



<https://doi.org/10.11646/zootaxa.4442.1.2>

<http://zoobank.org/urn:lsid:zoobank.org:pub:96B3E263-7748-4F84-94E0-D03B89440EB1>

The subspecific structure of *Dorcadion (Cribridorcadion) pusillum* Küster (Coleoptera: Cerambycidae) with description of two new subspecies from Romania

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Abstract

The subspecific structure of *Dorcadion pusillum* Küster is revised and its distribution summarized based on published records and specimens from different collections. The taxonomic status of *D. pusillum berladense* Pic is reconsidered, the availability of the name “*berladense*” discussed in accordance with Article 45.6 of the ICZN, and a lectotype here designated. Two new subspecies are described from the Curvature Subcarpathians and the Romanian Plane: *D. pusillum vasiliscus* ssp. nov. and *D. pusillum ochrolineatum* ssp. nov., respectively.

Key words: taxonomy, nomenclature, new subspecies, distribution, longhorn beetles

Introduction

Dorcadion pusillum Küster is a flightless longhorn beetle that inhabits steppe and forest steppe regions and distributed from the south of European Russia (Don River valley) to eastern Romania (Plavilstshikov 1958; Kasatkin 2002). Based on morphological arguments, three geographic population groups are currently recognized as subspecies of *D. pusillum*: the nominate subspecies, the most widespread, in Ukraine, Republic of Moldova and Romania (Danilevsky 2017); *D. pusillum tanaiticum* Kasatkin in the Rostov area, the south of European Russia (Kasatkin 2002; Danilevsky 2017); *D. pusillum berladense* Pic in eastern Romania (Kasatkin 2002; Danilevsky 2017).

Most specimens collected in Romania and deposited in several natural history museums or accumulated in time in the author’s collection correspond morphologically to the nominal subspecies, its occurrence in Romania being thus confirmed. Based on the locality labels of a few misidentified specimens found within a long series of *D. axillare* Küster deposited at the Romanian National Museum of Natural History, several field trips were organized in south-east Romania leading to the discovery of new populations of *D. pusillum*. According to the new findings the distribution range of *D. pusillum* is actually more extensive and covers the east and the south-east of Romania. The populations from the Curvature Subcarpathians and the Romanian Plane are quite distinct from the nominal subspecies in terms of differences in the pubescence pattern of elytra. These two groups of populations are described as new subspecies and the taxonomic status of *D. pusillum berladense* is revised.

Material and method

Specimens examined for this study are contained in the following collections: **MDCO**—M. M. Dascălu coll., Al. I. Cuza University, Iași, Romania; **MFBI**—Museum of Faculty of Biology, Al. I. Cuza University, Iași, Romania; **MGAB**—“Grigore Antipa” National Museum of Natural History, Bucharest, Romania; **MNHN**—Muséum national d’Histoire naturelle, Paris, France; **NMENH**—National Museum of Ethnography and Natural History, Chișinău, Republic of Moldova (N. Zubovsky coll.); **NSMD**—Natural Science Museum of Dorohoi, Romania; **NSMG**—Natural Science Museum of Galați, Romania; **NSMI**—Natural Science Museum of Iași, Romania;

SDEI—Senckenberg Deutsche Entomologische Institut, Müncheberg, Germany. Collection acronyms are used throughout the text to designate the depositories. For historical specimens and holotypes I reproduce all the labels, with data on different labels separated by “/”. Text in square bracket indicates comments by the author. Terminology for endophallus morphology follows Danilevsky *et al.* (2005).

Observations and descriptions were made with an Olympus SZX9 stereomicroscope with specimens illuminated with a fluorescent lamp. Most specimens were photographed at the CERNESIM facility Al. I. Cuza University with a Leica DFC 500 camera attached to the Leica M205 A motorized stereomicroscope and the serial images obtained combined with the Zerene Stacker 1.04 software. Descriptions, remarks and geographical distribution are presented for each subspecies; the descriptions of the new subspecies are based on the entire series of specimens, not only on the holotype. The map was created with the software SimpleMap (Shorthouse 2010) based on Kasatkin (2002) and the specimens listed under examined material in the present paper.

Taxonomy

According to Pesarini & Sabbadini (2007: 49) *D. pusillum* seems to have a moderate affinity with the *D. minutum* species group. Males of this group are characterised by small body size (ranging from 6.8 to 12.9 mm, except for the larger *D. minutum mimarenarium* Breuning); elytral disc with dense and appressed background pubescence, sutural stripe white, presutural stripe absent; when present, dorsal and humeral stripes with whitish pubescence sparser than the pubescence of the sutural stripe so that the former ones appear less intensely white; in some taxa dorsal and humeral stripes are completely absent or present in form of a basal stretch or spot. *D. pusillum* is also a small species with males ranging from 7.4 to 12 mm and the elytra have dark coloured dorsal and humeral stripes, less apparent on the background pubescence than the white sutural stripe; the presutural stripe is absent. Confluent black spots of velvety pubescence are present alongside the sutural stripe forming a subsutural stripe and this distinguishes *D. pusillum* from all the species of the *minutum* group; in the nominal subspecies similar spots exist on the dorsal and humeral stripes.

The two new subspecies described in this paper differ from the nominal one in the pubescence pattern of elytra. *D. p. vasiliscus* **ssp. nov.** lacks dorsal and humeral stripes altogether and the elytral pattern in *D. p. ochrolineatum* **ssp. nov.** appears transitional between the nominal subspecies and *D. p. vasiliscus* **ssp. nov.** (Figs 3, 4). However, the two new subspecies described here and the nominal one have the same morphology of the endophallus (Fig. 6C–E).

In S Ukraine and Crimea, the distribution of *D. pusillum* overlaps that of several subspecies of *D. cinerarium* included by Lazarev (2011) in the *panticapaeum* group of subspecies based on the presence of dense elytral pubescence in both sexes. A superficial resemblance exists between *D. pusillum* and the latter taxa that frequently have a small body size, elytra with dark pubescence in males, a white sutural stripe and a velvety black subsutural stripe visible under certain angles of light. However, they can be distinguished by the shape of the lateral tubercles of the pronotum and by the morphology of the endophallus. In *D. pusillum* the lateral prothoracic tubercle is small, with acute, moderately long spines; the medial tube of the endophallus has distally a distinct central bladder with a ventral swelling; the central trunk is delimited from the central bladder by a distinct central bend (Fig. 6C). In *D. cinerarium* the lateral prothoracic tubercle is short and obtuse or is weakly angulated without a distinct spine (Lazarev 2011); the central bladder is weakly developed and without swellings; the central trunk is hardly delimited from the central bladder (Lazarev 2009: fig. 6). Furthermore, males of *D. pusillum pusillum* can be distinguished from pubescent *D. cinerarium* by the presence of elytral stripes with characteristic black spots of pubescence.

Dorcadion pusillum pusillum Küster, 1847

Figs 1A–D, F–G, 3, 5A–E, 6C.

Dorcadion pusillum Küster, 1847: 90 (original description). Syntypes ♂♀, not examined (Museum of Natural History Nürnberg?). Type locality: Podolia, South Russia, Greece.

D. pusillum v. *berladense* Pic, 1903: 7 (original description). Lectotype ♂, present designation (MNHN). Type locality: Moldavie, Val du Berlad [Romania, Zorleni village according to Montandon (1908)].

D. pusillum m. *postdisjunctum* Breuning, 1946: 100 (unavailable name). Type locality: Romania, Vallée du Berlad [Zorleni village].

Dorcadion pusillum; Kraatz, 1873: 75 (redescription).—Ganglbauer, 1884: 450 (keyed).—Montandon, 1908: 100 (faunistic list).—Plavilstshikov, 1958: 149–151 (redescription, illustrated).—Panin & Săvulescu, 1961: 389 (redescription, distribution).—Breuning, 1962: 112, 168, 177, 286, 287 (keyed, redescription).—Kasatkin, 2006: 91 (endophallus structure).—Lazarev, 2009: 198.—Danilevsky, 2010: 251 (catalogued).—Lazarev (2011): 257.

Dorcadion pusillum pusillum; Kasatkin, 2002: 277–280 (illustrated, distribution).—Danilevsky, 2010: 251.

D. pusillum v. *berladense*; Montandon, 1908: 100.

D. pusillum ab. *berladense*; Plavilstshikov, 1958: 149, 150.—Panin & Săvulescu, 1961: 389.

D. pusillum ab. *postdisjunctum*; Plavilstshikov, 1958: 149, 150.

D. pusillum ab. *postdijuncta*; Panin & Săvulescu, 1961: 389.

D. pusillum m. *berladense*; Breuning, 1962: 112, 288.

D. pusillum m. *postdisjunctum*; Breuning, 1962: 159, 160, 287.

D. pusillum berladense; Kasatkin, 2002: 277 (change of status).—Danilevsky, 2010: 251 (catalogued).

Description. Male. Body length: 7.4–12.1 mm ($n = 95$), body width: 2.8–4.6 mm ($n = 86$). Body size varies between studied populations, with specimens from northern populations tending to be larger (Table 1). Body black. Antenna uniformly dark brown to reddish-brown (Fig. 3A) and first joint sometimes lighter. Legs black to dark brown, but femora and tibiae variably extensively reddish basally or fore tibia entirely reddish. Pronotum $0.78\text{--}1.11\times$ as wide basally as long ($n = 86$), with setiferous punctures distinctly separated mesally and denser and partly conjugated on sides; lateral tubercle small, with acute, moderately long spine. Pronotum dorsally with brown background pubescence, a median white stripe and sparse whitish pubescence laterally, mostly on tubercle. Elytra moderately convex, with dense, fine microsculpture and sparse small setiferous punctures; punctuation deeper and denser on humeral depression. Humeral carina roughly sculptured basally and well visible in basal third of elytra. Background elytral pubescence blackish-brown; humeral and dorsal stripes rusty or light brown, sometimes mixed with grayish pubescence towards apex (Fig. 3B, C, H, J), well-developed but not strongly contrasting with background pubescence; usually stripes fused at elytral apex. Spots of velvety black pubescence present on dorsal and humeral stripes and along sutural stripe, forming a mottled elytral pattern (Fig. 3D, F, H, J, K, P); pubescence of these spots caducous, in older specimens dorsal and humeral stripes interrupted by black elytral chitin (Fig. 3G, I, L, N). Sometimes humeral and dorsal stripes inconspicuous, dark-brown, with reduced black spots of velvety pubescence (Fig. 3E, M, O). Sutural stripe and a small humeral spot with white pubescence. Small, more or less confluent spots of velvety black pubescence form an interrupted subsutural stripe along sutural stripe. Lateral stripe white on epipleuron and mottled above it, with off-white to rusty pubescence interrupted by background pubescence.

Endophallus. Basal tube with small and weakly sclerotized ventral plates; medial tube slightly curved ventrally and enlarged distally forming a central bladder with distinct ventral and dorsal swellings; region before central bladder slightly swollen forming a second smaller bladder; central trunk covered in microspicules and connected at a wide angle to central bladder resulting in a distinct central bend; preapical bulb spherical and delimited from central trunk through a constriction; apical bulb spherical or more or less cylindrical (when not fully inflated) and covered in microspines (Fig. 6C).

Female. Body length 9–13.9 mm ($n = 42$). Body size varies between studied populations, with specimens from northern populations tending to be larger. Females are commonly autochrome, and besides the biometric traits related to sexual dimorphism, differ from males in the colour of the stripes and of the background pubescence on the pronotum and elytra. Pronotum transverse with comparatively longer lateral spines. Elytra wider and more convex, with dense, brown to light brown background pubescence (Fig. 5A, B, D, E) and with more developed humeral carina. Humeral stripe usually wider than dorsal (about as wide as interval between humeral and dorsal stripes or wider), stripes almost always fused at elytral apex. Because of lighter coloured elytral stripes (with light brown, creamy or off-white pubescence, sometimes mixed with rusty pubescence) the spots of velvety black pubescence on dorsal and humeral stripes are more contrasting than in males (Fig. 5B, D); rarely, these spots are reduced in size and number (Fig. 5A, E). Sutural stripe creamy to off-white. Lateral stripe as in male but wider.

Very few females are androchrome (Fig. 5C), with dark background pubescence and rusty elytral stripes. In some populations (Hălceeni, Galați) the autochrome and androchrome colour pattern intergrades so the separation between the two categories of females becomes arbitrary.

TABLE 1. Body size variation in *Dorcadion pusillum*

Subspecies and populations	Body length (mm) in males			Body width (mm) in males		
	Min–max	Mean ± STDEV	Nr. of specs	Min–Max	Mean ± STDEV	Nr. of specs
<i>D. p. pusillum</i>						
Ovidiopol, Odessa oblast (Ukraine)	7.4–9.4	8.5±0.6	10	2.8–3.5	3.2±0.2	10
Tomai and Răzeni (Rep. of Moldova)	8.0–10.4	9.3± 0.6	36	3.1–4.0	3.6±0.2	27
Sălciara and Galați (Romania)	8.4–10.6	9.7±0.5	21	3.2–3.9	3.7±0.2	21
Hălceni, Vlădeni and Valea lui David (Romania)	9.0–12.1	10.3±0.7	28	3.3–4.6	4.0±0.02	28
All populations of nominal ssp.	7.4–12.1	9.6±0.8	95	2.8–4.6	3.7± 0.3	86
<i>D. p. ochrolineatum</i> ssp. nov.						
Șuțești-Grădiștea and Lacul Sărat (Romania)	8.7–10.4	9.5±0.5	33	3.2–3.9	3.6±0.2	33
<i>D. p. vasiliscus</i> ssp. nov.						
Spătaru forest and Izvoru Dulce (Romania)	8.4–10.7	9.8± 0.6	32	3.2–4.1	3.7±0.2	32

Remarks. *Dorcadion pusillum* was described by Küster (1847) without a precise type locality from three distinct regions. The syntypic material of *D. pusillum* contains specimens from Podolia (the present-day Ukrainian Vinnytsia and Khmelnytskyi areas), South Russia and Greece. No other record of *D. pusillum* from Greece is known so far apart from Küster’s description. The reason of the inclusion of Greece will be later clarified by Kraatz (1873) according to whom the “griechische *apicale* Wattl in litt.”, placed under synonymy with *D. pusillum* by Kuster (1847), is a synonym of *D. minutum* Kraatz, a species from Greece. Ganglbauer (1884) considered *apicale* as distinct and described it as *D. minutum* var. *brenskei* Ganglbauer (currently accepted as *D. brenskei* according to Pesarini & Sabbadini 2004). Certainly Greece was originally included in the distribution of *D. pusillum* based on a species from the *minutum* species group, as Kraatz (1873) has already shown.

According to Tavakilian & Chevillotte (2016) the syntypic material of *D. pusillum* is deposited in the Museum of Natural History in Nürnberg. Unfortunately, it was not possible to obtain any further information and eventually designate a lectotype. As South Russia is a large region and also the type locality for the recently described *D. pusillum tanaiticum*, designation of Podolia as type locality is preferable. Podolia is a large historical region situated in Ukraine to the north of present day Republic of Moldova and for this reason, in the maps from Figs. 7 and 8 the type locality was placed in the forest steppe biome, somewhere between Khmelnytskyi and Vinnytsia, where Küster’s specimens are most likely to have originated.

***D. pusillum* v. *berladense*.** It was described by Pic (1903) from “Moldavie: Val du Berlad” based on male specimens collected by A. L. Montandon, a French naturalist and entomologist who lived and collected in Romania for most of his life (Andrei & Pandeale 2006). In MNHN the locality label and the original “type” label in Pic’s handwriting are on a female specimen (Fig. 1B) that cannot be the type as Pic described v. *berladense* base on the male sex. Even if Pic gives a single body length for his variety, the material is stated to be deposited in two collections (Nicolas and Pic). Hence the single male specimen bearing an identification label written by Pic (Fig. 1A) should be considered as syntype. For the stability of nomenclature, I here designate this specimen as lectotype.

Pic’s variety was regarded by Plavilstshikov (1958) as an *aberration* and by Breuning (1962) as a *morpha*. Kasatkin (2002) suggested, probably based on the description and distribution (type locality situated in the western margin of the species range), that the variety described by Pic has to be regarded as a subspecies. All specimens of *D. pusillum* collected by A. L. Montandon and found in the natural history museums in Paris and Bucharest (MNHN and MGAB) have the same locality label “Moldavie, Val. du Berlad”—a large area that covers the territory along the 200 km long Bârlad River, in present day eastern Romania (historical region Moldova). However, in the catalogue of the Romanian coleopteran fauna published five years after the description of v. *berladense*, A. L. Montandon (Montandon, 1908: 100) mentioned *D. pusillum* var. *berladense* Pic only from Zorleni, a village in Bârlad River valley. Even if the labels do not indicate the exact locality, Zorleni is by inference the type locality for v. *berladense*. Some specimens of *D. pusillum* from “Val. du Berlad” in both MNHN and MGAB collections were historically identified as *D. decipiens* Germar (Fig. 1D, F). The record of *D. decipiens* from Zorleni by Fleck (1906) based on specimens from A. L. Montandon was hence connected with *D. p. pusillum*, as males of *D. decipiens* are superficially similar to the former except body size and elytra shape.



FIGURE 1. Historical specimens of *Dorcadion pusillum* deposited in different collections and their labels: MNHN, Paris (A–D); MGAB, Bucharest (E, F); SDEI, Müncheberg (G, photo S. M. Blank). Lectotype of *D. pusillum* v. *berladense* in A (photo A. Taghavian, MNHN). Topotypic specimens in B–D, F. Scale bar 1 mm.

The availability of v. *berladense* Pic, 1903. Traditionally, the varieties described by Pic are considered available names in accordance with article 45.6.4 of ICZN (1999) which stipulates that the name following a binomen is subspecific if the author published it before 1961 expressly under the term variety. However, the same article stipulates that a variety is unavailable if “the author expressly gave it infrasubspecific rank or the content of the work unambiguously reveals that the name was proposed for an infrasubspecific entity” (ICZN, 1999). In the

same work Pic (1903) describes, besides numerous varieties, a new subspecies as well: “*Leptura bitlisiensis* Chevr. s. esp. *armeniaca*” (Pic, 1903: 4). He also describes *Pogonocherus taygetanus* from Greece asking himself if the new taxon could be related to *P. plasoni* Ganglbauer or even considered as a subspecies of the latter: “Ne connaissant pas *Plasoni* Gglb. en nature je ne puis me rendre compte exactement si *taygetanus* peut être considéré comme espèce voisine, ou regardé plutôt comme sous-espèce...” (Pic 1903: 8). He raises the same question for *Leptura excisipes* Daniel, namely if it might be the race (or subspecies) of another *Leptura* L. species: “Je me demande si *L. excisipes* ne serait pas la race (ou sous-espèce) asiatique de *pallens* Brul?” (Pic, 1903: 4).

Taking into account the article 45.6.4 of ICZN (1999) and the guidelines for its interpretation by Lingafelter & Nearn (2013), the fact that Pic (1903) described and discussed both subspecies and varieties within the same work, means that varieties could be treated as infrasubspecific and in this case *berladense* should be considered an unavailable name. A similar interpretation of this article was made by Bezděk & Regalin (2015) who considered the varieties of Crysomelidae species described by Pic in several papers as infrasubspecific because these papers contain at least one description of subspecies and thus, “the author himself stated for these varieties a lower level than the subspecific one” (Bezděk & Regalin 2015: 6).

However, it is not easy to understand if *v. berladense* has a subspecific or infrasubspecific rank from its original publication. In a paragraph immediately below the one describing *P. taygetanus*, Pic (1903) states that a specimen of *Saperda perforata* Pallas from Algeria should be distinguished from European specimens as a geographical variety: “Je dois à l’extrême obligeance de M. Quittard un exemplaire ♀ de *Saperda perforata* Pall. provenant de Philippeville, en Algérie, exemplaire qui, à mon avis, mérite d’être distingué de nos exemplaires européens, a titre de var. (*v. algerica*)” (Pic 1903: 8).

Therefore, in the spirit of the law the term variety in Pic (1903) has at least in one instance a connotation of subspecies, which in general usage of taxonomy was a replacement for “variety” in its meaning of geographic race (Mayr 1970: 210) and in this case *berladense* should be an available name. But in the letter of the law, because Pic (1903) uses the term “variety” for geographical forms in parallel with the term subspecies (and hence for a lower level of differentiation than subspecies), the name “variety, var., v.” is infrasubspecific (*below* subspecies).

For *berladense*, an accurate interpretation is hard to make and the conclusion depends on whether one favors the spirit or the letter of the code. As the work (Pic 1903) doesn’t indicate unambiguously the infrasubspecific rank and Pic’s varieties are routinely accepted as available names, I consider that *berladense* is available.

The taxonomic status of populations attributable to *v. berladense*. Irrespective of the availability of *berladense*, the next question is whether the population from “Vall. du Berlad” (Zorleni) can be considered as a valid subspecies. According to the original description (Pic 1903), *D. pusillum v. berladense* is characterized by a more uniform and extensive dark pubescence on elytrae and legs with the colour slightly obscured: “*pattes a coloration un peu obscurcie, élytres ornés d’une pubescence plus uniforme ou d’une pubescence foncée plus étendue*”. The short description given by Plavilstshikov for *berladense* (the dorsal and humeral stripes and the elytral spots as well are inconspicuous on the background coloration of elytra) could have been based also on specimens of *D. pusillum tanaiticum* as a specimen from Rostov on Don identified as aberration *berladense* by Plavilstshikov was included in the type series of *D. p. tanaiticum* (Kasatkin 2002).

The males from the same series as the lectotype of *v. berladense* (preserved in MGAB and MNHN) have worn-out pubescence and only one of them corresponds with Pic’s description (Fig. 1C); other five have evident elytral stripes, though they are partly abraded (Fig. 1D, F) and one is too mouldy to accurately determine the pattern. Breuning (1946) describes from “Vallée de Berlad” *D. pusillum m. postdisjunctum* based on a male similar with the nominal subspecies (i. e. with dorsal and humeral stripes), except dorsal stripe not fused with the humeral. Moreover, Montandon (1908) records from Zorleni both *D. pusillum* and *D. p. v. berladense* which again suggests a mixed series of specimens from the same locality.

The specimens from Sălchioara (at 13 km from Zorleni, the type locality of *v. berladense*) have the habitus of the nominal subspecies (Fig. 3L, N) but a few males are darker, with humeral and dorsal stripes inconspicuous (Fig. 3M, O) as in the lectotype. Darker males are rarely found also in other populations of the nominal subspecies, e.g. in Republic of Moldova at Răzeni and Tomaiul Nou (Fig. 3E). Furthermore, based on the male elytral pattern, the distribution range of the nominal form extends both north and south of Zorleni, at Hanu Conachi and Galați (localities 18 and 19 on the map in Fig. 7). Because of the above reasons, the populations from Zorleni area cannot be separated as a distinct subspecies.

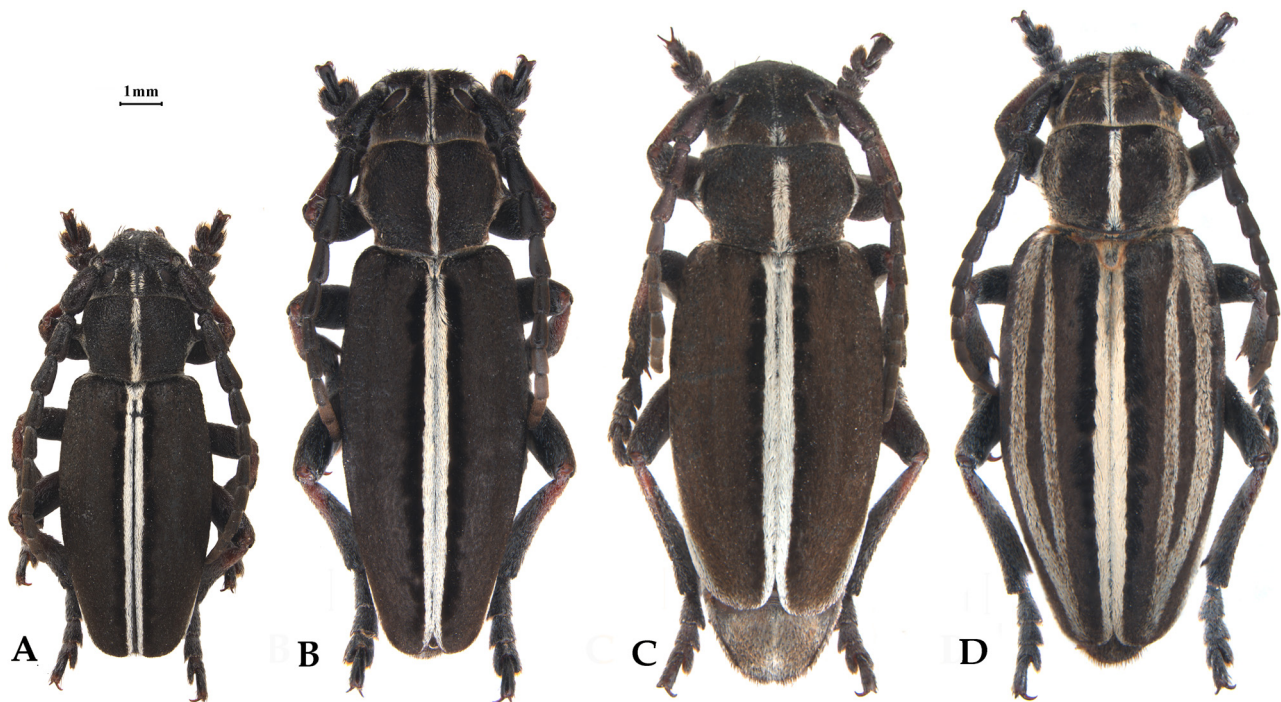


FIGURE 2. Habitus of *Dorcadion* spp. *D. pusillum vasiliscus* ssp. nov., male, Spătaru forest near Buzău, Romania (A); *D. murrayi*, male, Spătaru forest near Buzău, Romania (B); *D. murrayi*, females, Chițcani, Vaslui Co., Romania (C, D). All specimens at the same magnification. Scale bar 1 mm.

The darker individuals corresponding with Pic's description for v. *berladense* represent intrapopulational variability and *berladense* is treated here as a synonym of the nominal subspecies.

Distribution. Ukraine, Crimea, Republic of Moldova, Romania (Fig. 7).

Material examined. REP. OF MOLDOVA: **Ungheni, Elizavetovca**, 16.V.2013, leg. Dascălu, Fusu & Chinan (13♂♂, 3♀♀); **Raion Ialoveni, sat Răzeni** [Ialoveni district, Răzeni village], 26.III.2010, leg. A Zubov (11♂♂, 7♀♀), 20.IV.2011, leg. Dascălu, Fusu & Zubov (10♂♂, 8♀♀); **20 km de Hâncești, între Cneazevca și Tomaiul Nou** [20 km from Hâncești between Cneazevca and Tomaiul Nou], 19.IV.2011, leg. Dascălu, Fusu & Zubov (19♂♂, 2♀♀) [MDCO]. **Chișinău**, 29.III–11.IV.1923 (1♀), 5.IV.1924 (1♀), 20.IV.1925 (2♂♂, 1♀); **Durlești** [near Chișinău] V.1922 (1♂), IV.1923 (1♂), V.1925 (1♀); **Dănceni** [near Chișinău] 22.V.1932 (1♀) [NMENH]. **ROMANIA:** **Călărași** [Botoșani Co.], 13.IV.1972 (1♀) [NSMD]; **Iași, dig lac Hălțeni**, 2.V.2006, leg. Dascălu & Fusu (8♂♂) [NSMG]; **Iași, Vlădeni, dig lac Hălțeni** [dam of Hălțeni lake], 15.IV.2000 (1♀), 29.IV.2004 (1♂, 1♀), 25.V.2005 (1♂), 2.V.2006, (7♂♂, 4♀♀), 13.V.2006 (1♂), leg. Dascălu & Fusu, 3.V.2007, leg. Fusu L. (1♀); **Iași, Vlădeni, vale Miletin** [Miletin valley], 02.V.2011 (2♂♂), 20.V.2011 (8♂♂), leg. Dascălu & Fusu; **Iași, Rezervația Valea lui David** [Valea lui David Reserve], 17.IV.2011, leg. Dascălu, Fusu & Chinan (11♂♂, 6♀♀ autochrome, 1♀ androchrome), 18.IV.2008 (5♂♂), 27.IV.2011 (1♂, 1♀), leg. Dascălu & Fusu, 6.V.2008, leg. Fusu L. (2♂♂, 1♀) [MDCO]; **V. David** [Iași, Valea lui David Reserve], 9.V.1967 (1♂) [NSMI]; **Iași, Lețcani**, 14.V.2006, leg. Fusu L. (2♂♂, 2♀♀) [MDCO]; **Iași, Breazu**, 5.V.1961, leg. A. Popescu Gorj (1♀); **Breazu jud. Iași**, 20.V.1958 and 6.VI.1958, leg. A. Popescu-Gorj (2♀♀) [MGAB, Nr. 206, Serafim coll.]; **Iași**, 18.V.1955, leg. M. Ieniștea (2♂♂); **Breazu, Iași**, 5.V.1962, leg. A. Popescu-Gorj (1♂) [NSMG]; **Mârzești** [Iași, Rediu village, Mârzești meadows], 21.V.1961 (12♂♂, 5♀♀); **P. Sadoveanu** [Iași, Sadoveanu Park] 16.V.1958, [probably leg. C. Mândru] (1♀) [NSMI]; **Iași**, 18.V.1955, Dr. N. Săvulescu (1♂) [MFBI]; **Vaslui, Sălțioara**, 11.V.2008, leg. Dascălu M. M. (6♂♂) and 28.IV.2011, leg. Dascălu, Fusu & Chinan (10♂♂, 3♀♀) [MDCO]; **Galați, Grădina Botanică** [Botanical Garden], 4.V.2007, leg. Patriche G. (1♀ androchrome), 13.V.2011, leg. Cristescu M. (6♂♂, 2♀♀ autochrome, 3♀♀ androchrome); **Galați**, 150 m, 4.IV.2005 (1♀ androchrome), 6.IV.2005 (2♂♂, 1♀), 9.IV.2005 (1♀ autochrome, 2♀♀ androchrome), leg. A. Ruicănescu; **Galați, Hanu Conachi** 17.V.2005, leg. A. Ruicănescu (1♂) [MDCO]; **Galați**, 4.IV.2005 (2♂♂), 6.IV.2005 (6♂♂, 2♀♀), 9.IV.2005 (10♂♂, 3♀♀), 10.IV.2005 (3♂♂, 5♀♀), leg. A. Ruicănescu [NSMG]. **Galați:** Galatsch / Museum Paris Coll. J.

Thomson 1952 / Ex. Musaeo James Thomson / Galați (Roumanie) M. Al. Ieniștea corr. (1♀ androchrome); **Galați: pusillum** Kust. Galavsch [?] / Galați (Roumanie) M. Al. Ieniștea corr. / Museum Paris Coll. M. Pic. (1♂) [MNHN]; **Tulcea, Dobrogea**, R. Jeannel, IV.26 / Museum Paris, Coll. R. Jeannel 1931 (5♂♂ of which 1♂ with the identification label “*Dorcadion pusillum* Kust., Breuning det.”, 3♀♀ autochrome, 1♀ androchrome) [MNHN]; **Galați** (1♂, Fig. 1G): Galatsch [picture examined, Kraatz coll., SDEI]. **UKRAINE: Odessa Oblast, Ovidiopol**, Liman Nistru Border, 2.V.2013, leg. Dascălu, Fusu & Fusu (10♂♂, 4♀♀); **Kherson region, Kherson city**, 24.IV–9.V.1996, leg. Mishustin R. (4♂♂) [MDCO]; **Odessa** (1♂) [picture examined, Kraatz coll., SDEI]; **Odessa** (1♂): *pusillum* ♀, Odessa / Museum Paris Coll. J. Thomson 1952 / Ex. Musaeo James Thomson; **Crimea** (1♂): *cinerarium* F., Krimm, Rib. / Museum Paris Coll. M. Pic; **Crimea** (1♂): *cinerarium* Crimée / Museum Paris Coll. M. Pic [MNHN]; **Tatarbunar**, 3–5.V.1911, leg. Ivankov A. (1♂) [NMENH].

***Dorcadion pusillum v. berladense*. Type material.** Lectotype ♂ (present designation): 78 / *pusillum* var *berladense* Pic (handwritten label) / Type [red label] / Museum Paris Coll. M. Pic (Fig. 1A) [MNHN]. **Non-type material.** **Moldavie, Vall. du Berlad**, A. L. Montandon / reçu de a. nicolas / type [handwritten label] / Museum Paris Coll. M. Pic (1♀, Fig. 1B); **Moldavie, Vall. du Berlad**, A. L. Montandon / *decipiens?* ♂ / Museum Paris 1911, Coll. J. Bourgeois / *Dorcadion pusillum* Küst. Breuning dét. (1♂, Fig. 1D); **Moldavie, Vall. du Berlad**, A. L. Montandon / *pusillum* Kust. / *pusillum* d’après Daniel / *Dorcadion pusillum berladense* Pic, Breuning dét. / Museum Paris 1911, Coll. J. Bourgeois (1♂, Fig. 1C) [MNHN]; **Moldavie, Vall. du Berlad**, A. L. Montandon / *Dorc. pusillum* Küst., M. Al. Ieniștea det. (1♂); **Moldavie, Vall. du Berlad**, A. L. Montandon / Mus. Bucuresci dăruit [gift] A. L. Montandon / *Dorcadion decipiens* Germ., dét Nicolas / *Dorc. pusillum* Küst. M. Al. Ieniștea det. (1♂, Fig. 1F); **Moldavie, Vall. du Berlad**, A. L. Montandon / *Dorcadion decipiens* Germ. / *Dorc. pusillum* Küst., M. Al. Ieniștea det. (1♂) [MGAB, Nr. 85845, Heritage coll.]; **Moldavie, Vall. du Berlad**, A. L. Montandon (1♀) [MGAB, Nr. 199, Serafim coll.]; **Moldavie, Vall. du Berlad**, A. L. Montandon (2♂♂) [MGAB, Nr. 206, Serafim coll.].

***Dorcadion pusillum ochrolineatum* ssp. nov.**

Figs 4A–I, 5F–I, 6E.

? *D. pusillum* m. *romanicum* Podany, 1953: 33 (unavailable name). Type locality uncertain.

? *D. pusillum* m. *podanyi* Breuning, 1962: 112, 288 (unavailable name). Type locality uncertain.

? *D. pusillum* m. *clarevittatum* Breuning, 1962: 177, 288 (unavailable name). Type locality uncertain.

? *D. pusillum* m. *slobozianum* Heyrovsky, 1964: 183 (unavailable name). Type locality: Romania, Slobozia

D. pusillum ab. *romanicum*; Plavilstshikov, 1958: 149, 150.—Panin & Săvulescu, 1961: 389.

D. pusillum m. *romanicum*; Breuning, 1962: 112, 177, 287.

Description. Male. Body length: 8.7–10.4 mm (n = 33); body width: 3.2–3.9 mm (n = 33). Body black. Antenna uniformly dark brown to reddish-brown and first joint sometimes lighter. Legs black to dark brown, except femora and tibiae variably extensively reddish basally or fore tibia entirely reddish. Pronotum 0.82–0.97× as wide basally as long (n = 33) with setiferous punctures distinctly separated mesally and denser and partly conjugated on sides; lateral tubercle small, with acute, moderately long spine. Pronotum dorsally with brown background pubescence, a median pale yellow to rusty-yellow stripe and sparse yellowish pubescence laterally, mostly on tubercle. Elytra moderately convex, 1.68–1.99× longer than wide (n = 33) with dense, fine microsculpture and sparse small setiferous punctures; punctuation deeper and denser on humeral depression. Humeral carina roughly sculptured basally and well visible in basal third of elytra. Background elytral pubescence blackish-brown. Humeral stripe variably developed: mostly absent and reduced to a small, rusty-yellow humeral spot (Fig. 4B, F–I) but sometimes visible basally and apically as a trace of sparse, pale pubescence intermingled with the background pubescence (Fig. 4A, C). Very rarely (one specimen) humeral stripe complete but diffuse, and formed by sparse rusty-yellow pubescence interspersed with the dark background pubescence (Fig. 4D). A pale dorsal stripe absent, in many specimens replaced by some scattered black spots of pubescence, more or less visible depending on viewing angle (Fig. 4A, C–E). Small confluent spots of velvety black pubescence along sutural stripe form a subsutural stripe with irregular sinuate border. Sutural stripe pale yellow to rusty-yellow; in some specimens, part of or the entire stripe off-white but scutellum and pronotal median stripe frequently rusty-yellow (Fig. 4B, H). Lateral stripe white to rusty-yellow on epipleuron; in most specimens lateral stripe mottled above epipleuron. Endophallus with the same morphology as in the nominal subspecies (Fig. 6E).

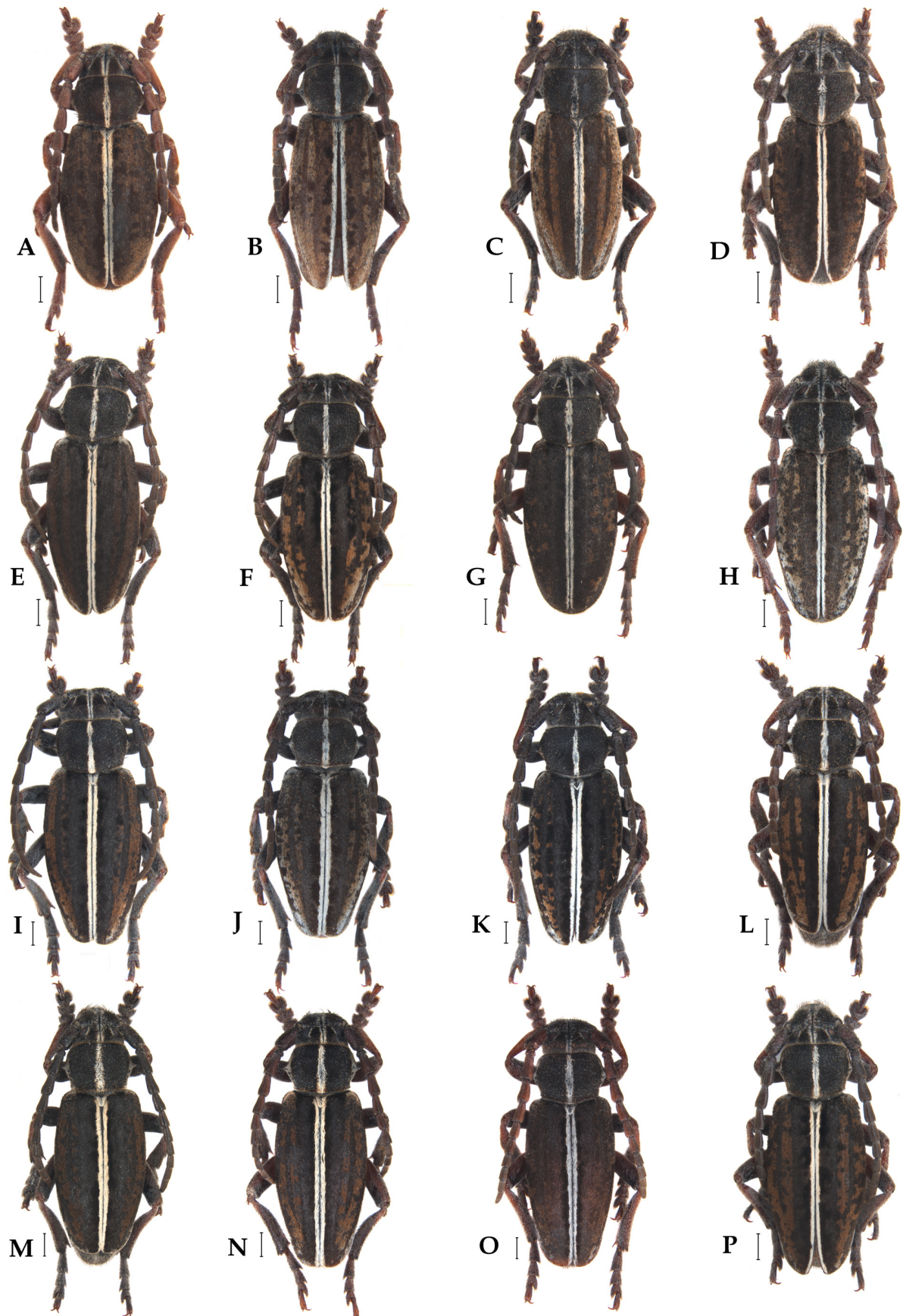


FIGURE 3. Habitus of males. *Dorcadion p. pusillum*, Kherson, Ukraine (A, B); Ovidiopol, Ukraine (C, D); Hâncești, Rep. of Moldova (E, F); Răzeni, Rep. of Moldova (G, H); Valea lui David, Iași Co., Romania (I, J); Vlădeni, Iași Co., Romania (K); Sălcișoara, Romania (L–O); Galați, Romania (P). Scale bar 1 mm.

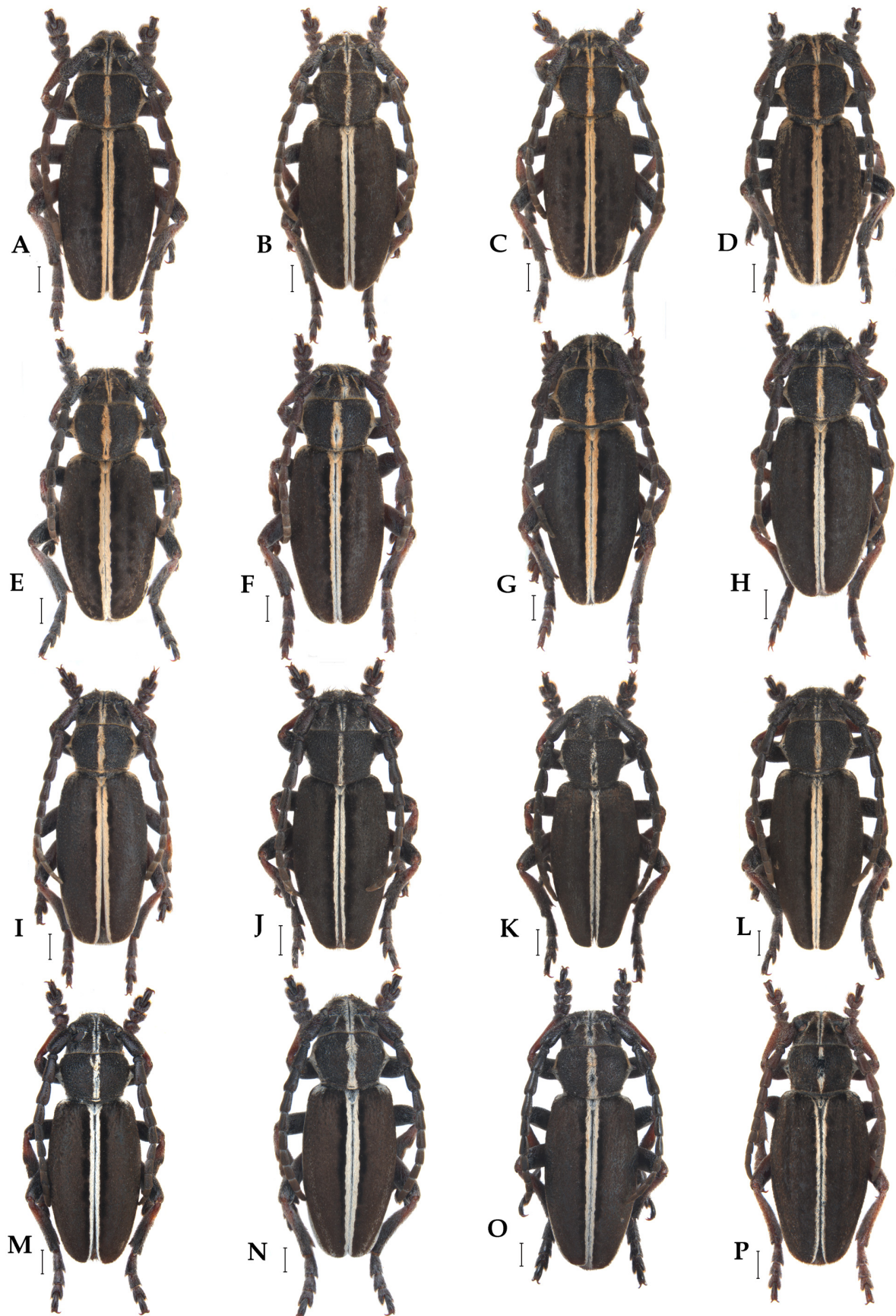


FIGURE 4. Habitus of males. *Dorcadion pusillum ochrolineatum* ssp. nov., Lacul Sărat near Brăila, Romania (A–E) and between Șuțești and Grădiștea, Brăila Co., Romania (F–I); *D. p. vasiliscus* ssp. nov., Spătaru forest near Buzău, Romania (J–L) and Beceni, Izvoru Dulce, Vrancea Co., Romania (M–O); *D. p. tanaiticum* from the type locality (P). Scale bar 1 mm.

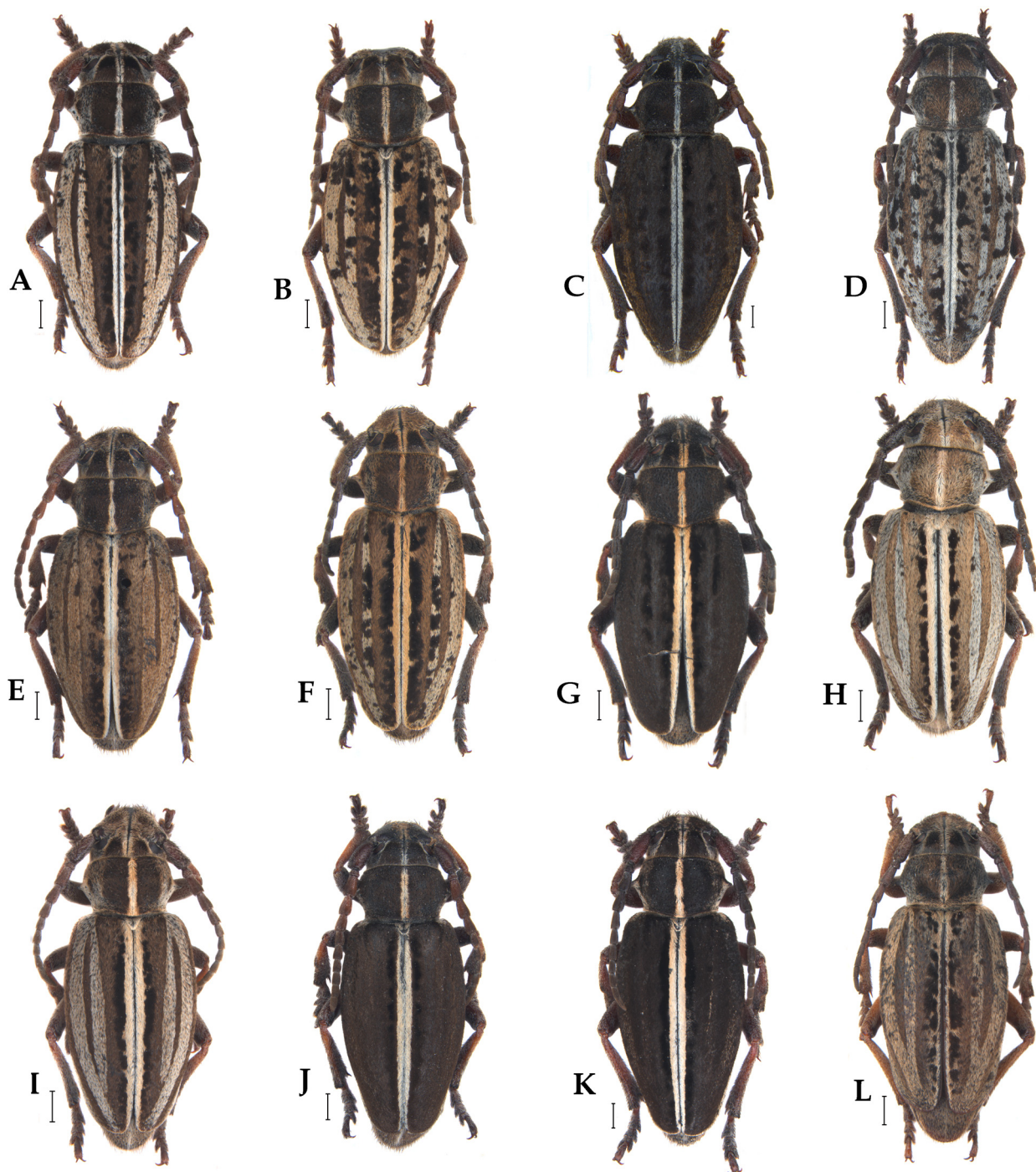


FIGURE 5. Habitus of females. *Dorcadion p. pusillum*, Răzeni, Rep. of Moldova (A); Hâncești, Rep. of Moldova (B); Valea lui David, Iași Co., Romania (C, D); Galați, Romania (E); *D. p. ochrolineatum* ssp. nov., Lacul Sărat near Brăila, Romania (F, G) and between Șuțești and Grădiște, Brăila Co., Romania (H, I); *D. p. vasiliscus* ssp. nov., Beceni, Izvorul Dulce, Vrancea Co., Romania (J) and Spătaru forest near Buzău, Romania (K); *D. p. tanaiticum* from the type locality (L). Scale bar 1 mm.

Female. Differs from the males in having a larger size (body length 7.0–12.7 mm, $n = 27$), with elytra proportionately wider, and more developed humeral and dorsal carinae; the pronotum with more prominent, sharper spines.

Autochrome females are frequently found while androchrome females (with pubescence pattern as in males) are very rare (Fig. 5G). Autochrome females with background pubescence of elytra brown to light brown with a

yellow hue. Humeral and dorsal stripes light gray or creamy; sutural stripe yellowish-white or white with a rusty hue (Fig. 5F, H, I). Humeral stripe wider than dorsal (about as wide as interval between humeral and dorsal stripes or wider) and both stripes fused at elytral apex. Usually, elytral stripes without scattered spots of black pubescence (Fig. 5H, I) except in a few specimens (Fig. 5F). Sutural stripe white. Subsutural stripe in form of small, more or less confluent, spots of velvety black pubescence. Lateral stripe light gray or creamy, wider than in males, above epipleuron mottled or not.

Etymology. From the greek word *ōkhrós* (pale yellow) and the latin word *lineātum* (lined) for the pale yellow to rusty-yellow colour of the sutural stripe of the elytra and the median stripe of the pronotum.

Remarks. *D. pusillum ochrolineatum* **ssp. nov.** was probably described several times under various unavailable names (Podany 1953; Breuning 1962; Heyrovsky 1964). The uncertainty of the synonymy resides in the fact that Podany (1953) and Breuning (1962) give a doubtful locality, “Herculaneum” and “Herculanea”, respectively (see below under discussions) The specimen from Heyrovsky (1964) was not examined, but according to the description and the locality his morph was likely a *D. pusillum ochrolineatum* **ssp. nov.**

The article 45.6. of ICZN regarding the subspecific or infrasubspecific rank of names following a binomen mentions all the possible abbreviations for “variety” “form” and “aberration”: “var.,” “v.,” “f.” and “ab.” except an abbreviation for “morph”. In this situation, if “m.” is the short for *mihi*, the Latin “to me, mine” (Evenhuis 2008), *m. romanicum* Podany could be available. If “m.” is the short from *morph*, *m. romanicum* has an infrasubspecific status in accordance with article 45.6.2. which stipulates that “the rank denoted by a species-group name following a binomen [...] is deemed to be infrasubspecific if its author used one of the terms ‘aberration’, ‘ab.’ or ‘morph’”.

In the same paper, besides *D. pusillum m. romanicum*, Podany (1953) used the abbreviation “m.” in the description of several other taxa:

“*Pedestredorcadion equestre* Fairm. m. *simile* n.: Comme **m. apicejunctum mihi** [described a row above in the same paper]”. Evidently “m.” stands for *morph* as *mihi* is not abbreviated but fully spelt.

“*Carinatodorcadion fulvum* ssp. *canaliculatum* F. m. *lineatotomentosum* n.: Comme **m. subcompletelineatum** Breun. de la ssp. *fulvum* Scop.”. Since *subcompletelineatum* was described by Breuning it follows that the “m.” stands for *morph* and not for *mihi*, and this is the sense of “m.” within Podany’s publication from 1953.

D. pusillum ochrolineatum resembles *D. pusillum vasiliscus* described below in colour and habitus except that the sutural stripe is frequently yellow with a rusty hue (it is white in *D. p. vasiliscus*), and the dorsal stripe is represented by a few black spots (dorsal stripe completely absent in *D. p. vasiliscus*). The frequency of autochrome females further differentiates *D. p. ochrolineatum* from *D. p. vasiliscus*. In *D. p. ochrolineatum* the vast majority of the females are autochrome (similar to the nominal subspecies) while in *D. p. vasiliscus* most females are androchrome.

Distribution. East of Romanian Plane (Brăila and Buzău counties) (Fig. 7).

Type material. Holotype. ♂: **Romania, Brăila, Lacul Sărat** [Salty Lake], 29.IV.2011, leg. Dascălu, Fusu & Chinan / Holotypus *Dorcadion pusillum ochrolineatum* **ssp. nov.** Det. Dascălu M. M. 2016 [MDCO]. **Paratypes:** **L. Sărat, Brăila**, 8.VI.962, Dr. N. Săvulescu (1♂) [MGAB, Nr. A IV 1979, 65 coll. N. Săvulescu]; **Lacu Sărat**, jud. Brăila, 28.V.1955, Nicolae Săvulescu (2♂♂); **L. Sărat, Brăila**, 8.VI.962, Dr. N. Săvulescu (1♂) [MGAB, Nr. 206, Serafim coll.]; **Romania, Brăila, mal râu Buzău între Şuţeşti–Grădiştea** [Buzău river bank, between Şuţeşti and Grădiştea], 29.IV.2011, leg. Dascălu, Fusu & Chinan (26♂♂, 12♀♀ autochrome, 1♀ androchrome); 29.IV.2018, leg. Dascălu, Fusu L. & A. (23♂♂, 8♀♀ autochrome); **Romania, Brăila, Lacul Sărat** [Salty Lake], 29.IV.2011, leg. Dascălu, Fusu & Chinan (32♂♂, 5♀♀ autochrome, 1♀ androchrome) [MDCO]; 12.V.1952, Dr. N. Săvulescu (1♂) [MFBI]; **Romania, Lacu Sărat, Brăila**, 20.V.1952 [2524] (1♂), 22.V.1952 [2529, 2531–2534] (4♂♂), 22.V.1952 [2525–2528, 2530, 2532, 2535] (7♀♀), Dr. N. Săvulescu [NSMI].

Abraded specimens excluded from type series: Roumanie, Lacu Sărat, A. L. Montandon (2♂♂, 2♀♀ androchrome); **Lacu Sărat**, jud. Brăila, 28.V.1955, Nicolae Săvulescu (1♀ autochrome); **L. Sărat Brăila**, 8.VI.962 (4♂♂), 22.V.952 (1♂) Dr. N. Săvulescu; **Balta Albă**, judeţul Buzău, 21.V.1995, Alexandru Iftime (1♂) [MGAB, Nr. 206, Serafim coll.]; **Roumanie, Lacu Sărat**, A. L. Montandon (2♀♀ autochrome); **L. Sărat Brăila**, 22.V.952, Dr. N. Săvulescu (1♀ autochrome) [MGAB, Nr. 199, Serafim coll.]; **Lacu Sărat**, 22.V.52 (2♀♀ autochrome); **L. Sărat, Brăila**, 22.V.52 (1♂, 1♀ autochrome), 8.VI.962 (3♂♂), Dr. N. Săvulescu [MGAB, Nr. A IV 1979, 65 coll. N. Săvulescu].

***Dorcadion pusillum tanaiticum* Kasatkin, 2002**

Figs 4P, 5L.

Dorcadion pusillum tanaiticum Kasatkin, 2002: 277–280 (original description). Type locality: Rostov area, Miasnikovsky distr., near Nedvigovka (Zoological Institute, St. Petersburg, ZIN).

Dorcadion pusillum tanaiticum; Lazarev, 2009: 198, 199.—Danilevsky, 2010: 251.—Lazarev, 2011: 257.

Description. This subspecies was described in detail and illustrated by its author (Kasatkin 2002).

Remarks. Unlike the nominal subspecies, in males of *D. p. tanaiticum* elytra have a darker pubescence with dark elytral stripes, almost as dark as the background pubescence and hence hardly visible; no dark spots of pubescence are present on elytra except the subsutural stripe which is visible only under certain angles of light.

Distribution. South of European Russia (Rostov area) (Fig. 7).

Material examined: S. Russia, Rostov region, Nedvigovka env., 19.IV.2008, leg. A. Abramov (3♂♂, 1♀) [MDCO].

***Dorcadion pusillum vasiliscus* ssp. nov.**

Figs 1E, 2A, 4J–O, 5J, K, 6D, F–H.

Description. Male. Body length: 8.4–10.7 mm (n = 32); body width: 3.2–4.1 mm (n = 32). Body black. Antenna usually black, except sometimes basal half or more reddish-brown. Legs black to dark brown with tibiae reddish-brown basally and sometimes fore tibia almost entirely reddish. Pronotum 0.71–0.98× as wide basally as long (n = 32), with setiferous punctures distinctly separated mesally and denser and partly conjugated on sides; lateral tubercle small, with acute, moderately long spine. Pronotum dorsally with brown background pubescence, a median white stripe and sparse whitish pubescence laterally, mostly on tubercle. Elytra moderately convex, 1.73–1.99× longer than wide (n = 32), with dense, fine microsculpture and sparse small setiferous punctures; punctuation deeper and denser on humeral depression. Humeral carina roughly sculptured basally and well visible in basal third of elytra. Background elytral pubescence blackish-brown. Humeral stripe reduced to a small humeral spot of white pubescence; exceptionally (one specimen) with sparse off-white setae towards apex of elytra (Fig. 4N). Dorsal stripe completely absent (Fig. 4J–M, O). Sutural stripe white. Small confluent spots of velvety black pubescence along sutural stripe form a subsutural stripe with irregular, sinuate border. Elytra without a mottled pattern as velvety black spots of pubescence on elytral disc absent (Fig. 4J–O). Lateral stripe similarly white on and above epipleuron, in most specimens not mottled. Endophallus with the same morphology as the nominal subspecies (Fig. 6D, F–H).

Female. Differs from male by larger size (body length 9.7–12.6 mm, n = 21), proportionately wider elytra, with more developed humeral and dorsal carinae; the pronotum with more prominent, sharper spines.

Androchrome females (with a male-like elytral pubescence pattern) (Fig. 5J, K) frequent. Autochrome females very rare (Fig. 1E). In these females background elytral pubescence brown, humeral and dorsal stripes light gray, without spots of black pubescence. Humeral stripe wider than dorsal (about as wide as interval between humeral and dorsal stripes or wider), both fused at elytral apex. Sutural stripe white. Subsutural stripe in form of small, more or less confluent spots of velvety black pubescence along sutural stripe.

Etymology. From the Romanian word *vasilisc* (Latin *basiliscus*), a legendary creature variously represented as a combination of a snake and a rooster. Noun in apposition. The general resemblance of *D. pusillum vasiliscus* ssp. nov. with other two species (*D. murrayi* Küster and *D. axillare*) inspired its name.

Remarks. The new subspecies does not have the elytral pubescence pattern of the nominal subspecies. Thus, males of *D. p. vasiliscus* differ from those of *D. p. pusillum* by the complete absence of the elytral stripes and black elytral spots and by their darker antenna. They differ from the geographically close *D. p. ochrolineatum* by the white colour of the sutural and median pronotal stripes (pale yellow to rusty-yellow in *D. p. ochrolineatum*) and by the complete absence of the dorsal and humeral elytral stripes and black elytral spots. Males of *D. p. vasiliscus* resemble those of *D. p. tanaiticum* (located on the opposite extremity of the species distribution range) in the dark colour of background pubescence and the absence of the black elytral spots, but differ by the absence of humeral and dorsal elytral stripes which in *D. p. tanaiticum* are present even if hardly visible (Fig. 4P). Also, in *D. p. tanaiticum*, the subsutural stripe is visible only under certain angles of light.

By the elytral pattern of males, *D. p. vasiliscus* **ssp. nov.** resembles two other species from the same geographic area, *D. murrayi* (Fig. 2A, B) and *D. axillare* (Fig. 6 in Dascălu & Fusu 2012). In all three taxa the males have elytra with uniform dark pubescence and without pale stripes except for the white sutural stripe. However, in the morphology of the endophallus (Fig. 6A, B, D, F–K) and other characters detailed in Table 2, the three mentioned taxa can be easily distinguished. Even if by external morphology *D. p. vasiliscus* resembles *D. murrayi* or *D. axillare*, the endophallus of *D. p. vasiliscus* is as in *D. p. pusillum* (Fig. 6C, D).

In the pattern of the elytral stripes and background pubescence, the rare autochrome females of *D. p. vasiliscus* (Fig. 1E) resemble those of *D. murrayi*, *D. a. axillare* and *D. a. moldavicum* Dascălu & Fusu; the androchrome females are also similar as discussed above for the males (compare Fig. 5J, K with Fig. 2C, D and Fig. 6 in Dascălu & Fusu 2012). The frequency of autochrome females further differentiates *D. p. vasiliscus* from the other three subspecies of *D. pusillum*. In this subspecies the vast majority of the females are androchrome, in *D. p. pusillum* and *D. p. ochrolineatum* androchrome females are extremely rare while in *D. p. tanaiticum* the female is always autochrome (Kasatkin 2002).

Distribution. Romania: Curvature Subcarpathians (Vrancea and Buzău counties) (Fig. 7).

TABLE 2. Comparative description between *Dorcadion pusillum vasiliscus* **ssp. nov.** and the morphologically and geographically close species

<i>D. p. vasiliscus</i> ssp. nov.	<i>D. murrayi</i>	<i>D. axillare</i>
body length: 8.4–10.7 mm (n = 32)	body length: 11.3–14.5 mm (n = 27)	body length: 9.6–14.3 mm (n = 79)
antenna black, except sometimes basal half or more, reddish-brown	antenna totally black	antenna black with first joint lighter, brownish-red
pronotum with sharp spines	pronotum with more obtuse spines	pronotum with sharp (ssp. <i>moldavicum</i>) to blunt spines (nominal subspecies)
elytra 1.73–1.96 times longer than wide (n=32) (except one with 1.99)*	elytra 1.95–2.29 times longer than wide (n=27) (except one with 1.91)*	elytra 1.71–2.09 times longer than wide (n=79)
elytra convex, with humeral carina visible in the basal third	elytra dorsally flattened, with well developed humeral carina reaching almost to the apex	elytra convex, with humeral carina visible in the basal third
elytra with blackish-brown background pubescence	elytra with blackish-brown background pubescence	elytra with pure black background pubescence
humeral white spot present	humeral spot absent or present	humeral white spot present
subsutural stripe formed by confluent spots of black pubescence	subsutural stripe in form of a black band of pubescence	subsutural stripe absent
legs black to dark brown with tibiae reddish-brown basally	legs black with tibiae reddish-brown basally	legs brownish-red
medial tube basad of central bladder swollen forming a second smaller bladder	a second smaller bladder absent	a second smaller bladder absent
angle between central trunk and central bladder obtuse, yet central bend distinct (Fig. 6D)	central trunk is turned to the central bladder at an acute angle hence central bend very distinct (Fig. 6A)	angle between central trunk and central bladder obtuse and dorsal swelling very reduced hence central bend almost indistinct (Fig. 6B)
ventral swelling of central bladder simple, not bifid (Fig. 6H); dorsal swelling not expanded (Fig. 6G)	ventral swelling of central bladder bifid (Fig. 6K); dorsal swelling expanded laterally (Fig. 6J)	ventral swelling of central bladder simple, not bifid (Fig. 6B); dorsal swelling not expanded
apical bulb covered with larger microspines (about 21–25 µm) (Fig. 6F, G)	apical bulb covered with smaller microspines (about 14–19 µm) (Fig. 6I, J)	apical bulb covered with smaller microspines (about 14–17 µm)

(*) the difference between mean values statistically significant (t-test, $p = 2.4 \times 10^{-16}$)

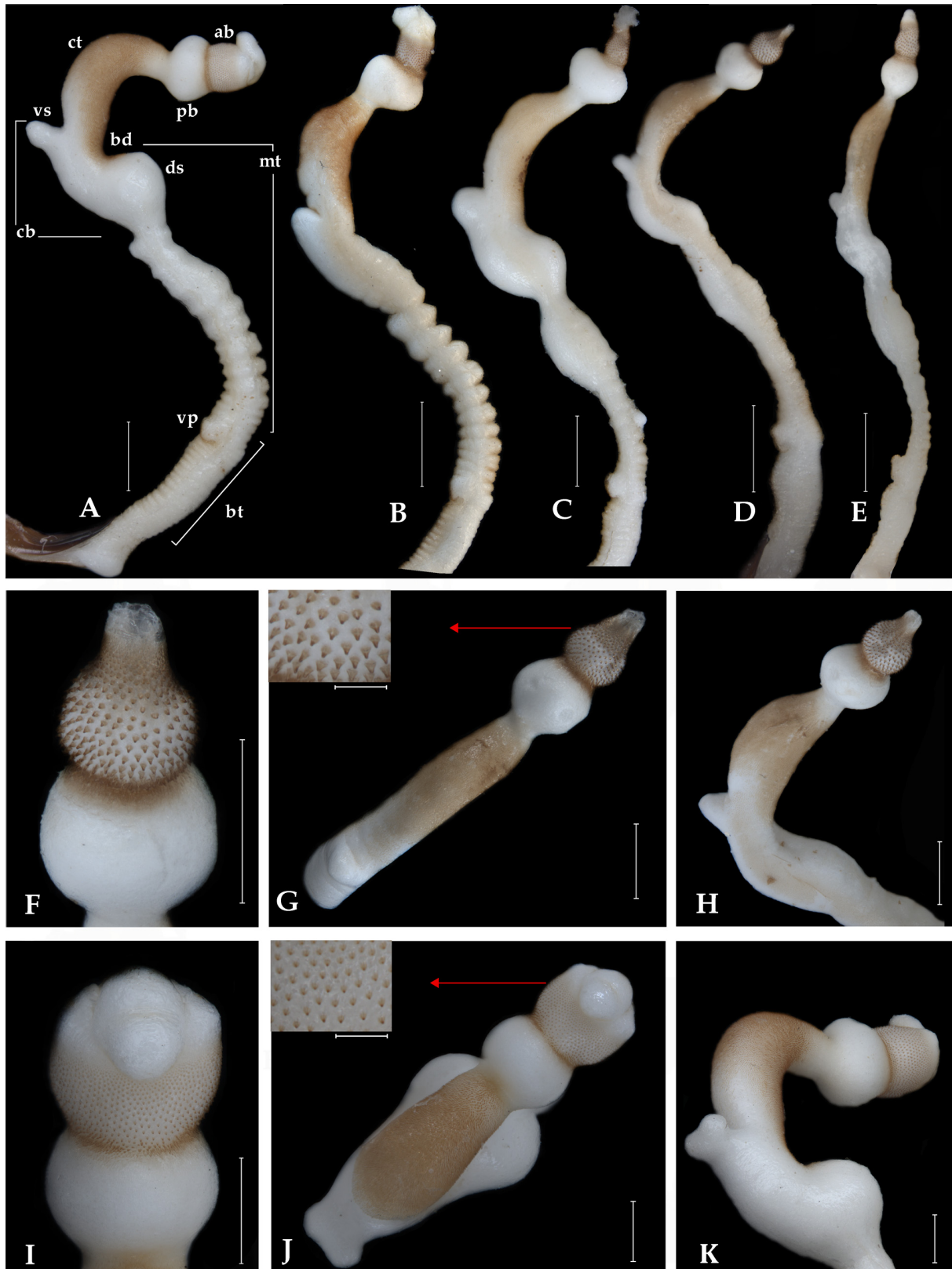


FIGURE 6. Endophallus structure in *Dorcadion* spp. *D. murrayi*, Spătaru forest near Buzău, Romania (A, I–K); *D. axillare moldavicum*, Chircești, Vaslui Co., Romania (B); *D. pusillum pusillum*, Vlădeni, Iași Co., Romania (C); *D. p. vasiliscus* ssp. nov., Spătaru forest near Buzău, Romania (D, F–H); *D. p. ochrolineatum* ssp. nov., between Șuțești and Grădiștea, Brăila Co., Romania, not fully inflated (E). Scale bar 1 mm for A–E, 0.5 mm for F–K and 0.1 mm for inserts in G and J. Abbreviations: (bt) basal tube, (vp) ventral plates, (mt) medial tube, (ct) central trunk, (bd) central bend, (cb) central bladder with (vs) ventral and (ds) dorsal swelling, (ab) apical bulb, (pb) preabical bulb. The differences in apical bulbs are an artefact due to different degrees of expansion.

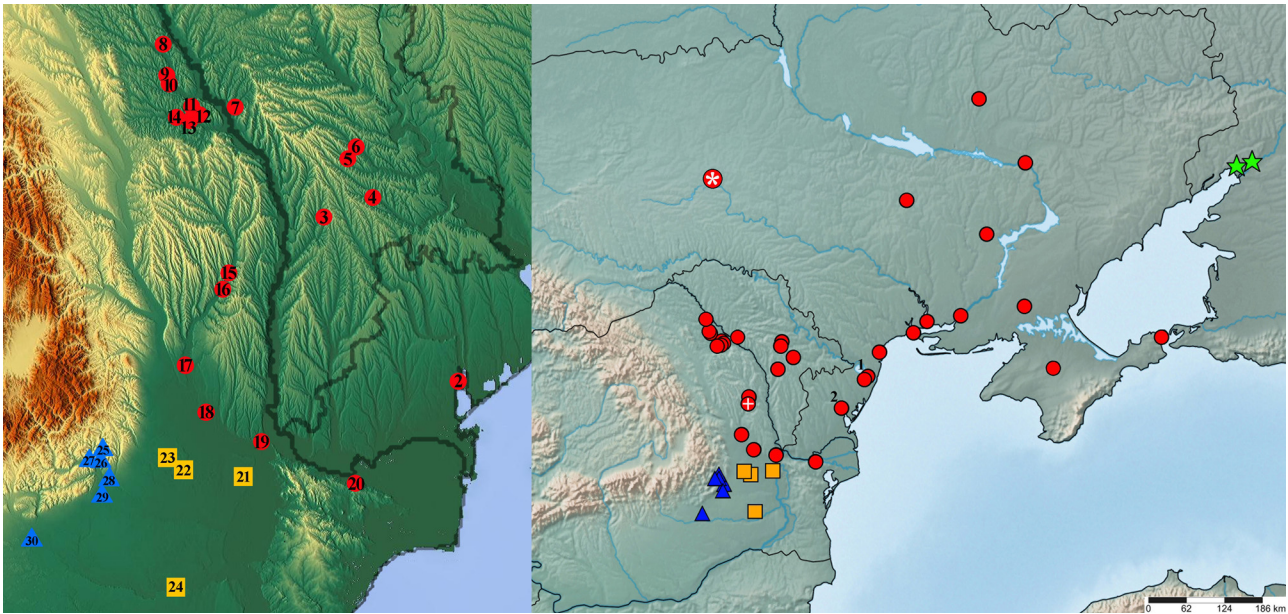


FIGURE 7. Distribution of *Dorcadion pusillum*: *D. p. tanaiticum* (green stars) after Kasatkin (2002); *D. p. pusillum* (red dots) with supplemental data to Kasatkin (2002) numbered as follows: 1–Ovidiopol (Odessa oblast); 2–Tatarbunar (Odessa oblast); 3–Tomaiul Nou, 20 km from Hâncești; 4–Răzeni (Ialoveni district); 5–Dânceni, near Chișinău; 6–Durești, near Chișinău; 7–Elizavetovca (Ungheni district); 8–Călărași (Botoșani Co.); 9–Vlădeni, dam of Hălțeni lake (Iași Co.); 10–Vlădeni, Miletin Valley; 11–Mârzești meadow, near Breazu village (Iași Co.); 12–Breazu, near Iași; 13–Valea lui David (Iași Co.); 14–Lețcani; 15–Sălcișoara (Vaslui Co.); 16–Zorleni (Vaslui Co.); 17–Tecuci; 18–Hanu Conachi (Galați Co.); 19–Galați; 20–Tulcea; *D. p. ochrolineatum* ssp. nov. (yellow squares): 21–Lacul Sărat, near Brăila; 22–Buzău river bank, between Șuțești and Grădiștea, (Brăila Co.); 23–Balta Albă (Buzău Co.); 24–Slobozia; *D. p. vasiliscus* ssp. nov. (blue triangles): 25–Izvoru Dulce, Beceni (Vrancea Co.); 26–Slănic river, near Aldeni (Buzău Co.); 27–near Joseni village, Berca (Buzău Co.); 28–Câlnău river, near Buzău; 29–Spătaru forest, near Buzău; 30–Cornurile (Prahova Co.). The red dot with white star is the presumed type locality of the nominal subspecies. The red dot with white cross is the type locality of *D. p. var. berladense*.

Type material. Holotype, ♂: **Romania, Vrancea, Beceni, Izvoru Dulce**, mal Slănic peste râu [over Slănic river], 30.IV.2011, leg. Dascălu, Fusu & Chinan / Holotypus *Dorcadion pusillum vasiliscus* ssp. nov. Det. Dascălu M. M. 2016 [MDCO]. **Paratypes: ROMANIA: Vrancea, Beceni, Izvoru Dulce**, mal Slănic peste râu [over Slănic river], 30.IV.2011, leg. Dascălu, Fusu & Chinan (18♂♂, 4♀♀ androchrome, 2♀♀ autochrome, one without head and pronotum, the other one abraded); **Romania, Vrancea, Beceni, Izvoru Dulce**, mal Slănic peste râu [over Slănic river], 30.IV.2011, leg. Dascălu, Fusu & Chinan (8♂♂, 3♀♀ androchrome); **Romania, Buzău, Pădure Spătaru** [Spătaru forest], 30.IV.2011, leg. Dascălu, Fusu & Chinan (36♂♂, 12♀♀ androchrome) and 26.IV.2017, leg. Fusu & Chinan (13♂♂); **Romania, Buzău, Câlnău river**, 29–30.IV.2011, leg. Dascălu, Fusu & Chinan (2♂♂, 2♀♀ autochrome, 2♀♀ androchrome); **Romania, Buzău Co., Slănic river, near Aldeni**, 30.IV.2011, leg. Dascălu, Fusu & Chinan (1♀ androchrome); **Buzău, 2 km from Joseni village**, on Sărățel river border, 29.IV.2012, leg. Dascălu, Fusu, Chinan & Mânzu (5♂♂, 1♀ androchrome, 1♀ autochrome) [MDCO]; **Dealul Balauru, la vest de [west of] Izvoru Dulce Beceni, Buzău**, 15.IV.2002, leg. Viorel Ungureanu (1♀ autochrome) [MGAB, Nr. 206, Serafim coll.]; **Pădure Spătaru, Costești (BZ)**, 12.V.1987, leg. N. Găldean (6♂♂, 1♀ autochrome) [MGAB, Nr. 199, Serafim coll.].

Abraded specimens excluded from the type series: La poalele Dealului Balauru, la vest de Izvoru Dulce Beceni, pe malul Slănicului, 12.V.2004, leg. Viorel Ungureanu (1♀ autochrome) [MGAB, Nr. 206, Serafim coll.]; **Roumanie, Cornurile Prahova**, A. L. Montandon (1♀ autochrome, Fig. 1E) [MGAB, Nr. 199, Serafim coll.].

Comparative material of *Dorcadion murrayi*. **Romania: Vaslui Co., Gara Tălășman**, 4.VI.2003, leg. Dascălu M. M. (3♂♂); **Vaslui Co., Chircești**, 27.IV.2006, leg. Dascălu, Fusu & Chinan (2♂♂); **Vaslui Co., Chițcani**, 11.V.2008, leg. Fusu & Chinan (8♂♂); **Vaslui Co., Gara Banca**, 11.V.2008, leg. Dascălu, Fusu & Chinan (3♂♂); **Galați Co., Bălăbănești**, 13.V.2008, leg. Fusu L. (2♂♂); **Vaslui Co., Gara Roșiștei**, 29.V.2010, leg. Gherghel I. (1♂); **Buzău Co., Aldeni**, 30.IV.2011, leg. Dascălu, Fusu & Chinan (1♂); **Buzău, Pădure Spătaru** [Spătaru forest], 30.IV.2011, leg. Dascălu, Fusu & Chinan (4♂♂); **Buzău, 2 km from Joseni village**, on

Sărățel river border, 29.IV.2012, leg. Dascălu, Fusu, Chinan & Mânzu (1♂); **Buzău Co., Pâclele, Berca**, 29.IV.2012, leg. Dascălu, Fusu, Chinan & Mânzu (1♂); **Dolj Co., Murta**, 25.V.2013, leg. Iorgu I. (1♂).

Comparative material of *Dorcadion axillare*: specimens listed in Dascălu & Fusu (2012).

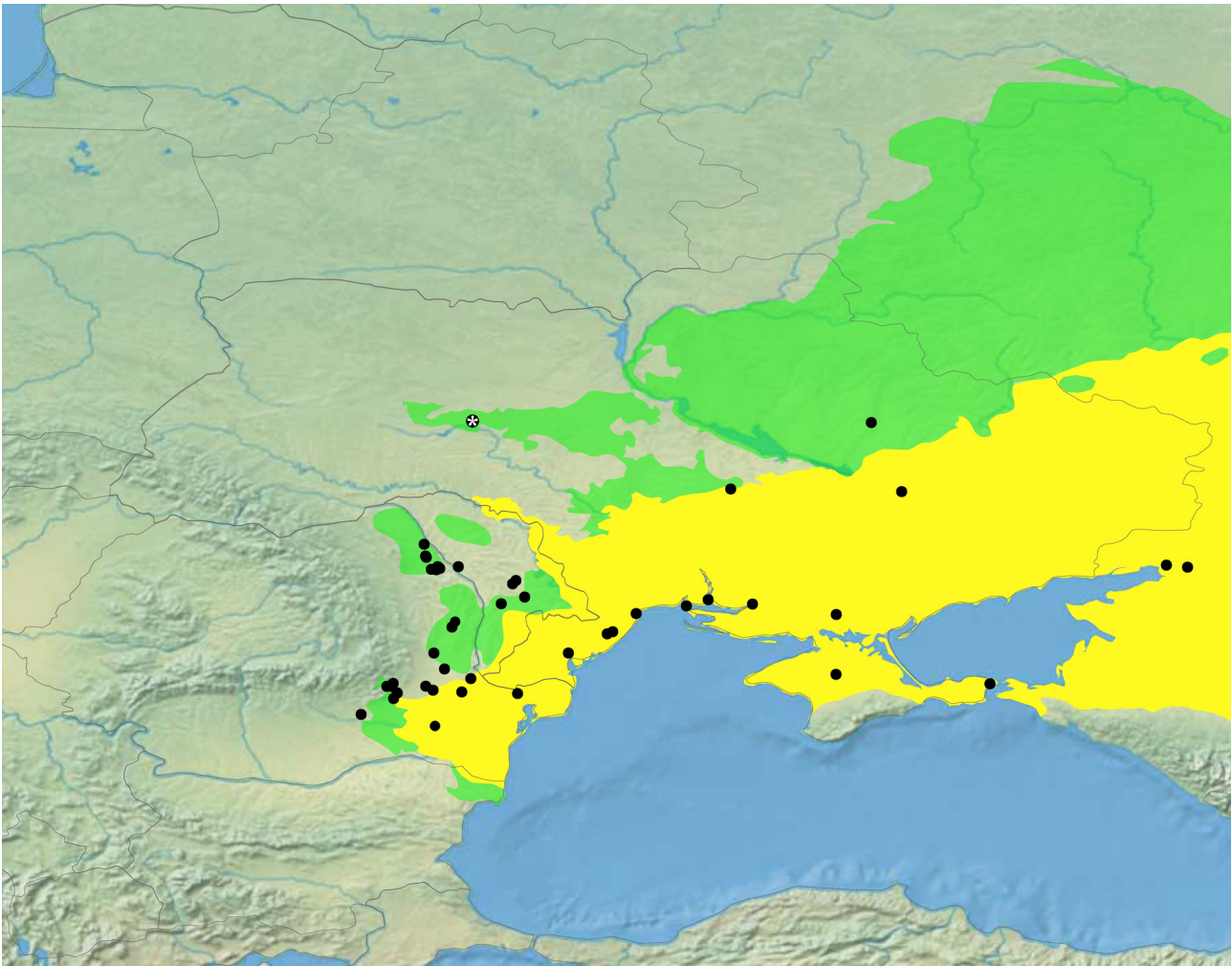


FIGURE 8. Distribution of *Dorcadion pusillum* in the steppe (yellow) and silvosteppe (green) ecoregions. Ecoregions outlines after Olson *et al.* (2001). The black dot with white star is the presumed type locality of the nominal subspecies.

Identification key for the males of *Dorcadion pusillum* subspecies

- 1 Elytra with complete humeral and dorsal stripes, even if sometimes the stripes are indistinct and almost as dark as the background pubescence. Sutural stripe white. Subsutural stripe sometimes visible only under certain angles of light 2
- Elytra always without pale dorsal stripes, humeral stripe reduced to a small, pale humeral spot or at most to a trace of sparse pale pubescence intermingled with the background pubescence. Sutural stripe white, yellow or rusty. Subsutural stripe always well visible 3
- 2 (1) Humeral and dorsal stripes distinct on the background pubescence of elytra, rusty to light brown and covered in black spots of pubescence resulting in a mottled elytral pattern. Subsutural stripe always well visible *D. pusillum pusillum* Küster
- Humeral and dorsal pale stripes hardly visible, almost as dark as the background pubescence, without black elytral spots. Subsutural stripe visible only under certain angles of light *D. pusillum tanaiticum* Kasatkin
- 3 (1) A pale dorsal stripe absent, but some scattered spots of black pubescence are present in its place. Humeral stripe reduced to a small humeral spot of rusty-yellow pubescence or rarely to basal and apical stretches of sparse pale pubescence intermingled with the background pubescence. Sutural stripe yellow to rusty yellow or, if it is off-white, then scutellum and pronotal median stripe frequently rusty-yellow. Most females autochrome *D. pusillum ochrolineatum* **ssp. nov.**
- Dorsal stripe completely absent, without any black spots of pubescence. Humeral stripe reduced to a small humeral spot of white pubescence. Sutural stripe white. Most females androchrome *D. pusillum vasiliscus* **ssp. nov.**

Discussion

D. pusillum is distributed from the foothills of curvature Subcarpathians (eastern Romania) to the south of European Russia, near Rostov on Don (western distribution limit). The species reaches its northern limit in Poltava and the historic region Volhynia in Ukraine and its southern limit in the Crimean Peninsula (Plavilstshikov 1958; Kasatkin 2002) and Romania. *D. p. tanaiticum* and the two new subspecies, *D. p. vasiliscus* **ssp. nov.** and *D. p. ochrolineatum* **ssp. nov.** are found at the extremes of the species range, with the nominal subspecies occupying a large area between them (Fig. 7). The distribution of the species overlaps the steppe and forest steppe regions from the south of European Russia to the eastern Romania (Fig. 8) and here mostly along the tributaries of Prut and Siret rivers.

In Romania, *D. pusillum* has been recorded from the Bârlad river valley (Pic 1903, as *v. berladense*; Breuning 1946, as *m. postdisjunctum*; Serafim 2010), Zorleni (Montandon 1908, as nominal and *v. berladense*), Tecuci (Panin & Săvulescu 1961), Galați (Kraatz 1873; Panin & Săvulescu 1961; Balaci 2000), Lacul Sărat, Brăila (Panin & Săvulescu 1961; Serafim 1985, 2010; Balaci 2000), Balta Albă (Serafim 2010), Babadag (Panin & Săvulescu 1961; Serafim 2010), Mangalia (Montandon 1908; Serafim 2010), Slobozia (Heyrovsky 1964, as *m. slobozianum*), “Herculaneum” (Podany 1953, as *m. romanicum*), and “Herculanea” (Breuning 1962, as *m. podanyi* and *m. clarevittatum*). The records made by Balaci and Serafim (except Balta Albă) are based on specimens collected many years ago by N. Săvulescu or A. L. Montandon and do not represent additional collecting data.

We confirm the locality records for only a part of the localities mentioned above, based on examination of specimens deposited in natural history museums (in Paris, Müncheberg, Bucharest, Iași and Galați) or on specimens collected during our field work. Nevertheless, no specimens from Tecuci were examined but certainly *D. pusillum* is present in this locality situated between Galați and Zorleni.

The following records are excluded from the distribution of *D. pusillum*. Those from Babadag are actually based on specimens of *D. axillare axillare* (see Dascălu & Fusu 2012). Those from Mangalia, in the south extremity of the Romanian littoral, are also most probably erroneous as *D. pusillum* is not known from Southern Dobruja (in Bulgaria). The record by A. L. Montandon could be connected with *D. axillare axillare* that has a general resemblance with *D. pusillum* and the record of Serafim (2010) is actually based on a male specimen of *D. axillare axillare*, collected by A. L. Montandon and deposited in MGAB (Dascălu & Fusu 2012). On the other side, the record of *D. arenarium* *v. axillare* from Cornurile, Prahova Valley (Montandon 1908) was based on *Dorcadion pusillum vasiliscus* **ssp. nov.** (1♀, Roumanie, Cornurile Prahova, A. L. Montandon, in MGAB; Fig. 1E).

The records from “Herculaneum” (Podany 1953) or “Herculanea” (Breuning 1962) based on specimens of *D. pusillum* collected by Dr. Nicolae Săvulescu in 1952 refer presumably to Băile Herculane, a town in the south-east extremity of Romania. In Săvulescu’s monograph of the longhorn beetles from the Romanian fauna published in 1961, this locality is not mentioned in the distribution of *D. pusillum* (Panin & Săvulescu 1961). Săvulescu treated the distributions in Romania very accurately and never omitted his own locality findings. One possible reason for this situation is that the specimens of *D. pusillum* from “Herculaneum” were probably collected at Lacul Sărat as this is the only locality from where Săvulescu collected *D. pusillum* (from 1952 to 1961). Based on this judgment, I connected the description of *m. romanicum* (Podany 1953) and *m. podanyi* and *m. clarevittatum* (Breuning 1962) with *D. pusillum ochrolineatum* **ssp. nov.** Until new records are made, this locality record remains dubious and likely based on mislabeled specimens.

Two specimens of *D. p. pusillum*, one from “Vall. du Berlad” (Vaslui county) and another from Breazu (Iași county), listed above under examined material, were wrongly mentioned as *D. decipiens* by Serafim (2010). The record of *D. decipiens* from Zorleni by Fleck (1906) based on the specimens of A. L. Montandon certainly refers to *D. pusillum* as a few specimens of this species in MGAB and MNHN have such old identification labels (Fig. 1D, F).

Acknowledgments

Many thanks are due to Vasilică Chinan (Al. I. Cuza University, Iași) for his precious help in collecting material during various field trips, the new subspecies *D. pusillum vasiliscus* being dedicated to him. Also, for the help during the field trips in Republic of Moldova, I am indebted to A. Zubov (Chișinău). For the loan of specimens and

for kindly providing access at the collections I thank M. Stan, R. Serafim and M. Foaltin (MGAB), M. Cristache (NSMG), A. Taghavian (MNHN), M. Pintilie and L. Apastinei (NSMD) and A. Davideanu (NSMI). I am grateful to M. L. Danilevsky, C. Perrein, C. Auvray, N. Auvray, B. Lemesle, and C. Cocquempot for helping me in finding rare publications, to L. Fusu for specimens and his helpful and valuable comments on my work, to S. M. Blank (SDEI, Müncheberg) for providing photos of specimens from Kraatz collection and for his kind help in searching for Küster's material, and to G. Ramel for English language editing. CERNESIM Centre at Al. I. Cuza University of Iași is also acknowledged for the imaging infrastructure used in this work. I thank P. Svacha and an anonymous reviewer for helpful comments and suggestions which have considerably improved the quality of the manuscript.

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