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# *Gonipterus scutellatus* s. l. in Montecristo Island (Tuscany): should its first introduction to the Palearctic region be backdated to the 19th century?
(Coleoptera Curculionidae)

**Abstract -** A population of *Gonipterus scutellatus* sensu lato (Coleoptera Curculionidae), a pest of *Eucalyptus* spp., was found on February 2011, for the first time in Tuscany, in the Integral Natural Reserve of Montecristo Island (Central Italy) as the possible result of a late 19th-century introduction on eucalyptus trees from Australia.

**Riassunto -** Gonipterus scutellatus *s. l. nell'isola di Montecristo (Toscana): il suo arrivo nella regione Paleartica dovrebbe essere retrodatato al XIX secolo? (Coleoptera Curculionidae).*
*Gonipterus scutellatus* s. l. (Coleoptera Curculionidae), un insetto dannoso per varie specie di *Eucalyptus*, è stato trovato, per la prima volta in Toscana, nel Febbraio 2011, nella Riserva Naturale Statale Integrale di Montecristo, isola del Parco Nazionale dell'Arcipelago Toscano. L'introduzione di questa specie potrebbe risalire alla fine del XIX secolo, con l'importazione di piante di *Eucalyptus* direttamente dall'Australia.

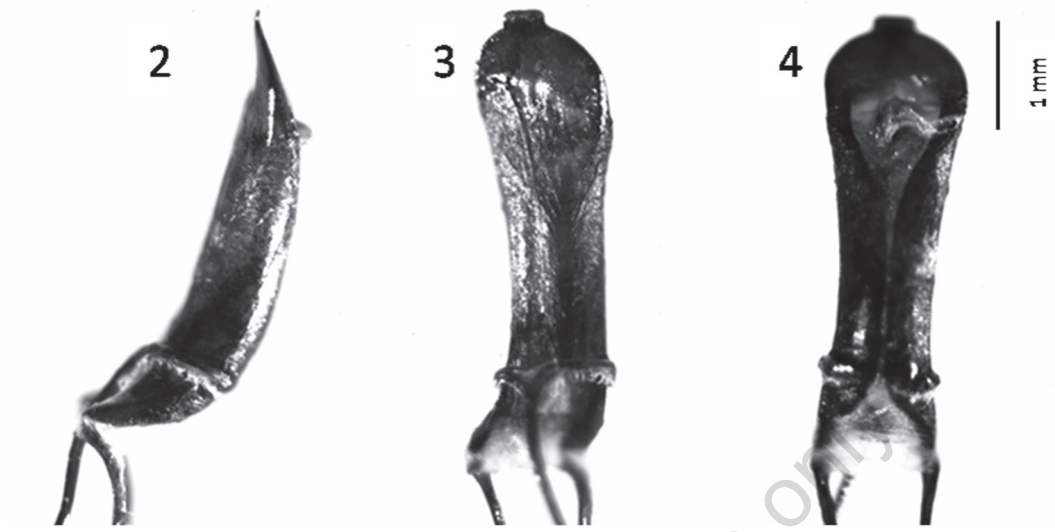
**Key-words:** *Gonipterus scutellatus*, weevil, eucalyptus, pest, introduction, Palearctic region.



Thirty specimens of eucalyptus snout beetles *Gonipterus scutellatus* Gyllenhal, 1833 sensu lato (Coleoptera Curculionidae) (fig. 1), an EPPO A2 quarantine pest of *Eucalyptus* spp. (EPPO/CABI, 1997), were collected during a session of biodiversity monitoring in Montecristo Island (an island of 10.39 km$^2$ in the Tuscan Archipelago, Central Italy), in February 2011, when adults of this species come out from hibernation (Arzone & Meotto, 1978). The specific identity of these specimens was morphologically confirmed by Dr P. Abbazzi, following the criteria of Rosado-Neto & Marques (1996), particularly the shape of aedeagus (figs. 2-4). However, according to Loch & Matsuki (2010), *G. scutellatus* is a complex of more than 10 cryptic species; thus, here we refer to the species as *G. scutellatus* s. l.. The collected specimens are now preserved at the Natural History Museum of the University of Florence.

Montecristo Island is located in the middle (about 65 km) between Monte Argentario (southern Tuscany) and Corsica Island (France) in the northern Tyrrhenian Sea (Italy); this island is exclusively composed of granite and has a peculiar shape, its profile being conical with 645 m of maximum elevation from sea level (Vignoli et al., 2007). Vegetation is predominantly characterized by low maquis and garigue. The only few indigenous trees are oaks (*Quercus ilex* L.); the other trees, concentrated in Cala Maestra inlet, are alien species,

Fig. 1. *Gonipterus scutellatus* s. l. on *Eucalyptus globulus* Labill.




Figs. 2-4. *Gonipterus scutellatus* s. l.: aedeagus in lateral, ventral and dorsal view.



including Mediterranean pines (*Pinus pinea* L., *P. halepensis* Mill.), the Asian *Ailanthus altissima* (Mill.) Swingle and eucalyptus species (Crudele et al., 2005; Vignoli et al., 2007). The population of *Eucalyptus* spp. is composed of about 150 trees, as assessed in 1971 (Pavan 1979; A. Zoccola pers. comm.), of the Tasmanian blue gum, *Eucalyptus globulus* Labill. (the most frequent species), *E. lehmanni* Press. ex Sch., and *E. cornuta* Labill.

Typical damages inflicted by *G. scutellatus* s. l. were noticed on old and coriaceous leaves of *E. globulus* (fig. 5), on which the specimens were collected. Only this species showed leaf damages in this area, confirming the weevil's preference for this plant, as reported in Arzone & Meotto (1978).

*Gonipterus scutellatus* s. l. comes from southeastern Australia and feeds on a wide range of trees, particularly *E. globulus* and manna gum, *E. viminalis* Labill. (Loch, 2008). The species has spread to other eucalyptus-growing countries, in North and South America, Western Australia, New Zealand, China, South and East Africa (OEPP/EPPO, 2005). In the Palearctic region the species, identified as *G. scutellatus*, was discovered first in Italy in 1976, then in France in 1977, and finally in Portugal and in Spain (in the 1990s) (OEPP/EPPO, 2005). Along with Tuscany, Liguria and Latium are two regions invaded by the eucalyptus beetle in Italy (Abbazzi & Maggini, 2010). In Liguria the species was recorded in 1976 (Arzone, 1976; Sampò, 1976; Arzone & Meotto, 1978; Rabasse & Perrin, 1979)

Fig. 5. Typical leaf damage caused by adults of *Gonipterus scutellatus*.

and in Latium in 1993 (Maltzeff & Colonelli, 1994).

Thirty weevils were collected in Cala Maestra inlet, the only accessible point of Montecristo Island. They showed a balanced sex ratio, as also reported in Arzone & Meotto (1978) (males=17, females=13; G=0.53, df=1, P>0.1).

We hypothesize that the species was accidentally introduced to this island by the end of the 19th century during the unique reforestation with eucalyptus trees imported directly from Australia, as made by Watson Taylor, at that time the owner of the island (Pavan, 1979; Gatteschi & Aretini, 1990). A recent introduction seems to be unlikely, since this island has been an Integral Natural Reserve since 1971. As such, it is subject to a limited anthropogenic impact: for example, the arrival and permanence of visitors are strictly forbidden without permission (Corpo Forestale dello Stato: http://www.corpoforestale.it). Indeed, knowledge on Curculionidae in this protected area is limited (Poggi, 1976; Fanfani & Groppali, 1979; Abbazzi pers. com.). Our finding seems to suggest to backdate the first introduction of *G. scutellatus* s. l. to the Palearctic region for almost a century, ours being possibly the oldest report of this pest outside its native range (OEPP/EPPO, 2005). Further studies are needed to investigate the distribution of the species in the continental Tuscany and to identify time and pathway of this introduction, using also genetic techniques. Comparisons of aedeagi with specimens from Latium, Liguria and France should be made to evaluate the similarity among these populations.

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