

**Research article**Submitted: May 25<sup>th</sup>, 2019 - Accepted: May 28<sup>th</sup>, 2019 - Published: May 31<sup>st</sup>, 2019***Brachyta (Fasciobrachyta) petriccionei*, a new Longhorn beetle species from Central Italy (Coleoptera: Cerambycidae)**Pierpaolo RAPUZZI<sup>1</sup>, Marco A. BOLOGNA<sup>2,\*</sup>, Riccardo POLONI<sup>3</sup><sup>1</sup> Via Cialla 48, 33040 Prepotto (UD), Italy - info@ronchidicialla.it<sup>2</sup> Dipartimento di Scienze, Università Roma Tre - Viale G. Marconi 446, 00146 Roma, Italy - marcoalberto.bologna@uniroma3.it<sup>3</sup> Via P. Togliatti 16, 41043 Formigine (MO), Italy - riccardo.poloni@gmail.com

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**Abstract**

In this paper we describe a new species of Cerambycidae of the Genus *Brachyta*, Subgenus *Fasciobrachyta*, close to *Brachyta balcanica* (Hampe, 1870). The new species, very likely associated as larvae with roots of *Paeonia officinalis*, was collected in the Majella National Park (Abruzzo, Italy) and its phylogenetic position clearly reveals a Transadriatic origin.

**Key words:** New species, *Paeonia*, Apennines, Biogeography, Conservation.

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**Introduction**

The genus *Brachyta* Fairmaire, 1865 is represented in the Italian Fauna by a single species, *B. interrogationis* (Linné, 1758), a Euro-Asiatic element with discontinuous range and distributed in the Alps (Sama & Rapuzzi 2011).

In May 2018, Bruno Petriccione photographed an unexpected *Brachyta* on flowers of *Paeonia officinalis* Linné, 1753 in the Majella National Park, Central Italy. Photos of this beetle, posted on an entomological Internet forum, were immediately noticed by some entomologists and reported by Biscaccianti et al. (2018) as *B. balcanica* (Hampe, 1870) at a local Congress. Independently, we recognized in these photos a new species of the subgenus *Fasciobrachyta* Danilevsky, 2014, whose species are associated as larvae to roots of plants of the genus *Paeonia* Linné, 1753 (Paeoniaceae; Tcherepanov 1979; Danilevsky 2014). After the sampling of an individual during a field research (May, 2019) coordinated by the Majella National Park, we decided to describe it immediately, to emphasize its relevance in terms of biogeographic isolation and conservation requirements.

The discovery of a new *Brachyta* species in Central Italy is very relevant, especially because it belongs to an Anatolian-Balkan subgenus not represented in the Italian Fauna until now. The area of the Majella National Park and, more generally, the Central Apennine ranges, show deep

biogeographic relationships with the Balkan peninsula. Gridelli (1950) well defined the presence in these mountains of species with trans-Adriatic distribution, sharing a disjunct distribution in the lands of both sides of Adriatic Sea originated by dispersion during old marine regressions and afterwards separated by vicariance events. Gridelli (1950) distinguished two categories of species with trans-Adriatic distribution: (a) those that have crossed the Adriatic Sea in the Pliocene and Pleistocene glacial events when the sea level variations uncovered large portions of land; and (b) the palaeo-Egeic species that have colonized Italy during the Miocene, when the Adriatic Sea was not yet in the present collocation. The first group of species is more recently spread and the populations in most cases are not differentiated yet, whereas the second and more ancient group of species is characterized by populations usually differentiated at subspecific or specific level.

We suppose that the new species here described represents an old relict element of a Miocenic dispersion of *Brachyta* from the Balkans to the Italian peninsula in formation, which afterwards speciated because of its isolation, surviving as a relict in the Abruzzo mountains.

The punctiform distribution of the new species troubles for its conservation and emphasizes the relevance and the distinctiveness of the fauna and flora of the Majella massif and the significance of the National Park for its conservation role.

***Brachyta (Fasciobrachyta) petriccionei* n. sp.**  
(Figs 1-4)

*Brachyta balcanica*, Biscaccianti et al. 2018, nec *B. balcanica* (Hampe, 1870).

**Diagnosis.** A *Brachyta* belonging to the subgenus *Fasciobrachyta*, according to the general body shape and the evident affinity with the other known species of this group; distinct from *B. balcanica* by the following characters: ground colour light yellow instead of darker yellow; presence of long golden erect hairs on head and pronotum; pronotum narrower and with lateral tooth prominent and acuminate instead short and stout; elytral black pattern with a small transversal fascia behind the middle in *B. petriccionei* n. sp. (Figs 1, 3), replaced by two isolated spots in *B. balcanica*; antennae more robust and longer, although with antennomere IV proportionally shorter (ca. 0.5× as long as III in the new species, ca. 0.7× as long as III in *B. balcanica*).

**Description**

(Female holotype: Figs 1-2): body length 15,8 mm, width 6,9 mm. Body black except elytra, legs and antennae partially yellow.

Head elongate, mandibles very long and slightly curved, upper side of the external margin impunctate, the remaining portions deeply punctured. Labrum rectangular, the apical third totally impunctate, the rest deep punctured. Forehead rectangular, deeply sulcate in the middle, antennal tubercles moderately developed. Cheeks short, about one third the maximal length of the eye. Median furrow extends from frons to occiput with a deep median line till the head base. Sculpture composed by dense and deep punctures, deeper and quite vermiculate behind the eyes. The whole surface covered by long, golden semi-recumbent hairs, denser and longer around eyes, forming a very long golden fringe. Also labrum and mandibles with hairs longer than on head surface. Antennae stout, long, reaching the second half of elytra; antennomeres I-IV light yellow, V yellow on the first two thirds and black on the last third; the remaining antennomeres totally black; III antennomere about as long as scape, IV half as long as III and V; scape and antennomeres III-VI constrict toward the base, the remaining cylindrical. Antennal pubescence similar to that on the legs, golden where the integument is yellow and black where it is black.

Pronotum slightly longer than wide (4,0:3,8), subconic, wider at the base, sides sinuate with a wide blunt tooth just before the middle; dorsal portion convex with a small longitudinal depression that distinguishes two large callosities in the middle. Apical and posterior portions of pronotum constricted, especially the fore one. Fore margin rounded and posterior one sinuate. The whole surface deeply punctate and opaque, points very dense and deep, only a small impunctate line in the middle of the disk. Pu-



**Figs 1-2** – *Brachyta petriccionei* sp. n.: the female Holotype of *Brachyta petriccionei* sp. n. in dorsal and lateral view.

bescence dense, semi-erect and oriented toward the top of the disk mixed to several very long, distinct and erect hairs; hairs on the basal portion of the pronotum lighter, forming a thin basal “collar”. Scutellum triangular, slightly longer than wide, covered by short recumbent golden hairs oriented toward the apex; sculpture composed by dense and small points. Elytra short, slightly tapered toward the apex with almost parallel sides and apex regularly rounded; dorsal surface with a small carina just behind the shoulder of each elytron. Integument light yellow with five black spots on each elytron (Figs 1-3), the first close to lateral margin behind the shoulder; the second in the middle about on the first fore third of elytra; third close to the inner margin just behind the middle of elytra; fourth represented by a transverse small fascia, interrupted near the inner margin; last one smaller, just before apex, on the middle; punctuation composed by dense small points, denser and wider on the basal third, becoming sparser and smaller toward the apex;

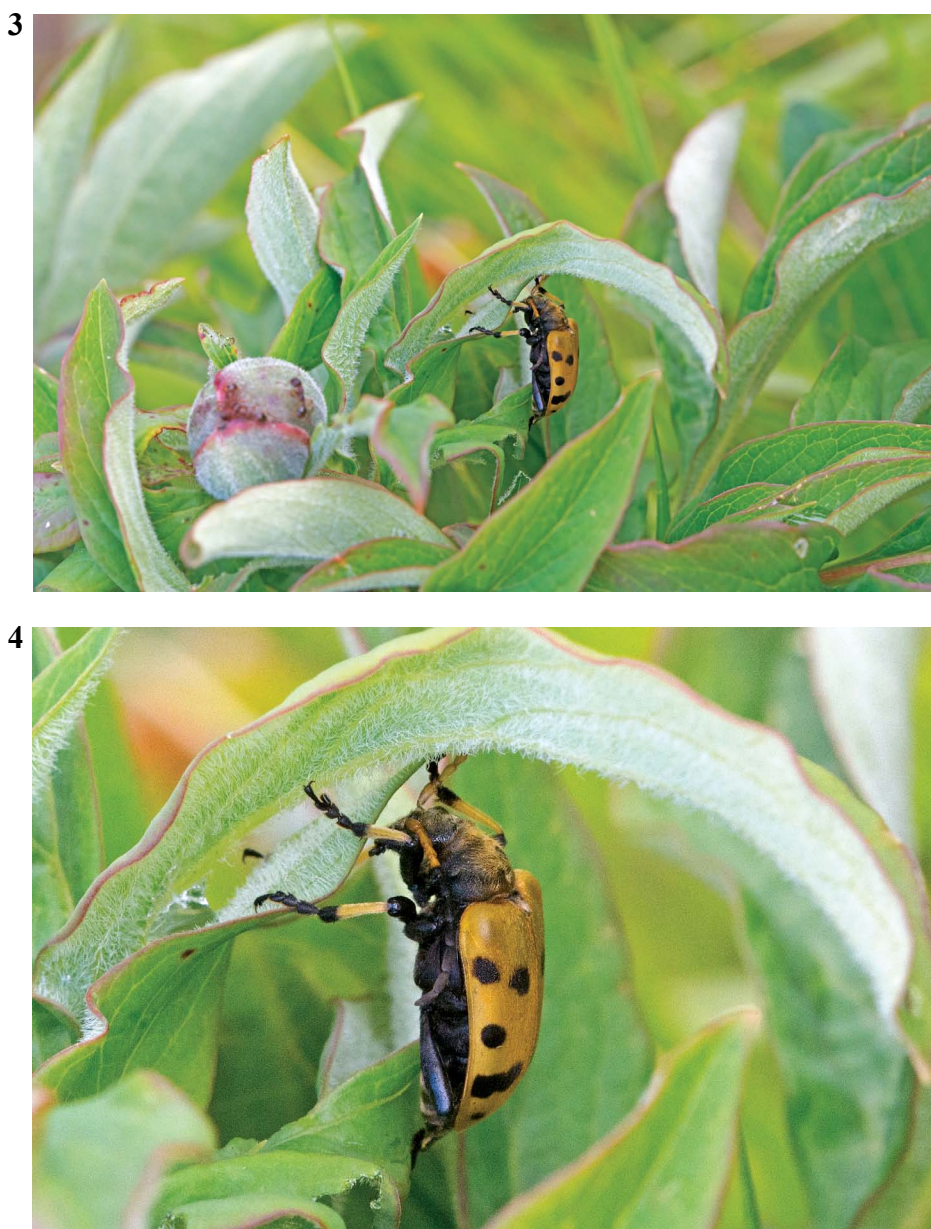
pubescence represented by short, dense, recumbent golden hairs, oriented toward the apex. Legs elongate, black except tibiae, which are light yellow with a black ring on the apical fourth, covered by stout short erect hairs, golden where the integument is yellow and black where it is black. Ventrites densely covered by golden pubescence, the rest of the ventral surface covered by black pubescence except the ventral part of the apical margin of prosternum where the fringe of golden long hairs is complete, following the same pattern of the dorsal side (Fig. 2).

**Type material.** Holotype ♀: **Italy:** Abruzzo, Monte Morone (PE), 1500 m, 23.V.2019, R. Poloni, P. Rapuzzi, M.A. Bologna, M. Carafa and B. Petriccione lgt (tempo-

rarily housed in P. Rapuzzi's collection waiting to be definitively deposited in a public Institution). Conservation reasons suggest not to define additional details of the type locality.

The holotype was collected on leaves of a plant of *Paeonia officinalis* Linné, 1753 ssp. *italica* N.G. Passal. & Bernardo (Figs 3, 4) still not flowered in a mountain glade of a mesic beech forest (Fig. 5). At the discovering of the new species in 2018, two individuals were observed on a flowering peony and a third one was seen flying in the glade over the *Paeonia* plants.

**Etymology.** The species is named after Dr. Bruno Petriccione, botanist, "Ufficio Territoriale per la Biodiversità



**Figs 3-4** – *Brachyta petriccionei* sp. n.: living Holotype of *Brachyta petriccionei* sp. n. on *Paeonia officinalis*.



di Castel di Sangro”, Carabinieri Forestali, who discovered the new species and immediately recognized its relevance, and supported us with information on the location of the collecting site, also participating to the first sampling (May, 2019) of this longhorn beetle.

**Biology.** The larval biology of the new species is unknown, but we suppose that the larva develops, as all other species of the subgenus, eating the roots of the plants of the genus *Paeonia* (Paeoniaceae). The adults, as suggested by the observation done by Bruno Petriccione, has a limited flying period and are anthophagous. The holotype and the first photographed individuals were found sitting on the leaves of *P. officinalis*, and for this reason we suppose that this could be the true host plant. The species seems to be associated with mountain pastures and glades characterized by the presence of peony (Fig. 5).

Studies on the larval morphology and adult and larval biology of the new species will be organized in the next future by the Majella N.P.

**Taxonomic and biogeographic remarks.** The genus *Brachyta* Fairmaire, 1865 was recently studied by Danilevsky (2014); this author divided it in three different subgenera (*Brachyta* s. str., *Fasciobrachyta* Danilevsky, 2014 and *Variobrachyta* Danilevsky, 2014). After the present paper, only two of them are represented in the Italian Fauna: *Brachyta* s. str. (*B. interrogationis* Linnaeus, 1758, from France to the Alps, Central and Northern Europe, Russia,

Siberia till the Pacific Coast of Russia, Northern China and Korean Peninsula) and *Fasciobrachyta* (with *B. petriccionei* sp. n. endemic to the Majella massif). *Fasciobrachyta* includes 4 species: *balcanica* (Hampe, 1871), widespread from East Turkey, to Bulgaria, Greece, Albania, Serbia and North East Croatia; *bifasciata* (Olivier, 1795) divided in some subspecies from East Russia, Mongolia, Manchuria, Northern and Central West China, Japan; *caucasica* Rost, 1902, with two subspecies, from Caucasus; and *delagrangiei* Pic, 1891 recorded only from the type locality (Akbès, Amanus Mountains [now Nur Mts], SE Turkey). The last species probably belongs to another subgenus (*Variobrachyta*) according to its body shape and elytral drawing. An additional, thus far undescribed species to be referred to *Fasciobrachyta* is known to us from Dobrogea (SE Romania and NE Bulgaria); it will be the target of a separate study (P. Rapuzzi, in preparation).

Other possible relationships will be better defined after the examination of males and by molecular analysis. The new species seems rather closely related to *B. balcanica* (Hampe, 1871) from which is easy to distinguish by the ground colour that is light yellow instead of dark yellow, and by the long golden erect hairs on head and pronotum that are totally missing in *B. balcanica*, where are replaced by sparser blackish hairs. The general shape of pronotum is different as well, in fact in the new species it is narrower, the lateral tooth is more prominent and acuminate instead being short and stout. The pattern of the elytral black spots is also different, the two black spots behind the mid-



**Fig. 5** – *Brachyta petriccionei* sp. n.: habitat of *Brachyta petriccionei* sp. n.

dle exhibited by *B. balcanica* being replaced in *B. petriccionei* n. sp. (at least in the only known type specimen) by a transverse line made by the fusion of these spots. The antennae are more robust and longer in *B. petriccionei* n. sp., although the antennomere IV is proportionally shorter (about 1/2 as long as III, instead 2/3 as in *B. balcanica*).

From *B. caucasica* the new species is distinct by the following characters: the hairs on pronotum are golden in the new species and dark in *B. caucasica*; the lateral tooth of the pronotum is more acuminate in *B. caucasica* than in the new species; the black elytral pattern in the Caucasian species includes a transverse fascia similarly than in *B. petriccionei* n. sp., but the round black spot before the elytral apex is replaced by a transverse fascia covering the apex.

From *B. bifasciata* the new species differs in the following characters: the whole pronotum surface is covered by golden hairs, while in *B. bifasciata* golden hairs are distributed only on the fore and basal portions of pronotum and the rest of the surface is covered by black hairs; the black fascia on the elytra is complete (not interrupted close to the inner margin of elytra), except in the subspecies *japonica* (Matsushita, 1933); the round black spot before the elytral apex is replaced by a transverse fascia covering the apex. Moreover, the pronotum of *B. bifasciata* is longer (4,1:3,7) than in *B. petriccionei* n. sp., and antennomere III-V are distinctly longer in the east Asian species. Antennomere I in *B. bifasciata* is black instead yellow and IV is totally yellow instead black on the apical third of its length.

From *B. delagrangei*, of which we have seen only the picture of the holotype, the new species differs greatly because in this Anatolian species the black elytral pattern is arranged in two transverse bands connected along the suture. Moreover, the pronotum of *B. delagrangei* seems distinctly shorter.

From a biogeographic point of view, the new species represents the second micro-endemic element of the group with *B. balcanica*. This group of species shows a North Eastern Mediterranean distribution and when the phylogenetic relationships of the included taxa will be clarified,

the history of dispersal and speciation events of this species pair could be better explained.

**Acknowledgements** – We are grateful to Dr. Bruno Petriccione, Lieutenant-Colonel and Deputy Commander of the “Ufficio Territoriale per la Biodiversità di Castel di Sangro” (L’Aquila province), Carabinieri Forestali, who shared with us the discovery of the new species and helped us in the field research. A special thank also to the colleague Ronni Paolinelli (Vidigulfo, Pavia province), who noticed us in 2018 the presence in a website of the first photo of the new species posted by B. Petriccione. Many thanks to Dr. Marco Carafa and Dr. Luciano Di Martino, respectively Naturalist and Director of the Parco Nazionale della Majella, who authorized the research on this new species, and collaborated (MC) in the field work. Finally, many thanks to Paolo Audisio, Roma, for his availability.

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