

lets. In both assemblages, length of wing, length of tail relative to length of wing and furcation of the tail vary geographically. As at present constituted, they have contiguous allopatric ranges, meeting at the Macassar Straits.

Whether all taxa currently treated as subspecies of *vanikorensis* or *salangana* are correctly allocated remains a problem for future research, in which the evidence of the nest will be important. At this stage, with knowledge of the identical type of nest, indicating genetically controlled similarities in both behaviour and the physiology of the cement-producing salivary glands, it seems unnecessary to separate *salangana* (with *natunae*) from *vanikorensis* solely on the basis of one slight character of plumage. Published descriptions show that nests of the same type are also built by populations referable to the taxa *bartschi*, *inquieta*, *ponapensis* and *rukensis*

(Stresemann 1925, Mitt. zool. Mus. Berlin 12: 179-190; Medway 1966: 160); these should also be considered conspecific (cf. Peters 1940, Check-list Birds Wld 4: 225). The prior name for the species is *C. vanikorensis* (1830). Its range extends from the Greater Sunda Islands to the Marianas, Caroline Islands and New Hebrides in the western Pacific. Although extensive, this range is paralleled by *Collocalia esculenta* and exceeded by other non-passerine landbirds in this region (e.g. *Halcyon chloris*).

Field-work in the New Hebrides was carried out jointly with Dr A. G. Marshall, who kindly collected one of the nests. We were hospitably accommodated at Hog Harbour in the school and were assisted by Messrs Fred Boe, John Joel and John Wycliffe.

All specimens have been deposited in the British Museum (Natural History).

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### IMPOVERISHMENT OF THE AVIFAUNA OF KANGAROO ISLAND

Abbott (1974) documented the species of birds that occur on Kangaroo Island and the neighbouring mainland, Fleurieu, Eyre and Yorke Peninsulas. He showed that the avifauna of the Island is impoverished compared with those of the three mainland areas, even though the total area of each is comparable. The avifauna of the Island shows the greatest affinity to that of Fleurieu Peninsula, from which the Island was most recently separated, about 10,000 years ago.

Abbott attributed the absence of some seventy-one species from Kangaroo Island to a low rate of immigration from the mainland. This explanation would be particularly interesting because the distance separating Island and mainland is only fourteen kilometres. Another explanation, that on Kangaroo Island suitable habitat for the absent species is lacking, or at least limited, is dismissed largely because the chief habitat of Fleurieu Peninsula, dry sclerophyll forest (*Eucalyptus baxteri*, *E. obliqua* and *E. cosmophylla*), is well represented on the Island. He did mention that savanna woodland (*E. leucoxylon*, *E. camaldulensis* and *E. odorata*) is poorly represented on the Island, but did not appreciate the importance of this habitat on Fleurieu Peninsula. Although many lists of species have been compiled for sites on the Fleurieu Peninsula, the favoured habitats of most species of birds have not been well documented.

We believe that many species do not occur on the Island because suitable habitat is lacking, in parti-

cular open savanna woodland, and, until recently, open grassland. On Fleurieu Peninsula savanna woodland is dominated by the South Australian Blue Gum *E. leucoxylon* with the River Red Gum *E. camaldulensis* abundant along creeks. *E. odorata*, *Casuarina stricta* and *Callitris preissii* are also common in drier areas. *E. leucoxylon* and *E. camaldulensis* occur on Kangaroo Island, but the former usually in dense forest associations and the latter usually replaced along creeks by *E. cladocalyx* and *E. viminalis*. We have had considerable experience of birds occurring in different habitats in the Mt Lofty Ranges, but have also relied on Condon (1968) and the personal experience of Mrs J. B. Paton. Table I lists the species, not on Kangaroo Island, that are associated with each major habitat on Fleurieu Peninsula. Many occur in more than one habitat and they are classified here in the habitat in which they are most abundant. Category 4 includes species that occur in many habitats but are likely to be found often in dry sclerophyll forest. Species in Categories 1-3 occur only rarely in dry sclerophyll forest.

Sixteen species (Table I, 1) are rare on Fleurieu Peninsula; they either occur as vagrants from central Australia or the eastern States (some have not been recorded since 1930) or are restricted to small areas of suitable habitat. They are probably not adapted to the main habitats of the region and so probably would not be successful on Kangaroo Island, although they might occur as vagrants. Twenty species (Table I, 2) occur chiefly in open country on Fleurieu

TABLE I

Main habitats of birds occurring on Fleurieu Peninsula but absent or vagrant on Kangaroo Island.

1 Vagrant or very restricted habitat	2 Open country or more arid lands	3 Savanna woodland	4 Sclerophyll forest
<i>Accipiter novaehollandiae</i>	<i>Elanus notatus</i>	<i>Geopelia striata</i>	<i>Platycercus e. adelaidae</i> S
<i>Falco subniger</i>	<i>Falco longipennis</i>	<i>Glossopsitta concinna</i>	<i>Neophema elegans</i>
<i>Coturnix ypsilophorus</i>	<i>Falco peregrinus</i>	<i>Platycercus eximius</i>	<i>Chrysococcyx lucidus</i>
<i>Coturnix chinensis</i>	<i>Ocyphaps lophotes</i>	<i>Chrysococcyx osculans</i>	<i>Podargus strigoides</i>
<i>Pedionomus torquatus</i>	<i>Psephotus haematonotus</i>	<i>Aegotheles cristatus</i>	<i>Potamostomus superciliosus</i>
<i>Glossopsitta pusilla</i>	<i>Cuculus pallidus</i>	<i>Dacelo novaeguineae</i>	<i>Acrocephalus stentoreus</i>
<i>Neophema chrysostoma</i>	<i>Tyto alba</i>	<i>Halcyon sancta</i>	<i>Acanthiza reguloides</i>
<i>Pezoporos wallicus</i>	<i>Merops ornatus</i>	<i>Smicrornis brevirostris</i>	<i>Sericornis frontalis</i> S
<i>Caprimulgus guttatus</i>	<i>Mirafra javanica</i>	<i>Acanthiza nana</i>	<i>Hylacola pyrrhopygia</i> S
<i>Ceyx azureus</i>	<i>Cheramoeca leucosternum</i>	<i>Microeca leucophaea</i>	<i>Neositta chrysoptera</i>
<i>Cincoloma punctatum</i>	<i>Petrochelidon ariel</i>	<i>Petroica cucullata</i>	<i>Climacteris leucophaea</i>
<i>Acanthiza iredalei</i>	<i>Lalage sueurii</i>	<i>Pachycephala rufiventris</i>	<i>Dicaeum hirundinaceum</i>
<i>Calamanthus fuliginosus</i>	<i>Cincloramphus mathewsi</i>	<i>Falcunculus frontatus</i>	<i>Pardalotus punctatus</i> S
<i>Malurus leucopterus</i>	<i>Aphelocephala leucopsis</i>	<i>Climacteris picumnus</i>	<i>Meliphaga chrysops</i>
<i>Pachycephala rufogularis</i>	<i>Acanthiza chrysorrhoa</i>	<i>Meliphaga penicillata</i>	<i>Melithreptus lunatus</i>
<i>Xanthomyza phrygia</i>	<i>Rhipidura leucophrys</i>	<i>Melithreptus gularis</i>	
	<i>Poephila guttata</i>	<i>Myzantha melanocephala</i>	(S—subspecies or sibling species present on K.I.)
	<i>Grallina cyanoleuca</i>	<i>Emblema guttata</i>	
	<i>Artamus personatus</i>	<i>Corcorax melanorhamphus</i>	
	<i>Artamus superciliosus</i>	<i>Cracticus torquatus</i>	

Peninsula or usually inhabit drier parts of the State moving south in summer. The Mt Lofty Ranges have been much cleared and some species originally may have occurred locally in open savanna woodland and later become more common; others have colonized cleared land from more open arid country to north and east. If our explanation is correct, that suitable habitat was lacking on Kangaroo Island for successful colonizations, some of these species will perhaps colonize the Island soon because clearing has been taking place widely during the last thirty years. In fact the Magpie Lark *Grallina cyanoleuca* is now common on the Island and the Willie Wagtail *Rhipidura leucophrys* occurs but is not yet as common as on the neighbouring mainland. Twenty species (Table I, 3) live in savanna woodland, a habitat barely represented on Kangaroo Island, so that their absence is not surprising. Although these species may be seen in forest they usually occur in the drier parts of southern South Australia.

The remaining fifteen species (Table I, 4), which breed in dry sclerophyll forest on Fleurieu Peninsula, include four that are represented on the Island by subspecies or sibling species. The other eleven might be expected on the Island because apparently suitable habitat is well represented; however, until their requirements are well known it would be unwise to attribute their absence to lack of immigration. The Shining Bronze-cuckoo *Chrysococcyx lucidus* does occur on Kangaroo Island; Condon recorded it as common and it has been seen there by HAF. As an

example of the lack of a specialized habitat mistletoes *Amyema* and *Lysiana* spp are apparently rare on the Island, though very common on Fleurieu Peninsula. This would explain the absence of the Mistletoebird *Dicaeum hirundinaceum*; and mistletoes may remain rare because the bird, which disperses their seeds, is absent. One species not mentioned by Abbott, the Singing Honeyeater *Meliphaga virescens*, is common in coastal habitats of the nearest mainland, but is only vagrant on the Island despite searches for it in suitable habitat.

Thus, of the seventy-one species that have never or only rarely been recorded on the Island but occur on Fleurieu Peninsula, we believe that fifty-six do not occur probably because there is not enough suitable habitat. The other fifteen species may have been unable to reach the Island because of its isolation from the mainland, but they include a variety of species, some with related subspecies or sibling species on the Island and others whose requirements are not well known. Some of these will probably come into Categories 1-3 when we know more about their ecology. We therefore believe that the hypothesis that the avifauna of Kangaroo Island is depauperate because of the failure of various species to immigrate is at best only partly true.

## REFERENCES

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