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Oldest record of *Cyrtogenius luteus* (Blandford)
(Coleoptera: Curculionidae: Scolytinae) from South America
with notes on its distribution in Brazil

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Oldest record of *Cyrtogenius luteus* (Blandford) (Coleoptera: Curculionidae: Scolytinae) from South America with notes on its distribution in Brazil

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Abstract. *Cyrtogenius luteus* (Blandford) (Coleoptera: Curculionidae: Scolytinae), an exotic species of Asian origin, is reported from Brazil for the first time. The oldest records from Brazil predate previous records from South America (Uruguay) by three years.

Key words. Introduced species, attractants, host plants.

Resumo. *Cyrtogenius luteus* (Blandford) (Coleoptera: Curculionidae: Scolytinae), uma espécie exótica de origem asiática, é relatada para o Brasil pela primeira vez. Os registros mais antigos do Brasil antecedem aqueles relatados para a América do Sul (Uruguai) em três anos.

Palavras chave. Espécie introduzida, atrativos, plantas hospedeiras.

Introduction

Over the past few decades the rise in international trade has led to a clear increase in the number of exotic pests detected in ports of entry and in the establishment of new exotic species worldwide, including bark and ambrosia beetles (Coleoptera: Curculionidae: Scolytinae) (Aukema et al. 2010; Haack and Rabaglia 2013). This apparently holds true also for Brazil where recently recorded scolytine exotic forest pests include *Amasa truncata* (Erichson) from cultivated stands of *Eucalyptus* (Flechtmann and Cognato 2011) and *Xylosandrus crassiusculus* (Motschulsky) from native forests near ports of entry (Flechtmann and Atkinson 2016).

We report here for the first time in Brazil the occurrence of *Cyrtogenius luteus* (Blandford). This is a bark beetle species of Asian origin (Wood and Bright 1992), and recently reported as introduced in Uruguay (Gómez et al. 2012) and Italy (Faccoli et al. 2012), significantly increasing the range of its natural distribution. According to the available literature, *C. luteus* primarily breeds in pines but there are records from other Pinaceae (*Larix* Miller, *Picea* A. Dietrich) (Wood and Bright 1992; Gómez et al. 2012).

Materials and Methods

As part of a long-term survey of bark and ambrosia beetles in Brazil we have been collecting in a variety of habitats throughout Brazil for more than 20 years. Trapping has mainly been with ethanol-baited flight intercept traps. Voucher specimens are deposited in the Museu de Entomologia da FEIS/UNESP, Ilha Solteira, São Paulo, Brazil (MEFEIS) and the University of Texas Insect Collection, Austin, Texas, U.S.A. (UTIC).

Results and Discussion

Specimens of *C. luteus* were collected from the following localities.

SÃO PAULO: Lençóis Paulista, Fazenda Rio Claro, Duraflora, cerrado fragment, 22°47'32.51"S 49°1'9.29"W, α -pinene-baited FIT, 29-IX-2006, C.A.H. Flechtmann (MEFEIS, 1); Lençóis Paulista, Fazenda Rio Claro, Duraflora, *Eucalyptus grandis* stand planted Jul 2001, 22°49'19.0"S 48°53'36.5"W, pheromone/kairomone-baited FIT, 23-II–27-IV-2007, C.A.H. Flechtmann (MEFEIS, 5).

PARANÁ: Telêmaco Borba, Fazenda Monte Alegre, Klabin, *Pinus taeda* stand planted Dec 1989, 24°18'56.2"S 50°30'37.5"W, pheromone/kairomone-baited FIT, 14-VI-2006–18-V-2007, C.A.H. Flechtmann (MEFEIS, 94, UTIC, 20); Telêmaco Borba, Fazenda Monte Alegre, Klabin, mixed araucaria forest fragment, 24°19'10"S 50°34'15"W, pheromone/kairomone-baited FIT, 09-III-2007, C.A.H. Flechtmann (MEFEIS, 5).

RIO GRANDE DO SUL: Santa Maria, Fundação Estadual de Pesquisa Agropecuária, naturally regenerated *Pinus taeda* stand planted ca. 1985, 29°40'8.03"S 53°55'16.90"W, ethanol-baited FIT, 17-XI-2011–29-V-2012, C.A.H. Flechtmann (MEFEIS, 10).

In Telêmaco Borba, a variety of lures were used. Most specimens of *C. luteus* were captured in traps baited with ethanol + α -pinene (39 specimens), followed by those with ethanol + α -pinene + sulcatol (31), α -pinene alone (22), and α -pinene + sulcatol (19). Traps baited with sulcatol alone or sulcatol + ethanol trapped only one specimen each, while traps baited with only ethanol had zero catches. These results suggest that the kairomone α -pinene is the major attractant among those tested and may be synergized by ethanol. Similar results were obtained by other researchers, which used α -pinene in combination with other kairomones or pheromones (Fan et al. 2010; Faccoli et al. 2012; Gómez 2015). The sex ratio of trapped *C. luteus* in Telêmaco Borba was very close to 1:1, in all combinations of lures. At this site sampling was done for one full year and *C. luteus* was trapped during the entire period. However, for most localities the majority of the specimens were trapped in March, a month of high temperatures. Similar results were obtained in Uruguay (Gómez et al. 2017). In Santa Maria we set traps at heights varying from 0.5 m until 6.0 above ground, at 0.5 m increments, and specimens were evenly trapped between 1.0 m and 6.0 m height, showing there is no flight height preference in this species.

Even though the literature shows there is a high association of *C. luteus* with Pinaceae, we trapped specimens in areas dominated by broadleaf trees: A eucalyptus stand, a cerrado fragment, a savanna formation (Lençóis Paulista), and also in an araucaria forest fragment (Telêmaco Borba). It is possible that *C. luteus* is colonizing the native Brazilian conifer, *Araucaria angustifolia* (Bert.) (Araucariaceae), present in the forest named for it. *Eucalyptus*, however, belongs to the Myrtaceae and there are no conifers in the Brazilian cerrado. Both of these sites are more than 30 km from the nearest pine plantations (Agudos, São Paulo, where we trapped extensively from 1982 to 1997 without finding *C. luteus*). It is also possible *C. luteus* is not strictly associated with pines, as indicated by Murayama (1957) who cited *Cornus controversa* Hemsl. (Cornaceae) as a host. Despite the fact that *C. luteus* was found in different localities, there was no obvious damage to live trees, as was observed in Italy (Faccoli et al. 2012). *Cyrtogenius luteus* is considered to be able to attack live trees, but this happens very rarely and it is considered a secondary species (Chen et al. 1999).

In most cases, it is very difficult to determine how and when an exotic species was introduced into a new locality. In many cases the species is established several years before it is first collected and reported (Haack and Rabaglia 2013). We also trapped between 1999 and 2001 in another stand of *Pinus taeda* L. in Telêmaco Borba, in the vicinity of the pine stand where *C. luteus* was trapped (ca. 13 km), with similar lures used to trap this species in this present report (2006 – 2007) and no specimens were trapped at that time (Flechtmann, unpublished). Our earliest records of *C. luteus* in Brazil date from 2006 from the states of São Paulo and Paraná, three years earlier than those reported from Uruguay (Gómez et al. 2012). It is likely that the initial introduction into South America may have been into Brazil, possibly in São Paulo (most important ports) and spread southward to Rio Grande do Sul and later Uruguay.

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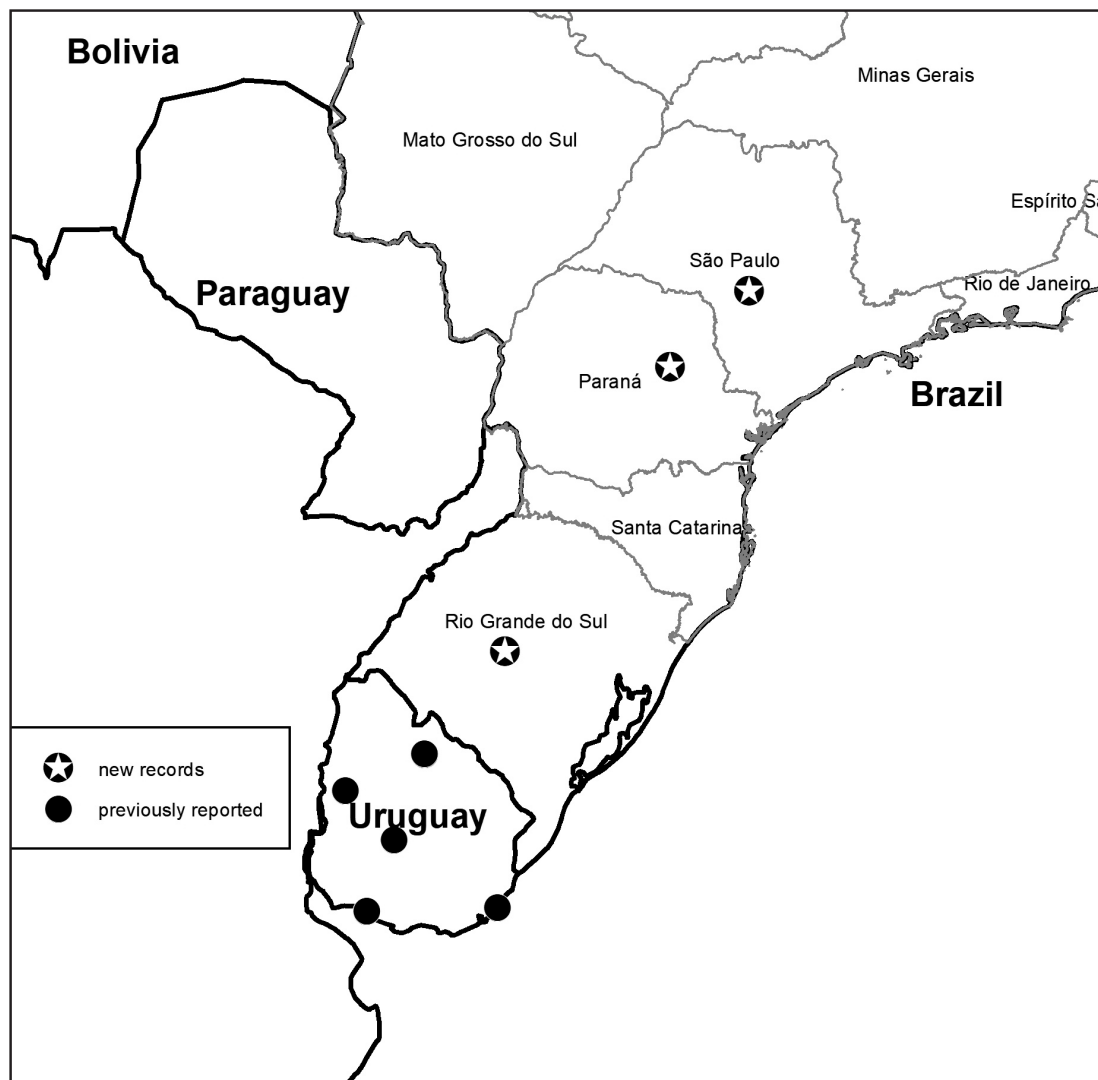


Figure 1. New and previously reported localities for *Cyrtogenius luteus* in South America.

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