Diurnal use of Nestboxes by Moulting Great Tits Parus major

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In May 1995 members of Monifieth High School Bird Club erected six nest boxes in a small stand of mature deciduous trees, of mixed species, at Panmurefield, Monifieth (NO 479327) with the permission of the East of Scotland Water Board. The nestboxes were of a standard design with a 33mm diameter entrance hole and constructed from 15mm thick planks of tanalised soft wood. The boxes were put up on a variety of tree species at heights of between 2.5 and 3 metres.

On 16 July 1995, prior to going to a hirundine roost session in the Tay reedbeds, I decided to check these boxes for possible late nesting attempts by Tree Sparrow Passer montanus . I began my inspection about 1900hrs. On opening a box I could see it was devoid of any nesting material but crouched in a front corner, below the entrance hole, was a Great Tit Parus major. The bird was easily picked up and removed from the box. On inspection it was found to be an adult in early primary wing moult. The bird was ringed (J730588) and sexed as a female on plumage characteristics. It had a primary moult score of five [2(2), 1(1), 7(old)] and no greater coverts at all. As such its age could not be judged precisely. The bird was also in tail moult; I did not record the extent of this but noted that the two central feathers were unmoulted. On release the bird flew very weakly back into the stand of trees.

I walked back into the wooded area and opened the next nestbox. This box also had not been used but a Great Tit was crouched in a front corner below the entrance hole. This box was less than 10m from the previous one and my first thoughts were that the bird I had just released must have taken refuge in this box. However, when removed from the box I could see that it was an unringed adult male which I ringed (J730589) . This bird was also in early primary moult with a score of seven [1(3), 1(2), 2(1), 6(old)], and like the female had no greater coverts, so could not be aged precisely either. Unlike the female this male had moulted part of its alula but was not in tail moult, although it had moulted all of its under-tail coverts. When released this bird also flew weakly. Neither bird had been put into a bag but had been held in the ringer's grip at all times.

According to data in Ginn & Melville (1983) these Great Tits would have been amongst some of the latest adults in the UK to have begun the post-nuptial moult of their primaries. Onset of primary wing moult is given as between 15 May and 18 July in the UK. The fact that the male's moult was a little ahead of the female's reflects the general situation in British Great Tits (Ginn & Melville, 1983).

Ginn & Melville (1983) state that, in general, birds become more secretive during the period of moult but they give no examples of species specific behaviours. Also, neither Gosler (1993) in his monograph 'The Great Tit ' nor Perrins (1979) in ' British Tits ' make any comment on the behaviour of adult Great Tits during the post-nuptial moult period. Gosler (1993) indicates that Great Tits 'prefer to roost overnight in a secure shelter such as a tree hole, and only if these are in short supply will they roost in the open.' He also states that 'Drent (1987) found that birds roosting in the open were more likely to die of exposure or predation by owls than birds roosting in nestboxes, so

this behaviour is adaptive.' Gosler also suggests in his book that competition for roost sites can be intense and is a contributary factor to the poorer survival rate of females as the more dominant males are more likely to obtain any available roost sites. Both Gosler (1993) and Perrins (1979) state that in this tit species individuals always roost singly and so there is competition for roost sites.

The two birds I removed from these recently erected nestboxes may have been a breeding pair and still on territory. Both birds were apparently roosting (for the night ?) from before 1930hrs; dusk was around 2200 Hrs. I suggest that these birds were exhibiting secretive behaviour in the post-nuptial moult period. I also suggest that this behaviour is possibly a behavioural adaptation which increases the individual's probability of surviving this moult period with its attendant physiological demands on the species energy budget. Also, because of the impaired efficiency of flight which both birds showed, I suggest that the Great Tit possibly reduces the risk of predation by diurnal raptors by its use of a secure hole in which to roost during daylight hours in this post-nuptial moult period. The availability of a secure roost for both members of a breeding pair may be an important aspect of the Great Tit's habitat. In woodlands where natural holes are rare or absent, should we erect extra (smaller ?) boxes within known Great Tit territories ? Is it worth checking nestboxes in the late afternoon / early evening during this species main moult period to obtain post-nuptial territorial adults ?

References

Ginn, H. B. & Melville, D.S. (1983) Moult in Birds; B.T.O. GUIDE 19. B.T.O., Tring.

Gosler, A. (1993) The Great Tit . Hamlyn Ltd., London.

Perrins, C. M. (1979) British Tits. Collins, London.