

## NATTERJACKS AREN'T ALL THE SAME

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Although the Natterjack Toad (*Bufo calamita*) is widely distributed across Europe, ranging from Spain and Portugal to the Baltic states, no subspecies have ever been recognised and these toads look pretty much the same everywhere. There is some variation – natterjacks from Iberia tend to be larger than those from northern Europe, and more frequently lack the yellow vertebral strip – but certainly nothing to write home about.

Behaviour, however, is another matter. Whereas those of us living in central or northern Europe expect our Natterjacks to turn up at breeding ponds sometime in April, and hang around until midsummer, things are very different in Spain. In that country the rains, and the amphibians, tend to arrive in winter. Natterjacks not only breed much earlier there, usually in February, but also often do so explosively just like Common Toads in England. Breeding is concentrated in just a couple of weeks or so, with much fighting between males. By April the ponds are often close to drying up, so toadlets are emerging just as their more northerly cousins are starting to think about reproduction. Summer in the Iberian lowlands is so hot and dry that after this time, right through to autumn, conditions are hostile to amphibians and many species (including Natterjacks) spend long periods deep underground in a state tantamount to aestivation.

So it was with considerable interest that I took charge of seven adult male Portuguese Natterjacks, confiscated by Customs officers from an illegal shipment, in March 1988. All were good-sized by British standards, with the smallest at 61mm and the largest a gargantuan 87mm. One had no back stripe, and another virtually none; they looked different from male British Natterjacks in a variety of small, subtle ways difficult to put your finger on, but they all settled down well enough in a small greenhouse with fitted pond. Come the end of April, all 7 were transferred into an outdoor vivarium already containing some British Natterjacks (kept under licence as part of a captive-breeding programme).

And now to the real point of all this. It gradually dawned on me as the spring progressed that, simultaneous with increased activity by the native Natterjacks, I was seeing less and less of the foreigners. In fact my last sighting was on June 11th; naturally I feared the worst but quite suddenly, in mid-September, all 7 reappeared as if by magic. They were transferred to the greenhouse for the winter, and remained active (except during short spells of severe frost) right through to spring '89. By contrast, all the UK Natterjacks disappeared during late October or early November (including some kept in the same greenhouse) and didn't reappear until March. This pattern repeated itself in 1989, and again in 1990, with Brits active in summer and the Portuguese taking over for the winter shift. These animals regularly surprised me; on January 22nd 1990, a very mild night revealed one of these Portuguese males, which I had given up for dead and not been able to move to the greenhouse, sitting in the vivarium pond in full breeding condition.

Gradually numbers have dwindled – I am now down to 4 of the original 7 – and, intriguingly, behaviour of the survivors has finally changed. I noticed during the summer of 1991 that 3 of them remained active well into July, and the following winter they disappeared into hibernation along with the Brits. Finally this summer (1992) all 4 have been active continually from March until late August, the time of writing – naturalised at last.

Seasonal behaviour patterns in Natterjacks are therefore difficult, but not impossible to change given enough time – several years in this case. For what amounts to nearly the lifetime of an average wild male Natterjack in Britain, the Portuguese animals insisted on aestivating even in a British summer, and coming out to breed in the middle of winter. It seems to me there is a message here about moving animals and releasing them distant from their origins (when trying to establish new colonies, for example). Hidden differences, which certainly include stereotyped behaviour, can occur and in this particular example would probably have proved disastrous if the individuals had simply been released into the wild.