

European antlion data from the EFMEA collection (Neuroptera: Myrmeleontidae)

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Abstract: In this paper, the authors publish the faunistic data of the antlion material of the EFMEA collection from Central and Southern Europe. This collection is one of the largest private collections in Austria. The most important species of the collection from a faunistic and nature conservation point of view are: *Neuroleon arenarius* (Navás, 1904), *Neuroleon ochreatus* (Navás, 1904), *Creoleon aegyptiacus* (Rambur, 1842), *Myrmeleon noacki* Ohm, 1963, and *Nedroleon anatolicus* Navás, 1914.

Keyword: antlion, faunistic, distribution, Europa.

Introduction

In the private Entomological Research Museum, EFMEA (*Entomologisches Forschungsmuseum Eyjolf Aistleitner, Feldkirch, Austria*), the revision of the lacewing collection started in 2022. In 2023, the authors of this paper documented the ecofaunistic data of the material in three papers with information on Ascalaphidae (AISTLEITNER & ÁBRAHÁM 2023a), Nemopteridae (AISTLEITNER & ÁBRAHÁM 2023b) from Europe, Asia and Africa. They summarized the results of several decades of fieldwork in Cabo Verde antlion and owlfly fauna (AISTLEITNER & ÁBRAHÁM 2023c).

The publication of the ecofaunistic data of the collection will continue with the contribution to the knowledge of the Spanish antlion fauna (AISTLEITNER & ÁBRAHÁM 2024 in press).

In previous years, the first author of the collection already prepared publications on the micro-taxonomy, ecofaunistics, and distribution data of the genus of *Libelloides* and *Nemoptera* (AISTLEITNER 1973, 1980, 1981, 1982a, b, 2007, 2015, 2019, 2020). This information is not included again in the authors' subsequent publications.

This paper aims to contribute to the knowledge of the distribution and flight activity of the adult European antlion fauna with ecofaunistic data.

Material and methods

A small proportion of the material examined originates from the occasional entomological fieldwork undertaken by the first author, while the majority has been donated to the collection by other entomologists during their entomological fieldwork.

The monograph of ASPÖCK et al. (1980) and the entomological collection of the Rippl-Rónai Museum (SCMK, Kaposvár) were used as reference and comparative material for species identification.

The data of the collection are not uniform, because they come from different periods and different collectors, therefore the faunistic data are presented in the order of the data on the label, they have not been standardised. The data of the collection are published in alphabetical order of the species, according to the recommendations of the Nagoya Protocol for documentation (STIEGELER et al. 2016), which were taken into account in the paper.

The faunistic data were grouped by country and smaller geographical units (province, geographical landscape unit, etc.) with phenological and other information. The survey data come from several countries. The spelling of the local languages or the information on the label has been retained in this way for easier retrieval in the collection. Most of the labels are in German.

Results and discussion

The European fauna is well documented from a taxonomic and faunistic point of view (e.g. ASPÖCK et al. 1980, MONSERRAT & Acevedo 2013). However, the faunistic research of the last two decades shows that even more new species can be detected in Southern Europe (PANTALEONI et al. 2010, PANTALEONI & BADANO 2012, BADANO et al. 2016) since the antlion species prefer arid Mediterranean areas to continental ones.

In this publication, faunistic data of 186 specimens of 24 species from Southern and Central European countries from the EFMEA collection are published. This publication does not include data on specimens from Spain, as these have been published in a separate publication.

The material studied has not been collected systematically, but over many years material from occasional samplings have been added to the collection.

No new species for the local fauna were found in the collection from any country. However, it does contain some rare species of interest from a faunistic and conservation point of view, namely *Neuroleon arenarius* (Navás, 1904) and *Neuroleon ochreatus* (Navás, 1904) from Italy and South France, *Creoleon aegyptiacus* (Rambur, 1842) from Italy and South France, *Myrmeleon noacki* Ohm, 1963, and *Nedroleon anatolicus* Navás, 1914 from Greece.

The nomenclature and the list of species follow the monograph of ASPÖCK et al. (2001).

Family **Myrmeleontidae** Latreille, 1802
 Subfamily **Palparinae** Banks, 1911
 Tribe **Palparini** Banks, 1911

Palpares libelluloides (Linnaeus, 1764)

Examined material: **Albanien**, Durrës, Villa Zogu, 80 m, 09.06.2017, 1♂, leg. Aistleitner. - Berat, 15 km SW Berat, Mte. Terpanit, 850 m, 02.07.2015, 2♀♀, leg. Aistleitner. - **Bulgaria**, Burgas, Sozopol, 20.06.1973, 1♂ 1♀, leg. Navratil. - Černomorec, 50 m, 21.07.1985, 2♂♂ 3♀♀, leg. Anonymus. - **Kroatien**, Insel Cres, Stivan, 23.7.-3.8.1998, 7 ex., leg. Ortner S. - Dalmatien, Šibenik, o.D., 1♀, leg. Anonymus. - **Frankreich**, Alpes-Maritimes, Vence N, 500-600 m, 28.07.1973, 2♂♂, leg. Groß. - Herault, Saint-Guilhem-le-Desert, 16.07.1984, 1♂ 4♀♀, leg. Anonymus. - Korsika, Calvi, 22.07.1983, 1♀, leg. Schurig. - Golfo de Porto, Piano, Col de San Martino, 09.07.1982, 1♀, leg. Anonymus. - **Griechenland**, Delphi, 19.06.1985, 1♂ 1♀, leg. Laube. - Fokida, Dorida-Eratini, 17.06.1979, 1♂, leg. Mühle. 25.05.1981, 1♂, leg. Probst. - Kreta, Spili, 35-13-45 N, 24-32-34 E, o.D., 1♂, leg. Mühle. - Chania, Dramia, Kavalos, 01.06.1981, 1♀, leg. Probst. - Paros (Kykladen), 26.05.1979, 1♂, leg. Gawehn. - Peleponnes, Arkadien, Leonidi, 15.06.1979, 1♂, leg. Mühle. - Sparta, 3 km N m, 30.5.-6.6.1997, 1♂ 3♀♀, leg. Fischer H. - Kalavryta, Mega Spileo, 1000 m, 8.-16.6.1972, 1♂, leg. Spinder. - Samos, Mandates N, "Nachtigallental" m, 25.07.2002, 1♂, leg. Aistleitner U. - Thessalia, Larisa, Kypseli, 250 m, 08.06.1988, 2♀♀, leg. Oswald R. - Thrakien, Avdira-Lagos, 01.08.1987, 1♂, leg. Anonymus. - **Italien**, Savona, Andora, Capo Mele, 230 m, 03.07.1987, 1♂, leg. Drouet. - Livorno, Insel Elba, Patresi, 2.-6.6.1970, 1♀, leg. Tretttau ex coll. Groß. - **N-Mazedonien**, Skopje, Mte. Vodno, 21.07.1976, 1♂, leg. Groß. - Štip, 22.06.1988, 1♀, leg. Kautt. [Drenovo, Dolnja-Klissura] am Rajekfluss, 300 m, 5.7.1979, 3 ♂♂, leg. Schaidler. - Veles, Topolka (Mt.?), 150 m, 04.07.1979, 1♀, leg. de Freina.

Subfamily **Myrmeleontinae** Latreille, 1802
 Tribe **Acanthaclisini** Rambur, 1842

Acanthaclisis occitanica (Villers, 1789)

Examined material: **Frankreich**, Pyrénées-Orientales, Banyuls sur Mer, 24.-30.7.1951, 1♀, leg. Groß.

Tribe **Myrmecaelurini** Esben-Petersen, 1918

Myrmecaelurus trigrammus Pallas, 1781)

Examined material: **Albanien**, Lushnja, Kolonia, Kloster Ardenica, 250 m, 22.08.1995, 2♀♀, leg. Aistleitner. - **Griechenland**, Parnass, Arachova, 1100-1200 m, 31.07.1977, 1 ex., leg. Groß. - Aegaeis, Samos, Manolates, Nachtigallental, 25.07.2002, 4 ex., leg. U. Aistleitner.

Tribe **Myrmeleontini** Latreille, 1802

Myrmeleon formicarius Linnaeus, 1767

Examined material: **Austria**, Vorarlberg, Innerbraz, Rüttenen, 1020 m, 06.07.2004, 1 ex., leg. Aistleitner. - **Deutschland**, Bayern, Oberpfalz, Kallmünz, 15.06.1974, 1 ex. und Oberfranken, Pegnitz, 27.06.1973, 1 ex., leg. Ströhle. - **Frankreich**, Isere, Mens, Mentayre, 930 m, 5.-6.7.1985, 1 ex., leg. Drouet. - Hautes-Alpes, Vallon de Durbonas,

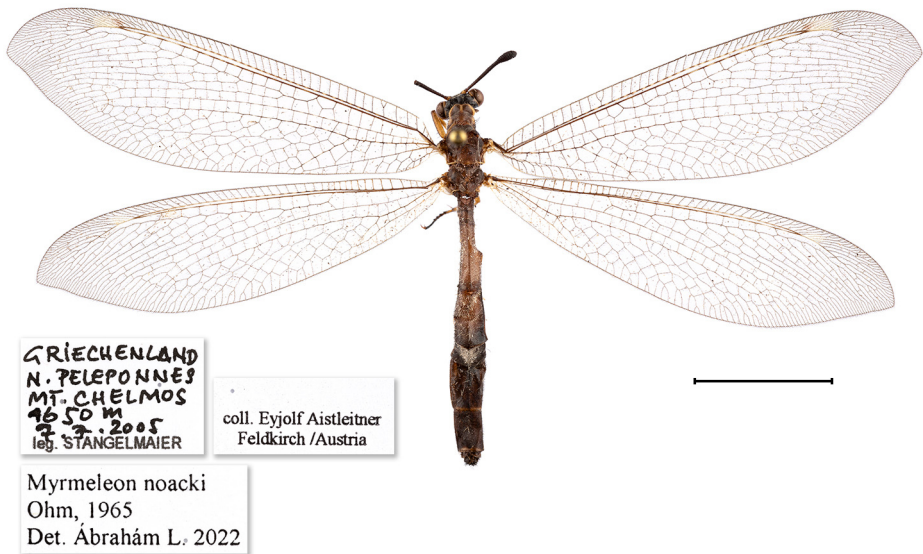


Fig. 1: *Myrmeleon noacki* Ohm, 1963

La Faurie, 44.561088, 5.742544, 880 m, 02.06.1990, 1 ex., leg. Drouet. - **Griechenland**, Peloponnes, Mt. Chelmos, 1650 m, 07.07.2005, 1 ex., leg. Stangelmaier. - Italien, Cuneo, Garessio, Colle de San Bernardo, 960 m, 07.07.1987, 1 ex., leg. Drouet. - **Schweiz**, Wallis, Mörel, 06.08.1955, 1 ex., leg. Groß.

Myrmeleon noacki Ohm, 1963 (Fig. 1)

Examined material: **Griechenland**, Chelmos, 1650 m, 07.07.2005, 1 ex., leg. Stangelmaier.

Myrmeleon inconspicuus Rambur, 1842

Examined material: **Frankreich**, Pyrénées-Orientales, Banyuls sur Mer, 24.-30.7.1951, 1♀, leg. Groß.

Myrmeleon bore (Tjeder, 1941)

Examined material: **Austria**, Kärnten, Arnoldstein, rechtes Gailufer, 23.8.xx, 3 ex., leg. Stangelmaier, (det. Gruppe).

Myrmeleon hyalinus Olivier, 1811

Examined material: **Italien**, Sardinien, Costa Rei, Mte. Nai, 16.06.1984, 1♂, leg. Eitschberger U. & A. - **Griechenland**, Peloponnes, Pylos, 10 km N, 18.07.1977, 3 ex., leg. Groß.

Euroleon nostras (Fourcroy, 1785)

Examined material: **Austria**, Vorarlberg, Dornbirn, Klotzen, 600 m, 9.+16.7.2004, 2 ex. - Götzis, Götznberg, 680 m, 30.06.2004, 1 ex. el. - **Übersaxen**, Galathweg,

16.07.2004, 1 ex. el. - Feldkirch, Ardetzenberg, 11.07.2004, 1 ex. el. - Sateins, 520 m, 31.07.2004, 1 ex., alle cult. U. Aistleitner. - Thüringen, Flugelin, 680 m, 31.07.2004, 2 ex., leg. U. Aistleitner. - Rankweil, Forstgarten, 440 m, 11.07.2004, 1 ex. cult. Kapp. - **Griechenland**, Aegaeis, Samos, Prof Ilias, Mt. Ampelos, 220 m, 21.06.2014, 1 ex. und Samos, Kampos, 5 km W, Mt. Kerkis, 220 m, 20.06.2014, 1 ex., leg. Stangelmaier & Fritsch. - **Schweiz**, Graubünden, Bergell, Soglio, 1100 m, 10.06.2004, 1 ex., leg. U. Aistleitner.

Tribe *Nemoleontini* Banks, 1911

Macronemurus appendiculatus (Latreille, 1807)

Examined material: **Frankreich**, Alpes-Maritimes, Mouans-Sartoux, 21.08.1982, 3 ex. und Nice, La Turbie, 31.07.1982, 1 ex., leg. Broquet. - Alpes-de-Haute-Provence, Saint-Auban, Franchironette, 520 m, 23.07.1986, 1 ex., leg. Drouet. - Hautes-Alpes, Embrun, 44.588374, 6.475720, 28.07.1986, 2 ex., leg. Drouet. - Korsika, Golfo de Porto, Piana S, Col de San Martino, 08.07.1982, 1 ex., leg. Anonymus. - **Italien**, Sardinien, Val de Olbia, San Pantaleo env., 11.07.1982, 1 ex., leg. Anonymus. - Costa Rei, Mt. Nai, 12.06.1986, 5 ex., leg. Eitschberger U. & A. - **Kroatien**, Insel Cres, Stivan, 29.7.-3.8.1998, leg. Ortner S. - Dalmatien, Omiš, 10 m, 19.07.2012, 1 ex., leg. Stangelmaier.

Macronemurus bilineatus Brauer, 1868

Examined material: **Griechenland**, Altaia, Peleponnes, Kalavrita, 800 m, 03.07.1988, 1♂, leg. Drouet. - Fokida, Eleonas, 600 m, 11.07.1988, 1♀, leg. Drouet.

Delfimeus irroratus (Olivier, 1811)

Examined material: **Kroatien**, Dubrovnik, 21.08.1957, 1♂, leg. Groß.

Neuroleon arenarius (Navás, 1904) (Fig. 2)

Examined material: **Frankreich**, Pyrénées-Orientales, Banyuls sur Mer, 24.-30.7.1951, 1♂, leg. Groß.

Neuroleon ochreatus (Navás, 1904) (Fig. 3)

Examined material: **Frankreich**, Herault, Frontignan, 01.08.1996, 1♂, leg. Brandstetter.

Neuroleon nemausiensis (Borkhausen, 1791)

Examined material: **Italien**, Forli, Galeata, Straja, 07.09.2001, 1♂ 2♀♀, leg. Stangelmaier. - **Türkei**, Rumelien, Veracussia - ubi?, 15.-18.7.1971, 1♀, leg. Groß.

Neuroleon microsternus (McLachlan, 1898)

Examined material: **Griechenland**, Fokida, Delphi, 500 m, 24.09.2000, 1♀, leg. Stangelmaier.

Distoleon tetragrammicus (Fabricius, 1798)

Examined material: **Albanien**, Diber, Rabdisht, 850 m, 08.07.2017, 1 ex., leg. Aistleitner. - **Kroatien**, Insel Cres, Stivan, 03.08.1998, 1♂, leg. Ortner S. - **Frankreich**, Alpes-Maritimes, Saorge, Vallon de Cayros, 44°00'N 07°31'E, 19.+20.7.2018, 1 ex., leg. Mayr T. - Alpes-de-Haute-Provence, Oraison, 25.07.1973, 2 ex., leg. Groß. - Hautes-Alpes, Saint-Crépin, Les Caase, 09.07.1982, 1 ex., leg. Drouet. - Pyrénées-Orientales, Banyuls sur Mer, 24.-30.7.1951, 1 ex., leg. Groß. - **Griechenland**, Boeotia, Parnassos,

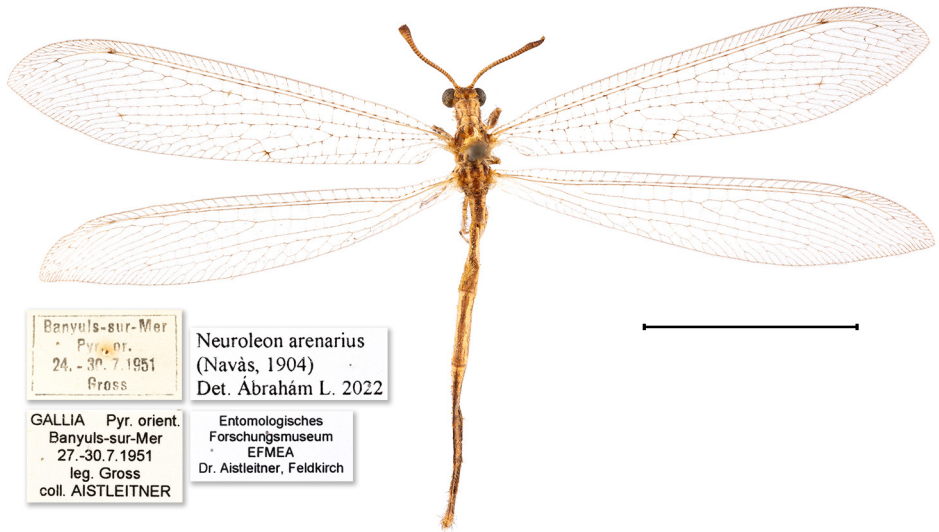


Fig. 2: *Neuroleon arenarius* (Navás, 1904)

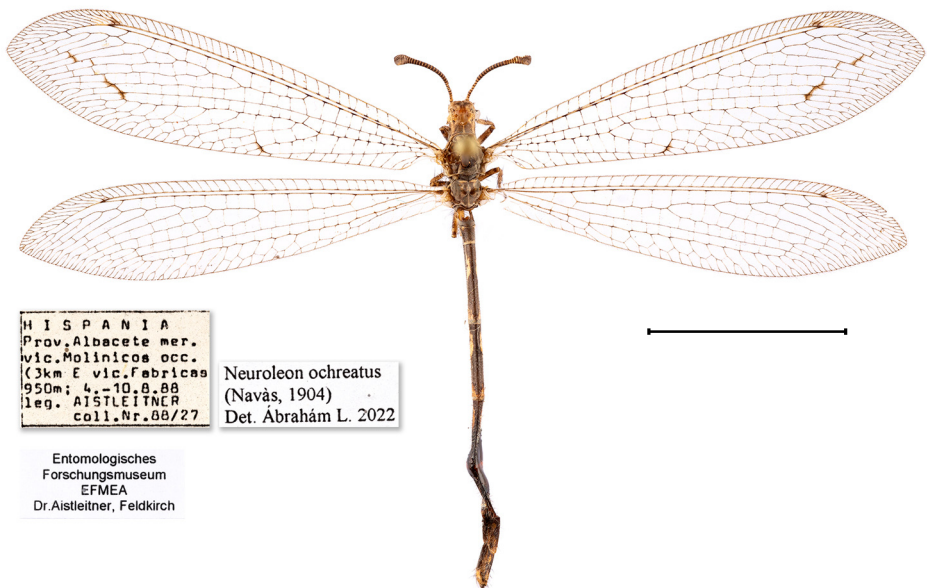


Fig. 3: *Neuroleon ochreatus* (Navás, 1904)

Darlia, 1000 m, 08.06.1988, 1 ex., leg. Oswald. - Peloponnes, Taigetos, Trypi Pass, 1500 m, 19.07.1977, 4 ex., leg. Groß. - Kalavrita, Chelmos, 1300 m, 13.07.1977, 2 ex., leg. Groß. - Aegeis, Samos, Kampos, Kerkis, 19.-20.6.2014, 1 ex., leg. Fritsch & Stangelmaier. - **Italien**, Trento, Gardasee, Pietramurata, 250 m, 01.08.1981, 2 ex., leg. Ströhle. - Forli, Galeata, Straja, 07.09.2001, 3 ex., leg. Stangelmaier. - Isola d'Elba, Patresi, 25.-28.5.1970, 1 ex., 2.-6.6.1970, 2 ex., leg. Trettau ex coll. Groß. - **Schweiz**, Wallis, Mörel, 06.08.1953, 3 ex., leg. Groß. - **Tschechien**, Moravia mer., Pouzdrány, 12.08.1999, 1 ex., leg. Hladky.

Distoleon annulatus (Klug, 1834)

Examined material: **Griechenland**, Fokida, Delphi, 500 m, 24.09.2000, 2 ex., leg. Stangelmaier.

Nemoleon poecilopterus (Stein, 1863)

Examined material: **Griechenland**, Aegeis, Samos, Kampos, 5 km W, Mt. Kerkis, 220 m, 20.06.2014, 1♀ und Samos, Mylilini, 3 km W, Mt. Rampaidonis, 260 m, 11.-12.6.2014, 1♀, leg. Stangelmaier & Fritsch.

Creoleon lugdunensis (Villers, 1789)

Examined material: **Frankreich**, Pyrénées-Orientales, Banyuls sur Mer, 24.-30.7.1951, 1 ex., leg. Groß. - Bouches de Rhone, Camargue, Château d'Astonin, 03.07.1983, 1 ex., leg. Broquet. - **Italien**, Sardinien, Costa Rei, Mt. Nai, 04.06.1984, 1 ex., 10.+13.+16.6.1984, 4 ex., leg. Eitschberger U. & A. - Latium, Rom, Castel Fusano, 18.07.1991, 1♂ und Ostia, 25.7.o.J., 1 ex., leg. Groß. - Toscana, Isola del Giglio, 1♂ 1♀, 17.-20.5.68, 2 ex., leg. Trettau in coll. Groß.

Creoleon plumbeus (Olivier, 1811)

Examined material: **Albanien**, Diber, Pescopi, Rabdisht, 850 m, 08.07.2017, 1 ex., leg. Aistleitner. - **Griechenland**, Thrakien, Komotini NNW, Mishos, 40 m, 07.10.1985, 1 ex., leg. de Freina. - Peloponnes, Pylos, 10 km N, 18.07.1977, 1 ex., leg. Groß. - Olympia, 28.06.1988, 1 ex., leg. Drouet. - Kalavrita, Chelmos, 38°01'N 22°10'E, 1300 m, 13.07.1977, 1 ex., leg. Groß. - Nisos Évvoia (Euboea), Nea Stira, 100 m, 4.-21.8.2000, 1 ex., leg. Aistleitner. - Aegeis, Samos, Kampos, 5 km W, Mt. Kerkis, 220 m, 20.06.2014, 1 ex., leg. Stangelmaier & Fritsch. - Aegeis, Aetolia, Amfilochia-Anixiatiko, 38°58'N 21°10'E, 20 m, 12.06.1988, 1 ex., leg. Oswald. - **Montenegro**, Podgorica, 19.08.1957, 2 ex., leg. Groß.

Creoleon aegyptiacus (Rambur, 1842) (Fig. 4)

Examined material: **Italien**, Sicilia, [Isole pelagii], Lampedusa, Mte. Albero Sole, 29.05.1997, 1♂ und Isola Linosa, 31.05.1997, 1♂, leg. Aistleitner. - Sardinien, Costa Rei, Mte. Nai, 10.-13.6.1984, 4 ex., 15.06.1984, 1 ex., leg. Eitschberger U. & A. - **Frankreich**, Corse, Cateraggio Aleria, 27.05.1983, 2♂♂, leg. Broquet.

Tribe **Glenurini** Banks, 1927

Nedroleon anatolicus Navás, 1914 (Fig. 5)

Examined material: **Griechenland**, Peloponnes, Anagia, Taygetos, 1100 m, 20.07.1977, 3 ex., leg. Groß and the same 2 ex. (NeuMyr8802 and NeuMyr8803) in coll. SCMK.

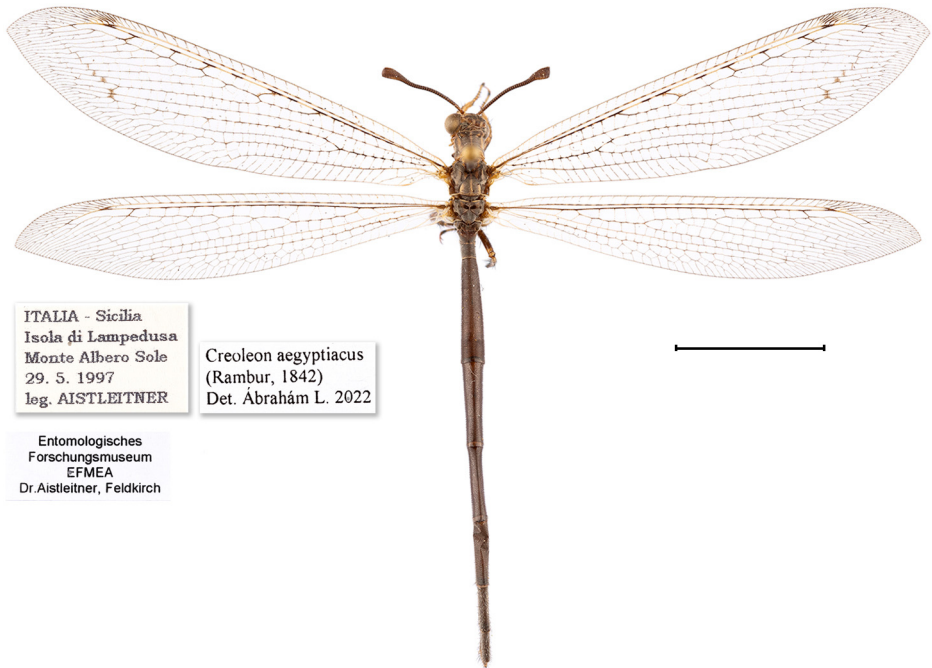


Fig. 4: *Creoleon aegyptiacus* (Rambur, 1842)

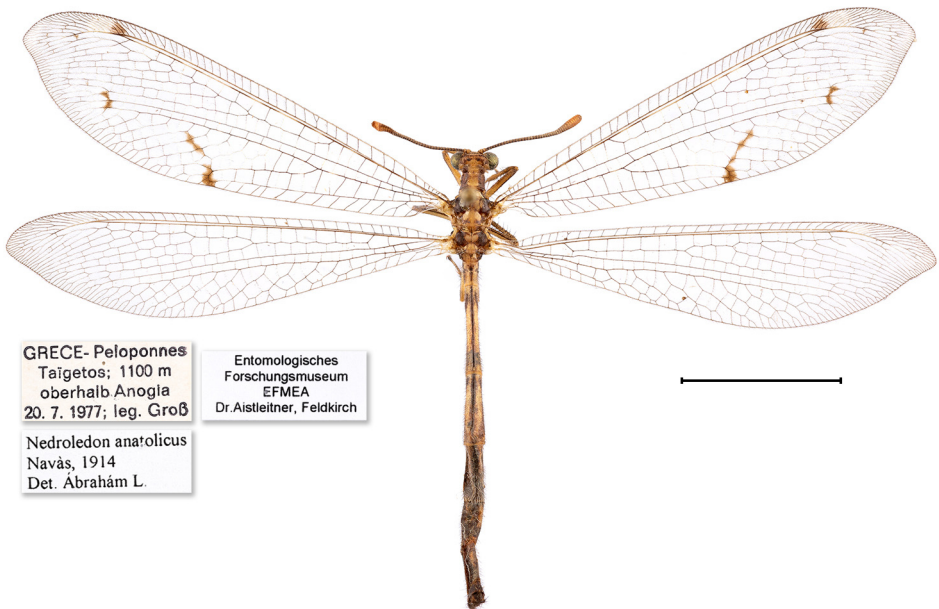


Fig. 5: *Nedroleon anatolicus* Navás, 1914

Megistopus flavicornis (Rossi, 1790)

Examined material: **Frankreich**, Pyrénées-Orientales, Banyuls-sur-Mer, o.D., 1 ex., leg. Buddenbrock. - **Italien**, Sondrio, Chiavenna Piuro, Camping Aquafreggia, 400 m, 25.07.1980, 1 ♀, leg. Brandstetter. - Sardinien, Costa Rei, Mt. Nai, 11.06.1982, 2 ex., leg. Eitschberger U. & A.

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