

### Heat Avoidance by some Birds of the Big Desert, Victoria

During the early afternoon of February 20, 1980, ten species of birds were noted to shelter beneath Mallee vegetation or litter near Chinaman's Flat in the south-eastern corner of the Big Desert, Victoria. This behaviour was interpreted as an effort to avoid heat exposure. The maximum shade temperature for the day was 46°C while the temperature under large accumulations of litter was noticeably lower.

A Malleefowl was observed sheltering in shade at the base of a clump of bushes. Nine species of passerines were observed to shelter in large accumulations of macro-litter (bark and small branches) around the bases of large Bull Mallee *Eucalyptus behriana* and a clump of Moonah *Melaleuca lanceolata*.

Initially a Purple-gaped Honeyeater showing signs of heat stress, i.e. hyperventilation, was seen entering a 'burrow' in the macro-litter at the base of a Bull Mallee. No sounds suggesting foraging behaviour were heard and after ten minutes the bird was caught, whereupon it was noted that hyperventilation had ceased. Investigation of macro-litter around a clump of Moonah showed that nearly 20 birds were sheltering at the same site. These included several Silvereyes and Purple-gaped Honeyeaters, two White-plumed Honeyeaters, one Spiny-cheeked Honeyeater, one Willie Wagtail and one Golden Whistler. All of these birds were disturbed from the site upon my approach to a distance of three metres. All birds returned to the shelter by the time I had moved ten metres away. A second approach had a similar result. However a third approach resulted in only one White-plumed Honeyeater, the Willie Wagtail, the Golden Whistler and three Silvereyes returning, the other birds having dispersed from the immediate area. The macro-litter beneath another Bull Mallee sheltered a Red-capped Robin, a Yellow-plumed Honeyeater and a Chestnut-rumped Thornbill. In addition, approximately 20 unidentified birds were found in the shade of a small ledge created by soil erosion undercutting the road. It was also noticed that there was almost no avian activity other than that described above.

These observations suggest that a number of birds in the Mallee region shelter during hot days as an important means of heat avoidance. It was noted that only a few trees had large accumulations of litter at their bases and that birds did not shelter around trees lacking such large accumulations. Their unwillingness to leave such shelter may be due to the low availability and importance of suitable sites. These possibilities are also supported by the high densities of birds found at some sites.

It may be expected that birds will shelter wherever the opportunity arises. However ledges formed by the undercutting action of soil erosion seem quite rare and so most of the suitable sheltering sites are likely to be in large accumulations of litter. If this is so, their highly flammable nature may be expected to impose limitations upon the Mallee avifauna in summers following fire. The formation and persistence of suitable sites will be related to the rates of litter accumulation and decay as well as the nature and frequency of fire. However lack of food and nesting sites due to fire may be more limiting than a lack of sheltering sites.

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