Dtsch. Entomol. Z. 73 (2) 2026, 531–541 | DOI 10.3897/dez.73.210225

PENSOFT

für Natur MUSEUM FÜR NATURKUNDE BERLIN

A surprising discovery of a new *Lucanus* species from Corinthia, Greece (Coleoptera, Lucanidae, Lucaninae)

Jonas Kristl[1*], Gaëtan Flocon[2*]

1 *2nd Zoological Department, Natural History Museum Vienna, Burgring 7, 1010 Vienna, Austria*

2 *University of Rennes, 35000 Rennes, France*

https://zoobank.org/7FE9EE00-AFA0-4E42-8E71-97DF39E91E90

Corresponding author: Jonas Kristl (jonas.kristl@nhm.at)

Academic editor: Matthias Seidel ♦ **Received** 3 August 2026 ♦ **Accepted** 24 September 2026 ♦ **Published** 1 October 2026

Abstract

A new stag beetle species, *Lucanus apollon* Kristl & Flocon, **sp. nov.**, is described from the Geraneia Mountains, Corinthia, Greece, based on 56 male specimens collected in July 2025. The new species is diagnosed, illustrated, and compared with morphologically similar western Palaearctic *Lucanus* species. Information on its habitat and phenology is provided. Additionally, a checklist and distribution map of the Greek *Lucanus* species are presented, including the first records of *Lucanus ibericus* Motschulsky, 1845 from Lesbos and *L. laticornis* Deyrolle, 1864 from Lesbos and Samos. A key to the Greek *Lucanus* species and species morphologically similar to *L. apollon* **sp. nov.** is provided.

Key Words

Citizen science, distribution, Geraneia Mountains, Mediterranean, morphology, new records, taxonomy

Introduction

Lucanus Scopoli, 1763 is the type genus of the family Lucanidae Latreille, 1804, comprising approximately 132 described species, with new species being discovered regularly (Bánki et al. 2026). Most species of the genus are distributed within the Palaearctic region, with some occurring in the Oriental region and a few in the Nearctic region (Fujita 2010). Although the phylogenetic relationships among the western Palaearctic *Lucanus* species are not fully resolved, molecular evidence based on COI sequences suggests that they form a monophyletic group distinct from the eastern Asian *Lucanus* species (Cox et al. 2013).

In Europe, the genus is represented by five species (Bardiani et al. 2017), three of which have previously been cited from Greece: *L. cervus* (Linnaeus, 1758); *L. ibericus* Motschulsky, 1845; and *L. tetraodon* Thunberg, 1806. However, the presence of *L. ibericus* and *L. tetraodon* in Greece is doubtful (Bartolozzi et al. 2016).

The distribution patterns of Lucanidae in Greece remain inadequately studied, with species only recently discovered on the Greek mainland, such as *Sinodendron cylindricum* (Linnaeus, 1758), and others recently recorded from the Greek islands, such as *Dorcus parallelipipedus* (Linnaeus, 1758) and *D. peyronis* Reiche & Saulcy, 1856 from Crete (Bartolozzi et al. 2016; Bolanakis et al. 2024).

During field surveys prompted by observations on the citizen-science platform iNaturalist and conducted in the Peloponnese, southern Greece, in July 2025, an isolated population of an undescribed *Lucanus* species was discovered. Herein, *Lucanus apollon* sp. nov. is described from Pisia, Geraneia Mountains, Corinthia, Greece.

* These authors contributed equally.

Copyright *Jonas Kristl & Gaëtan Flocon*. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Materials and methods

Abbreviations of collections

GFPC Gaëtan Flocon Personal Collection, Rennes, France
GNHM National Museum of Natural History Goulandris, Athens, Greece
JKPC Jonas Kristl Personal Collection, Vienna, Austria
MEPC Manfred Egger Personal Collection, Wattens, Austria
MZLU Lund University Biological Museum, Lund, Sweden
NHMW Naturhistorisches Museum Wien, Vienna, Austria

Field collection

A total of 56 male specimens of the new species were collected in the forest of Pisia, Corinthia, Greece, at an elevation of 540–580 m, during two periods: 4–8 July 2025 and 13–17 July 2025. Fieldwork was conducted under a research permit (ΥΠΕΝ/ΔΔΔ/34776/1304) issued by the Greek Ministry of Environment and Energy, General Secretariat of Forests. All specimens were captured at nightfall between 21:00 and 23:00 h using insect nets with 2 m telescopic handles and by hand. Photographs of living specimens and the habitat were taken using a Canon EOS 70D digital camera paired with a Sigma 105 mm f/2.8 EX DG Macro OS HSM.

Morphological methods

Specimens were relaxed for approximately 48 h in a sealed box containing paper towels moistened with water. Abdominal segments VIII and IX and the aedeagus were removed from the abdomen and separated from each other. To remove remaining tissues from the sclerotised structures, the abdominal terminalia were macerated in a 10% potassium hydroxide (KOH) solution for 24 h and subsequently washed with distilled water.

Habitus and abdominal terminalia photographs were taken using a Canon EOS R50 digital camera paired with a Canon EF-S 60 mm f/2.8 Macro USM. Focus stacking was performed using Helicon Focus v. 8.2.2 Pro, and the resulting images were edited and assembled into plates using Adobe Photoshop v. 27.2.0.

Distribution data and mapping of *Lucanus* species in Greece

Distribution data for *Lucanus* species occurring in Greece were compiled from collection material and verified citizen-science observations from iNaturalist and Observation.org (iNaturalist 2026; Observation International and local partners 2026). All photographic records from citizen-science platforms were reviewed, and the species identifications were confirmed by the authors prior to inclusion. All occurrence records used to generate the distribution map are provided in Suppl. material 1: *Lucanus* spp. Greece occurrence records. Fig. 8 was generated in QGIS v. 3.34.11 based on national administrative boundaries from Natural Earth (www.naturalearthdata.com) and a digital elevation model obtained from OpenTopography (www.opentopography.org).

Taxonomy

Genus *Lucanus* Scopoli, 1763

Lucanus apollon Kristl & Flocon, sp. nov.

https://zoobank.org/26BE9D07-AC82-4DC8-B391-E76A42948ACE
Figs 1A–H, 2A, B, 3A, 4A–D, 5A, 6A–C, 7D

Type material. ***Holotype*:** GREECE • ♂; Geraneia Mountains, Corinthia, Pisia; 38°01'06.8"N, 22°59'17.7"E; alt. 550 m; 14 Jul. 2025; J. Kristl & G. Flocon leg.; NHMW NHMW-ZOO-COL-0003342. ***Paratypes*:** GREECE • 55♂♂; Geraneia Mountains, Corinthia, Pisia; 38°01'08.9"N, 22°59'21.9"E with the collecting area extending up to 150 m SW and 150 m SSW of the coordinates; alt. 540–580 m; 04–08 Jul. 2025 and 13–17 Jul. 2025; J. Kristl & G. Flocon leg.; 1♂ in GNHM, 23♂♂ in JKPC, 31♂♂ in GFPC.

Additional observations. GREECE – **Attica reg.** • 1♂; Mt. Parnitha, 30 km NNE Athens, Ippokratios Politia; 38°12'55.3"N, 23°47'55.4"E; alt. 650 m; 10 Jul. 2025; documented by I. Linardaki (https://www.inaturalist.org/observations/296834848). – **Euboea reg.** • 1♂; Mt. Messapio, 3.5 km SE Loukissia; 38°27'39.0"N, 23°28'52.4"E; alt. 760 m; 23 Jun. 2022; documented by Spi Ros (https://www.inaturalist.org/observations/152776008).

Differential diagnosis. *Lucanus apollon* sp. nov. is most similar to *L. busignyi* (Planet, 1909) in its glossy dorsal surface but differs in having a bifid mandibular apex, which is simple in *L. busignyi*. *L. apollon* sp. nov. differs from *L. ibericus* Motschulsky, 1845, and *L. macrophyllus* Kraatz, 1860 by its glossy dorsal surface, whereas the latter two possess a dull dorsal surface. *Lucanus apollon* sp. nov. can be distinguished from all three species by having an aedeagus with stout parameres, whereas the other species possess more slender ones. The diagnostic characters distinguishing *L. apollon* sp. nov. from the compared species are summarised in Table 1.

Description of the holotype. ♂ (Figs 1A, B, 2A, B, 3A, 4A–D, 5A, 6A–C). Body length: 43.5 mm. Length of body parts: head (7.3 mm), mandible (7.4 mm), pronotum (7.3 mm), elytra (22.1 mm); width: head (11.4 mm), pronotum (13.3 mm), elytra (16.0 mm).

Habitus (Figs 1A, B, 2A, B)**.** Body colour reddish-brown, dorsally glossy and without pubescence,

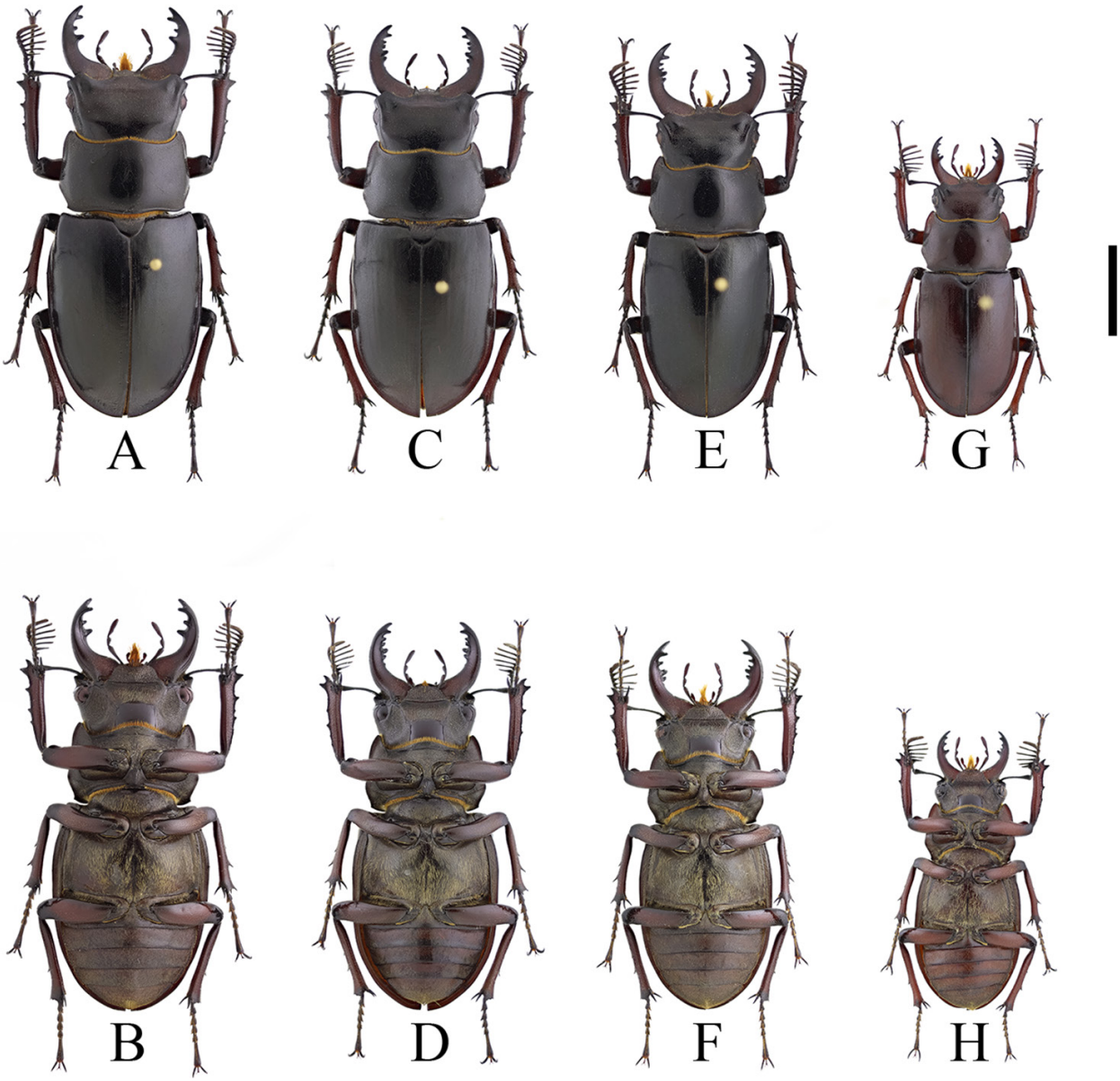

Figure 1. Habitus of male *Lucanus apollon* sp. nov. **A, B, E–H.** Paratypes; **C, D.** Holotype. **A, C, E, G.** Dorsal view; **B, D, F, H.** Ventral view. Scale bar: 10.0 mm.

ventrally with fine pubescence; femora and tibiae appear dark reddish on the dorsal and ventral sides.

***Head*.** Transverse. Anterior ridge weakly defined. Lateral ridges narrowed in the anterior half, forming very weak, rounded, obtuse posterolateral angles. Canthus (Fig. 3A) very thin, projecting 2/5 over the eye. Clypeolabrum (Figs 1A, 2A) transverse, apically rounded, with paired acute apicolateral projections slightly upcurved, fused with frons. Mandible (Figs 1A, 2A, 3A) approximately as long as head, semicircular, incurved; apex bifid, distal tine longer than proximal tine; inner margin with prominent median tooth located at midlength of the mandible, two unequally sized denticles below the median tooth, and two denticles between the median tooth and the apical fork. Antennal club (Fig. 3A) hexamerous, with antennomeres 5–10 prominently elongated; antennomere four slightly elongated and acute.

Pronotum (Figs 1A, 2A)**.** Transverse, 1.8 times wider than long, slightly wider than head, widest at posterior 1/3. Anterior margin bisinuate, anterior angles slightly rounded; lateral angles obtuse; posterior margin bisinuate, posterior angles obtuse yet pointed.

Scutellar shield (Figs 1A, 2A)**.** Semicircular, 1.5 times wider than long.

Legs (Figs 1A, B, 2A, B)**.** Protibiae each with 2–4 variably developed teeth along outer margin, excluding apical fork; apex bifurcate with acute branches, slightly curved outward. Mesotibiae and metatibiae each with three spines along outer margin.

Elytra (Figs 1A, 2A)**.** Elongate, 1.4 times longer than wide, widest at basal 1/3.

Venter (Figs 1B, 2B)**.** Prosternum and mesoventrite densely punctate, with very fine pubescence; prosternal process apically acute. Metaventrite densely punctate,

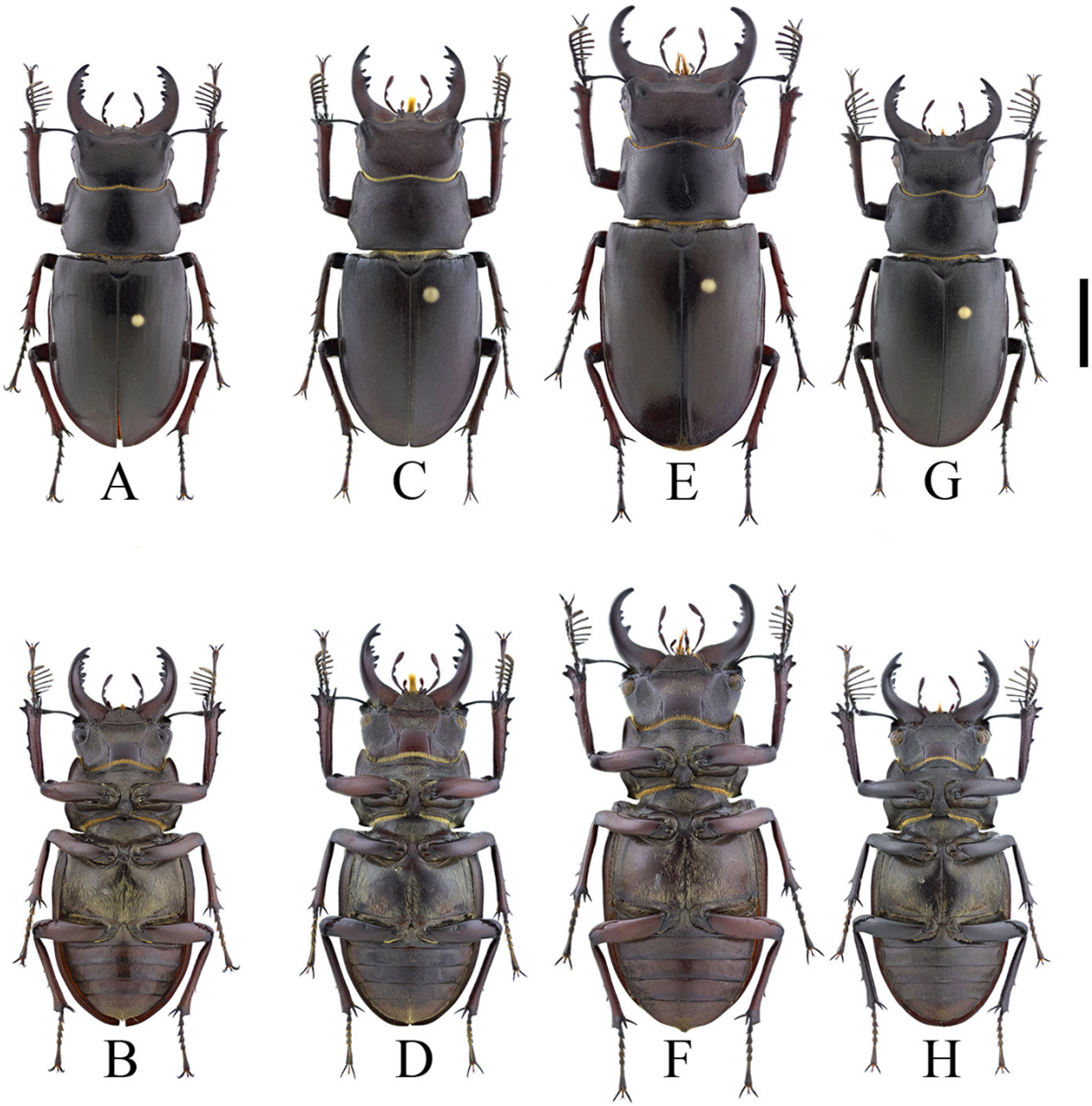

Figure 2. Habitus of male *Lucanus* species. **A, B.** *L. apollon* sp. nov., holotype; **C, D.** *L. ibericus*; **E, F.** *L. busignyi*; **G, H.** *L. macrophyllus*. **A, C, E, G.** Dorsal view; **B, D, F, H.** Ventral view. Scale bar: 10.0 mm.

with dense, conspicuous pubescence. Abdominal ventrites reddish-brown, densely punctate, with fine pubescence; posterior margin of each ventrite with a darker transverse band. Epipleura densely punctate, with fine pubescence.

Abdominal terminalia. Abdominal ventrite VIII (Fig. 4A) falcate, with a small, obtuse projection at the midline. Abdominal tergite VIII (Fig. 4B) trapezoidal, with a T-shaped membranous area extending from the base along the midline to approximately half the tergite length. Abdominal segment IX (Fig. 4C, D) ovate.

Aedeagus. In dorsal view (Fig. 6B) approximately 3.0 times longer than wide. Phallobase (Fig. 6A–C) approximately 1.7 times longer than parameres. Parameres (Fig. 6C) stout, with apices upcurved. Penis (Fig. 6A) stout, approximately 0.7 times the length of the parameres. Flagellum (Fig. 5A) approximately 2.8 times longer than aedeagus, apex of flagellum slender, not enlarged.

Variation of paratypes. 55♂♂ (Fig. 1C–H). Body length: 30.6–47.0 mm. General morphology as in holotype, except for the following variation.

Habitus. Body colour ranging from light to dark reddish-brown; femora and tibiae varying from light reddish to dark reddish on the dorsal and ventral sides.

Head. Mandibular dentition variable, with some specimens lacking additional denticles below the median tooth, others bearing 1–2 denticles; number of denticles between the median tooth and the apical fork ranges from 1–3.

Legs. Protibiae each with 1–5 variably developed teeth along outer margin, excluding apical fork. Mesotibiae and metatibiae each with 2–3 spines along outer margin.

Female. Unknown.

Etymology. The specific epithet "*apollon*" is a noun in apposition, referring to Apollo (Ἀπόλλων, Apollōn), the

Table 1. Comparison of diagnostic morphological characters of *Lucanus apollon* sp. nov. and morphologically close species.

Characters	*L. apollon* sp. nov.	*L. ibericus*	*L. busignyi*	*L. macrophyllus*
Mandible apex	Bifid (Fig. 3A)	Bifid (Fig. 3B)	Simple (Fig. 3C)	Bifid/simple (Fig. 3D)
Median tooth	Prominent (Fig. 3A)	Prominent (Fig. 3B)	Prominent (Fig. 3C)	Truncated (Fig. 3D)
Median tooth position	Middle of mandible (Fig. 3A)	Middle of mandible (Fig. 3B)	Below middle of mandible (Fig. 3C)	Middle of mandible (Fig. 3D)
Denticles below the median tooth	Present/absent (Fig. 3A)	Present/absent (Fig. 3B)	Absent (Fig. 3C)	Present/absent (Fig. 3D)
Antennal lamellae	Long (Fig. 3A)	Fairly long (Fig. 3B)	Long (Fig. 3C)	Very long (Fig. 3D)
Longest antennomere	8 (Fig. 3A)	8 (Fig. 3B)	8 (Fig. 3C)	7 (Fig. 3D)
Antennomeres 5–10	Slender (Fig. 3A)	Slightly thickened (Fig. 3B)	Slender (Fig. 3C)	Very slender (Fig. 3D)
Antennomeres 6–9 widened apex	Absent (Fig. 3A)	Absent (Fig. 3B)	Absent (Fig. 3C)	Present (Fig. 3D)
Dorsal body surface	Glossy (Fig. 2A)	Dull (Fig. 2C)	Glossy (Fig. 2E)	Dull (Fig. 2G)
Femora	Reddish (Fig. 2B)	Reddish (Fig. 2D)	Reddish (Fig. 2F)	Black (Fig. 2H)
Abdominal tergite VIII	Trapezoidal (Fig. 4B)	Lunate (Fig. 4F)	Falcate (Fig. 4J)	Subtriangular (Fig. 4N)
Median line on abdominal tergite VIII	From base to half (Fig. 4B)	From base to 1/3 (Fig. 4F)	From base to apex (Fig. 4J)	From base to half (Fig. 4N)
Abdominal segment IX	Ovate (Fig. 4C, D)	Ventricose (Fig. 4G, H)	Ovate (Fig. 4K, L)	Ovate (Fig. 4O, P)
Parameres	Stout, apices upcurved (Fig. 6C)	Slender, apices slightly upcurved (Fig. 6F)	Slender, widened basally, apices upcurved (Fig. 6I)	Slender, apices upcurved (Fig. 6L)
Penis/parameres length ratio	0.7× (Fig. 6A)	0.7× (Fig. 6D)	0.6× (Fig. 6G)	0.5× (Fig. 6J)

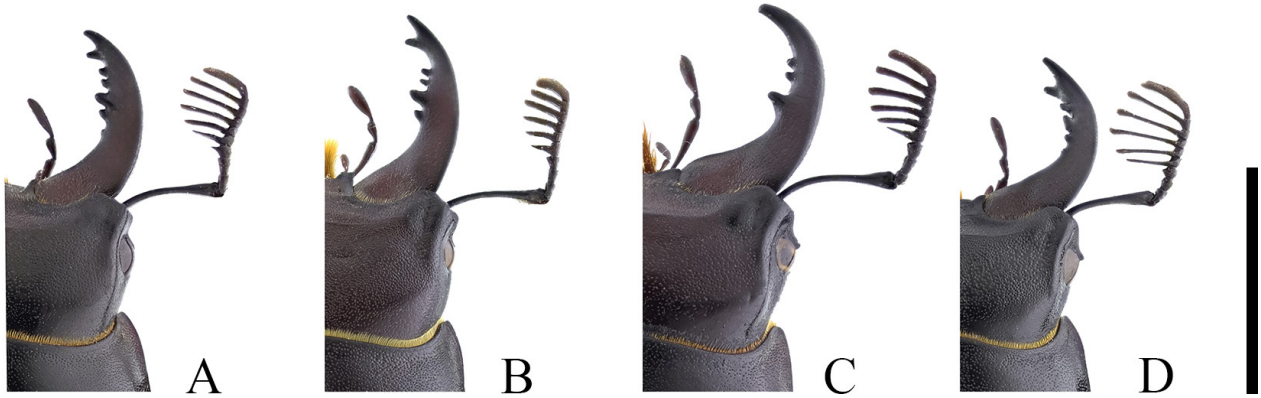

Figure 3. Head details of male *Lucanus* species in dorsal view. **A,** *L. apollon* sp. nov., holotype; **B.** *L. ibericus*; **C.** *L. busignyi*; **D.** *L. macrophyllus*. Scale bar: 10.0 mm.

ancient Greek god associated with light, music, and the arts, in reference to its discovery in Greece.

Distribution. Greece (Geraneia Mountains, Mount Parnitha, Mount Messapio).

Ecology. Adults of *Lucanus apollon* sp. nov. were active between 21:00 and 23:00 h, with most activity occurring after nightfall. Some specimens were attracted to streetlights (Fig. 7B), suggesting positive phototaxis. The specimens were observed in flight, on the ground, on tree trunks of *Quercus ilex*, *Platanus orientalis*, and *Pinus halepensis*, and within cavities in rock walls and *Quercus coccifera*. The habitat consists of a Mediterranean lowland to submontane *Pinus* forest dominated by *Pinus halepensis*, *Quercus ilex*, *Quercus coccifera*, *Platanus orientalis*, and *Arbutus andrachne* (Fig. 7A, C).

The beginning of July appears to mark the onset of adult activity, with 12 specimens observed between 4–8 July, whereas the highest number of active adults was recorded in mid-July, with 44 specimens observed between 13–17 July. Despite the presence of potential predators such as the hooded crow (*Corvus cornix*), red fox (*Vulpes vulpes*), and domestic cat (*Felis catus*) (Avgın and Thomaes 2014; Bardiani et al. 2017), no damaged specimens were observed. The only evidence of predation was a single damaged elytron.

The species coexists with *Dorcus parallelipipedus* (Linnaeus, 1758) and other saproxylic Coleoptera, including *Mesoprionus besikanus* (Fairmaire, 1855) and *Oryctes nasicornis* (Linnaeus, 1758). No other species of *Lucanus* were found at the locality.

Material examined for comparison

Lucanus ibericus Motschulsky, 1845

Figs 2C–D, 3B, 4E–H, 5B, 6D–F

Lucanus ibericus Motschulsky, 1845: 60.
Lucanus curtulus Motschulsky, 1845: 60.
Lucanus orientalis Kraatz, 1860: 269.
Lucanus piger Motschulsky, 1870: 37.
Lucanus intermedius Motschulsky, 1870: 41.
Lucanus tenebrosus Motschulsky, 1870: 47.
Lucanus ibericus capsica Semenov, 1901: 105.
Lucanus ibericus ravasinii Schatzmeyer, 1923: 8.

Type locality. "Géorgie" [Georgia]

Material examined. GEORGIA – **Mtskheta–Mtianeti reg.** • 2♂♂; 5 km W Mtskheta; 15 Jul. 2021; I. Uspenskyi

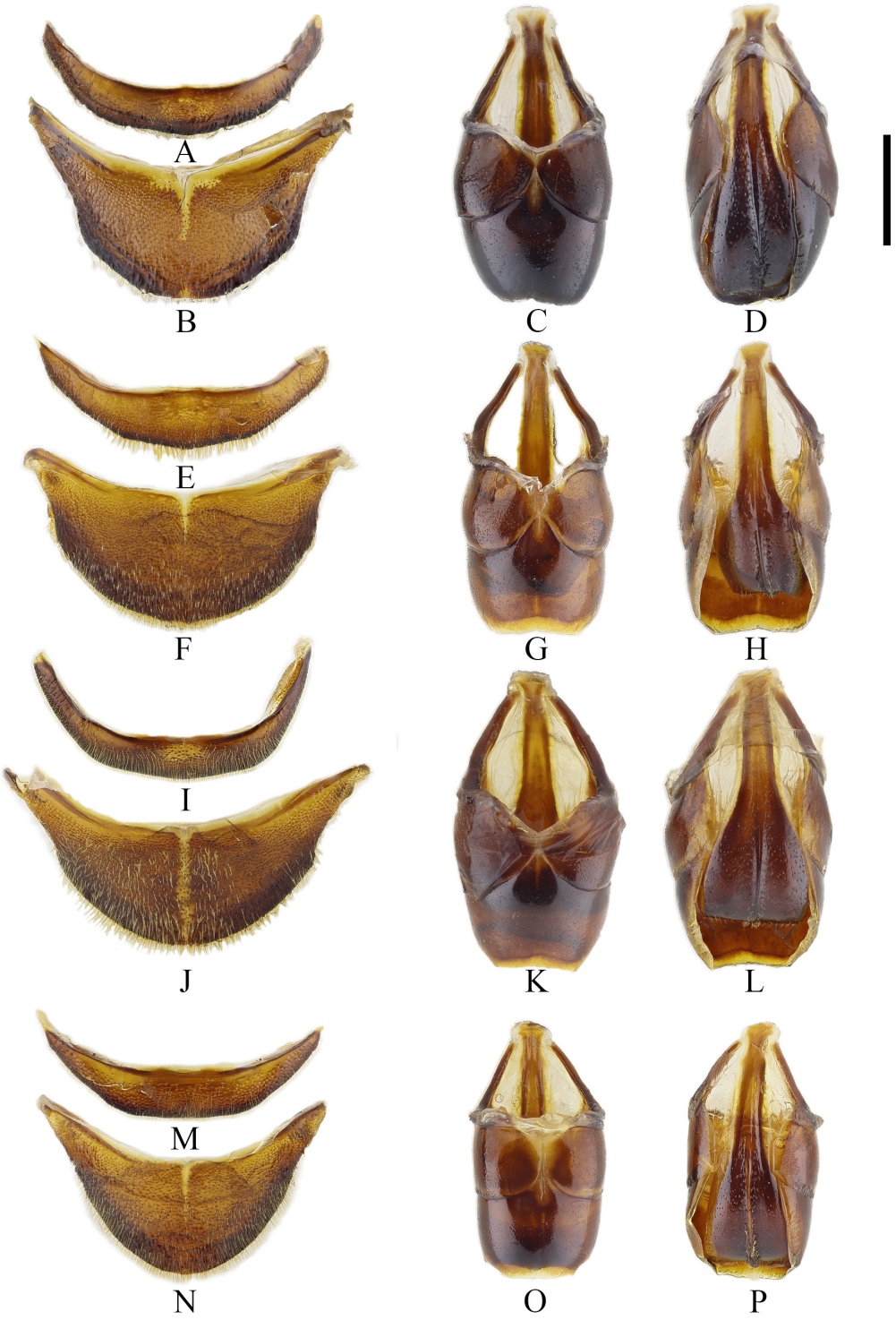

Figure 4. Male abdominal ventrite VIII (**A, E, I, M**), abdominal tergite VIII (**B, F, J, N**) and abdominal segment IX (**C, D, G, H, K, L, O, P**) of *Lucanus* species. **A–D,** *L. apollon* sp. nov., holotype; **E–H,** *L. ibericus*; **I–L,** *L. busignyi*; **M–P,** *L. macrophyllus*. **B, C, F, G, J, K, N, O.** Dorsal view; **A, D, E, H, I, L, M, P.** Ventral view. Scale bar: 2.5 mm.

leg.; JKPC. – **Samtskhe–Javakheti reg.** • 2♂♂; near Borjomi; 16 Jul. 2023; H. Demydov leg.; JKPC. RUSSIA – **Stavropol reg.** • 3♂♂; Pyatigorsk, Mashuk Mt.; alt. 500 m; 17 Jun. 2020; A. Tatulyan leg.; JKPC. • 10♂♂; Pyatigorsk, Beshtau Mt.; alt. 600 m; 18 Jun. 2020; A. Tatulyan leg.; GFPC. TURKEY • 2♂♂; Cappadocia, Nevşehir Prov., Göreme; 10–19 Jul. 2001; M. Vašek leg; JKPC.

Distribution. Caucasus, NW to NE and C Anatolia, Greece (Lesbos)

Remarks. It occurs in habitats dominated by *Fagus* sp., *Quercus* sp., *Carpinus betulus*, and *Platanus orientalis* (Avgın and Thomaes 2014; Sürgüt and Varli 2023). The species is attracted to light (Avgın and Thomaes 2014).

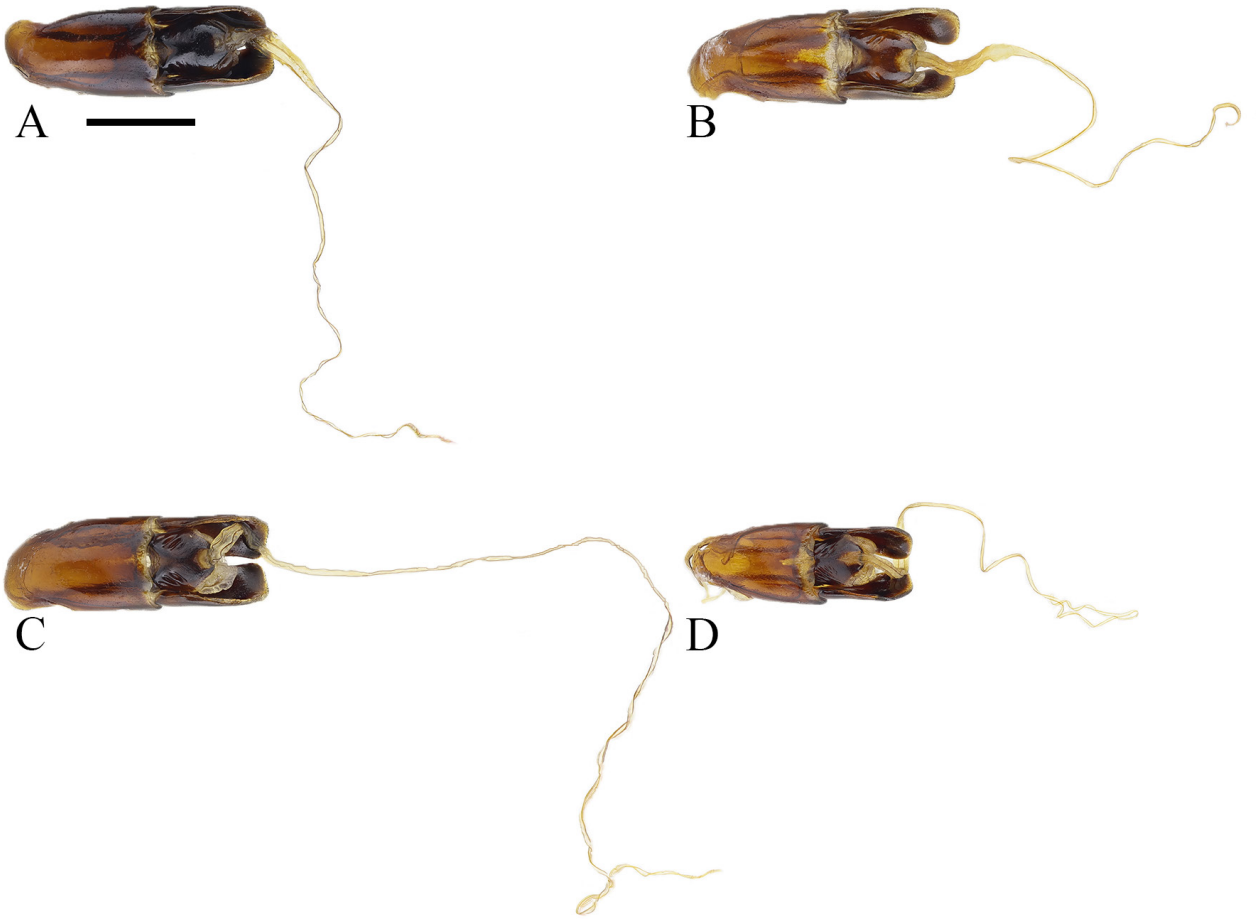

Figure 5. Aedeagus of *Lucanus* species in ventral view. **A.** *L. apollon* sp. nov., holotype; **B.** *L. ibericus*; **C.** *L. busignyi*; **D.** *L. macrophyllus*. Scale bar:2.5 mm.

Lucanus busignyi (Planet, 1909)

Figs 2E–F, 3C, 4I–L, 5C, 6G–I

Pseudolucanus busignyi Planet, 1909: 173.

Type locality. "Asia minor" [Turkey, Anatolia]

Material examined. TURKEY • 4♂♂; Muğla Prov., Fethiye, Nif (Arpacık); alt. 950–1,000 m; Jul. 2021; local collector leg; 3♂♂ in JKPC, 1♂ in GFPC.

Distribution. SW Anatolia

Remarks. It occurs in habitats dominated by *Quercus* sp., *Cedrus* sp., and *Platanus orientalis* (Avgın and Thomaes 2014; Schenk and Fiedler 2020; Maik Petzold pers. comm. 2025).

Lucanus macrophyllus Kraatz, 1860

Figs 2G–H, 3D, 4M–P, 5D, 6J–L

Lucanus macrophyllus Kraatz, 1860: 271.

Type locality. "Caramanien" [Turkey, S Anatolia]

Material examined. TURKEY – **Antalya Prov.** • 6♂♂; S Taurus Mts., 30 km NW Alanya; alt. 1,150 m; 20 Jul. 2001; M. Hiermeier leg.; 1♂ in JKPC, 5♂♂ in MEPC. – **Muğla Prov.** • 1♂; Yatağan; alt. 630 m; 13 Jul. 1984; P. Cult leg.; NHMW NHMW-ZOO-COL-0085395. – **Cilician Taurus** • 1♂; date and collector unknown; historical specimen; NHMW NHMW-ZOO-COL-0002702.

Distribution. SW to SC Anatolia

Remarks. It occurs in habitats dominated by *Quercus* sp. (Jansson and Snäll 2017).

Lucanus cervus turcicus Sturm, 1843

Lucanus turcicus Sturm, 1843: 347.

Type locality. "Konstantinopel" [Turkey, Istanbul]

Material examined. GREECE – **East Macedonia and Thrace reg.** • 1♂; Rhodope; 09 Jul. 2018; MZLU 00245798; previously misidentified as *L. ibericus*. – **Central Macedonia reg.** • 1♂; Chalkidiki, Ouranoupolis; 22 Jul. 1975; Kritscher leg.; NHMW NHMW-ZOO-COL-0085396; previously misidentified as *L. tetraodon*, H. Bomans, 1983 det.

Distribution. S to SE Balkan Peninsula

Remarks. On Mount Ossa, Thessaly, Greece, adults of *L. cervus turcicus* were observed in *Fagus* forests at higher elevations between 500 and 600 m and in mixed *Quercus* forests at lower elevations, down to 100 m, in early June (pers. obs. 2024).

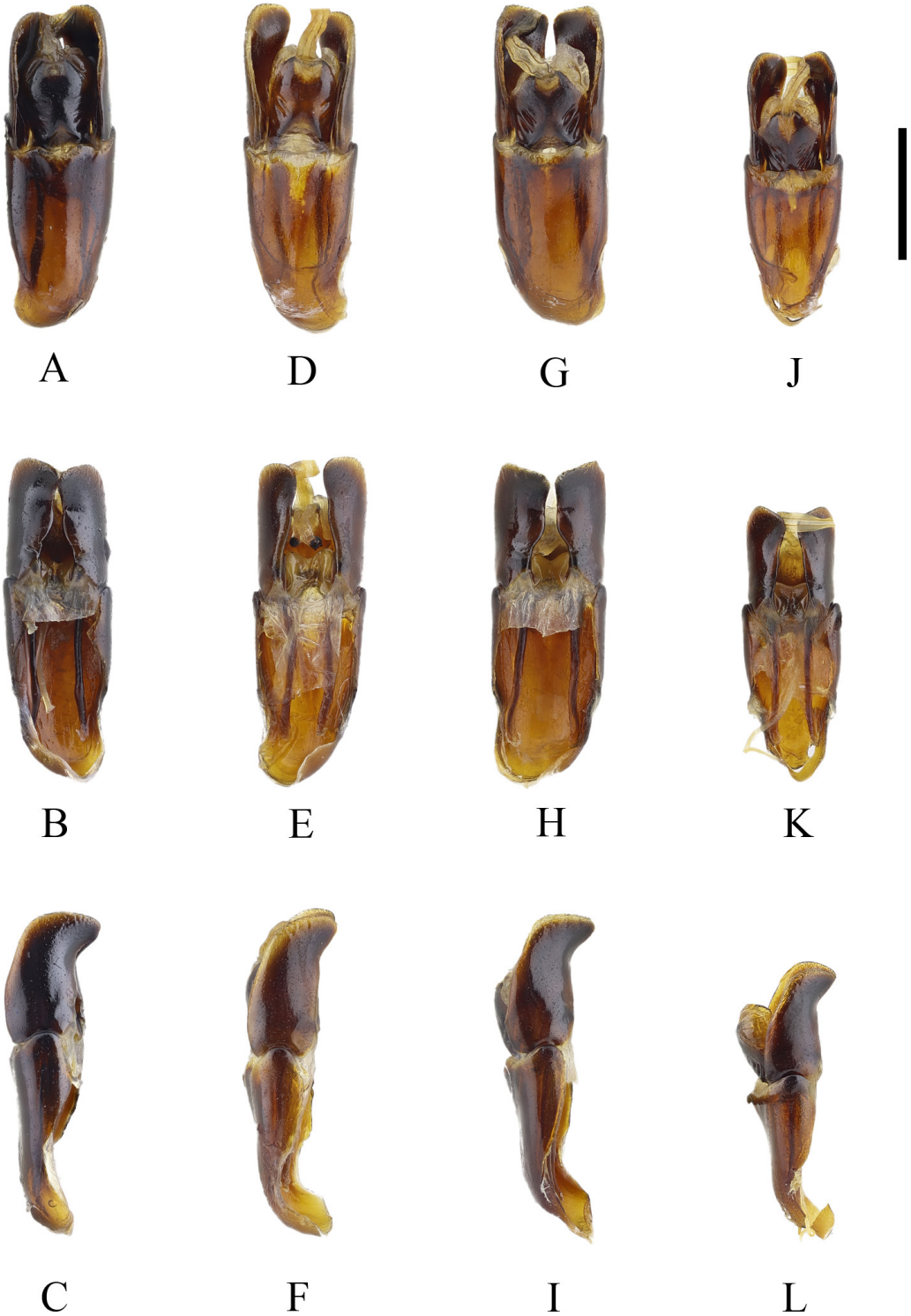

Figure 6. Aedeagus of *Lucanus* species, excluding flagellum. **A–C.** *L. apollon* sp. nov., holotype; **D–F.** *L. ibericus*; **G–I.** *L. busignyi*; **J–L.** *L. macrophyllus*. **B, E, H, K.** Dorsal view; **A, D, G, J.** Ventral view; **C, F, I, L.** Lateral view. Scale bar: 2.5 mm.

Checklist and distribution of *Lucanus* species in Greece

The verification of museum and private collection specimens, together with verified citizen-science observations from iNaturalist and Observation.org, revealed the presence of five taxa of *Lucanus* in Greece: *Lucanus cervus cervus* (Linnaeus, 1758), *L. cervus turcicus* Sturm, 1843, *L. apollon* sp. nov., *L. ibericus* Motschulsky, 1845, and *L. laticornis* Deyrolle, 1864 (Fig. 8).

A total of 178 observations from iNaturalist were reviewed, of which 150 could be confidently identified to species level, or to subspecies level in the case of *L. cervus*. These comprised two observations of *L. apollon* sp. nov., 74 of *L. cervus cervus*, 62 of *L. cervus turcicus*, six intermediate specimens of *L. cervus*, and six of

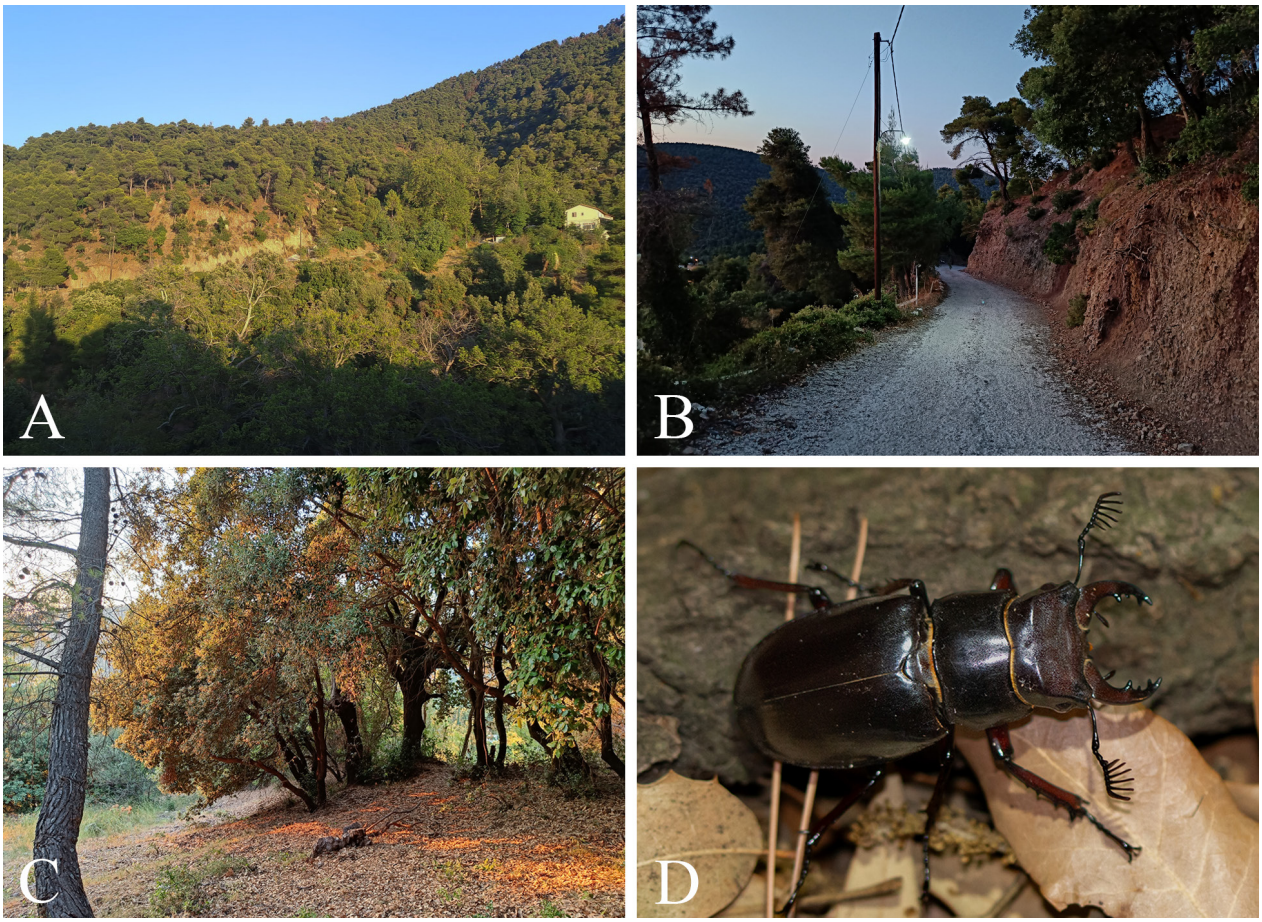

Figure 7. Habitat of *Lucanus apollon* sp. nov. in Pisia, Corinthia, Greece. **A.** Forest habitat; **B.** Dirt road through the forest on steep slopes with a streetlight; **C.** Characteristic vegetation of the habitat, including *Quercus coccifera*, *Quercus ilex*, and *Pinus halepensis*; **D.** Living male of *Lucanus apollon* sp. nov. at the type locality.

L. laticornis. From Observation.org, 41 observations with photographic evidence were reviewed, of which 25 could be confidently identified to species level, or to subspecies level in the case of *L. cervus*. These comprised 14 observations of *L. cervus cervus*, three of *L. cervus turcicus*, seven of *L. laticornis*, and one of *L. ibericus*. The remaining 16 observations could not be reliably identified because they either represented a different taxon that had previously been misidentified as *L. cervus*, were of insufficient photographic quality for species or subspecies identification, or had masked locality data.

Two additional localities of *L. apollon* sp. nov. were discovered on Mount Parnitha and Mount Messapio, expanding the known distribution of the species.

Lucanus cervus cervus occurs in western Greece and the Peloponnese, whereas *L. cervus turcicus* is distributed across the eastern Greek mainland, Euboea, and Samothraki. Intermediate populations occur between the ranges of the two subspecies and include specimens that cannot be confidently assigned to either taxon. These specimens usually show a pentamerous antennal club.

All Greek specimens previously identified as either *L. tetraodon* Thunberg, 1806 or *L. ibericus* that were examined by the authors proved to be minor males of *L. cervus turcicus*. However, verified records confirm the occurrence of *L. ibericus* on Lesbos. This represents the first documented record of the species from Greece.

Likewise, *L. laticornis* is confirmed from the islands of Lesbos and Samos, representing the first documented records of this species from Greece. On Samos, *L. laticornis* was observed in habitats near human settlements dominated by *Quercus*, *Platanus*, and *Pinus*. Adults are active shortly after dusk during June and are attracted to UV light (Linus Brinker pers. comm. 2025).

Key to the males of Greek *Lucanus* species and allied species of *L. apollon* sp. nov.

1	Mandibles distinctly longer than head	2
–	Mandibles as long as or shorter than head	4
2	Antennal club with antennomeres 5–10 prominently elongated	*L. laticornis*
–	Antennal club with antennomeres only slightly elongated	3

3 Antennal club tetramerous, composed of antennomeres 7–10 ..... *L. cervus cervus*
– Antennal club hexamerous, composed of antennomeres 5–10 ..... *L. cervus turcicus*
– Antennal club pentamerous, composed of antennomeres 6–10 ..... *L. cervus* intermediate specimens
4 Dorsal body surface glossy 5
– Dorsal body surface dull 6
5 Mandible apex bifid; median tooth situated at middle of mandible (Fig. 3A) ..... *L. apollon* sp. nov.
– Mandible apex simple; median tooth situated below middle of mandible (Fig. 3C) ..... *L. busignyi*
6 Femora black (Fig. 2H); antennomeres 5–10 very long and slender; longest antennomere seven; apices of antennomeres 6–9 widened (Fig. 3D) ..... *L. macrophyllus*
– Femora light to dark reddish (Fig. 2D); antennomeres 5–10 slightly thickened; longest antennomere eight; apices of antennomeres 6–9 not widened (Fig. 3B) ..... *L. ibericus*

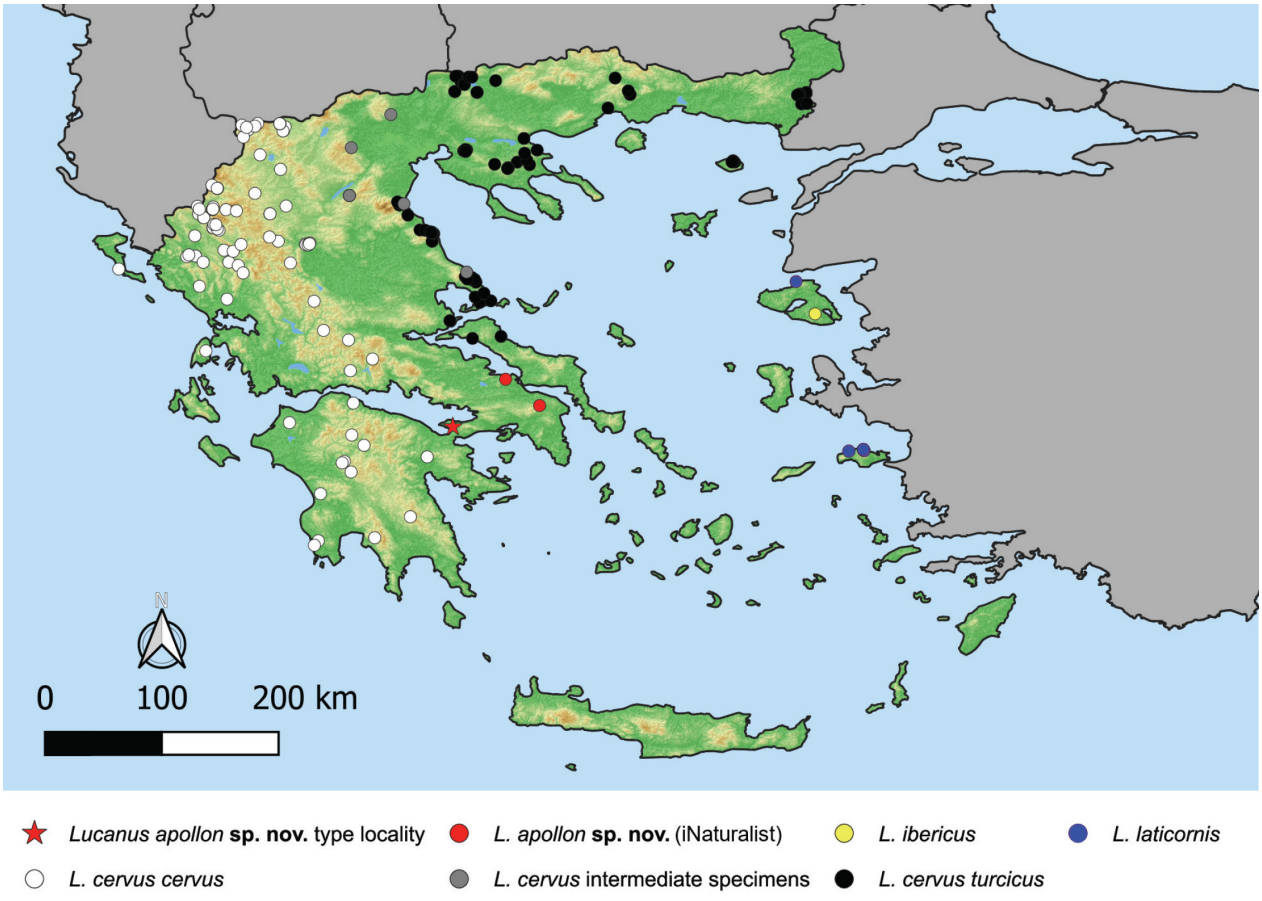

Figure 8. Distribution of *Lucanus* spp. in Greece.

Acknowledgements

We thank Matthias Seidel for his valuable support in obtaining the collecting permit required for fieldwork in Greece and for his helpful comments on an earlier version of the manuscript. We are grateful to Manfred Egger for providing access to specimens from his private collection and to Tobias Seifert for his helpful advice regarding the citation of Observation.org records. We further acknowledge Maik Petzold for providing valuable information on the habitat of *Lucanus busignyi* in Muğla Province, Turkey, and Linus Brinker for providing valuable information on the habitat of *L. laticornis* on Samos, Greece. We also thank the Museum für Naturkunde Berlin for its generous support in covering the publication charges.

References

Avgın S, Thomaes A (2014) Taxonomic key of *Lucanus* spp. (Coleoptera: Lucanidae) found in Turkey. Journal of Entomological Science 49: 70–77. https://doi.org/10.18474/0749-8004-49.1.70

Bánki O, Roskov Y, Döring M, Ower G, Hernández Robles DR, Plata Corredor CA, Stjernegaard Jeppesen T, Örn A, Pape T, Hobern D, Garnett S, Little H, DeWalt RE, Miller J, Orrell T, Aalbu R, Abbott J, Abreu C, Acero PA, et al. (2026) Catalogue of Life (2026-08-26 XR). Catalogue of Life Foundation, Amsterdam, Netherlands. https://doi.org/10.48580/dgyy9 [accessed 23 September 2026]

Bardiani M, Chiari S, Maurizi E, Tini M, Toni I, Zauli A, Campanaro A, Carpaneto GM, Audisio P (2017) Guidelines for the monitoring of *Lucanus cervus*. Nature Conservation 20: 37–78. https://doi.org/10.3897/natureconservation.20.12687

Bartolozzi L, Norbiato M, Cianferoni F (2016) A review of geographical distribution of the stag beetles in Mediterranean countries (Coleoptera: Lucanidae). Fragmenta Entomologica 48: 153. https://doi.org/10.4081/fe.2016.182

Bolanakis G, Makris C, Trichas A (2024) New and noteworthy records of saproxylic beetles (Coleoptera) from Crete (Greece). Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 67: 71–93. https://doi.org/10.3897/travaux.67.e110121

Cox K, Thomaes A, Antonini G, Zilioli M, De Gelas K, Harvey D, Solano E, Audisio P, McKeown M, Shaw P, Minetti R, Bartolozzi L, Mergeay J (2013) Testing the performance of a fragment of the COI gene to identify western Palaearctic stag beetle species (Coleoptera: Lucanidae). ZooKeys 365: 105–126. https://doi.org/10.3897/zookeys.365.5526

Fujita H (2010) The Lucanid Beetles of the World. Mushi-Sha, Tokyo, 472 pp.

iNaturalist (2026) *Lucanus* spp. observations from Greece. https://www.inaturalist.org/observations?place_id=7094&subview=map&taxon_id=60813 [accessed 29 July 2026]

Jansson N, Snäll S (2017) Photo documentation of the unique Oak area in Kösecobanli.

Kraatz G (1860) Ueber die europäischen Hirschkäfer (Zweites Stück). Berliner Entomologische Zeitschrift 4: 265–275. https://doi.org/10.1002/mmnd.18600040106

Motschulsky V (1845) Remarques sur la collection de Coléoptères Russes de Victor de Motschulsky. Bulletin De La Société Impériale Des Naturalistes De Moscou 18(1): 3–127.

Observation International and local partners (2026) *Lucanus* spp. observations from Greece. https://gr.observation.org/taxa/1578/Lucanus/ [accessed 29 July 2026]

Planet LM (1909) Description d'un pseudolucane nouveau. Le Naturaliste 31(538): 173.

Schenk KD, Fiedler F (2020) Notes about the Lucanidae fauna of Turkey with description of *Lucanus* (*Pseudolucanus*) *fiedleri* (Coleoptera, Lucanidae). Beetles world 21: 26–36.

Sürgüt H, Varli S (2023) Researches on determination of saproxylic beetles (Coleoptera) on old hollow broad-leaved tree species in Cataldag (Balıkesir–Bursa) in Western Türkiye. Biological Diversity and Conservation 16(2): 102–113. https://doi.org/10.46309/biodicon.2023.1247666

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Artificial Intelligence (AI) use

The authors accept full responsibility for the content of the manuscript, including the disclosure of any use of AI.
No AI tools were used in the preparation of this manuscript.

Funding

No funding was reported.

Author contributions

This study was conducted without external financial support and was privately funded by the authors.

Author ORCIDs

J. Kristl https://orcid.org/0009-0007-4662-5398
G. Flocon https://orcid.org/0009-0006-4670-243X

Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.

Supplementary material 1

Lucanus spp. Greece occurrence records

Authors: Jonas Kristl, Gaëtan Flocon
Data type: xlsx
Explanation note: Occurence records of *Lucanus* spp. in Greece compiled from collection material and verified citizen-science observations from iNaturalist and Observation.org.
Copyright notice: This dataset is made available under the Open Database License (http://opendatacommons.org/licenses/odbl/1.0). The Open Database License (ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.
Link: https://doi.org/10.3897/dez.73.210225.suppl1