

First record of *Coenosia attenuata* Stein (Diptera, Muscidae) from Chile, with biological notes

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ABSTRACT. First record of *Coenosia attenuata* Stein (Diptera, Muscidae) from Chile, with biological notes. *Coenosia* Meigen (Muscidae, Coenosiinae) species are known as predators of other insects and play an important role as potential biocontrol agents. Six species of *Coenosia* have been recorded in Europe preying on insects pests, one of them is *Coenosia attenuata* Stein. This species was recently recorded from the Neotropical Region and is herein recorded for the first time to Chile. Biological notes were included.

KEYWORDS. Chile; Coenosiinae; first record; hunter fly.

RESUMO. Novo registro de *Coenosia attenuata* Stein (Diptera, Muscidae) no Chile com notas biológicas. As espécies de *Coenosia* Meigen (Muscidae, Coenosiinae) são conhecidas predadoras de outros insetos, apresentando um papel importante como potenciais agentes de controle biológico. Seis espécies de *Coenosia* têm sido registradas na Europa predando insetos praga, uma delas é *Coenosia attenuata* Stein. Esta espécie foi recentemente registrada na Região Neotropical e é aqui registrada pela primeira vez no Chile. Notas biológicas são incluídas.

PALAVRAS-CHAVE. Chile; Coenosiinae; mosca-caçadora; primeiro registro.

Coenosia Meigen (Muscidae) is a Coenosiinae genus widespread in all regions, known as predators of other insects, both on the larval and adult stages. Because of its predacious habits *Coenosia* species play an important role as potential biocontrol agents. Six species of *Coenosia* – *C. atra* Meigen, 1830; *C. attenuata* Stein, 1902; *C. humilis* Meigen, 1826; *C. strigipes* Stein, 1916; *C. tigrina* Fabricius, 1775 and *C. testacea* Robineau-Desvoidy, 1830 – have been recorded in Europe as members of the “greenhouse predator community”, preying on white flies, black fungus gnats and leaf-mining flies (Kühne 2000). Within 39 Neotropical species, 14 occur on Chile (Carvalho *et al.* 2005). This communication records a new predacious *Coenosia* to Chile and gives some biological notes on its behavior.

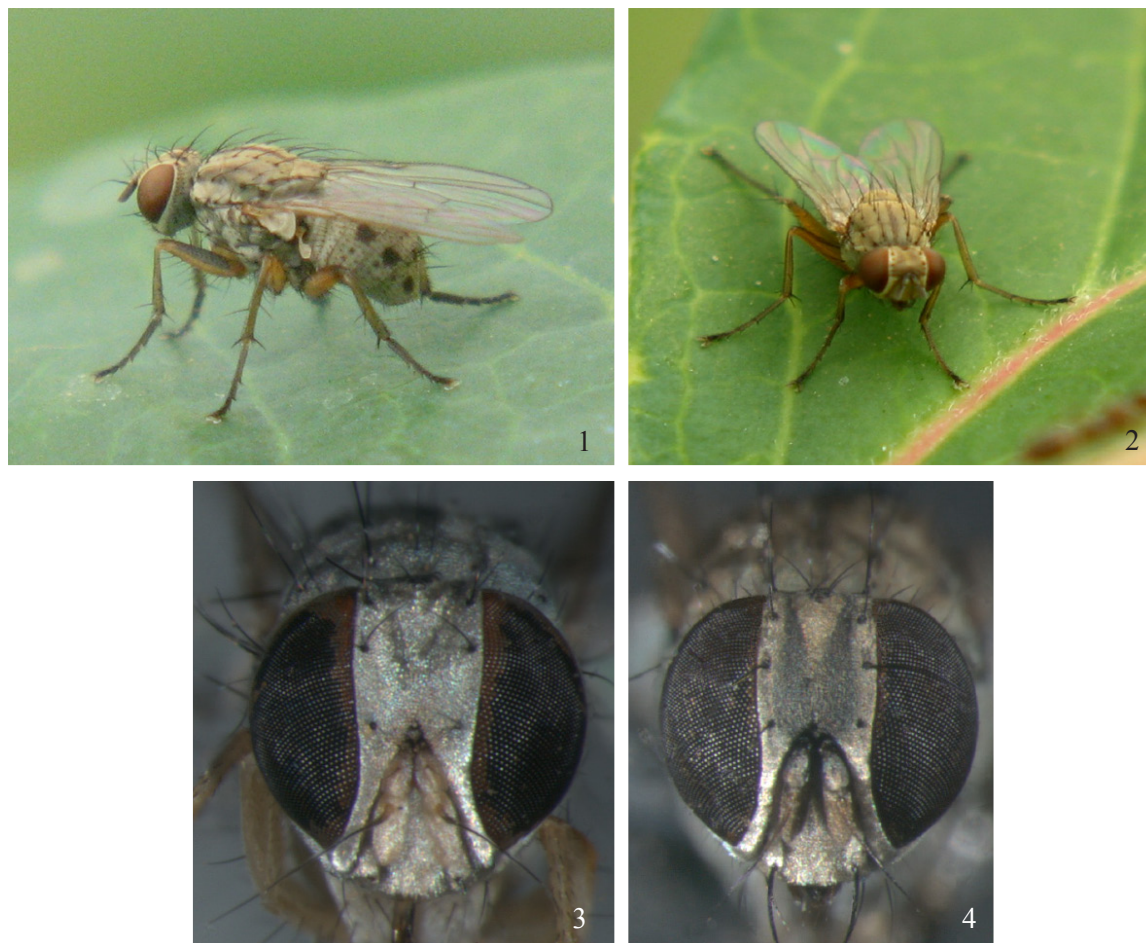
The collections of samples analyzed were carried out at the Vicuña Experimental Centre (26°30'S, 70°41'W) and Pan de Azúcar Experimental Farm (30°41'S, 71°14'W) both located in the Elqui Province, Coquimbo Region and belonging to the Agricultural Research Institute, Intihuasi Research Regional Centre. Numerous hunter flies samples were found in blueberries (*Vaccinium corymbosum* L.) grown at the Vicuña Experimental Centre, and in melons grown in greenhouses at the Pan de Azúcar Experimental Farm. The color photos of male and female heads were made using a Leica DFC 420 camera and Syncroscopy Auto-Montage with a Leica MZ16 microscope.

The material collected was identified as *Coenosia attenuata* Stein, herein recorded for the first time to Chile.

This is a native species to the Old World (Southern Europe) widespread throughout Europe, Asia, Africa and Australia. Only recently the species was firstly recorded in the New World, in South America (Ecuador and Peru) by Martínez-Sánchez *et al.* (2002). And, more recently, Pérez (2006) first reported it in horticultural greenhouse crops in the Bogotá Plateau (Colombia). The author gave a morphological description of adult male and female.

In North America, Hoebeke *et al.* (2003) first reported *C. attenuata* to North America based on collections from the USA and Canada, where adult flies were collected from commercial greenhouses in counties of New York State and Ontario Province. The material was collected in 2002 but *C. attenuata* was first noticed in October 1999 in a commercial greenhouse in New York. Other two predacious species, *C. tigrina* and *C. humilis*, are known from North America, both presumably introduced in the early mid 1800s (Hoebeke *et al.* 2003).

C. attenuata as well as other species of *Coenosia* has shown promise as a biological control agent of fungus gnats, shore flies, and other common greenhouse pests (Hoebeke *et al.* 2003). In colder climates, this fly is known as a very effective predator of various insects and is usually seen in greenhouses attacking pests. It is widely known under the name “killer fly” or “hunter fly” as a potential biological control agent against some plant and other pests (Cock 1993; Gerling *et al.* 2001; Parrella 2008; among others). Hoebeke *et al.* (2003) redescribed the species and also presented a



Figs. 1–4. *Coenosia attenuata* Stein. 1–2. Adult female; 3. Male, head, frontal view; 4. Female, head, frontal view

summary of the available European literature on its biology and habits.

The fly is small, about 2.5–4.0mm in length (male smaller than females), brownish grey in ground color, with frons parallel sided in both sexes (male dichoptic); legs yellow in male and black in female. Males have a strong silvery-white frontal vitta, face, parafacial and fronto-orbital plate (Fig. 3). In females these areas are brownish, with very few pollinosity, contrasting with the golden pollinosity of the ocellar triangle, seen under certain lights (Fig 2.).

The specimens of *C. attenuata* collected in the Vicuña area were found predated black fungus gnats flies (Sciaridae, Diptera) on blueberries plants grown in pots. On the other hand, the specimens collected in the Pan de Azúcar area were found predated greenhouse adult white flies (*Trialeurodes vaporariorum* W., Aleyrodidae-Hemiptera) and leaf mining flies (*Liriomyza hudibrensis* B, Agromyzidae-Diptera) on melon plants grown in greenhouses.

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