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CHARLES G. SIBLEY and JON E. AHLQUIST, *Department of Biology and Peabody Museum of Natural History, Yale University, New Haven, Connecticut 06511, U.S.A.*

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POLYGAMY IN THE SPECKLED WARBLER *SERICORNIS SAGITTATUS*

Rowley (1976) listed the Speckled Warbler *Sericornis sagittatus* as a communal breeder on the basis of an observation by McGill (1970) who saw four Speckled Warblers feeding a fledgling Black-eared Cuckoo *Chrysococcyx osculans*. Various texts describe Speckled Warblers as occurring in pairs or small groups (e.g. McGill 1970; Frith 1976, 1979).

At Wollomombi, near Armidale, NSW, R.A. Noske and I colour-banded thirty Speckled Warblers between 1977 and 1981, and observation of these birds gave some indications of their social organization. Table I shows the size of parties of Speckled Warblers observed in mixed-species feeding flocks. In most cases only a single pair was observed. From observations and retraps each pair appeared to have a home range of about 8 ha. Of twenty-eight parties of three birds, individuals in thirteen parties were identified. Three of these parties were of one male and two females and ten were of one or more adults with known young of the year.

TABLE I

Size of parties of Speckled Warblers observed in mixed-species flocks at Wollomombi 1978-81.

No. of birds in party	1	2	3	4	5	6	7
No. of parties	18	103	28	14	24	2	1

In about half the parties of four or five birds, the individuals were identified and these parties were of a pair of adults with attendant young of the year. The three occasions where there were more than five birds each involved two separate families of adults and their young foraging together. Of three families in which both parents and all young were colour-banded the young birds stayed with the parents until mid- or late winter. One clutch that fledged in October and another that fledged in February were seen with their parents in the

following June, and another that fledged in January remained with their parents until July. This suggests that young of the year dispersed just prior to the breeding season in the following spring.

Table II suggests that annual mortality is high. There was no significant difference by χ^2 test between the survival of the twelve known fledglings and the eighteen birds presumed to be adults at time of banding. Apart from 1982, when observation was much less frequent, the annual loss is surprisingly regular considering the extreme drought of 1979-80. No grasses set seed during the two consecutive autumns of 1979-80. Although Frith (1976) describes the diet of Speckled Warblers as insects and a few seeds, stomach samples from both Wollomombi and from Eastwood State Forest nearby (H.A. Ford, pers. comm.) show that seeds are a very important part of the diet of Speckled Warblers.

On 20 September 1978 a nest with three eggs was found, attended by male BLUE/WHITE and female BLACK/BLUE. These birds, banded in late 1977, were seen foraging together in July 1978. All eggs hatched and both sexes shared equally in feeding the nestlings (n: male 29, female 32) and fledglings (n: male 17, female 15). By November, however, while female BLACK/BLUE was still accompanying the colour-banded young, male BLUE/WHITE was associating with another female, GREEN/RED. On 9 February 1979, male BLUE/WHITE and female GREEN/RED were found attending a nest with three young, located 200 m from the first nest. Once again, both sexes seemed to share equally in feeding the nestlings (n: male 7, female 9). The nestlings were colour-banded and fledged on the following day.

On 13 February 1979 both the colour-banded young and female (BLACK/BLUE) of the first nest came close to the colour-banded young and parents (BLUE/WHITE and GREEN/RED) of the second nest. Female GREEN/RED, mother of the second nest, fed MAGENTA/WHITE, a young bird of the first nest, and MAGENTA/ORANGE, one of its own young. The two family

TABLE II

Survival of banded Speckled Warblers at Wollomombi 1978-81

Year banded	Year still alive				
	1978	1979	1980	1981	1982
1978*	13	7	5	5	1
1979		6	3	2	-
1980			4	1	1
1981				7	4
% survived from previous year		54%	62%	67%	40% +

*: includes some birds banded in 1977 before study period.

+: observation time much less in 1982 than in other years.

groups then separated, male BLUE/WHITE staying with his second brood (that of female GREEN/RED). On 15 February, male BLUE/WHITE and female GREEN/RED, and their young, approached the home range of yet a third pair with young. The male, YELLOW/BLACK, of this third pair, fed one of BLUE/WHITE's young. It seems that the young of Speckled Warblers are fed, at least sporadically, for many months after fledging. It also seems that adult Speckled Warblers will feed any young nearby regardless of parentage. Thus McGill's (1970) observation of four Speckled Warblers feeding a fledgling cuckoo can hardly be accepted at this stage as evidence for communal breeding.

The behaviour of male BLUE/WHITE in changing partners seems to conflict with the obviously strong pair-bonds among Speckled Warblers. Not only do male and female share equally in the feeding of young but they feed together for at least several months before nesting. Perhaps the species practises 'successive polygamy' (Wittenberger 1979) i.e. males mate with and care for the young of several females in succession rather than mating with several females at the same time

as occurs in simultaneous polygamy. However, this single example may merely have been an opportunistic act by male BLUE/WHITE; a case of desertion by a normally monogamous species. This example, and the ease with which Speckled Warblers can be netted, colour-banded and subsequently observed, suggest a fruitful field of investigation.

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H.L. BELL, Department of Zoology, University of New England, Armidale, NSW 2351, Australia.

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