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New species of the genus *Agrilus* Curtis, 1825 of South Africa, Namibia and Djibouti (Coleoptera Buprestidae)

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ABSTRACT Four new species linked to desert and sub-desert habitats of the Afrotropical Region (Republic of South Africa, Namibia and Djibouti) and belonging to the genus *Agrilus* Curtis, 1825 (Coleoptera Buprestidae) are described, morphologically characterized by small size and dense pubescence: *Agrilus (Agrilus) esophthalmus* n. sp., *A. (Lilliput) jorpelandi* n. sp., *A. (Lilliput) kabateki* n. sp. *A. (Lilliput) pallidus* n. sp.

KEY WORDS Afrotropical Region; Southern Africa; Est Africa; desertic and sub-desertic habitats; taxonomy, biology.

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INTRODUCTION

Following contributions by Curletti (1996; 1999; 2000; 2002; 2024; in press), this article presents the descriptions of four new species belonging to the rich Agrilini entomofauna of southern and eastern Africa. In addition to the desert-specific species found in Djibouti, the remaining species described here are from the Republic of South Africa and Namibia, including one species common to both these countries, confirming the close affinity between faunas that share some of the same habitats.

All these species are characterized by small size and dense pubescence, likely an adaptation to the desert and semi-desert environments to which they are associated.

MATERIAL AND METHODS

The material studied was found from colleagues working in various parts of Africa, assembled by R. Rejzek, who provided it to the author for study purposes. The photographs were taken with a Nikon P6000 camera attached to the zoom lens of a Leica MZ6 stereomicroscope; they were stacked using the Combine ZP program and edited with Photoshop Limited Edition (Adobe Systems Inc.).

ACRONYMS. CJJS: Jon Jörpeland Collection, Uppsala, Sweden; GCCI: Author's Collection (Carmagnola, Italy); NMPC: National Museum of Science, Prague, Czech Republic; RRCC: Roman Rejzek Collection, Prague, Czech Republic.

RESULTS

Agrilus (Agrilus) esophthalmus n. sp. (Figs. 1–3)
https://zoobank.org/8A7FD795-75D5-48CF-A0A6-2C2E29A6E940

Material examined. Holotype. REPUBLIC OF SOUTH AFRICA (RSA) • 1 spm male; Kwazulu Natal, Ndumo Game Reserve; 80 m; 26°55'10"S 32°18'42"E; 24-29 Nov. 2023; ex-larva *Vachellia* sp.; R. Rejzek legit (NMPC). Paratypes. REPUBLIC OF SOUTH AFRICA (RSA) • 8 spm

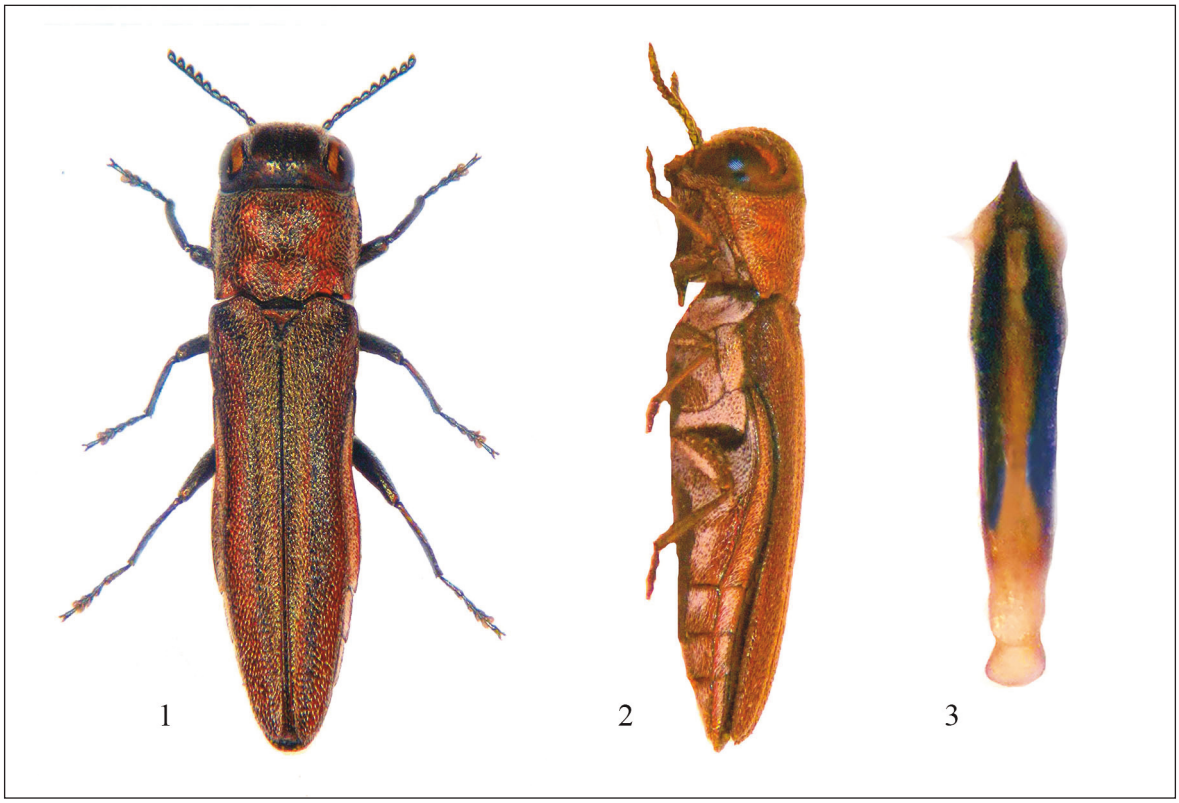
males and 13 females; same data of holotypus (NMPC, GCCI, RRCC).

DESCRIPTION OF THE HOLOTYPE. Male. Length 5.3 mm. Color entirely bronze, narrow body, gray pubescence tending to pale yellow/ivory present in the elytral perisutural band. Head slightly protruding from the ocular line. Vertex more than half as wide as the anterior margin of the pronotum. Frons slightly furrowed; pubescence denser along the ocular margin and at the base. Eyes large and globose. Antennae serrate from the 4th antennomere. Pronotum wider than long, ratio = 1.44. Lateral margins slightly arcuate, posterior angles right. Disc with regular pubescence, but denser and pruinose along the margins; flattened and transverse sculpture. Prehumeral carinulae short and barely visible. Marginal carinae separated even at the base. Scutellum carinate. Elytra narrow, leaving the lateroterga exposed, which are uniformly pubescent. Apices separately rounded and microdenticulate. Perisutural bands placed in a depression. Ventral side with pruinose pubescence denser on the sides of the ventrites. Same pubescence on the metecoxa, metaepisternum, and mesoepimeron. Legs with metatarsus longer than the metatibia. Basal metatarsomere shorter than the sum of the three following. All claws with a bifid internal spur and mucronate external one.

Aedeagus 1.05 mm, flattened, thin, with pointed median lobe (Fig. 3).

VARIABILITY. The length of the paratypes is between 4 and 6.3 mm. Some specimens lack the pruinose pubescence on the sides of the pronotum and the ventrites. Sexual dimorphism: females are distinguished by their simply mucronate claws and their less elongated basal metatarsus, while maintaining the same length proportions between the various segments.

ETYMOLOGY. Name derived from the Ancient Greek prefix έσω (eso) = external, outside and the noun οφθαλμός (ophthalmòs) = eye, meaning a prominent, protruding eye.



Figures 1–3. *Agrilus esophthalmus* n. sp., holotypus, Republic of South Africa (RSA): Kwazulu Natal, Ndumo Game Reserve. Fig. 1: dorsal view. Fig. 2: lateral view. Fig. 3: aedeagus.

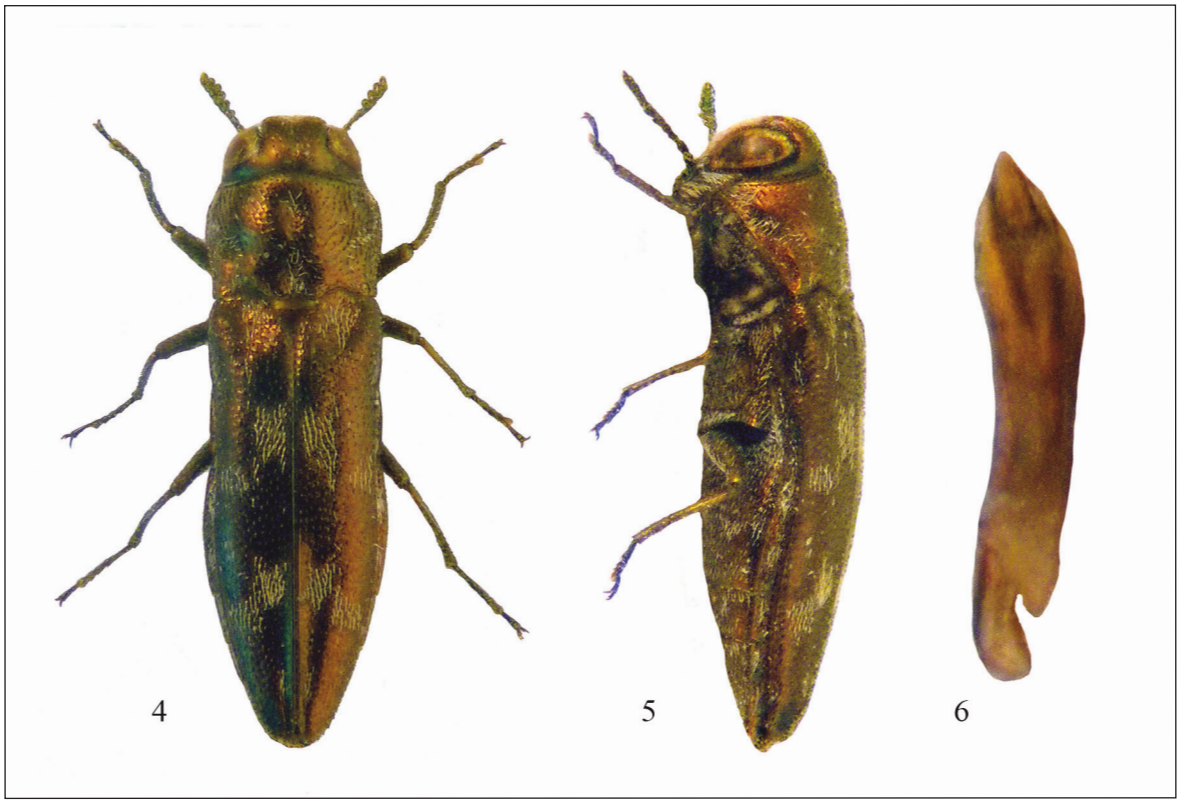
Host plant. All specimens were obtained ex larvae from *Vachellia* sp.

Remarks. Due to its size and elytral perisutural pubescence, *A. esophthalmus* n. sp. can be confused with another South African species, particularly with *A. stevensoniellus* Obenberger, 1935 described from Zimbabwe. *Agrilus stevensoniellus* is essentially distinguished by its smaller eyes and the male's frons with yellow pubescence covering the integuments.

Agrilus (Lilliput) kabateki n. sp. (Figs. 4–6)
https://zoobank.org/D8895379-79AB-4D5C-958C-43A344AFE9E4

Material examined. Holotype. DJIBOUTI • 1 spm male; Tadjoura district, Andaba surroundings; 20–21 Oct. 2023; 12°15'58.989"N 42°24'49.003"E; 290 m; P. Kabatek legit (NMPC). Paratypes: DJIBOUTI • 2 spm males and 4 females; same data of holotypus (NMPC, GCCI, RRCC).

Description of the holotype. Male. Length 3.6 mm. Color bright bronze. Head rounded, with a vertex slightly less than half the width of the anterior margin of the pronotum. Frons longitudinally grooved, with white, pruinose pubescence covering the integuments. Clypeus small, not carinate. Antennae short, serrate from the 5th antennomere. Eyes large, not protruding. Pronotum wider than long, ratio = 1.46. Sculpture flattened, arranged vertically in the anterior part and transversely in the posterior part. Disc with anterior median depression. Lateral margins slightly arcuate with right posterior angles. Prehumeral carinulae not entire. Marginal carinae also separated posteriorly. Scutellum large, carinate. Elytra with pubescence composed of four pairs of spots arranged respectively at the base, ⅔, ¾ and before the apex; the latter is less abundant, while the median ones are flanked by lateral/posterior pubescence. Apices separately rounded and microdenticulate. Ventrites pubescent, with hairs more densely packed at the margins. Tarsi elongated, almost as long as the metafemur.



Figures 4–6. *Agrilus kabateki* n. sp., holotypus, Djibouti: Tadjoura district, Andaba surroundings.
Fig. 4: dorsal view. Fig. 5: lateral view. Fig. 6: aedeagus.

Basal metatarsomere longer than the sum of the two following.

Aedeagus 0.8 mm long, slightly sclerotized, diaphanous, curved and slightly asymmetrical. The apex of the median lobe is pointed (Fig. 6).

VARIABILITY. The length of the paratypes is between 3.2 to 4.2 mm. Three specimens have a thin-median pubescent line connecting the median spots. In two specimens, the apical pubescence is less visible. Sexual dimorphism: No secondary sexual characters are noted, except for the proportionally shorter basal metatarsomere in females.

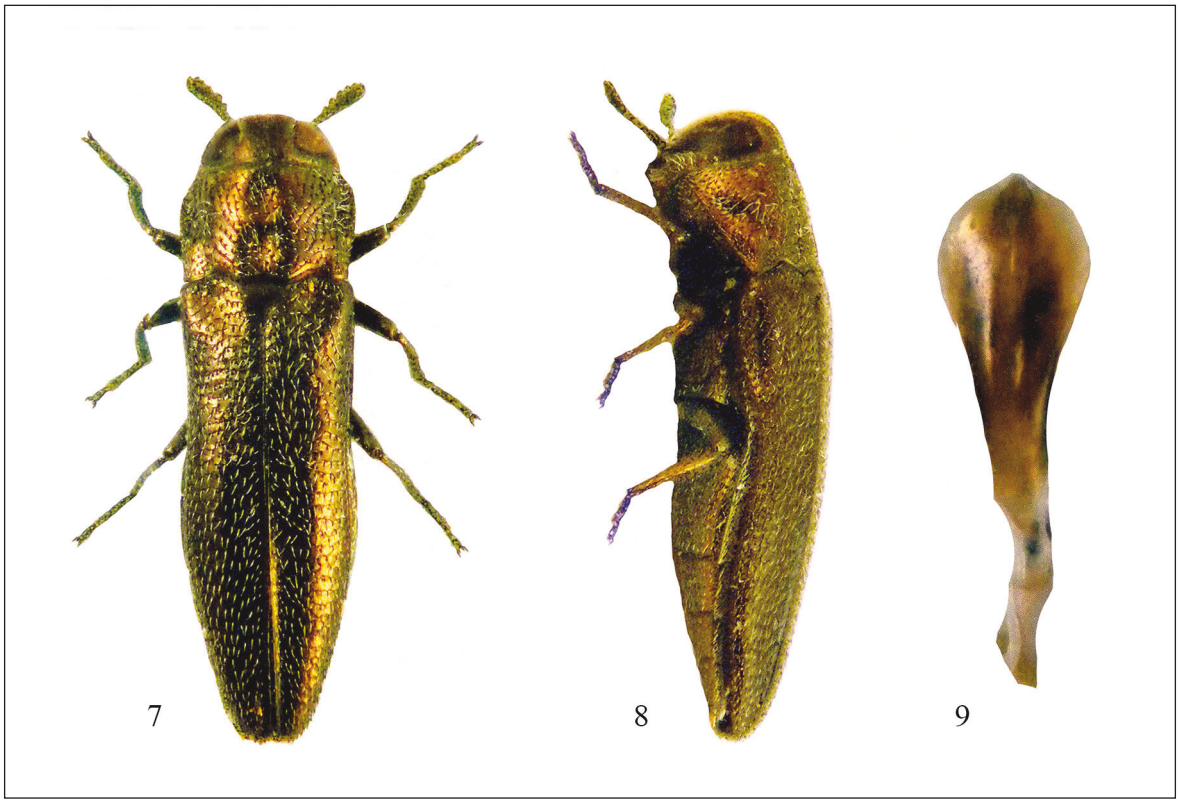
ETYMOLOGY. The species is named after the collector, Petr Kabatek (Prague, Czech Republic).

DIAGNOSIS. *Agrilus kabateki* n. sp. shows a moderate affinity with *A. arenosus* Curletti, 2024 from Saudi Arabia. The two species show a similar general shape and genital structure in males. *Agrilus kabateki* n. sp. differs in its more distinct and regular elytral pubescent bands, frontal and ventral pubescence, pubescent median pronotal dimples, and different pronotal sculpture; the aedeagus is noticeably narrower and more elongated.

Although their heads are less conical than the norm for the subgenus, both species were placed in Lilliput primarily because of their size and overall body shape.

Agrilus (Lilliput) pallidus n. sp. (Figs. 7–9)
https://zoobank.org/172452FA-767D-4474-AE90-733111218BB8

MATERIAL EXAMINED. Holotype. REPUBLIC OF SOUTH AFRICA (RSA) • 1 spm male; Limpopo province, Manaame, 16 km N Louis Trichardti; 800 m; 22°54'16"S 29°54'47"E, 21.XI.2022, R. Rejzek legit (NMPC). Paratypes. REPUBLIC OF SOUTH AFRICA (RSA) • 1 spm male; same data of holotype; 1 spm female; Limpopo province; 12 km S Musina; 540 m; 22°27'58"S 30°02'42"E; 6 Dec. 2024; R. Rejzek legit. 1 spm male; Limpopo province; 20 km NW



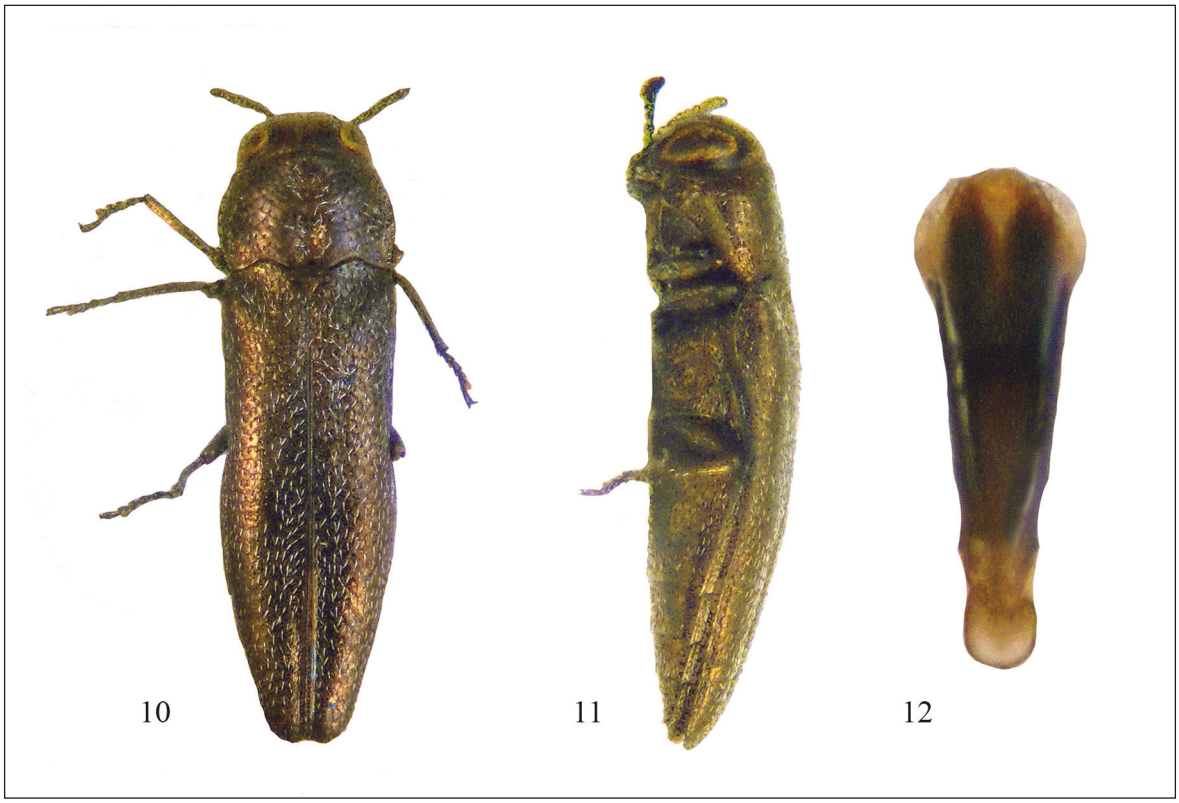
Figures 7–9. *Agrilus pallidus* n. sp., holotypus, Republic of South Africa (RSA): Limpopo province, Manaame, 16 km N Louis Trichardti. Fig. 7: dorsal view. Fig. 8: lateral view. Fig. 9: aedeagus.

Groot Maripo; 25°25'06"S 26°21'36"E; 25 Nov. 2024; 1045 m; R. Rejek legit. 2 spm males and 3 females; Limpopo province; 19 km E Thabazimbi; 1011 m, 24°34'35"E 27°34'42"E; 30 Nov. 2024; R. Reizek legit (NMPC, GCCI, RRCC).

Description of the holotype. Male. Length 3.2 mm. Short shape, bright bronze color, with regular white pubescence uniform over the entire back. Roundish head, non-protruding eyes, vertex slightly more than ⅓ of the anterior margin of the pronotum wide. Golden front, with long and uniform gray pubescence, most noticeable at the base. Clypeus not carinate. Antennae with expanded and rounded distal articulations, antennomeres 1–4 not serrate, globose. Pronotum wider than long, ratio = 1.55. Lateral margins not arcuate, with obtuse posterior angles. Two vague, shallow median depressions, located respectively behind the vertex and in front of the scutellum. Flat sculpture, arranged mainly vertically. Prehumeral carinulae not entire, barely visible because they are confused with the sculpture. Marginal carinae subparallel, well-spaced from each other. Scutellum carinate. Elytra with separately rounded and microdenticulate apices. The venter has regular pubescence, shorter and less dense than the dorsal one. The anterior claws are bifid, but the inner claws are shorter than the outer claws; the median and posterior claws are serrated. Metatarsus is abnormal compared to the norm for the genus, with slightly elongated articulations 1–4 and apical article 5, almost as long as the previous ones combined.

The aedeagus is 0.6 mm long, slightly sclerotized, diaphanous and flattened. The tip of the median lobe is pointed, and the parameres are expanded and winged (Fig. 9).

Variability. The length of the paratypes is between 3.2 to 3.9 mm. Apart from size, no notable differences are noted. Sexual dimorphism: females differ in more rounded pronotal margins, less pubescent frons, all claws simply mucronate and a significantly shorter fifth metatarsomere.



Figures 10–12. *Agrilus jorpelandi* n. sp., holotypus, Namibia: Otjiwarongo-Kalkfeld, Otjondjupa.
Fig. 10: dorsal view. Fig. 11: lateral view. Fig. 12: aedeagus.

ETYMOLOGY. From the Latin term "*pallĭdus*" referring to the pale color of the slightly sclerotized aedeagus.

DIAGNOSIS. *Agrilus pallidus* n. sp. may be confused with *A. pseudolituratus* Descarpentries, 1959, described from Tanzania. It differs mainly in its more rounded head, less pubescent frons, and for elytra less elongated and pointed posteriorly.

Agrilus (Lilliput) jorpelandi n. sp. (Figs. 10–12)
https://zoobank.org/6B4E64FB-0F47-435F-B9AE-63E49106D9AB

MATERIAL EXAMINED. Holotypus. NAMIBIA • 1 spm male; Otjiwarongo-Kalkfeld, Otjondjupa; 20.626198, 16.376209; 17 Feb. 2025; Jon Jörpeland legit (GCCI). Paratypes. 1 spm male; same data of holotype. REPUBLIC OF SOUTH AFRICA (RSA) • 2 males and 1 female; North West province, 20 km NW Groot Marico; 25°25'06"S 26°21'36"E; 25 Nov. 2024; 1045 m; R. Rejzek legit. • 1 spm male; Limpopo province, 19 km E Thabazimbi; 1011 m; 24°34'35"E 27°34'42"E (GCCI, RRCC, CJJS).

DESCRIPTION OF THE HOLOTYPE. Male. Length 3.75 mm. The description follows that of *A. pallidus*, with which it coexists, differing in a few details: darker color, male with more rounded lateral margins of the pronotum, less expanded distal antennomeres and serrated from the fourth, longitudinally grooved vertex, almost hairless frons, less elongated fifth metatarsomere. The aedeagus, 0.8 mm long, although winged like *A. pallidus*, is more elongated, well sclerotized, with a rounded median lobe tip (Fig. 12).

PARATYPES. The length of the paratypes is 3.7 mm (males) and 4.1 mm (female). The two South African specimens have brighter coloration, similar to that of *A. pallidus* n. sp. Sexual dimorphism: the differences are in the shape of the anterior claws, which are bifid in females, and the length of the metatarsus, which is slightly more developed in males.

HOST PLANT. The Namibian specimens were found on *Acacia* sp. or *Dychrostachys* sp. shrubs (Jörpeland *in litteris*).

ETYMOLOGY. The species is named after the collector: Jon Jörpeland (Uppsala, Sweden).

DIAGNOSIS. As previously stated, the identification of *A. jorpelandi* presents some difficulties due to its extreme similarity to *A. pallidus* n. sp. The major distinguishing features have already been listed in the holotype description.

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My gratitude goes to Roman Rejzek (Prague, Czech Republic) and Jon Jörpeland (Uppsala, Sweden) for their collaboration and for providing access to some of the material studied, and to Luca Cristiano (Carmagnola, Italy) for his critical review of the text.

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