



Thirteen moth species (Lepidoptera, Erebidae, Noctuidae) newly recorded in South Africa, with comments on their distribution

Sylvain Delabye^{‡,§}, Fernando P Gaona^{‡,§}, Pavel Potocký[§], Llewellyn C Foxcroft^{¶,¶}, Pavla Halamová[‡], Martin Hejda[#], Sandra MacFadyen[¤], Klára Pyšková^{‡,#}, Ondřej Sedláček[‡], Markéta Staňková[¤], David Storch^{‡,¤}, Petr Pyšek^{‡,#}, Robert Tropek^{‡,§}

‡ Department of Ecology, Faculty of Science, Charles University, Prague, Czech Republic

§ Institute of Entomology, Biology Centre, Czech Academy of Sciences, České Budějovice, Czech Republic

| Scientific Services, South African National Parks, Skukuza, South Africa

¶ Centre for Invasion Biology, Department of Botany and Zoology, Stellenbosch University, Stellenbosch, South Africa

Czech Academy of Sciences, Institute of Botany, Department of Invasion Ecology, Pruhonice, Czech Republic

¤ Department of Mathematical Sciences, Stellenbosch University, Stellenbosch, South Africa

¤ Department of Zoology, Faculty of Science, Charles University, Prague, Czech Republic

» Center for Theoretical Study, Charles University, Prague, Czech Republic

Corresponding author: Sylvain Delabye (sylvain.delabye@gmail.com), Robert Tropek (robert.tropék@gmail.com)

Academic editor: Shinichi Nakahara

Received: 30 Jun 2022 | Accepted: 31 Jul 2022 | Published: 25 Aug 2022

Citation: Delabye S, Gaona FP, Potocký P, Foxcroft LC, Halamová P, Hejda M, MacFadyen S, Pyšková K, Sedláček O, Staňková M, Storch D, Pyšek P, Tropek R (2022) Thirteen moth species (Lepidoptera, Erebidae, Noctuidae) newly recorded in South Africa, with comments on their distribution. Biodiversity Data Journal 10: e89729. <https://doi.org/10.3897/BDJ.10.e89729>

Abstract

Background

Thanks to the high diversity of ecosystems and habitats, South Africa harbours tremendous diversity of insects. The Kruger National Park, due to its position close to the border between two biogeographic regions and high heterogeneity of environmental conditions, represents an insufficiently studied hotspot of lepidopteran diversity. During our ecological research in the Kruger National Park, we collected abundant moth material, including several interesting faunistic records reported in this study.

New information

We reported 13 species of moths which had not yet been recorded in South Africa. In many cases, our records represented an important extension of the species' known distribution, including two species (*Ozarba gaedei* and *O. persinua*) whose distribution ranges extended into the Zambezian biogeographic region. Such findings confirmed the poor regional knowledge of lepidopteran diversity.

Keywords

Afrotropics, faunistic report, Heterocera, Kruger National Park, light trapping, savannahs, Zambezian region

Introduction

South Africa offers an extraordinarily heterogeneous land area, hosting nine terrestrial biomes, including deserts, rich Mediterranean vegetation and various savannahs and forests (Mucina and Rutherford 2006). Located in the country's north-eastern corner, the Kruger National Park (KNP) represents one of the largest African protected areas and one of the oldest national parks in the continent (Joubert 1986). It covers unusually heterogeneous savannah habitats from subtropical and tropical zones in its southern and northern parts, respectively. The 11 described land systems (defined by a combination of climate, geological conditions, altitude and vegetation character; Venter et al. 2003) belong to the Zambezian region, although some of them closely border with the Southern African region (Linder et al. 2012).

KNP hosts tremendous diversity of many taxonomic groups, including insects (Braack and Kryger 2003, Mawdsley et al. 2016, D'Souza et al. 2021). Even though KNP belongs to one of the South African areas with the greatest amount of moth distribution records (Mecenero et al. 2020), the knowledge on the Lepidoptera diversity still remains strongly insufficient. Our recent sampling of moths in a range of savannah habitats of KNP yielded more than 60,000 captured individuals. Amongst these, we identified 13 moth species recorded for the first time in South Africa. Here, we present the sampled material for these species, with remarks on their distribution.

Materials and methods

All reported moth specimens were collected in the Kruger National Park, South Africa from November 2018 until March 2020, as a part of the MOSAIK project (Monitoring Savannah Biodiversity in the Kruger National Park) focused on exploring biodiversity patterns of plants and animals in various environmental settings of the savannah ecosystem (Pyšek et al. 2020, Hejda et al. 2022). Our sampling was performed at 60 plots at four main land systems (Skukuza, Satara, Phalaborwa and Letaba) between the Crocodile River in the

south up to Punda Maria in the north (see Hejda et al. (2022) for the location of all plots). The plots were set up to cover three habitats with different levels of water availability and large herbivore disturbances (perennial rivers, seasonal rivers and crests with no availability of water; Fig. 1). Each plot was sampled during early (November) and late (February–March) wet seasons.

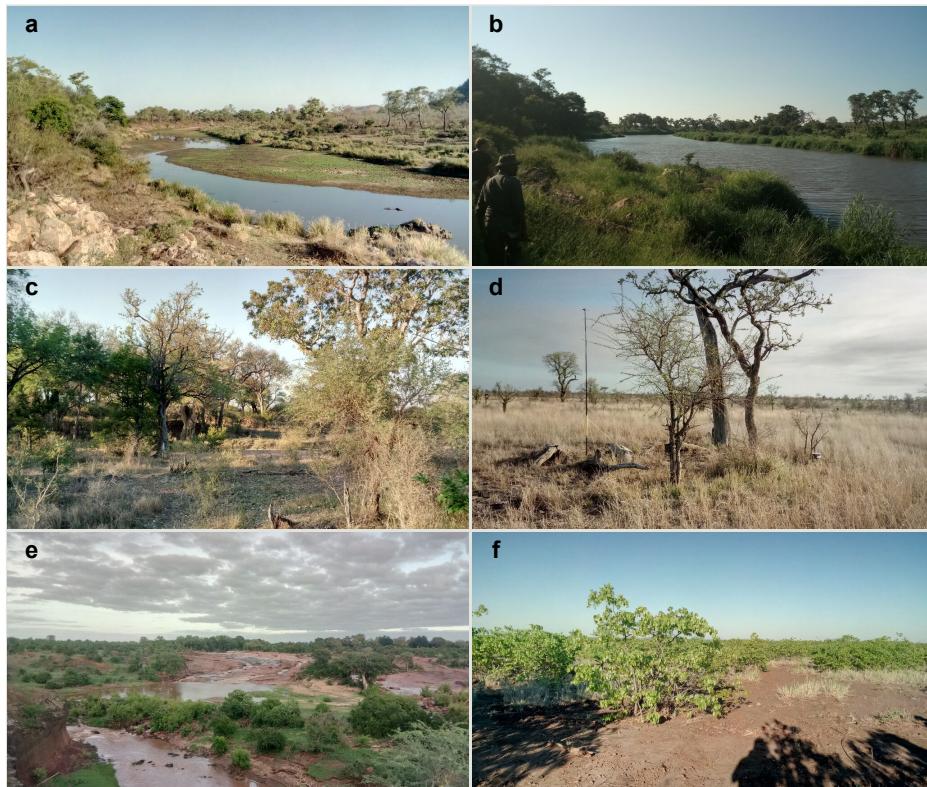


Figure 1.

Examples of sampled savannah habitats:

- a:** Mixed woodland savannah and thorn thickets along the Crocodile River, west of Crocodile Bridge, during the dry season. [doi](#)
- b:** Mixed woodland savannah and thorn thickets along the Crocodile River, west of Crocodile Bridge, during the wet season. [doi](#)
- c:** Mixed thornveld and woodland savannah along a seasonal river in the Olifants rugged veld, east of Satara. [doi](#)
- d:** Open savannah grassland on a basalt crest, southeast of Satara. [doi](#)
- e:** Mopani dominated open savannah along the Shingwedzi River, Red Rocks, west of the Shingwedzi Camp. [doi](#)
- f:** Mopani dominated mosaic of woodland and open savannah on a crest, close to the Shingwedzi tourist Camp. [doi](#)

Moths were attracted and collected by portable light traps consisting of a two-sided strip of 48 LEDs emitting UV light and powered by 12V batteries (Delabaye et al. 2020). Attracted

specimens were anaesthetised by ammonium hydrogen carbonate inside the traps. In the collected moth material, we focused on twelve moth families: Erebidae, Eutellidae, Noctuidae, Nolidae, Notodontidae, Eupterotidae, Lasiocampidae, Saturniidae, Sphingidae, Geometridae, Thyrididae and Limacodidae. We identified all specimens of the focal families, based mostly on external morphology and/or genitalia dissections, using various available literature and online resources and the exhaustive Lepidoptera collection in the Nature Education Centre, Jagiellonian University, Kraków, Poland. The identification of all species reported here as the new country records were always confirmed by genitalia dissection, the reference literature being referred in comments to particular species.

The known distribution of individual species followed a combination of Hacker (2016), Hacker (2019) and the AfroMoths database (De Prins and De Prins 2022), with cross-checking various other available resources, including the Global Biodiversity Information Facility (GBIF; Robertson et al. 2014), the LepiMAP project (LepiMAP; Edge and Mecenero 2015), the iNaturalist database (iNaturalist; Nugent 2018) and the Barcoding of Life Data System (BOLD; Ratnasingham and Hebert 2007). The nomenclature of higher taxonomic units of Erebidae followed Zahiri et al. (2011). The voucher material was shared between collections of the Nature Education Centre of Jagiellonian University in Kraków, Poland and the Biology Centre, Czech Academy of Sciences, České Budějovice, Czechia.

Taxon treatments

Eublemma accedens aethiopica Hacker, 2019

Nomenclature

Erebidae, Boletobiinae

Materials

- a. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S114, 3 km N of Historical Site 20; verbatimElevation: 366 m; decimalLatitude: -25.070953; decimalLongitude: 31.59927; eventDate: 02/27/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 11; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- b. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitshaka river, 4 km E of N'waswitshaka waterhole; verbatimElevation: 287 m; decimalLatitude: -25.026541; decimalLongitude: 31.54934; eventDate: 02/27/2019; habitat: Seasonal river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillows; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

- c. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, road H4-1, 7.5 km E fo Skukuza camp; verbatimElevation: 265 m; decimalLatitude: -24.973743; decimalLongitude: 31.661434; eventDate: 02/27/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- d. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S26; verbatimElevation: 367 m; decimalLatitude: -25.208377; decimalLongitude: 31.652466; eventDate: 02/24/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 7; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- e. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, Lookout on S79 road; verbatimElevation: 200 m; decimalLatitude: -25.064099; decimalLongitude: 31.825735; eventDate: 02/24/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 86; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- f. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, road S114, 5 km N of Malelane gate; verbatimElevation: 300 m; decimalLatitude: -25.437282; decimalLongitude: 31.528655; eventDate: 02/25/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- g. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Jock waterhole; verbatimElevation: 381 m; decimalLatitude: -25.301012; decimalLongitude: 31.549768; eventDate: 02/25/2019; habitat: Crest; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- h. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Biyamiti river, road S23, 1 km N of Wehr dam; verbatimElevation: 290 m; decimalLatitude: -25.266171; decimalLongitude: 31.619022; eventDate: 11/07/2018; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabье;

- datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- i. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S36, 5 km NE of Hlanguleni picnic site; verbatimElevation: 333 m; decimalLatitude: -24.681967; decimalLongitude: 31.666664; eventDate: 03/03/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - j. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Gayisenga waterhole; verbatimElevation: 256 m; decimalLatitude: -25.270645; decimalLongitude: 31.756561; eventDate: 03/06/2019; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - k. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Ripape river, S33 and S36 crossroads; verbatimElevation: 325 m; decimalLatitude: -24.757101; decimalLongitude: 31.698319; eventDate: 03/03/2019; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 5; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - l. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'watimhiri river, road S21, 1 km NE of Nhlotini waterhole; verbatimElevation: 283 m; decimalLatitude: -25.116682; decimalLongitude: 31.696896; eventDate: 02/24/2019; habitat: Seasonal river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillows; individualCount: 14; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - m. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road H5; verbatimElevation: 307 m; decimalLatitude: -25.20729; decimalLongitude: 31.77072; eventDate: 03/06/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - n. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 329 m; decimalLatitude: -24.600415; decimalLongitude: 31.687177; eventDate: 03/03/2019; habitat: Perennial river; mixed thorn and Marula woodland savanna on granite:

- Bushwillow, Acacia and Marula; individualCount: 8; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- o. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road H10, 1 km SE of Nkumbe View Site; verbatimElevation: 407 m; decimalLatitude: -24.861873; decimalLongitude: 31.897264; eventDate: 02/26/2019; habitat: Crest; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- p. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Orpen dam; verbatimElevation: 253 m; decimalLatitude: -24.793037; decimalLongitude: 31.899386; eventDate: 02/26/2019; habitat: Perennial river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- q. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Silolweni river, road H1-2, 1 km S of Silolweni dam; verbatimElevation: 284 m; decimalLatitude: -24.820865; decimalLongitude: 31.844014; eventDate: 02/26/2019; habitat: Seasonal river; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- r. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sweni Bird Hide; verbatimElevation: 187 m; decimalLatitude: -24.474196; decimalLongitude: 31.972276; eventDate: 03/02/2019; habitat: Perennial river; Oliphants rugged veld: mixed thornveld and woodland savanna; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- s. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'wanetzi river, road S100, 2 km W of Nsasane waterhole; verbatimElevation: 228 m; decimalLatitude: -24.381219; decimalLongitude: 31.886093; eventDate: 03/02/2019; habitat: Seasonal river; Oliphants rugged veld: mixed thornveld and woodland savanna; individualCount: 9; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- t. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road H1-3, 500m W of Marheya waterhole; verbatimElevation: 333 m; decimalLatitude: -24.565596; decimalLongitude: 31.77476; eventDate: 03/01/2019; habitat: Crest; wooded savanna on shale: Bushwillow, Leadwood, Marula, Knobthorn trees, and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye;

- datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- u. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, Crocodile Bridge; verbatimElevation: 183 m; decimalLatitude: -25.363011; decimalLongitude: 31.891832; eventDate: 03/07/2019; habitat: Perennial river; open savanna grassland on basalt; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - v. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S36, 7 km S of Hamiltons Tented camp; verbatimElevation: 242 m; decimalLatitude: -25.283896; decimalLongitude: 31.926798; eventDate: 03/07/2019; habitat: Crest; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - w. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Ngwenyeni river, 3 km NE of Nandzana waterhole; verbatimElevation: 335 m; decimalLatitude: -23.817311; decimalLongitude: 31.296011; eventDate: 02/19/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 3; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA (x1); ZMJU (x2); basisOfRecord: PreservedSpecimen
 - x. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 5 km E of road H14; verbatimElevation: 278 m; decimalLatitude: -23.757038; decimalLongitude: 31.392944; eventDate: 02/19/2020; habitat: Perennial river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 5; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - y. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S133, 6 km S of Jumbo waterhole; verbatimElevation: 365 m; decimalLatitude: -23.844016; decimalLongitude: 31.365157; eventDate: 02/19/2020; habitat: Crest; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: CB (x2); ZMJU (x1); basisOfRecord: PreservedSpecimen
 - z. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nhlanganini dam; verbatimElevation: 327 m; decimalLatitude: -23.933918; decimalLongitude: 31.494673; eventDate: 02/21/2020; habitat: Perennial river; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 1; lifeStage: adult; identifiedBy:

- Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- aa. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H9, close to Misumani river; verbatimElevation: 379 m; decimalLatitude: -23.930505; decimalLongitude: 31.398723; eventDate: 02/21/2020; habitat: Crest; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 5; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ab. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.47949; eventDate: 02/21/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ac. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.47949; eventDate: 12/02/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ad. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Stapelkop dam; verbatimElevation: 362 m; decimalLatitude: -23.594645; decimalLongitude: 31.254819; eventDate: 11/30/2019; habitat: Perennial river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ae. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, 2 km SE of Frazerus waterhole; verbatimElevation: 352 m; decimalLatitude: -23.495737; decimalLongitude: 31.325834; eventDate: 02/28/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 4; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- af. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-6, 1 km SW of Olifantsbad pan; verbatimElevation: 426 m; decimalLatitude: -23.335829; decimalLongitude: 31.32542; eventDate: 02/24/2020; habitat: Crest; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; dateIdentified: 2022;

- type: PhysicalObject; institutionCode: CB (x1); ZMJJU (x1); basisOfRecord: PreservedSpecimen
- ag. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Redrocks waterhole; verbatimElevation: 328 m; decimalLatitude: -23.172717; decimalLongitude: 31.299895; eventDate: 02/24/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 3; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ah. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Shisha West waterhole; verbatimElevation: 363 m; decimalLatitude: -22.8274; decimalLongitude: 31.216057; eventDate: 02/25/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ai. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, management track at Babalala; verbatimElevation: 357 m; decimalLatitude: -22.898804; decimalLongitude: 31.284004; eventDate: 02/25/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: CB (x1); ZMJJU (x1); basisOfRecord: PreservedSpecimen
- aj. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S56, Mpophongo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 02/25/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- ak. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Timbavati river, road S39, 6 km N of Roodewal camp; verbatimElevation: 249 m; decimalLatitude: -24.10563; decimalLongitude: 31.660381; eventDate: 02/17/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 4; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- al. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, S90 (Old Main Road), 5 km SE of Balule camp; verbatimElevation: 288 m; decimalLatitude: -24.085694; decimalLongitude: 31.780033; eventDate: 02/17/2020; habitat: Crest; Oliphants rugged veld: mixed thornveld and woodland savanna; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

- am. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Makhadzi waterhole; verbatimElevation: 285 m; decimalLatitude: -23.697166; decimalLongitude: 31.617761; eventDate: 12/01/2019; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- an. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-5, 11 km S of Letaba camp; verbatimElevation: 301 m; decimalLatitude: -23.930371; decimalLongitude: 31.600825; eventDate: 02/20/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ao. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 10 km E of Letaba camp; verbatimElevation: 217 m; decimalLatitude: -23.844905; decimalLongitude: 31.641514; eventDate: 02/20/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ap. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Makhadzi waterhole; verbatimElevation: 285 m; decimalLatitude: -23.697166; decimalLongitude: 31.617761; eventDate: 02/20/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- aq. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Middlevlei waterhole; verbatimElevation: 297 m; decimalLatitude: -23.68666; decimalLongitude: 31.546334; eventDate: 02/18/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- ar. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, road S48, 1 km W of Klein Nshawu waterhole; verbatimElevation: 315 m; decimalLatitude: -23.625623; decimalLongitude: 31.470533; eventDate: 02/18/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA (x1); ZMJJU (x1); basisOfRecord: PreservedSpecimen

- as. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkulumbeni dam; verbatimElevation: 297 m; decimalLatitude: -23.008383; decimalLongitude: 31.371634; eventDate: 02/27/2020; habitat: Open savanna grassland with stunted mopane; individualCount: 3; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- at. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tinyarhini waterhole; verbatimElevation: 280 m; decimalLatitude: -23.151872; decimalLongitude: 31.475738; eventDate: 02/27/2020; habitat: Open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJU; basisOfRecord: PreservedSpecimen
- au. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nyawutsi waterhole; verbatimElevation: 288 m; decimalLatitude: -23.294739; decimalLongitude: 31.529902; eventDate: 02/26/2020; habitat: Seasonal river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 3; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA (x1); ZMJU (x2); basisOfRecord: PreservedSpecimen
- av. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S50, 2 km MW of Shibavantse lookout; verbatimElevation: 364 m; decimalLatitude: -23.400426; decimalLongitude: 31.531024; eventDate: 02/26/2020; habitat: Crest; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 2; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJU; basisOfRecord: PreservedSpecimen
- aw. scientificName: *Eublemma accedens aethiopica* (Hacker, 2019); genus: *Eublemma*; specificEpithet: *accedens aethiopica*; scientificNameAuthorship: Hacker, 2019; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Shingwedzi river, Historical Site 50; verbatimElevation: 266 m; decimalLatitude: -23.22038; decimalLongitude: 31.552017; eventDate: 02/26/2020; habitat: Perennial river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Fernando P. Gaona, Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJU; basisOfRecord: PreservedSpecimen

Description

The detailed diagnosis made by Hacker (2019) enabled identification of this species.

Distribution

We report this species for the first time in South Africa. This widespread species' distribution was previously known to range from West Africa to south-eastern Asia, the Pacific Islands and northern Australia. The African subspecies *E. a. aethiopica* was

already known from the Guinean (Nigeria, Guinea, Burkina Faso), Congolian (Democratic Republic of the Congo), Somalian (Ethiopia, Kenya) and Zambeziyan (Tanzania) biogeographical regions and from Madagascar (De Prins and De Prins 2022). Hacker (2019) suggested that only *Eublemma caffrorum* (Wallengern, 1860) occurs in southern Africa. However, genitalia examination of our specimens clearly revealed that both species co-occur in KNP. Both species are barely morphologically distinguishable, which could have explained that *E. accedens* was overlooked in southern Africa. Thus, our record extended the southern border of the species' known distribution range in the continent by over 1,000 km (Fig. 2). Nevertheless, we suppose it could have been overlooked because it is distinguishable only by genitalia dissection (Hacker 2019).

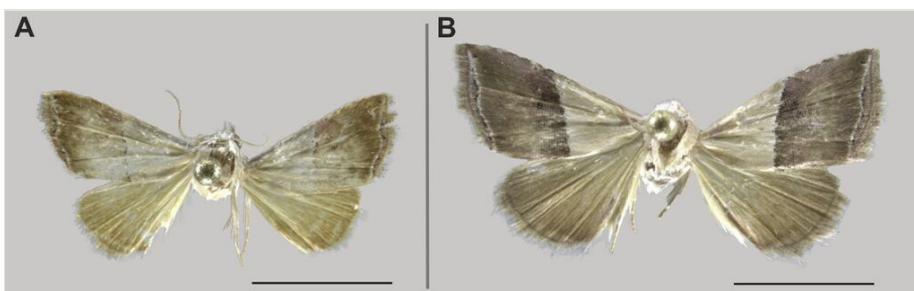


Figure 2. [doi](#)

Eublemma accedens aethiopica Hacker, 2019, South Africa, Kruger National Park; **A** male; **B** female. The scale represents 5 mm.

Eublemma savour Berio, 1950

Nomenclature

Erebidae, Boletobiinae

Materials

- a. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road H1-6, 1 km SW of Olifantsbad pan; verbatimElevation: 426 m; decimalLatitude: -23.335829; decimalLongitude: 31.325420; eventDate: 24/02/2020; habitat: Crest; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H9, close to Misumanzi river; verbatimElevation: 379 m; decimalLatitude: -23.930505; decimalLongitude: 31.398723; eventDate: 02/12/2019; habitat: Crest; mixed woodland savanna with sweet grazing; Knobthorn and Marula; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

- c. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 21/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- d. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 6 km N of Letaba camp; verbatimElevation: 245 m; decimalLatitude: -23.811079; decimalLongitude: 31.580949; eventDate: 18/02/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- e. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-5, 11 km S of Letaba camp; verbatimElevation: 301 m; decimalLatitude: -23.930371; decimalLongitude: 31.600825; eventDate: 20/02/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- f. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 10 km E of Letaba camp; verbatimElevation: 217 m; decimalLatitude: -23.844905; decimalLongitude: 31.641514; eventDate: 20/02/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- g. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, Crocodile Bridge; verbatimElevation: 183 m; decimalLatitude: -25.363011; decimalLongitude: 31.891832; eventDate: 07/03/2019; habitat: Perennial river; open savanna grassland on basalt; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- h. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Mnondozi river, pan 1 km S of Hlwehlwe; verbatimElevation: 188 m; decimalLatitude: -25.067375; decimalLongitude: 31.973211; eventDate: 05/03/2019; habitat: Seasonal river; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- i. scientificName: *Eublemma savour* Berio, 1950; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Vurhami river, road H4-2; verbatimElevation: 219 m; decimalLatitude: -25.246385; decimalLongitude: 31.847472; eventDate: 07/03/2019; habitat: Season river; wooded savanna on shale: Bushwillow, Leadwood, Marula and Knobthorn trees, and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2019).

Distribution

We report this species for the first time in South Africa. It was already known from several countries in the Guinean (Burkina Faso, Nigeria), Somalian (Sudan, Ethiopia, Eritrea and Kenya), Zambezian and Southern African biogeographical regions, including Zimbabwe bordering with South Africa (Hacker 2019). Its occurrence in KNP is, therefore, not surprising (Fig. 3).

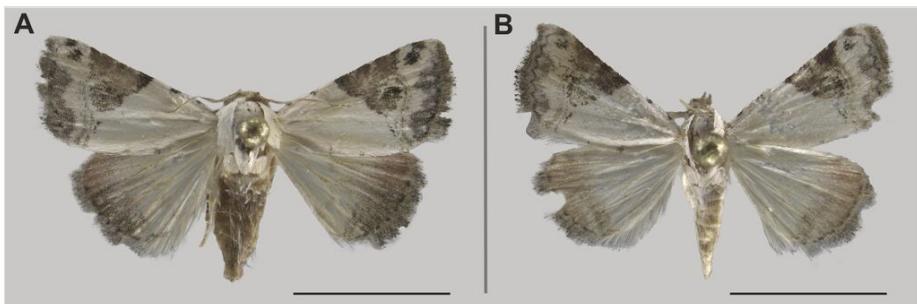


Figure 3. [doi](#)

Eublemma savour Berio, 1950, South Africa, Kruger National Park; **A** male; **B** female. The scale represents 5 mm.

Beriodesma determinata (Wallengren, 1863)

Nomenclature

Erebidae, Erebinae

Materials

- a. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, road S48, 1 km W of Klein Nshawu waterhole; verbatimElevation: 315 m; decimalLatitude: -23.625623; decimalLongitude: 31.470533; eventDate: 18/02/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 2; sex: 1 male, 1 female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-5, 11 km S of Letaba camp; verbatimElevation: 301 m; decimalLatitude: -23.930371; decimalLongitude: 31.600825; eventDate: 20/02/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

- c. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road S50, 2 km MW of Shibavantse lookout; verbatimElevation: 364 m; decimalLatitude: -23.400426; decimalLongitude: 31.531024; eventDate: 26/02/2020; habitat: Crest; Lebombo - low, arid rhyolite hills; Acacia and thorn thickets; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- d. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 5 km E of Road H14; verbatimElevation: 278 m; decimalLatitude: -23.757038; decimalLongitude: 31.392944; eventDate: 19/02/2020; habitat: Perennial river; mopani dominated woodland on granite; Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- e. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'wanetzi river, road S100, 2 km W of Nsasane waterhole; verbatimElevation: 228 m; decimalLatitude: -24.381219; decimalLongitude: 31.886093; eventDate: 02/03/2019; habitat: Seasonal river; Olifants rugged veld: mixed thornveld and woodland savanna; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- f. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Silolweni river, road H1-2, 1 km S of Silolweni dam; verbatimElevation: 284 m; decimalLatitude: -24.820865; decimalLongitude: 31.844014; eventDate: 26/02/2019; habitat: Seasonal river; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- g. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Vurhami river, road H4-2; verbatimElevation: 219 m; decimalLatitude: -25.246385; decimalLongitude: 31.847472; eventDate: 07/03/2019; habitat: Season river; wooded savanna on shale; Bushwillow, Leadwood, Marula and Knobthorn trees, and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- h. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 329 m; decimalLatitude: -24.600415; decimalLongitude: 31.687177; eventDate: 03/03/2019; habitat: Perennial river; mixed thorn and Marula woodland on granite; Bushwillow, Acacia and Marula; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- i. scientificName: *Beriodesma determinata* (Wallengren, 1863); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, 2 km S of N'wanghandze waterhole; verbatimElevation: 152 m; decimalLatitude: -25.158984; decimalLongitude: 31.998265; eventDate: 05/03/2019; habitat: Perennial river; Lebombo - low, arid rhyolite hills; Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen

Description

The identification was mainly based on Hacker (2016) and on photographs in De Prins and De Prins (2022).

Distribution

We report this species for the first time in South Africa. The known distribution of this species already included the Zambezian (Tanzania and Zimbabwe), Somalian (Kenya) and Southern African (Namibia) biogeographic regions (Hacker 2016, De Prins and De Prins 2022). The extension of its known distribution to KNP is not surprising (Fig. 4).

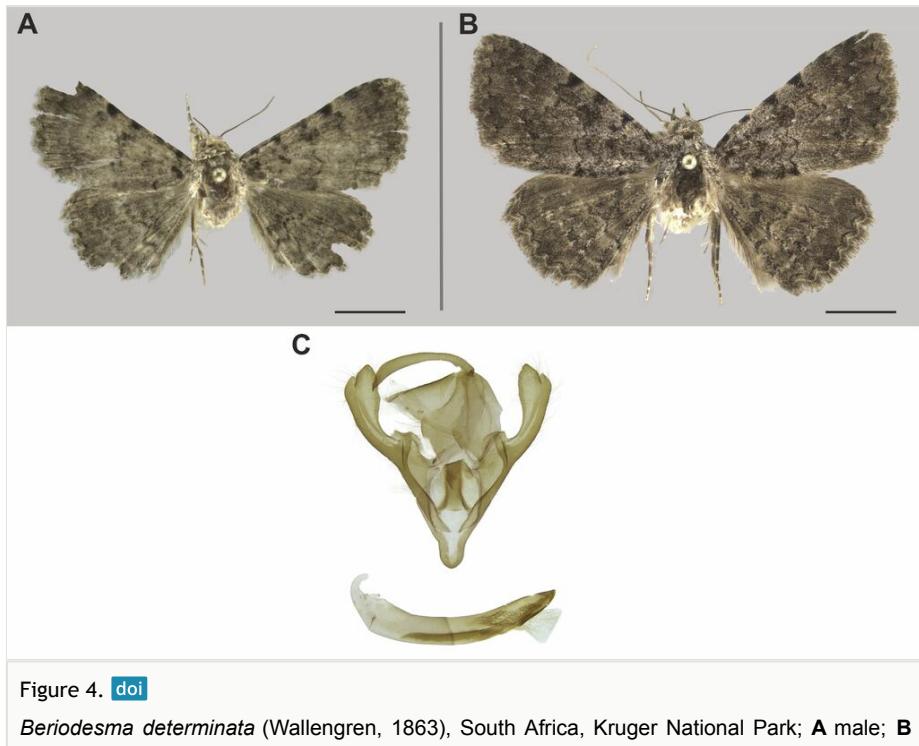


Figure 4. [doi](#)

Beriodesma determinata (Wallengren, 1863), South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Heteropalpia exarata (Mabille, 1890)

Nomenclature

Erebidae, Erebinae

Materials

- a. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, 1 km NW of Balule camp;

- verbatimElevation: 269 m; decimalLatitude: -24.053562; decimalLongitude: 31.722598; eventDate: 20/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S56, Mphongolo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 25/02/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
 - c. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Road H1-3, 500m W of Marheya waterhole; verbatimElevation: 333 m; decimalLatitude: -24.565596; decimalLongitude: 31.774760; eventDate: 01/03/2019; habitat: Crest; wooded savanna on shale: Bushwillow, Leadwood, Marula, Knobthorn trees, and thorn thickets; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
 - d. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, road S114, 5 km N of Malelane gate; verbatimElevation: 300 m; decimalLatitude: -25.437282; decimalLongitude: 31.528655; eventDate: 25/02/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
 - e. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S114, 3 km N of Historical Site 20; verbatimElevation: 366 m; decimalLatitude: -25.070953; decimalLongitude: 31.599270; eventDate: 27/02/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
 - f. scientificName: *Heteropalpia exarata* (Mabille, 1890); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, Lookout on S79 road; verbatimElevation: 200 m; decimalLatitude: -25.064099; decimalLongitude: 31.825735; eventDate: 24/02/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

Description

The identification was mainly based on Hacker (2016) and on photographs in De Prins and De Prins (2022).

Distribution

We report this species for the first time in South Africa. This widespread species was already reported from the Sahel-Saharan (Mauritania), Guinean (Burkina Faso, Nigeria), Sudanian (Chad, Sudan), Somalian (Kenya, Ethiopia, Eritrea, Somalia), Zambezian and Southern African regions, including Zimbabwe bordering with South Africa (Hacker 2016, De Prins and De Prins 2022) (Fig. 5).

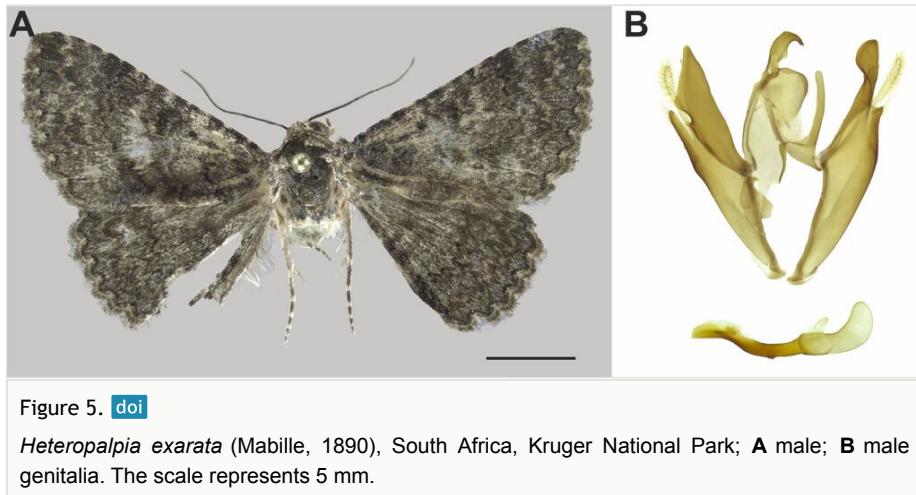


Figure 5. [doi](#)

Heteropalpia exarata (Mabille, 1890), South Africa, Kruger National Park; **A** male; **B** male genitalia. The scale represents 5 mm.

Ozarba atrisigna (Hampson, 1910)

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, 2 km S of N'wanghandze waterhole; verbatimElevation: 152 m; decimalLatitude: -25.158984; decimalLongitude: 31.998265; eventDate: 05/03/2019; habitat: Perennial river; Lebombo - low, arid rhyolite hills; Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 5 km E of Road H14; verbatimElevation: 278 m; decimalLatitude: -23.757038; decimalLongitude: 31.392944; eventDate: 19/02/2020; habitat: Perennial river; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S133, 6 km S of Jumbo waterhole;

- verbatimElevation: 365 m; decimalLatitude: -23.844016; decimalLongitude: 31.365157; eventDate: 19/02/2020; habitat: Crest; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Mnondozi river, pan 1 km S of Hlwehlwe; verbatimElevation: 188 m; decimalLatitude: -25.067375; decimalLongitude: 31.973211; eventDate: 05/03/2019; habitat: Seasonal river; open savanna grassland on basalt; individualCount: 5; sex: 2 males, 3 females; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- e. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Vurhami river, road H4-2; verbatimElevation: 219 m; decimalLatitude: -25.246385; decimalLongitude: 31.847472; eventDate: 07/03/2019; habitat: Seasonal river; wooded savanna on shale: Bushwillow, Leadwood, Marula and Knobthorn trees, and thorn thickets; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- f. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 21/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- g. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sweni Bird Hide; verbatimElevation: 187 m; decimalLatitude: -24.474196; decimalLongitude: 31.972276; eventDate: 02/03/2019; habitat: Perennial river; rugged veld: mixed thronveld and woodland savanna; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- h. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Gayisenga waterhole; verbatimElevation: 256 m; decimalLatitude: -25.270645; decimalLongitude: 31.756561; eventDate: 06/03/2019; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- i. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 02/12/2019; habitat: Seasonal river; mopani dominated woodlandsavanna on granite: Acacia, Bushwillow and Mopane; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- j. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, road H4-1, 7.5 km E fo Skukuza camp; verbatimElevation: 265 m; decimalLatitude: -24.973743; decimalLongitude: 31.661434; eventDate: 27/02/2019; habitat: Perennial river; mixed woodland savanna

- and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- k. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, 2 km S of N'wanghandze waterhole; verbatimElevation: 152 m; decimalLatitude: -25.158984; decimalLongitude: 31.998265; eventDate: 09/11/2018; habitat: Perennial river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- l. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Road S122, 4 km E of Hillside waterhole; verbatimElevation: 281 m; decimalLatitude: -24.973976; decimalLongitude: 31.928260; eventDate: 05/03/2019; habitat: Crest; open savanna grassland on basalt; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- m. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S36, 5 km NE of Hlanguleni picnic site; verbatimElevation: 333 m; decimalLatitude: -24.681967; decimalLongitude: 31.666664; eventDate: 03/03/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- n. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Shingwedzi river, Historical Site 50; verbatimElevation: 266 m; decimalLatitude: -23.220380; decimalLongitude: 31.552017; eventDate: 26/02/2020; habitat: Perennial river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- o. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 329 m; decimalLatitude: -24.600415; decimalLongitude: 31.687177; eventDate: 03/03/2019; habitat: Perennial river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- p. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Stapelkop dam; verbatimElevation: 362 m; decimalLatitude: -23.594645; decimalLongitude: 31.254819; eventDate: 30/11/2019; habitat: Perennial river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- q. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nhlanganini dam; verbatimElevation: 327 m; decimalLatitude: -23.933918; decimalLongitude: 31.494673; eventDate: 21/02/2020; habitat: Perennial river; mixed woodland savanna with sweet grazing: Knobthorn and

- Marula; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- r. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'wanetzi river, road S100, 2 km W of Nsasane waterhole; verbatimElevation: 228 m; decimalLatitude: -24.381219; decimalLongitude: 31.886093; eventDate: 02/03/2019; habitat: Seasonal river; rugged veld: mixed thornveld and woodland savanna; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - s. scientificName: *Ozarba atrisigna* (Hampson, 1910); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-5, 11 km S of Letaba camp; verbatimElevation: 301 m; decimalLatitude: -23.930371; decimalLongitude: 31.600825; eventDate: 20/02/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. The species was already known from the Zambezian (Tanzania) and Southern African (Namibia) biogeographic regions (Mey 2011, Hacker 2016). Nevertheless, our records substantially extended its known distribution (Fig. 6).



Figure 6. [doi](#)

Ozarba atrisigna (Hampson, 1910), male genitalia, South Africa, Kruger National Park.

***Ozarba berioi* Hacker, 2016**

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba berioi* Hacker, 2016; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, management track at Babalala; verbatimElevation: 357 m; decimalLatitude: -22.898804; decimalLongitude: 31.284004; eventDate: 25/02/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba berioi* Hacker, 2016; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nyawutsi waterhole; verbatimElevation: 288 m; decimalLatitude: -23.294739; decimalLongitude: 31.529902; eventDate: 26/02/2020; habitat: Seasonal river; Lebombo - low, arid rhyolite hills; Acacia and thorn thickets; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba berioi* Hacker, 2016; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, road H1-5, 11 km S of Letaba camp; verbatimElevation: 301 m; decimalLatitude: -23.930371; decimalLongitude: 31.600825; eventDate: 20/02/2020; habitat: Crest; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba berioi* Hacker, 2016; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkokhodzi river, road H1-6; verbatimElevation: 358 m; decimalLatitude: -23.239622; decimalLongitude: 31.312995; eventDate: 26/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. So far, this species has been known only from East Africa: the Somalian region (Ethiopia and Kenya) and the Zambezian region (Tanzania; Hacker 2016, De Prins and De Prins 2022). Therefore, our record extended its known distribution range for over 1,000 km southwards (Fig. 7).

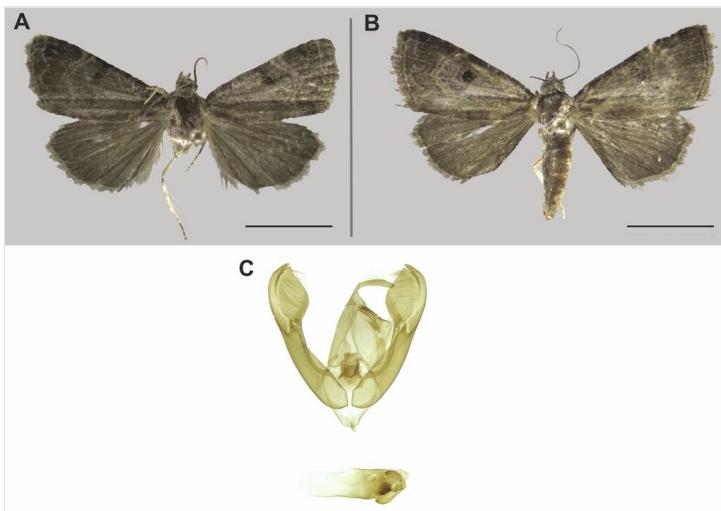


Figure 7. [doi](#)

Ozarba berioi Hacker, 2016, South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Ozarba bicolora (Bethune-Baker, 1911)

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba bicolora* (Bethune-Baker, 1911); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S56, Mphongolo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 25/02/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba bicolora* (Bethune-Baker, 1911); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Shisha West waterhole; verbatimElevation: 363 m; decimalLatitude: -22.827400; decimalLongitude: 31.216057; eventDate: 25/02/2020; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. This species was known only from Eastern Africa: the Somalian (Ethiopia and Kenya), Shaba (Uganda) and Zambezian (Tanzania) biogeographical regions (Hacker 2016, De Prins and De Prins 2022). Therefore, our record extended its known distribution for over 1,000 km southwards (Fig. 8).

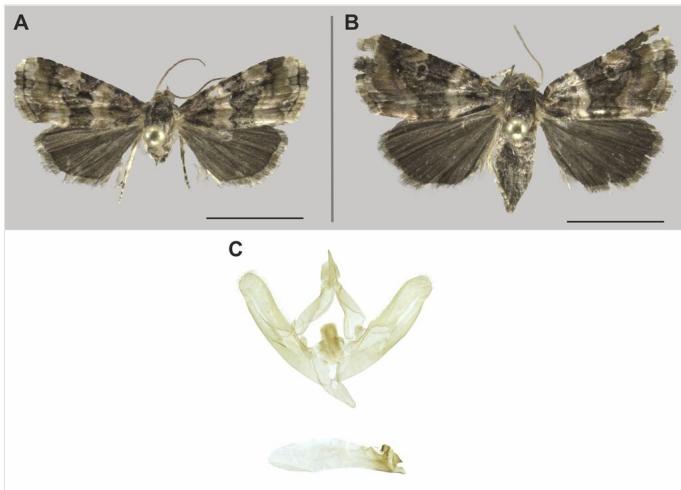


Figure 8. [doi](#)

Ozarba bicolora (Bethune-Baker, 1911), South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Ozarba exoplaga Berio, 1940

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba exoplaga* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Redrocks waterhole; verbatimElevation: 328 m; decimalLatitude: -23.172717; decimalLongitude: 31.299895; eventDate: 24/02/2020; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJU; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba exoplaga* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'wanetzi river, road S100, 2 km W of Nsasane waterhole; verbatimElevation: 228 m; decimalLatitude: -24.381219; decimalLongitude: 31.886093; eventDate: 14/11/2018; habitat: Seasonal river; rugged veld: mixed thornveld and woodland savanna; individualCount: 1; sex: male; lifeStage:

- adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba exoplaga* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, 2 km SE of Frazerus waterhole; verbatimElevation: 352 m; decimalLatitude: -23.495737; decimalLongitude: 31.325834; eventDate: 28/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 3; sex: males; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - d. scientificName: *Ozarba exoplaga* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 329 m; decimalLatitude: -24.600415; decimalLongitude: 31.687177; eventDate: 16/11/2018; habitat: Perennial river; mixed thorn and Marula woodland savanna on granite; Bushwillow, Acacia and Marula; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
 - e. scientificName: *Ozarba exoplaga* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Road H1-3, 500m W of Marheya waterhole; verbatimElevation: 333 m; decimalLatitude: -24.565596; decimalLongitude: 31.774760; eventDate: 01/03/2019; habitat: Crest; wooded savanna on shale; Bushwillow, Leadwood, Marula, Knobthorn trees, and thorn thickets; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

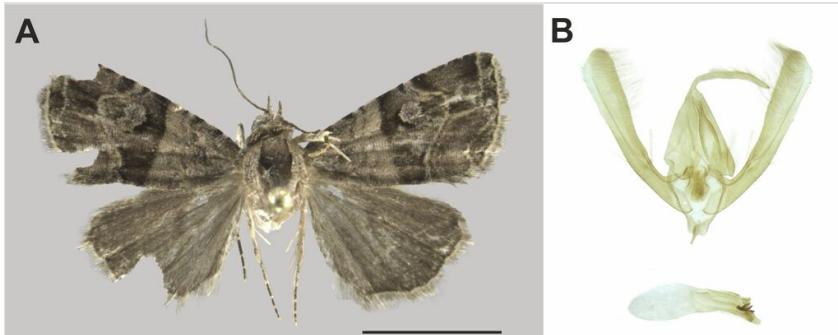


Figure 9. [doi](#)

Ozarba exoplaga Berio, 1940, South Africa, Kruger National Park; **A** male; **B** male genitalia. The scale represents 5 mm.

Distribution

We report this species for the first time in South Africa. It was known from several countries in equatorial Africa (including Tanzania in the Zambezian biogeographic

region) and Madagascar (Hacker 2016, De Prins and De Prins 2022). Therefore, the reported distribution in KNP extended the species' known distribution on the continent for over 1,000 km southwards (Fig. 9).

***Ozarba gaedei* Berio, 1940**

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nyawutsi waterhole; verbatimElevation: 288 m; decimalLatitude: -23.294739; decimalLongitude: 31.529902; eventDate: 26/02/2020; habitat: Seasonal river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 329 m; decimalLatitude: -24.600415; decimalLongitude: 31.687177; eventDate: 03/03/2019; habitat: Perennial river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkokhodzi river, road H1-6; verbatimElevation: 358 m; decimalLatitude: -23.239622; decimalLongitude: 31.312995; eventDate: 24/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 2; sex: males; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tinyarhini waterhole; verbatimElevation: 280 m; decimalLatitude: -23.151872; decimalLongitude: 31.475738; eventDate: 28/11/2019; habitat: Open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- e. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, road S25, 11 km W of Crocodile Bridge camp; verbatimElevation: 195 m; decimalLatitude: -25.333097; decimalLongitude: 31.814744; eventDate: 11/11/2018; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- f. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S133, 6 km S of Jumbo waterhole; verbatimElevation: 365 m; decimalLatitude: -23.844016; decimalLongitude: 31.365157;

- eventDate: 19/02/2020; habitat: Crest; mixed woodland savanna with sweet grazing; Knobthorn and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- g. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, Crocodile Bridge; verbatimElevation: 183 m; decimalLatitude: -25.363011; decimalLongitude: 31.891832; eventDate: 07/03/2019; habitat: Perennial river; open savanna grassland on basalt; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- h. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S125, 1 km NW of Mhisanamond waterhole; verbatimElevation: 325 m; decimalLatitude: -24.757101; decimalLongitude: 31.698319; eventDate: 03/03/2019; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- i. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitschaka river, 4 km E of N'waswitschaka waterhole; verbatimElevation: 287 m; decimalLatitude: -25.026541; decimalLongitude: 31.549340; eventDate: 27/02/2019; habitat: Seasonal river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillows; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- j. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S56, Mphongolo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 29/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- k. scientificName: *Ozarba gaedei* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 21/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. Previously, it was considered as endemic to Namibia (Hacker 2016, De Prins and De Prins 2022). Our records extended its distribution range for almost 2,000 km eastwards, into the Zambezian biogeographical region (Fig. 10).



Figure 10. [doi](#)

Ozarba gaedei Berio, 1940, South Africa, Kruger National Park; **A** male; **B** male genitalia. The scale represents 5 mm.

Ozarba hemileuca Wiltshire, 1982

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 10 km E of Letaba camp; verbatimElevation: 217 m; decimalLatitude: -23.844905; decimalLongitude: 31.641514; eventDate: 01/12/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkokhodzi river, road H1-6; verbatimElevation: 358 m; decimalLatitude: -23.239622; decimalLongitude: 31.312995; eventDate: 24/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Shingwedzi river, Historical Site 50; verbatimElevation: 266 m; decimalLatitude: -23.220380; decimalLongitude: 31.552017; eventDate: 26/02/2020; habitat: Perennial river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, 1 km NW of Balule camp; verbatimElevation: 269 m; decimalLatitude: -24.053562; decimalLongitude: 31.722598; eventDate: 20/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye;

- datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- e. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'wanetzi river, road S100, 2 km W of Nsasane waterhole; verbatimElevation: 228 m; decimalLatitude: -24.381219; decimalLongitude: 31.886093; eventDate: 02/03/2019; habitat: Seasonal river; rugged veld: mixed thornveld and woodland savanna; individualCount: 2; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- f. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 02/12/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen
- g. scientificName: *Ozarba hemileuca* Wiltshire, 1982; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 21/02/2020; habitat: Seasonal river; mopani dominated woodlandsavanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: ZMJJU; basisOfRecord: PreservedSpecimen

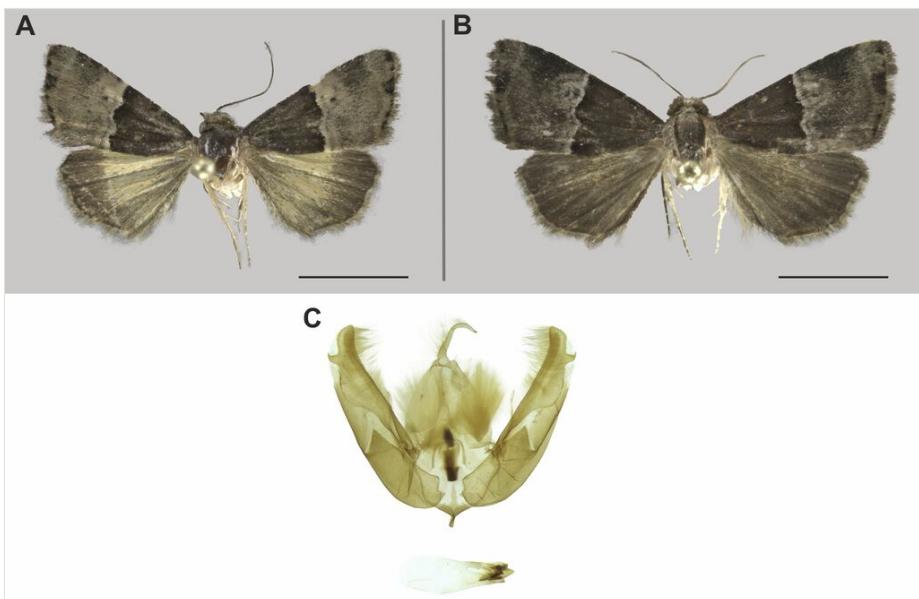


Figure 11. doi:

Ozarba hemileuca Wiltshire, 1982, South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. This species was known from the Somalian (Ethiopia, Somalia and Kenya) and Zambezian (Tanzania) biogeographic regions (Hacker 2016, De Prins and De Prins 2022). Our records from South Africa thus extended its known distribution for over 1,000 km southwards (Fig. 11).

Ozarba limbata (Butler, 1898)

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba limbata* (Butler, 1898); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Redrocks waterhole; verbatimElevation: 328 m; decimalLatitude: -23.172717; decimalLongitude: 31.299895; eventDate: 26/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 3; sex: males; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba limbata* (Butler, 1898); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tinyarhini waterhole; verbatimElevation: 280 m; decimalLatitude: -23.151872; decimalLongitude: 31.475738; eventDate: 28/11/2019; habitat: Open savanna grassland with stunted mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba limbata* (Butler, 1898); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 02/12/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba limbata* (Butler, 1898); country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkokhodzi river, road H1-6; verbatimElevation: 358 m; decimalLatitude: -23.239622; decimalLongitude: 31.312995; eventDate: 26/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

We report this species for the first time in South Africa. It was previously known from several countries in Eastern Africa (including Tanzania in the Zambezian biogeographic region; (Hacker 2016, De Prins and De Prins 2022). Our South African record thus extended its distribution for over 1,000 km southwards (Fig. 12).

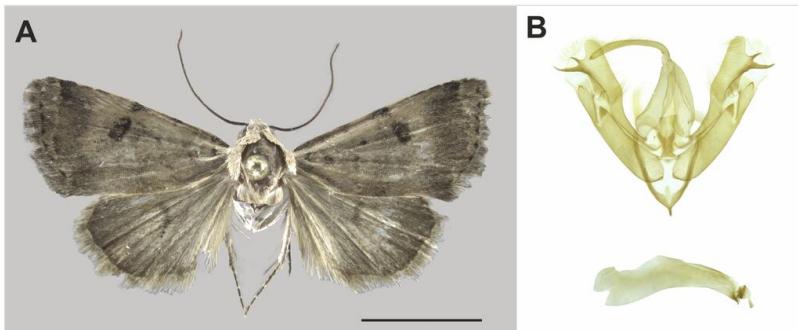


Figure 12. [doi](#)

Ozarba limbata (Butler, 1898), South Africa, Kruger National Park; **A** male; **B** male genitalia. The scale represents 5 mm.

Ozarba negrottoi Berio, 1940

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba negrottoi* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, 2 km SE of Frazerus waterhole; verbatimElevation: 352 m; decimalLatitude: -23.495737; decimalLongitude: 31.325834; eventDate: 30/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba negrottoi* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S56, Mphongolo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 29/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba negrottoi* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 6 km N of Letaba camp; verbatimElevation: 245 m; decimalLatitude: -23.811079; decimalLongitude: 31.580949; eventDate: 25/11/2019; habitat: Perennial river; open savanna grassland with stunted

mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

The three reported individuals represent the first record of *O. negrottoi* in South Africa. This species was previously known only from the Somalian (Somalia) and Zambezian (Tanzania) regions (Hacker 2016, De Prins and De Prins 2022). We extended its known distribution for over 1,000 km southwards (Fig. 13).

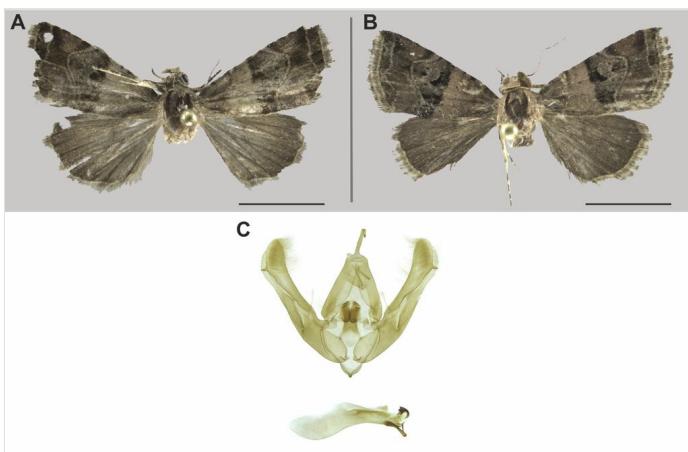


Figure 13. [doi](#)

Ozarba negrottoi Berio, 1940, South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Ozarba persinua Berio, 1940

Nomenclature

Noctuidae, Eustrotiinae

Materials

- a. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road H9, close to Misumani river; verbatimElevation: 379 m; decimalLatitude: -23.930505; decimalLongitude: 31.398723; eventDate: 21/02/2020; habitat: Crest; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 1; sex: male; lifeStage: adult; identifiedBy:

- Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- b. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 21/02/2020; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: female; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- c. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, 2 km SE of Frazerus waterhole; verbatimElevation: 352 m; decimalLatitude: -23.495737; decimalLongitude: 31.325834; eventDate: 30/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: ZMJu; basisOfRecord: PreservedSpecimen
- d. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S56, Mphongolo river, 1 km N of Ribye waterhole; verbatimElevation: 314 m; decimalLatitude: -22.991653; decimalLongitude: 31.270644; eventDate: 29/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- e. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, Crocodile Bridge; verbatimElevation: 183 m; decimalLatitude: -25.363011; decimalLongitude: 31.891832; eventDate: 07/03/2019; habitat: Perennial river; open savanna grassland on basalt; individualCount: 5; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- f. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Vurhami river, road H4-2; verbatimElevation: 219 m; decimalLatitude: -25.246385; decimalLongitude: 31.847472; eventDate: 07/03/2019; habitat: Season river; wooded savanna on shale: Bushwillow, Leadwood, Marula and Knobthorn trees, and thorn thickets; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- g. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'watimhiri river, road S21, 1 km NE of Nhlotini waterhole; verbatimElevation: 283 m; decimalLatitude: -25.116682; decimalLongitude: 31.696896; eventDate: 17/11/2018; habitat: Seasonal river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillows; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- h. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 10 km E of Letaba camp; verbatimElevation: 217 m; decimalLatitude: -23.844905; decimalLongitude: 31.641514; eventDate: 01/12/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabaye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

- i. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Stapelkop dam; verbatimElevation: 362 m; decimalLatitude: -23.594645; decimalLongitude: 31.254819; eventDate: 30/11/2019; habitat: Perennial river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- j. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Redrocks waterhole; verbatimElevation: 328 m; decimalLatitude: -23.172717; decimalLongitude: 31.299895; eventDate: 26/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 7; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- k. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road H9, close to Misumani river; verbatimElevation: 379 m; decimalLatitude: -23.930505; decimalLongitude: 31.398723; eventDate: 02/12/2019; habitat: Crest; mixed woodland savanna with sweet grazing: Knobthorn and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- l. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road H1-6, 1 km SW of Olifantsbad pan; verbatimElevation: 426 m; decimalLatitude: -23.335829; decimalLongitude: 31.325420; eventDate: 26/11/2019; habitat: Crest; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- m. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S86; verbatimElevation: 295 m; decimalLatitude: -24.678816; decimalLongitude: 31.791085; eventDate: 01/03/2019; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- n. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, road S36, 5 km NE of Hlanguleni picnic site; verbatimElevation: 333 m; decimalLatitude: -24.681967; decimalLongitude: 31.666664; eventDate: 03/03/2019; habitat: Crest; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- o. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, Lookout on S79 road; verbatimElevation: 200 m; decimalLatitude: -25.064099; decimalLongitude: 31.825735; eventDate: 24/02/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- p. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, N'waswitsontso river, road S86;

- verbatimElevation: 295 m; decimalLatitude: -24.678816; decimalLongitude: 31.791085; eventDate: 15/11/2018; habitat: Seasonal river; mixed thorn and Marula woodland savanna on granite: Bushwillow, Acacia and Marula; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- q. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nyawutsi waterhole; verbatimElevation: 288 m; decimalLatitude: -23.294739; decimalLongitude: 31.529902; eventDate: 27/11/2019; habitat: Seasonal river; Lebombo - low, arid rhyolite hills: Acacia and thorn thickets; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- r. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Sabie river, road H4-1, 7.5 km E fo Skukuza camp; verbatimElevation: 265 m; decimalLatitude: -24.973743; decimalLongitude: 31.661434; eventDate: 06/11/2018; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- s. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Letaba river, 6 km N of Letaba camp; verbatimElevation: 245 m; decimalLatitude: -23.811079; decimalLongitude: 31.580949; eventDate: 25/11/2019; habitat: Perennial river; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- t. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Road S47, Nwanedzi river; verbatimElevation: 278 m; decimalLatitude: -23.793044; decimalLongitude: 31.479490; eventDate: 02/12/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- u. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Mpumalanga; verbatimLocality: Kruger NP, Crocodile river, road S114, 5 km N of Malelane gate; verbatimElevation: 300 m; decimalLatitude: -25.437282; decimalLongitude: 31.528655; eventDate: 25/02/2019; habitat: Perennial river; mixed woodland savanna and thorn thickets: Tamboti, Acacia, Marula and Bushwillow; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- v. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Makhadzi waterhole; verbatimElevation: 285 m; decimalLatitude: -23.697166; decimalLongitude: 31.617761; eventDate: 01/12/2019; habitat: Seasonal river; open savanna grassland with stunted mopane; individualCount: 2; lifeStage: adult; identifiedBy: Sylvain Delabye; datelidentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen
- w. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Nkokhodzi river, road H1-6; verbatimElevation: 358 m; decimalLatitude: -23.239622; decimalLongitude: 31.312995; eventDate: 26/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite: Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain

Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

x. scientificName: *Ozarba persinua* Berio, 1940; country: South Africa; stateProvince: Limpopo; verbatimLocality: Kruger NP, Tsendze river, 2 km SE of Frazerus waterhole; verbatimElevation: 352 m; decimalLatitude: -23.495737; decimalLongitude: 31.325834; eventDate: 30/11/2019; habitat: Seasonal river; mopani dominated woodland savanna on granite; Acacia, Bushwillow and Mopane; individualCount: 1; lifeStage: adult; identifiedBy: Sylvain Delabye; dateIdentified: 2022; type: PhysicalObject; institutionCode: IECA; basisOfRecord: PreservedSpecimen

Description

The identification was based on Hacker (2016).

Distribution

This species was considered as endemic to Namibia (Hacker 2016, De Prins and De Prins 2022) and our specimens represent the first records of this species in South Africa. We therefore extended the species' range distribution for almost 2,000 km eastwards, to the Zambezian biogeographic region (Fig. 14).

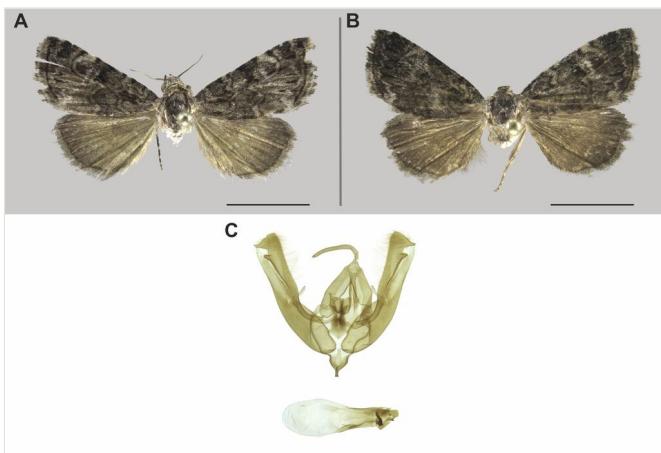


Figure 14. [doi](#)

Ozarba persinua Berio, 1940, South Africa, Kruger National Park; **A** male; **B** female; **C** male genitalia. The scale represents 5 mm.

Discussion

Altogether, we presented records of 13 species of moths newly reported to occur in South Africa. Two of these species (*O. gaedei* and *O. persinua*) were known to occur in Namibia (Southern African biogeographic region) only and our records extended their known distributions for over 2,000 km into the Zambezian biogeographic region. Although the remaining eleven species were previously recorded in the Zambezian biogeographic region

(De Prins and De Prins 2022), the nearest known localities of eight of them were in Tanzania, i.e. over 1,000 km north of KNP. Only three reported species were already known from Zimbabwe, the country bordering KNP and their occurrence in South Africa could, therefore, be expected.

The new distributional records of moth species in KNP evidenced the poor knowledge on the lepidopteran fauna of the Afrotropical savannah ecosystems (Delabye et al. 2020, Mecenero et al. 2020). For most of the reported species, we extended the known distribution for over 1,000 km. As the ecosystems between KNP and the nearest reported localities of these species in Tanzania and/or Namibia include various types of savannahs (Mucina and Rutherford 2006, Delabye et al. 2020), we can assume that populations of at least some of these moths are being overlooked. This can be expected especially for the species which we report as relatively abundant in KNP (e.g. *E. accedens*, *O. atrisigna*, *O. persinua*). Therefore, we suggest an intensive survey of lepidopteran diversity in South Africa with results published even in small reports is crucial for improving our knowledge on the diversity of Afrotropical Lepidoptera.

Acknowledgements

We are grateful to Desmond Mabaso, Herman Ntimane and Annoit Mashele for accompanying us in the field and keeping us safe; to Samantha Mabuza, Sharon Thompson and Patricia Khoza for their priceless assistance with arranging permits and other logistics for our research in KNP; to Daria Ashmarina, Léna Jego, Ewelina Sroka, Karolina Sroka and Rafał Garlacz for setting part of the specimens; and to Tomasz Pyrcz and Rafał Garlacz for providing access to the reference material in the Nature Education Centre, Jagellonian University, Krakow, Poland. LCF acknowledges the DSI-NRF Centre of Excellence (C•I•B) for Invasion Biology and South African National Parks/Kruger National Park for support. This study was supported by Czech Science Foundation (18-18495S) and Charles University (UNCE204069).

Author contributions

PP, KP, LCF, MH, RT, SM and DS established the sampling plots within the MOSAIK project. SD, RT, PH, MS and OS collected the specimens. SD, FPG and PP processed and identified the reported material and SD, FPG and RT reviewed the identified species' distribution. SD and RT wrote the first manuscript draft and led the manuscript editing and revision. All co-authors participated in the manuscript writing and approved its submission.

References

- Braack LE, Kryger P (2003) Insects and savanna heterogeneity. In: Du Toit JT, Rogers KH, Biggs HC (Eds) *The Kruger experience: Ecology and management of savanna heterogeneity*. Island Press, Washington DC, 519 pp.

- Delabye S, Sedláček O, Maicher V, Tropek R (2020) New records of six moth (Lepidoptera: Erebidae, Lasiocampidae) species in south African countries, with comments on their distribution. *Biodiversity data journal* 8: e59339. <https://doi.org/10.3897/BDJ.8.e59339>
- De Prins J, De Prins W (2022) Afromoths, online database of Afrotropical moth species (Lepidoptera). <http://www.afromoths.net/>. Accessed on: 2022-5-25.
- D'Souza ML, Van der Bank M, Shongwe Z, Ratnay RD, Stewart R, Van Rooyen J, Govender D, Hebert PD (2021) Biodiversity baselines: tracking insects in Kruger National Park with DNA barcodes. *Biological Conservation* 256: 109034. <https://doi.org/10.1016/j.biocon.2021.109034>
- Edge DA, Mecenero S (2015) Butterfly conservation in southern Africa. *Journal of Insect Conservation* 19: 325-339. <https://doi.org/10.1007/s10841-015-9758-5>
- Hacker HH (2016) Systematic and illustrated catalogue of the Macroheterocera and Coccoidea Leach, [1815], Zygaenoidea Latreille, 1809, Thyridoidea Herrich-Schäffer, 1846 and Hyblaeoidea Hampson, 1903 of the Arabian Peninsula, with a survey of their distribution (Lepid.). *Esperiana* 20(1): 1-742; (2): 1-430.
- Hacker HH (2019) Moths of Africa: Systematic and illustrated Catalogue of the Heterocera (Lepidoptera) of Africa, volume 1. Biogeography, Boletobiinae (Erebidae). Esperiana Verlag, Bad Staffelstein, 815 pp.
- Hejda M, Čuda J, Pyšková K, Zambatis G, Foxcroft LC, MacFadyen S, Storch D, Tropek R, Pyšek P (2022) Water availability, bedrock, disturbance by herbivores, and climate determine plant diversity in South-African savanna. *Scientific Reports* 12 (1): 338. <https://doi.org/10.1038/s41598-021-02870-3>
- Joubert SC (1986) The Kruger National Park - An introduction. *Koedoe* 29 (1): 1-11. <https://doi.org/10.4102/koedoe.v29i1.516>
- Linder HP, de Klerk HM, Born J, Burgess ND, Fjeldså J, Rahbek C (2012) The partitioning of Africa: statistically defined biogeographical regions in sub-Saharan Africa. *Journal of Biogeography* 39 (7): 1189-1205. <https://doi.org/10.1111/j.1365-2699.2012.02728.x>
- Mawdsley J, Harrison J, Sithole H (2016) Natural history of a South African insect pollinator assemblage (Insecta: Coleoptera, Diptera, Hymenoptera, Lepidoptera): diagnostic notes, food web analysis and conservation recommendations. *Journal of Natural History* (50)2849-2879. <https://doi.org/10.1080/00222933.2016.1216194>
- Mecenero S, Edge DA, Staude HS, Coetzer BH, Coetzer AJ, Raimondo DC, Williams MC, Armstrong AJ, Ball JB, Bode JD, Cockburn KN, Dobson CM, Dobson JC, Henning GA, Morton AS, Pringle EL, Rautenbach F, Selb HE, Van Der Colff D, Woodhall SE (2020) Outcomes of the Southern African Lepidoptera Conservation Assessment (SALCA). *Metamorphosis* 31 (4): 1-160. <https://doi.org/10.4314/met.v31i4.1>
- Mey W (2011) Basic pattern of Lepidoptera diversity in southwestern Africa. *Esperiana Memoir* 6: 1-316.
- Mucina L, Rutherford MC (2006) The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia*, 19. South African National Biodiversity Institute, Pretoria.
- Nugent J (2018) iNaturalist. *Science Scope* 41 (7): 12-13.
- Pyšek P, Hejda M, Čuda J, Zambatis G, Pyšková K, MacFadyen S, Storch D, Tropek R, Foxcroft LC (2020) Into the great wide open: do alien plants spread from rivers to dry savanna in the Kruger National Park? *NeoBiota* 60: 61-77. <https://doi.org/10.3897/neobiota.60.54608>

- Ratnasingham S, Hebert PDN (2007) bold: The Barcode of Life Data System (<http://www.barcodinglife.org>). Molecular Ecology Notes 7 (3): 355-364. <https://doi.org/10.1111/j.1471-8286.2007.01678.x>
- Robertson T, Döring M, Guralnick R, Bloom D, Wieczorek J, Braak K, Otegui J, Russell L, Desmet P (2014) The GBIF Integrated Publishing Toolkit: Facilitating the efficient publishing of biodiversity data on the internet. PLOS One 9 (8). <https://doi.org/10.1371/journal.pone.0102623>
- Venter FJ, Scholes RJ, Eckhardt HC (2003) The abiotic template and its associated vegetation pattern. In: Sinclair AR, Walker B (Eds) The Kruger experience: Ecology and management of savanna heterogeneity. Island Publisher, Washington DC, 519 pp.
- Zahiri R, Holloway J, Kitching I, Lafontaine JD, Mutanen M, Wahlberg N (2011) Molecular phylogenetics of Erebidae (Lepidoptera, Noctuoidea). Systematic Entomology 37 (1): 102-124. <https://doi.org/10.1111/j.1365-3113.2011.00607.x>