

Food items recorded during this study were characteristic of both aerial and terrestrial foraging. Most invertebrates recorded could have been hawked in the air or gleaned from foliage or bark. The presence of a single centipede in one bird's stomach and the large number of ants and any pupae suggest that some time was spent by both birds foraging on the ground. From this and previous studies it would appear that Australian Owlet-nightjars are opportunistic feeders taking whatever food is available.

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## OCCUPANCY OF LAND-BASED TERRITORIES BY CLAMOROUS REED-WARBLEDERS IN CANBERRA DURING A DROUGHT YEAR

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During the breeding season, Clamorous Reed-Warblers *Acrocephalus stentoreus* inhabit the reed belts in wetlands and along watercourses, 'living entirely within the cover of reeds and feeding on insects and small aquatic animals there' (Reader's Digest 1986). However, at least while the adults have young in the nest, Reed-Warblers frequently leave the stands of reeds and forage on bordering dry land. Brown and Brown (1985) stressed the importance that dry habitats close to the nest sites in marshes have as sources for food for this species when rearing young in south-west Australia. Birds in Canberra, A.C.T., at the campus of the Australian National University (ANU) and at Commonwealth Park, are often encountered collecting insects in bushes and the lower parts of trees up to 30 m or more away

from the reeds in which they nest, but only within the period during which they are feeding young. Occasionally, during spring migration, one can hear a bird singing out of shrubs with no water in sight. This was also noted in Armidale (S. J. S. Debus, pers. comm.).

In 1982-83, during a widespread drought in eastern Australia, the more than 30 Reed-Warbler territories along Sullivan's Creek in the campus of ANU were occupied as usual by early October (unpublished data). In late November several additional Reed-Warblers were singing at various sites scattered over the campus, each located well away from water (150-500 m). Birds settled in thickets of shrubs, either *Grevillea*, *Leptospermum*, *Cotoneaster* or mixed stands of native and exotic bushes.

To judge from singing and sight records, the seven land-based territories were held for between 18 days and two months. In a *Grevillea* hedge in a carpark and in a dense complex of *Wisteria* and various bushes, single birds were seen searching for food, making warning calls when approached and behaving rather secretively. Nesting may have been attempted at these sites. One area of tall and dense stands of mainly *Leptospermum*, some conifers and other shrubs, approximately 150 m away from water with open lawns in between, was certainly occupied by a pair. Both birds were seen carrying food. The nest site was most likely in a ti-tree. In mid January the pair was feeding a fledgling outside the nest.

Since 1979 I have regularly surveyed the breeding bird communities of the campus. With the exception of 1982 the Clamorous Reed-Warbler has never colonized land-based territories, nor do birds from territories along Sullivan's Creek in search of food stray as far as any of the bush complexes, in which birds had settled during the drought year. It is most likely that the birds in 1982 which appeared at ANU from late November onwards, well after the time the species normally occupies breeding sites in the area, had first settled somewhere else. Because of the drought, their original territories may have become unsuitable for nesting or no longer productive enough to provide the food supply needed to raise young. At lakes near Perth, Western Australia, Reed-Warblers give up their nests and leave the breeding site when the reed beds dry out (S. Gordon, pers. comm.).

The water level at Sullivan's Creek changed little during the 1982-83 breeding season allowing pairs of Reed-Warblers there to complete their breeding cycle as typical for the area (Lenz 1989). All territories at Sullivan's Creek were occupied at the time the second wave of Reed-Warblers arrived at ANU; only suboptimal sites away from water were left for the displaced birds. But the resident breeding population may have provided the stimulus for the late arrivals to try to settle in the area nevertheless.

The records from Canberra and Western Australia (Brown and Brown 1985) indicate that *A. stentoreus* may not be so overspecialized as to depend completely upon reed beds as is generally

assumed. This is also amply demonstrated by an observation from Ballarat, Victoria, which Mr G. Binns kindly made available. In the two successive springs of 1978 and 1979 one pair of Clamorous Reed-Warblers nested in a clump of Pampas grass *Cartoderia* sp., close to a building on the grounds of the Ballarat Anglican Grammar School, c. 750 m from Lake Wendoree (with a large breeding population of *A. stentoreus*). The nests were built at a height of 2 m. The site was at night illuminated by a light. On both occasions the nest was robbed by Little Ravens *Corvus mellori*.

Courtney-Haines (1974) listed observations on nest sites other than in reed beds (but with one exception all still at the edge of water), including several species of trees (willow, mulberry, paperbark), an exotic bush (*Sparmannia*), bamboo and stands of the weed *Verbena bonariensis*. The Clamorous Reed-Warbler can supplement the food supply to its young from dryland vegetation and is potentially able to complete a full breeding cycle in dense vegetation with no connection to the water. An even greater flexibility in habitat use is known from other species of *Acrocephalus* as well (Bibby and Thomas 1985, Leisler 1985), but is also often underestimated (Catchpole 1974).

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