

The National Dormouse Monitoring Programme continues to grow. While everyone has been collecting the 1999 records, the previous year's data were being analysed. During 1998 the number of dormice recorded rose to 2375 (up from 1881 in 1997) from 73 sites all over the area in which dormice occur. These numbers are slightly higher than those recorded in the April 1999 newsletter because records continued to arrive up to the middle of July!

Recorders made 468 visits in 1998, including those when no dormice were found. Thank you all for your efforts. As you will see, the large amount of data now becoming available is beginning to make it possible to examine year to year variation and to show that all the conservation effort is worthwhile. Moreover, monitoring the dormice in this way has made it a high profile species and this leads to site protection and management practices which benefit a whole range of woodland species in addition to the dormouse.

After the 1997 disaster you will be glad to know that Frank Kirkby did find one dormouse in October 1998 at Old Travellers Rest – “Not a good year but better than last.” he said. “I have had plenty of woodmice and some pygmy shrews in the boxes....”

The first two charts (Figures !a & 1b), which compare the numbers of dormice at as many sites as possible, have been constructed in exactly the

© October 1999 Paul Bright & Pat Morris,
School of Biological Sciences, Royal Holloway, University
of London, Egham, Surrey, TW20 OEX. The National
Dormouse Monitoring Programme is supported by English
Nature and based at Royal Holloway, University of London.
The 'Dormouse Monitor' is compiled by Mary Morris

**Please make a note
NOW
to send in your 1999
dormouse records as
soon as possible;
at the latest by
31 DECEMBER 1999.**

same way as their equivalents in last year's *Monitor*. The 1997 data have been included for comparison. Any site for which data are missing in one or other of the years may either be new to the list, or have had no dormice to record in that month of that year. Sites at which no dormice were recorded in 1998 include GB Gruffy Reserve, Beacon Hill, Harridge & Home Woods, Levin Down and Black Rock Quarry. We hope the recorders at those sites will persist with their monitoring and that they had a better year in 1999.

Body weight at independence

The early newsletters, reporting data from 1992 to 1996, contained similar diagrams for October each year in which the columns were divided into adults and juveniles. Adults were defined as those animals weighing more than 16g and juveniles those weighing less than 16g. This dividing weight now seems rather high (not for distinguishing adults i.e. those which can breed – see later – but for distinguishing independent individuals from nestlings) so, before starting to make an index which can be used for inter-annual comparison, we decided to examine the weights of juveniles and to ask the question - at what weight do they become independent of their mother?

Fig. 1a: Numbers of dormice

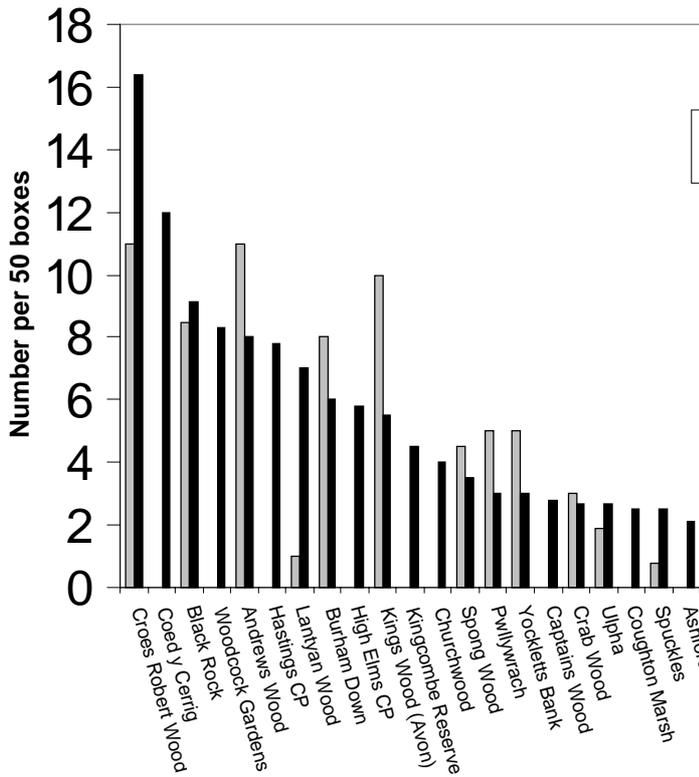
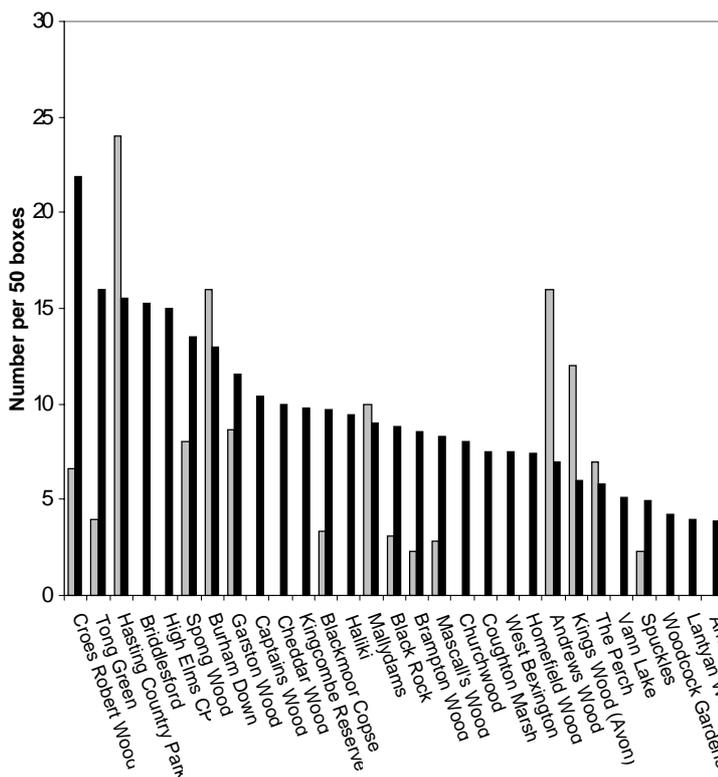
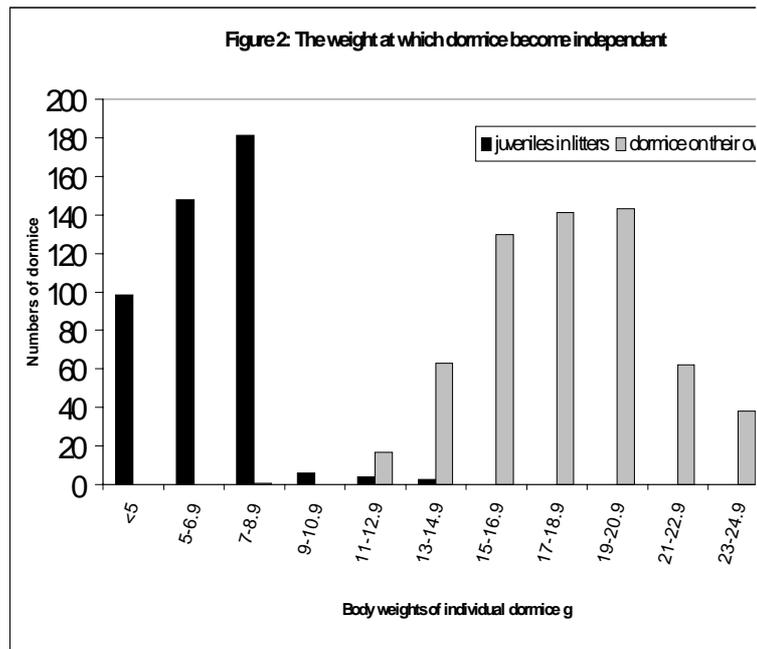


Fig. 1b: Numbers of dormice:

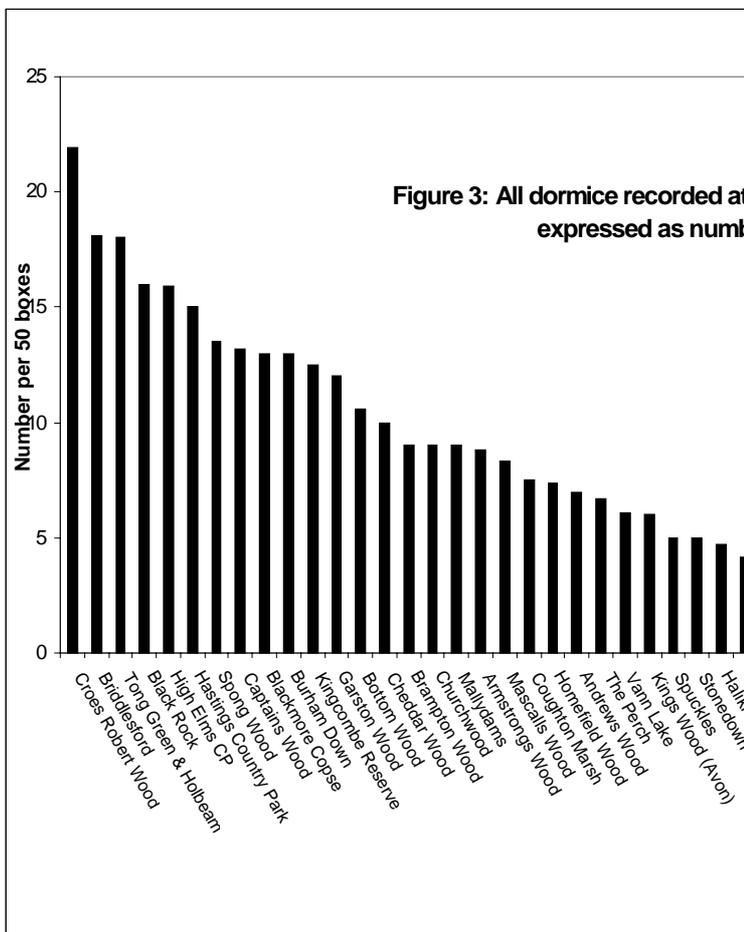


Firstly 174 litters were identified from 43 different sites. Of the young in these litters 440 had been weighed and a frequency diagram was constructed of these weights. Secondly, all those animals recorded alone in a box were extracted and those which had been weighed were grouped by weight in the same manner. The results are shown in Figure 2. The smallest animal found alone weighed only 7.5g (at Hastings Country Park) but this is very exceptional; the next smallest is 11g. It therefore seems likely that juvenile dormice become independent when they are somewhere between 9 and 12g. The fact that there are very few animals (only 71 out of 1258 that were weighed) weighing between 9 and 13g suggests that as soon as they do become independent they either die or grow very quickly. We have therefore decided to count any animal weighing 12g or more as independent. This is also the minimum weight that we have estimated it is necessary for an animal to reach before going into hibernation, if it is to survive the winter.

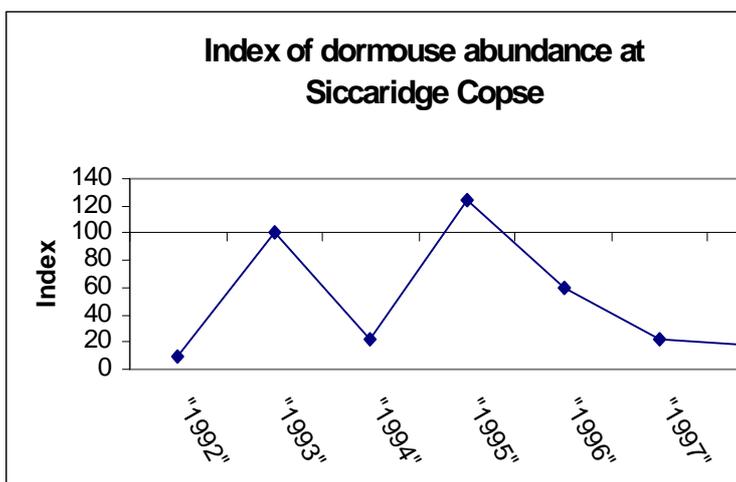


Towards an index of long term variation in dormouse numbers

We are seeking to produce an index which will illustrate simply the year to year variation in numbers of dormice at each site, similar to that published by the British Trust for Ornithology for different bird species. Using 12g as the dividing



line between nestlings and independent animals, and October as the month in which populations are likely to be at their maximum (as before) we calculated numbers of animals weighing more than 12g per 50 boxes at several sites for which we have the longest records. Taking one year (1993) as 100 we can then express the other years as percentages which are either up or down compared with the reference year.



However, while extracting the figures for this analysis it became clear that a proportion of the animals had not been weighed, particularly in earlier years, and the index would be unduly influenced by the proportion of animals weighed rather than by what was actually happening to the whole population in reality. Moreover, we cannot assume that all those not weighed are small because this is clearly not always the case.

Figure 4: Year to year variation in the index of dormouse abundance. 1993 is the reference year for which the number of dormice per 50 boxes in October is set at 100 and all other years are expressed as percentage of 1993.

Unfortunately this also applies to Figures 1a and 1b. To illustrate the point, all the dormice recorded in October 1998, whether or not they had been weighed or were large enough to be likely to survive the winter, were used to recalculate numbers per 50 boxes for each site (Figure 3). The order of sites is not very different, but the comparison that can now be made between sites is quite independent of whether or not the recorder decided to weigh particular animals.

One obvious solution to this problem is to include all the dormice recorded in any index that we calculate. This has been done for one site, Siccaridge Copse in Gloucestershire (Figure 4) as an example and we hope to have more examples ready for the next newsletter.

Topor

Topor is a means of saving energy, by lowering the body temperature, when the weather is cold and/or food is scarce. But if dormice are torpid for long periods during the early summer their breeding is delayed. It is therefore interesting to examine the records of dormice found torpid and to compare them from year to year. The chart on this topic in the April 1999 issue of the Dormouse Monitor showed that fewer individuals were recorded as torpid in 1998 than in the previous year. This is explored further by comparing the percentages of all recorded dormice that were found torpid each month in 1997 and 1998 (Figure 5a). It is clear that from April to June a higher percentage of the dormice were torpid in 1997 than in 1998. In 1998 more were found torpid in November, although the numbers for November 1997 were very low. Using the mean of the air temperatures given by recorders as an index (Figure 5b) it is evident that 1997 had a later summer and warmer autumn than 1998 which ties in with the figures for torpor.

**Please
WEIGH YOUR DORMICE
if at all possible
and collect as much other
information as you can**

John Stidworthy, who monitors Bottom Wood in Buckinghamshire sent a remarkable story about a friend in a village near High Wycombe who, with a neighbour, “each found a torpid dormouse on the same day on two spots along the same lane, just by the edge of the road. Not wanting to leave them exposed to traffic and the multitude of cats in the vicinity, and not finding anyone else to help, they gathered them up in their hands and carried them

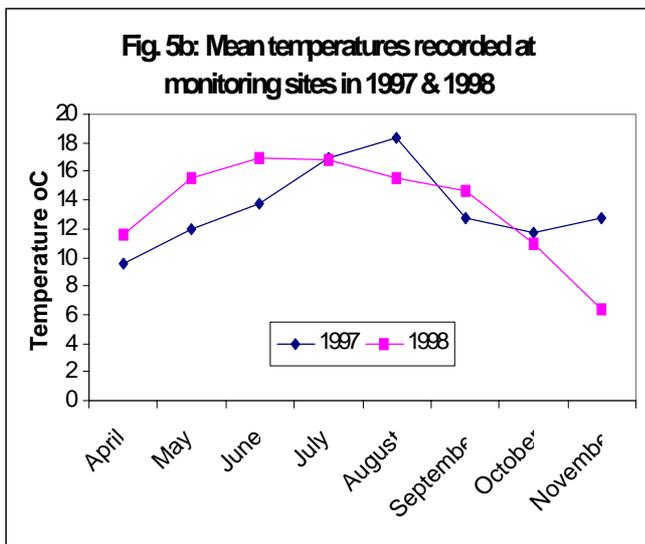
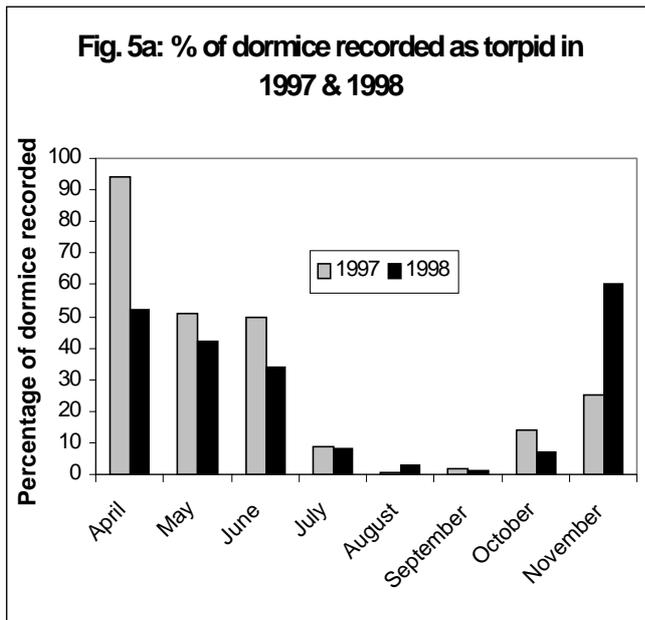


Figure 5: a - the incidence of torpor during 1997 & 1998. b - mean air temperatures for 1997 & 1998 as recorded at dormouse monitoring sites. In March too few animals were recorded to justify comparison; most were torpid.

down to the far end of Bottom Wood where they knew we have boxes up, and left them there. Remarkably the dormice stayed asleep the whole way, although they were beginning to stir before their destination. I am not sure whether this saved the dormice or finished them off, but it was well intentioned, and their chances of survival were probably low in the place they were found. It does indicate, though, that dormice can penetrate the heart of this small village.” This must have been towards the end of May. It is also interesting that people find torpid dormice lying about in the open surprisingly often.

Timing of breeding

The frequency with which dormice are found torpid during early summer in Britain goes a long way to explaining why at most sites breeding is most frequent in late summer. When the records of litters are examined the highest numbers are recorded in August and September but frequently the young are quite large (5-8g) by the time they are found. They were clearly born some time earlier. The question is - how much earlier?

To examine this question we looked at the data recorded for 174 litters and found 7 litters which were recorded in the same box, and the young weighed, on two successive visits. At one site, Ulpha in Cumbria, sadly the young were alive but alone on the second visit, had lost weight and were dead the next day, so they were discounted. This left six litters which we could assume were the same batch of young, where the individual (or average) weights had increased over a known number of days. We could therefore calculate a rate of growth in g/day. The details for each of these litters are shown in Table 1. One litter had

Table 1. The weights of young dormice recorded in two successive months and calculation of their rates of growth.

Site	First observation			Second observation			weight increase	days	growth rate
	date	no in litter	mean weight	date	no in litter	mean weight			
Croes Robert	18/8	5	1.8g	15/9	5	6.8g	5.0g	28	0.178 g/day
Hastings CP	25/7	4*	2.5g	19/8	2	7.25g	4.75	25	0.19 g/day
Hastings CP	25/6	4	2.87g	25/7	4	6.0g	3.13	30	0.104 g/day
Kingscombe Res.	21/7	5	2.7g	18/8	4	7.87g	5.17	28	0.185 g/day
Spong Wood	25/7	4	1.5g	15/8	4	6.87g	5.37	21	0.256 g/day
Stockton Dingle	17/6	5	3.3g	21/7	3	6.33g	3.03	34	0.089 g/day
							Mean growth rate		0.167 g/day

*no adult female present

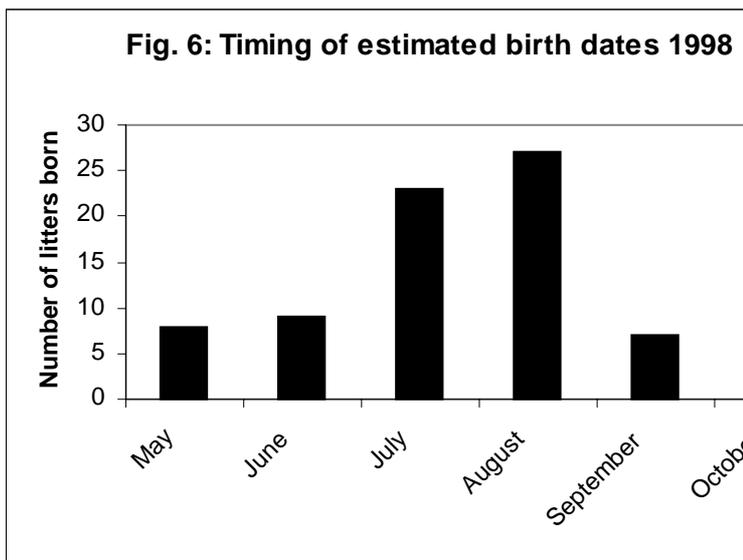


Figure 6. Time distribution of births based on estimated birth dates of 74 dormice litters (see text for explanation).

However, as the incidence of torpor suggests, births were probably earlier than usual in 1998.

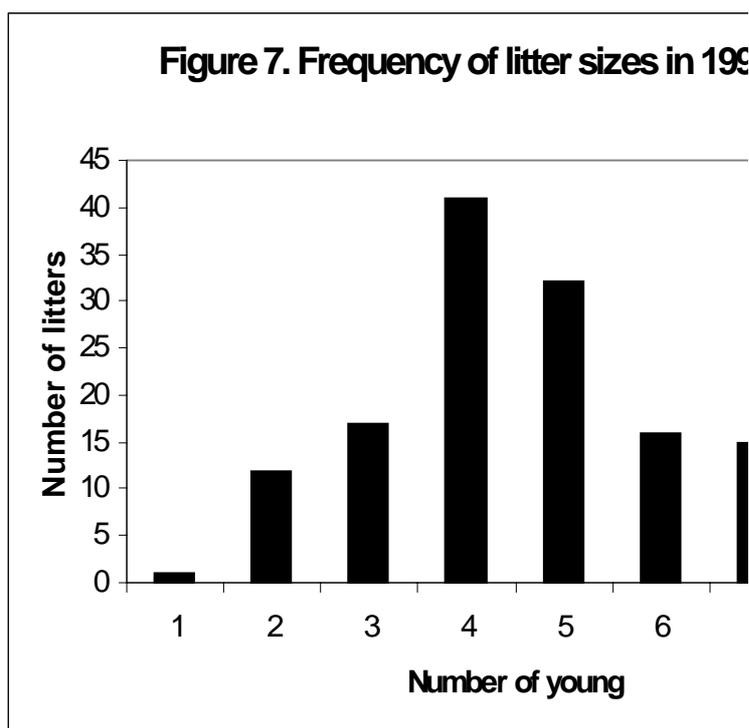
Nevertheless some litters are born very late and John Stidworthy mentions finding a litter of newborn dormice (at least four) on 30th October 1998, when he was expecting to be able to soon take the boxes down for the winter. He also made some very interesting observations on how tolerant dormice are of disturbance. "We made the decision at the start of the year that we would not, at present, restrain dormice for measuring, sexing, marking and so on. With only a small known population in

no adult female present on the first occasion and this was one of the three litters in which the number of young had declined by the second visit. It is interesting to note that the two examples of babies found in June had the slowest growth rates but until we have more information we cannot be sure if this is significant.

The average growth rate of the babies in these six litters was 0.167g/day. This is satisfactorily similar to the figure found previously by Paul Bright and that given in a paper by Wilfred Schultz who worked with wild and captive dormice in Germany.

the wood we were more interested in encouraging their presence and breeding wherever possible, and did not want to subject them to procedures that might discourage them from using nestboxes. However, dormice seem to be fairly phlegmatic creatures. Early in September, two licence-holders inadvertently looked in a few of the same nestboxes just an hour and a half apart. On the first occasion there were five animals. One and a half hours later, two were happily back in nestboxes, and felt disinclined to leave again. After this I waited on several occasions to see how long it was before animals returned to a nestbox that had been

If we apply this figure to all the 1998 litters for which we have only one observation and weight (74 litters including the first observation of the six litters shown in Table 1) we can back calculate to estimate their likely date of birth – assuming that they were born at 1g weight. Plotting these estimated birth dates it is evident from Figure 6 that the majority of births occurred in July and August rather than August and September. There are also rather more litters born in May and June than was evident from plotting just the dates on which litters were first observed.



disturbed. Twice it was only ten minutes. Once it was just two minutes, after the dormouse had gone only a couple of metres up the tree for a short wait. Late in the year, as opposed to in the height of summer, dormice showed a marked reluctance to leave the nestbox at all, even though they were awake and active.”

These observations confirm the conclusions we came to in the mid-1980s – that monitoring, even of lactating females, causes no significant harm.

Numbers of young and weights of breeding females

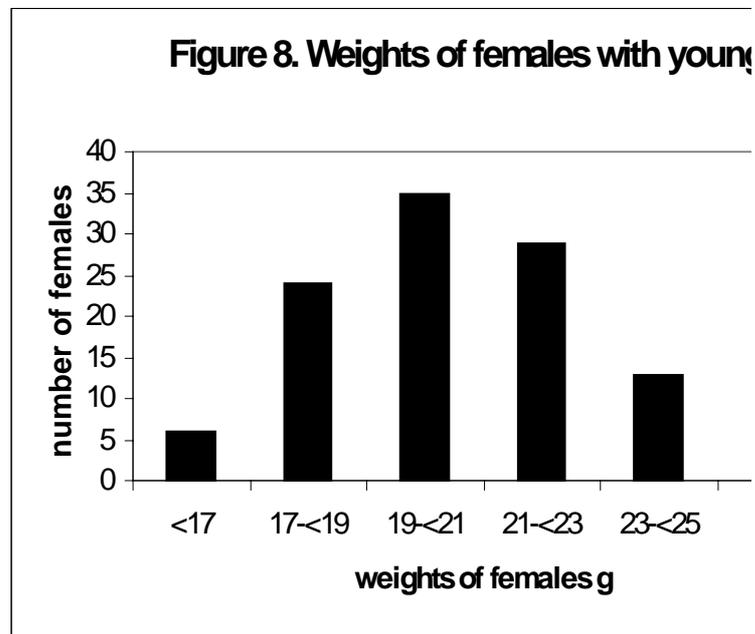
Figure 7 is based on 136 litters in which the young were counted and it is clear that, although the numbers of young vary from 1 to 8, the most frequent litter sizes are 4 or 5. Most litters had a female present and in 117 cases the recorders managed to weigh her. These weights are plotted in Figure 8. The majority of females found with young weighed between 17 and 23g but these are, of course, not the same weights at which they gave birth. Moreover it should be noted that some, but not all, of the larger females were found late in the year with rather large young and their weights may be greater due to preparation for hibernation.

Nevertheless, the important implication here is that lactating females need to be *very* well fed – weight is actually gained following birth, despite the huge and growing energy demands of lactation. Therefore habitats with excellent food supplies are needed for successful breeding.

The largest dormouse recorded in 1998 was a male weighing 33g found at Stockton Dingle in Cheshire, one of the reintroduction sites, on 20 October. The runners up, weighing 32g, were also October males recorded at Coed y Cerrig in Wales, Kingcombe Reserve in Dorset and Brampton Wood in Cambridgeshire, so the timing of autumn weight gain is clearly nothing to do with latitude.

Retirement of Elaine Hurrell

Elaine Hurrell has been monitoring the dormouse nestboxes in Andrews Wood, Devon since 1992 but pioneered work on dormice in Britain long before that. She decided to retire from the monitoring team after the box check on 15 October 1999 and to mark the event a surprise party was arranged by those who have been helping her with the checks. Pat Morris was able to go down to Devon for the day and greatly enjoyed meeting Elaine again and all her willing helpers. The monitoring of Andrews Wood will continue in capable hands.



It was Elaine’s father who observed that his captive dormice opened hazel nuts in a distinctive way and that nuts opened in this way could give a clue to the presence of dormice in the wild. This led Elaine to initiate a survey, through the Mammal Society, in which members searched for nuts and nests and thus greatly extended current knowledge of where dormice occurred in Britain. The resulting distribution map was published (Hurrell and McIntosh, 1984, *Mammal Review* 14:1-18) but Elaine had already published two booklets on dormice, the first as early as 1962 (*Dormice, Animals of Britain No 10*. Edited by L. Harrison Matthews, Sunday Times Publications Ltd. Out of print but sometimes found in second-hand bookshops) and the Mammal Society’s original book on *The Common Dormouse* (Hurrell, 1980,

published by Blandford. Now out of print.). With heartfelt thanks to Elaine for her enormous contribution to our knowledge of British dormice, we wish her all the very best in her retirement.

More Notes from contributors

Gordon Vaughan is another long-time dormouse stalwart in Devon but his first love is pied flycatchers. Gordon decided, many years ago, to put up boxes in oak woodland near Okehampton and divert some of these migratory birds from their flightpath to South Wales. His boxes successfully attracted pied flycatchers but, before they arrive, are taken up by Great tits and dormice who start nesting earlier. Gordon, therefore regards dormice as "pests" but "to try and compensate for my failings, I try to record all other details found."

"As a matter of interest my records reveal 83 visits were made to my woods during 1998, either for maintenance early on but mostly for checking throughout the rest of the year. That is over and above all the many additional hours spent renovating or building boxes in my garage and work in the woods keeping paths clear from fallen trees, branches etc. Still, I do believe good sound boxes which contain dry nest material help greatly to produce successful occupation rates and breeding success." This probably applies to dormice as much as to birds.

Gordon continues "Other frequent visitors to my boxes are Earwigs. mention must also be made of a grey coloured tree slug which is regularly found in my boxes. Their numbers tend to depend on the dampness inside the box. In fact it is surprising exactly what does appear in my boxes, especially as they are so high up. For example, snails of various sizes, millipedes, centipedes, worms, woodlice and, of course, spiders of many

sorts. One of my boxes removed this winter for repair was found to contain over 400 woodlice!! An amazing sight... Hibernating butterflies are occasionally found but bees, wasps and hornets are usually dissuaded from staying."

At another birdie site, Garston Wood which is owned by RSPB, **David Tucker** concludes that "Dormice are distributed throughout the wood but densities appear to vary considerably; populations are clearly low in less favourable areas. The most successful breeding has occurred in those coupes (the areas in which hazel is managed) that have coppice under 15 years old, having few standards and with a substantial understorey that is (A) (D) (E) in 1998. In 1997 include (F) but coppicing close by has substantially reduced breeding there in 1998. Coppicing close to breeding areas seems to move the population out: half of 8N and 1S were coppiced this year and no activity has been recorded in those boxes used last year and adjacent to the clearance areas. Re-colonisation after coppicing can take place within four years."

Colin Elford who had small numbers of boxes at various Forest Enterprise sites in Dorset reports that he has "fought for budget money for 50 new boxes which I now have [Good! Editor] and will put out in the Spring (1999). I plan to have 50 boxes in Stonedown Wood which lies adjacent to Garston Wood."

Finally, **Ann Griffiths**, who lives in Chichester sent in the most amazing photograph of an old polythene bag in which she found a nest and live dormouse at her site, where she otherwise had no records. Her letter continues "Interestingly, the bag contained a summer nest, as did one other bag in the same location, and another one found later in the season elsewhere on the site! - abandon the boxes ????"

We have also been told recently of dormice nesting inside vertical plastic tree guards around young oak trees in an area of bracken and bramble. **David Counsell** wrote (October 1999) from Tunbridge Wells in Kent, to say "This morning I was stripping tree shelters from these oaks, and found a dormouse in two of them. It seems that dormice have adapted to life after the Great Storm in an unexpected way."

Your INVITATION to the Millenium gathering of Dormouse Recorders should be enclosed with this newsletter. Please fill in the slip and send it in; put the date in your diary.

DO JOIN US ON 26 MARCH 2000