

Abstract

The leafminer *Coptodisca* sp. (Lepidoptera: Heliozelidae), recently recorded for the first time in Europe on Italian black and common walnut trees, is shown to be the North-American *Coptodisca lucifluella* (Clemens) based on morphological (forewing pattern) and molecular (cytochrome oxidase c subunit I sequence) evidence. The phylogenetic relatedness of three species feeding on Juglandaceae suggests that *C. lucifluella* has likely shifted, within the same host plant family, from its original North-American hosts *Carya* spp. to *Juglans* spp. Over the few years since its detection, it has established in many regions in Italy and has become a widespread and dominant invasive species. The leafminer completes three to four generations per year, with the first adults emerging in April–May and mature larvae of the last generation starting hibernation in September–October. Although a high larval mortality was recorded in field observations (up to 74%), the impact of the pest was substantial with all leaves infested at the end of the last generation in all 3 years tested. The distribution of the leafminer in the canopy was homogeneous. The species is redescribed and illustrated, a lectotype is designated and a new synonymy is established.

Bernardo U, Nieuwerkerken EJ Van, Sasso R, Gebiola M, Gualtieri L, Viggiani G 2015. Characterization, distribution, biology and impact on Italian walnut orchards of the invasive North-American leafminer *Coptodisca lucifluella* (Lepidoptera: Heliozelidae). Bulletin of Entomological Research, online (in press). doi:10.1017/S0007485314000947