Published December 15, 2010

Klapalekiana, **46**: 181–188, 2010
ISSN 1210-6100

Adinopsis mauritiana sp. n. – the first known species of the tribe Deinopsini from the Mascarene Islands and a new record of *Adinopsis lemur* from Madagascar (Coleoptera: Staphylinidae: Aleocharinae)

Adinopsis mauritiana sp. n. – první známý druh tribu Deinopsini z Maskarénských ostrovů a nový nález *Adinopsis lemur* z Madagaskaru (Coleoptera: Staphylinidae: Aleocharinae)

Jiří JANÁK

CZ-417 62 Rtyně nad Bílinou 4, Czech Republic

Taxonomy, distribution, new species, Coleoptera, Staphylinidae, Aleocharinae, *Adinopsis*, Mascarene Islands, Mauritius, Madagascar

Abstract. *Adinopsis mauritiana* sp. n., belonging to the tribe Deinopsini, is described and illustrated from Mauritius (Mascarene Islands) and distinguished from allied species. New data on the distribution of *Adinopsis lemur* Janák, 1996 from Madagascar are presented. A World checklist of the *Adinopsis* species is provided.

INTRODUCTION

Since my contribution to the Madagascan *Adinopsis* Cameron, 1919 (Janák 1996) more material has become available, collected during my field trips to Madagascar and Mauritius. The material yielded one new species for science from Mauritius, which is the first evidence of the occurrence of the tribe Deinopsini in Mascarene Islands, as well as additional records of *Adinopsis lemur* Janák, 1996 from Madagascar.

The genus *Adinopsis* can be distinguished from other Staphylinidae genera by the combination of: body tear-shaped, 2–2–2 tarsal segmentation; 2 large subapical teeth on mandible; 4-segmented maxillary palpi with segments 1 and 3 vestigial; antennae 11-segmented with the two basal segments enlarged and the apical segment with an apical papilla; tergite 10 narrowly elongate; and apical lobe of paramerite with long setae (Uhlig & Klimaszewski 1995, Ashe & Chatzimanolis 2003). *Adinopsis*-species are ripicolous and, as observed during the fieldwork in Madagascar and Mauritius, they prefer sunlit habitats.

Since the 1970s the world fauna of this genus has been revised using modern characters and all earlier known species have been redescribed, and several new species discovered (Klimaszewski 1979, 1980, 1982, 1985, 1991; Klimaszewski & Frank 1992; Klimaszewski & Génier 1985; Klimaszewski & Jansen 1994; Pace 1987, 1989, 2008; Uhlig 1995; Uhlig & Klimaszewski 1995; Janák 1996). Twenty-six recent species (including the new species described in this paper) from different regions are known to date. A fossil species *A.* †*groehni* Zerche, 1999 was described from Tertiary Baltic amber (about 35 million years old) (Zerche 1999).

MATERIAL AND METHODS

The material examined is deposited in the following two collections:
JJRC – Jiří Janák private collection, Rtyně nad Bílinou, Czech Republic
MNHNP – Muséum national d'Histoire naturelle, Paris

Dry-mounted specimens were studied using an MBS 10 binocular stereomicroscope. Line drawings were made using the ocular grid of a Zeiss Laboval compound microscope. Measurements were taken with both the above mentioned microscopes using a graticule. The following abbreviations are used: ht = holotype, m = mean, n = number of measured specimens.

RESULTS

Adinopsis mauritiana sp. n.
(Figs 1-14)

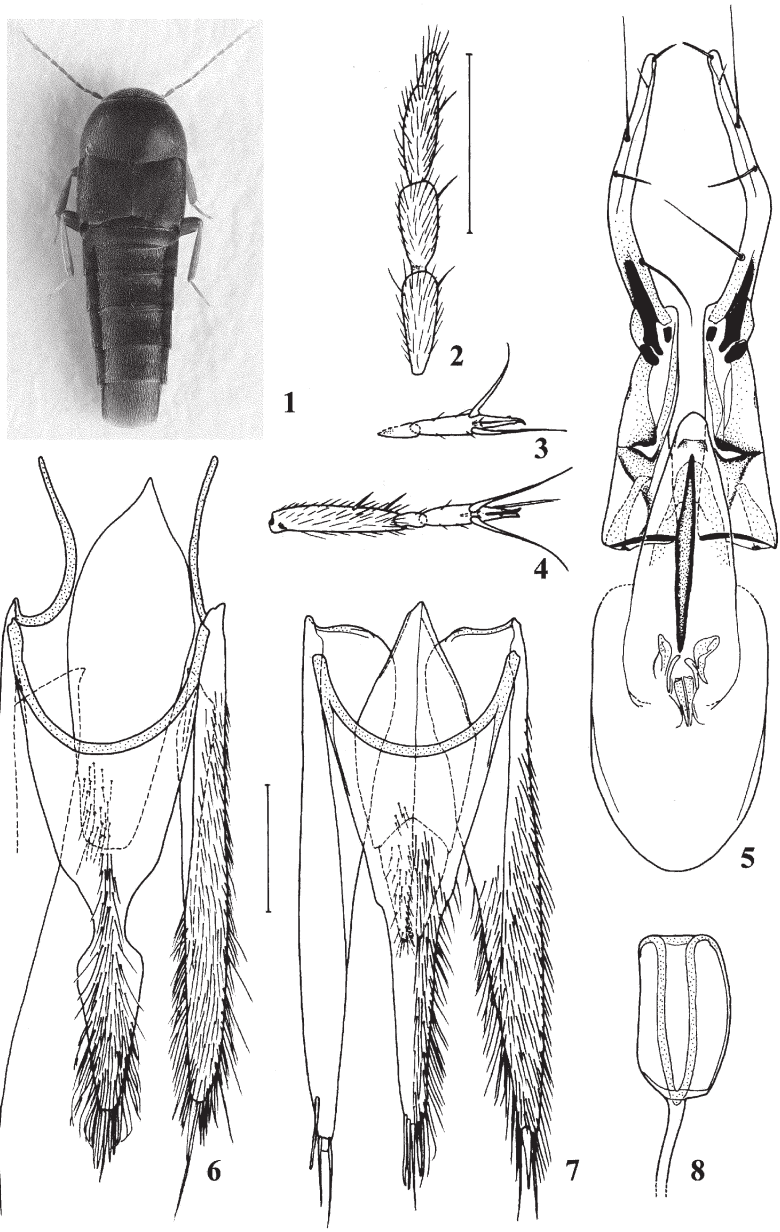
Type material. Holotype ♂: SW Mauritius, Mt. Cocotte, 20˚26´03˝S, 57˚27´53˝E, 600–650 m, 27–31.i.2006, river bank, treading, J. Janák lgt. (JJRC). Paratypes: same data as the holotype, 1 ♀ (JJRC); SW Mauritius, Black River Gorges N.P., above Alexandra Falls, 20˚25´43˝S, 57˚27´04˝E, 600 m, 28.i.2006, river bank, treading, J. Janák lgt., 8 ♂♂, 5 ♀♀ (JJRC, MNHP).
Description (n = 15)**.** Length 3.0–3.7 mm (m = 3.3 mm, ht = 3.3 mm), length of anterior body 1.3–1.6 mm (m = 1.4 mm, ht 1.4 mm). Dark brown, anterior margin of pronotum and posterior margins of tergites reddish-brown, antennomeres 2–9, maxillary palps and legs light brown with a rusty tinge, antennomeres 1, 10 and 11 and palps light yellowish brown. Pubescence yellowish brown.

Head (Fig. 1) convex, transverse, (width/length = 1.27–1.65, m = 1.44, ht = 1.42). Eyes large, the maximal width situated close behind the eyes. Surface between punctures moderately shining, microsculpture indistinct. Antennae long and slender, with two basal segments enlarged, antennomeres 3 to 10 elongate, antennomere 5 more than twice as long as broad (length/width = 2.2–3.1, m = 2.6), antennomere 10 approximately twice as long as wide (length/width = 2.0–2.7, m = 2.2), antennomere 11 with short papilla, half as long as the segment and not distinctly separated from it (Fig. 2). Pronotum moderately convex and strongly transverse (width/length = 1.60–1.71, m = 1.65, ht = 1.68), longer and much wider than head (length of pronotum/length of head = 1.16–1.41, m = 1.28; width of pronotum/width of head 1.39–1.56, m = 1.46), distinctly widened behind. Base of the pronotum towards the sharp hind angles deeply emarginate. Surface between punctures moderately shining, microsculpture indistinct. Elytra short and very transverse (width/length at shoulder = 1.29–1.46, m = 1.37, ht = 1.42), about 1.2 times longer than pronotum and about of the same width (length of elytra/length of pronotum = 1.12–1.32, m = 1.23; width of elytra/width of pronotum 1.00–1.03, m = 1.02). Hind margin distinctly emarginated before the outer posterior angle. Surface between punctures dull.

Abdomen strongly narrowed apically.

Tarsi with 2 large segments (Fig. 4). Base of the second tarsomere with an appendix (Fig. 3, 4) resembling an incompletely developed or reduced segment (as in both known Madagascan species – *A. lemur* Janák, 1996 and *A. farakely* Janák, 1996 – cf. Fig. 3–5 and 17–19 in Janák, l. c.), bearing only a few short setae opposite to the large first tarsomere.

Male. Tergite and sternite 8 densely pubescent. Tergite 8 widely irregularly emarginate posteriorly (Fig. 9). Sternite 8 elongate and bearing some furcate spines at posterior margin



Figs 1–8. *Adinopsis mauritiana* sp. n. 1, 2, 5, 6: holotype ♂; 3, 4: paratype ♂; 7, 8: paratype ♀, 1 – habitus; 2 – antennomeres 9–11; 3 – last segment of mesotarsus; 4 – mesotarsus; 5 – aedeagus, dorsal; 6 – ♂, terminalia; 7 – ♀, terminalia; 8 – spermatheca. Scale 0.2 mm (2 = 3, 4; 5 = 6–8), Fig. 1 without scale.

Obr. 1–8. *Adinopsis mauritiana* sp. n. 1, 2, 5, 6: holotypus ♂; 3, 4: paratypus ♂; 7, 8: paratypus ♀, 1 – habitus; 2 – tykadlové články 9–11; 3 – poslední článek zadního tarsu; 4 – střední tarsus; 5 – aedeagus, dorsálně; 6 – ♂, terminálie; 7 – ♀, terminálie; 8 – spermatéka. Měřítko 0,2 mm (2 = 3, 4; 5 = 6–8), obr. 1 bez měřítka.

(Figs 10, 11). Tergite 10 long and densely pubescent, with lateral margins deeply sinuated in the middle and with triangularly elongate apical part (Fig. 6). Aedeagus elongate, long 1.22–1.29 mm (n = 8, m = 1.22, h =1.27) with long narrow internal structure and 2 pairs of smaller structures in the median part of the bulbus; median lobe with apex widely pointed, apical lobe of paramerite with 2 very long and 3 shorter setae (Fig. 5).

Female. Tergite and sternite 8 densely pubescent. Tergite 8 widely emarginated posteriorly (Fig. 12). Sternite 8 elongate and bearing some furcate spines at posterior margin (Figs 13, 14). Tergite 10 long and densely pubescent, narrowed apically (Fig. 7). Spermatheca as in Fig. 8.

Relationship. The new species belongs to the *A. hammondi* group (Uhlig & Klimaszewski 1995) and resembles *A. lemur* Janák, 1996 externally. The species of this group have similarly shaped aedeagi with a long sclerite and a few small structures in the internal sac. The new species differs from *A. lemur* by the widely pointed apex of the median lobe (spoon-like in *A. lemur*). The shape of the apical part of the male tergite 10 of *A. mauritiana* sp. n. is very particular and it is the best character to distinguish the new species from other species of the genus.

Bionomics. The type specimens were collected in February by treading the banks of two streams in the Black River National Park in Mauritius. The species seems to prefer sunlit grassy places on the river banks.

Distribution. South-West Mauritius.

Etymology. This species is named after the island of Mauritius, where the type material was collected.

Discussion. All three species from the Madagascan Region – *A. lemur* Janák, 1996, *A. farakely* Janák, 1996 and *A. mauritiana* sp. n. – posses the generic characters described in the introduction; all three have similarly formed tarsi – the base of the second tarsomere is connected with an appendix resembling an incompletely developed or reduced segment. This character could easily have been overlooked by previous investigations, because it can be covered by the dense pubescence of the apical part of the first tarsomere, and is hardly visible without disarticulation and mounting. Checking the tarsal segmentation of the genus *Adinopsis* worldwide is beyond of the scope of this study. Moreover only scarce material of most species is available for study (especially of Ethiopian and Oriental species), and so disarticulation of specimens for detailed study is problematic without larger material.

Adinopsis lemur Janák, 1996

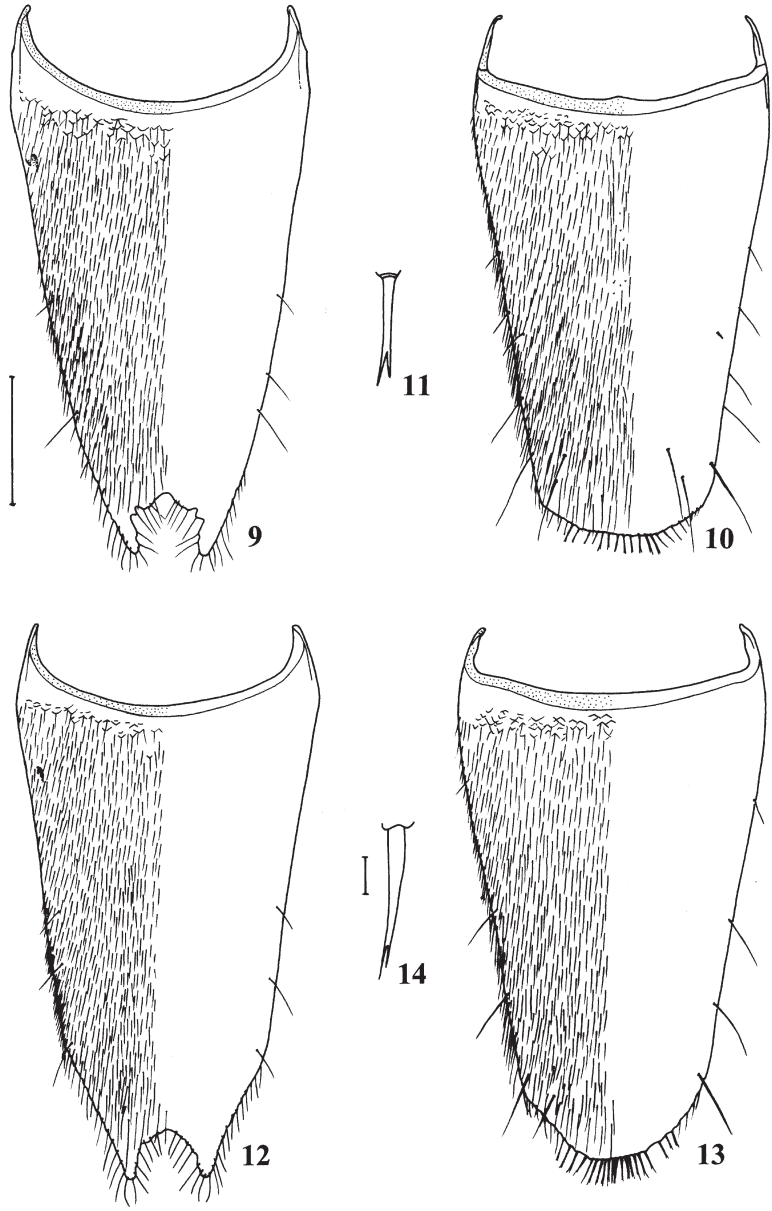
SE Madagascar, 24 km NE of Esira, Col de Marotaolana, 1100–1200 m, 1.–2.ii.2004, 20˚14´S, 46˚53´E, swamp, J. Janák lgt., 2 ♂♂, 1 ♀ (JJRC).

The species was hitherto known from 6 localities in eastern and western Madagascar.

World Checklist of the genus *Adinopsis*

The species groups were defined by Klimaszewski & Jansen (1994) and completed and corrected by Uhlig & Klimaszewski (1995) and Zerche (1999). Four species remained as „incertae sedis“.

***Adinopsis †groehni* group**	
A. †groehni Zerche, 1999	
***Adinopsis australis* group**	**Australian Region**
A. australis (Fauvel, 1878)	Australia



Figs 9–14. *Adinopsis mauritiana* sp. n. 9–11: holotype ♂, 9 – tergite 8, 10 – sternite 8, 11 – median seta of sternite 8; 12–14 paratype ♀: 12 – tergite 8, 13 – sternite 8, 14 – median seta of sternite 8. Scale 0.2 mm (9, 10, 12, 13) and 0.01 mm (11, 14).

Figs 9–14. *Adinopsis mauritiana* sp. n. 9–11: holotypus ♂, 9 – tergit 8, 10 – sternit 8, 11 – střední seta sternitu 8; 12–14 paratypus ♀: 12 – tergit 8, 13 – sternit 8, 14 – střední seta sternitu 8. Měřítko 0,2 mm ((9, 10, 12, 13) a 0.01 mm (11, 14).

***Adinopsis hammondi* group**	**Ethiopian Region, Madagascan Region**
A. deckerti Uhlig et Klimaszewski, 1995	Namibia
A. flavicornis Klimaszewski, 1979	D. R. Congo
A. hammondi Klimaszewski, 1980	Angola
A. lemur Janák, 1996	Madagascar
A. maraisi Uhlig et Klimaszewski, 1995	Namibia
A. mauritiana sp. n.	Mauritius
A. mmabolela Klimaszewski et Jansen, 1994	South Africa
A. ndumu Klimaszewski, 1991	South Africa
***Adinopsis africana* group**	**Ethiopian Region, Madagascan Region**
A. africana Cameron, 1950	D. R. Congo
A. farakely Janák, 1996	Madagascar
***Adinopsis schoutedeni* group**	**Ethiopian Region**
A. schoutedeni (Bernhauer, 1933)	D. R. Congo
***Adinopsis rufobrunnea* group**	**Oriental Region**
A. rufobrunnea Cameron, 1919	Singapore
***Adinopsis cinnamomea* group**	**Oriental Region**
A. cinnamomea (Kraatz, 1859)	Sri Lanka, Andaman Islands, Malaysia
***Adinopsis nepalensis* group**	**Oriental Region**
A. nepalensis Pace, 1987	Nepal
***Adinopsis myllaenoides* group**	**Nearctic and Neotropical Region**
A. myllaenoides (Kraatz, 1857)	North, Central and South America
A. peruviana Pace, 2008	Peru
***Adinopsis pubescens* group**	**Neotropical Region**
A. braziliensis Klimaszewski, 1979	Brazil
A. ferruginea (Sharp, 1883)	Guatemala
A. pubescens Klimaszewski, 1982	Central and South America
***Adinopsis bicornis* group**	**Nearctic Region**
A. bicornis Klimaszewski, 1979	USA
A. cuspidata Klimaszewski, 1982	USA
***Adinopsis* „incertae sedis“**	
A. angusta (Sharp, 1883)	Central and South America
A. chinensis Pace, 1989	China
A. devroyei (Bernhauer, 1933)	D. R. Congo
A. klimaszewskii Uhlig, 1995	Namibia

ACKNOWLEDGEMENTS. The author thanks Jerzy Klimaszewski (Laurentian Forestry Centre, Canada) for sending his difficult-to-obtain papers on Deinopsini. Special thanks are due to Pavel Krásenský (Chomutov, Czech Republic) for digital photography.

REFERENCES

ASHE J. S. & CHATZIMANOLIS S. 2003: *Adinopsis*. Version 06 November 2003. http://tolweb.org/Adinopsis/10043/2003.11.06 in The Tree of Life Web Project, http://tolweb.org/ (accessed 16 June 2010).

JANÁK J. 1996: Zwei neue Arten der Gattung Adinopsis aus Madagaskar (Coleoptera, Staphylinidae, Aleocharinae, Deinopsini). *Entomofauna* **17**: 325–336.

KLIMASZEWSKI J. 1979: *A revision of the Gymnusini and Deinopsini of the World*. *Monograph 25*. Agriculture Canada, Ottawa, 169 pp.
KLIMASZEWSKI J. 1980: Two new species of Deinopsini from the Afrotropical and Nearctic regions with notes on two other species of this tribe (Coleoptera, Staphylinidae). *Polskie Pismo Entomologiczne* **50**: 109–120.
KLIMASZEWSKI J. 1982: A revision of the Gymnusini and Deinopsini of the world (Coleoptera: Staphylinidae). Supplement 2. *The Canadian Entomologist* **114**: 317–335.
KLIMASZEWSKI J. 1985: Revision of the Gymnusini and Deinopsini of the world (Coleoptera: Staphylinidae). Supplement 4. New distribution data and description of female Adinopsis bicornis. *Entomological News* **96**: 142–144.
KLIMASZEWSKI J. 1991: First record of the genus Adinopsis Cameron from South Africa, with the description of a new species (Coleoptera: Staphylinidae: Aleocharinae). *Annals of the Transvaal Museum*, **35**: 205–207.
KLIMASZEWSKI J. & FRANK J. H. 1992: New distributional data for New World Gymnusini and Deinopsini with description of a new species (Coleoptera, Staphylinidae, Aleocharinae). Supplement 5. *The Coleopterists Bulletin* **46**: 242–249.
KLIMASZEWSKI J. & GÉNIER F. 1985: A revision of the Gymnusini and Deinopsini of the world (Coleoptera: Staphylinidae, Aleocharinae) Supplement 3. *The Coleopterists Bulletin* **39**: 60–66.
KLIMASZEWSKI J. & JANSEN R. 1994: Description of a new Afrotropical species of Adinopsis Cameron 1919 with notes on some Neotropical and/or Nearctic species (Coleoptera Staphylinidae Aleocharinae). *Tropical Zoology* **7**: 325–332.
PACE R. 1987: Staphylinidae dell'Himalaya Nepalese. Aleocharinae raccolte dal Prof. Dr. J. Martens (Insecta: Coleoptera). *Courier Forschungsinstitut Senckenberg* **93**: 383–441.
PACE R. 1989: Aleocharinae from Hong Kong (Coleoptera, Staphylinidae). *Revue Suisse de Zoologie* **106**: 663–689.
PACE R. 2008: New records of Aleocharinae from Ecuador and Peru, with the description of new species, new subgenera and new genera (Coleoptera, Staphylinidae). In: GIACHINO P. M. (ed.): Biodiversity of South America, I. *Memoirs on Biodiversity* **1**: 225–398.
UHLIG M. 1995: Adinopsis klimaszewskii sp. n. from the Popa Falls in Northern Namibia (Coleoptera, Staphylinidae, Aleocharinae). *Mitteilungen aus dem Zoologischen Museum in Berlin* **71**: 293–295.
UHLIG M. & KLIMASZEWSKI J. 1995: A review of the African Adinopsis species with description of two new species from Northern Namibia. *Mitteilungen aus dem Zoologischen Museum in Berlin* **71**: 297–309.
ZERCHE L. 1999: Eine neue Art der Gattung Adinopsis Cameron aus dem Baltischen Bernstein (Coleoptera: Staphylinidae, Aleocharinae, Deinopsini). *Beiträge zur Entomologie* **49**: 97–105.

SOUHRN

Rod *Adinopsis* Cameron, 1919 se odlišuje od ostatních rodů drabčíků kapkovitým tvarem těla, dvoučlánkovými tarsami, 2 subapikálními zuby na kusadlech, čtyřčlánkovými maxilárními palpami s redukovaným 1. a 3. článkem, 11 článkovými tykadly se dvěma rozšířenými bazálními články a posledním článkem s apikální papilou, úzce protáhlým 10. tergitem a paramerami s dlouhými setami v apikální části. Tento rod je široce rozšířen, a to zejména v tropických oblastech, je ripikolní a vyhledává zejména osluněná stanoviště. Od 70. let minulého století byl předmětem celé řady studií a všechny dříve popsané druhy byly revidovány a redeskribovány.

Z malgašského regionu byly první dva druhy popsány autorem před více než deseti lety (Janák 1996). Během dalších cest na Madagaskar a Mauricius byl nalezen nový druh – *A. mauritiana* sp. n., což je první nález zástupce tribu Deinopsini na Maskarénských ostrovech a byla rovněž objevena nová lokalita druhu *A. lemur* Janák, 1996 na Madagaskaru. Všechny tři druhy známé nyní z malgašského regionu vykazují, ve srovnání s jinými druhy, odlišně utvářenou bázi posledního článku tarsů, který je spojen s přívěskem připomínajícím redukovaný nebo neúplně vyvinutý článek, s velmi redukovanou chaetotaxií, jehož funkce ani původ nejsou

dosud objasněny. V dalších rodových znacích nevykazují žádné odlišnosti. To mohlo být u předchozích studiích přehlédnuto, neboť bez mikroskopických preparátů je tento detail obtížně pozorovatelný, zejména pro husté chloupkování prvního tarsálního článku. Cílem tohoto článku není hodnotit fylogenetický význam a původ tohoto znaku. To by mohlo být předmětem dalších studií. Předpokladem k tomu je však získání dalšího materiálu. Od řady druhů jsou známy totiž pouze jednotlivé exempláře, což neumožňuje oddělení některých důležitých částí pro zhotovení mikroskopických preparátů a detailní pozorování.

Adinopsis mauritiana sp. n. patří do skupiny *A. hammondi*, která zahrnuje druhy z tropické Afriky a Madagaskaru. Tento nový druh je od ostatních druhů rodu odlišitelný podle zvláštně utvářeného samčího 10. tergitu, který je ve střední části hluboce vykrojený a je zakončen trojúhelníkovitě rozšířenou špicí (Fig. 6). Od externě nejvíce podobného druhu – *A. lemur* se dále liší tupou špicí na konci středního lobu aedoeagu, zatímco u *A. lemur* je špice lžičkovitého tvaru.

Článek je doplněn celosvětovým check-listem druhů s rozdělením do druhových skupin. Čtyři druhy nejsou dosud do žádné skupiny zařazeny, neboť to současný stav znalostí neumožňuje. Dosud je znám jeden fosilní druh z baltského jantaru a 26 recentních druhů (včetně druhu nově popsaného v tomto článku).