

Genus *Willema* Grishin, 2019 Sylphs

CONG. Q, ZHANG, J., SHEN, J. & GRISHIN, N.V. 2019. Fifty new genera of HesperIIDae (Lepidoptera). *Insecta Mundi* 0731: 1-56.

Type-species: *Heteropsis willemi* Wallengren, 1857, by original designation.

The genus *Willema* belongs to the Family HesperIIDae Latreille, 1809; Subfamily Heteropterinae Aurivillius, 1925, Tribe Heteropterini Aurivillius, 1925. The other genera of the Subfamily Heteropterinae in the Afrotropical Region are *Metisella* and the Madagascan *Hovala*.

Willema is an Afrotropical genus of seven species.

**Willema willemi* (Wallengren, 1857)# Netted Sylph



Netted Sylph (*Willema willemi*) at rest
Image courtesy Raimund Schutte

Heteropterus willemi Wallengren, 1857. *Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar. Stockholm annis 1838-1845. Collecta (n.s.)* 2 (4): 47 (55 pp.).

Cyclopides willemi Wallengren. Trimen, 1866a (*Rhop. Afr. Aust.*, ii, p. 296, n. 186).

Cyclopides willemi (Wallengren, 1857). Trimen & Bowker, 1889.

Metisella willemi (Wallengren, 1857). Hemming, 1934 (*Stylops* 3: 99).

Metisella willemi Wallengren. Swanepoel, 1953a.

Metisella willemi (Wallengren, 1857). Dickson & Kroon, 1978.

Metisella willemi (Wallengren, 1857). Pringle *et al.*, 1994: 322.

Willema willemi (Wallengren, 1857). Cong *et al.*, 2019.



Willema willemi. Male (Wingspan 30 mm). Left – upperside; right – underside.
Loding, Mpumalanga, South Africa. 15 September 2010. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Willema willemi. Female (Wingspan 32 mm). Left – upperside; right – underside.
Welbekend, Gauteng, South Africa. 11 February 2008. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type locality: [South Africa]: “Caffraria” [False locality]. Holotype in the Swedish Natural History Museum (images available at www2.nrm.se/en/lep_nrm/w).

Distribution: Somalia (Butler, *vide* Trimen & Bowker, 1889), Uganda, Kenya (south-west), Tanzania, Democratic Republic of Congo (Shaba), Malawi, Zambia, Angola, Mozambique, Zimbabwe, Botswana (east), Namibia, South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng).

Specific localities:

Kenya – South Kavirondo (Larsen, 1991c); Mara area (Larsen, 1991c); Cotter’s Camp, Masai Mara (D.A. Trembath, *vide* Larsen, 1991c); Kisii Hotel (M. Cock, *vide* Larsen, 1991c).

Tanzania – Ufipa (Kielland, 1990d); Mpanda (Kielland, 1990d); Kigoma (Kielland, 1990d); Mount Image (Kielland, 1990d); Mount Nyumbenitu, Uzungwa Range (Kielland, 1990d); Rebuho Mountains (Kielland, 1990d); Bulongwa in Njombe (Haldane, *vide* Kielland, 1990d); Katavi National Park (Fitzherbert *et al.*, 2006).

Zambia – Mwinilunga (Heath *et al.*, 2002); Chingola (Heath *et al.*, 2002); Kalulushi (Heath *et al.*, 2002); Kabwe (Heath *et al.*, 2002); Chisamba (Heath *et al.*, 2002); Chalimbana (Heath *et al.*, 2002); Pemba (Heath *et al.*, 2002); Choma (Heath *et al.*, 2002); Mpika District (Heath *et al.*, 2002); Luongo River (Heath *et al.*, 2002); Mbala (Heath *et al.*, 2002).

Angola – Huila Province (Mendes *et al.*, 2013).

Botswana – Gaborone (Larsen, 1991); Serowe (Larsen, 1991); Ngotwane River at Tlokwen (Larsen, 1991); Mahalapye (Pennington; male specimen illustrated above).

Namibia – Damaraland (Hewitson, 1868).

Limpopo Province – Waterberg (Swanepoel, 1953); Warmbaths (Swanepoel, 1953); Potgietersrus (Swanepoel, 1953); Polokwane – Moske’s bush (Swanepoel, 1953); Solomandale – Sand River bush (Swanepoel, 1953); 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 – Lydenburg district (Ayres, *vide* Trimen & Bowker, 1889); Barberton (Palmer, *vide* Trimen & Bowker, 1889); Crocodile River (Barber, *vide* Trimen & Bowker, 1889).

North West Province – Marico River (Selous, *vide* Trimen & Bowker, 1889); Kgaswane Mountain Reserve (Williams); Utopia Resort (C. Dobson, 2006).

Gauteng – Pretoria (Swanepoel, 1953).

Habitat: Savanna, especially along streams fringed by trees that provide an almost closed canopy. Also in densely wooded clumps of bush. In Tanzania at altitudes from 800 to 2 000 m (Kielland, 1990d).

Habits: A locally common species (Kielland, 1990d). Flies in the shade of trees among long green grass, especially on the banks of streams. The flight is slow and skipping, just above the grass. Both sexes regularly visit flowers and males occasionally mud-puddle. Males establish territories in the shade of trees, and use grass blades as perches. When basking the wings are held three-quarters of the way open (Larsen, 1991c).

Flight period: December to May; commonest from January to March (Pringle *et al.*, 1994).

Early stages:

Cock & Congdon, 2017 [leaf shelters, larva, pupa].

Larval food:

Setaria megaphylla (= *Setaria plicatilis*) (Poaceae) [Cock & Congdon, 2017].

Setaria species (Poaceae) [Larsen, 1991c: 411].

cheles Hewitson, 1868 *in* Hewitson, 1867-8 (as sp. of *Cyclopides*). *Descriptions of one hundred new species of Hesperidae* [sic]: 42 (56 pp.). London. [Namibia]: “Damara Land”.

****Willema tsadicus* (Aurivillius, 1905)**

Northern Netted Sylph

Cyclopides formosus var. *tsadicus* Aurivillius, 1905. *Arkiv för Zoologi* 2 (12): 23 (47 pp.).

Metisella tsadicus (Aurivillius, 1905). Ackery *et al.*, 1995.

Willema tsadicus (Aurivillius, 1905). Cong *et al.*, 2019.



Willema tsadicus. Male. Left – upperside; right – underside.
Bimon, Central African Republic. June 1995. SCC. ABRI-2019-2302.
Images MC Williams ex ABRI Collection.



Willema tsadicus. Female. Left – upperside; right – underside.
Bimon, Central African Republic. June 1995. SCC. ABRI-2019-2301.
Images MC Williams ex ABRI Collection.

Type locality: [Nigeria (Larsen, 2005a)]: “Süd-Bormu: Dile”.

Distribution: Guinea (Warren-Gash, pers. comm., 2002), Nigeria (north-east), Cameroon (north – Lake Tchad area), Central African Republic, Sudan (south), Uganda (north), Ethiopia (south-west).

Specific localities:

Guinea – Labe in the Fouta Djallon (H. Warren-Gash, *vide* Larsen, 2005a; single male).

Nigeria – South Bormu: Dile (TL).

Uganda – Patigo (Bethune-Baker, 1906).

Ethiopia – Youbdo (Ungemach, 1932).

Early stages: Nothing published.

Larval food: Nothing published.

Note: The population in Guinea is probably a distinct subspecies or species (Larsen, 2005a).

ogwanyi Bethune-Baker, 1906 (as sp. of *Cyclopides*). *Annals and Magazine of Natural History* (7) **17**: 110 (104-110). [Uganda]: “Patigo”.

birbiranus Ungemach, 1932 (as sp. of *Cyclopides*). *Mémoires de la Société des Sciences Naturelles (et Physiques) du Maroc* **32**: 101 (1-122). [Ethiopia]: “Youbdo”.

****Willema angolana* (Karsch, 1896)**

Cyclopides angolana Karsch, 1896. *Entomologische Nachrichten. Berlin* **22**: 375 (372-378).

Metisella angolana (Karsch, 1896). Ackery *et al.*, 1995.

Willema angolana (Karsch, 1896). Cong *et al.*, 2019.



Willema angolana angolana. Male. Left – upperside; right – underside.
Ikelenge, Mwinilunga district, Zambia. 25 March 1981.
Images MC Williams ex Gardiner Collection.



Willema angolana angolana. Female. Left – upperside; right – underside.
Mundwiji Plains, Mwinilunga district, Zambia. 19 March 2007.
Images MC Williams ex Gardiner Collection.

Type locality: “Hinterleib von Angola”.

Distribution: Angola, Democratic Republic of Congo (Shaba), Zambia.

Early stages: Nothing published.

Larval food: Nothing published.

***Willema angolana angolana* (Karsch, 1896)**

Cyclopides angolana Karsch, 1896. *Entomologische Nachrichten. Berlin* **22**: 375 (372-378).

Metisella angolana angolana (Karsch, 1896). Ackery *et al.*, 1995.

Willema angolana angolana (Karsch, 1896). Cong *et al.*, 2019.



Willema angolana angolana. Male. Left – upperside; right – underside.
Ikelenge, Mwinilunga district, Zambia. 25 March 1981.
Images MC Williams ex Gardiner Collection.



Willema angolana angolana. Female. Left – upperside; right – underside.
Mundwiji Plains, Mwinilunga district, Zambia. 19 March 2007.
Images MC Williams ex Gardiner Collection.

Type locality: “Hinterleib von Angola”.

Distribution: Angola, Zambia.

Specific localities:

Angola – Bie Province; Huambo Province; Moxico Province (Mendes *et al.*, 2013).

Zambia – Ikelenge (Heath *et al.*, 2002); Mwinilunga district (Heath *et al.*, 2002; male illustrated above).

Willema angolana cooksoni (Druce, 1905)

Cyclopides cooksoni Druce, 1905. *Transactions of the Entomological Society of London* **1905**: 260 (251-262).

Metisella angolana cooksoni (Druce, 1905). Ackery *et al.*, 1995.

Willema angolana cooksoni (Druce, 1905). Cong *et al.*, 2019.

Type locality: [Democratic Republic of Congo], not Zambia (*see* Cookson, 1954): “North-west Rhodesia”.

Distribution: Democratic Republic of Congo (Shaba).

Note: Heath *et al.* (2002: 9) aver that *cooksoni* may only be a seasonal form of *angolana*.

**Willema carsoni* (Butler, 1898)

Cyclopides carsoni Butler, 1898. *Proceedings of the Zoological Society of London* **1898**: 57 (49-58).

Metisella carsoni (Butler, 1898). Ackery *et al.*, 1995.

Willema carsoni (Butler, 1898). Cong *et al.*, 2019.



Willema carsoni. Male. Left – upperside; right – underside.
Moizi, Tanzania. February 1994. SCC. ABRI-2019-2303.
Images MC Williams ex ABRI Collection.



Willema carsoni. Female. Left – upperside; right – underside.
Sitebi Mountain, western Tanzania. CC, IB. ABRI-2019-2304.
Images MC Williams ex ABRI Collection.

Type locality: [Tanzania]: “Fwambo, Tanganyika”.

Distribution: Tanzania (west), Zambia (north-east).

Specific localities:

Tanzania – Fwambo (TL); Bisi Forest in Ufipa (Kielland, 1990d); Kampisa (Kielland, 1990d); Sandstone Ridge (Kielland, 1990d); Ntakatta in Mpanda (Kielland, 1990d); Mahale ridge in Kigoma (Kielland, 1990d); Kungwe; Sibweza (Congdon & Bampton, unpub., 2003).

Zambia – Shiwa Ngandu (Heath *et al.*, 2002); Mbala (Heath *et al.*, 2002); Abercorn (Badham).

Habitat: Montane woodland and grassland. In Tanzania from 1 500 to 2 200 m (Kielland, 1990d).

Habits: Occurs in localized colonies (Kielland, 1990d). Kielland (1990) one December encountered an irruption of the species and noted between 1 500 and 2 000 individuals mud-puddling along a small mountain stream.

Early stages: Nothing published.

Larval food: Nothing published.

Note: Heath *et al.* (2002: 9) suggest that *carsoni* may be a seasonal form of *Metisella formosus linda*. Congdon & Bampton (unpublished 2003) doubt this, on the grounds that *carsoni* and *formosus* are not everywhere sympatric (e.g. only *carsoni* is found at Sibweza in Tanzania).

**Willema kumbona* (Evans, 1937)

Metisella kumbona Evans, 1937. *A catalogue of the African Hesperiiidae indicating the classification and nomenclature adopted in the British Museum*: 73 (212 pp.).

Metisella kumbona Evans, 1937. Ackery *et al.*, 1995.

Willema kumbona (Evans, 1937). Cong *et al.*, 2019.



Willema kumbona. Male. Left – upperside; right – underside.
Cameroon. September 1992. SCC. ABRI-2019-2299.
Images MC Williams ex ABRI Collection.



Willema kumbona. Female. Left – upperside; right – underside.
Wak, Cameroon. August 2000. SCC. ABRI-2019-2300.
Images MC Williams ex ABRI Collection.

Type locality: Cameroon: “Cameroons (Bitje)”.

Distribution: Nigeria, Cameroon. [Not recorded from Nigeria by Larsen, 2005a].

Specific localities:

Cameroon – Bitje (TL).

Early stages: Nothing published.

Larval food: Nothing published.

****Willema formosus* (Butler, 1894)**

Beautiful Sylph

Heteropterus formosus Butler, 1894. *Proceedings of the Zoological Society of London* **1893**: 670 (643-684).

Metisella formosus (Butler, 1894). Ackery *et al.*, 1995.

Willema formosus (Butler, 1894). Cong *et al.*, 2019.



Willema formosus linda. Male. Left – upperside; right – underside.
Danger Hill, Mpika National Park, Zambia. 20 December 2015.



Willema formosus linda. Female. Left – upperside; right – underside.
Mutinondo, Zambia. February 2003. CC et al. ABRI-2019-2308.
Images MC Williams ex ABRI Collection.

Type locality: [Malawi]: “Zomba”.

Distribution: Ethiopia, Democratic Republic of Congo, Uganda, Kenya, Tanzania, Malawi, Zambia, Mozambique (Congdon *et al.*, 2010).

Habitat: Marshy savanna and grassland close to forest (Kielland, 1990d). In Tanzania at altitudes between 1 200 and 1 800 m (n nominate subspecies) and 1 000 to 1 400 (subspecies *linda*) (Kielland, 1990d).

Habits: Apparently occurs in very localized populations (Larsen, 1991c).

Early stages:

Cock & Congdon, 2017 [ovum].

Larval food:

An unidentified species of grass (Poaceae) [Cock & Congdon, 2017].

Willema formosus formosus (Butler, 1894)

Heteropterus formosus Butler, 1894. *Proceedings of the Zoological Society of London* **1893**: 670 (643-684).

Metisella formosus formosus (Butler, 1894). Ackery *et al.*, 1995.

Willema formosus formosus (Butler, 1894). Cong *et al.*, 2019.

Type locality: [Malawi]: “Zomba”.

Distribution: Tanzania (south), Malawi, Mozambique.

Specific localities:

Tanzania – Mufindi, 1200 m (Kielland, 1990d); Kitesa Forest, west of Songea, 1800 m (Kielland, 1990d).

Malawi – Zomba (TL); Nyika N.P. (J. Timberlake, pers. comm., 2019).

Mozambique – Njesi Plateau (Congdon *et al.*, 2010).

Willema formosus linda (Evans, 1937)

Metisella formosus linda Evans, 1937. *A catalogue of the African HesperIIDae indicating the classification and nomenclature adopted in the British Museum*: 74 (212 pp.).

Metisella formosus linda Evans, 1937. Ackery *et al.*, 1995.

Willema formosus linda (Evans, 1937). Cong *et al.*, 2019.



Willema formosus linda. Male. Left – upperside; right – underside.
Danger Hill, Mpika National Park, Zambia. 20 December 2015.
Images MC Williams ex Gardiner Collection.



Willema formosus linda. Female. Left – upperside; right – underside.
Mutinondo, Zambia. February 2003. CC et al. ABRI-2019-2308.
Images MC Williams ex ABRI Collection.

Type locality: [Democratic Republic of Congo]: “Congo (Kambove, Katanga, 4,500 ft)”.

Distribution: Democratic Republic of Congo (Shaba), Kenya (west), Tanzania (west), Zambia (north).

Specific localities:

Democratic Republic of Congo – Kambove, Katanga (TL).

Kenya – Kitale (Larsen, 1991c); Turbo (Larsen, 1991c); Kipkaren (Larsen, 1991c); East Surrey Estate (Larsen, 1991c).

Tanzania – Mpanda (Kielland, 1990d); Kigoma (Kielland, 1990d); Sibweza (Kielland, 1990d); Nyakanazi, Biharamulo District (Congdon & Collins, 1998); Malagarasi River crossing (Congdon & Collins, 1998); Katavi National Park (Fitzherbert *et al.*, 2006).

Zambia – Mwinilunga (Heath *et al.*, 2002); Kabompo River (Heath *et al.*, 2002); Solwezi (Heath *et al.*, 2002); Mufulira (Heath *et al.*, 2002); Kitwe (Heath *et al.*, 2002); Ndola (Heath *et al.*, 2002); Miengwe (Heath *et al.*, 2002); Mpongwe (Heath *et al.*, 2002); Kawambwa (Heath *et al.*, 2002); Kalungwishi River (Heath *et al.*, 2002); Shiwa Ngandu (Heath *et al.*, 2002); Mpika (Heath *et al.*, 2002); Chinsali.

Note: Larsen (1991: 410) believes that *nyanza* and *linda* are doubtfully distinct subspecies.

Willema formosus mittoni (Carcasson, 1961)

Metisella formosus mittoni Carcasson, 1961. *Occasional Papers. Coryndon Memorial Museum, Nairobi* 7: 23 (1-23).

Metisella formosus mittoni Carcasson, 1961. Ackery *et al.*, 1995.

Willema formosus mittoni (Carcasson, 1961). Cong *et al.*, 2019.

Type locality: Ethiopia: “Mega, southern Ethiopia”.

Distribution: Ethiopia (south).

Specific localities:

Ethiopia – Mega (TL).

Willema formosus nyanza (Evans, 1937)

Metisella formosus nyanza Evans, 1937. *A catalogue of the African Hesperidae indicating the classification and nomenclature adopted in the British Museum*: 74 (212 pp.).

Metisella formosus nyanza Evans, 1937. Ackery *et al.*, 1995.

Willema formosus nyanza (Evans, 1937). Cong *et al.*, 2019.

Type locality: Uganda: “N.W. of Victoria Nyanza, 4,000 ft”.

Distribution: Democratic Republic of Congo (east – Kivu), Uganda, Tanzania (north-west).

Specific localities:

Uganda – N.W. of Lake Victoria (TL).

Tanzania – Minziro Forest (Congdon & Collins, 1998); Munene Forest (Congdon & Collins, 1998).

Note: Larsen (1991: 410) believes that *nyanza* and *linda* are doubtfully distinct subspecies.

**Willema perexcellens* (Butler, 1896)

Cyclopides perexcellens Butler, 1896. *Annals and Magazine of Natural History* (6) **18**: 161 (159-163).

Metisella perexcellens (Butler, 1896). Ackery *et al.*, 1995.

Willema perexcellens (Butler, 1896). Cong *et al.*, 2019.



Willema perexcellens perexcellens. Male. Left – upperside; right – underside.
Nyika, Malawi. March 1993. SCC. ABRI-2019-2305.
Images MC Williams ex ABRI Collection.



Willema perexcellens perexcellens. Female. Left – upperside; right – underside.
Nyika, Malawi. March 1993. SCC. ABRI-2019-2306.
Images MC Williams ex ABRI Collection.

Type locality: [Malawi]: “Kasungu Mountain, 7425 feet alt., Nyika”.

Distribution: Tanzania, Malawi.

Habitat: Open, montane grassland at 1 600 to 2 000 m (subspecies *sitebi*) (Kielland, 1990d).

Habits: Flies low above and in between the grass on the lee-side of ridges and hills (Kielland, 1990d).

Early stages: Nothing published.

Larval food: Nothing published.

Willema perexcellens perexcellens (Butler, 1896)

Cyclopidus perexcellens Butler, 1896. *Annals and Magazine of Natural History* (6) **18**: 161 (159-163).

Metisella perexcellens perexcellens (Butler, 1896). Ackery *et al.*, 1995.

Willema perexcellens perexcellens (Butler, 1896). Cong *et al.*, 2019.



Willema perexcellens perexcellens. Male. Left – upperside; right – underside.
Nyika, Malawi. March 1993. SCC. ABRI-2019-2305.
Images MC Williams ex ABRI Collection.



Willema perexcellens perexcellens. Female. Left – upperside; right – underside.
Nyika, Malawi. March 1993. SCC. ABRI-2019-2306.
Images MC Williams ex ABRI Collection.

Type locality: [Malawi]: “Kasungu Mountain, 7425 feet alt., Nyika”.

Distribution: Malawi. Apparently only known from the type series.

Specific localities:

Malawi – Kasungu Mountain, Nyika (TL); Nyika N.P. (J. Timberlake, pers. comm., 2019).

Willema perexcellens marunga (Evans, 1937)

Metisella perexcellens marunga Evans, 1937. *A catalogue of the African Hesperiiidae indicating the classification and nomenclature adopted in the British Museum*: 73 (212 pp.).

Metisella perexcellens marunga Evans, 1937. Ackery *et al.*, 1995.

Willema perexcellens marunga (Evans, 1937). Cong *et al.*, 2019.

Type locality: [Tanzania]: “Marung Plateau”.

Distribution: Tanzania. Known only from the type locality.

Specific localities:

Tanzania – Marung Plateau, 2 100 m (TL).

Willema perexcellens sitebi (Kielland, 1982)

Metisella perexcellens sitebi Kielland, 1982. *Lambillionea* **81**: 90 (86-90).

Metisella perexcellens sitebi Kielland, 1982. Ackery *et al.*, 1995.

Willema perexcellens sitebi (Kielland, 1982). Cong *et al.*, 2019.

Type locality: Tanzania: “Mpanda, Sitebi Mt”.

Distribution: Tanzania (Mpanda district).

Specific localities:

Tanzania – Sitebi Mountain (TL); part of the Sandstone Ridge between Sitebi Mountain and Ipumba Mountain (Kielland, 1990d).