

Genus *Issoria* Hübner, [1819] Fritillaries

In: Hübner, [1816-[1826]. *Verzeichniss bekannter Schmettlinge* 31 (432 + 72 pp.). Augsburg.

Type-species: *Papilio lathonia* Linnaeus, by subsequent designation (Scudder, 1875. *Proceedings of the American Academy of Arts and Sciences* **10**: 198 (91-293).) [extralimital].

= Genus *Prokuekenthaliella* Reuss, 1924

Deutsche Entomologische Zeitschrift **1926**: ? (65-70). Type-species: *Argynnis excelsior* Butler, by original designation. Regarded as a synonym of *Issoria* by Simonsen *et al.*, 2006.

Synonyms based on extralimital type-species: *Chilargynnis* Bryk; *Kukenthaliella* Reuss; *Pseudorathora* Reuss; *Rathora* Moore.

The genus *Issoria* belongs to the Family Nymphalidae Rafinesque, 1815; Subfamily Heliconiinae Swainson, 1822; Tribe Argynnini Swainson, 1833; Subtribe Argynnina Swainson, 1833. The other genus in the Subtribe Argynnina in the Afrotropical Region is *Argynnis*.

Issoria (Fritillaries) is an essentially Palaearctic genus that extends into the Afrotropical Region. Three montane species are found in the Afrotropical Region.

Afrotropical species in the genus *Issoria* Hübner, [1819]

I. hanningtoni

I. baumanni

I. smaragdifera

**Issoria hanningtoni* (Elwes, 1889) Silver-spangled Fritillary

Argynnis hanningtoni Elwes, 1889. *Transactions of the Entomological Society of London* **1889**: 558 (535-575).

Issoria hanningtoni (Elwes, 1889). Ackery *et al.*, 1995.

Prokuekenthaliella hanningtoni (Elwes, 1889) **comb. n.** Simonsen, 2006b.

Issoria hanningtoni (Elwes, 1889) **comb. n.** Simonsen *et al.*, 2006.



Issoria hanningtoni jeanneli. Male. Left – upperside; right – underside.
Nandi Forest, Kenya. 9 October 1997. J. Greyling.
Images M.C. Williams ex J. Greyling Collection.

Type data: [Tanzania]: “the forests of Taveta, near Mount Kilimanjaro”. As pointed out by Liseki & Vane-Wright (2018) this is in all probability a false locality as the forests at Taveta are at about 800 m, far too low for this species of butterfly.

Diagnosis: Wingspan – male 35 mm; female mm. Compared to *I. baumanni* the ground colour is paler and the blackish brown markings are stronger (Kielland, 1990d).

Distribution: Sudan, Uganda, Kenya, Tanzania.

Habitat: Montane forest. In Tanzania the nominate subspecies is found at altitudes above 1 800 m (Kielland, 1990d). In Kenya it is not usually found at altitudes below 1 700 m (Larsen, 1991c).

Habits: The flight is low down, fast and direct (Kielland, 1990d). It is very fond of open forest glades, where it may be quite common. It has been suggested that the silver spots on the underside of the wings provide camouflage among the dew-drop covered grass on which the butterflies roost at night (Larsen, 1991c).

Larval food:

Viola abyssinica Steud. ex Oliv. (Violaceae) [Van Someren, 1974: 321].

***Issoria hanningtoni hanningtoni* (Elwes, 1889)**
Silver-spangled Fritillary

Argynnis hanningtoni Elwes, 1889. *Transactions of the Entomological Society of London* **1889**: 558 (535-575).

Issoria hanningtoni (Elwes, 1889). Ackery *et al.*, 1995.

Prokuekenthaliella hanningtoni (Elwes, 1889) **comb. n.** Simonsen, 2006b.

Issoria hanningtoni (Elwes, 1889) **comb. n.** Simonsen *et al.*, 2006.

Type data: [Tanzania]: “the forests of Taveta, near Mount Kilimanjaro”.

Distribution: Tanzania (north).

Specific localities:

Tanzania – Taveta, near Mount Kilimanjaro (TL). Mount Meru; Ngorongoro (Kielland, 1990d). Upper slopes of Mt. Kilimanjaro (Liseki & Vane-Wright, 2018).

***Issoria hanningtoni jeanneli* (Bernardi, 1968)**
Highlands Mountain Fritillary

Issoria hanningtoni jeanneli Bernardi, 1968. *Bulletin de la Société Entomologique de France* **73**: 150 (149-151).

Prokuekenthaliella hanningtoni jeanneli (Bernardi, 1968). Simonsen, 2006.

Issoria hanningtoni jeanneli Bernardi, 1968. Simonsen *et al.*, 2006.



Issoria hanningtoni jeanneli. Male. Left – upperside; right – underside.
Nandi Forest, Kenya. 9 October 1997. J. Greyling.
Images M.C. Williams ex J. Greyling Collection.

Type data: Kenya: “Camp III de l’Elgon, zone des bruyères, Est”.

Distribution: ?Uganda (Davenport, 1996), Kenya (highlands).

Kenya – Mount Elgon (TL). Nandi Escarpment; Mount Kenya; Aberdares (Larsen, 1991c). Katamayu Forest (Williams, unpublished).

Issoria hanningtoni imatonga (Riley, 1932)

Imatong Mountain Fritillary

Argynnis hanningtoni imatonga Riley, 1932. *Annals and Magazine of Natural History* (10) **10**: 138 (137-152).

Issoria hanningtoni imatonga (Riley, 1932). Ackery *et al.*, 1995.

Prokuekenthaliella hanningtoni imatonga (Riley, 1932) **comb. n.** Simonsen, 2006b.

Issoria hanningtoni imatonga (Riley, 1932) **comb. n.** Simonsen *et al.*, 2006.

Type data: Sudan: “Imatong Mts., South Sudan”.

Distribution: South Sudan (south – Imatong Mountains).

**Issoria baumanni* (Rebel & Rogenhofer, 1894)

Mountain Fritillary

Argynnis baumanni Rebel & Rogenhofer, 1894. *In*: Baumann, O., *Durch Massailand zur Nilquelle. Reisen und Forschungen der Massai-Expedition des deutschen Antisklaverei-Komitee in den Jahren 1891-1893*: 329 (323-341).

Issoria baumanni (Rebel & Rogenhofer, 1894). Ackery *et al.*, 1995.

Prokuekenthaliella baumanni (Rebel & Rogenhofer, 1894) **comb. n.** Simonsen, 2006b.

Issoria baumanni (Rebel & Rogenhofer, 1894) **comb. n.** Simonsen *et al.*, 2006.



Baumann's Mountain Fritillary (*Issoria baumanni*). Volcano National Park, Rwanda.

Image courtesy Jeremy Dobson.

Type data: [Burundi]: “Missosi ya Mwesi im Imbo-Urundi-Gebiet”.

Diagnosis: Wingspan – male 34 mm; female mm.

Distribution: Nigeria, Cameroon, Democratic Republic of Congo, Uganda, Rwanda, Burundi, Tanzania.

Zambia is given by Kielland (1990d) and Larsen (2005a), but not by Heath *et al.* (2002).

Habitat: Grassland, marshy areas and forest margins at high altitudes. In Tanzania subspecies *katangae* occurs at altitudes from 2 000 to 2 300 m and subspecies *orientalis* from 1 300 to 2 340 m (Kielland, 1990d).

Habits: The flight is low, rapid and direct (Kielland, 1990d). They frequently visit flowers (Larsen, 2005a).

Larval food:

Viola abyssinica Steud. ex Oliv. (Violaceae) [Van Someren, 1974: 321].

Issoria baumanni baumanni (Rebel & Rogenhofer, 1894)

Mountain Fritillary

Argynnis baumanni Rebel & Rogenhofer, 1894. *In*: Baumann, O., *Durch Massailand zur Nilquelle. Reisen und Forschungen der Massai-Expedition des deutschen Antisklaverei-Komitee in den Jahren 1891-1893*: 329 (323-341).

Issoria baumanni (Rebel & Rogenhofer, 1894). Ackery *et al.*, 1995.

Prokuekenthaliella baumanni (Rebel & Rogenhofer, 1894) **comb. n.** Simonsen, 2006b.

Issoria baumanni (Rebel & Rogenhofer, 1894) **comb. n.** Simonsen *et al.*, 2006.

Type data: [Burundi]: “Missosi ya Mwesi im Imbo-Urundi-Gebiet”.

Distribution: Burundi.

Specific localities:

Burundi – Missosi ya Mwesi (TL).

Issoria baumanni excelsior (Butler, 1896)

Summit Mountain Fritillary

Argynnis excelsior Butler, 1896. *Proceedings of the Zoological Society of London* **1895**: 729 (722-742).

Synonym of *Issoria baumanni baumanni* (Rebel & Rogenhofer, 1894). Ackery *et al.*, 1995.

Issoria baumanni excelsior (Butler, 1896) **stat. rev.** Larsen, 2005a: 463.

Prokuekenthaliella baumanni excelsior (Butler, 1896) **comb. n.** Simonsen, 2006b.

Issoria baumanni excelsior (Butler, 1896) **comb. n.** Simonsen *et al.*, 2006.

Type data: [Uganda]: “Ruwenzori”.

Distribution: Nigeria, Cameroon, Democratic Republic of Congo (east – Kivu), Uganda, Rwanda, Burundi.

Specific localities:

Nigeria – Chappel Hendu (in Gashak-Gumpti N.P.) on the Mambilla Plateau (Larsen, 2005a).

Democratic Republic of Congo – Bilati (Dufrane, 1945). Semuliki Valley; Mt. Mitumba (Ducarme, 2018).

Uganda – Ruwenzori (TL). Semuliki N.P. (Davenport & Howard, 1996).

uganda Röber, 1937 (as sp. of *Argynnis*). *Festschrift zum 60. Geburtstage von Professor Dr. Embrik Strand. Riga* **2**: 525 (524-526). Uganda.

alberici Dufrane, 1945 (as ab. of *Argynnis (Boloria) excelsior*). *Bulletin et Annales de la Société Royale Entomologique de Belgique* **81**: 99 (0-143). Democratic Republic of Congo: “Bilati”.

Issoria baumanni katangae (Neave, 1910)

Katanga Mountain Fritillary

Brenthis excelsior katangae Neave, 1910. *Proceedings of the Zoological Society of London* **1910**: 28 (2-86).

Issoria baumanni katangae (Neave, 1910). Ackery *et al.*, 1995.

Prokuekenthaliella baumanni katangae (Neave, 1910) **comb. n.** Simonsen, 2006b.

Issoria baumanni katangae (Neave, 1910) **comb. n.** Simonsen *et al.*, 2006.

Type data: [Democratic Republic of Congo]: “Belgian Post of Msofi, a few miles over the border, and some 16 miles north from Kanshashi, in N.W. Rhodesia, 30.1.07”.

Diagnosis: Compared to the nominate subspecies the ground colour of the upperside of the wings is paler and the basal blackish dusting of scales is less extensive (Kielland, 1990d).

Distribution: Democratic Republic of Congo (Shaba, Tanganyika), Tanzania (south-west).

Recorded, apparently in error, from Zambia by Ackery *et al.*, 1995 (Heath *et al.*, 2002).

Specific localities:

Democratic Republic of Congo – Msofi (TL).

Tanzania – Bizi Forest in Ufipa (Rukwa District) (Kielland, 1990d).

Issoria baumanni orientalis Kielland, 1990

Eastern Mountain Fritillary

Issoria baumanni orientalis Kielland, 1990. *Butterflies of Tanzania* 143 (363 pp.). Melbourne.

Prokuekenthaliella baumanni orientalis (Kielland, 1990) **comb. n.** Simonsen, 2006b.

Issoria baumanni orientalis Kielland, 1990 **comb. n.** Simonsen *et al.*, 2006.

Type data: Tanzania: “Mufindi, Luisenga, 1750 m., 27-III-1982, J. Kielland”. Holotype in the Natural History Museum, London.

Description:

“**Male.** Upperside ground colour orange-brown, somewhat darker than in ssp. *katangae*, almost as in ssp. *baumanni*; submarginal orange lunules of both wings considerably larger; the round, blackish postdiscal spots less strongly developed. Underside markings distinct; brown markings considerably darker than in ssp. *katangae* and *baumanni*; silver spots more shiny than in *katangae*. Length of f.w. 15-18 mm. **Female.** Greyish-yellow, darker than *katangae*; basal grey dusting extended to near anal angle; marginal orange lunules large. Underside as in the male, but brown areas slightly paler, though darker than in *katangae*. Length of f.w. 17-17.6 mm.”

Diagnosis: Upperside ground colour darker than in ssp. *katangae*; submarginal orange lunules on both wings larger; the round blackish postdiscal spots less well developed; brown markings on underside darker than ssp. *katangae* and *baumanni*; silver spots more shiny than those of ssp. *katangae* (Kielland, 1990d).

Distribution: Tanzania (southern highlands).

Specific localities:

Tanzania – Luisenga at Mufindi (TL). Njombe Highlands; Dabaga Forest; Kiransi Forest; Nyumbenitu Mountain; Luhomberu Mountain; Iboma Forest; Idoto River (Kielland, 1990d).

****Issoria smaragdifera* (Butler, 1895)** **Queen Fritillary**

Argynnis smaragdifera Butler, 1895. *Proceedings of the Zoological Society of London* **1895**: 629 (627-634).

Issoria saragdifera (Butler, 1895). Dickson & Kroon, 1978.

Issoria smaragdifera (Butler, 1895). Pringle *et al.*, 1994: 124.



Issoria smaragdifera smaragdifera. Female (Wingspan 40 mm). Left – upperside; right – underside.
Nyanga, Zimbabwe. 5 October 2012. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type data: [Malawi]: “Kasungu Mountain, Nyika, west of Lake Nyasa”.

Diagnosis: Wingspan – male 39 mm; female 43 mm. The largest of the three Afrotropical *Issoria* species, with a more pointed forewing apex; bolder black markings on the upperside of the wings; silvery spots on hindwing underside larger; a few subapical silver spots in the forewing underside (Kielland, 1990d).

Distribution: Tanzania, Malawi, Zambia, Mozambique, Zimbabwe.

Habitat: Montane grassland on the edges of montane forest. In Tanzania subspecies *reducta* is found at altitudes from 1 500 to 2 900 m (Kielland, 1990d).

Habits: Frequents open glades and the edges of montane forest, flying rather close to the ground (Van Son, 1979). Settles frequently, on low vegetation or on the ground. The flight is very rapid (Kielland, 1990d). Specimens can be found roosting on long grass stems on misty mornings (Pringle *et al.*, 1994).

Flight period: All year (Pringle *et al.*, 1994).

Larval food:

Viola abyssinica Steud. ex Oliv. (Violaceae) [Gifford, 1965: 116].

***Issoria smaragdifera smaragdifera* (Butler, 1895)** **Queen Fritillary**

Argynnis smaragdifera Butler, 1895. *Proceedings of the Zoological Society of London* **1895**: 629 (627-634).

Issoria saragdifera (Butler, 1895). Dickson & Kroon, 1978.

Issoria smaragdifera smaragdifera (Butler, 1895). Pringle *et al.*, 1994: 124.



Issoria smaragdifera smaragdifera. Female (Wingspan 40 mm). Left – upperside; right – underside.
Nyanga, Zimbabwe. 5 October 2012. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type data: [Malawi]: “Kasungu Mountain, Nyika, west of Lake Nyasa”.

Distribution: Malawi (highlands), Zambia (east), Mozambique, Zimbabwe (eastern border).

Specific localities:

Malawi – Kasungu Mountain, Nyika (TL). Mt. Mulanje (Congdon *et al.*, 2010).

Zambia – Nyika (Heath *et al.*, 2002).

Mozambique – Mt. Namuli (Congdon *et al.*, 2010).

Zimbabwe – summit of the Inyangani Mountain; Vumba Mountains; Butler North in the Chitoras (Pringle *et al.*, 1994). Nyanga (Pennington).

Issoria smaragdifera reducta Carcasson, 1961
Tanzanian Queen Fritillary

Issoria smaragdifera reducta Carcasson, 1961. *Occasional Papers. Coryndon Memorial Museum, Nairobi* 7: 10 (1-23).

Type data: [Tanzania]: “Poroto Mts, Mbeya, Tanganyika Territory”.

Distribution: Tanzania (southern highlands), ?Zambia.

Specific localities:

Tanzania – Poroto Mountains, Mbeya (TL). Mount Rungwe to Njombe; Uzungwa Range – from Mufindi to Mount Luhombero; Mangalisa Mountain in the Rubehos (Kielland, 1990d).

Zambia – Material from Mbala may belong to this subspecies (Heath *et al.*, 2002).