

## A POPULATION OF TURLOUGH TOADS

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### INTRODUCTION

I have long envied the Irish for having turloughs, but thought that pools which fill and empty as if they had a mind of their own could only be Irish. The news that a turlough had been found near Carmel Woods, Ammanford in Wales and that it contained a common toad population came as music to my ears.

Having had a long acquaintance with the toad populations of Llandrindod and Llysdinam in mid-Wales, I was keen to look closely at the data which Dick Davies sent me regarding the Pant-y-llyn population. A quick look at the data rapidly dispelled some of my "well known facts" about toad populations and in addition confirmed some anomalous behaviour which I had observed at Llandrindod.

### OBSERVATIONS

There is very little difference in size of individuals between the populations at Pant-y-llyn and Llandrindod although the former has a smaller population size than the latter had when actively studied a decade ago.

At Llandrindod the average duration of migratory activity over a five year period was 35 days with 11-12 days within this when activity was intense. If the data collected from Pant-y-llyn in 1993 covered most of the breeding migration then it seemed to be accomplished in about a fortnight.

Probably the most interesting population parameter collected from Pant-y-llyn in 1993 relates to the observed sex ratios:

	Pant-y-llyn	Llandrindod	Llysdinam
	m : f	m : f	m : f
breeding	1 : 1.5	3 : 1	4.7 : 1
summer			2.1 : 1

The sex ratio of the Pant-y-llyn population is quite remarkable since most previous studies have found more males than females. For instance, Davies & Halliday (1977) found that, in an Oxford pond, there were six males to every female and Moore (1954) in Dorset found two males to every female. This observation alone is sufficient to merit further investigation of the population.

At Pant-y-llyn spawning was recorded when the water temperature reached 9°C and throughout the recorded migration the temperature was between 8-10°C. Threshold temperature for movement varies between populations, at Llandrindod it is about 4°C; at St. Ives, Frazer (1966) found it to be 7°C and slightly higher in an Exmouth

population. In our researches in the late 1970s and early 1980s we agreed with the established wisdom of the time that in our case migration would not begin before day 65 of the year even if there was favourable weather in February. In 1991 I had to eat my words when I observed a significant migration of all male toads at Llandrindod. They were of average length but visibly underweight. The observation at Pant-y-llyn of toads on the 11th February with a large movement on the 16th fits in with my observation. My original thought on these apparently anomalous movements was that mild winters had turned up the toads' "thermostats" too high resulting in a too rapid utilisation of fat reserves forcing them out of hibernation too early.

A turlough with such an unusual toad population – lucky Llanelli Naturalists!

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