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## LEPIDOPTERA FAUNA OF NAMIBIA II: OKAVANGO RIVER VALLEY, KAVANGO REGION

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### Abstract

In total, 37 moth and 112 butterfly species from seven and five families, respectively, have been identified in the Okavango River Valley, Kavango Region, northern Namibia. The family Nymphalidae was by far the most speciose (32 recorded species), followed by Lycaenidae (19 spp.), Pieridae (16 spp.), Sphingidae (13 spp.) and Saturniidae (9 spp.). For each species listed, the date and the site of collection is given, together with data on its global distribution. There are 11 taxa recorded in Namibia for the first time: *Eurema regularis* (Pieridae); 6 taxa from the family Lycaenidae (*Lachnocnema brimo*, *Iolaus lalos lalos*, *Hypolycaena caeculus caeculus*, *H. c. c. forma dolores*, *Anthene sheppardi* and *Leptotes brevidentatus*) and four species from the family Nymphalidae (*Charaxes varanes*, *Neptis serena*, *Sevenia rosa* and *Eurytela drope*).

KEY WORDS: Lepidoptera, checklist, biodiversity, distribution, moths, Kavango Region.

### Introduction

In 2011, a research project on temporal and special distribution of moth and butterfly species in Namibia was initiated in Ogongo, Omustati Region, northern Namibia. In total, 77 moth species represented by 13 families have been identified in that region (Kopij, 2014). This paper reports on a study that continues this project. It deals with Lepidoptera fauna in another area of northern Namibia, with a permanently flowing river. It is rather untypical ecological setting in Namibia, where there are only ephemeral rivers in most areas. Nevertheless, as it has been pointed out, regular lepidopterological studies have not been conducted in this region (Kopij, 2014; 2017). Only Oberplicher (1992) collected moths here from the family Saturniidae.

The present paper attempts, therefore, to partly fill the gap in our knowledge on the Lepidoptera fauna of this region.

## Materials and Methods

### Study Area

The study was conducted the Okavango River Valley, mainly from three locations: Shankara (17°57'55" S, 20°50'57" E), Shamvura (18°03'41" S, 20°86'07" E), and Popa Falls (18°11'95" S, 21°58'27" E) in the Kavango East region, NE Namibia (Fig. 1).

The Okavango River is unique in the world. It collects all its water in a drainage basin of ca. 112 000 km<sup>2</sup> in Angola, then flows ca. 500 km with no further influx, forming a sort of linear oasis on the border of Namibia and Angola, and when entering Botswana, it finally disperses the water into a 'sea' of sand forming an inner delta (Mendelsohn & el Obeid, 2004).

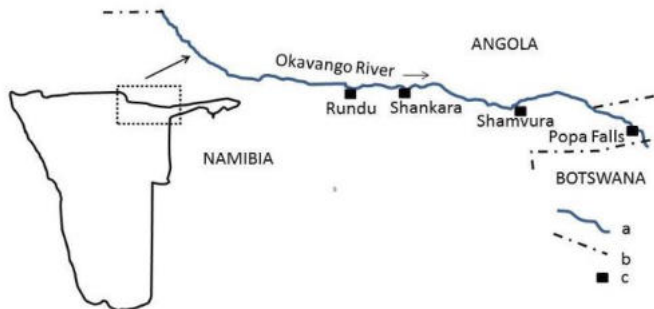


Figure 1. Map showing the study area and the distribution of collection sites.  
Explanation: a –river, b – international border, c – collection sites.

The river forms a meandering channel, with banks that are covered with extensive marshlands composed of tall grasses (Poaceae) and sedges (Cyperaceae), with a domination of *Phragmites australis* (Cav.) and *Cyperus papyrus* L. The marshes are often in the form of beds, several hundred meters in width (Fig. 2). The riparian forest is composed mainly of the genera *Garcinia*, *Sclerocarya*, *Diospyros*, *Acacia*, *Grewia*, *Pterocarpus*, *Ricinodendron*, *Ziziphus*, *Baikiaea*, *Baphia*, *Phoenix* and *Adansonia*. Further afield, the forest is classified as by *Burkea* Woodland (Mendelsohn & el Obeid, 2004), dominated by the magnificent Manketti trees, *Schinziophyton rautanenii* (Schinz), often in almost pure stands on Kalahari sands (Fig. 3). Bethune (1991) provided a checklist of all vascular plant species recorded in the Okavango Valley.



Figure 2. Okavango river valley near Shamvura.



Figure 3. Manketti trees *Schinziophyton rautanenii* on Kalahari sand.

Today, the river valley is densely populated by rural farming communities, and the natural forest vegetation in most places has been transformed into pastures, cultivated fields and villages. However, the river itself is still in its natural state, unregulated, and its banks are covered by natural vegetation.

The mean annual rainfall in the study area is 550-600 mm, with c. 80% between December and March (Mendelsohn & el Obeid 2004, Mendelsohn et al. 2009). Annual rainfall varies substantially from year to year. All collection sites are shown in Fig. 1.

## Methods

Moths and butterflies were trapped by sweeping net and on ordinary 60 W light (cf. Kopij, 2005; 2014) during the years 1996-2012. The sampling was made throughout the year. The collected butterflies and moths were sexed whenever possible. The specimens were deposited in the private collection of one of the authors (M. Pax) at Shamvura Camp, Kavango Region, Namibia.

As in Kopij (2005, 2014), for the identification of moth species Pinhey (1960, 1975), Oberplierer (1995) and Picker *et al.* (2002) were used, while for butterflies Pringle *et al.* (1994) and Woodhall (2005) were used.

## Systematic check list of species

The systematics and nomenclature of families follow Nieuwerkerken *et al.* (2011). For some species, their former generic names (as listed in Vari *et al.* 2002) are also given in brackets. The nomenclature of species and their family arrangement follow Vari *et al.* (2002), with some recent revisions (Zolotuhin & Gurkovich, 2009a; 2009b).

For each species listed (identified), the day and site of collection, and data on global distribution are given. Species that are not labelled were collected either from Shamvura or Shankara. Species with an asterisk (\*) are new for Namibia. ♂ and ♀ denote male and female while ♀♂ stands for undetermined sex, respectively.

## Results

### Thyridoidea

#### Thyrididae

##### Charideinae

*Arniocera erythropyga* (Wallengren, 1860)

Material examined: Shamvura, Nov. 1999, 1 ♀♂.

Distribution: South Africa, Botswana, Zimbabwe, Mozambique, Malawi.

### Papilionoidea

#### Papilionidae

*Papilio demodocus demodocus* Esper, 1798

Material examined: Shankara, 27.04.1996, 11.12.2003, 3 ♀♂.

Distribution: all over the Afrotropical region; widespread in Namibia, reaching the fringes of the Namib Desert.

*Graphium (Arisbe) leonidas leonidas* (Fabricius, 1793) *f. brasidas* (Felder, 1864)

Material examined: Popa Falls, 17.12.1997, 1 ♀♂; Shamvura, 20.02.2008, 1 ♀♂.

Distribution: sp.: all over Africa; subsp.: eastern southern Africa from Eastern Cape to Zimbabwe; not recorded in Namibia.

*Graphium (Arisbe) angolanus angolanus* (Goeze, 1779)

Material examined: Popa Falls, 27.04.2003, 1 ♀♂.

Distribution: northeastern part of southern Africa, westwards to northern Namibia.

## Hesperiidae

### Coeliadinae

*Coeliades forestan forestan* (Stoll, 1782)

Material examined: Shankara, 08.04.1996, 27.04.1996, 3 ♀♀; Shamvura, 06.04.2003, 2 ♀♀.

Distribution: sp.: all over Africa; subsp.: eastern and northern parts of southern Africa, westwards to northern Namibia.

### Pyrginae

*Leucochitonea levubu* Wallengren, 1857

Material examined: Shamvura, 15.03.2011, 2 ♀♂.

Distribution: northeastern part of southern Africa, westwards to northern Namibia.

### Hesperiinae

*Zenonia zeno* (Trimen, 1864)

Material examined: Shankara, 29.05.1996, 1 ♂.

Distribution: southeastern part of southern Africa.

*Borbo fallax* (Gaede, 1916)

Material examined: Shamvura, 20.04.2003, 1 ♀♂; Shankara; 08.04.1996, 1 ♀♂.

Distribution: northeastern part of southern Africa.

## Pieridae

### Pierinae

*Pinacopteryx eriphia* (Godart, 1819) *eriphia* (Godart, 1819) *f. eriphia* (Godart, 1819)

Material examined: Shamvura, 02.04.2003, 03.01.2006, 2 ♀♂; Shankara, 02.05.1996, 1 ♀♂.

Distribution: sp.: all over Africa; subsp.: all over southern Africa, except the arid west.

*Catopsilia florella* (Fabricius, 1775)

Material examined: Shamvura, 28.03.2003, 05.08.2004, 27.08.2004, 3 ♀♂.

Distribution: all over southern Africa.

*\*Eurema (Maiva) regularis* (Butler, 1876)

Material examined: Shamvura, 02.04.2003, 07.05.2003, 15.03.2011, 3 ♀♂.

Distribution: rare; Mozambique and eastern Zimbabwe.

*Eronia leda* (De Boisduval, 1847)

Material examined: 1 ♀♂, not labeled.

Distribution: SE Africa.

*Nepheronia buquetti buquetti* (De Boisduval, 1836) f. *buquetti* (De Boisduval, 1836)

Material examined: Shamvura, 10.10.2010, 20.06.2010, 19.05.2012, 4 ♀♂.

Distribution: northeastern southern Africa westwards to Namibia.

*Colotis (Colotis) ione* (Godart, 1819) f. *phlegyas* (Butler, 1865)

Material examined: Shankara, 06.04.1996, 1 ♂.

Distribution: NE South Africa, Zimbabwe, Mozambique, N Botswana, N Namibia.

*Colotis (Colotis) ione* (Godart, 1819) f. *xerophila* (Talbot, 1939)

Material examined: Shankara, 18.01.1997, 1 ♀.

Distribution: common in eastern wet region of southern Africa from KwaZulu-Natal to northern Namibia.

*Colotis (Colitis) antevippe* (De Boisduval, 1836) *gavisa* (Wallengren, 1857)

Material examined: Shamvura, 14.01.2006, 1 ♀♂.

Distribution: all over Africa.

*Colotis (Colitis) antevippe gavisa* f. *helle* (Butler, 1876)

Material examined: Shankara, 06.04.1996, 1 ♂ (wet season form).

Distribution: sp.: all over the Afrotropical region; subsp.: throughout savanna and coastal bush in southern Africa.

*Colotis (Colotis) evenina evenina* f. *evenina* (Wallengren, 1857)

Material examined: Shamvura, 15.03.2011, 1 ♀♂.

Distribution: subsp.: northeastern part of southern Africa, westwards to northern Namibia.

*Colotis (Colitis) pallene* (Hopffer, 1855) f. *seineri* (Strand, 1909)

Material examined: Shamvura, 02.04.2003, 1 ♀♂.

Distribution: KwaZulu/Natal only.

*Colotis (Colotis) agoye agoye* (Wallengren, 1857) f. *lais*

Material examined: Shamvura, 02.01.2006, 1 ♂.

Distribution: sp.: all over Africa; subsp.: northeastern southern Africa northwards to Brandberg in Namibia.

*Colotis (Teracolus) eris eris* (Klug 1829) f. *damara* (Talbot, 1939)

Material examined: Shankara, 04.04.1996, 1 ♂ (extreme dry season form).

Distribution: sp.: all over Africa; subsp.: all over southern Africa.

*Belenois (Anaphaeis) creona severina* (Cramer, 1775)

Material examined: Shamvura, August 2004, 1 ♀♂.

Distribution: all over southern Africa.

*Belenois (Anaphaeis) gidica* (Godart, 1819) f. *abyssinica* (Lucas, 1852)

Material examined: Shankara, 28.07.1996, 1 ♀♂. (dry season form).

Distribution: along eastern coast from Mossel Bay westwards to northern Namibia.

*Mylothris agathina* (Cramer, 1779) f. *ochrascens* (Stoneham, 1937)

Material examined: Shamvura, 04.08.2004, 1 ♀.

Distribution: all over southern Africa.

## Lycaenidae

### Lipteninae

*\*Mimacraea marshalli marshalli* (Trimen, 1898)

Material examined: Shamvura, 22.08.2000, 07.08.2004, 2 ♀♂.

Distribution: rare and elusive, recorded only in Zimbabwe.

*Cnodontes pallida* (Trimen, 1898)

Material examined: Shankara, 08.08.1996, 2 ♀♂.

Distribution: northeastern part of southern Africa westwards to Mashari and Kombat in Namibia.

### Miletinae

*Lachnocnema bibulus* (Fabricius, 1793)

Material examined: Shamvura, August 2004, 1 ♀.

Distribution: uncommon; all over southern Africa in savanna and bush.

\**Lachnocnema brimo* Karsch, 1893

Material examined: Popa Falls, 03.06.2003, 1 ♀♂.

Distribution: rare; Zimbabwe, Zambia, Malawi.

## Theclinae

*Iolaus (Argiolaus) silarus silarus* Druce, 1885

Material examined: Shamvura, 02.04.2007, 11.10.2008, 2 ♀♂.

Distribution: northeastern part of southern Africa.

\**Iolaus (Argiolaus) lalos lalos* (Druce, 1896)

Material examined: Shamvura, 17.12.2007, 11.10.2008, 2 ♀♂.

Distribution: rare; recorded only in Mozambique and eastern Zimbabwe.

*Leptomyrina gorgias* (Stoll, 1790) *sobrina* Talbot, 1935

Material examined: Shamvura, 27.03.2003, 1 ♀♂.

Distribution: sp.: eastern and southern Africa; subsp.: southeastern part of southern Africa.

\**Hypolycaena (Hemiolaus) caeculus caeculus* (Hopffer, 1855)

Material examined: Shamvura, 04.05.2001, 03.06.2003, 27.04.2003, 14.01.2006, 02.01.2006, 25.05.2009, 6 ♀♂; Popa Falls, 27.04.2003, 03.06.2003, 6 ♀♂.

Distribution: uncommon in southeastern part of southern Africa westwards to Zimbabwe.

\**Hypolycaena (Hemiolaus) caeculus caeculus* f. *dolores* (Hopffer, 1855)

Material examined: Shamvura, 14.01.2006, 07.04.2012, 2 ♀♂; Popa Falls, 03.06.2003, 27.04.2003, 3 ♀♂.

Distribution: uncommon in southeastern part of southern Africa westwards to Zimbabwe.

*Deudorix (Virachola) dinochares* Grose-Smith, 1887

Material examined: Shamvura, 02.06.2004, 15.05.2006, 2 ♀♂; Popa Falls, 21.04.2003, 27.04.2003, 2 ♀♂; Shankara, 20.05.1998, 1 ♀♂.

Distribution: northeastern part of southern Africa westwards to Namibia.

*Deudorix (Virachola) antalus* (Hopffer, 1855)

Material examined: Shamvura, 10.10.2003, 31.03.2003, 29.04.2008, 28.04.2009, 4 ♀♂.; Popa Falls, 27.04.2003, 2 ♀♂.

Distribution: throughout southern Africa.

*Axiocerces tjoane* (Wallengren, 1857)

Material examined: Shamvura, 27.04.2003, 03.06.2003, 14.03.2003, 15.06.2003, 27.04.2003, 11 ♀♂.

Distribution: savanna and coastal bush of southern Africa.

*Bowkeria phosphor* (Trimen, 1866)

Material examined: Shamvura, 03.06.2003, 21.06.2003, 23.03.2005, 02.04.2008, 5 ♀♂.

Distribution: rare; southeastern part of southern Africa.

#### Polyommatae

\**Anthene sheppardi* Stevenson, 1940

Material examined: Shamvura, 27.10.2003, 08.03.2008, 2 ♂♂.

Distribution: Zimbabwe and Mozambique.

*Anthene kersteni* (Gerstaecker, 1871)

Material examined: Shamvura, 23.03.2005, 1 ♀♂.

Distribution: rare; KwaZulu-Natal, Mozambique and Zimbabwe.

\**Leptotes brevidentatus* (Tite, 1958)

Material examined: Shamvura, 26.01.2004, 1 ♀♂.

Distribution: rare in southeastern part of southern Africa.

*Leptotes jeanneli* (Stempffer, 1935)

Material examined: Shamvura; 09.05.2001, 11.09.2001, 17.10.2007, 3 ♀♂.

Distribution: eastern and southern Africa.

*Euchrysops osiris* (Hoffner, 1855)

Material examined: Popa Falls, 03.06.2003, 1 ♀.

Distribution: southeastern part of southern Africa from KwaZulu-Natal to northern Namibia.

*Freyeria trochylus* (Freyer, 1844)

Material examined: Shamvura, 23.03.2005, 1 ♂.

Distribution: all over Africa.

#### Nymphalidae

##### Danainae

*Danaus (Anosia) chrysippus* (Linnaeus, 1758) *aegypticus* (Schreber, 1759)

Material examined: Shamvura, 22.02.2000, 28.03.2003, 28.03.2003, 28.03.2003, 13.05.2003, August 2004, 6 ♀♂; Shankara, 03.06.1996, 07.06.1997, 36.03.1998, 3 ♀♂.

Distribution: sp.: Afrotropical, southern Palearctic and Indo-Australian regions; subsp.: Afrotropical region.

## Satyrinae

*Melanitis leda* (Linnaeus, 1758) *helenae* (Westwood, 1851)

Material examined: Shankara, 29.05.1995, 1 ♀; Shamvura, 16.03.2000, 13.02.2005, 11.03.2008, 3 ♀♀.

Distribution: Afrotropical, Palearctic and Indo-Australian regions.

*Melanitis leda helenae* f. *zitenides* Fruehstorfer 1905.

Material examined: Shamvura, 10.03.2000, 05.04.2006, 1 ♂, 1 ♀; Shankara, 06.04.1996, 12.04.1996, 01.05.1996, 1 ♂, 2 ♀♀. All specimens represent dry season form.

Distribution: eastern part of southern Africa, from Eastern Cape through Mozambique, Zimbabwe, Botswana to northern Namibia.

## Acraeninae

*Hyalites* (*Hyalites*) *obeira* (Hewitson, 1863) *meyeri* (Van Son, 1963)

Material examined: Shamvura, 09.05.2001, 18.04.2003, 27.04.2003, 02.08.2004, 15.05.2010, 25.05.2010, 8 ♀♂; Shankara, 28.04.1996, 1 ♀♂.

Distribution: sp.: southern Africa; subsp.: southeastern part of southern Africa. Abundant in northern Namibia (Pringle *et al.*, 1994).

*Hyalites* (*Auracraea*) *rahira rahira* (De Boisduval, 1833)

Material examined: Shamvura, 04.08.2004, 1 ♀♂.

Distribution: rare; along the eastern coast from the Cape to northern part of southern Africa westwards to Namibia. In February and March 1978, Ball captured them at Mashari (Pringle *et al.* 1994).

*Hyalites* (*Hyalites*) *eponina* (Cramer, 1780)

Material examined: Shankara, 27.04.1996, 2 ♀♂.

Distribution: all over Africa.

*Hyalites* (*Hyalites*) *acerata* (Hewitson, 1874)

Material examined: Shamvura; 27.04.2003, 1 ♀♂.

Distribution: only in the extreme north of southern Africa. It was recorded in July and December at Rundu and Outschi in the Kavango Region and Katima Mulilo in Zambezi Region, northern Namibia (Pringle *et al.*, 1994).

*Acraeae* (*Stephanina*) *natalica natalica* De Boisduval, 1847

Material examined: Shamvura; 03.08.2004, 08.08.2004, 1 ♀♂.

Distribution: sp.: all over Africa; subsp.: very common in the east and northeast of southern Africa.

*Acraea* (*Stephanina*) *natalica natalica* (De Boisduval, 1847) f. *albiventris* (Le Dour, 1923)

Material examined: Shamvura, 16.07.2003, 1 ♂ (dry-season form).

Distribution: sp.: all over Africa; subsp.: very common in southeastern part of southern Africa.

*Acraea (Stephania) caldarena caldarena* (Hewitson, 1877)

Material examined: Shamvura, 28.01.2007, 1 ♀♂.

Distribution: common in southeastern Africa westwards to Namibia.

*Acraea (Acraea) acraea acraea* Hewitson, 1865

Material examined: Shankara, 29.05.1996, 1 ♀♂.; Shamvura, 22.03.2005, 18.10.2005, 13.02.2008, 3 ♀♂.

Distribution: sp.: eastern and southern Africa; subsp.: northeastern southern Africa.

*Catacroptera cloanthe cloanthe* Hewitson, 1865

Material examined: Shamvura; 10.06.2006, 1 ♀♂.

Distribution: northeastern part southern Africa.

## Charaxinae

*\*Charaxes varanes varanes* (Cramer, 1777)

Material examined: Shamvura, 27.11.2005, 14.03.2006, 27.04.2006, 12.05.2009, 4 ♀♂; Shankara, 04.04.1996, 30.04.1998, March 1999, 3 ♀♂.

Distribution: northeastern part of southern Africa from Mossel Bay in South Africa to Zimbabwe.

*Charaxes candiope candiope* (Godart, 1824)

Material examined: Shamvura, September 2000, 29.11.2006, 02.04.2008, 3 ♀♂.

Distribution: northeastern part of southern Africa westwards to northern Namibia.

*Charaxes jasius saturnus* (Butler, 1865)

Material examined: Shamvura, 10.02.2001, 06.04.2004, 05.04.2006, 20.01.2012, 4 ♀♂; Shankara, 05.04.1996, 16.01.1997, 2 ♀♂.

Distribution: northeastern part of southern Africa

*Charaes druceanus* Butler, 1869

Material examined: Shamvura, 06. 04.2004, 1 ♀♂.

Distribution: all over Africa.

*Charaxes bohemani* C. et R. Felder, 1859

Material examined: Shamvura, 10.10.2000, 10.04.2004, 18.04.2004, 30.11.2006, 20.02.2008, 09.02.2008, 01.10.2012, 20.01.2012, 22.01.2012, 9 ♀♂.

Distribution: northeastern part of southern Africa westwards to northern Namibia.

*Charaxes penricei penricei* Rothschild, 1900

Material examined: Shankara, 05.04.1996, 06.04.1996, 3 ♀♂.

Distribution: v rare; Zimbabwe, Zambia and Mozambique.

*Charaxes achaemenes achaemenes* C. et R. Felder, 1867

Material examined: Shamvura, 21.04.2001, 10.04.2004, 11.04.2004, 07.04.2004, 18.04.2004, 18.04.2004, 7 ♀♂.

Distribution: northeastern part of southern Africa westwards to northern Namibia.

*Charaxes phaeus* Hewitson, 1877

Material examined: Shankara, 07.04.1996, 05.04.1996, 06.04.1996, 7 ♀♂; Shamvura, 24.03.2004, 25.03.2004, 05.04.2004, 18.04.2004, 20.04.2003, 16.04.2006, 10 ♀♂.

Distribution: savanna and bush of southern Africa.

Nymphalinae

*Hamanumida daedalus* (Fabricius, 1775)

Material examined: Shamvura, 05.08.2004, 05.03.2009, 2 ♀♂; Shankara, 07.04.1996, 1 ♀♂.

Distribution: all over southern Africa in savanna biome.

*\*Neptis serena* Overlaet, 1955

Material examined: Popa Falls, 27.04.2003, 3 ♀♂; Shamvura, 14.01.2006, 1 ♀♂.

Distribution: Mozambique, Zimbabwe, northern Botswana and KwaZulu-Natal.

*\*Sallya rosa* (Hewitson, 1877)

Material examined: Shankara, 06.04.1996, 1 ♂.

Distribution: northeastern part of southern Africa.

*Byblia anvatara acheloia* (Wellengren, 1857) f. *similata* (Van Son, 1979)

Material examined: Shamvura, 02.04.2003, 20.04.2003, 05.08.2004, 5 ♀♂ (summer form); Shankara, 04.04.1996, 20.04.1996, 3 ♀♂.

Distribution: all over the Afrotropical region; subsp.: northeastern southern Africa to Tsumeb in Namibia.

*\*Eurytela dryope* (Cramer, 1775) *angulate* Aurivillius, 1899

Material examined: Shamvura, 07.08.2004, 1 ♂.

Distribution: uncommon in southeastern part of southern Africa westwards to Zimbabwe.

*Hypolimnas misippus* (Linnaeus, 1764) f. *inaria* (Cramer, 1779)

Material examined: Shamvura, 14.03.2003, 02.03.2012, 2 ♀♀; Shankara, 27.10.1996, 02.02.1999, 2 ♀♀.

Distribution: Throughout the Afrotropical region.

*Precis octavia sesamus* Trimen, 1883

Material examined: Shamvura; 12.06.2010, 1 ♂.

Distribution: all over southern Africa in grasslands, savanna and woodlands.

*Precis (Precis) antilope* (Feisthamel, 1850)

Material examined: Shamvura, Aug. 2004, 1 ♂; Shamvura, 03.07.2003, 1 ♂.

Distribution: northern part of southern Africa; in Namibia fairly common in northern part as far as Outjo.

*Precis (Junonia) hierta* (Fabricius, 1798) *cebre* (Trimen 1870)

Material examined: Shankara, 04.04.1996, 18.01.1997, 1 ♂, 1 ♀.

Distribution: sp.: all over Africa; subsp.: all over southern Africa.

*Precis (Junonia) oenone oenone* (Linnaeus, 1758)

Material examined: Shankara, 07.04.1996, 2 ♂♂.

Distribution: sp.: all over Africa; subsp.: common in southeastern southern Africa.

*Precis (Junonia) orithya madagascariensis* Guenée, 1865

Material examined: Shamvura, 24.01.2000, 1 ♀♂.

Distribution: common in southeastern Africa from the Eastern Cape westwards to Namibia.

*Phalantha phalantha* (Drury, 1770) *aetiopica* (Rothschild et Jordan, 1903)

Material examined: Shankara, 07.04.1996, 1 ♀♂; Popa Falls, 27.04.2003, 03.06.2003, 3 ♀♂.

Distribution: sp. Africa and SE Asia; subsp.: Eastern Cape, KwaZulu-Natal, Transvaal, Zimbabwe, Madagascar.

Lasicampoidea

Lasiocampidae

Lasiocampinae

*Metajana chanleri* Holland, 1896 (= *Craspia wahlbergi* Aurivillius, 1909)

Material examined: Shamvura, 26.03.2001, 15.03.2008, 2 ♂♂.

Distribution: Namibia, Transvaal, Zimbabwe and Zambia.

*Philotherma rennei* (Dewitz, 1881)

Material examined: Shamvura, 12.02.2000, 1 ♂.

Distribution: Namibia, Zimbabwe, Cape.

*Cleopatrina* (=Eutricha=Pachypasa) *bilinea* (Walker, 1855)

Material examined: Shamvura, 01.05.2001, 1 ♀.

Distribution: all over the Afrotropical region.

*Tetracme* (=Eutricha=Pachypasa) *truncata* (Walker, 1855)

Material examined: Shankara, 28.05.1998, 1 ♀♂.

Distribution: all over the Afrotropical region.

*Leipoxais emarginata* Aurivillius, 1911

Material examined: Shamvura, 06.03.2000, 1 ♀.

Distribution: Transvaal, Zimbabwe and Mozambique.

## Bombycoidea

### Eupterotidae

#### Janinae

*Tentalia* (=Jana) *tantalus* Herrich-Schaeffer, 1854

Material examined: 1 ♂, not labeled.

Distribution: South Africa, Zimbabwe and Botswana.

### Saturniidae

#### Saturniinae

*Epiphora bauhiniae vera* (Janse, 1918)

Material examined: Shamvura, 25.01.2001, 04.02.2001, 16.03.2002, 29.01.2003, 29.03.2003, 5 ♀♂; Popa Falls, 04.03.2011, 1 ♀♂.

Distribution: sp.: all over Africa; subsp.: from the former Transvaal to DR Congo.

*Heniocha dyops* (Maassen, 1872)

Material examined: Shamvura, 25.11.2003, 25.11.2003, 04.02.2005, 3 ♀♂; Shamvura, Feb. 2000, 1 ♂.

Distribution: southeastern Africa.

*Rohaniella pygmaea pygmaea* (Maassen et Weymer, 1885)

Material examined: Shankara, 06.01.1997, 1 ♂; Shamvura, 20.02.2001, 20.02.2001, 25.02.2002, 3 ♂♂.

Distribution: all over Africa.

*Pseudobunaea tyrrhena tyrrhena* (Westwood, 1849)

Distribution: Shamvura, 05.02.2000, 10.11.2000, 20.12.2000, 15.01.2001, 25.01.2001, 10.02.2001, November 2004, 16.02.2008, 8 ♂♂.

Distribution: Namibia, South Africa, Mozambique, Zimbabwe northwards to equatorial and western Africa.

*Imbrasia* (= *Cirina*) *forda forda* (Westwood, 1849)

Material examined: Shankara, December 1996, 1 ♂; Shamvura, November 2004, 14.11.2005, 13.11.2006, 13.11.2014, 14.11.2014, 7 ♂♂.

Distribution: northeastern South Africa, Mozambique, Zimbabwe, Zambia, northwards to Kenya and equatorial Africa.

*Gynanisa maja* (Klug, 1836)

Material examined: Shamvura, Jan. 2000, December 2000, November 2004, 28.11.2005, 4 ♀♀; Shankara, 10.01.1997, 1 ♀.

Distribution: eastern South Africa, Zimbabwe and Mozambique.

*Gonimbrasia* (= *Imbrasia*) *belina belina* (Westwood, 1849) (Fig. 4)

Material examined, Shamvura, January 2000, 05.12.2000, 08.02.2000, 26.02.2001, December 2001, 29.10.2008, 6 ♂♂, 1 ♀; Shankara, December 1996, 1 ♀♂.

Distribution: all over the Afrotropical region.



Figure 4. *Gonimbrasia* (= *Imbrasia*) *belina belina*.

*Gonimbrasia* (= *Imbrasia*) *cytherea* (Fabricius, 1775)

Material examined: Shamvura, 25.11.2003, 20.11.2011, 09.12.2012, 29.12.2014, 2 ♂♂, 4 ♀♀.

Distribution: Republic of South Africa, Zimbabwe, Tanzania.

*Campimoptilum* (=Goodia) *kuntzei* (Dewitz, 1881)

Material examined: Shamvura, 06.03.2000, 10.03.2000, 10.03.2000, 3 ♂♂.

Distribution: southeastern Africa from Transvaal to Kenya.

Sphingidae

Sphinginae

*Acherontia atropos* (Linnaeus, 1758)

Material examined: Shamvura, 01.01.2006, 1 ♀.

Distribution: Africa, Europe, Middle East.

*Macropoliana natalensis* (Butler, 1875)

Material examined: Shankara, 21.02.1999, 1 ♀; Shamvura, November 2001, 1 ♀.

Distribution: southeastern Africa.

*Lophostethus dumolinii dumolinii* (Angas, 1849)

Material examined: Shamvura, 15.12.2000, 1 ♀♂; Shankara, 01.01.1997, 18.01.1997, 2 ♀♂.

Distribution: all over the Afrotropical region.

*Platysphinx piabilis* (Distant, 1897) (Fig. 5)

Material examined: Shamvura, January 2000, December 2001, 3 ♀♂; Shamvura, 27.11.2005, 2 ♀♀.

Distribution: southern and eastern Africa.



Figure 5. *Platysphinx piabilis*.

*Rufoclanis numosae numosae* (Wallengren, 1860)

Material examined: Shankara, December 1996, 15.11.1997, 2 ♀♂; Shamvura, 28.02.2000, 2 ♀♂.

Distribution: southern Africa.

#### Macroglossinae

*Cephonodes hylas virescens* (Wallengren, 1858)

Material examined: Shamvura, 25.11.2003, 1 ♀♂.

Distribution: Afrotropical, Oriental and Australian regions.

*Nephele comma* Hopffer, 1857

Material examined: Shamvura, January 2000, 1 ♀; Shankara, December 1996, 1 ♂.

Distribution: all over Africa.

*Nephele funebris* (Fabricius, 1793)

Material examined: Shankara, 15.11.1997, 1 ♂.

Distribution: all over Africa.

*Basiothia medea* (Fabricius, 1781)

Material examined: 1 ♀♂, not labeled.

Distribution: all over Africa.

*Hippotion balsaminae* (Walker 1856)

Material examined: 2 ♀♀, not labeled.

Distribution: all over Africa.

*Hippotion celerio* (Linnaeus, 1758)

Material examined: 1 ♀♂, not labeled.

Distribution: Africa, Europe and Oriental region.

*Hippotion eson* (Cramer 1779)

Material examined: Shankara, December 1996, 1 ♀♂.

Distribution: all over Africa.

#### Acherotinae

*Herse convolvuli* (Linnaeus, 1758)

Material examined: Shamvura, January 2000, 1 ♂, 1 ♀.

Distribution: cosmopolitan.

## Noctuoidea

## Erebidae (formerly in Arctiidae)

## Arctiinae

*Amerila* (= *Rhodogastria*) *bubo* (Walker, 1855)

Material examined: Shamvura, February 2000, 1 ♂.

Distribution: all over Africa.

*Amata* (= *Syntomis*) *alicia* (Butler, 1876)

Material examined: Shamvura, 03.04.2006, 1 ♀.

Distribution: all over Africa.

*Euchromia* *amoena* (Moeschler, 1872)

Material examined: Shankara, 04.04.1996, December 1996, 1 ♂, 1 ♀.

Distribution: southern and eastern Africa.

## Noctuidae

## Agaristinae

*Heracleia* *superba* (Butler, 1875)

Material examined: Shamvura, 06.03.2000, 29.11.2008, 1 ♂, 1 ♀; Shankara, 21.02.1999, 1 ♀♂.

Distribution: southeastern Africa.

## Catocalinae

*Callio* *despretiosissima* Holland, 1892

Material examined: Shamvura, 28.02.2000, 1 ♂.

Distribution: southern and eastern Africa.

*Eudocima* (= *Othreis*) *fullonia* (Clerck, 1764)

Material examined: 1 ♂, 1 ♀.; not labeled.

Distribution: common; all over Africa and S Asia and Australia.

*Eudocima* (= *Othreis*) *materna* (Linnaeus, 1766)

Material examined: Shamvura, 12.02.2000, 3 ♂♂.

Distribution: common; all over Africa and S Asia and Australia.

*Sphingomorpha chlorea* (Cramer, 1777)

Material examined: Shankara, December 1996, 1 ♀♂.

Distribution: common; all over Africa and S Asia.

Discussions and Conclusions

The number of Lepidoptera species genera recorded in Namibia by the year 1990 are according to the Namibian Biodiversity Data. The numbers have been updated by 'Zoological Records' for the years 1990-2010 (Kopij, 2017). The numbers of species in particular Lepidoptera families worldwide are according to Van Nieukerhen *et al.* (2011). The total number of moths species recorded to date in Namibia is 721, that of butterflies, 241 (Tab. I). The most speciose Namibian Lepidopteran families are Noctuidae, Gelechiidae, Lycaenidae and Nymphalidae (Tab. I).

In 'The list of moths of Namibia' updated by 27.03.2018, 510 species are listed ([http://eu.wikipedia.org/wiki/List\\_of\\_moths\\_of\\_Namibia](http://eu.wikipedia.org/wiki/List_of_moths_of_Namibia)); and in 'The list of butterflies of Namibia updated by 11.03.2018, 224 species are listed ([http://eu.wikipedia.org/wiki/List\\_of\\_butterflies\\_of\\_Namibia](http://eu.wikipedia.org/wiki/List_of_butterflies_of_Namibia)). There are 11 taxa recorded in Namibia for the first time in this study: *Eurema regularis* (Pieridae); 6 taxa from the family Lycaenidae (*Lachnocnema brimo*, *Iolaus lalos lalos*, *Hypolycaena caeculus caeculus*, *H. c. c. forma dolores*, *Anthene sheppardi* and *Leptotes brevidentatus*) and four species from the family Nymphalidae (*Charaxes varanes*, *Neptis serena*, *Sevenia rosa* and *Eurytela drope*).The present study, as well as Tab. I, strongly suggest that the moth fauna of Namibia is largely unrecorded. Butterfly fauna is much better studied, but even in this group a dozen or so species may still be unrecorded.

Table I. Number of Lepidoptera species and genera (in familial arrangement) in Namibia (G. Kopij's unpublished data) in comparison with these numbers in the world (according to Niuekerk *et al.* 2011).

| Taxa            | World  |         | Namibia |         |
|-----------------|--------|---------|---------|---------|
|                 | genera | species | genera  | species |
| Nepticulidae    | 13     | 819     | 4       | 17      |
| Incurvariidae   | 11     | 51      | 2       | 4       |
| Cecidosidae     | 5      | 16      | 1       | 3       |
| Tischeriidae    | 3      | 110     | 2       | 3       |
| Eriocottidae    | 6      | 80      | 1       | 3       |
| Psychidae       | 241    | 1350    | 11      | 12      |
| Tineidae        | 357    | 2393    | 20      | 32      |
| Bucculatricidae | 4      | 297     | 1       | 7       |
| Gracillariidae  | 101    | 1866    | 17      | 38      |
| Yponomeutidae   | 95     | 363     | 2       | 2       |
| Plutellidae     | 48     | 150     | 2       | 2       |
| Autostichidae   | 72     | 638     | 3       | 3       |
| Lecithoceridae  | 100    | 1200    | 2       | 2       |

Table I – continued

| Taxa                | World  |         | Namibia |         |
|---------------------|--------|---------|---------|---------|
|                     | genera | species | genera  | species |
| Xyloryctidae        | 60     | 524     | 1       | 4       |
| Oecophoridae        | 313    | 3308    | 2       | 3       |
| Coleophoridae       | 5      | 1386    | 1       | 15      |
| Elachistidae        | 161    | 3201    | 2       | 3       |
| Scythrididae        | 30     | 669     | 1       | 4       |
| Cosmopterigidae     | 1356   | 1792    | 3       | 7       |
| Gelechiidae         | 500    | 4700    | 53      | 100     |
| Pterophoridae       | 90     | 1318    | 5       | 11      |
| Copromorphidae      | 9      | 43      | 1       | 1       |
| Carpsinidae         | 19     | 283     | 2       | 2       |
| Schreckensteiniidae | 2      | 8       | 2       | 2       |
| Epermeniidae        | 10     | 126     | 1       | 1       |
| Choreutidae         | 18     | 406     | 2       | 2       |
| Galacticidae        | 3      | 19      | 1       | 2       |
| Tortricidae         | 1071   | 10387   | 6       | 11      |
| Cossidae            | 151    | 971     | 10      | 28      |
| Metarbelidae        | 18     | 196     | 5       | 11      |
| Sesiidae            | 154    | 1397    | 2       | 2       |
| Limacodidae         | 301    | 1672    | 12      | 16      |
| Zygaenidae          | 170    | 1036    | 1       | 1       |
| Thyrididae          | 93     | 940     | 5       | 11      |
| Papilionidae        | 32     | 570     | 2       | 7       |
| Hesperiidae         | 570    | 4113    | 17      | 41      |
| Pieridae            | 91     | 1164    | 10      | 31      |
| Lycaenidae          | 416    | 5201    | 45      | 85      |
| Nymphalidae         | 559    | 6152    | 27      | 77      |
| Pyrallidae          | 1055   | 5921    | 38      | 54      |
| Crambidae           | 1020   | 9655    | 5       | 7       |
| Lasiocampidae       | 224    | 1952    | 13      | 16      |
| Eupterotidae        | 53     | 339     | 3       | 3       |
| Bombycidae          | 26     | 185     | 1       | 1       |
| Saturniidae         | 169    | 2349    | 14      | 25      |
| Sphingidae          | 206    | 1463    | 18      | 25      |
| Uraniidae           | 90     | 686     | 1       | 1       |
| Geometridae         | 2002   | 23002   | 27      | 55      |

Table I – continued

| Taxa         | World  |         | Namibia |         |
|--------------|--------|---------|---------|---------|
|              | genera | species | genera  | species |
| Notodontidae | 704    | 3800    | 8       | 10      |
| Erebidae     | 1760   | 24569   | 1       | 1       |
| Nolidae      | 186    | 1738    | 2       | 2       |
| Noctuidae    | 1089   | 11772   | 88      | 156     |
| Total        | 15578  | 157424  | 506     | 962     |

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## ФАУНА ЛЕПТИРА НАМИБИЈЕ II ДОЛИНА РЕКЕ ОКАВАНГО, РЕГИОН КАВАНГЕ

Гжегош Копиј и Марк Пакстон

### Извод

У долини реке Окаванго у северној Намибији укупно је сакупљено 37 ноћних и 112 врста дневних лептира. Највећи број примерака, укупно 32, припада фамилији Nymphalidae, друга фамилија по броју уловљених врста је Lycaenidae (19 spp.), затим Pieridae (16 spp.), Sphingidae (13 spp.) и Saturniidae (9 spp.). Утврђено је 11 нових таксона за Намибију: *Eurema regularis* (Pieridae); 6 таксона из фамилије Lycaenidae (*Lachnocnema brimo*, *Iolaus lalos lalos*, *Hypolycaena caeculus caeculus*, *H. c. c. forma dolores*, *Anthene sheppardi* и *Leptotes brevidentatus*) и четири врсте из фамилије Nymphalidae (*Charaxes varanes*, *Neptis serena*, *Sevenia rosa* и *Eurytela drope*).

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