

***Agrilus evocatus* n. sp. of peninsular Italy and the some Tyrrhenian islands (Coleoptera Buprestidae)**

Gianfranco Curletti

c/o Museo Civico di Storia Naturale, parco Cascina Vigna, 10022 Carmagnola, Italy;
ORCID: 0000-0002-8881-6463 - e-mail: giancurletti@gmail.com

ABSTRACT A new species of the genus *Agrilus* Curtis, 1825 (Coleoptera Buprestidae) belonging to the “*solieri* group”, is described: *Agrilus (Agrilus) evocatus* n. sp. The new species is reported for peninsular Italy, Sardinia, Corsica and one island of the Tuscan Archipelago.

KEY WORDS Subgenus *Agrilus*; *solieri* group; W palaearctic; Italy; Sardinia; Corsica; Capraia Island.

Received 28.11.2021; accepted 18.12.2021; published online 30.12.2021

INTRODUCTION

The genus *Agrilus* Curtis, 1825 (Coleoptera Buprestidae) is one of the most species-rich generating in the entire animal kingdom and is present on all the continents around the world except Antarctica. Curletti (2020) estimates the number of taxa known to date to be around 4,000, but says the number is bound to rise further, especially in tropical areas. Within the family Buprestidae Leach 1815, the genus is characterized by its elongated shape, the presence of two marginal carinae on the pronotum and the very elongated metatarsus. Numerous subgenera have been proposed (Bellamy 2008), but the objective difficulty in finding valid differential characters has created conflicting opinions so that recent AAs (Jendek & Grebennikov, 2011; Löbl & Smetana, 2016) have preferred to ignore them by postponing the problem.

Regarding the Italian fauna that count currently 50 taxa (personal assessments), following the studies of Schaefer (1950) for the French fauna and Cobos (1986) for the Iberian fauna, Curletti (2013) has proposed four subgenera: in addition to that nominal, the subgenera *Anambus*

Thomson 1864, *Robertius* Théry 1947, *Uragrilus* Semenov 1935.

Within the *Agrilus* subgenus, two species in Italy are characterized by the particular conformation of the claws, by the presence of uniform elytral pubescence and by the biology link to shrub plants: *A. (Agrilus) elegans* Mulsant et Rey 1863 and *A. (Agrilus) solieri* Gory et Laporte 1837.

During the study of this group, a new form had already been highlighted for some years, which now, after further confirmation, it has been decided to describe.

MATERIAL AND METHODS

The specimens studied are dried and glued on cardboard. The extracted male genitalia were glued to the side of the related specimen in a dorsal position. The syndetic used is arabic glue for whole specimens and transparent nail polish for genital preparations. The photographs of the whole specimens and the aedeagi were taken with a Nikon P6000 camera fixed to the zoom of a Leica MZ6 stereomicroscope, using 10x eyepieces for the for-

mer and 20x eyepieces for the latter. The same were then processed with the stacking technique using the Combine ZP program and processed with the Photoshop Limited Edition program (Adobe Systems Inc.). The descriptions follow the procedure proposed by Curletti (2011, 2012, 2015) and Curletti & Migliore (2013), which thanks to the use of photographs allows to discern an appropriate and concrete habitus of taxa and to omit repetitive morphological characters, not necessary or useless, highlighting those that are difficult to describe. The description of this new entity comes after years of uncertainties that only after further research, comparisons and insights have been partially overcome.

ACRONYMS. GCCI: Curletti Gianfranco collection, Carmagnola, Italy; CEJB: Eduard Jendek collection, Bratislava, Slovakia; CGMR: Maurizio Gigli collection, Rome, Italy; CGMC: Gianluca Magnani collection, Cesena, Italy; CFIN: Francesco Izzillo collection, Naples, Italy.

RESULTS

Systematics

Agrilus (Agrilus) evocatus n. sp.

<https://zoobank.org/act:0F4724D3-E8ED-427C-AB6C-C71FD9F2B058>

MATERIAL EXAMINED. Holotypus male: Toscana, Scarlino (Grosseto), 25.VI.1992, F. Marozzini legit (GCCI). Paratypes: 1 female, Toscana, Firenze, cave di Maiano, 16.VI.1963, Failla legit; 1 male, Toscana, M. Argentario, 13.VI.1987, M. Gigli legit; 2 males and 2 females, Capraia Island, loc. Il Piano, 27.VI.1993, Regalin legit; 2 males, Puglia, Chieuti, Torre Fantine, 8.VI.1991, R. Regalin legit; 1 male and 1 female, Puglia, Mottola dint., 2.VI.1986, F. Montemurro legit; 1 male, Martina, bosco Pianelle, 12.VI.1983, F. Montemurro legit; 1 male and 2 females, Sardegna, Cala Viola, M. Olmi legit; 1 female, Sardegna, Berchidda, VII.1993, A. Casale legit; 1 male and 1 female, Corse, Folelli, 4.VII.1988, Ricchiardi legit (GCCI, CEJC, CGMR, CGMC, CFIN).

DESCRIPTION OF THE HOLOTYPE. Male (Fig. 1). Length 6.3 mm. Metallic bronzed body, more brilliant in the ventral side. Head with vertex wider than 1/3 of the anterior margin of pronotum, longi-

tudinally striated. Concolour front, furrowed in the mid-anterior part. Short uniformly diffused pubescence, gray, which becomes brown and longer in the basal area (Fig. 2). Clypeus without carina, coaxial to the front line. Big eyes, barely visible dorsally. Antennae toothed from the IV antennomer, with rounded distal segments.

Pronotum wider than long, with regularly rounded lateral margins but sinuate just before the posterior angle which is acute. Maximum width in half. Disc regularly convex at the sides, with two vague median depressions: the first transverse behind the anterior margin, the second longitudinal in front of the scutellum. Sculpture composed of regular transverse striae. Short prehumeral carinula, strongly arched. Marginal carinae open anteriorly, and also divided posteriorly. Subgular lobe with regularly rounded anterior margin. Prosternal plate wide and slightly waisted. Scutellum transversely carinate.

Elytra with regular and clearly visible gray pubescence. Disc without trace of perisutural depression. Rounded and microdenticulate apices. Ventral side with the same elytral pubescence, with the exception of laterotergum where the pubescence is more thickened. Last external ventrites with rounded apical margin.

Metallic legs, short. Metatibia longer than the metatarsus, metatarsal formula 1<2+3. Anterior claws bifid, median claws with the external bifid and the internal toothed; toothed posterior claws. Aedeagus with slightly curved profile. Integuments slightly sclerified, testaceous in color. Subparallel paramers, slightly enlarged at the apex. Subconical median lobe.

VARIABILITY. The shape of the paratypes is very constant: length from 4.6 to 6.6 mm. In some males the pubescence of the head is less visible and the frontal color tends to green. Sexual dimorphism: females have less pubescence on the frons and on the prosternal plate; all the claws are simply toothed.

ETYMOLOGY. From the Latin noun “*evōcātus*” = evoked. The name was chosen after the suggestion narrated on page 94 of the book “Matto per gli Insetti” (Curletti, 2008). In this short story I explain how I had the opportunity, the day after the death of the late colleague Gerini, to randomly extract from his collection received in study, the small series of *Agrilus* that led me to identify the new species. It was unrecognizable, mixed with other



Figures 1–3. *Agrilus evocatus* n. sp., holotypus. Fig. 1: *Agrilus evocatus* n. sp., holotypus. Fig. 2: head. Fig. 3: pronotum. Figure 4. *Agrilus solieri* Gory et Laporte: pronotum (Villa Ada, Roma, Italy). Figure 5. *Agrilus evocatus* n. sp., aedeagus in dorsal vision of holotype, 1.4 mm. Figure 6. *Agrilus solieri* Gory et Laporte, aedeagus in dorsal vision (Antignano, Livorno, Italy), 1 mm.

species, covered with mold and dust, neglected for years and I chose them at random to clean them up. The fact is certainly coincidental, but I like to think of an inspiration from my deceased friend.

REMARKS. *Agrilus evocatus* n. sp. is near to *A. solieri* Gory et Laporte, 1837 of which he is a sympatric, at least with regard to the Italian fauna. In fact, their separation is easy only for the male genitalia and the sculpture of the pronotum, which is one of the few morphological characters that allow the females of the two species to be separated, in addition to the prosternal plate which on average has parallel and less sinuous-waisted lateral margins. The pronotum of *A. evocatus* n. sp. is composed of more numerous, thinner and less prominent striae than those present in *A. solieri* (Figs. 3, 4). The aedeagus of *A. evocatus* n. sp. it is more parallel, with a less claviform appearance and less dilated parameres anteriorly; the apex of the median lobe is conical and not rounded (Figs. 5, 6). With *A. solieri* it shares the color, even if on average less bright and cupric, the structure of the body, the antennae and the legs. The extreme similarity justifies the fact that the few differences highlighted have so far escaped the majority of researchers and that only the fortuitous case mentioned in the paragraph relating to etymology has allowed us to focus attention. The coexistence of two very similar species, “sister species”, lists numerous examples in relation to the tribe Agrilini: considerations by Curletti (2001) for the Australian fauna in relation to the “*hypoleucus* group”, *A. falsus* for French Guyana (Curletti & Brûlé, 2013), “*deyrollei* group” for Solomon Islands (Curletti 2003) and *A. senior* for South American one. Curletti (2008) hypothesizes a recent speciation, if not yet in progress, caused by alterations of the karyotype (Mayr, 1970).

The biology is currently unknown, even if it is presumable that similarly to *A. solieri*, the new species is related to shrubby Rosaceae.

ACKNOWLEDGMENTS

Thanks to Angelo Dutto (Turin, Italy) and Linda Hill (Ghemme, Italy) for the English help. The thoughts turn to the late specialist Francesco Gerini (Florence, Italy) from whose collection inspiration was found to identify this new species.

REFERENCES

- Bellamy C.L., 2008. A world catalogue and bibliography of the jewel beetles (Coleoptera: Buprestoidea). Volume 4. Agrilinae: Agrilina through Trachyini. Pensoft Publishers, Sofia-Moscow.
- Cobos A., 1986. Fauna Iberica de Coleopteros Buprestidae. Consejo Superior de Investigaciones Cientificas, 364 pp.
- Curletti G., 2001. The genus *Agrilus* in Australia. Jewel Beetles, 9: 76 pp.
- Curletti G., 2003. The genus *Agrilus* Curtis, 1825 in Solomon Islands. Bollettino Museo regionale di Scienze naturali di Torino, 20: 135–160.
- Curletti G., 2008. Matto per gli Insetti. Naturalisti si nasce, entomologi si diventa. Blu Ed., 175 pp.
- Curletti G., 2011. New species of *Agrilus* from Nicaragua and Costa Rica. Fragmenta entomologica, 42: 493–498.
- Curletti G., 2012. La foresta di Kakamega in Kenya: nuove specie del genere *Agrilus* Curtis, 1825 (Coleoptera Buprestidae). Giornale italiano di Entomologia, 13: 17–24.
- Curletti G., 2013. Considerazioni su alcune specie di *Agrilus* Curtis, 1825 presenti in Italia e su alcuni sottogeneri proposti di recente (Coleoptera, Buprestidae). Fragmenta entomologica, 45: 71–82.
- Curletti G., 2015. Three new species of Agrilini (Coleoptera Buprestidae) from Argentina and Bolivia. Giornale italiano di Entomologia, 14: 25–30.
- Curletti G., 2020. Diversity of the genus *Agrilus* Curtis (Coleoptera: Buprestidae) in South America. Revista Chilena de Entomología, 46: 425–451.
- Curletti G. & Brûlé S., 2013. Deuxième contribution à la connaissance des Agrilini de Guyane (Coleoptera, Buprestidae, Agrilinae). Magellanes ed., Ex Natura: 1–44.
- Curletti G. & Migliore L., 2013. A new species of *Agrilus* Curtis, 1825 from the Natural History Museum of Porto Alegre, Brazil. Giornale italiano di Entomologia, 13: 351–354.
- Curletti G., 2018. Appunti sugli *Agrilus* Curtis, 1825 dell'Argentina (Coleoptera, Buprestidae). Rivista piemontese di Storia naturale, 39: 317–346.
- Jendek E. & Grebennikov V., 2011. *Agrilus* (Coleoptera, Buprestidae) of East Asia. Jan Farkač, Prague, 362 pp.
- Löbl I. & Smetana A. (Eds.), 2016. Catalogue of Palaearctic Coleoptera, Vol. 3: Scarabaeoidea, Scirtoidea, Dascilloidea, Buprestoidea and Byrrhoidea, 690 pp.
- Mayr E., 1970. L'evoluzione delle specie animali. Einaudi Edizioni, 833 pp.
- Schaefer L., 1950. Les Buprestides de France. Tableaux analytiques des Coléoptères de la faune franco-rhénane. Miscellanea Entomologica, Supplement, 511 pp.