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On the *Cephennium* fauna of Greece (Coleoptera, Staphylinidae, Scydmaeninae)

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A b s t r a c t : Thirteen species of Cephennium MÜLLER & KUNZE, 1822 from Greece are described and illustrated: C. dilatatum nov.sp. (Kavala: Oros Pangéo), C. olympicum nov.sp. (Pieria: Olympos), C. pellucidum nov.sp. (Fthiotis/Evritania: Oros Timfristos), and C. brachati nov.sp. (Flórina) of the C. perispinctum group; C. aciferum nov.sp. (Pelopónnisos, Thessalia, Etolia-Akarnania, Kefalonia, Corfu), C. sagittatum nov.sp. (Ipiros), and C. linguatum nov.sp. (Levkas) of the C. jonicum group; C. cornutum nov.sp. (Fthiothis: Oros Timphristos) of the C. corruptum group; C. vitsiense nov.sp. (Flórina: Oros Vitsi); C. vellicans nov.sp. (Ioánnina: Oros Gramos); C. catax nov.sp. (Thessalia: Oros Ossa); C. dramanum nov.sp. (Drama); C. fibuliferum nov.sp. (Fthiothis, Pelopónnisos). Cephennium jonicum HOLDHAUS, 1908 and C. petraeum APFELBECK, 1911, previously subspecies of *C. jonicum*, are treated as distinct species. Based on drawings by the late Claude Besuchet, the aedeagi of several Cephennium species described prior to 1910, of which published illustrations had not been available, are figured. New records of two previously described species are reported. Including the newly described taxa, the Cephennium fauna of Greece currently includes 35 named species, twelve from Crete (endemic), one from Karpathos (endemic), one from Samothraki (endemic), one from Levkas, and the remainder from the mainland, the Pelopónnisos, and the Ionian Islands Corfu, Levkas, and Kefalonia. A catalogue of the Cephennium species recorded from Greece is provided.

K e y w o r d s : Coleoptera, Staphylinidae, Scydmaeninae, *Cephennium*, Greece, taxonomy, new species, new status, new records, catalogue.

Introduction

The speciose West Palaearctic genus *Cephennium* MÜLLER & KUNZE, 1822 previously included more than 200 species (ASSING & MEYBOHM in press). In Greece it was represented by 22 named species from Crete (twelve endemic), Samothraki (one endemic), Karpathos (one endemic), Corfu (one endemic, two more widespread), and the remainder from the mainland including the Pelopónnisos (ASSING 2019a-c, MEYBOHM 2016, SCHÜLKE & SMETANA 2015, STEVANOVIĆ 2011, 2014). These species are currently assigned to the nominal subgenus (three species), to *Phennecium* NORMAND, 1912 (five species), to *Neocephennium* APFELBECK, 1911 (one species) (SCHÜLKE & SMETANA 2015), or listed as incertae sedis (13 species). The subgeneric concept currently in use is phylogenetically problematic (JAŁOSZYŃSKI & STEVANOVIĆ 2015).

Modern descriptions and illustrations of the aedeagus are available for the vast majority of species (18 species), which were described only after 2010 (ASSING 2019b, c, MEYBOHM 2016, STEVANOVIĆ 2011, 2014). However, figures of the aedeagi of the remaining four species, which were described prior to 1910, have not been published.

In the 1960s, the late Claude Besuchet had examined nearly all the available types of *Cephennium*, accumulated drawings of the aedeagi of numerous described and even more undescribed species, and documented records of numerous specimens from various collections. Neither his drawings nor the lists of examined material have ever been published. Fortunately, however, they were recently made available to the authors. We use this opportunity, to present the drawings of several species for which illustrations of the aedeagi had not been available in the literature. In addition, locality data compiled by Claude Besuchet are summarized.

The records and descriptions provided in the present study are based on material accumulated by the second author over the past decades. Other Greek material from the collections of the authors has already been treated by STEVANOVIĆ (2011, 2014).

Material and methods

The material mentioned in this study is deposited in the following collections:

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using digital cameras (Axiocam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay software.

Body length was measured from the anterior margin of the labrum to the apex of the elytra and the length of the aedeagus from the apex of the median lobe to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect. When assessing the relative length of the paramere, the apical setae are not included.

Since the current subgeneric classification is weakly supported, the species treated in this paper are not assigned to subgenera, but instead to existing species groups, whenever possible.

Results

Including the new species described below, the Greek *Cephennium* fauna currently includes 35 named species. Additional undescribed species were seen from several Aegean islands (to be described in future articles specifically dealing with the faunas of these islands), and material of four unnamed species from mainland localities was examined by Claude Besuchet (unpublished notes).

Catalogue of the named species recorded from Greece

In the list below, the species are given in alphabetical order. The subgeneric assignments according to Schülke & Smetana (2015) are indicated in brackets after each species name: C = Cephennium; N = Neocephennium; P = Phennecium; is = incertae sedis.

Species	Distribution			
aciferum nov.sp.	Greece: Pelopónnisos, Thessalia, Etolia-Akarnania, Kefalonia, Corfu			
angelinii Stevanović, 2014 [C]	Greece: Trikala			
arcuatum Assing, 2019 [is]	Greece: Crete			
assingi Stevanović, 2014 [C]	Greece: Makedhonia, Thessalia			
brachati nov.sp.	Greece: Flórina			
catax nov.sp.	Greece: Lárissa (Oros Ossa)			
chanianum Assing, 2019 [is]	Greece: Crete			
cornutum nov.sp.	Greece: Fthiothis (Timphristos)			
curvatum Assing, 2019 [is]	Greece: Crete			
dilatatum nov.sp.	Greece: Kavala (Pangéo)			
dramanum nov.sp.	Greece: Dráma			
fibuliferum nov.sp.	Greece: Fthiothis, Pelopónnisos			
fortespinosum Assing, 2019 [is]	Greece: Crete			
granulum REITTER, 1884 [P]	Greece: mainland, Pelopónnisos, Corfu			
hamulatum Assing, 2019 [is]	Greece: Crete			
idanum Assing, 2019 [is]	Greece: Crete			
jonicum Holdhaus, 1908 [P]	Greece: Corfu			
kerpense MEYBOHM, 2016 [P]	Greece: Karpathos			
latius Assing, 2019 [is]	Greece: Crete			
lesinae REITTER, 1881 [P]	Croatia; Montenegro; Greece: Corfu			
linguatum nov.sp.	Greece: Levkas			
meybohmi Assing, 2019 [is]	Greece: Crete			
olympicum nov.sp.	Greece: Pieria (Olympos)			
pellucidum nov.sp.	Greece: Fthiothis/Evritania (Timphristos)			
puncticolle Reitter, 1885 [P]	Greece: Evvoia, Oros Parnassos			
sagittatum nov.sp.	Greece: Ipiros			
samothracicum Assing, 2019 [is]	Greece: Samothraki			
selenanum Assing, 2019 [is]	Greece: Crete			
selinorum Assing, 2019 [is]	Greece: Crete			

Species	Distribution				
sinuosum Assing, 2019 [is]	Greece: Crete				
thripticum Assing, 2019 [is]	Greece: Crete				
vellicans nov.sp.	Greece: Ioánnina (Oros Gramos)				
viti Stevanović, 2014 [C]	Bulgaria; Greece; Macedonia; Serbia				
vitsiense nov.sp.	Greece: Flórina (Oros Vitsi)				
wunderlei Stevanović, 2011 [N]	Greece: Fhtiotis, Fokis (Oros Parnassos, Oros Giona)				

Taxonomy

Cephennium lesinae REITTER, 1881 (Figs 11-12)

The original description is based on an unspecified number of syntypes without specified locality in an article on beetles of Dalmatia and Montenegro (REITTER 1881). Besuchet (unpublished notes) examined numerous specimens from Split (Croatia) and Castello (Montenegro). BRENSKE et al. (1884) reported the species from the Greek island Corfu. The aedeagus is illustrated in Figs 11-12.

Cephennium granulum REITTER, 1884 (Figs 13-14)

The original description is based on an unspecified number of type specimens from "Parnes bei Athen, Salonichi" (REITTER 1884). Besuchet (unpublished notes) examined material (including type material) from Corfu, Thessaloniki, Parnes (near Athens), Oros Parnassos, and Nauplia, as well as several specimens without specified localities ("Graecia") from the collections of Perrot, Dodero, Binaghi, and Croissandeau, from NHMW, SDEI, and from his own collection (MHNG). The aedeagus is illustrated in Figs 13-14.

Cephennium puncticolle REITTER, 1885 (Figs 15-16)

Material examined: GREECE: 1♂, 1♀, Evvoia, Oros Dirfys, N Kato Steni, 38°36′30″N, 23°51′46″E, fir forest, 8.IV.2001, leg. Assing (cAss).

The original description is based on "1 Ex." from "Euboea" (REITTER 1885). Besuchet (unpublished notes) examined the holotype and material labelled "Graecia. Parnass. Reitter" ($3 \mathring{\circlearrowleft} \mathring{\circlearrowleft}$, $1 \mathring{\hookrightarrow}$) deposited in HNHM, MNHNP, NHMW and in his own collection (MHNG). The aedeagus is illustrated in Figs 15-16.

Cephennium wunderlei STEVANOVIĆ, 2014

M a t e r i a l e x a m i n e d: **GREECE**: 3♂♂, 2♀♀, Fthiotis, Parnassos, road to ski resort, 38°34′32″N, 22°34′36″E, 1490 m, fir forest with snowfields, litter between rocks sifted, 8.IV.2017, leg. Schülke (MNB, cAss); 3♂♂, Fthiotis, Parnassos, road to ski resort, 38°34′23″N, 22°34′30″E, 1540 m, fir forest, sifted, 8.IV.2017, leg. Schülke (MNB, cAss).

The original description is based on 23 type specimens from several localities in Oros

Parnassos and Oros Giona (STEVANOVIĆ 2011). This species is characterized by minute eyes composed of 2-3 ommatidia, completely reduced hind wings, and a rather large aedeagus of distinctive morphology. For illustrations of the aedeagus see STEVANOVIĆ (2011).

Cephennium dilatatum nov.sp. (Figs 1, 17-18)

Type material: Holotype 3: "Greece, W Kavala, Oros Pangéo, 1410 m, Buchenwald, Hang mit Schneerest, Gesiebe, $40^\circ54^\circ22^\circ\mathbb{N}$, $24^\circ07^\circ14^\circ\mathbb{E}$, 5.V.2019, M. Schülke [GR2019-3a] / Holotypus 3° Cephennium dilatatum sp. n. det. V. Assing 2020" (MNB). Paratypes: $13^\circ\mathbb{E}$: same data as holotype (cAss); $12^\circ\mathbb{E}$: "GREECE, W Kavala, Oros Pangéo, 1080 m, Farnwurzeln und Streu gesiebt, $40^\circ55^\circ14^\circ\mathbb{N}$, $24^\circ10^\circ17^\circ\mathbb{E}$, 2.V.2019, leg. M. Schülke [GR2019-4]" (MNB).

E t y m o l o g y: The specific epithet is the past participle of the Latin verb dilatare (to widen). It alludes to the subapically dilated median lobe of the aedeagus (ventral view).

Description: Body length 1.3-1.4 mm; antenna 0.7 mm long. Habitus (Fig. 1) robust (body rather broad and strongly convex in cross-section). Body reddish-brown to dark-brown with the elytra at least slightly darker than head and pronotum.

Eyes composed of approximately ten ommatidia with pigmentation. Antenna with antennomeres V and VII longer and more oblong than antennomeres VI and VIII; antennomeres X approximately 1.5 times as broad as long and XI approximately twice as long as broad.

Pronotum approximately 1.2 times as broad as long, strongly convex in cross-section, posteriorly with weakly keel-shaped median elevation; punctation very fine.

Elytra broader than pronotum, strongly convex in cross-section, anteriorly each with a transverse impression with tomentose whitish pubescence; punctation very fine.

3: protibia apically strongly excavate and curved; metaventrite extensively and shallowly impressed; aedeagus (Figs 17-18) 0.38-0.40 mm long; median lobe subapically dilated and apically with a short median projection in ventral view; internal structures distinctive; parameres curved and slender, nearly reaching apex of median lobe, with moderately long apical seta.

C o m p a r a t i v e n o t e s: Based on external (robust habitus; body strongly convex in cross-section) and the male primary and secondary sexual characters (protibia apically curved and excavate; median lobe of aedeagus long and slender, apically with a median process in ventral view; parameres curved and with relatively long apical seta), C. dilatatum belongs to the C. perispinctum group (see ASSING & MEYBOHM in press). It is reliably distinguished from other species of this group only by the shape and internal structures of the aedeagus.

Distribution and natural history: The type specimens were found in two localities in Oros Pangéo (Northeast Greece), a mountain remarkably rich in endemic species. They were sifted from leaf litter and fern roots in beech forests at altitudes of 1080 and 1410 m.

Cephennium olympicum nov.sp. (Figs 2, 19)

E t y m o l o g y: The specific epithet is an adjective derived from Olympos, the name of the mountain where the type locality is situated.

Description: Body length 1.3-1.4 mm; antenna approximately 0.75 mm long. Colouration: head and pronotum reddish-brown; elytra blackish-brown. Habitus (Fig. 2), size, and other external characters as in *C. dilatatum*, except as follows:

Antennae more slender; antennomeres IX and X barely 1.5 times as broad as long. Pronotum with very indistinct median elevation posteriorly.

3: protibia subapically strongly excavate, only very weakly curved, and apically distinctly dilated; aedeagus (Fig. 19) 0.37-0.38 mm long; median lobe apically acute; internal structures rather massive, rather strongly sclerotized, and of distinctive shapes; parameres slender, not reaching apex of median lobe, with rather long apical seta.

C o m p a r a t i v e n o t e s: Like *C. dilatatum*, *C. olympicum* belongs to the *C. perispinctum* group. It differs from other representatives of this group particularly by the modifications of the male protibiae and by the structure of the aedeagus. From *C. assingi*, with which it shares a similar shape of the aedeagus, it differs in the internal structures of the aedeagus and by the modifications of the male protibiae.

D is tribution and natural his tory: The type locality is situated in eastern slopes of Oros Olympos at an altitude of approximately 500 m.

Cephennium pellucidum nov.sp. (Figs 3, 20-22)

T y p e m a t e r i a l : $\underline{\text{Holotype }}$: "GR-Sterea Elada, Bez. Fthiotida, Timfristos-Gebiet, n./ö. Passhöhe, 3.5.82, leg. Brachat / $\underline{\text{Holotypus }}$ Cephennium pellucidum sp. n. det. V. Assing 2020" (cAss). $\underline{\text{Paratypes: }}$ 49: same data as holotype (cAss); 13, 599: "GR-Sterea Elada, Bez. Evritania, westl. Timfristos, 1.6.90, leg. Brachat" (cAss).

E t y m o l o g y: The specific epithet (Latin, adjective: transparent) alludes to the weakly sclerotized internal structures of the aedeagus.

Description: Body length 1.2-1.3 mm; antenna approximately 0.55-0.65 mm long. Colouration: body reddish to blackish-brown, usually with the elytra darker than the head and pronotum. Habitus (Fig. 3) and other external characters as in *C. dilatatum*, except as follows:

Pronotum with indistinct median elevation posteriorly.

♂: protibia apically strongly bent and distinctly excavate; mesotibia subapically weakly curved and somewhat excavate; aedeagus (Figs 20-22) 0.30-0.32 mm long; median lobe apically broad and with acute median process; internal structures lamellate and weakly sclerotized; parameres slender, not reaching apex of median lobe, with moderately long apical seta.

C o m p a r a t i v e n o t e s: This species, too, belongs to the *C. perispinctum* group. It differs from other representatives of this group particularly by the modifications of the male pro- and mesotibiae, as well as by the shape and lamellate internal structures of the aedeagus.

Distribution and natural history: The type material was collected in two localities in and near Oros Timfristos, near the border between Evritania and Fthiotis. Other data are not available.

Cephennium brachati nov.sp. (Figs 4, 23, 39)

Type material: <u>Holotype 3</u>: "GR-Makedonia, Bez.: Florina, Umgeb. Pass Florina/Pissoderi, ca. 1400 m, 19.5.94, leg. Brachat / Holotypus 3 Cephennium brachati sp. n. det. V. Assing 2020" (cAss).

E t y m o l o g y: This species is dedicated to our friend Volker Brachat (Geretsried), who collected the type material of not only of this, but also of several other species described in the present paper.

Description: Body length 1.3 mm; antenna 0.6 mm long. Colouration: head and pronotum dark reddish-brown; elytra blackish-brown. Habitus (Fig. 4) and other external characters as in *C. dilatatum*, except as follows:

Pronotum without median elevation posteriorly.

3: protibia apically distinctly bent and weakly excavate; aedeagus (Figs 23, 39) very large, 0.45 mm long; median lobe apically acute in the middle; internal structures weakly sclerotized, lateral structures connected by a circular structure; parameres slender, not reaching apex of median lobe, with moderately long apical seta.

C o m p a r a t i v e n o t e s: This species is distinguished from other representatives of the *C. perispinctum* group particularly by the size, shape, and internal structures of the aedeagus.

Distribution and natural history: The type locality is situated in Flórina, Northwest Greece, at an altitude of 1400 m. Other data are not available.

Cephennium vitsiense nov.sp. (Figs 6, 24-25)

T y p e m a t e r i a l : $\underline{\text{Holotype}}$: "GR. [1] Flórina, 20 km SSW Flórina, Oros Vitsi, N-slope, 1850-1900 m, 40°38'32N, $\underline{\text{21}}$ °22'46E, 22.V.2005 V. Assing / Holotypus $\mathring{\circlearrowleft}$ Cephennium vitsiense sp. n. det. V. Assing 2020" (cAss).

E t y m o l o g y: The specific epithet is an adjective derived from Vitsi, the name of the mountain where the type locality is situated.

D e s c r i p t i o n: Body length 1.25 mm; antenna 0.55 mm long. Habitus (Fig. 6) moderately slender. Body reddish.

Eyes composed of approximately ten ommatidia. Antenna with antennomeres V approximately as long as broad, VII weakly transverse, IX and X barely 1.5 times as broad as long, and XI less than twice as long as broad.

Pronotum relatively weakly transverse, 1.12 times as broad as long, moderately convex in cross-section. Punctation rather sparse and very fine, approximately as fine as that of elytra.

Elytra broader than pronotum; humeral carinae weakly pronounced, nearly as long as the combined length of the basal four antennomeres; anterior impressions transverse and with tomentose pubescence.

♂: protibia apically distinctly bent and excavate; aedeagus (Figs 24-25) 0.30 mm long; median lobe apically very acute in ventral view; internal sac with a pair of large claw-shaped structures; parameres thin, straight, not reaching apex of median lobe, and with rather long apical seta.

C o m p a r a t i v e n o t e s: Based on the similar shape of the aedeagus and the similar shapes and arrangement of its internal structures, *C. vitsiense* is closely allied to

C. angelinii. It is distinguished from this species by the apically much more acute median lobe, distinctly claw-shaped internal structures, and the modifications of the male protibiae.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y: The type locality is situated in Oros Vitsi, a mountain rich in endemics to the south-southwest of Flórina, Northwest Greece. The holotype was sifted from grass and moss in the alpine zone of the peak region at an altitude of 1850-1900 m.

C o m m e n t: The holotypes of this and the following species were returned by Miroslav Stevanović to the second author with paratype labels reading "Paratypus Cephennium (s.str.) acuminatum m., det. M. Stevanović 2013". This species, however, was never described.

Cephennium vellicans nov.sp. (Figs 26-27)

Type material: <u>Holotype 3</u>: "GR. [9] N-Pindos, ca. 40 km NNE Konitsa, S Oros Arénes, 1650 m, 40°17′34N, 20°53′21E, 25.V.2005 V. Assing / Holotypus 3 Cephennium vellicans sp. n. det. V. Assing 2020" (cAss).

E t y m o l o g y: The specific epithet is the present participle of the Latin verb vellicare (to pinch). It alludes to the rather massive claw-shaped internal structures of the aedeagus.

Description: Body length 1.3 mm. External and male secondary sexual characters as in C. vitsiense.

3: aedeagus 0.35 mm long; median lobe apically acute in ventral view; internal sac with a pair of large claw-shaped structures; parameres thin, straight, not reaching apex of median lobe, and with rather long apical seta.

C o m p a r a t i v e n o t e s: This species is distinguished from the similar and evidently closely allied *C. vitsiense* by a larger and slightly differently shaped aedeagus with more massive claw-shaped internal structures.

Distribution and natural history: The type locality is situated in the Oros Gramos range, to the south of Oros Arénes (SE Aetomilitsa) in Northwest Greece, close to the border with Albania. The holotype was sifted from leaf litter in a beech forest at an altitude of 1650 m.

Cephennium catax nov.sp. (Figs 7, 28-29, 40-41)

Type material: <u>Holotype ♂</u>: "GR-Thessalia, Bez. Larissa, Nordhänge Ossa, 27.4.-8.5.82, leg. Brachat / Holotypus ♂ *Cephennium catax* sp. n. det. V. Assing 2020" (cAss). <u>Paratypes</u>: 10♂♂, 3♀♀: same data as holotype (cAss); 1♂: "Griechenland, Region Thessalien, Provinz Larissa, Mont Ossa 1200 m, 6.-16.6.1986, leg. I. Wolf" (cAss).

E t y m o l o g y: The specific epithet (Latin, adjective: lame, with a limp) alludes to the apically distinctly bent male metatibia.

Description: Body length 1.2-1.3 mm; antenna approximately 0.6 mm long. Habitus (Fig. 7) rather slender. Body reddish to reddish-brown.

Eyes composed of approximately ten ommatidia. Antenna with antennomeres X barely 1.5 times as broad as long and XI approximately twice as long as broad.

Pronotum approximately 1.15 times as broad as long, moderately convex in cross-section; punctation denser and as fine as, or slightly finer than that of elytra.

Elytra broader than pronotum, moderately convex in cross-section, anteriorly each with a small transversely oval impression with tomentose whitish pubescence; punctation fine.

♂: protibia straight, in apical two-fifths somewhat flattened, weakly excavate, and with conspicuously dense and long pubescence on inner face; mesotibia with similar modifications in apical third, but pubescence less dense and slightly shorter; metatibia (Fig. 41) somewhat flattened on inner face in apical third and apically strongly bent; metaventrite extensively, shallowly impressed; aedeagus (Figs 28-29, 40) 0.27-0.28 mm long; median lobe apically conspicuously acute in ventral view; internal structures weakly sclerotized; parameres slender, weakly curved, nearly reaching apex of median lobe, and apically with rather long seta.

C o m p a r a t i v e n o t e s: *Cephennium catax* is distinguished from all other congeners recorded from Greece by the conspicuous modifications of the male pro- and metatibiae, as well as by the structure of the aedeagus.

Distribution and natural history: The type specimens were collected in the northern slopes of Ossa Oros, Thessalia, Greece. One of the paratypes was found at an altitude of 1200 m.

Cephennium dramanum nov.sp. (Figs 8, 30-33)

E t y m o l o g y: The specific epithet is an adjective derived from Drama, the region where the species was collected.

Description: Body length 1.2-1.3 mm; antenna 0.6 mm long. Habitus (Fig. 8) rather slender. Body reddish to reddish-brown.

Eyes composed of approximately eight ommatidia. Antenna with antennomeres V and VII longer and more oblong than antennomeres VI and VIII; antennomeres X approximately 1.5 times as broad as long and XI approximately 1.5 times as long as broad.

Pronotum approximately 1.15 times as broad as long, moderately convex in cross-section; punctation very fine to moderately fine, less distinct than that of elytra.

Elytra broader than pronotum, moderately convex in cross-section, anteriorly each with a small transversely oval impression with tomentose whitish pubescence; punctation moderately fine and distinct.

3: protibia apically very strongly excavate and curved; meso- and metatibia apically flattened and somewhat excavate, but not distinctly curved; metaventrite extensively depressed or indistinctly impressed; aedeagus (Figs 30-33) 0.33-0.36 mm long; median lobe apically acute both in ventral and in lateral view; internal structure narrowly clip-

shaped; parameres slender, weakly curved, not reaching apex of median lobe, and apically with rather long seta.

C o m p a r a t i v e n o t e s: Cephennium dramanum is distinguished from other species of slender habitus and reddish colouration particularly by the modifications of the male tibiae and by the structure of the aedeagus.

Distribution and natural history: The type specimens were found in Oros Falakro and a locality to the east of this mountain in the Dráma region, Northeast Greece. Those collected by Michael Schülke were sifted from debris near snow. The altitudes range from 1100 to approximately 1750 m.

Cephennium fibuliferum nov.sp. (Figs 9, 34-36)

Type material: Holotype \circlearrowleft : "GR. Fthiotis, 1200 m, 17, Oros Kallidromo, SSE Lamia, Abies wood, 38°44′58N, 22°31′49E, 07.IV.2001, V. Assing / Holotypus \circlearrowleft Cephennium fibuliferum sp. n. det. V. Assing 2020" (cAss). Paratypes: 19: "GR. Fthiotis, 1450 m, 23, Oros Iti, W-side, subalpine pasture, 38°49′29N, 22°14′12E, 10.IV.2001, V. Assing" (cAss); 1 \circlearrowleft : "GR - Peloponnes, Reg.: Arkadia, Mt. Menalo, 1600 m, Skicenter, 26.4.1999, leg. Brachat" (cAss); 1 \circlearrowleft : "Peloponnisos, Bez. Ahaia; Umgeb. Kalavrita, 16 km -> Trapeza, 20.IV.1995; leg. Brachat" (cAss); 1 \circlearrowleft : "GR-Peloponnes, Achaia, Agios Nicolaos östl. Kato Klitoria, 25.4.1999, leg.: Brachat" (cAss).

E t y m o l o g y: The specific epithet is an adjective composed of the Latin noun fibula (clip) and the Latin suffix (-ferum: carrying). It alludes to the shape of the internal structure of the aedeagus.

D e s c r i p t i o n : Body length 0.9-1.1 mm; habitus (Fig. 9) slender. Body yellowish-red to pale reddish.

Eyes composed of 3-4 ommatidia without, or with very weak pigmentation. Punctation of pronotum dense and fine, but more distinct than that of elytra. Elytra slender, but broader than pronotum, anteriorly with small tomentose impressions; humeral carinae distinct, approximately as long as combined length of the basal four antennomeres. Hind wings completely reduced.

♂: protibia unmodified; metaventrite depressed, but not distinctly impressed; aedeagus (Figs 34-36) 0.25-0.27 mm long; ventral process apically weakly bisinuate; internal sac with clip-shaped apico-median structure; paramere thin, apically slightly extending beyond apex of median lobe and with short apical seta.

C o m p a r a t i v e n o t e s: This species is characterized particularly by the shapes of the aedeagus and its internal structures.

Distribution and natural history: The type specimens were found in several localities in Fthiotis and in the northern and central Pelopónnisos. Those from Fthiotis were sifted in a fir forest and in a subalpine pasture at altitudes of 1200 and 1450 m.

Cephennium cornutum nov.sp. (Figs 10, 37-38)

T y p e m a t e r i a 1 : <u>Holotype \circlearrowleft </u>: "GR - Sterea Elada, Bez. Fthiotida, Timfristos-Gebiet, nördl. Pass, 2.5.82 leg. Brachat / unter Steinen / Holotypus \circlearrowleft Cephennium cornutum sp. n. det. V. Assing 2020" (cAss). <u>Paratypes</u>: $2 \circlearrowleft \circlearrowleft , 4 \circlearrowleft \circlearrowleft$: same data as holotype (cAss).

E t y m o l o g y: The specific epithet (Latin, adjective: with horns) alludes to the horn-shaped internal structures of the aedeagus.

Description: Body length 1.0 mm; habitus (Fig. 10) slender. Body yellowish-red to pale-reddish.

Eyes reduced to minute rudiments composed of approximately three weakly defined ommatidia with pigmentation. Punctation of pronotum fine, but more distinct than that of elytra. Elytra slender, but broader than pronotum, anteriorly with small transversely oval impressions with tomentose pubescence; humeral carinae distinct, approximately as long as the combined length of the basal five antennomeres. Hind wings completely reduced. Mesotibia apically curved.

3: protibia unmodified; metaventrite with extensive median impression; aedeagus (Figs 37-38) 0.24-0.25 mm long, dorso-ventrally depressed; ventral process apically broadly truncate; internal sac with a pair of pronounced horn-shaped lateral spines and with additional median structures; paramere thin, apically slightly extending beyond apex of median lobe and with short apical seta.

C o m p a r a t i v e n o t e s: Based on the morphology of the aedeagus (dorsoventrally flattened; apex of median lobe trunctate; shapes and arrangement of internal structures; parameres with short apical seta), as well as on external characters (small body size; pale colouration; eyes composed of few ommatidia), this species belongs to the *C. corruptum* group (see ASSING & MEYBOHM in press). Among the species of this group, it is characterized particularly by the shapes of the internal structures of the aedeagus.

D is tribution and natural history: The type locality is situated in Oros Timfristos, Fthiotis, Greece. The specimens were found under stones.

Cephennium jonicum group

Cephennium jonicum, which was previously represented by two named subspecies, the nominal subspecies from Corfu and C. jonicum petraeum APFELBECK, 1911 from Bosnia-Herzegovina and Croatia, belongs to a group of species characterized by an aedeagus with a bulbous capsule and with two minute apico-median internal structures. An examination of material from various regions in Greece (including Corfu) revealed that these structures differ between populations. As a result of their small size, the observed differences are, of course, less pronounced to the human eye than those between aedeagi of species belonging to other groups with larger internal structures. In addition, the aedeagi significantly differ in size. Moreover, a representative of the C. jonicum with similarly small internal structures of constantly different shape was recently discovered also in Turkey (ASSING & MEYBOHM in press). Since, finally, there is neither zoogeographic nor morphological evidence (transitional conditions) suggesting that the differences found in the *C. jonicum* group should be attributed to intersubspecific rather than interspecific variation, C. jonicum and allied taxa (including C. petraeum) are regarded as distinct species. Besuchet (unpublished notes) examined another undescribed species from the Croatian island Mljet ("Meleda"); the internal structures of the aedeagus are illustrated in Fig. 50.

Besuchet (unpublished notes) examined five males and two females of *C. petraeum* ("Neum a.M., Herceg.", "Pravno, Hercegov", "Hrasno") deposited in HNHM, NHMW, coll. Dodero, coll. Cauchois, and in his own collection. The internal structures of the aedaeagus of *C. petraeum* are illustrated in Fig. 49.

Cephennium jonicum HOLDHAUS, 1908, nov.stat. (Figs 42, 46)

M a t e r i a l e x a m i n e d : **GREECE**: 2 exs., Corfu, leg. Paganetti (ex coll. Rous) (cAss). For additional material examined see ASSING et al. (2018).

Based on available evidence, the distribution of *C. jonicum* is confined to Corfu. Besuchet (unpublished notes) examined numerous specimens from Corfu (Gasturi, Palaeokastritsa, Val di Ropa, Hagia Mathias, and unspecified localities) deposited in various collections. The aedeagus and its internal structures are illustrated in Fig. 42, 46.

Cephennium aciferum nov.sp. (Figs 5, 43, 47)

Cephennium jonicum majusculum BESUCHET i.l.

T y p e m a t e r i a l : <u>Holotype &</u>: "GR. Peleponnes, Reg. Ilia, Bez. Pirgos, Kastro, 5-20 m, 28.9.-3.10.2002, leg. I. Wolf / Holotypus & *Cephennium aciferum* sp. n. det. V. Assing 2020" (cAss). <u>Paratypes</u>: $4 \circlearrowleft 3$, $5 \circlearrowleft 2$: same data as holotype (cAss); $7 \circlearrowleft 3$, $4 \circlearrowleft 2$: same data as holotype, but "bei Kastro, 17-20.9.2002" (cAss); $4 \circlearrowleft 3$, $2 \circlearrowleft 2$: "GR Thessalien, Etolia ke Akarnania, südl. Astakos 150 m, 16.9.2002 leg. I. Wolf" (cAss); $3 \circlearrowleft 3$, $1 \circlearrowleft 3$: "GR - Sterea Elada, Etolia Akarnania, Str. Amphilohia-Vonitsa, Umgeb. Loutraki, 16.04.1994, leg. Brachat" (cAss).

E t y m o l o g y: The specific epithet is an adjective composed of the Latin noun acus (needle) and the Latin suffix -ferum (carrying). It alludes to the shape of the apical internal structure of the aedeagus.

C o m m e n t: Besuchet (unpubl. notes) examined 13 specimens (working name: *C. jonicum majusculum* i.l.) from the Ionian islands Corfu $(3 \circlearrowleft \circlearrowleft, 2 \hookrightarrow \circlearrowleft;$ without specified locality) and Kefalonia $(5 \circlearrowleft \circlearrowleft, 3 \hookrightarrow \hookrightarrow;$ Argostoli, Eleutherios pass, Megalo Vouno) in HNHM, MNHNP, SDEI, coll. Dodero, and his own collection. Based on the illustrations of the internal structures of the aedeagus, this material is conspecific with the type material listed above.

D e s c r i p t i o n : Body length 0.9-1.0 mm; habitus (Fig. 5) slender. Body yellowish-red to reddish.

Eyes composed of approximately five ommatidia without pigmentation. Punctation of pronotum fine, but more distinct than that of elytra. Elytra slender, but broader than pronotum, anteriorly with transversely oval tomentose impressions; humeral carinae distinct, approximately as long as combined length of the basal four to five antennomeres. Hind wings completely reduced.

3: protibia unmodified; metaventrite with extensive median impression; aedeagus (Figs 43, 47) approximately 0.35 mm long; ventral process apically truncate to weakly concave; internal sac with apically acute apico-median structure; paramere thin, apically not reaching apex of median lobe and with short apical seta.

C o mp a rative notes: Based on the morphology of the aedeagus, *C. aciferum* belongs to the *C. jonicum* group. It is distinguished from *C. jonicum* by a larger aedeagus (*C. jonicum*: aedeagus approximately 0.27 mm long) with a differently shaped apical internal structure.

Distribution and natural history: The type specimens were found in two localities in Etolia-Akarnania and one in the Pelopónnisos. The altitudes range from near sea-level to 150 m.

Cephennium sagittatum nov.sp. (Fig. 44)

Type material: Holotype 3: "GR. Epirus, südl. Igumenitsa, 5 km ö. Parga 100 m / Osthang am Campingplatz Enjoy-Lichnos, Ges. Eiche u. Arbutus, 11.9.2002, leg. I. Wolf / Holotypus 3 Cephennium sagittatum sp. n. det. V. Assing 2020" (cAss). Paratypes: 1 $$^\circ$: same data as holotype (cAss); 633, 3^\circ$: same data as holotype, but "200 m" (cAss); 3 exs.: "GR-Ipiros, Bez.: Igoumenitsa, bei Ramio, 15.04.-28.04.95, leg. Brachat" (cAss); 1^\circ$: "GR-Epirus, Region Ioannina, Timfi National Park / Platanenau am Farangi Vikou Fluß, 22.6.2002, lg. I. Wolf" (cAss); 1^\circ$: "GR-Ipiros, Bez. Ioannina, s Vrosina, Eichenwald Zalonga, I. Brachat 8.6.2002" (cAss); 1^\circ$: "GR-Ipiros, Bez. Joanina, Eichenwald bei Vrossina 6.6.88, leg. Brachat" (cAss); 1^\circ$: "GR-Ipiros, Bez.: Ioanina, Umg. Vrossina, s/w Eichenwald, 25.5.98 leg. Brachat" (cAss); 233: "GR-Ipiros, Bez.: Thesprotia, Str. Filátes-Asprokklissi, Spertos, 14.5.94, leg. Brachat" (cAss); 1^\circ$: "GR-Ipiros, Bez.: Thesprotia, Str. Thesprotiko-Assos, Umgeb. Assos, 17.5.94 leg. Brachat" (cAss); 1^\circ$: "GR-Ipiros, Bez.: Thesprotia, Str. Igoumenitsa-Ioannina, Umgeb. Petrovitsa, 8.V.2002, leg. Brachat" (cAss); 1^\circ$: "GR-Ipiros, Bez.: Thesprotia, Str. Igoumenitsa-Ioannina, Umgeb. Petrovitsa, 8.V.2002, leg. Brachat" (cAss); 1^\circ$: "GR-Ipiros, Bez.: Thesprotia, Str. Ipsprotia, Filiates, Pinienwald, 14.5.97 leg. Brachat" (cAss);

E t y m o l o g y: The specific epithet is an adjective derived from the Latin noun sagitta (arrow) and alludes to the shape of the apical internal structure of the aedeagus, which somewhat resembles an arrow head.

Description: Body length 1.0-1.1 mm. Eyes composed of approximately five ommatidia without, or with weak, pigmentation. Other external characters as in *C. aciferum*.

3: protibia unmodified; metaventrite with extensive median impression; aedeagus (Fig. 44) 0.33-0.35 mm long; ventral process apically truncate; internal sac with apico-median structure shaped like an arrow head; paramere thin, apically not reaching apex of median lobe and with short apical seta.

C o m p a r a t i v e n o t e s: Among the species of the *C. jonicum* group, *C. sagittatum* is characterized particularly by the shapes of the internal structures of the aedeagus. Regarding the size of the aedeagus, this species is most similar to *C. aciferum*, from which is distinguished above all by an apically much less acute apico-median internal structure.

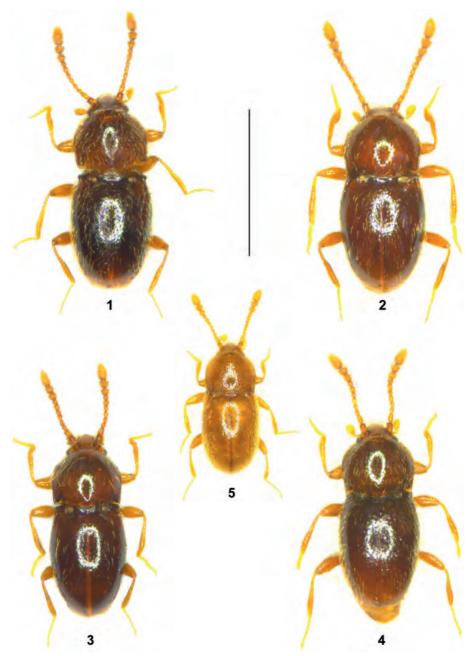
Distribution and natural history: The specimens were sifted in various forest habitats in Ipiros, Northwest Greece.

Cephennium linguatum nov.sp. (Figs 45, 48)

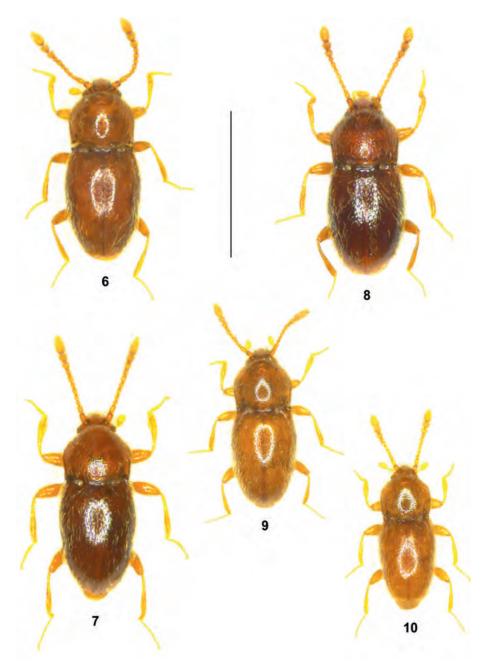
? Cephennium jonicum obscurum BESUCHET i.l.

Type material: Holotype ♂: "GR. Levkas, 100 m, Felswand b. Apolpena, Streugesiebe Nr. 15, 29.IX.1993, Assing leg. / Holotypus ♂ Cephennium linguatum sp. n. det. V. Assing 2020" (cAss).

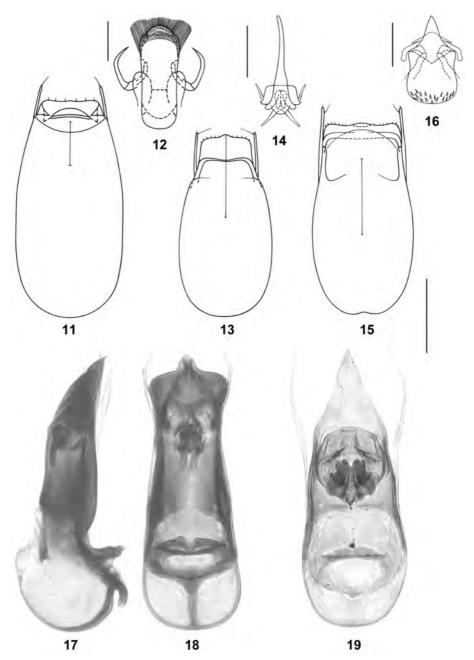
E t y m o l o g y: The specific epithet is an adjective derived from the Latin noun lingua (tongue) and alludes to the tongue-shaped apico-median internal structure of the aedeagus.



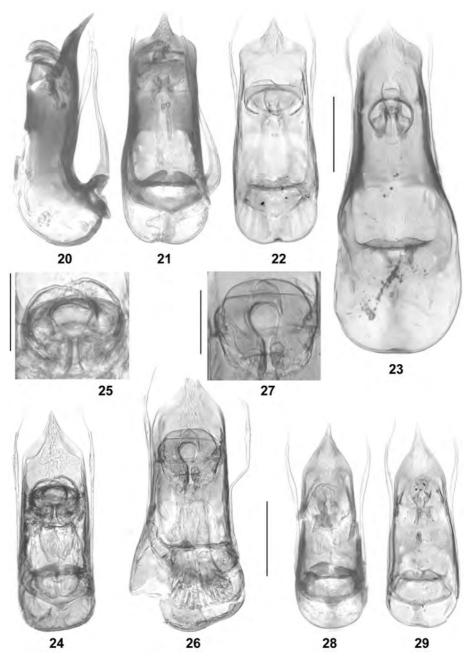
Figs 1-5: Male habitus of Cephennium dilatatum (1), C. olympicum (2), C. pellucidum (3), C. brachati (4), and C. aciferum (5). Scale bar: 1.0 mm.



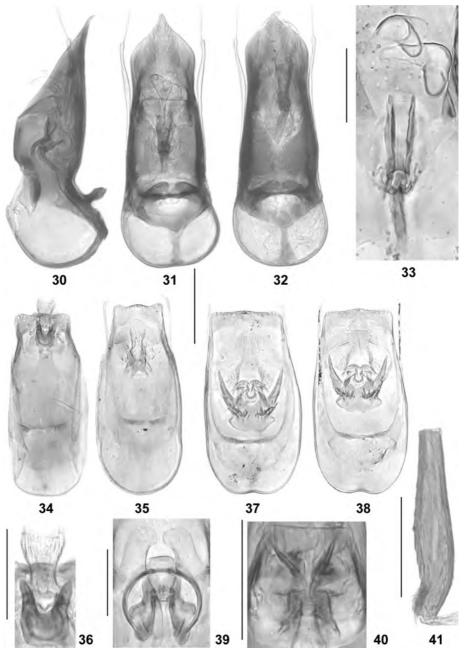
Figs 6-10: Male habitus of *Cephennium vitsiense* (6), *C. catax* (7), *C. dramanum* (8), *C. fibuliferum* (9), and *C. cornutum* (10). Scale bar: 1.0 mm.



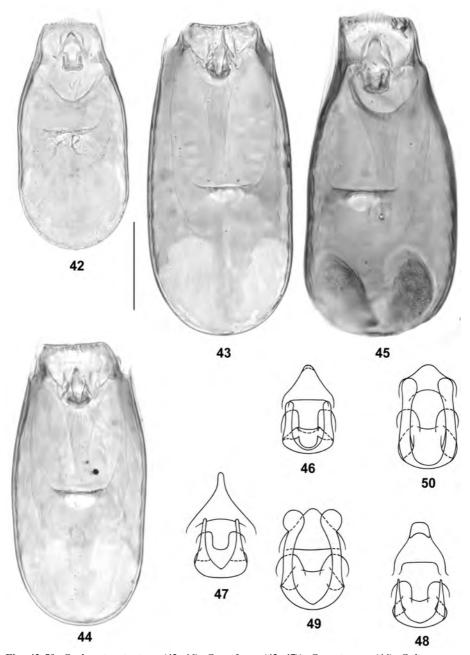
Figs 11-19: Cephennium lesinae (11-12), C. granulum (13-14), C. puncticolle (15-16), C. dilatatum (17-18), and C. olympicum (19): (11, 13, 15, 17-19) aedeagus in dorsal, lateral, and in ventral view; (12, 14, 16) internal structures of aedeagus. Scale bars: 11, 13, 15, 17-19: 0.1 mm; 14, 16: 0.05 mm; 12: 0.02 mm. Figs 11-16 based on C. Besuchet (unpubl.).



Figs 20-29: Cephennium pellucidum (20-22), C. brachati (23), C. vitsiense (24-25), C. vellicans (26-27), and C. catax (28-29): (20-24, 26, 28-29) aedeagus in lateral and in ventral view; (25, 27) internal structures of aedeagus. Scale bars: 20-24, 26, 28-29: 0.1 mm; 25, 27: 0.05 mm.



Figs 30-41: Cephennium dramanum (30-33), C. fibuliferum (34-36), C. cornutum (37-38), C. brachati (39), and C. catax (40-41): (30-32, 34-35, 37-38) aedeagus in lateral and in ventral view; (33, 36, 39-40) internal structures of aedeagus; (41) metatibia. Scale bars: 30-32, 34-35, 37-38, 41: 0.1 mm; 33, 36, 39-40: 0.05 mm.



Figs 42-50: Cephennium jonicum (42, 46), C. aciferum (43, 47)), C. sagittatum (44), C. linguatum (45, 48), C. petraeum (49), and C. sp. from Mljet (50): (42-45) aedeagus in ventral view; (46-50) internal structures of aedeagus. Scale bars: 42-45: 0.1 mm; 46-50: without scale. Figs 46-50 are based on C. Besuchet (unpubl.).

Description: Body length 1.1 mm. Body reddish-brown. Eyes composed of approximately five ommatidia without pigmentation. Other external characters as in *C. aciferum*.

3: protibia unmodified; metaventrite with extensive median impression; aedeagus Figs 45, 48) 0.38 mm long; ventral process apically truncate, in the middle with a small projection; internal sac with tongue-shaped apico-median structure; paramere thin, apically reaching apex of median lobe and with short apical seta.

C omparative notes: This species is distinguished from other representatives of the *C. jonicum* group by a larger aedeagus with differently shaped internal structures.

Distribution and natural history: The type locality is situated near Apolpena in the Ionian island Levkas. The holotype was washed from deep soil beneath bushes near a rock wall.

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Zusammenfassung

Dreizehn Arten der Gattung Cephennium MÜLLER & KUNZE, 1822 aus Griechenland werden beschrieben und abgebildet: C. dilatatum nov.sp. (Kavala: Oros Pangéo), C. olympicum nov.sp. (Pieria: Olympos), C. pellucidum nov.sp. (Fthiotis/Evritania: Oros Timfristos) und C. brachati nov.sp. (Flórina) aus der C. perispinctum-Gruppe; C. aciferum nov.sp. (Pelopónnisos, Thessalia, Etolia-Akarnania, Kefalonia, Korfu), C. sagittatum nov.sp. (Ipiros) und C. linguatum nov.sp. (Levkas) aus der C. jonicum-Gruppe; C. cornutum nov.sp. (Fthiothis: Oros Timphristos) aus der C. corruptum-Gruppe; C. vitsiense nov.sp. (Flórina: Oros Vitsi); C. vellicans nov.sp. (Ioánnina: Oros Gramos); C. catax nov.sp. (Thessalia: Oros Ossa); C. dramanum nov.sp. (Drama); C. fibuliferum nov.sp. (Fthiothis, Pelopónnisos). Cephennium jonicum HOLDHAUS, 1908 und C. petraeum APFELBECK, 1911, bisher Unterarten von C. jonicum, werden als distinkte Arten betrachtet. Zeichnungen der Aedoeagi einiger vor 1910 beschriebener Cephennium-Arten, die der verstorbene Claude Besuchet anfertigte, aber nie publizierte, werden erstmals veröffentlicht. Neue Nachweise von zwei bereits beschriebenen Arten werden gemeldet. Einschließlich der neu beschriebenen Taxa ist Cephennium in Griechenland mit derzeit 35 benannten Arten vertreten, von denen zwölf auf Kreta, eine auf Karpathos und eine auf Samothraki endemisch sind. Die übrigen Arten sind auf dem Festland, der Peloponnes und den jonischen Inseln Korfu, Levkas und Kefalonia verbreitet. Ein Katalog der aus Griechenland bekannten Cephennium-Arten wird erstellt.

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