

LYCAENIDAE | POLYOMMATINAE | POLYOMMATINI | LAMPIDINA

Genus *Cacyreus* Butler, 1898

Bronzes

Proceedings of the Zoological Society of London **1897**: 845 (835-857).

Type-species: *Papilio lingeus* Stoll, by original designation.

= *Hyreus* Hübner, 1819. *In*: Hübner, 1816-1826. *Verzeichniss bekannter Schmettlinge*: 70 (432 + 72 pp.). Augsburg. Type-species: *Papilio lingeus* Stoll, by subsequent designation (Butler, 1898. *Proceedings of the Zoological Society of London* **1897**: 845 (835-857)). Invalid; junior homonym of *Hyreus* Stephens, 1816. Ackery *et al.*, 1995: 640 state: “As *Hyreus* Hübner originally had no type-species fixed, Butler selected one of the originally included nominal species, *Papilio lingeus* Stoll, to be the type-species of *Cacyreus*; this designation also applies to the prior but preoccupied nominal genus, *Hyreus* Hübner, [1819].

The genus *Cacyreus* belongs to the Family Lycaenidae Leach, 1815; Subfamily Polyommatae Swainson, 1827; Tribe Polyommata Swainson, 1827; Subtribe Lampidina Stradomsky, 2016. The other two genera in the Subtribe Lampidina in the Afrotropical Region are *Harpendyreus* and *Lampides*.

Cacyreus (Bronzes) is a purely Afrotropical genus containing nine species. One species (*Cacyreus marshalli*) has recently been introduced into Europe (early 1990's), where it appears to be thriving, and spreading.

Species in the genus *Cacyreus* Butler, 1898

C. lingeus

C. darius

C. marshalli

C. fracta

C. virilis

C. audeoudi

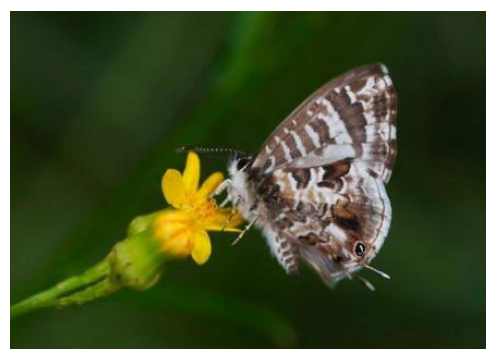
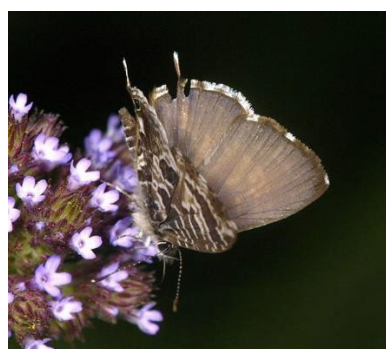
C. ethiopicus

C. dicksoni

C. niebuhri

**Cacyreus lingeus* (Stoll, [1782])

Bush Bronze (#)



Cacyreus lingeus. Right: Male. Centre: Female. Right: Male underside.
Images courtesy Steve Woodhall.

Papilio lingeus Stoll, [1782]. *In*: Stoll, [1780-2]. *Die Uitlandsche Kapellen voorkomende in de drie waerreldeelen Asia, Africa en America* 4 [part]: 176 (29-252). Amsterdam & Utrecht.

Lycaena lingeus Cramer. Trimen, 1866a.

Lycaena lingeus (Cramer, 1782). Trimen & Bowker, 1887b.

Cacyreus lingeus Cramer. Swanepoel, 1953a.

Cacyreus lingeus (Stoll, 1782). Dickson & Kroon, 1978.

Cacyreus lingeus (Stoll, 1782). Pringle *et al.*, 1994: 235.

Cacyreus lingeus Stoll, 1782. D'Abrera, 2009: 808.



Cacyreus linzeus. Male (Wingspan 25 mm). Left – upperside; right – underside.
Port Edward, KwaZulu-Natal, South Africa. 29 April 2005. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Cacyreus linzeus. Female (Wingspan 26 mm). Left – upperside; right – underside.
Royal Natal National Park, KwaZulu-Natal. 24 May 2008. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Type data: [South Africa]: “Cap de bonne Espérance”.

Distribution: Gambia, Guinea-Bissau, Guinea, Sierra Leone, Burkina Faso, Liberia, Ivory Coast, Ghana, Togo, Benin (throughout), Nigeria (south and Cross River loop), Cameroon, Equatorial Guinea (Bioko), Gabon, Angola (Gardiner, 2004), Democratic Republic of Congo, Uganda, Kenya, Tanzania, Zambia (widespread), 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), Eswatini, Lesotho. Also on Socotra Island (Yemen).

Specific localities:

Gambia – Fajara, Bijilo, Abuko, Brufut, Pirang, Farasutu, Finto Minareg, Brusubi, Marakissa, Kotu, Tujering (Jon Baker, pers. comm., May 2020).

Liberia – Wologizi (Safian *et al.*, 2020).

Ghana – Bobiri Butterfly Sanctuary (Larsen *et al.*, 2007). Boabeng-Fiema Monkey Sanctuary (Larsen *et al.*, 2009).

Benin – Lokoli (Tchiboza *et al.*, 2008). Houeyogbe Forest (Coache & Rainon, 2016). See Coache *et al.* (2017).

Nigeria – Oban Hills (Larsen, 2005a).

Cameroon – Korup (Larsen, 2005a).

Gabon – Libreville; Pongara; Lope N.P.; Bateke Plateau (Vande weghe, 2010).

Democratic Republic of Congo – Ituri Forest; Semuliki Valley; Mt Mitumba (Ducarme, 2018).

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

Kenya – Widespread; Mount Elgon (Jackson, 1937). Chyulu Hills; Teita Hills (Larsen, 1991c).

Tanzania – Throughout (Kielland, 1990d). Mount Meru (Aurivillius, 1910). Katavi National Park (Fitzherbert *et al.*, 2006).

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

Zambia – Ikelenge; Lusaka; Chalimbana; Chingola; Mufulira; Mbala (Heath *et al.*, 2002).

Mozambique – Njesi Plateau; Mt Namuli; Mt Mabu (Congdon *et al.*, 2010).

Botswana – Moremi Gorge, Tswapong Hills; 2 males (Larsen, 1991).

South Africa –

Limpopo Province – Lekgalameetse Nature Reserve (“Malta Forest”); Woodbush; Duiwelskloof; Mokeetzi; Zoutpansberg; Polokwane; Potgietersrus; Waterberg (Swanepoel, 1953). Doorndraai Dam Nature Reserve (Warren, 1990). Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015).

Mpumalanga – Barberton; Lydenburg; Graskop (Swanepoel, 1953). Buffelskloof Nature Reserve (Williams). Gauteng – Pretoria; Johannesburg (Swanepoel, 1953). Free State Province – Cyferfontein [-30.3736 25.8131] (R. Griesel, unpublished). KwaZulu-Natal – Port Shepstone; Durban; Eshowe; St. Lucia; Pietermaritzburg; Estcourt (Swanepoel, 1953). Kosi Bay Nature Reserve; Tembe Nature Reserve (Pringle & Kyle, 2002). Eastern Cape Province – Port Elizabeth; Grahamstown; East London; Umtata; Queenstown; Kokstad (Swanepoel, 1953). Western Cape Province – Cape Town; Malmesbury; Piketberg; Citrusdal; Ceres; Worcester; Swellendam; Caledon; George (Swanepoel, 1953). Jonkershoek (Williams). Northern Cape Province – Namaqualand; Augrabies (Swanepoel, 1953).

Eswatini – Stegi (Swanepoel, 1953).

Habitat: Moist savanna, usually on the banks of streams in wooded habitats. It is often found in gardens (Pringle *et al.*, 1994). Also in open areas in the forest zone and in dry forest (Larsen, 2005a). In Tanzania at altitudes from near sea-level to 2 300 m (Kielland, 1990d).

Habits: A common butterfly that usually flies quite slowly, a metre or two above the ground, in fairly dense bush, often settling on flowers, grass stems or other low vegetation (Pringle *et al.*, 1994). Males mud-puddle and both sexes often come to flowers (Larsen, 2005a).

Flight period: All year except in cooler areas where it is scarce in winter (Pringle *et al.*, 1994).

Early stages:

Jackson, 1937: 230 [Mount Elgon, Kenya].

“The larva feeds on the flowers and seeds of the food-plants. **Egg.** Very small, greenish-white, and much flattened, with a large part of the central area depressed and darkened. It is laid on the immature flower- spikes, on the calyces or among the flowers. Diameter 0.25-0.5 mm. **Larva.** Of almost any imaginable colour, green, purple, maroon, brown, etc., according to the particular lamiate on which it is feeding, and is in fact one of the most wonderful examples of procrypsis among the Lycaenidae. To give only one case: On *Coleus* [*Plectranthus*] *lactiflorus*, it is bright green with the scalloped edges of the sides, the ‘teeth’ of the dorsal ridge, and the anal segments rich bluish-purple, while the extreme points of the dorsal ‘teeth’ are white. This merges completely with the coloration of the flower-spikes. The dorsal ridge is double, the dividing ‘valley’ being broader anteriorly, collar small, and the whole very hairy. There is no sign of tubercles or gland. Length 15 mm. **Pupa.** Light brownish with minute black speckling and two black dorso-lateral stripes. It is narrow and of nearly equal width throughout. Head-case very broad and blunt, and thorax slightly ridged. The pupa is very hairy and the hair both in the larval and pupal stages seems to be a further advance in procrypsis, for the food-plants are also mostly hairy. Length 9 mm. **Parasites.** The Hymenoptera bred were three species of *Anilastus* (Ichneumonidae) and a species of *Tetrastichus* (Chalcidae).”

Clark & Dickson, 1971: 56 [as *Cacyreus lingeus lingeus*; near Port Elizabeth, Eastern Cape].

“**Egg.** 0.5 mm diam. x 0.3 mm high. Laid singly among buds. Eggs hatch after 6 days. The discarded shell is not eaten. **Larva.** 1st instar 0.75 mm, growing to 1.75 mm in 3 days; 2nd instar growing to 3 mm in 4-5 days; 3rd instar growing to 6 mm in 5-8 days; 4th instar growing to 11.5 mm in 7-11 days. The honey-gland is present in the 2nd to 4th instars. There are no tubercles. Larvae feed on the buds and flowers and they also feed on the pith of young shoots, by boring into the sides of the latter. They can extend their necks an appreciable distance into a bud or shoot. There is a considerable variation in the shades of colour. The discarded skin is not generally eaten. There is a succession of broods. **Pupa.** 8.5 mm. Secured to a leaf or twig by cremastral hooks entangled in a silken mat and by a girdle. There are colour variations to suit surroundings. Imago emerges after 10-15 days. **Parasites.** Larva killed in the 4th instar by tachinids: *Blondelia* spp. Pupa killed by tachinids: *Aplomyiella* spp.”

Larval food:

Clinopodium simensis (Benth.) Kuntze (Lamiaceae) [Jackson, 1937: 230; as *Calamintha simensis* Benth.; Kenya].

Clinopodium uhligii (Gürke) Ryding var. *uhligii* (Lamiaceae) [Jackson, 1937: 230; as *Calamintha elgonensis* Bullock; Kenya].

Geranium species (Geraniaceae) [Kielland, 1990d: 214; Larsen, 1991c: 229; requires confirmation].

Hyptis pectinata (L.) Poit. [Otto *et al.*, 2013: 72].

Lavandula angustifolia Miller [Heath *et al.*, 2002: 110].

Lavandula species (Lamiaceae) [Clark & Dickson, 1971: 56].

Leonotis leonurus (L.) R.Br. [Kroon, 1999].

Mentha species [Clark & Dickson, 1971: 56].

Mentha spicata L. [Heath *et al.*, 2002: 110].

Nepeta species (Lamiaceae) [Heath *et al.*, 2002: 110].

Pelargonium species (Geraniaceae) [Larsen, 1991c: 229; this record needs to be confirmed].

Plastostema species (Lamiaceae) [Larsen, 2005a].

Plectranthus barbatus Andrews (Lamiaceae) [Heath *et al.*, 2002: 110].

Plectranthus forskohlii (Willd.) Briq. (Lamiaceae) [Jackson, 1937: 230; as *Coleus forskohlii*; Kenya].

Plectranthus lactiflorus (Vatke) Agnew (Lamiaceae) [Jackson, 1937: 230; as *Coleus lactiflorus*; Kenya].

Salvia africana-caerulea L. (Lamiaceae) [Heath *et al.*, 2002: 110].

Salvia repens Burch. ex Benth. (Lamiaceae) [Claassens, 2005].

Salvia species [Clark & Dickson, 1971: 56].

Saturaja species [Heath *et al.*, 2002: 110].

Satureja species (Lamiaceae) [Kielland, 1990d: 214].

Syncolostemon flabellifolius (S.Moore) A.J.Paton (Lamiaceae) [Mullin, *in* Pringle *et al.*, 1994: 235; as *Hemizygia flabellifolia* S. Moore; Zimbabwe].
Tetradenia riparia (Hochst.) Codd. (Lamiaceae) [Otto *et al.*, 2013: 72].

ericus Fabricius, 1793 (as sp. of *Papilio*). *Entomologia emendata et aucta* 3 (1): 281 (488 pp.). Hafniae. [Africa]: “Habitat in India Dom.”. [False locality].

ciliaris Aurivillius, 1910 (as var. of *Cupido lingeus*). *In*: Sjöstedt, B. Y., *Wissenschaftliche Ergebnisse der Schweidischen zoologischen Expedition nach dem Kilimandjaro, dem Meru und den umgebenen Massaiesteppen Deutsch-OstAfrikas 1905-1906*. 2 (9): 9 (56 pp.). Stockholm. [Tanzania]: “Meru-Berg in Regenwalde zwischen 3000 und 3500 m”. Holotype in the Swedish Natural History Museum (images available at www2.nrm.se/en/lep_nrm/l).

****Cacyreus darius* (Mabille, 1877)** **Island Bronze**

Lycaena darius Mabille, 1877. *Bulletin de la Société Zoologique de France* 2: 216 (214-240).
Cacyreus darius Mabille, 1877. D’Abrera, 2009: 808.



Cacyreus darius. Male. Left – upperside; right – underside.
 Andasibe, Madagascar. 6 April 2018. M. Williams.
 Images M.C. Williams ex Dobson Collection.



Cacyreus darius. Female. Left – upperside; right – underside.
 Andasibe, Madagascar. 6 April 2018. M. Williams.
 Images M.C. Williams ex Dobson Collection.

Type data: [Madagascar]: “Congo”. [False locality].

Diagnosis: Indistinguishable, on facies alone, from *Cacyreus lingeus* (Davis & Barnes, 1991). Males of the two species do, however, show consistent differences in the valves (Stempffer, 1943).

General remarks: Probably introduced to Mauritius, as it was first taken here around 1900. Manders (1908) suggests that the early stages were brought in on *Coleus* (= *Plectranthus*), the larval foodplant, and planted in the Botanical Gardens at Curepipe. Vinson (1938) noted that it was scarce and during the years 1976-1980 no specimens were seen (Davis & Barnes, 1991).

Distribution: Madagascar, Mauritius, Reunion, Comoro Islands.

Specific localities:

Mauritius – Status unclear; may be extinct (Davis & Barnes, 1991). Recently found at Le Morne; Pailles; Chameral (Lawrence, 2016).

Habitat: Forest, forest margins and anthropogenic environments (Lees *et al.*, 2003).

Relevant literature:

De Freina, J. 2010. Record from Mauritius. Waltemathe, 2010. New locality records for Reunion.

****Cacyreus marshalli* Butler, 1898**
Geranium Bronze (#)



Cacyreus marshalli. Left: Male upperside. Right: Male underside.
 Images courtesy Steve Woodhall

Cacyreus marshalli Butler, 1898. *Proceedings of the Zoological Society of London* **1897**: 845 (835-857).

Cacyreus marshalli Butler. Swanepoel, 1953a.

Cacyreus marshalli Butler, 1897. Dickson & Kroon, 1978. [date of authorship erroneous]

Cacyreus marshalli Butler, 1897. Pringle *et al.*, 1994: 236. [date of authorship erroneous]

Cacyreus marshalli Butler, 1898. D'Abrera, 2009: 808.



Cacyreus marshalli. Male (Wingspan 20 mm). Left – upperside; right – underside.
 Bushman's River Mouth, Eastern Cape Province, South Africa. 12 December 2003. M. Williams.
 Images M.C. Williams ex Williams Collection.



Cacyreus marshalli. Female (Wingspan 22 mm). Left – upperside; right – underside.
 Utopia Resort, North West Province, South Africa. 2 July 2006. J. Dobson.
 Images M.C. Williams ex Dobson Collection.

Type data: [South Africa]: “Estcourt, 4000 ft; Frere, 3800 ft”.

Diagnosis: Similar to *Cacyreus fracta* but the upperside is darker brown and lacks a violaceous sheen (Pringle *et al.*, 1994).

Distribution: Angola, Zambia, Mozambique, Zimbabwe, Botswana, South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, Free State Province, KwaZulu- Natal, Eastern Cape Province, Western Cape Province, Northern Cape Province), Eswatini.

Accidentally introduced into Europe – Spain, Portugal, France, Germany, Italy, Sicily (Cernigliaro *et al.*, 2003), Switzerland (Aistleitner, 2003), Netherlands (Poot, Wijnen & Veling, 2003), Greece (Galanos, 2014), Bulgaria (Langourov & Simov, 2014). Recorded from Morocco by Franchimont (2012).

Specific localities:

Zambia – Lusaka; Mufulira. Its presence in Zambia may be due to importation of the larval food plant bearing early stages of the butterfly (Heath *et al.*, 2002).

Botswana – Tlokweng; Serowe; Molepolole; Gaborone Mall; Kasane (Larsen, 1991).

South Africa –

Limpopo Province – Warmbaths; Polokwane; Zoekmekaar; Leydsdorp; Zoutpansberg (Swanepoel, 1953).

Lekgalameetse Nature Reserve (“Malta Forest”) (Williams). Soetdoring Farm [-24.561 28.233] (A. Mayer, pers comm. 2015). Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015).

Mpumalanga – Barberton (Swanepoel, 1953). Sterkspruit Nature Reserve (Williams).

North West Province – Zeerust (Swanepoel, 1953). Utopia Resort (C. Dobson, 2006). Breednek (25 52S; 27 27E) (Williams 30 Nov. 2008).

Gauteng – Pretoria (Swanepoel, 1953). Witwatersrand Botanical Gardens (J. Dobson, unpublished checklist, 2001).

Free State Province – Ladybrand; Bloemfontein; Kroonstad (Swanepoel, 1953). Cyferfontein [-30.3736 25.8131] (R. Griesel, unpublished).

KwaZulu-Natal – Estcourt (TL). Throughout (Swanepoel, 1953). Kosi Bay Nature Reserve; Tembe Nature Reserve (Pringle & Kyle, 2002).

Eastern Cape Province – Frere (Butler, 1898). Uitenhage; Cradock; Queenstown; Umtata; Kokstad (Swanepoel, 1953). Newton Park, Port Elizabeth (Clark & Dickson, 1971).

Western Cape Province – Cape Town; Piketberg; Paarl; Worcester; Tulbagh (Swanepoel, 1953). Matjesfontein; Caledon; Swellendam; Oudtshoorn; George (Swanepoel, 1953).

Habitat: A variety of habitats, including gardens.

Habits: Has a slow, fluttering flight, usually around or in close proximity to the larval host plants. Both sexes often feed from flowers (Pringle *et al.*, 1994).

Flight period: All year in suitable localities, summer in cooler regions (Pringle *et al.*, 1994).

Early stages:

Clark & Dickson, 1952: 31.

Clark & Dickson, 1971: 60 [as *Cacyreus marshalli*; Newton Park, Port Elizabeth, Eastern Cape].

“Egg. 0.5 mm diam. x 0.3 mm high. Laid singly on or near a bud or young seeds. Eggs hatch after some 6 days. The discarded shell is not eaten.

Larva. 1st instar 1 mm, growing to 2 mm in 8 days; 2nd instar growing to 3 mm in 8 days; 3rd instar growing to 6 mm in 8 days; 4th instar growing to 13 mm in 9 days. The larvae have neither honey-gland nor tubercles. There is colour variation with extremes of yellow shades, with or without pink markings, to shades of green, with or without pink markings; also intermediate shades. When feeding on seeds, larvae are not easily seen. The ‘discards’, after a moult, are not eaten. **Pupa.** 9 mm. Secured to bits of rubbish by the cremastral hooks, which are entangled in a silken mat, and by a girdle. Pupae vary in colour – in shades of green, pale yellow or brown, with brown mottling. They are very hairy. The imago emerges after 13-19 days. **Parasites.** Larva killed by *Apanteles* sp. in the 3rd instar; and by small tachinids and small braconids in the final instar.”

Sarto & Maso, 1991.

Trautner & Hermann, 2003 [Spain].

Favilli & Manganelli, 2006.



Cacyreus marshalli. Left: Egg. Centre: Final instar larva. Right: Pupa.
Images courtesy Allison Sharp.

Larval food:

Geranium species [Clark & Dickson, 1971: 60]. *Pelargonium cucullatum* L'Hér. [Kroon, 1999]. *Pelargonium fulgidum* (L.) L'Hér. [Kroon, 1999]. *Pelargonium* species (Geraniaceae) [Clark & Dickson, 1971: 60].

****Cacyreus fracta* (Grünberg, 1911)**
Water Bronze (#)



Cacyreus fracta. Male underside.
 Image courtesy Steve Woodhall

Papilio palemon Stoll, [1782]. In: Stoll, [1780-2]. *Die Uitlandsche Kapellen voorkomende in de drie waerelddeelen Asia, Africa en America* 4 [part]: 209 (29-252). Amsteldam & Utrecht.

Lycaena palemon Cramer. Trimen, 1866a.

Lycaena palemon (Cramer, 1782). Trimen & Bowker, 1887b.

Cupido palemon var *fracta* Grünberg, 1911. *Wissenschaftliche Ergebnisse der Deutschen Zentral-Afrika Expedition 1907- 1908*. 3 (17): 545 (506-560), 4 pls. Leipzig.

Cacyreus palemon Cramer. Swanepoel, 1953a.

Cacyreus palemon (Stoll, 1782). Dickson & Kroon, 1978.

Cacyreus palemon (Stoll, 1782). Pringle *et al.*, 1994: 235.

Cacyreus tespis Herbst, 1804. Koçak, 1996. [invalid replacement name].

Cacyreus fracta Grünberg, 1911. G. Lamas, pers. comm., 2007.

Cacyreus tespis Herbst, 1804. D'Abbrera, 2009: 808.



Cacyreus fracta fracta. Male (Wingspan 21 mm). Left – upperside; right – underside.
 Golden Gate Highlands National Park, Free State Province, South Africa. 13 January 2001. M. Williams.
 Images M.C. Williams ex Williams Collection.



Cacyreus fracta fracta. Female (Wingspan 22 mm). Left – upperside; right – underside.
 Golden Gate Highlands National Park, Free State Province, South Africa. 10 January 2001. M. Williams.
 Images M.C. Williams ex Williams Collection.

Type data: [Uganda]: “Nörd. v. Albert-Edward-See, Ruwnzori, Westseite ... 2000 m”.

Distribution: Ethiopia, Uganda, Rwanda, Burundi, Kenya, Tanzania, Democratic Republic of Congo, Malawi, Zambia, Mozambique, Zimbabwe, South Africa, Eswatini, Lesotho.

Habitat: Wet areas, marshes and stream banks in grassland. Also in forest margins and clearings. In southern Africa it occurs from sea-level to the highest mountains (Pringle *et al.*, 1994) but in Kenya it is rarely found at altitudes below 2 000 m (Larsen, 1991c). In Tanzania at altitudes from 1 500 to 2 700 m (Kielland, 1990d).

Habits: The flight is relatively slow and close to the ground. They perch on low vegetation, often basking with the wings held two-thirds open. Both sexes regularly visit flowers.

Flight period: All year but only summer in cold regions.

Early stages:

Clark & Dickson, 1952: 30.

Clark & Dickson, 1971: 57 [as *Cacyreus palemon*; Newton Park, Port Elizabeth, Eastern Cape].

“**Egg.** 0.5 mm diam. x 0.3 mm high. Laid singly on buds and young seeds. Eggs hatch after 6 days. The discarded shell is not eaten. **Larva.** 1st instar 1 mm, growing to 2 mm in 8 days; 2nd instar growing to 3 mm in 8 days; 3rd instar growing to 6 mm in 8 days; 4th instar growing to 12.5-13.5 mm in 9 days. The larvae have neither honey-gland nor tubercles. There is a big variation in colour to match the surroundings: shades of green, pink, red and, in the earlier instars, yellow. Larvae burrow into seeds with, generally, only the hindmost segments visible. They are not easily detected. There is a succession of broods, through the summer months. The discarded skin is not eaten after moulting. **Pupa.** 9-10 mm. Secured to rubbish or twigs by the cremastral hooks, which are entangled in a mat, and by a girdle. The colour varies from dull yellowish white to shades of green or brown, but all the colours are relieved by darker markings. Pupae are always very hairy. The imago emerges after some 13-20 days. **Parasites.** Larva killed by an *Apanteles* sp. in the 3rd instar, and by a tachinid, *Blondelia* sp., in the final instar; also *Aplomyiella laeviventris*. Pupa killed by the tachinid *Aplomyiella laeviventris*.”

Larval food:

Geranium species (Geraniaceae) [Clark & Dickson, 1971: 57].

Pelargonium species (Geraniaceae) (probably) [Trimen, *in* Trimen & Bowker, 1887, Vol. 2: 68].

Pelargonium species (Geraniaceae) [Clark & Dickson, 1971: 57].

Cacyreus fracta fracta (Grünberg, 1911)

Water Bronze (#)

Papilio palemon Stoll, 1782. *In*: Stoll, 1780-2. *Die Uitlandsche Kapellen voorkomende in de drie waerelddeelen Asia, Africa en America* 4 [part]: 209 (29-252). Amsteldam & Utrecht.



Cacyreus fracta fracta. Male (Wingspan 21 mm). Left – upperside; right – underside.
Golden Gate Highlands National Park, Free State Province, South Africa. 13 January 2001. M. Williams.
Images M.C. Williams ex Williams Collection.



Cacyreus fracta fracta. Female (Wingspan 22 mm). Left – upperside; right – underside.
Golden Gate Highlands National Park, Free State Province, South Africa. 10 January 2001. M. Williams.
Images M.C. Williams ex Williams Collection.

Type data: [Uganda]: “Nörd. v. Albert-Edward-Seg, Ruwnzori, Westseite ... 2000 m”.

Diagnosis: In Lesotho and at Clarens in the Free State Province a large proportion of individuals are un-tailed (f. *ecaadata*) (Pringle *et al.*, 1994).

Distribution: Uganda, Rwanda, Burundi, Kenya, Tanzania, Democratic Republic of Congo (Kivu, Maniema), Malawi, Zambia, Mozambique, Zimbabwe (eastern border), South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, Free State Province, KwaZulu-Natal, Eastern Cape Province, Western Cape Province, Northern Cape Province), Eswatini, Lesotho.

Specific localities:

Uganda – North of Lake Albert-Edward (TL).

Kenya – Localities above 2 000 m; Teita Hills (Larsen, 1991c).

Tanzania – Most high mountains except those in Kigoma and Mpanda (Kielland, 1990d).

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

Malawi – Mt Mulanje; Mt Zomba (Congdon *et al.*, 2010). Nyika N.P. (J. Timberlake, pers. comm., 2019).

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

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

South Africa –

Limpopo Province – Haenertsburg (Swanepoel, 1953).

Mpumalanga – Volksrust; Barberton; Lydenburg (Swanepoel, 1953). Sterkspruit Nature Reserve (Williams).

North West Province – Utopia Resort (C. Dobson, 2006).

Gauteng – Johannesburg (Swanepoel, 1953).

Free State Province – Throughout eastern areas (Swanepoel, 1953). Golden Gate Highlands National Park (Williams). Platberg, Harrismith (Dobson, Williams & Schutte, unpublished, 2010).

KwaZulu-Natal – Pietermaritzburg; Balgowan; Vryheid; Durban (Swanepoel, 1953).

Eastern Cape Province – Port Elizabeth; Grahamstown; Cradock; King William's Town; Queenstown; Molteno; Zuurberg; Dordrecht; Kokstad (Swanepoel, 1953).

Western Cape Province – Cape Town; Paarl; Worcester; Swellendam; George; Knysna (Swanepoel, 1953).

Eswatini – Western mountain areas; Malolotja Nature Reserve (www.sntc.org.sz).

Lesotho – Throughout (Swanepoel, 1953). Mokhotlong (Stempffer, 1950). Mahlasela Pass.

palemon Stoll, 1782 (as sp. of *Papilio*). *In*: Stoll, 1780-2. *Die Uitlandsche Kapellen voorkomende in de drie waerrelddeelen Asia, Africa en America* 4 [part]: 209 (29-252). Amsteldam & Utrecht. [South Africa]: “Cap de bonne Espérance. Invalid, nec *Papilio palaemon* Pallas, 1771; Koçak, 1996 (*Centre for Entomological Studies Miscellaneous Papers* 27-28: 13 (10-16)).

tespis Herbst, 1804 (as sp. of *Papilio*). *Natursystem aller bekannten in- und ausländischen Insekten. Der Schmetterlinge* 11: 270 (392 pp.). Berlin. Type locality: [South Africa]: “der Kap”. Koçak (1996) replaced the name *palemon* Stoll, 1782 with *tespis* Herbst, 1804. However, G. Lamas (pers. comm., 2007) notes that *tespis* is a misidentification (and misspelling) of *Papilio thespis* Linnaeus, 1764. The name *fracta* Grünberg, 1911 is the next available one.

ecaadata Stempffer, 1950 (as f. of *Cacyreus palemon*). *Revue Française d'Entomologie* 17: 144 (135- 149). [Lesotho]: “Mokhotlong, 7.000 pieds (Basutoland)”.

Cacyreus fracta ghimirra Talbot, 1935

Ethiopian Water Bronze

Cacyreus palemon ghimirra Talbot, 1935. *Entomologist's Monthly Magazine* 71: 148 (69-78, 115-127, 147-153).

Cacyreus tespis ghimirra Talbot, 1935. Koçak, 1996.

Cacyreus fracta ghimirra Talbot, 1935. G. Lamas, pers. comm., 2007.

Cacyreus tespis ghimirra Talbot, 1935. D'Abreera, 2009: 808.

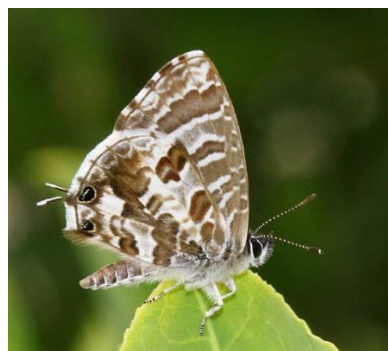
Type data: [Ethiopia]: “Shoa Ghimirra province”.

Distribution: Ethiopia (highlands).

Specific localities:

Ethiopia – Shoa, Ghimirra Province (TL).

****Cacyreus virilis* Aurivillius, 1924**
Mocker Bronze (#)



Cacyreus virilis. Left: Male upperside. Right: Male underside.
 Images courtesy Steve Woodhall (left) and Raimund Schutte (right).

Cacyreus virilis Stempffer, 1936. *Bulletin de la Société Entomologique de France* **41**: 283 (283-284).

Cacyreus virilis Aurivillius. Swanepoel, 1953a.

Cacyreus virilis (Aurivillius, 1925). Dickson & Kroon, 1978.

Cacyreus virilis (Aurivillius, 1924). Pringle *et al.*, 1994: 235.

Cacyreus virilis Aurivillius, 1924. D'Abrera, 2009: 808.



Cacyreus virilis. Male (Wingspan 25 mm). Left – upperside; right – underside.
 Utopia Resort, North West Province, South Africa. 15 August 2010. J. Dobson.
 Images M.C. Williams ex Dobson Collection.



Cacyreus virilis. Female (Wingspan 26 mm). Left – upperside; right – underside.
 Utopia Resort, North West Province, South Africa. 28 August 2010. J. Dobson.
 Images M.C. Williams ex Dobson Collection.

Type data: [Zimbabwe]: “Mashonaland”; [Mozambique]: “Makulane”; South Africa: “Transvaal, Johannesburg”; [Tanzania]: “Tanganyika: Arusha District, Ruvubu River”; [Kenya]: “Afrique Orientale anglaise: Nandi”; [Angola]: “Upper Cubango; Cunene Watershed, 5500 pieds”.

Diagnosis: Difficult to separate from *Cacyreus linzeus*. In *virilis* the brown costal mark on the hindwing underside, nearest the base of the wing, is angled inwards towards the abdomen, whereas in *linzeus* this mark is angled downwards, towards the tornus (Pringle *et al.*, 1994).

Distribution: Senegal, Guinea, Benin (throughout), Nigeria, Angola, Democratic Republic of Congo (Kabinda, Lualaba), Uganda, Burundi, Kenya, Tanzania, Malawi, Zambia (widespread), Mozambique, Zimbabwe,

Botswana, South Africa (Limpopo Province, Mpumalanga, North West Province, Gauteng, KwaZulu-Natal, Eastern Cape Province, Western Cape Province), Eswatini. Also in Saudi Arabia (south-west) – Yemen, Oman.

Specific localities:

Guinea – Fouta Djallon (Larsen, 2005a).

Benin – Houeyogbe Forest (Coache & Rainon, 2016). See Coache *et al.* (2017).

Nigeria – Jos Plateau (Larsen, 1983: 164).

Angola – Upper Cubango; Cunene Watershed.

Kenya – Widespread (Larsen, 1991c). Nandi (Stempffer, 1936).

Tanzania – Widespread (Kielland, 1990d). Ruvubu River (Stempffer, 1936).

Malawi – Mt Zomba (Congdon *et al.*, 2010). Nyika N.P. (J. Timberlake, pers. comm., 2019).

Zambia – Lusaka; Chalimbana; Mufulira; Mkushi; Nyika (Heath *et al.*, 2002).

Mozambique – Makulane (Stempffer, 1936). Mt Inago; Mt Namuli; Mt Mabu (Congdon *et al.*, 2010). Mt Mecula [-12.0772 37.6297]; Mt Yao [-12.4432 36.5114] (Congdon & Bayliss, 2013).

Botswana – Mogoditshane; Kazungula; 25 km west of Kanye; Serowe (Larsen, 1991).

South Africa –

Limpopo Province – Doorndraai Dam Nature Reserve (Warren, 1990). Lekgalameetse Nature Reserve (“Malta Forest”); Makapans Cave; 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). Sterkspruit Nature Reserve (Williams).

North West Province – Utopia Resort (C. Dobson, 2006).

Gauteng – Johannesburg (Stempffer, 1936).

KwaZulu-Natal – Shongweni (Clark & Dickson, 1971).

Western Cape Province – Strandfontein (A. Duke; record requires confirmation).

Eswatini – Malolotja Nature Reserve (www.sntc.org.sz).

Habitat: Savanna. Also on forest margins. In Tanzania at altitudes from near sea-level to 2 200 m. Often in more arid habitat than that harbouring *Cacyreus lingeus* (Kielland, 1990d).

Habits: Both sexes come to flowers and males mud-puddle. Individuals are often encountered flying for long distances, in a straight line (Larsen, 1991c). Often found in localized colonies in areas with short grass (Larsen, 2005a).

Flight period: All year but scarce in winter in cooler areas (Pringle *et al.*, 1994).

Early stages:

Clark & Dickson, 1971: 57 [as *Cacyreus virilis*; Shongweni, KwaZulu-Natal].

“**Egg.** 0.4-0.5 mm diam. x 0.25-0.3 mm high, pure white with a delicate, somewhat irregular tracery of fine ribbing, arranged in broken, reversed involute curves, about 16 in each direction, emanating from the micropyle and continuing diagonally down the sides, where the intersections are punctuated by small moles. Eggs are laid on buds or young flowers and hatch after some 6 days. The discarded shell is not eaten. **Larva.** 1st instar 0.7 mm, growing to 1.5 mm in 5 days; 2nd instar growing to 2.5 mm in 5 days; 3rd instar growing to 6 mm in 6 days; 4th instar growing to 11-12 mm in 9 days. The honey-gland is present in the 3rd and 4th instars, but there are no tubercles. There is marked colour variation. The larva was depicted in colour only up to the end of the 2nd instar. A pencil drawing of the 3rd instar (dorsal view), which is not included in the plate, shows the larva at this stage to be very similar, superficially, to the 3rd instar larva of *C. lingeus*. **Pupa.** 8.5 mm. Secured to a leaf or twig by the cremastral hooks, which are entangled in a silken mat, and by a girdle. There are colour variations as in *C. lingeus*. The imago emerges after 10-15 days. **Parasites.** Larva killed by species of Tachinidae; *Blondelia* and *Aplomyiella* species have been noted. The maggot emerges from the side of the 4th instar larva or from the pupa, falls to the ground and pupates in rubbish after 24-36 hours.”

Larval food:

Calamintha species [Clark & Dickson, 1971: 57].

Lavandula species [Clark & Dickson, 1971: 57].

Nepeta species (Lamiaceae) [Heath *et al.*, 2002: 110].

Plectranthus species (Lamiaceae) [Clark & Dickson, 1971: 57; as *Coleus* species].

Salvia species (Lamiaceae) [Clark & Dickson, 1971: 57].

Satureja species (Lamiaceae) [Heath *et al.*, 2002: 110].

Tetradenia riparia (Hochst.) Codd. (Lamiaceae) [Otto *et al.*, 2013: 72].

virilis Aurivillius, 1924. *In*: Seitz, 1908-25 (as ab. of *Cupido lingeus*). *Die Gross-Schmetterlinge der Erde*, Stuttgart (2) 13 *Die Afrikanischen Tagfalter*: 463 (614 pp.). No locality.

****Cacyreus audeoudi* Stempffer, 1936**

Bright Bronze

Cacyreus audeoudi Stempffer, 1936. *Bulletin de la Société Entomologique de France* **41**: 284 (283-284).

Cacyreus audeoudi Stempffer, 1936. D'Abrera, 2009: 808.

Type data: [Kenya]: “Mont Elgon”.

Distribution: Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Benin (south, central), Nigeria (south and Cross River loop), Cameroon, Congo, Democratic Republic of Congo (Mongala, Uele, Ituri, Kivu, Tshopo, Equateur, Sankuru, Lualaba), Uganda, Kenya (west), Tanzania (west, north and east).

Specific localities:

Ghana – near Sunyane (Kühne, 1999). Atewa Range (Larsen, 2005a).

Benin – Houeyogbe Forest (Coache & Rainon, 2016). see Coache *et al.* (2017).

Nigeria – Okwangwo (Larsen, 2005a).

Democratic Republic of Congo – Ituri Forest; Semuliki Valley; Central Forest Block; Mt Mitumba; Mt Blue (Ducarme, 2018).

Uganda – Semuliki N.P. (H. Selb, unpublished, 2016).

Kenya – Mount Elgon (TL). Kitale; Nandi (Larsen, 1991c).

Tanzania – Kigoma; Ntakatta Forest; Luntampa; Mahale Mountain; Mount Oldeani; Nou Forest in Mbulu; Nguru Mountains; Kanga Mountains (Kielland, 1990d).

Larval food:

Similar to *Cacyreus lingeus* (see Fontaine, 1988).

****Cacyreus ethiopicus* Tite, 1961**

Abyssinian Bronze

Cacyreus ethiopicus Tite, 1961. *Entomologist* **94**: 112 (112-113).

Cacyreus ethiopicus Tite, 1961. D'Abrera, 2009: 808.

Type data: [Ethiopia]: “25 km north of Quiha”.

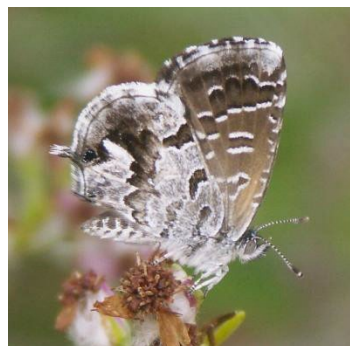
Distribution: Ethiopia.

Specific localities:

Ethiopia – 25 km north of Quiha (TL).

****Cacyreus dicksoni* Pennington, 1962**

Karoo Bronze (#)



Cacyreus dicksoni. Left: Male upperside. Right: Male underside.

Images courtesy Christopher Willis

Cacyreus dicksoni Pennington, 1962. *Journal of the Entomological Society of Southern Africa* **25**: 283 (266-286).

Cacyreus dicksoni Pennington, 1962. Dickson & Kroon, 1978.

Cacyreus dicksoni Pennington, 1962. Pringle *et al.*, 1994: 236.

Cacyreus dicksoni Pennington, 1963. D'Abrera, 2009: 808. [date of authorship erroneous]



Cacyreus dicksoni. Male (Wingspan 19 mm). Left – upperside; right – underside.
Ladismith, Western Cape Province, South Africa. 20 March 1995. J. Greyling.
Images M.C. Williams ex Greyling Collection.



Cacyreus dicksoni. Female (Wingspan 23 mm). Left – upperside; right – underside.
Ladismith, Western Cape Province, South Africa. 20 March 1995. J. Greyling.
Images M.C. Williams ex Greyling Collection.

Type data: South Africa: “Citrusdal Pass (Clanwilliam Distr., C.P.)”.

Diagnosis: Similar to *Cacyreus marshalli* but the upperside of the wings has a metallic sheen and the wing margins are darker (Pringle *et al.*, 1994).

Distribution: Namibia (south), South Africa (Western Cape Province, Northern Cape Province).

Specific localities:

Namibia – Prinzen Bay (D. and R. Plowes).

South Africa –

Western Cape Province – Citrusdal Pass (TL). Karbonaatjes Kraal, Hex River Pass (Clark & Dickson, 1971). Near the Hex River Pass; Cape Peninsula (Pringle *et al.*, 1994).

Northern Cape Province – near Port Nolloth; Wallekraal (Pringle *et al.*, 1994). Near Steinkopf (Williams & Woodhall, 1989). Hantam National Botanical Garden (C. Willis, pers comm., 2008).

Habitat: Fynbos and succulent karoo at altitudes from near sea-level to 1 500 m (Pringle *et al.*, 1994).

Flight period: Spring, summer and autumn (Pringle *et al.*, 1994).

Early stages:

Clark & Dickson, 1971: 61 [as *Cacyreus dicksoni*; Karbonaatjes Kraal, Hex River Pass, Western Cape].

“**Egg.** 0.55 mm diam. x 0.35 mm high. Laid singly on flower-buds. Pure white with two sets of reversed ribbing, 16 per set, radiating from the micropyle. The intersections are capped with moles and the spaces between the ribs are troughed. Eggs hatch after some 9 days. **Larva.** 1st instar 1 mm, growing to 2 mm in 5 days; 2nd instar growing to 3 mm in 6 days; 3rd instar growing to 5.5-6 mm in 6 days; 4th instar growing to 10-11 mm in 9 days. There are neither honey-gland nor tubercles. On hatching the young larva burrows into the side of the bud on which the egg was laid and feeds on the forming petals. Later it feeds on the developing seeds as well. The colour varies and matches well the surroundings. The larva moults where it is feeding. **Pupa.** Male 7.5 mm, female 8.5 mm. Secured to a stalk or pieces of rubbish on the ground by the cremastral hooks and a girdle. Of a pale dull yellow colour which gradually becomes more dull, with dark grey blotches. There is a pinkish red line on the dorsum of the abdomen. On that of the thorax it is broken, and dark grey. Emergence takes place after 9 days.”

Larval food:

Geranium species (Geraniaceae) [Clark & Dickson, 1971: 61].

Pelargonium crithmifolium Sm. (Geraniaceae) [Williams & Woodhall, 1989: 2; as *Pelargonium crismophyllum*; Steinkopf, Namaqualand, Northern Cape Province] (*Met.* 1 (24): 2-3).

Pelargonium species (Geraniaceae) [Clark & Dickson, 1971: 61].

****Cacyreus niebuhri* Larsen, 1982**

Yemen Bronze

Cacyreus niebuhri Larsen, 1982. *Biologiske Skrifter* **23** (3): 43 (76 pp.).
Cacyreus niebuhri Larsen, 1982. D'Abreu, 2009: 808.

Type data: Yemen: "Ibb Province, Jabal Bada'an, 2400 m".

Distribution: Yemen.

Known only from the vicinity of the type locality.

Specific localities:

Yemen – Jabal Bada'an, Ibb Province (TL).