WATLING, D. 1978. Observations on the naturalised distribution of the Red-vented Bulbul in the Pacific, with special reference to the Fiji Islands. Notornis 25: 109-117.
WATLING, D. 1982. Birds of Fiji, Tonga and Samoa. Wellington: Millwood Press.

B. J. GILL, *Auckland Institute & Museum, Private Bag, Auckland*

# SHORT NOTE

## Co-operative breeding in Brown Creeper?

In co-operative breeding, more than two adults assist in rearing young (Elmen 1984). The closely related Yellowhead *(Mohoua ochrocephala)* and Whitehead *(M. albicilla)* are known to breed co-operatively (Soper 1976, Gill & McLean 1986, G. Elliott pers. comm.). However, no evidence of co-operative breeding was found by Cunningham (1985, pers. comm.) in the only detailed breeding study of Brown Creeper *(Finschia novaeseelandiae)* made to date. Here, we report observations made at Kowhai Bush, Kaikoura (where Cunningham also worked) of Brown Creepers appearing to breed co-operatively.

Brown Creepers had a poor breeding season in 1986-87 at Kowhai Bush, probably because of a drought, which killed about 10% of the trees in the study area and partly defoliated many others. Of about 25 pairs studied only four (possibly five) fledged chicks, several built nests but did not lay, and many apparently did not start nest-building. Thus, a large number of birds were presumably physiologically ready to breed but did not do so.

On 5 November, when we removed chicks from a nest for banding, three adult Brown Creepers arrived and mobbed us. On 16 November, we mist-netted the adults from this nest one day after the (banded) chicks first flew. While we were holding the parents for banding, we saw two other adult creepers with the chicks, which were perched 10 m away, and heard the usual calls of chicks being fed. On their release, the true parents (determined by many subsequent checks of band combinations) flew immediately to the chicks and chased the other birds away.

On 11 November we saw three adult creepers within two metres of a nest containing banded young. One of these adults was chased off by the other two. Two adults from this nest were banded on 19 November. After 19 November, an unbanded bird was twice seen feeding the chicks while the banded birds (the usual feeders) were away. On two other occasions an unbanded bird approached with food and was chased off. Two unbanded creepers were often seen within 20 m of these chicks after they had left the nest. Any other creepers which approached to within a few metres of the chicks were always chased by the banded adults if they were seen.

Do these observations show that Brown Creepers are co-operative breeders?

If co-operation is indeed rare in Brown Creepers, then our observation of co-operation in two of the three families we followed intensively seems too coincidental. However, Cunningham (1985) did not see similar behaviour despite many hours of observation. The most likely explanation is that the

drought in the study area in 1986-87 resulted in frustrated breeders showing "parenting" behaviour which was appropriate to the time (breeding season), but not to the place (neighbour's nest or chicks). The observations of true parents consistently chasing off other birds bringing food supports this view. The argument, which is developed in detail in Jamieson (1986), suggests that Brown Creepers should not yet be regarded as co-operative breeders.

We thank S. Fegley and J. van Berkel for assistance in the field, and B. Gill, B. Heather, C. Miskelly and J. Waas for comments and criticism. Our research is funded by the University Grants Committee and the Department of Zoology, University of Canterbury.

**LITERATURE CITED**

CUNNINGHAM, J. B. 1985. Breeding ecology, social organisation, and communicatory behaviour in the Brown Creeper *(Finschia novaeseelandiae)*. Unpubl. PhD thesis, University of Canterbury.
EMLEN, S. T. 1984. Co-operative breeding in birds and mammals, *In* KREBS, J. R.; DAVIES, N. B. Behavioural Ecology, an Evolutionary Approach. Oxford: Blackwell.
GILL, B. J.; McLEAN, I. G. 1986. Morphometrics of the Whitehead *Mohoua albicilla* on Little Barrier Island, New Zealand. NZ J Zool. 13: 267-271.
JAMIESON, I. G. 1986. The functional approach to behaviour: is it useful? Amer. Nat. 127: 195-208.
SOPER, M. F. 1976. New Zealand Birds. Christchurch: Whitcoulls.

IAN G. McLEAN, SHELLEY DEAN *and* RICHARD de HAMEL, *Dept of Zoology and Edward Percival Field Station, University of Canterbury, Christchurch.*

# NOTICE

*Ecology Division DSIR Bibliography 1946-1986*

This 72-page indexed bibliography lists 810 items and covers the 40 years of published work of Ecology Division, DSIR. The main fields of study include the ecology of New Zealand land mammals (particularly the role of introduced mammals in New Zealand ecosystems) and birds (including agricultural pests). There are also papers on New Zealand lizards, invertebrates, vegetation studies, the ecology of many offshore islands, and others of a more general nature. From 1969 to 1982 the Division was also active in freshwater research, and a number of papers deal with this topic.

The Bibliography costs $10 and can be ordered from the Publications Officer, Ecology Division, DSIR, Private Bag, Lower Hutt. Please make cheques payable to Ecology Division, DSIR.