

Description of a new *Pseudopalpares* species from southern Africa (Neuroptera: Myrmeleontidae)

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ÁBRAHÁM, L.: *Description of a new Pseudopalpares species from southern Africa (Neuroptera: Myrmeleontidae)*.

Abstract: *Pseudopalpares paropunctatus* sp. n. from Botswana and Namibia is described and compared to *Pseudopalpares sparsus* (McLachlan, 1867), *Pseudopalpares sobrinus* (Navás, 1912) (comb. n.), and *Pseudopalpares nyicanus* (Kolbe, 1897) (comb. n.) which are moved to a new combination. The lectotype of *Pseudopalpares sparsus* (McLachlan, 1867) is designated from male syntype of *Palpares sparsus* McLachlan, 1867 (present designation). The female syntype of *Palpares sparsus* McLachlan, 1867 is conspecific with *Pseudopalpares sobrinus* (Navás, 1912). The type specimen of *Palpares aemulus* Péringuey, 1911 is re-examined and the synonym status of *Pseudopalpares nyicanus* (Kolbe, 1897) is confirmed. A key for species is also given.

Keywords: new species, ant-lion, taxonomy, *Palpares*, *Pseudopalpares*, Africa.

Introduction

STANGE (2004) listed 18 genera in the tribe of Palparini Banks, 1911. Most species are found in the genus *Palpares* Rambur, 1842. Currently, the number of valid species of the tribe is more than 130 (STANGE 2004, OSWALD 2023).

From a taxonomic point of view, the genus of *Palpares* is the most species-rich in the tribe of Palparini since it was the earliest described genus. Besides, it was a so-called ‘collecting’ genus from which more and more genera were separated (NAVÁS 1912, INSOM & CARFI 1988, MANSELL 1990) in the 20th century. Examining the morphological diversity of the tribe, INSOM & CARFI (1988) and MANSELL (1990, 1992, 2004) tried to group the species into new genera (*Annulares* Mansell, 2004, *Goniocercus* Insom & Carfi, 1988, *Indopalpares* Insom & Carfi, 1988, *Pamares* Mansell, 1990, *Parapalpares* Insom & Carfi, 1988, *Pseudopalpares* Insom & Carfi, 1988). However, a comprehensive genus-level revision of the tribe has not yet taken place.

Its higher-level classification is also varied. The literature of the 20th century treated them mainly as a subfamily (ASPÖCK et al. 2001, STANGE 2004, BADANO et al. 2017) but they are also mentioned as a family (JONES 2019, PROST & POPOV 2021). So the higher taxonomy still needs further investigation as well. Recently, HÉVEN et al. (2023) carried out systematics and historical biogeography studies using DNA analysis on Palparini antlions.

The genus *Palpares* and related genera are of Gondwanan origin. They occur in higher species richness in the southern part of Africa (BANKS 1913, HÖLZEL 1986,

MANSELL 1990). The distribution of the genus includes the entire territory of Africa and Madagascar as well as the Mediterranean areas in Europe (2 sp.), the southern part of Asia: West Asia (8 sp.), India (10 sp.), and Southeast Asia (2 sp.) based on Lacewing Digital Library (LDL) (OSWALD 2023).

In the less studied areas of Africa and Asia, where the number of species is higher, additional new species may also be found (HÖLZEL 1988, GHOSH 1991, MANSELL 2004, ÁBRAHÁM 2010, 2012, AKOUDJIN & MICHEL 2011, ÁBRAHÁM & VAN HARTEN 2014).

During the digitization of the Rippl-Rónai Museum (Kaposvár, Hungary) collection, The specimens were redetermined and found a new species in the genus *Pseudopalpalares* from southern Africa.

Material and methods

Not only the type but also male and female non-type specimens were also used for the morphological examination. Additionally, the literature referencing the species was checked, along with requesting high-quality photos of the type specimen available in various collections.

The habitus photos were taken by Canon EOS 6DM2 digital camera equipped with Canon macro lens 100 mm and a flashlight system (Godox MS 300). Later, the layers of photos were processed with stacking and Adobe Photoshop software.

According to traditional methods, the caudal part of the abdomen was removed, treated with a 10% KOH solution, and heated for 15 minutes. After cooling, it was rinsed in distilled water. For taking photos, the genitalia was placed in glycerine in a Petri dish. Finally, each genitalia was transferred into glycerine in a microvial for preservation.

Abbreviations:

- NHMUK – Natural History Museum, London, UK
EFMEA – Entomologisches Forschungsmuseum Eyjolf Aistleitner (private collection), Feldkirch, Austria
HNHM – Hungarian Natural History Museum, Budapest, Hungary
MIZ – Museum and Institute of Zoology, Polish Akademia of Sciences, Warsaw, Poland
MNHN – Muséum National d'Histoire Naturelle, Paris, France
SAMC – The Iziko South African Museum (former South African Museum), Cape Town, RSA
SCMK – Rippl-Rónai Museum, (former Somogy County Museum), Kaposvár, Hungary
JODPC – John O' Dell's private collection Hornsea, UK
USMB – Upper Silesian Museum, Bytom, Poland
ZMHB – Museum für Naturkunde der Humboldt Universität zu Berlin, Bereich Zoologisches Museum, Berlin, Germany
ZPPC – Zoltán Papp's private collection, Budapest, Hungary

Com – Comment, Comb – New combination; Dist – Distribution; Mon – Monograph; Odescr – Original description; List – Faunal list

FW – Fore wing, HW – Hind wing, C – Costa, Sc – Subcosta, R – Radius, Mp – Media posterior, Mp_1 and Mp_2 – Media posterior 1 and 2, Cua – Cubitus anterior, Cua_1 – Cubitus anterior 1, Cua_2 – Cubitus anterior 2, Cup – Cubitus posterior, A_1 , A_2 and A_3 – Anal veins 1, 2 and 3, as – apical streak, mm – medial mark, ep – ectoproct, T8, T9 – tergites 8 and 9, S8, S9 – Sternites 8 and 9, gx – gonocoxites, gx8, gx9, gx11 – gonocoxites 8, 9, and 11, gp – gonophysal plate

Results and discussion

Description

***Pseudopalpares parvopunctatus* sp. n.** (Fig. 1A–E, Fig. 2, Fig. 3A and B).

Material examined:

Holotype: ♂ Namibia, Omaheke Prov. 35 km Epukiro 21°37'S; 19°06'E, 9.3.2022, leg. Jiří Halada.

Preserved in the entomological collection of SCMK, Hungary.

Paratypes: 1 ♀ Namibia, Omaheke Prov, 35 km Gobabis, 1480 m, 22°23'S; 18°39'E, 2014. 03. 12. J. Halada leg (in coll. SCMK), 1 ♂ 2 ♀ same as holotype (in coll. ZPPC); 1 ♂ Botswana, Ghanzi Distr. 51 km E Charles Hill, 1150 m, 22°24'S, 20°30'E 1.2. 2023, leg. Jiří Halada (in coll. SCMK); 1 ♂ and 1 ♀ Namibia, Omaheke, 35 km W Gobabis, 1480 m, 11.3.2022, leg. J. Halada; 1 ♀ Namibia, Omaheke, 35 km W Gobabis, 1480 m, 12.03.2014, leg. J. Halada (in coll. EFME); 1 ♀ S.W.A. [Namibia] Tsumeb SAM-NEU-A001084 (in coll. SAMC).

Diagnosis:

A large antlion species. The general colour of the body is yellow with black marks. Frons is completely black. The abdomen is black dorsally with longitudinal yellow bands on both sides. The wings are moderately wide, there are only small spots on the wings and without larger marks, and spots do not form an apical streak on the hind wing. The terminal segment of labial palp is very slightly clavate at the extremity with the drop-shaped sensory opening. Gonarcus are a well-developed, regularly rounded, and hood-shaped bulla.

Head: Vertex vaulted in frontal view and reddish-yellow with wide dull black band above antenna and with wide transversal shiny black band from which a wide black band extends along epicranial suture in dorsal view. Short sparse and black hairs in yellow part at top of vertex. Frons dominantly shining black (Fig. 1C) just below scapus rather dark brown with short sparse white hairs. Gena, clypeus and labrum shining yellow. Gena hairless. Clypeus with medium long sparse black hairs. Labrum with pale hairs directed to mouth part. Mandible yellow with brown apex. Maxillary and labial palps yellow last segments become brown to black; end of labial palp widening, and distal tip slightly flattened, not pointed (Fig. 1D). Sensory pit drop-shaped. Antenna 9 mm long. Scape shiny black with sparse black hairs in ventral side; pedicel black with narrow yellow ring distally, hairless. Flagellar segments and club black with short black setae.

Thorax: Pronotum (Fig. 1B) shorter than wide, rhomboid-shaped in dorsal view, yellow with lateral and median wide dull black band. Both margins of pronotum flexed upward, and with long, dense, upstanding, white and black hairs. Mesonotum and metanotum yellow with widened dull black median band and lateral narrow stripes, and with dense long and white hairs. Median band widened and narrowed in some places. Metascutum with reddish-brown velvety spots. Sides dull black, with long very dense and white hairs.

Legs: strong. Coxae and trochanters dull black. Femora dominantly yellow with stiff white and black bristles. Tibiae somewhat shorter than femora, almost completely yellow but distal parts black, and with stiff black bristles. Indistinct black half-ring-shaped mark on dorsal side. Tibial spurs reddish-brown, and slightly longer than tarsal segments 1-2 combined. Tarsal segments completely shiny black and with short stiff black bristles. Segments 1-4 equal, segment 5 as long as segments 1-4 combined. Claws shining reddish-brown slightly longer than tibial spurs.

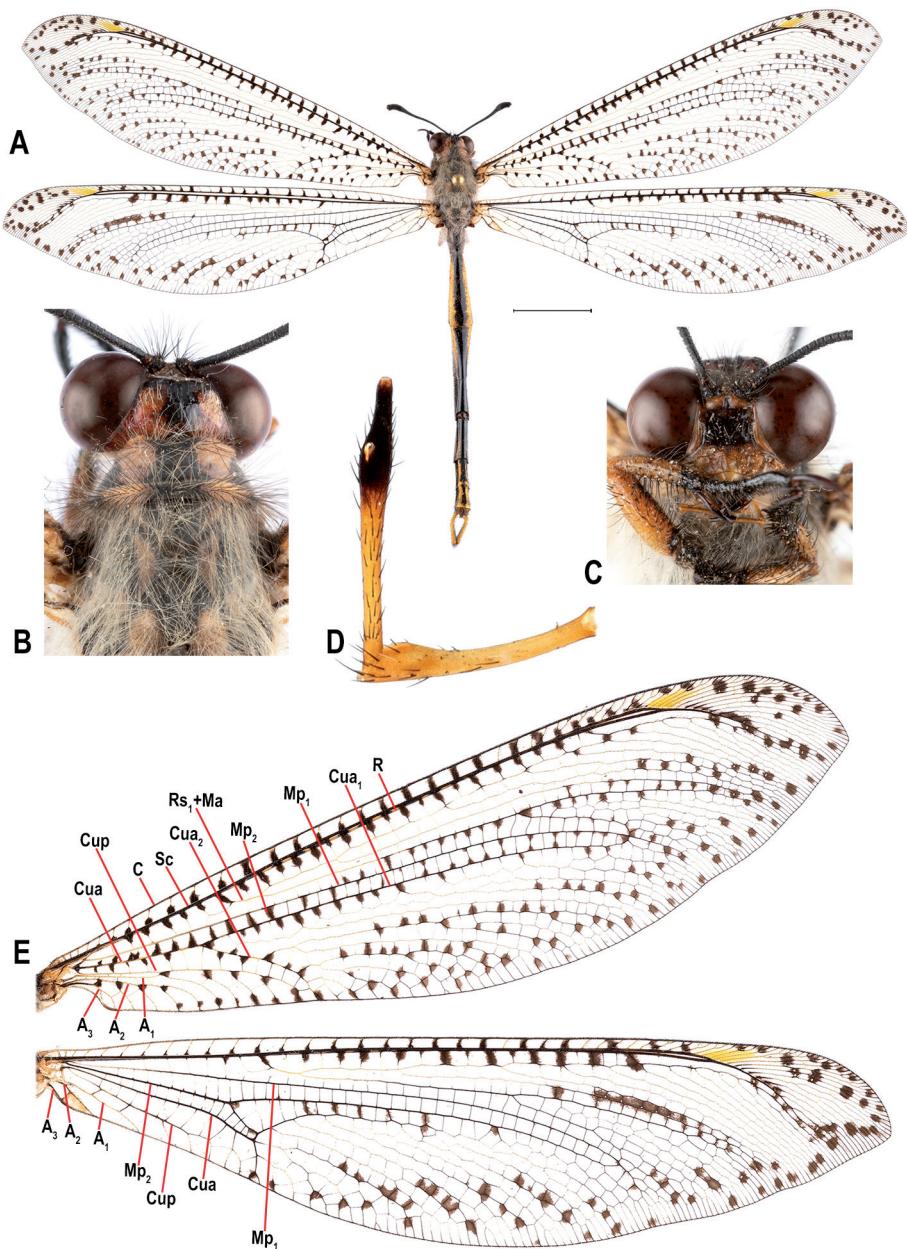


Fig. 1: Holotype of *Pseudopalpares parvopunctatus* sp. n., A – habitus in dorsal view, scale bar: 10 mm; B – vertex and notum in dorsal view; C – head in frontal view; D – labial palp; E – wing venation, in different scales

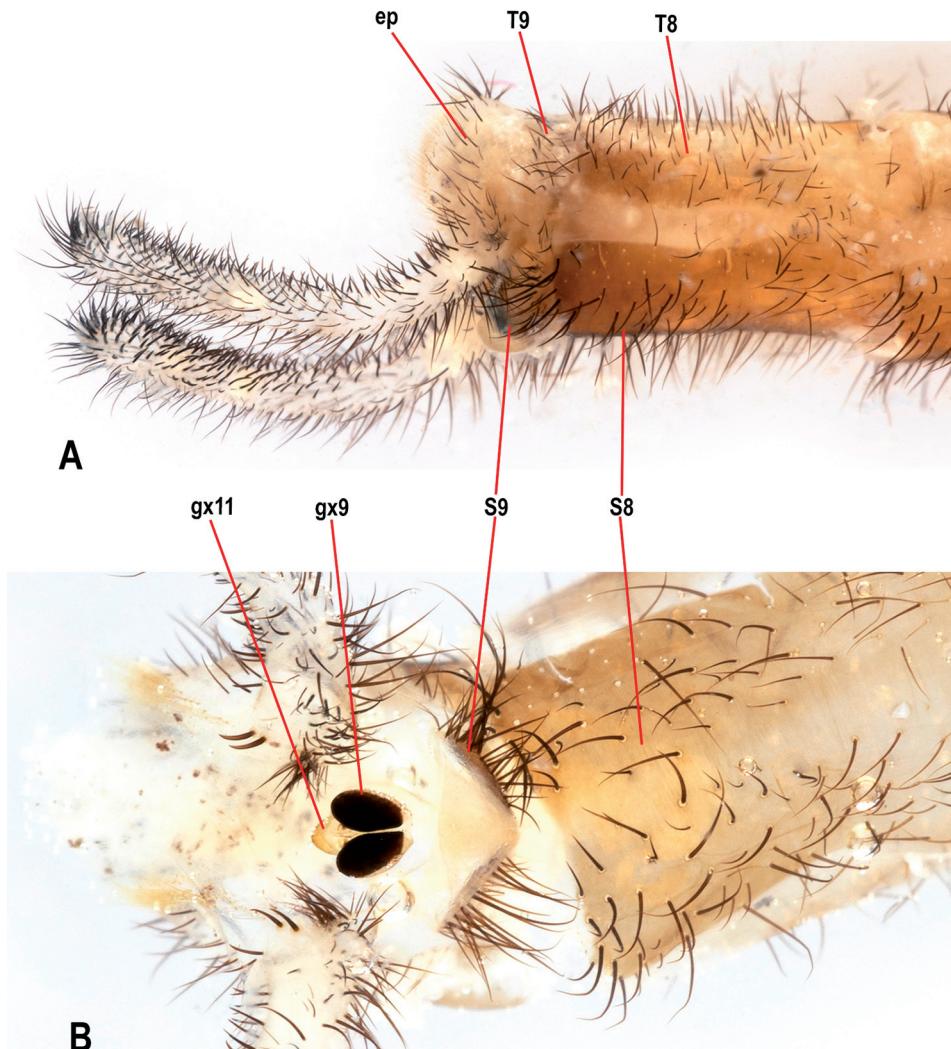


Fig. 2: *Pseudopalpares parvopunctatus* sp. n., A – male terminalia and genitalia in lateral view; B – male genitalia in caudal view

Wings: Fore wing 55 mm long, 15 mm wide. Membrane transparent with many small dark brown spots and dots along cross-veins but without larger marks. Punctuation as in Fig. 1E. C yellow. Sc yellow, interrupted with brown sections at cross-veins. Cross-veins with brown shadow on both sides in coastal area. Pterostigma distinct bright yellow with 5 cross-veins. R dark brown. Anterior part of Mp yellow, Mp_1 yellow, interrupted with brown sections at cross-veins then turning completely brown. Mp_2 brown with wide brow shadow on both sides. Cua yellow interrupted with brown sections at cross-veins, and Cua_1 and Cua_2 yellow interrupted with brown sections at cross-veins. Cup yellow basally then alternated with brown sections. A_1 and A_2 yellow. A_3 brown basally and yellow distally.

Hind wing: 55 mm long, 14 mm wide. Membrane transparent with many small dark brown spots and dots. Before cubital fork no spots and dots on base and the middle part of hind wing. Only small, separate spots in the apical area. Pterostigma distinct yellow with 4-5 cross-veins. C yellow, Sc yellow, interrupted with brown sections at cross-veins. Mp₁ yellow basally and black distally. Cu_a Cu_{a1} and Cu_{a2} completely brown. Cup yellow basally and brown distally. A₁, A₂, and A₃ dominantly yellow.

Abdomen: 42 mm long together with processus of ectoproct. Tergites black with two longitudinal yellow stripes laterally. Intersegmental membrane yellow. Sternites completely black. Hairs on segments 1-4 long dense and white, other segments with short and sparse white.

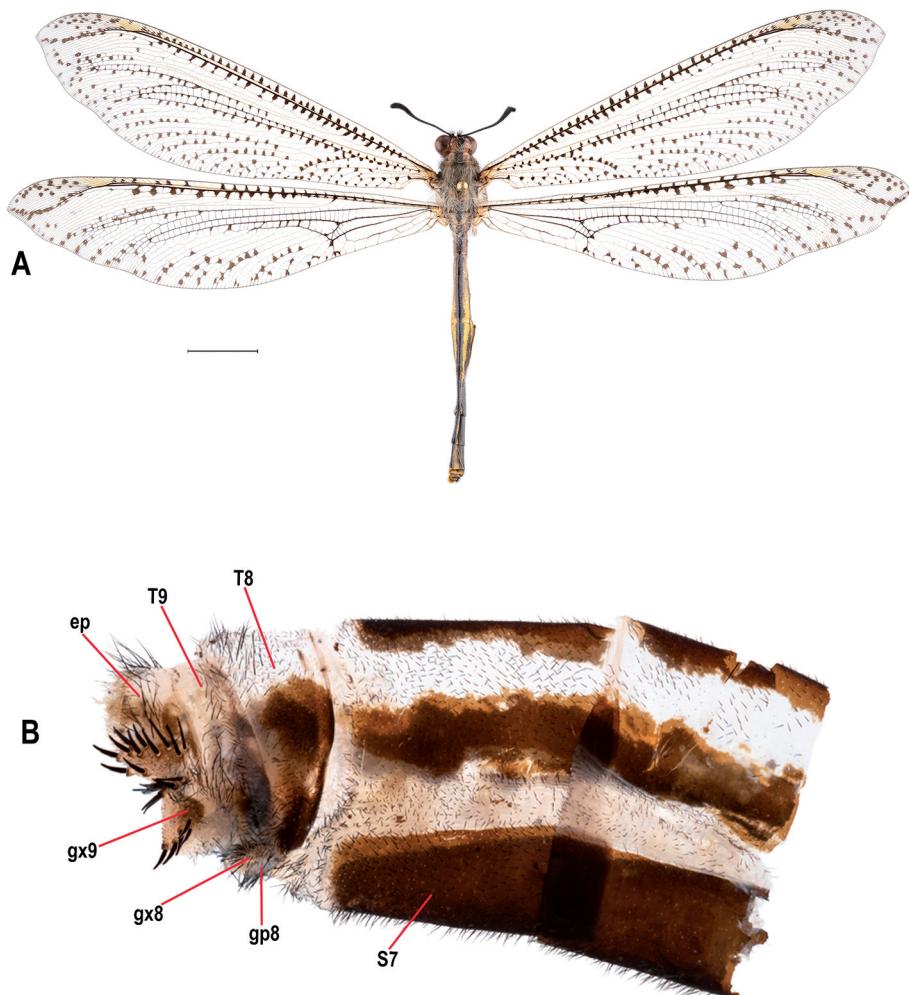


Fig. 3: Paratype female *Pseudopalpares parvopunctatus* sp. n., A – habitus in dorsal view, scale bar: 10 mm; B – terminalia and genitalia in lateral view, magnified

Terminalia and genitalia: Ectoproct oval plate with curved processus which as long as length of segment 8. Ectoproct yellow with black oval spot at base of processus and with short strong black setae. Gonocoxites 11 without setae in caudal view.

Paratype female: Female terminalia as in Fig. 3B in lateral view.

Diagnostic characters:

The new species shows a high degree of similarity with *Pseudopalpares sobrinus* (Péringuay, 1911) comb. n., *Pseudopalpares sparsus* (McLachlan, 1867), and *Pseudopalpares nyicanus* (Kolbe, 1897) comb. n. which occur in the southern African area. However, the new species can be easily distinguished from them based on the longitudinal black stripe running along the dorsal surface of the tergites, the absence of larger spots and apical streak on the hindwing. The origin of Rs is after cubital fork. A large black spot on frons is also characteristic of the new species. No stetae on gonocoxites 11 in caudal view.

Etymology:

The name of the new species refers to the small spots of the wings.

Distribution: Botswana and Namibia.

Annotated checklist and distribution of the genus *Pseudopalpares* and related species

***Pseudopalpares sparsus* (McLachlan, 1867) (Fig. 4A and B).**

Palpares sparsus McLachlan, 1867: 240 (partim male syntype) – (Odescr), Stitz 1912 (Dist), Esben-Petersen 2016 (Com), 1928 (Dist, Com male syntype), Navás 1919 (Dist), 1925b (Dist), 1928 (Dist).

Palpares sparsus jeanneli Navás, 1914: 12 – (Odescr), Stange 2004 (Syn, Mon).

Palpares sparsus marginalis Navás, 1923: 143 – (Odescr), Stange 2004 (Syn, Mon).

Palpares nudatus Navás 1912: 221 – (Odescr), Esben-Petersen 1916 (List), 1920 (Syn).

Type material examined:

In coll. NHMUK: 1 ♂ // Daka R[iver]. Zambesi (Valley). / March 1863 / myrmeleo T. Baines // McLachlan coll. / B.M. 1938-674 // Palpares / sparsus McL. / (Type) // NHMUK010288091 //.

Additional material examined:

In coll. MIZ: 1 female D.[eutsch] Ost-Afrika [Tanzania], Salala, Mai 1908, Hammerstein S.; Mus. Zool. Polonicum 12/45; *Palpares sparsus* McL. Krivokhatsky det.

In coll. HNHM Iringa D.[eutsch]O.[st]A.[frica] [Tanzania] *Palpares sparsus* McL., H. Hözel det. 1970.

In coll. PZPC: 1 ♂ RSA, KwaZulu-Natal, Mhlopeni N.R. h, 875 m, 18-21.II.2018. leg. Udovichenko P.

Differential characters: Frons dark brown to black. Membrane with many small spots on both wings. Apical streaks more or less visible on wings. No spots between area of R_1 and R_2 on both wings. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Democratic Republic Congo (NAVÁS 1923), Kenya (NAVÁS 1914), Republic South Africa (MC LACHLAN 1868), Zimbabwe (STANGE 2004). New record for the fauna of Tanzania.



Fig. 4: Male syntype of *Pseudopalpares sparsus* (McLachlan, 1867)
A – habitus in dorsal view; B – head in frontal view, magnified

Remarks: The lectotype of *Pseudopalpares sparsus* (McLachlan, 1867) is designated from male syntype of *Palpares sparsus* McLachlan, 1867 (present designation).

***Pseudopalpares sobrinus* (Péringuey, 1911) comb. n. (Fig. 5A and B).**

Palpares sparsus McLachlan, 1867: 240 – (Odescri, partim female syntype). (Fig. 6A and B).

Palpares sobrinus Péringuey, 1911: 33 – (Odescri), Calvert 1899 (Dist as *Palpares* sp.), Banks 1913 (List), Esben-Petersen 1916 (List), 1928 (Dist), Navás 1919 (Dist), 1927 (Dist), 1935 (Dist), Mansell & Aspöck 1990 (Dist), Whittington 2002 (Dist), Stange 2004 (Mon).

Palpares carpentieri Navás, 1925a: 182 – (Odescri), Monserrat 1985 (Type list), Stange 2004 (Syn).

Palpares campanai Navás, 1915: 9 – (Odescri), Esben-Petersen 1928 (Syn), Monserrat 1985 (Type list), Mansell & Aspöck 1990 (Dist), Mansell 2000 (Dist).

Type material examined:

In coll. SAMC: 1 ♀ // Type // Palpares / sobrinus P. // Cap Col // Dunbrody / A. J. O'Neil. // SAM-NEU-A001078 //

Additional material examined:

In coll. SCMK: 1 ♂ Botswana SE 10 km E Thamaga 9.8.2019. Leg: S. Prepsl (NeuMyr8592); 1 ♂ Namibia 60 km from Windhoek 10.03.2006. Leg: Dr. Vas János (NeuMyr120); 1 ♂ Namibia F. Etosha Pan 27-28.01.2002 Leg: Werner (NeuMyr121); 2 ♀ RSA Transvaal near Thabazimbi 15-16.01.1999. Leg: Werner (NeuMyr117); 3 ♀ RSA Transvaal near Tshipise 19.01.1999 Leg: Werner (NeuMyr118); 2 ♂ 1 ♀ RSA Transvaal H. Merensky Nature Reserve 20.I.1999 Leg: Werner (NeuMyr119); 1 ♂ RSA Transvaal near Louis Trichardt Zontp. 17-19.01.1999. Leg: Werner (NeuMyr122); 1 ♂ Namibia Prov. Erongo 30 km W Omaruru 1130m 22.3.2017 Leg: J. Halada (NeuMyr2403); 1 ♀ Namibia Prov. Khomas 30 km SE Windhoek 1870m 22°34'44"S 17°20'12"E 21.3.2017 Leg: J. Halada (NeuMyr2212).

In coll. PZPC 1 ♂ Namibia prov. Khomas, 30km SE Windhoek, 22°34'44"S 17°20'12"E, 1870m, 21. III. 2017, leg. J. Halada; 1 ♂ Namibia NE, Kalahari desert, Dordabis region 70km S.E. Windhoek, 1490 m, 18-21 II. 2018, leg. Dementiev S.; 1 ♂ Namibia NE, Katima Mulilo Protea Hotel 31. I. 2020, leg. Vladimir Major; 2 ♂, 1 ♀ Namibia NE, Okakarara Hamakari, Camo, 25°58'S 17°03'E, 1310m 2-5. II. 2020, leg. Vladimir Major; 1 ♀ Namibi, Mondilla Safari camp. S 19°34' E 15°34' 24-26.1.2020. leg. Vladimir Major.

Differential characters: Frons with large black spot. Forewing membrane with many small and brown spots and apical spots not unit into streaks on both wings. On hindwing, medial mark large, usually transversally divided. Membrane with spots or short streaks between area of R_1 and R_2 on both wings. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Angola (NAVÁS 1915), Botswana (NAVÁS 1919), Namibia (ESBEN-PETERSEN 1928), and Republic South Africa (PÉRINGUEY 1911).



**Fig. 5: *Pseudopalpares sobrinus* (Péringuey, 1911) A – habitus of the type;
B – head in frontal view, magnified**

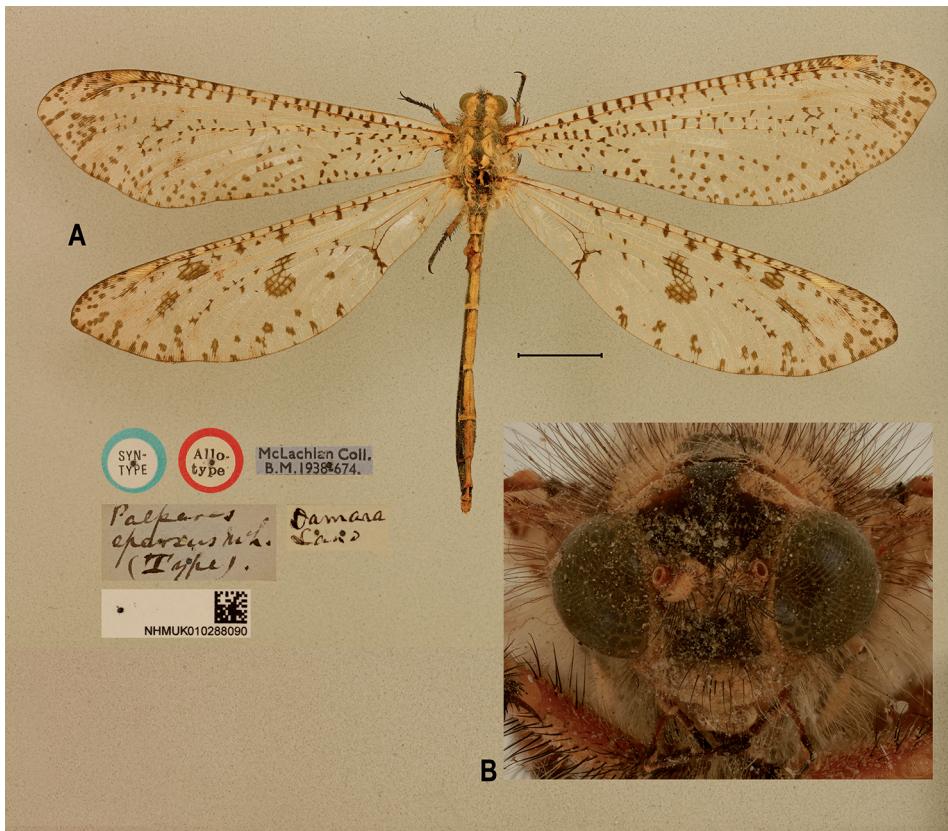


Fig. 6: Female syntype *Palpares sparsus* McLachlan, 1867 conspecific with *Pseudopalpalares sobrinus* (Péringuey, 1911) A – habitus of the type; B – head in frontal view, magnified

Remarks: When *Palpares sparsus* was described by McLACHLAN (1868), he was uncertain whether the type specimens (1 male and 1 female) belonged to the same species, and sexual dimorphism was also suspected. Re-checking of the type specimens clearly showed that his doubts were true, as the male and female (allotype) are not conspecific.

Pseudopalpalares nyicanus (Kolbe, 1897) comb. n. (Fig. 7A–C).

Palpares nyicanus Kolbe, 1897: 11 – (Odescr), Navás 1912 (Dist), Banks 1913 (Chlist, Key), Esben-Petersen 1916 (Syn), Stange 2004 (Mon).

Palpares aemulus Péringuey, 1911: 31 – (Odescr), Banks 1913 (Syn), Esben-Petersen 1916 (Syn). (Fig. 8A and B).

Type material examined:

In coll. NHMUK: 1 ♀ // Syn / Type // Allotype // Damara / Land // McLachlan coll. / B.M. 1938-674 // *Palpares / sparsus* McL. / (Type). // NHMUK010288090 // In coll. ZMHB: 1 ♂ // Type // Farhani Usa- / gara / 27.V.[18]90. / Stuhlmann F. // *Palpares / nyicanus* / n. sp. / Kolbe // 1229 // http://coll.-mfn-berlin.de/u_a14ea1 // In coll. SAMC: 1 ♂ // M fongosi / Zulu L / W E Jones / April 1911 // *Palpares / aemulus* ♂ Per / type // SAM-NEU- / A001056 //

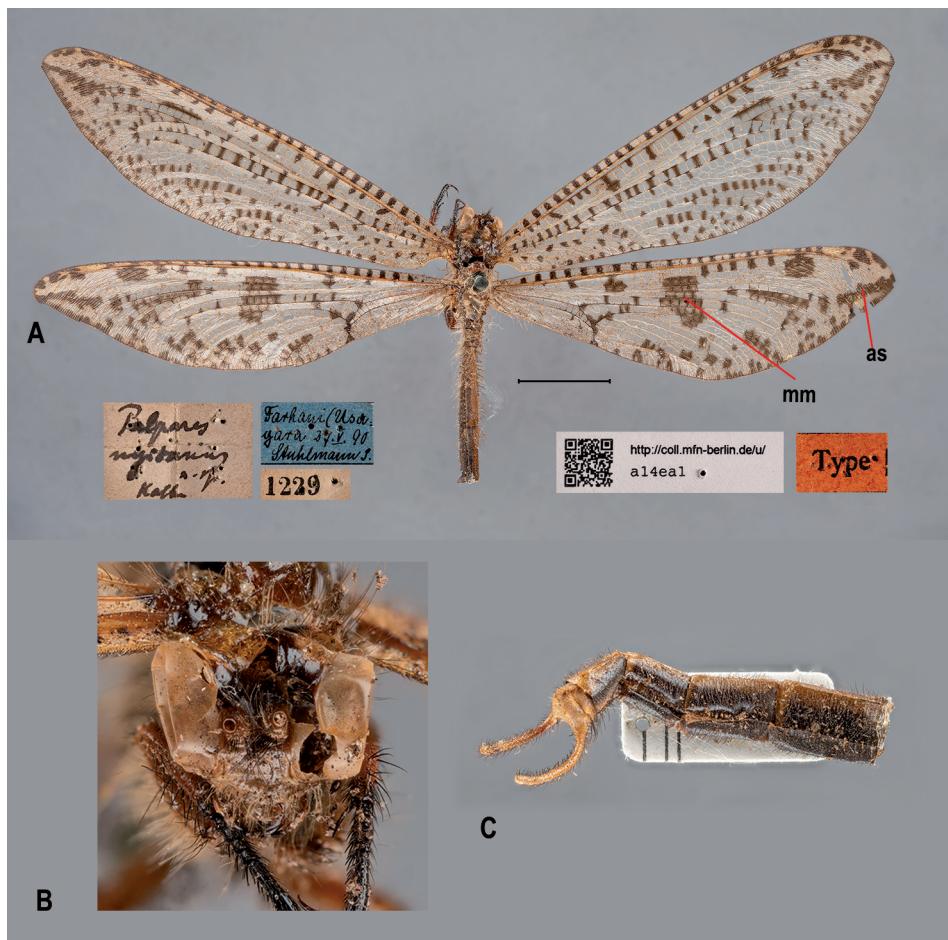


Fig. 7: *Pseudopalpares nyicanus* (Kolbe, 1897) A – habitus of the type in dorsal view; B – head in frontal view; C – male abdomen and terminalia in dorsal view, magnified

Additional material examined:

In coll. SCMK: 1 ♂ South Africa KwaZulu-Natal Province 15 km NE of Pietermaritzburg, Cumberland Nature Reserve 29°30'49.65"S, 30°30'16.88"E, 25-28.II.2019 Leg: S. A. Knyazev (NeuMyr2335); 1 ♂ RSA Duiwelskloof 2004.04.10-14. Leg: Vas János (NeuMyr123).

In coll. JODPC: 1 ♀ RSA Kwazulu-Natal, Weenen Game Res.[erve], 28°50'43"S, 29°59'13"E 13.1.2011, A. Suchinco leg.

Differential characters: Frons yellow. Forewing membrane with many small spots, hindwing membrane also with many small spots and with larger not divided medial mark. Apical streaks on both wings clearly visible. Tergites with longitudinal yellow band dorsally and with brown bands laterally.

Distribution: Namibia, Republic South Africa (McLACHLAN 1868), and Tanzania (KOLBE 1897).



Fig. 8: Type of *Palpare aemulus* Péringuery, 1911
A – habitus in dorsal view; B – head in frontal view, magnified

***Palpare abyssinicus* Kolbe, 1898 (Fig. 9A–C).**

Palpare abyssinicus Kolbe, 1898: 233 – (Odescr), Banks 1913 (Tax), 1920 (Dist), Esben-Petersen 1916 (Dist), Prost 2010: 260 (Dist).

Additional material examined:

In coll. MIZ: 1 ♀ Eritrea Adua [Adwa] Kristensen S. Nov[ember]. 08., Mus. Zool. Polonicum 12/45, Palp abyssinicus Kolb; 1 ♀ the same, *Palpare abyssinicus* Kolbe Krivokhatsky det.

Differential characters: Frons completely black. Forewing membrane dominantly with small reddish-brown spots except brown spotted costal area on both sides of cross-veins. Hindwing membrane also with many small reddish-brown spots, apical streak and medial large mark missing. Tergites unicolor, yellowish-brown.

Distribution: Eritrea (ESBEN-PETERSEN 1916), Ethiopia (KOLBE 1898), and Democratic Republic Congo (BANKS 1920).

Remarks: Type deposition is unknown. The species is morphologically close to the *Pseudopalpare* species. In the future, it is worth investigating the classification of the genus with the help of DNA analysis

***Lachlathetes furfuraceus* (Rambur, 1842) (Fig. 10A and B).**

Myrmeleon furfuraceus Rambur, 1842 – Walker 1853: 304 (Redescri, Comb), Handschin & Markl 1955: 74 (List). *Palpare furfuraceus* (Rambur, 1842): 373 (Odescri), Hagen 1866: 456 (Tax), McLachlan 1868: 275 (Comb), 1873: 130 (Com), Banks 1913: 178 (Redescri), Kimmins 1945: 99 (Morph), Navás 1919: 293, 1924: 376 (Dist),



Fig. 9: *Palpares abyssinicus* Kolbe, 1898

A – habitus in dorsal view; B – head in frontal view, magnified

1932: 4 (Dist), 1933: 204 (Dist), Navás 1936: 334 (Dist), Prost 1995: 86 (Dist), Whittington 2002: 385 (Dist). *Palpares equestris* Navás 1912: 55 (Odscr), Stitz 1912: 113 (Dist), Banks 1913: 178 (Syn), Stange 2004: 41 (Syn).

Lachlathetes furfuraceus (Rambur, 1842): Stange 2004: 41 (Mon), Prost 2010: 258 (Dist), Prost & Popov 2021: 55 (Dist), Prost et al. 2022: 46 (Dist).

Additional material examined:

1 ♂ Burkina Faso, Boromo region 09. 2008. Leg: A. Rautenstrauch (NeuMyr34); 1 ♀ Ghana, Upper East Region, Nakpanduri Gambaga Escarpment 10-16.11.2009. Leg: Sáfián, Sz., Yevu, S. (NeuMyr351); 4 ♂ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 410m N12°06'15,0" W008°24'32,7" 09.09-10.03.2015, Leg: Gergely Petrányi (NeuMyr36/1-4); 1 ♂ 1 ♀ Mali, Bamako, Oct. 2012. Leg: Szilárd Kiss (NeuMyr2077/1-2); 1 ♀ Mali, Mopti region, Bandiogara 14°20'N 3°25'W 27.09.2017. Leg: Gergely Petrányi (NeuMyr2309); 1 ♀ Mali, Mopti region, Bandiagara, auto-trap 20.02.2017. light trap (NeuMyr2614); 1 ♂ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 414m N 12°06'16,4" W 008°24'32,9" 10.29-11.15.2016. Leg: Gergely Petrányi light trap (NeuMyr4629); 11 ♀ Mali, Koulikoro Region, Ouronina (20km SW of Bankoumana) 414m N12°06'16,4" W008°24'32,9" 10.29-11.15.2016. Leg: Gergely Petrányi light trap (NeuMyr4617- NeuMyr4628);

Differential characters: Frons yellow to light brown. Forewing membrane with fused network of small reddish-brown spots and with larger marks in apical area. Hindwing membrane mainly decorated with large reddish-brown marks. Tergites dark brown with yellow distal margins.



Fig. 10: *Lachlathetes furfuraceus* (Rambur, 1842)

A – habitus of the type; B – head in frontal view, C – side and legs in lateral view, magnified

Distribution: Benin (PROST et al. 2022), Burkina Faso (PROST 1995), Ghana, Niger (STANGE 2004), Democratic Republic Congo (NAVÁS 1932), Mali (MICHEL 1999), Nigeria (NAVÁS 1912 as *Palpares equestris*), Senegal (RAMBUR 1842), Togo (STITZ 1912)

Remarks: The type specimen is not checked, preserved in MNHN (STANGE 2004). Based on its known area, it is a species with a typical West African distribution, its occurrence in Sudan, Konlikoro is unlikely, since the cited locality (Navás 1924) can be found in Mali. It vicariates with the previous species in West Africa. The generic status, *Lachlathetes* is uncertain. It differs significantly from the genotype species (*Lachlathetes moestus* (Hagen, 1853)) morphologically (labial palp, habitus, male genitalia, etc.).

Key for the species

1. Smaller and larger spots on membrane of both wings predominantly reddish-brown... **2**
- Spots on both wings brown to dark brown **3**
2. Every 2nd or occasionally 3th cross-vein in costal area of both wings dark brown, otherwise cross-veins in wings reddish-brown, in HW without conspicuous large spots (Fig. 9) ***P. abyssinicus***
- Cross-veins in costal area of both wings yellow or light reddish-brown, in HW with larger reddish-brown marks (Fig. 10) ***L. furfuraceus***
3. Dorsal surface of tergites with longitudinal dark brown to black stripe, and with two longitudinal yellow stripes laterally (Fig. 1–3) ***P. parvopunctatus* sp. n.**
- Dorsal surface of tergites with longitudinal yellow stripe, and with two longitudinal brown stripes laterally **4**
4. Frons with black spot..... **5**
- Frons yellow, in HW smaller spots merge into apical streak, medial mark large (Fig. 7)..... ***P. nyicanus***
5. In radial area below Rs_1+Ma not spotted, spots mostly form apical streak, medial mark not visible in HW (Fig. 4)..... ***P. sparsus***
- In radial area below Rs_1+Ma with spots, apical streaks not visible only separated small spots, large medial mark often divided in HW (Fig. 5)..... ***P. sobrinus***

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References

- AKOUDJIN, M.; MICHEL, B. 2011: A new species of *Palpares* Rambur (Neuroptera: Myrmeleontidae) with an identification key to the species of West Africa. - *Zootaxa* 2792:33-40.
- ASPÖCK, H.; HÖLZEL, H.; ASPÖCK, U. 2001: Kommentierter Katalog der Neuropterida (Insecta: Raphidioptera, Megaloptera, Neuroptera) der Westpaläarktis. - *Denisia* 2:1-606.
- ÁBRAHÁM, L. 2010: Description of a new *Palpares* species from Middle East Asia (Neuroptera: Myrmeleontidae). - *Acta Phytopathologica et Entomologica Hungarica* 45(2): 367-371.
- ÁBRAHÁM, L. 2012. "On the other hand, what is this Eastern *aeschnoides*?" (Morton 1926) – an undescribed *Palpares* species from the Eastern Mediterranean (Neuroptera: Myrmeleontidae). - *Natura Somogyiensis* 22: 65-102.
- ÁBRAHÁM, L. & A. VAN HARTEN 2014: Order Neuroptera, family Myrmeleontidae Arthropod fauna of the United Arab Emirates 5: 299-333.
- BADANO, D.; ASPÖCK, U.; ASPÖCK, H.; CERRETTI, P. 2017: Phylogeny of Myrmeleontiformia based on larval morphology (Neuropterida: Neuroptera). - *Systematic Entomology* 42:94-117
- BANKS, N. 1913: The neuropterous genus *Palpares*. - *Annals of the Entomological Society of America* 6:171-[195].
- BANKS, N. 1920: Neuroptera, Panorpata, and Trichoptera collected by the American Museum Congo Expedition, with lists of the species known from the Belgian Congo. - *Bulletin of the American Museum of Natural History* 43:21-33.
- CALVERT, P. P. 1899: Neuropterous insects collected by Dr. A. Donaldson Smith in northeastern Africa. - *Proceedings of the Academy of Natural Sciences of Philadelphia* 51:228-244.
- ESBEN-PETERSEN, P. 1916: Notes concerning African Myrmeleonidae I. - *Arkiv för Zoologi* 10(15):1-22.
- ESBEN-PETERSEN, P. 1920: Revision of some of the type-specimens of Myrmeleonidae, described by Navas and placed in the Vienna Museum. - *Annales de la Société Entomologique de Belgique* 60:190-196.
- ESBEN-PETERSEN, P. 1928: Neuroptera Planipennia. Pp. 203-221. - In: MICHAELSEN, J. W. (editor). *Beiträge zur Kenntnis der Land- und Süßwasserfauna Deutsch-Südwestafrikas, Ergebnisse der Hamburger Deutsch-Südwestafrikanischen Studienreise 1911*. Vol. 2. Friederichsen and Co., Hamburg.
- GHOSH, S. K. 1991: On a new species of the genus *Palpares* (Neuroptera: Myrmeleontidae) from India. - *Records of the Zoological Survey of India* 88:71-73.
- JONES, J. R. 2019: Total-evidence phylogeny of the owlflies (Neuroptera, Ascalaphidae) supports a new higher-level classification. *Zoologica Scripta* 48: 761-782.
- HAGEN, H. A. 1866: Hemerobidarum Synopsis synonymica. - *Stettiner Entomologische Zeitung* 27:369-462.
- HANDSCHIN, E.; MARKL, W. 1955: Neuropteren aus Angola. Companhia de Diamantes de Angola, Publicações Culturais, - Lisboa 27:65-82.
- HÉVIN, N. M.-C.; KERGOAT, G. J.; CLAMENS, A.-L.; LE RU, B.; MANSELL, M. W.; MICHEL, B. 2023: Evolution, systematics and historical biogeography of Palparini and Palparidiini antlions (Neuroptera: Myrmeleontidae): old origin and in situ diversification in Southern Africa. - *Systematic Entomology* 48(4): 600-614.
- HÖLZEL, H. 1998: Zoogeographical features of Neuroptera of the Arabian peninsula. in Panelius, S. P. (ed.). *Neuropteryology 1997. Proceedings of the Sixth International Symposium on Neuropteryology* (13-16 July 1997, Helsinki, Finland). - *Acta Zoologica Fennica* 209: 129-140.
- HÖLZEL, H. 1986: Biogeography of Palearctic Myrmeleonidae (Neuropteroidea: Planipennia). Pp. 53-70. In: GEPP, J.; ASPÖCK, H.; HÖLZEL, H. (editors). - *Recent Research in Neuropteryology. Proceedings of the 2nd International Symposium on Neuropteryology. Meeting: 21-23 August 1984, Hamburg, Germany*. Privately printed, Graz, Austria. 176 pp.
- HÖLZEL, H. 1988: Neuroptera of Arabia: Fam. Sisyridae, Hemerobiidae, Chrysopidae (Part 2) and Myrmeleonidae (Part 3). - *Fauna of Saudi Arabia* 9:52-67.
- INSOM, E.; CARFI, S. 1988. Taxonomic studies on Palparini (sensu Markl, 1954). I: The genus *Palpares* Rambur, 1842 partim (Neuroptera: Myrmeleontidae) with the proposal of its division and description of new genera. - *Neuroptera International* 5:57-78.
- KIMMINS, D. E. 1945: A note on some specialized hairs in the Palparinae (Neuroptera, Myrmeleontidae). - *Entomologist* 78:97-99.
- KOLBE, H. J. 1897. Neuropteren. Die Netzflügler. MÖBIUS, K. A. (editor). *Die Thierwelt [Deutsch-]Ost-Afrikas und der Nachbargebiete. Band IV (Wirbellose Thiere)*. - Dietrich Reimer, Berlin. [i] + 42 pp.
- KOLBE, H. J. 1898. Neue Neuropteren aus der Myrmeleontidengattung *Palpares*. - *Stettiner Entomologische Zeitung* 59:229-235.

- MANSELL, M. W. 1990. The Myrmeleontidae of southern Africa: tribe Palparini. Introduction and description of Pamares gen. nov., with four new species (Insecta: Neuroptera). - Journal of the Entomological Society of Southern Africa 53:165-189.
- MANSELL, M. W. 1992. Key characters in the phylogeny and classification of Palparini (Insecta: Neuroptera: Myrmeleontidae). Pp. 243-254. In: CANARD, M.; ASPÖCK, H.; MANSELL, M. W. (editors). - Current Research in Neuropterology. Proceedings of the Fourth International Symposium on Neuropterology. Meeting: 24-27 June 1991, Bagnères-de-Luchon, Haute-Garonne, France. Privately printed, Toulouse, France. 414 pp.
- MANSELL, M. W. 2000. Neuroptera (Insecta). in Kirk-Spriggs, A. H.; Marais, M. (eds.). Dâures-biodiversity of the Brandenberg Massif, Namibia. - Cimbebasia Memoir 9:163-176.
- MANSELL, M. W. 2004. Antlions of southern Africa: Annulares nov. gen. (Neuroptera, Myrmeleontidae, Palparini) including two new species, with comments on the tribe Palparini. Aspöck, U. (science editor). Entomologie und Parasitologie. Festschrift zum 65. Geburtstag von Horst Aspöck. - Denisia 13:201-208.
- MANSELL, M. W.; ASPÖCK, H. 1990: Post-symposium neuropterological excursions. Pp. 287-298. - In: MANSELL, M. W.; ASPÖCK, H. (editors). Advances in Neuropterology. Proceedings of the Third International Symposium on Neuropterology. Meeting: 3-4 February 1988, Berg en Dal, Kruger National Park, South Africa. South African Department of Agricultural Development, Pretoria. vi + 298 pp.
- MCCLACHLAN, R. 1868. New genera and species, &c., of neuropterous insects; and a revision of Mr. F. Walker's British Museum Catalogue of Neuroptera, part ii. (1853), as far as the end of the genus Myrmeleon. - Journal of the Linnean Society of London, Zoology 9:230-281 [Errata: 9:281].
- MICHEL, B. 1999: Biodiversité et écologie des Palparinae du sud du Mali (Neuroptera, Myrmeleontidae). - Bulletin de la Société Entomologique de France 104:45-52.
- MONSERRAT, V. J. 1985: Lista de los tipos de Mecoptera y Neuroptera (Insecta) de la colección L. Navás, depositados en el Museo de Zoología de Barcelona. - Miscellània Zoològica 9:233-243.
- NAVÁS, L. 1912: Myrméléonides (Ins. Névr.) nouveaux ou peu connus. - Annales de la Société Scientifique de Bruxelles 36(pt. 2):203-248.
- NAVÁS, L. 1914: Voyage de Ch. Alluaud et R. Jeannel en Afrique Orientale (1911-1912). - Résultats scientifiques. Insectes Névroptères. I. Planipennia et Mecoptera. Paris. 52 pp.
- NAVÁS, L. 1915: Neuroptera nova africana. IV Series. - Memorie dell'Accademia Pontifica dei Nuovi Lincei, Rome (2)1:9-19.
- NAVÁS, L. 1919: Comunicaciones entomológicas. 3. Insectos exóticos. - Revista de la [Real] Academia de Ciencias Exactas Físico-Químicas y Naturales de Zaragoza (1)4:287-306.
- NAVÁS, L. 1923: Quelques Myrméléonides (Ins. Névr.) d'Afrique. - Annales de la Société Scientifique de Bruxelles 43(pt. 1):143-147.
- NAVÁS, L. 1925a: Insectos exóticos nuevos o poco conocidos. Segunda [II] serie. - Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)19:181-200.
- NAVÁS, L. 1925b: Insectes du Congo Belge. Série I. - Revue de Zoologie Africaines, Bruxelles 13:123-132.
- NAVÁS, L. 1927: Comunicaciones entomológicas. 10 [sic; =9]. Mis excursiones científicas en 1927. - Revista de la [Real] Academia de Ciencias Exactas Físico-Químicas y Naturales de Zaragoza (1)11:79-137.
- NAVÁS, L. 1928: Insectos del Museo de Estocolmo. - Revista de la Real Academia de Ciencias Exactas Físicas y Naturales de Madrid 24:28-39.
- NAVÁS, L. 1932: Alcuni insetti del Museo di Zoologia della R. Università... di Torino. - Bollettino dei Musei di Zoologia e di Anatomia Comparata della R. Università di Torino (3)42(26):1-38.
- NAVÁS, L. 1933: Neurópteros exóticos [1.a serie]. - Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)23:203-216.
- NAVÁS, L. 1935: Neurópteros exóticos. 2.a serie. Memorias de la Real Academia de Ciencias y Artes de Barcelona (3)25:37-59.
- NAVÁS, L. 1936: Insectes du Congo Belge. Série IX. - Revue de Zoologie et de Botanique Africaines 28:333-368.
- OSWALD, J. D. 2023: Neuroptera Species of the World. - Lacewing Digital Library, Research Publication No. 1. Available from: <http://lacewing.tamu.edu/SpeciesCatalog/Main> (accessed 01. Augustus 2023)
- PÉRINGUEY, L. 1911: Descriptions of four new species of South African Hemerobiidae (Order Neuroptera). - Annals of the South African Museum 10:31-37.
- RAMBUR, [J.] P. 1842: Histoire naturelle des insectes, névroptères. - Librairie encyclopédique de Roret. Fain et Thunot, Paris. [xviii] + 534 pp.
- PROST, A. 1995: Révision des Palparinae d'Afrique de l'Ouest (Neuroptera, Myrmeleontidae). - Bulletin de la Société Entomologique de France 100:79-107.

- Prost, A. 2010: Patterns of distribution of the Palparini (Neuroptera: Myrmeleontidae: Palparinae) in the northern half of Africa: faunal transitions and regional overlaps. - Pp. 257–266. In: DEVETAK, D.; LIPOVŠEK, S.; ARNETT, A. E. (editors). Proceedings of the 10th International Symposium on Neuropterology. Meeting: 22–25 June 2008, Piran, Slovenia. University of Maribor, Maribor, Slovenia. 307 pp.
- PROST, A.; POPOV, A. 2021: A first comprehensive inventory of Ascalaphidae, Palparidae, and Myrmeleontidae (Insecta: Neuroptera) of Northeastern Nigeria with description of two new species and an overview of genus *Bankisus* Navás. - *Historia Naturalis Bulgarica* 43(5):51-77.
- STANGE, L. A. 2004: A systematic catalog, bibliography and classification of the world antlions (Insecta: Neuroptera: Myrmeleontidae). - *Memoirs of the American Entomological Institute* 74, iv+ 1-565.
- STITZ, H. 1912: Palpares aus der Sammlung des Berliner Museums. - *Mitteilungen aus dem Zoologischen Museum in Berlin* 6:103-116.
- WALKER, F. 1853. List of the specimens of neuropterous insects in the collection of the British Museum. Part II (Sialidae--Nemopterides). - British Museum, London. [iii] + 193-476 pp.
- WHITTINGTON, A. E. 2002: Resources in Scottish Neuropterology. SZIRÁKI, Gy. (editor). Neuropterology 2000. - Proceedings of the Seventh International Symposium on Neuropterology. Meeting: 6-9 August 2000, Budapest, Hungary. *Acta Zoologica Academiae Scientiarum Hungaricae* 48(Suppl. 2):371-387.