and description of female].

**Papilio (Princeps) leucotaenia** Rothschild, 1908

Type locality: [Rwanda]: “German East Africa, Rugoge Forest, east of the south end of Lake Kivu, 2100-2300 m.”.
Distribution: Uganda (south-west – Kigezi), Rwanda, Burundi, Democratic Republic of Congo (Kivu).
Specific localities:
Uganda – Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise et al., 2001); Bwindi Forest (Davenport, 2002).
Rwanda – Rugoge Forest (TL).
Habitat: Forest at altitudes from 2 100 to 2 300 m (Davenport, 2002).
Early stages: Nothing published.
Larval food: Nothing published.
MacKinnon’s swallowtail (Papilio mackinnoni) (foreground) feeding on wet mud together with Hesper’s Swallowtail (Papilio hesperus) (background). Uganda.
Images courtesy Raimund Schutte.

Papilio Mackinnoni Em. Sharpe, 1891. Aurivillius, 1899.

Type locality: [Kenya]: “Between Sotik and Kavirondo, Kikuyu”.
Habitat: Montane forest, at altitudes above 1 400 m. In Tanzania, subspecies isokae is found at altitudes from 1 400 to over 2 000 m, subspecies reductofascia from 1 900 to 2 600 m, and subspecies mpwapwana in montane forest margins and forest-grassland mosaic from 1 800 to 2 300 m (Kielland, 1990d).
Habits: The flight is fast and weaving and males often patrol a 10 to 20 metre section of forest road or rivulet (Kielland, 1990d; Larsen, 1991c). It usually flies high up but frequently descends to feed from flowers low down. It may be quite common in the localities in which it is found. Specimens of subspecies reductofascia have been observed flying on Mount Longido even in misty weather, frequently settling on vegetation low down. The usual patrolling flight was not noted in the Longido population. Males at both Mount Longido and the Meto Hills have been found mudpuddling on river banks on the lower slopes (Kielland, 1990d). Specimens of subspecies mpwapwana were found feeding from the flowers of bushes some distance from the forest (Kielland, 1990d).
Early stages: Nothing published.
Larval food:
Citrus species (Rutaceae) [Larsen, 1991c: 112].
Claussenia species (Rutaceae) [Congdon, vide Kielland, 1990d: 41].
Todalia species (Rutaceae) [Larsen, 1991c: 112].
Vepris nobilis (Delile) Mziray (Rutaceae) [Van Someren, 1974: 316; as Teclea nobilis Delile].
Vepris simplicifolia (Engl.) Mziray (Rutaceae) [Van Someren, 1974: 316; as Teclea simplicifolia Verdoorn].
Vepris trichocarpa (Engl.) Mziray (Rutaceae) [Van Someren, 1974: 316; as Teclea tricocarpa Engler].

Relevant literature:
Bryk, 1926 – Melanism in.

**Type locality:** [Kenya]: “Between Sotik and Kavirondo, Kikuyu”.

**Distribution:** Democratic Republic of Congo (Ituri, Kivu), Uganda, Rwanda, Burundi, Kenya, Tanzania (north-east).

**Specific localities:**
- Democratic Republic of Congo – Muana River (Dufrane, 1953).
- Uganda – Semuliki N.P. (Davenport & Howard, 1996); Maramogambo Forest, Queen Elizabeth N.P. (Tumuhimbise *et al*., 2001); Mount Elgon (Turlin & Lequeux, 2010); Kadam (Turlin & Lequeux, 2010); Napak (Turlin & Lequeux, 2010).
- Kenya – Between Sotik and Kavirondo (TL); Mount Elgon (Bryk, 1926); Aberdare Mountains (Larsen, 1991c); Ngong Forest (Larsen, 1991c); Nyeri (Larsen, 1991c); Nandi (Larsen, 1991c).
- Tanzania – Loliondo (Kielland, 1990d); Bukoba Region (Kielland, 1990d); Moshi (Kielland, 1990d).

**immaculatus** Suffert, 1904 (as ssp. of *Papilio mackinnoni*). *Deutsche Entomologische Zeitschrift, Iris* 17: 96 (12-107). Tanzania: “Hinterland von Usambara”.

**bimaculatus** Suffert, 1904 (as ssp. of *Papilio mackinnoni*). *Deutsche Entomologische Zeitschrift, Iris* 17: 96 (12-107). Tanzania: “Hinterland von Usambara”.


**elgonia** Bryk, 1926 (as var. of *Papilio mackinnoni* [sic]). *Journal of the East Africa and Uganda Natural History Society* (25): 89 (89). Kenya/Uganda: “Mt. Elgon, 8300 ft.”.


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**Papilio (Princeps) mackinnoni benguellae** Jordan, 1908


**Type locality:** Angola: “Cuval River, Benguella”.

**Distribution:** Angola (central highlands).

**Specific localities:**
- Angola – Cuval River (TL).

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**Papilio (Princeps) mackinnoni isokae** (Hancock, 1984)


**Type locality:** Zambia: “Chowa Forest, Nyika Plateau, 2300 m”.

**Diagnosis:** Differs from the nominate subspecies on the forewing upperside where the discal band is much wider (Kielland, 1990d).

**Distribution:** Tanzania (west), Malawi (north), Zambia (north-east).

**Specific localities:**
- Tanzania – Mbeya (Haldane, 1956); Njombe District: near Iboma Forest (Kielland, 1990d); Mpanda District: Mweze (Kielland, 1990d); Wanzizi (Kielland, 1990d); Kampisa (Kielland, 1990d); Sitebi Mountain
Zambia – Chowo Forest, Nyika (TL); Makutu Mountains (Heath et al., 2002); Mafinga Mountains (Heath et al., 2002).

**Papilio (Princeps) mackinnoni mpwapwana** Kielland, 1990


**Type locality:** Tanzania: “Mpwapwa, Rubeho Mts., Mangalisa Mt., 2200 m”. Holotype (male) in the Natural History Museum, London.

**Diagnosis:** Compared to the nominate subspecies the forewing upperside discal row of yellow spots is slightly wider (Kielland, 1990d).

**Description:**
“Closest to ssp *mackinnoni*. Male. Upperside f.w. discal row of yellow spots slightly wider than in the nominate race; a small yellow spot beyond end of cell near costa, sometimes another, smaller one just below it; the discal spot in space 1b smaller than those in 2, 3 and 4 (in *mackinnoni* this spot is usually the largest); in the h.w. the lower discal spot in space 5 is very narrow and greatly elongated distally and the spot in 4 to a lesser degree; the band looks more serrated than in *mackinnoni*; tail longer and narrower. Underside close to that of the nominate race, but h.w. discal yellow band narrower. Length of f.w. 51-54. Female. Upperside a little paler than the male, discal yellow band much wider, a little wider and more ochreous than in *mackinnoni*; spots of h.w. band narrower than those of the f.w. band. Underside similar to that of *mackinnoni*. Length of f.w. 52-56 mm.”

**Distribution:** Tanzania (east – Rubeho Mountains of Mpwapwa and Kilosa Districts).

**Specific localities:**
Tanzania – Mangalisa Forest (TL; most abundant here); Mount Chugu (Kielland, 1990d); Mafwemiru Forest Reserve (Kielland, 1990d); Wotta Forest (Kielland, 1990d); east of Mbugu Mission (Kielland, 1990d); Ukwiwa Forest (probable) (Kielland, 1990d).

**Papilio (Princeps) mackinnoni reductofascia** Kielland, 1990


**Type locality:** Tanzania: “Arusha, Longido, 2600 m”. Holotype (male) in the Natural History Museum, London.

**Diagnosis:** The yellow bands are very narrow, with the forewing band being narrower than the hindwing band in both sexes (Kielland, 1990d).

**Description:**
“Male. The postdiscal band of yellow f.w. spots very narrow, narrower than the h.w. post discal row of yellow spots (in ssp. *mackinnoni* the f.w. spots are equal in width or wider than the h.w. spots); the spots comprising the band being discrete; f.w. in most specimens without any trace of spots on the proximal side of the band, in a few specimens just a trace of a diffuse dot beyond cell (in the nominate race this spot is prominent and there is often a smaller dot just below it); margins as in the nominate race. H.w. row of yellow twin spots in spaces 2, 3, 4 and 5 are usually more or less conjoined; tail long and curved, less spatulate than in ssp. *mackinnoni*. Underside h.w. discal pale yellow spots wider than in ssp. *mackinnoni*. Length of f.w., Longido Mt: 52-58 mm, average 56 mm; specimens from Metu Hills are on average smaller. Female. Upperside yellow markings larger than in the male, but the proportions of the discal band are the same; there is one small yellow spot beyond cell (in ssp. *mackinnoni* from one to two, and often also with a spot just inside the cell end). Underside markings as in the nominate race. Length of f.w. 53-61 mm.”

**Distribution:** Kenya (south), Tanzania (north).

**Specific localities:**
Tanzania – Mount Longido (TL; near and on the summit); Meto Hills (Kielland, 1990d).

**Papilio (Princeps) mackinnoni theodori** Riley, 1921


**Type locality**: [Zambia]: “N.W. Rhodesia, Solwezi”.
**Distribution**: Democratic Republic of Congo (Shaba), Zambia (north-west).

**Specific localities**:
Zambia – Solwezi (TL); Ikelenge (Heath et al., 2002); Mwinilunga (Heath et al., 2002); Kasangezhi (Heath et al., 2002); Kamapanda (Heath et al., 2002); St. Anthony’s Mission (near Mpongwe) (Heath et al., 2002); upper Kafue River (Heath et al., 2002); Lake Kashiba, Mpongwe (male illustrated above).

Papilio mackinnoni equatoriana Turlin & Lequeux, 2010


**Distribution**: Sudan (south), Uganda (north).

**Specific localities**:
Sudan – Imatong Mountains (Turlin & Lequeux, 2010).
Uganda – Agoro-Agu Forest (TL).
**Papilio (Princeps) mackinnoni karamojae** Turlin & Lequeux, 2010


Distribution: Uganda (north-east).

Specific localities:
- Uganda – Mount Morungole (TL); Zulia Forest (4°07'N; 34°E), Kaabong district (Turlin & Lequeux, 2010).

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**Papilio (Princeps) mangoura** Hewitson, 1875

Type locality: Madagascar.

Distribution: Madagascar.

Habitat: Forest (Lees et al., 2003).

Early stages: Nothing published.

Larval food: Nothing published.

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**Papilio (Princeps) manlius** Fabricius, 1798

Type locality: [Mauritius]: “Isle de France”.

Diagnosis: Belongs to the *P. nireus* group and is closely related to *P. phorbanta* and *P. epiphorbas*.

Distribution: Mauritius.

Specific localities:
- Mauritius – Widespread and common.

General notes: The conservation status of this species is dealt with in the Red Data Book for Papilionidae (Collins & Morris, 1985).

Habitat: Found throughout the island because it uses introduced *Citrus* species as larval foodplants (Davis & Barnes, 1991).

Early stages:

Davis & Barnes, 1991.

The larvae are, apparently, bright green in all instars.

Larval food: Nothing published.

grachus Fabricius, 1798 (as sp. of Papilio). *Supplementum entomologiae systematica* 422 (572 pp.). Hafniae. Mauritius: “Isle de France”.


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**Papilio (Princeps) microps** Storace, [1952]


**Type locality:** Ethiopia: “Shoa, Abyssinia centrale”.

**Distribution:** Ethiopia, Somalia (north).

**Specific localities:**
Ethiopia – Shoa (TL); Wor to Gamitscha, Kaffa (Rothschild & Jordan, 1905); Eli (Strand, 1911); Shaki River, Mocha District (Carpenter, 1935); Scioa (Storace, 1952); Scitalit (Storace, 1952); Mantec (Storace, 1952).

**Early stages:** Nothing published.

**Larval food:** Nothing published.

\[ \text{aethiops} \] Rothschild & Jordan, 1905 (as sp. of *Papilio*). *Novitates Zoologicae* 12: 190 (175-191). Ethiopia: “Wori to Gamitscha, Kaffa”. [Invalid: junior primary homonym of *Papilio aethiops* Esper, 1777 [Satyrinae] and *Papilio aethiops* Palisot de Beauvois, [1805] [Nymphalidae].]

\[ \text{elicola} \] Strand, 1911 (as ab. of *Papilio aethiops*). *Entomologische Rundschau* 28: 140 (137-141). Ethiopia: “Abyssinien, Eli”.

\[ \text{oribazoides} \] Carpenter, 1935 (as f. of *Papilio aethiops*). *Transactions of the Royal Entomological Society of London* 83: 331 (313-447). Ethiopia: “Abyssinia, Saki (Shaki) R., Mocha district, 7° 26’, 35° 26’, 5800 ft.”.


\[ \text{aethiopsis} \] Hancock, 1983 (as [unnecessary] objective replacement name for *Papilio aethiops* Rothschild & Jordan). *Smithseria* 2: 38 (1-48).


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**Papilio (Princeps) phorbanta** Linnaeus, 1771


**Type locality:** [Reunion]: “Cayenna”. [False locality.]

**Distribution:** Reunion, Seychelles.

Reported, in error, as *P. disparalis* Boisduval, 1833, from Madagascar by Van Vollenhoven (1869) (Lees et al., 2003).

**Early stages:** Nothing published.

**Larval food:**
Rutaceae [Matire & Rochat, 2008].

**Relevant literature:**
Guillermet, 2003c [Biology notes; Reunion].

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**Papilio (Princeps) phorbanta phorbanta** Linnaeus, 1771


*Papilio phorbanta* L., 1771. Aurivillius, 1899.

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Type locality: [Reunion]: “Cayenna”. [False locality.]

Distribution: Reunion.


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*Papilio (Princeps) phorbanta nana* Oberthür, 1879
Small Reunion Swallowtail; Papillon La Pâture


Type locality: Seychelles: “Iles Seychelles”.

Distribution: Seychelles. Extinct *(see Legrand, 1965: 173).*

Specific localities – Assumed to have been collected on Mahe (Lawrence, 2014).

Notes: Known from a single pair allegedly collected from Seychelles before 1880 (Lawrence, 2014). May represent vagrants from Reunion (Paulian & Viette, 1968). Alternatively it could have been intentionally introduced (Hancock, 1983) or unintentionally introduced on *Citrus* trees from Reunion in the 1700s and 1800s (Legrand, 1959).