

## SHORT NOTES

# The invasive occurrence of the Mediterranean dwarfspider *Diplocephalus graecus* (O.-P. Cambridge, 1872) in Belgium (Araneae: Linyphiidae)

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KEY WORDS: *Diplocephalus graecus*, Araneae, first occurrence, Mediterranean species, coastal dunes, climate change, invasion, expansion

*Diplocephalus graecus* (O.-P. Cambridge, 1872) is known as one of the most common erigonid spiders of the European Mediterranean region (9). Until now the species has been recorded from Northern Africa (Algeria, Morocco, Tunisia; 9, 10, 16, 17, 29, 21), Southern (France, Italy, Spain, Greece; 11, 12, 13, 14, 15, 16, 18, 19, 20, 22) and Eastern Europe (Romania; 18), reaching its northern limit near Paris (17, 20). The recent captures in Belgium indicate that its range is expanding further to the north.

Males measure 1.5 to 1.9 mm, females are a little larger: 1.8 to 2.2 mm. *D. graecus* is a brownish species with a dark grey abdomen; chelicerae and legs are yellowish to orange-brown and the sternum is of a darker brown. The placements of the trichobotrium and spines on the legs are characteristic for the genus *Diplocephalus*. As in most members of the Erigoninae subfamily, males of this species are easily distinguished by the shape of the male cephalic tubercle (Fig. 1A). Certainty about identification can be gained by checking the shape of the male palpal tibia, which lacks typical apophyses, in contrast to other European members of the genus (Fig. 1B). The epigyne of the females has a typical wide median fissure with median constriction (Fig. 1C).

In the Mediterranean region, *D. graecus* occurs in a wide variety of man-made and man-influenced habitats such as gardens, pastures, arable fields and short mountain grasslands. The species is also found in more natural habitats such as maquis, rough grassland, lake-borders and saltmarshes (9, 16, 17).

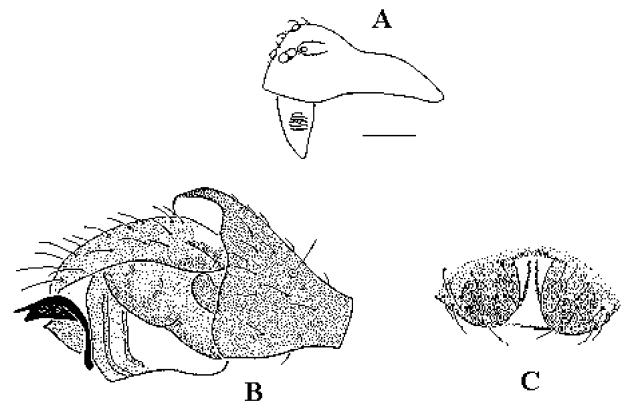


Fig. 1. – Male cephalothorax (A), palpal structure (B) and epigyne (C) of *Diplocephalus graecus* (O.-P.-Cambridge) – scale line=0.2 mm (9).

Most individuals in Belgium were found in pitfall traps used for monitoring studies in the Flemish coastal dunes. Another specimen was captured with an arboreal eclector trap (3) in a recently installed forest reserve in the Province of East-Flanders. The first individuals were collected in the winter of 1999 in the Westhoek dune reserve at De Panne (18 males and two females in the period between September 10<sup>th</sup>, 1999 and February 6<sup>th</sup>, 2000) and in the fossil dunes of Ghyvelde-Adinkerke, on the French-Belgian Border (20 males in the period between October 12<sup>th</sup>, 1999 and February 6<sup>th</sup>, 2000). During this period, no individuals were collected in other sampled dune areas in Nieuwpoort and Oostduinkerke. Surprisingly, the following summer one male was found on a dead tree-trunk in an open Beech-forest (*Fagus sylvatica*) without substantial undergrowth (Kluisbergen). In October and November of 2000, *D. graecus* (three males) was for the first time found in the grey dune-area of the IJzer-estuary in Nieuwpoort, although this site has been monitored for terrestrial invertebrates since 1990 (2). During the same period, 15 males were captured in a dune slack of the Westhoek Nature Reserve. All individuals,

except for one, were captured in thermophilous, sandy habitats (dune slacks, grey dunes, short dune grasslands and recently cut scrubland with a large amount of bare sand). However, no other specimens were collected in other suitable habitats (heathland, inland dunes) sampled elsewhere in Belgium from early 1999 until October 2000 (8,12).

In Fig. 2 we visualise the captures of the species in Belgium. If we pool our data from the two years, it becomes clear that the species reaches its highest activity in the winter-period, although it can be present during summer and autumn (Fig. 3). For the Mediterranean region the same trend can be recognized: most individuals of *D. graecus* were collected during the period October-April (9). In general, summer records are very rare in the south (9,20), which makes our phenology data highly concordant with those from southern countries.

Our data show that the species expands its range northward along the coastline in an invasive way, a phenomenon also observed in other southern insect and arachnid species (4,5,6,7,21). Our observations and the fact that in southern regions *D. graecus* occurs in disturbed habitats, indicate that the species has a high dispersal power by

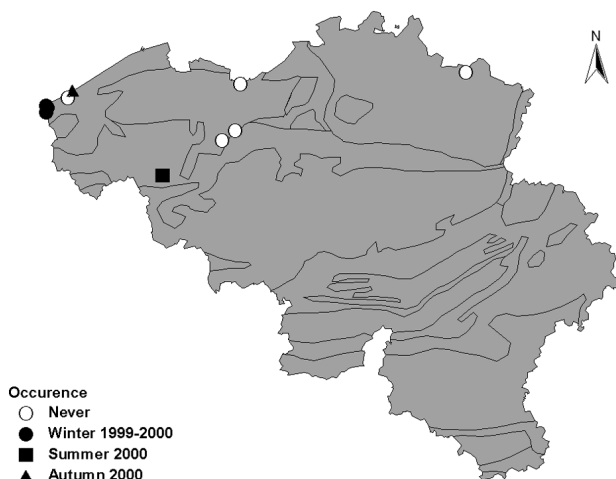


Fig. 2. – Captures of *Diplocephalus graecus* in Belgium in the sampled suitable habitats in the period 1999-2000.

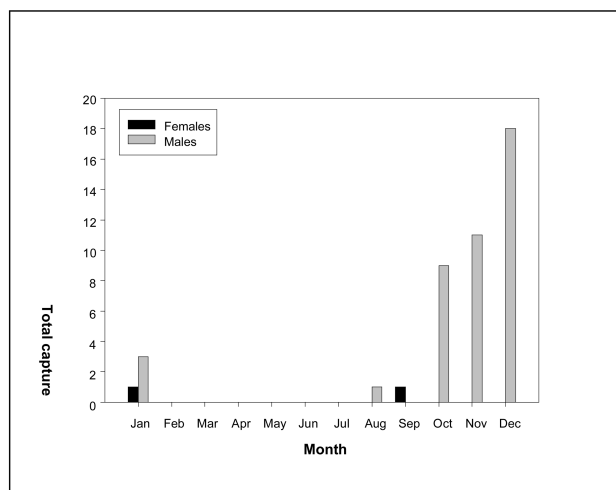


Fig. 3. – Phenology of *Diplocephalus graecus* in Belgium in the period 1999-2000.

way of ballooning. The milder winter-temperatures along the coast in comparison with those of inland habitats (1), probably enables the species to survive and spread in our region. Because of its assumed high dispersal capacities, the follow-up of its expansion should reveal interesting data on climate change and its effect on the spread of southern species.

We would like to thank Dr. R. Bosmans for checking the identification.

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*Received: February 18, 2002*

*Accepted: April 20, 2002*