



## Taxonomic revision of the fruit fly genus *Neoceratitis* Hendel (Diptera: Tephritidae)

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### Abstract

*Neoceratitis* is revised to include six species. *N. albisetata*, from Madagascar, is described as new. *Trirhithrum lycii* var. *minimum* Bezzi, 1924 is a junior synonym of *Ceratitidis lycii* Coquillett, 1901, new synonym. All known and suspected host associations are within the family Solanaceae, with one species (*N. cyanescens*) infesting tomatoes and several species of *Solanum*, whereas the other species with known hosts are associated with *Lycium* spp. *Neoceratitis* is probably similar to *Trirhithrum* Bezzi and particularly to the little known *Paratrirhithrum* Shiraki. Redescriptions (description in the case of the new species) and illustrations are provided for all the species, and a key to all the species is also provided.

**Key words:** fruit flies, *Neoceratitis*, Ceratitidina, Afrotropical, Palearctic, Oriental

### Introduction

Tephritidae are picture-winged flies of variable size and worldwide distribution. Although commonly named 'fruit flies', the larvae of some species develop in other parts of the host plant, including flowers, seeds and stems. Fruit flies of economic significance were treated by White and Elson-Harris (1994), and the currently acknowledged classification is presented by Norrbom *et al.* (1999) and Korneyev (1999). The larvae of most Ceratitidina species develop in fleshy fruit, and several species of agricultural importance are known, especially within the genera *Ceratitidis* McLeay, *Capparimyia* Bezzi, *Neoceratitis* Hendel and *Trirhithrum* Bezzi. Several of the ceratitidine genera have recently been revised systematically (White *et al.* 2003; De Meyer & Freidberg 2005 and references therein for *Ceratitidis*; De Meyer & Freidberg 2006; De Meyer 2006, 2009).

The genus *Neoceratitis* Hendel is predominantly an Afrotropical group, developing in the fruits of Solanaceae. One species, *N. cyanescens* (Bezzi), is considered of major economic significance as it infests tomato and other commercially grown Solanaceae (White & Elson-Harris 1994; Quilici & Jeuffrault 2001). Material in collections is sparse and the genus has never been the subject of a revision. Representatives of this genus are usually darkly coloured flies of small size, with a characteristic silvery microtrichia pattern on the scutum. They seem to be closely related to other ceratitidine genera, in particular *Trirhithrum* and *Paratrirhithrum* Shiraki.

In this paper we revise *Neoceratitis*, re-describe the genus and the previously known species, and describe one new species. Specific commentaries on nomenclatorial or taxonomic issues are presented under each species wherever this is deemed necessary. Host plant specificity is briefly discussed.

### Taxonomic history

*Neoceratitis* was established by Hendel (1927) for a single Asian species, *Ceratitidis asiatica* Becker. Hendel differentiated it from *Ceratitidis* by the shape of the frons and face in lateral view, and some minor differences in the wing venation. Later, the same author (Hendel 1931) described another monotypic taxon, *Trirhithromyia* (as a subgenus