



Green Lizards and Wall Lizards on Bournemouth cliffs

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AS well as Britain's six native reptile species, there are a handful of exotic species dotted around the country, which have almost all clearly originated from deliberate or accidental releases. Wall Lizards, Italian Wall Lizards, Green Lizards, Aesculapian Snakes, Dice Snakes, garter snakes of various kinds, European Pond Terrapins, and Red-eared Terrapins are among those that have been reported over the last century (Arnold, 1995; Beebee & Griffiths, 2000; Fitter, 1959). Some populations have not persisted, but others appear to be surviving quite well, particularly in southern English counties where the summers are warmer. On the whole, these naturalised species are confined to isolated locations and they do not appear to be spreading. Nevertheless, we know so little about most of them that we cannot say how well they are doing. The Wall Lizard certainly occurs most widely, and clearly has no problems breeding in our climate. On the south coast, there are known Wall Lizard populations on Portland, the Purbeck coast, Poole Bay cliffs, Shoreham and

throughout the town of Ventnor on the Isle of Wight. Green Lizards have historically been released in several south coast locations, with limited success, but a thriving population was recently discovered on Bournemouth's cliffs and appears to have no problems breeding and persisting in the south coast's sunny climate.

During July 2002, I was walking eastwards from Boscombe Pier to Hengistbury Head, alternating between the clifftop paths and the promenade below. About late morning, I traversed the cliff via a zig-zag path and thought I saw a female Wall Lizard. I 'knew' the nearest population was a few miles to the west, but I wrote a hesitant entry in my notebook. Then, to my amazement, I saw what was quite clearly a male Green Lizard. It was vivid green with fine black speckles, about 30 cm total length, and with a dark tail that looked regrown. I didn't notice a blue throat but I was pretty certain it was a male. I immediately made some phone calls to relay the news and check if anyone at The HCT knew about

this, but no-one did. As I continued along the zigzag, checking walls as I went, I did see some Wall Lizards, the males tending to be bright green mottled black. So it appeared that in one visit I had 'discovered' new populations of two species of lizard. Within a week or so, a local naturalist visited our office and said that he too had recently seen Wall Lizards and a single Green Lizard at the same location. He had been visiting the location for years and had never seen either species before, except for a possible Wall Lizard sighting about 1995. We began to wonder how long these species had been there. Were they recently introduced or long established?

Bournemouth and Poole Bay cliffs provide a wide variety of habitats, from bare sand, dune grasses, native herbs and shrubs, to countless introduced plants and trees. Hottentot fig is a severe problem, smothering and displacing everything; elsewhere Pampas grass, Holm oak, bamboo, yucca, garden privet, and sycamore are locally abundant. Sand Lizards are confined largely to marram areas from Boscombe Pier to Sandbanks, and do not appear to exist east of Boscombe Pier, despite there being suitable habitat. Common Lizards are fairly ubiquitous on the cliffs and clifftops, Slow-worms are remarkably uncommon, and snakes are virtually or actually absent. The 'new' Wall Lizard and Green Lizard area has a diversity of native and exotic scrub, seaside daisies, sand and gravel exposures, dune grasses, and a series of walls, mostly pointed. An added benefit of the cliffs is their southerly aspect and shelter provided by the chines (enabling breeding in Clouded Yellow Butterflies as well as exotic lizards; M. Skelton, pers. comm.).

Wanting to know more about the extent and origin of these lizards, I embarked on a regime of regular visits throughout the summer and autumn of 2002, and regularly saw Wall Lizards (sometimes over 30 animals), including numerous juveniles. They weren't confined to walls either; bare sand slopes, grass and shrubs seemed to be equally suitable. They were not too fussy about the weather, and amazingly a few juveniles and the odd adult could be seen right through the winter in temperatures as low as 4 or 5°C. I got a couple more glimpses of Green Lizards that year,

including a second smaller animal, but always on the same zigzag path. However, Michael Skelton, a local naturalist, saw them elsewhere within 100m of the zig-zag and photographed one at the clifftop on a lump of concrete where I'd seen only Wall Lizards before. At that point, I still thought there may only have been a handful of animals. It wasn't until April 2003 that there suddenly seemed to be a boom in Green Lizard sightings. It's difficult to know whether this is just because we weren't looking closely before, or whether there has been a sudden influx of lizards. (Obviously the latter explanation raises more awkward questions than it answers). We began to search more widely along clifftop areas, especially when Michael saw a juvenile Green Lizard, and found Green Lizards several hundred metres further along the cliff. We even discovered a dwarfed oak bush close to the clifftop but surrounded by mown grass, that is regularly used by up to four Green Lizards of varying ages!

In the spring of 2003, juveniles clearly from 2002 were already as large as adult Common Lizards; a pale fawny green-brown colour with two pale lime green/white dorsolateral stripes and two lateral stripes. As the weeks progressed the young developed black blotches too. In the absence of contrary advice from others more familiar with both species, it is this even number of stripes that leads me to believe that these Green Lizards are *Lacerta bilineata* rather than *Lacerta viridis* (or any other species). The western race, present across the Channel in France and Jersey, is *L. bilineata*. We saw female adults about 20cm long during 2003, and later in the year Michael saw neonates. In summer 2003, I began to look further west and saw Green Lizards and Wall Lizards about 1 km away from the original zigzag. Together with another confirmed third-party Green Lizard sighting further along the Southbourne cliffs, this means that the Green Lizards now extend along at least 3 km of cliffs. The questions of population size, age and origin became more perplexing, particularly given that this had remained virtually unknown to the wider herpetological community. (The fact that it was virtually on The HCT's doorstep caused amusement too!). Wall Lizards have been seen



Typical marram habitat on cliffs at Bournemouth. Photograph © Chris Gleed-Owen.



Immature male Green Lizard, 16th May 2004. Photograph © Chris Gleed-Owen.



First-clutch (?) 2003 juvenile Green Lizard, 7th May 2004. Photograph © Jonathan McGowan.

sporadically further afield than the zig-zag path site, but they do not appear to be distributed as extensively as the Green Lizards; perhaps a function of their size and habitat preferences.

Some new data have come to light in 2004, thanks to Jonathan McGowan from the Bournemouth Natural Science Society who has been visiting the zig-zag site for a number of



Second-clutch (?) 2003 juvenile Green Lizard, 4th May 2004. Photograph © Jonathan McGowan.



Male Wall Lizard, April 2004. Photograph © Chris Gleed-Owen.

years. He first saw Green Lizards there in 1999 – a new earliest confirmed record – but he has a reliable third-party sighting of a large dead Green Lizard from a footpath there in 1994. Jonathan regularly sees Green Lizards of all ages, including males up to 50 cm total length. His first sighting of 2004 was a large male on 16th March, which is as early as Sand Lizards appear in Dorset, and earlier than I had imagined the Green Lizards were emerging. More intriguing still, in early May 2004 he photographed juvenile Green Lizards that were clearly from different cohorts. Not including five or six months of hibernation, the older one had obviously been growing for several months, but the younger one appeared to be only a couple of weeks old. This suggested a very late hatching in 2003. I now believe that, much like the Sand Lizards and Wall Lizards in the Bournemouth area, at least some of the Green Lizards are double-clutching. Up until now, all the records have still been east of Boscombe Pier, the approach road to which should form a reasonably good barrier to dispersal. However, Jonathan has seen an adult male Green Lizard at the base of the cliffs west of Boscombe Pier, towards Bournemouth Pier. This is much further west than any previous sighting, and is worrying because it transgresses perhaps the only barrier to dispersal westwards into Sand Lizard territory. If there is any conflict between the Green Lizards and Sand Lizards, then we should be concerned. It may be coincidental that there are no Sand Lizards on the cliffs east of Boscombe Pier, all the way to Hengistbury Head, despite the habitat being present, but it is slightly suspicious.

So, how did these exotic lizard populations come about? I suspect they originated as captive animals that were released, deliberately or accidentally, some time in the last 20 years, but I don't know where or when. There are extensive areas of scrub and dune grass along most of the cliffs, providing good Green Lizard habitat in the majority of places. If the current distribution dispersed from one release, then I would have thought it would take 20 years to reach their current density and extend up to 2 km (or possibly 3km) in each direction. Fitter (1959) noted that a single Green Lizard was seen on the Isle of Wight in 1934, several miles away from where 100 had been released in 1899. On Bournemouth cliffs,

given the numbers of sightings within fairly small areas, I would guess there are upward of 500 animals along the cliffs from Boscombe to Southbourne, possibly even 1000. If there were multiple releases, then it would explain a wide distribution in a shorter time, and allow for a smaller population altogether. Multiple releases would also explain why there were virtually no sightings earlier than about five years ago. Beach hut owners at the bottom of the zigzag tell me the Wall Lizards only appeared in about 1999. I was initially sceptical of this being a reliable fact as most holidaymakers and dog-walkers still don't see any lizards today. However, it seems that sightings from the other sources seem to begin around the mid- to late-1990s. If a nucleic population became established around that time, it would take a few years to become established and large enough to be obvious. Michael Skelton's first probable record was in 1995, Jonathan McGowan's records start in 1999 (or possibly 1994), and Dave Bird tells me Wall Lizards appeared at another Poole Bay cliff site around the same time in the late 1990s.

I'm trying to glean more information from people who know about these Green Lizard and Wall Lizard populations; unfortunately it's not easy. I am slightly concerned that the releases may still be going on, mainly because they could have detrimental effects on the Sand Lizards. Sand Lizards are present west of Boscombe Pier, but are absent from the whole 5 km of cliffs east of Boscombe Pier where the Green Lizards are present. It is tempting to draw an obvious conclusion. Either way, a systematic study is needed in order to investigate the effects of exotic lizard populations on native reptiles – a risk assessment of sorts. It would also be useful to confirm the origins of these populations, lest the folklore gets out of hand. I don't believe they swam the Channel as suggested by every journalist who contacted me last year. I also don't think they could have arrived in prehistory and persisted naturally, although I am not absolutely convinced that all the south coast Wall Lizards are introduced. Until someone funds a genetic study of all known populations, and a phylogeographic comparison with European mainland populations, I will still harbour a slight suspicion that perhaps one could be native. The Ventnor population may

be the strongest candidate; it's conceivable that 'Green Lizards' released there a century ago were in fact Wall Lizards but Fitter (1959) seems convinced otherwise. Today the Wall Lizard population is distributed widely throughout the town and adjacent areas, including the Botanic Gardens car park, and is well known to the locals. As for Green Lizards, a release in Torbay in Devon in 1937 (Fitter, 1959) may still survive, and there are reported sightings of Green Lizards near Dawlish (Keith Corbett, pers. comm.). Also, a Plymouth resident who was familiar with a population thought to be Italian Wall Lizards in Plymouth in the 1950s, recently rediscovered them alive and well (D. Coles, pers. comm.).

At The HCT, we hold the national database of records for the rare amphibians and reptiles, but also exotic species data. We're recording and gathering records on the Wall Lizard, Green Lizard, and other exotics. A quick extract of my own sightings from 2002 and 2003 shows a total of 40 visits to the zig-zag, resulting in 348 Wall Lizard sightings, 22 Green Lizard, and 58 Common Lizard sightings. These visits were in various weather conditions (which we record and encourage others to record), and with 'sightings rates' of up to 32 Wall Lizards per hour. Common Lizards don't seem to be very common where there are lots of Wall Lizards, and as already pointed out, Sand Lizards are non-existent. This year, on one brief walk with Hampshire Amphibian and Reptile Group in poor conditions, we saw seven Green Lizards, all immature or juvenile, and only three Common Lizards. The HCT is providing advice to Bournemouth Borough Council on the management of the cliff and cliff-top habitats for reptiles. Others are providing botanical and entomological advice. The aims are to improve the wildlife value of the cliffs and cliff-tops as natural and semi-natural habitat. Invasives will be dealt with first; in particular, Hottentot fig which will be sprayed and removed *en masse* when dead. What was 'amenity grassland' on the cliff-tops will be left to grow rank, and gorse blocks will be reduced to manageable mosaics and cut back from path edges to alleviate the fire risk. Some signage is planned to explain to change of management. A watching brief will need to be kept on the exotic lizards and their interactions with the native species. A student from Sparsholt College is currently mapping the distributions of each species (Steve Scammell).

All in all, it is tempting to view the exotic newcomers to Bournemouth's cliffs as an interesting addition to Britain's reptile fauna, but we have to keep an eye on how they might be impacting on the native lizards. The Wall Lizards aren't confined to walls; they live throughout the vegetation and bare ground, albeit in lower numbers. The dune grass and scrubby habitats are perfect for Green Lizards. Both species are breeding, and both are evidently laying two clutches. The south coast climate is amenable to both; the Green Lizards seem to be active from March to October, the Wall Lizards even longer. The Wall Lizards' active season is presumably so long because most live within cracks in walls that heat up quickly. It doesn't take more than 10 minutes of sun before they're out, and I've seen them basking when there's frost on the ground in an adjacent shadow. I have also seen juveniles feeding in the middle of winter. The notion of a long hibernation does not seem to apply to this species in Britain. I suspect that they have a distinctly different physiology to the native lacertid lizards, more akin to North American species. If they can feed on a winter's day, then retreat to their refuge overnight in sub-zero temperatures, and then come out again the next day, they must be pretty hardy. You could even say that they're beating the native species at their own game.

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