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# To the knowledge of owlfly and antlion fauna of Cape Verde (Neuroptera: Myrmeleontidae)

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Aistleitner, E. & Ábrahám, L.: *To the knowledge of owlfly and antlion fauna of Cape Verde (Neuroptera: Myrmeleontidae).*
**Abstract:** The authors publish new faunistic surveys carried out in Cape Verde. An annotated checklist of the Myrmeleontidae fauna was compiled. The general and local distribution of the species is described. *Creoleon cinerascens* (Navás, 1912) is a new species in the fauna of Cape Verde (Maio). *Cueta divisa* (Navás, 1912), *Myrmeleon hyalinus caboverdicus* Hölzel, 1987, *Neuroleon modestus* (Navás, 1912) from Brava were found for the first time from the local fauna. The endemic *Myrmeleon amicus* Hölzel & Ohm, 1983 is a new record for the fauna of Maio and Brava. The owlfly fauna 1 and the antlion fauna includes 12 species. The current investigations provide new faunistic data of 201 specimens for the distribution of 8 species.

**Keywords:** Ascalaphidae, Myrmeleontidae, faunistic, new record, distribution

## Introduction

Cape Verde is located in the Macaronesia ecoregion, an archipelago formed by volcanic activity on the ridge of the Atlantic Ocean, along with the Azores, the Canary Islands, Madeira, and the Savage Isles. These islands lie between 600 and 850 kilometers west of Cap-Vert, the westernmost point of continental Africa. It consists of 10 larger and 8 smaller islets, are arranged in a horseshoe shape. The members of the northern archipelago are the Barlavento Islands (windward islands): Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Boa Vista; members of the southern archipelago are the Sotavento Islands (leeward): Maio, Santiago, Fogo, Brava. Although the archipelago is basically in an arid climate area, the climate of the islands varies depending on their location in the ocean and the height of the islands to moderately arid, semiarid, subhumid, and humid areas (Aistleitner 2013).

The first publication on the endemic neuropteran fauna of the archipelago (*Apertochrysa nigra* (McLachlan, 1869)) was published in the 19th century. By the middle of the 20th century, Navás (1932) and Tjeder (1957) added two new Myrmeleontidae (*Creoleon giganteus* Navás, 1932, *Creoleon cecconinus* Navás, 1932) and two new Coniopterygidae species (*Coniocompsa fimbriata* Tjeder, 1957, *Coniopteryx lindbergi* Tjeder, 1957) increasing the number of the endemic fauna. However, the more thorough exploration of the Neuroptera fauna began relatively late in the second half of the 20th century. German

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(Peter Ohm) and Austrian (Herbert Hölzel) researchers excelled in this and intensively investigated the fauna of Chrysopidae and Myrmeleontidae, with special regard to the zoogeographic conditions of the Macaronesia ecoregion (OHM & HÖLZEL 1982, 1984). Two new endemic taxa from the Chrysopidae (HÖLZEL & OHM, 1982 - *Apertochrysa teiresias* (Hölzel & Ohm, 1982), *Chrysemosa piresi* (Hölzel & Ohm, 1982)) and Myrmeleontidae fauna were also studied by HÖLZEL (1986 - *Myrmeleon hyalinus caboverdicus* Hölzel, 1987), and HÖLZEL & OHM (1983) - *Myrmeleon amicus* Hölzel & Ohm, 1983).

The relative obscurity of the Neuroptera fauna of the area, in comparison with the islands of the Macaronesia ecoregion closer to the continent, also resulted from its location. For researchers, the archipelago of Cape Verde proved to be particularly remarkable from a zoogeographic point of view (OHM & HÖLZEL 1982, 1984).

Around the turn of the millennium, the exploration of the Neuroptera fauna gained a new momentum because the first author of the paper regularly visited the archipelago for two decades and collected a wide range of insects with his published co-authors in different groups (eg. AISTLEITNER 2013, 2017, AISTLEITNER et al. 2008). The material of Chrysopidae and Myrmeleontidae collected between 1998 and 2007, which was placed in his private collection (**E**ntomologisches **F**orschungs**m**useum **E**jyolf **A**istleitner–EFMEA), has partly been published. It enriched the fauna of the individual islands with many new faunal data (AISTLEITNER & HÖLZEL 2012). He did not stop researching the insect fauna after that and collected additional Myrmeleontidae material, in the determination of which Axel Gruppe and, from 2022, the second author also took part.

In this publication, we publish the new faunistic data and with it a compiled and annotated checklist of the myrmeleontid fauna of Cape Verde, and give brief remarks of the distribution on the species.

## Material and methods

The first author of this publication has spent longer and shorter periods in Cape Verde since December 1998. For more than twenty years, he regularly collected insects during the day and at night, using a 20-watt UV light tube and a 250-watt mercury vapor lamp. Although he did not collect antlion larvae.

The samplings covered all the islands of Cape Verde. From the point of view of antlions, the drier southern archipelago is more important, especially the lower places with sandy structure soil. Some of the larvae do not construct pits (e.g. *Creoleon* sp.). and/or hide under the surface of the soil in places protected from rain, wind, and direct sunlight, If even, then (e.g. *Myrmeleon alternans*) many specimens aggregate during the daytime in shady places provided by the rocks.

The faunistic data are given in the usual way by listing the collecting sites, altitude, date, and name of the collector. After the determination, each specimen was labelled with so-called det-labels separately (the species name, author, date, determiner and year). Most of the voucher specimens can be found in the EFMEA collection. In addition, some specimens were also donated to the collections of Axel Gruppe (Germany) and SCMK Entomological Collection (Rippl-Rónai Museum, Kaposvár, Hungary). These have been marked in the list.

The first author has already published faunistic data on the islands between 1998 and 2007 (AISTLEITNER & HÖLZEL 2012), therefore we are only publishing faunistic data from those specimens that were not included in the previous publication.

The fauna list of the archipelago was compiled using OSVALD's database (2023).


**Fig. 1: Westafrika with the middle-atlantic islands**

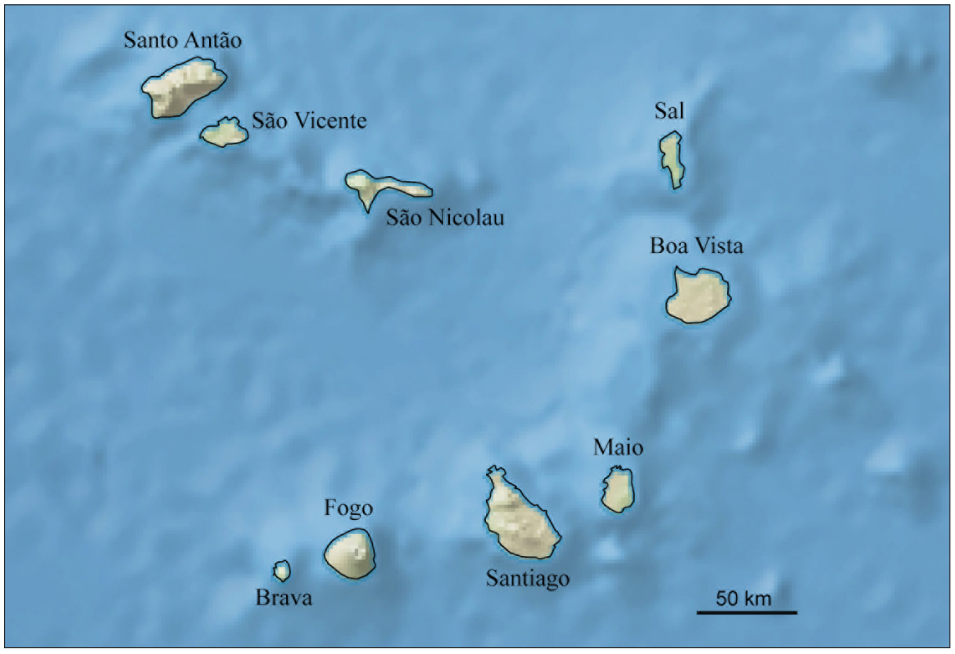


**Fig. 2: Cape Verde archipelago**

**Fig. 3: Boa Vista, Sal Rei, habitat of *Myrmeleon amicus, M. alternans* (Photo: E. AISTLEITNER)**

**Fig. 4: Brava, Nova Sintra-Santana, habitat of *Myrmeleon* cf. *caliginosus, M. hyalinus caboverdicus, M. amicus* (Photo: E. AISTLEITNER)**

**Fig. 5: Maio, Punta do Morinho, habitat of *Cueta divisa, Myrmeleon alternans, M. amicus* (Photo: E. Aistleitner)**

Collecting periods in the recent paper: 27.12.1998; 28.11.2000–29.11.2000; 06.01.2001–05.10.2001; 27.01.2002–30.12.2002; 09.01.2003–23.11.2003; 31.01.2004 –08.12.2004; 25.10.2005–20.12.2005; 03.01.2011–03.08.2011; 16.10.2012–23.10.2012; 25.11.2013; 25.12.2019.

## Result and discussion

The lacewing fauna of Cape Verde is relatively well-known thanks to research carried out in the last hundred years. This is especially true for the Myrmeleontidae fauna.

The checklist of flora and fauna of the archipelago was recently compiled by Monserrat & Martín (2005). In this, 27 taxa of the Neuroptera fauna became known, and the Myrmeleontidae fauna is represented by 13 taxa.

Based on previous research, we compiled a checklist supplemented with an annotated bibliography. In addition, we published new faunal data of the species found in the archipelago from the fauna research period between 1999 and the present day.This survey is based on altogether 201 specimens of 8 species.

## Annotated checklist of the antlion fauna of Cape Verde

*Abbreviations*: Dist – Distribution, Zoogeo – Zoogeography, Chlist – Checklist, Faun – Faunistic.

***Ascalaphus festivus*** (Rambur, 1842)

*Ascalaphus festivus* (Rambur, 1842) – Ohm & Hölzel 1982 (Dist, Zoogeo), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun), Aistleitner & Ábrahám 2023.(Faun).

*Remarks*: It has a wide distribution area in arid Africa, the Middle East (Israel - ASPÖCK et al. 2001, Jordan - MONERRAT & ÁBRAHÁM 2021), and the Arabian Peninsula (HÖLZEL 2004). Its area in Europe also extends to Sardinia (PANTALEONI et al. 2013). OHM & HÖLZEL (1982) mentioned its occurrence in the Cape Verde archipelago (Santiago, Fogo). There is only one specimen in the collection, also from the island of Santiago (AISTLEITNER & HÖLZEL 2012).

*Local distribution*: Maio, Santiago, Fogo.

***Centroclisis punctulata*** Navás, 1912

*Centroclisis punctulata* Navás, 1912 – Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist).

*Remarks*: The species from the Cape Verde archipelago was mentioned by OHM & HÖLZEL 1982, since then its new faunistic data has not become known. The species is also widespread in the Sahara region (PROST 1998). ASPÖCK et al. (2001) cited from northern Africa (Algeria and Tunisia). It was not found in Cape Verde during the current survey.

*Local distribution*: Santiago, Fogo.

***Syngenes debilis*** (Gerstäcker, 1888)

*Syngenes* sp. - Ohm & Hölzel, 1982 (Dist).

*Syngenes debilis* (Gerstäcker, 1888) – Hölzel & Ohm 1990 (List), Prost 1998 (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Mansell 2018 (Dist).

*Remarks:* MANSELL (2018) revised the genus *Syngenes* Kolbe, 1897, which is mostly distributed in Africa. Based on its previous collection sites (PROST 1998), its main distribution area is the sub-Saharan and savanna region of West Africa. It was not found during the current survey.

*Local distribution:* Sal, Santiago.

***Myrmecaelurus reinhardi*** Hölzel & Ohm, 1991

*Myrmecaelurus* sp. – Hölzel & Ohm 1990 (List).

*Myrmecaelurus reinhardi* Hölzel & Ohm, 1991a – (Odescr), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist).

*Remarks:* OHM & HÖLZEL (1982) even mentioned the occurrence of the genus *Myrmecaelurus* as a missing taxon in the zoogeographic evaluation of the fauna of the archipelago. Later, HÖLZEL & OHM (1990) published information on the occurrence of a species of *Myrmecaelurus* sp. that is new but undescribed species from Cape Verde. The new species was described the following year by HÖLZEL & OHM (1991a). The holotype is from Senegal, the paratypes were collected from Sudan and Cape Verde (Fogo). No new specimens were found during the survey carried out in the Cape Verde archipelago.

*Local distribution:* Fogo.

***Cueta divisa*** (Navás, 1912)

*Cueta klugi* Hölzel, 1982 – Hölzel & Ohm 1990 (List), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

*Cueta variegata* (Klug in Ehrenberg, 1834) – Ohm & Hölzel 1982 (Dist, Zoogeo), Stange 2004 (Mon).

*Material examined*: **Sal**, Pedra Lume, 1 m, 29.11.2000., 1 ex. leg. Aistleitner; **Sal**, Espargos, 45 m, 28.11.2000., 10 ex. leg. Aistleitner; **Maio**, Morrinho, Dünen, 5 m, 16.10.2012., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Brava, Mangue de Sete Ribeiras, 20 m, 6.9.2001., 9 ex. leg. Aistleitner; **Santiago**, Cidade Velha (Ribeira Grande), 3-20 m, 5.10.2001., 28 ex. leg. Aistleitner; **Santiago**, Praia, Plato, 3-8 m, 30.9.2001., 6 ex. leg. Aistleitner; **Santiago**, Assomada, Fundura, 13.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Porto Formoso, 2-20 m, 16.9.2001., 23 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 7.11.2004., 1 ex. leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 2 ex. leg. Aistleitner det. Gruppe; **Brava**, Nova Sintra, Santana, 490 m, 3.8.2011., 6 ex. leg. Aistleitner; **Brava**, Nova Sintra, Lem/Covada, 3.12.2002., 3 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 4.12.2002., 2 ex. leg. Aistleitner.

*Remarks:* There have been many nomenclature changes in the name of the species (Ábrahám & Giacomino 2020). It is a common and widespread species, especially in the southern part of the Sahara (Oswald 2023). Its area also covers the Arabian Peninsula and the island of Socotra (Kimmins 1960).) The larva builds a trip on the sand soil structure. Adults emerge in the second half of the year (Hölzel & Ohm 1990). It has already been found on all the islands of the Cape Verde archipelago. It is considered a common species as well as on the African continent.

*Local distribution:* Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Maio, Santiago, Fogo, Brava.


**Fig. 6:** ***Cueta divisa*** **(Navás, 1912), scale: 10 mm**

***Myrmeleon alternans*** Brullé, 1839

*Myrmeleon alternans* Brullé, 1839 – (Odescr), Hölzel & Ohm 1990 (List), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

*Material examined:* **São Vicente**, Baia das Gatas, 27.12.1998., 1 ex. leg. Aistleitner; **Sal**, Espargos, 45 m, 30.10.2004., 1 ex. leg. Aistleitner; **Boa Vista**, Sal Rei, Dünen, 3 m, 25.11.2013., 2 ex. leg. Aistleitner; **Santiago**, Praia, Plato, 30.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Porto Formoso, 3 m, 16.9.2001., 10 ex. leg. Aistleitner; **Santiago**, Ribeira Principal, 150 m, 6.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Assomada, Cha de Tanque, Ribeira do Mato Sanchez, 200-230 m, 14.9.2001., 24 ex. Aistleitner; **Santiago**, Assomada, Cha de Tanque, Ribeira do Mato Sanchez, 200-230 m, 5.9.2001., 1 ex. leg. Aistleitner, det. Gruppe; **Santiago**, Assomada W Chä de Tanque, 230 m, 5.9.2001., 4 ex. leg. Aistleitner (coll. in SCMK); **Santiago**, Assomada W Chä de Tanque, Sanchez, 200 m, 17.9.2001., 2 ex. leg. Aistleitner (coll. in SCMK); **Santiago**, Assomada W Chä de Tanque, Ribeira do Mato Sanchez, 200 m, 17.9.2001., 5 ex. leg. Aistleitner (coll. in SCMK), 3 ex (in coll Gruppe); **Brava**, Cachaco, 600 m, 3.8.2001., 2 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 2 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 3.11.2004., 2 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 5.11.2005., 1 ex. leg. Aistleitner, 2 ex (in coll Gruppe); **Brava**, Nova Sintra, Santana, 490 m, 23.10.2012., 1 ex. leg. Aistleitner.

*Remarks:* A widespread species in the archipelago of the Atlantic Ocean (Cape Verde, Azores). Its distribution does not extend to the African continent. There, it is replaced by the similar species *Myrmeleon fasciatus* (Navás, 1912), which is widespread throughout the Sahara region and the Arabian Peninsula. Earlier, it was also mentioned from Socotra

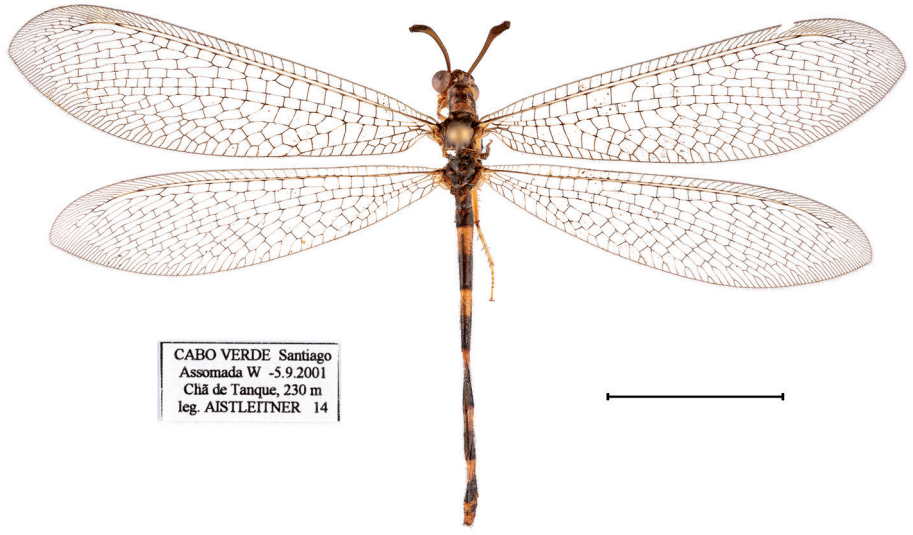


**Fig. 7:** ***Myrmeleon alternans*** **Brullé, 1839, scale: 10 mm**

(Yemen), but there is an endemic species (*Myrmeleon saldaitisi* Ábrahám, 2010). According to Hölzel & Ohm (1991b), the species spread from the mainland to the archipelago and became darker in colour due to the humid climate. A widespread species in the archipelago of the Atlantic Ocean (Cape Verde, Azores), its distribution does not extend to the African continent. Based on the collecting experiences of the first author, we know that it rests in larger quantities during the day on the dark rocks of volcanic origin, so its colouring may be an evolutionary advantage for it in this environment.

*Local distribution*: Santo Antão, São Vicente, São Nicolau, Sal, Santiago, Fogo, Brava.

***Myrmeleon amicus*** Hölzel & Ohm, 1983

*Myrmeleon* (*Morter*) sp. – Ohm & Hölzel, 1982 (Dist, Zoogeo).

*Myrmeleon amicus* Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

*Material examined*: **Boa Vista**, Sal Rei, Dünen, 3 m, 25.11.2013., 2 ex. leg. Aistleitner, det. Gruppe; **Maio**, Morrinho, 5 m, 16.10.2012., 3 ex. leg. Aistleitner, det. Gruppe; **Brava**, Nova Sintra, Santana, 490 m, 22.2.2004., 1 ex. leg. Aistleitner, det. Gruppe.

*Remarks*: Endemic species, known almost from all islands.

*Local distribution*: Santo Antão, São Vicente, São Nicolau, Sal, Boa Vista, Maio, Santiago, Fogo, Brava.

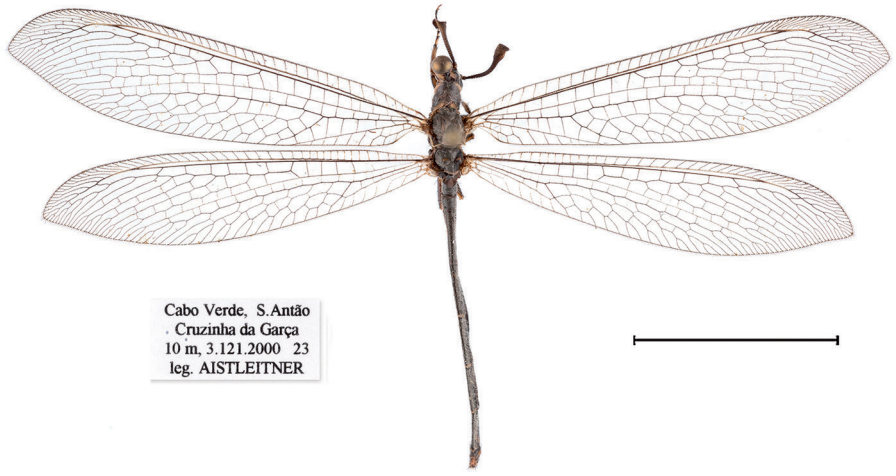


**Fig. 8:** ***Myrmeleon amicus*** **Hölzel & Ohm, 1983, scale: 10 mm**

***Myrmeleon*** cf. ***caliginosus*** Hölzel & Ohm, 1983

*Myrmeleon* sp. – Ohm & Hölzel, 1982 (Dist, Zoogeo).

*Myrmeleon caliginosus* Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

*Material examined*: **Boa Vista**, Ribeira do Rabil, 30 m, 6.1.2001., 1 ex. leg. Aistleitner; **Santiago**, Cidade Velha (Ribeira Grande), 5 m, 5.10.2001., 1 ex. leg. Aistleitner; **Santiago**, Ribeira Brava, Mangue de Sete Ribeiras, 6.9.2001., 1 ex. leg. Aistleitner; **Santiago**, Calheta, 4.9.2001., 10 ex. leg. Aistleitner; *Brava*, Nova Sintra, Santana, 490 m, 3.3.2003., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 23.11.2003., 1 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 31.1.2004., 2 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 5.9.2004., 8 ex leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 8.12.2004., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 20.12.2005., 1 ex. leg. Aistleitner; **Brava**, Nova Sintra, Santana, 490 m, 25.10.2005., 6 ex leg. Aistleitner; **Brava**, Fajã d'Agua, 10.12.2002., 6 ex leg. Aistleitner; **Brava**, Nova Sintra, Sorno, 50 m, 30.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 5.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 25.12.2002., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 475 m, 9.1.2003., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Lem/Covada, 4 m, 9.1.2003., 3 ex leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 2 ex leg. Aistleitner; **Brava**, Nova Sintra, San Pedro, 3.3.2002., 1 ex. leg. Aistleitner.


**Fig. 9: *Myrmeleon* cf. *caliginosus* Hölzel & Ohm, 1983, scale: 10 mm**

*Remarks*: The type specimens of the species come from Cape Verde, but specimens from East Africa and the Arabian Peninsula were also found in the Sahara region (HÖLZEL & OHM 1983) when the species was described. Presumably, the taxon is widespread in most of Africa (BADANO 2020). The species needs revision from a taxonomic point of view because several *Myrmeleon* species (eg. *Myrmeleon simplicissimus* Gerstaecker, 1885, *Myrmeleon stigmalis* Navás, 1912) have been described from Africa before .

*Local distribution:* Santo Antão, São Vicente, Santa Luzia, São Nicolau, Sal, Boa Vista, Santiago, Fogo, Brava.

***Myrmeleon hyalinus caboverdicus*** Hölzel, 1987

*Myrmeleon hyalinus* Olivier: – Ohm & Hölzel, 1982 (Dist, Zoogeo).
*Myrmeleon hyalinus caboverdicus* Hölzel, 1987 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Aistleitner & Hölzel 2012 (Faun).
*Myrmeleon hyalinus* Olivier, 1811 ssp. *caboverdicus* Hölzel, 1987 – Monserrat & Martín 2005 (Chlist).

*Material examined*: **Brava**, Nova Sintra, Santana, 490 m, 8.12.2004., 1 ex leg. Aistleitner (coll. in SCMK); **Brava**, Nova Sintra, Santana, 490 m, 25.12.2019., 1 ex leg. Aistleitner.

*Remarks*: The holotype is from São Vicente. It is generally one of the most common *Myrmeleon* species on the continent, in contrast to the local population, which appears to be less widespread in the archipelago and has a small population size. The specimens of the local population in the archipelago are also strongly coloured, in this respect they differ significantly from the *M. hyalinus* populations found in dry environments on the continent. The explanation of variation in colour and its subspecies status can be explained similarly to the one described for the species *Myrmeleon alternans*.
*Local distribution:* São Vicente, Santiago, Brava.

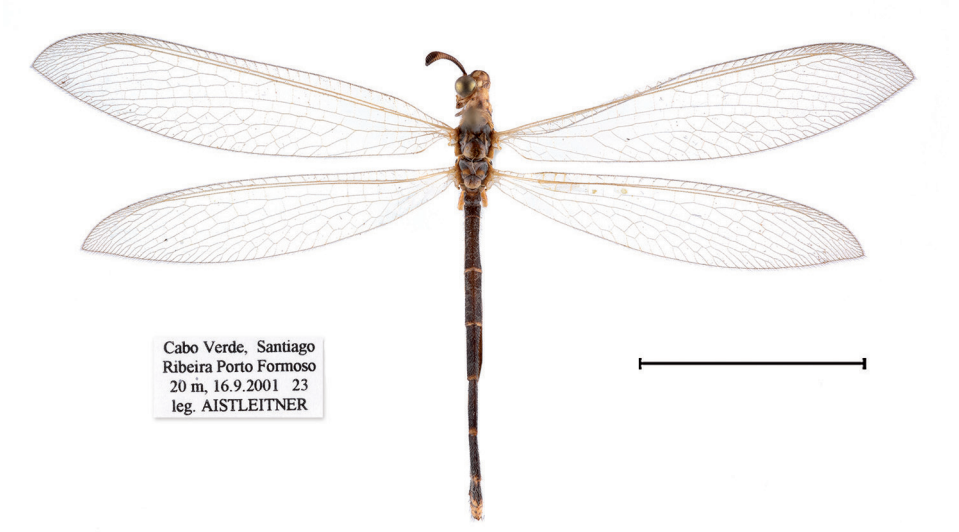


**Fig. 10: *Myrmeleon hyalinus caboverdicus* Hölzel, 1987, scale: 10 mm**

***Creoleon cecconinus*** Navás, 1932

*Creoleon griseus cecconinus* Navás, 1932 – (Odescr), Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist).
*Creoleon griseus* (Klug, 1834) ssp. *cecconinus* Navás, 1932 – Monserrat & Martín 2005 (Chlist).
*Creoleon cecconinus* Navás, 1932 – Stange 2004 (Mon), Aistleitner & Hölzel 2012 (Faun).

*Material examined*: **Santiago**, Assomada, Fundura, 13.9.2001., 2 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 13.12.2002., 1 ex. leg. Aistleitner; **Brava**, Ribeira do Sorno, 50 m, 4.12.2002., 1 ex. leg. Aistleitner; **Brava**, Cachaco, 6-800 m, 9.11.2003., 1 ex. leg. Aistleitner (coll. in SCMK).

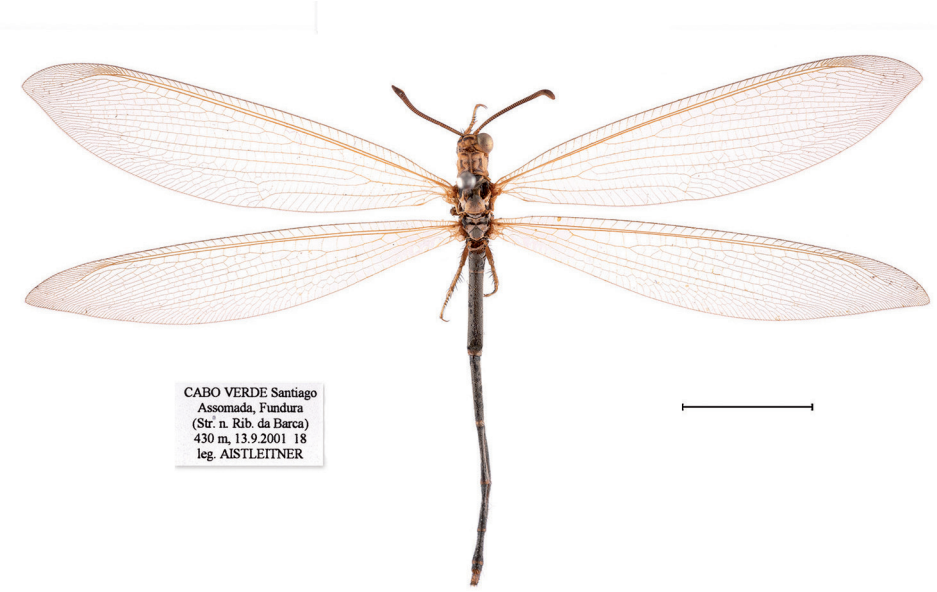


**Fig. 11:** ***Creoleon cecconinus*** **Navás, 1932, scale: 10 mm**

*Remarks:* Previously it was considered an endemic subspecies (HÖLZEL & OHM 1990), and nowadays it is moved to the species level (Oswald 2023). Its morpho-taxonomic examination requires further research. It seems to be a widespread species in the Cape Verde archipelago. since it has already been found on all the islands.

*Local distribution*: Santo Antão, São Vicente, São Nicolau, Boavista Maio Santiago, Fogo, Brava.

***Creoleon cinerascens*** (Navás, 1912)

*Material examined*: **Maio**, Vila do Maio 20 m 27.1.2002., 1 ex. leg. Aistleitner.

*Remarks*: It is a widespread species in the Sahara region of Africa and the Arabian Peninsula. It can be especially common in sandy coastal regions. Its occurrence in Cape Verde is not special. A new species in the local fauna.

*Local distribution:* Maio.

***Creoleon giganteus*** Navás, 1932

*Creoleon giganteus* Navás, 1932 – (Odescr), Ohm & Hölzel 1982 (Dist, Zoogeo), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Dist), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun).

*Remarks:* Endemic species. It was not found in Cape Verde during the current survey.

*Local distribution:* Santo Antão, São Vicente, São Nicolau, Sal, Boa Vista Maio, Santiago.

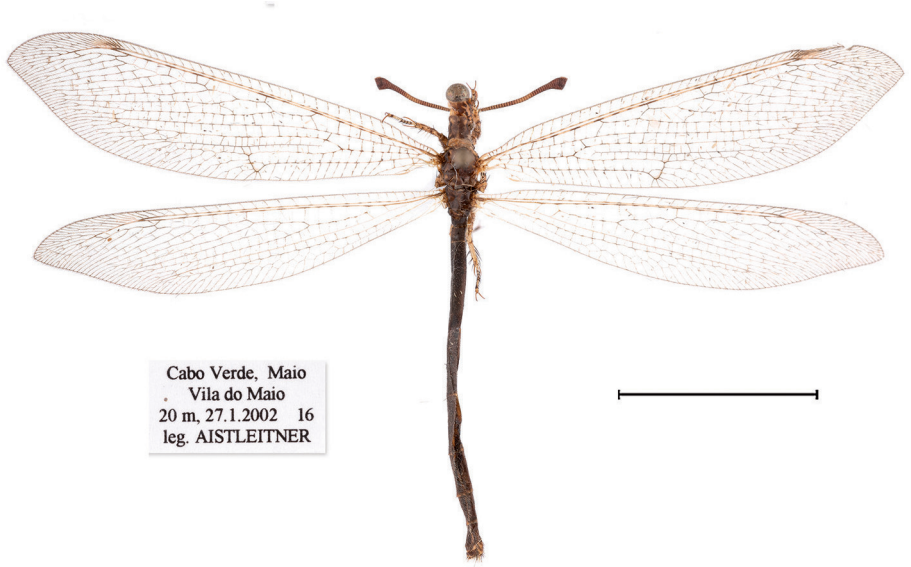


**Fig. 12:** ***Creoleon cinerascens*** **(Navás, 1912), scale: 10 mm**

***Neuroleon modestus*** (Navás, 1912)

*Neuroleon* sp. – Ohm & Hölzel 1982 (Dist, Zoogeo).

*Neuroleon sociorum* Hölzel & Ohm, 1983 – (Odescr), Hölzel & Ohm 1990 (List), Hölzel & Ohm 1991b (Faun), Stange 2004 (Mon), Monserrat & Martín 2005 (Chlist), Aistleitner & Hölzel 2012 (Faun), Mansell 2018 (Dist).

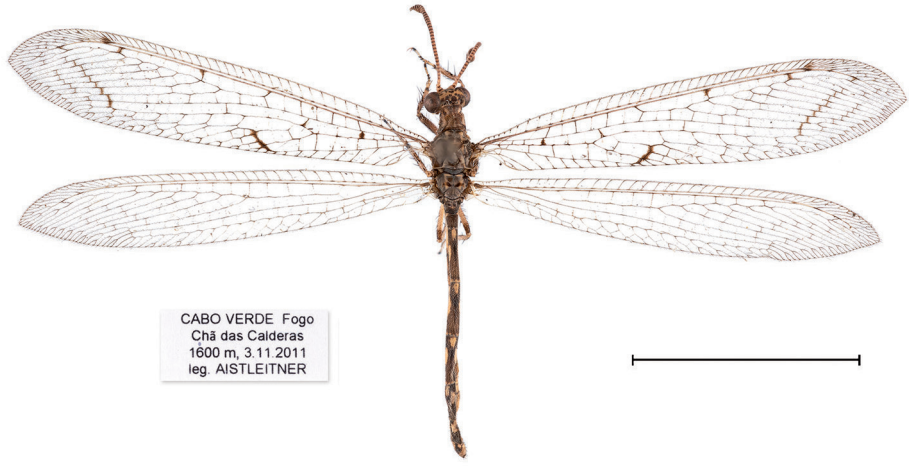


**Fig. 13:** ***Neuroleon modestus*** (Navás, 1912)**, scale: 10 mm**

*Material examined:* **Fogo**, Cha das Caldeiras, 1600 m, 03.1.2011., 1 ex. leg. Aistleitner; **Brava**, Faja d'Agua, Ribeira, 50 m, 10.12.2002., 1 ex. leg. Aistleitner, (in coll. Gruppe).

*Remarks:* It is described from Cape Verde by HÖLZEL & OHM (1983) as a new species and later found to be conspecific with the morphological variable species *Neuroleon modestus* (Navás, 1912). It has a very wide distribution in the Saharan and sub-Saharan region (MICHEL & AKOUDJIN 2012 and PROST & POPOV 2021), and its area extends to the Arabian Peninsula (LETARDI et al. 2020) and Socotra (ÁBRAHÁM 2010).

*Local distribution:* Sal, Maio, Santiago, Fogo, Brava.

The current survey documented the occurrence of a new species (*Creoleon cinerascens* (Navás, 1912)) in the local fauna. It has a wide distribution in Africa, especially in coastal sandy areas. Thus, the occurrence of Cape Verde is not surprising.

The characteristic of the local antlion fauna is that, far from the African continent, a specific fauna development emerges between the species of the genus *Myrmeleon* (4 sp.) and *Creoleon* (3 sp.). Out of the 12 known species, 4 endemic taxa (*Myrmeleon amicus*, *Myrmeleon hyalinus caboverdicus, Creoleon cecconinus, Creoleon giganteus*) can be found in the archipelago. Of these, *Myrmeleon hyalinus caboverdicus* was detected in only a few islands (OHM & HÖLZEL 1984, MONSERRAT & MARTÍN 2005). The other endemic species in the archipelago were found in the majority of the islands. *Myrmeleon alternans* is a typical species with a wide distribution in the Macaronesia ecoregion (OHM & HÖLZEL 1982, 1984). The size of the M alternans in the Canary Islands is significantly larger than that of the Cape Verdean specimens, suggesting further taxonomic separation. On the African continent it is replaced by its sister species *Myrmeleon fasciatus* (Navás, 1912). *Syngenes debilis* is a characteristic species of the Western Sahara region (PROST 1998).

*Centroclisis punctulata, Myrmecaelurus reinhardi, Cueta divisa*, and *Creoleon cinerascens* have a wide distribution in the eremial zone in the Saharan region (STANGE 2004). *Myrmeleon* cf. *caliginosus* and the area of *Neuroleon modestus* extend the whole of Africa. The continental species with a wide distribution populated the majority of the archipelago. They will probably become known from the entire archipelago during further research.

Among the factors endangering fauna, tourism should be singled out. Because of global tourism, those islands with sandy beaches suitable for swimming are at risk. They lie at a low altitude above sea level and usually do not contain fresh water. Due to the packaging materials of the food transported to these islands and the lack of waste collection, the islands are heavily polluted with garbage, which leads to the impoverishment of terrestrial and marine life.

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