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SHORT COMMUNICATION

The first record of the *Azolla* frond weevil *Stenopelmus rufinasus* (Curculionidae: Brachycerinae: Tanysphyrini) in Israel

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Collecting of the ground-dwelling weevils in Israel was undertaken by me in 2009–2010 during a survey of Israeli fauna and flora within the framework of the Israel Taxonomy Initiative. Weevils were collected by pitfall trapping at 28 sites around the country. During the survey, two females of the semi-aquatic *Azolla* frond weevil *Stenopelmus rufinasus* Gyllenhal, 1835 were collected. This is the first record of this species in Israel and in the Western Asia.

Stenopelmus rufinasus was considered previously a member of Erirhininae, but recently it has been treated as a member of the sister subfamily Brachycerinae in the tribe Tanysphirini, which includes mainly aquatic and semi-aquatic taxa (Oberprieler 2014). *Stenopelmus rufinasus* is a small (1.6–2.0 mm long) stout weevil, with a short reddish rostrum not longer than the pronotum, and geniculate antennae with a 7-segmented flagellum and a distinct club. Its body is covered dorsally by white yellow and brown, and ventrally by white scales (Figs 1, 2).

Stenopelmus rufinasus feeds and develops on several species of the fern genus *Azolla* (Salviniaceae) (Richerson & Grigarick 1967; Hill 1998). The weevil is indigenous to the southern part of the USA and Mexico (O'Brien & Anderson 1996). It was also recorded from Argentina and Paraguay, but it is unclear whether it is indigenous or introduced there (Hill 1998). *Stenopelmus rufinasus* has been occasionally introduced in Europe (Belgium, France, Germany, Ireland, Italy, The Netherlands, Portugal, Spain, UK and Ukraine) (Caldara 2011; Carrapiço *et al*. 2011), and in Japan (Caldara 2011). In France it was collected for the first time in 1898 (Bedel 1901), although possibly became established there earlier in the 19th century, probably with imported *Azolla* (Janson 1921). It was introduced to South Africa, Mozambique and Zimbabwe to control the invasive red water fern, *Azolla filiculoides* (Lamark) (Cilliers *et al*. 2003; Hill 1998; McConnachie *et al*. 2004; Hill & McConnachie 2009).

Azolla filiculoides is a floating water fern indigenous to America, highly productive and ecologically flexible, introduced in Israel as an ornamental plant for aquariums (Dufour-Dror 2010, 2014). On many occasions it accidentally escaped

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Figs 1–3: (1) *Stenopelmus rufinasus* (Sede Boqer), dorsal view; (2) *S. rufinasus* (Berekhat Ya'ar), lateral view; (3) Berekhat Ya'ar, swamp, 17.v.2015 (courtesy Noam Avitzel).

and invaded natural habitats. Thus, it was found in the streams Nahal Alexander in the 1980s and Nahal Yarqon in 2009 (Central Coastal Plain) (Dufour-Dror 2010; Feinbrun-Dothan & Danin 1991), Bar'on winter pool (Golan Heights) in the 1980s (Feinbrun-Dothan & Danin 1991), and Berekhat Ya'ar Swamp (Central Coastal Plain) in 2010 (Dufour-Dror 2014). *Azolla filiculoides* is found sporadically in water ponds throughout the Galilee (J.-M. Dufour-Dror and D. Milstein, pers. comm.).

In Israel, one specimen of *S. rufinasus* was collected by me in Berekhat Ya'ar Nature Reserve, comprising a swamp (Fig. 3), on 20.vii.2010, in a pitfall trap close to the water (32°24'39"N 34°45'02"E). This record corresponds to the aforementioned outbreak of *A. filiculoides* in Berekhat Ya'ar in 2010. The second specimen was collected on 13.iv.2010 in a completely unexpected place in the Central Negev desert, at the bottom of the upper Nahal Qarqash, opposite to the entrance to Midreshet Sede Boqer (30°51'15"N 34°46'08"E). The place is extremely arid, covered by a typical desert vegetation and has no water sources or even temporary pools. It is therefore unclear how the weevil arrived and how it survived there. The only possible suggestion is that it escaped from a local aquarium. The other possibility is that the second specimen is also from Berekhat Ya'ar, but was mislabelled during sorting of a catch from different traps.

No additional specimens of *S. rufinasus* have been found until now, despite a few attempts made in Berekhat Ya'ar (where no *A. filiculoides* is seen anymore) and in the ornamental fish ponds of the kibbutz HaZorea' (dense population of *A. filiculoides*). The origin of the weevil remains unclear, and so is the question whether it succeeded to establish a population or disappeared after a short outbreak.

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