

Aggressive interactions between a sand lizard *Lacerta agilis* and a common wall lizard *Podarcis muralis* in England

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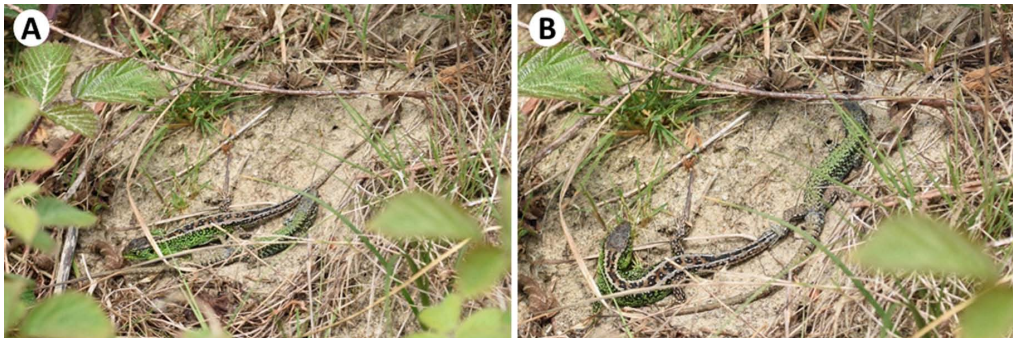
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In Germany, the native sand lizard (*Lacerta agilis*) and the invasive alien wall lizard (*Podarcis muralis*) have been observed to have strongly overlapping local distributions with a very high rate of overlap in substrate selection, especially between the males of the two species (Heym et al., 2013). However, interspecific interactions were apparently rare (mainly basking at a distance). Nevertheless, in England the native *L. agilis* has been observed to respond to the scent of *P. muralis* with direct aggression while in another native lizard species, *Zootoca vivipara*, the response was only avoidance (Williams et al., 2020).

In Poole, Dorset (England) in one of the few areas where both *L. agilis* and the alien *P. muralis* can be observed in close proximity, I made further observations that confirm the aggressive responses between the two species. At around 13:00 h on 29th April 2019, I observed an adult, male wall lizard. It was basking on a low, sandy bank backed by cliffs adjacent to a busy footpath close to the sea, on a sandy area between the vegetation, facing slightly up the gradient

and away from the footpath. An adult, male sand lizard in breeding condition then approached the area from higher up the slope and slowly crawled alongside the wall lizard, close enough for the back legs of the two lizards to be in contact, the sand lizard facing down the slope towards the footpath (Fig. 1A). Almost at once the wall lizard began to move away, taking a couple of paces up the slope before stopping and turning its head to look in the direction of the new arrival. At this time the wall lizard was standing on the tail of the sand lizard. The sand lizard then turned towards the departing lizard which then moved off again a few centimetres up the slope (Fig. 1B).

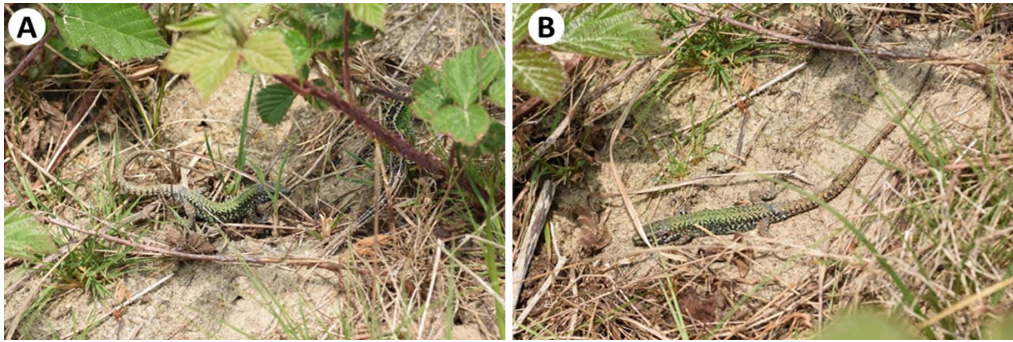
The sand lizard then followed after the wall lizard which was moving away slowly. The larger sand lizard then grasped the tail of the other lizard in its jaws, about 3 cm from the tail tip. The wall lizard continued on for another couple of paces and appeared to be dragging the sand lizard along behind it before turning back down the slope to face towards its attacker (Figs. 2A & B).



Figures 1A & B. Initial interactions between a male *L. agilis* and *P. muralis*- **A.** The male *L. agilis* has arrived to lie parallel to the basking *P. muralis*, **B.** The male *P. muralis* begins to move away



Figures 2A & B. Further interaction between the male *L. agilis* and *P. muralis*- **A.** The male *L. agilis* chases after the male *P. muralis* and grasps its tail, **B.** The male *P. muralis* turns to face the *L. agilis*



Figures 3A & B. Final interactions between the male *L. agilis* and *P. muralis* - **A.** The male *P. muralis* has lunged at the male *L. agilis* which is now in retreat and soon to disappear, **B.** The male *P. muralis* has now returned to its original basking spot and is basking

The wall lizard, with an open gape, then lunged towards the sand lizard which immediately released the tail and moved rapidly up the slope and away from the confrontation by 7 to 10 cm. The wall lizard inflated its body and slowly waved its tail from side to side whilst watching the departure of the sand lizard up the slope (Figs. 3A) and then out of view. Within a few seconds of this, the wall lizard had returned to the original basking spot, this time facing down the slope, towards the footpath (Fig. 3B).

Despite watching for a further ten minutes the male sand lizard was not seen again and the wall lizard remained, eyes closed, basking in the sunshine. It is clear from these observations that the males of the two species, in the breeding season, are aggressive towards each other and that at least in this case the wall lizard was able to defend its basking spot against significant aggression from a larger male sand lizard.

REFERENCES

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Accepted: 14 October 2020