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BIRDS AND CONSERVATION IN QUEENSLAND

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INTRODUCTION

An increasing proportion of Queenslanders are adopting a set of values far removed from those which have been previously accepted as being essential to the betterment of society. More people are demanding for example, the right to drink clean water and breathe unpolluted air, the opportunity to walk through and enjoy large untouched areas of natural landscape, and a preference for living in a well-planned urban environment which preserves its structural features of historical interest and its parklands.

Similarly, an almost phenomenal upsurge in interest in Australian native wildlife, particularly birds, has occurred in recent years. As more people become aware of the need to protect and enjoy the environment of which they are part, so too do they appreciate its various components. The values of many people today embrace a strong and very real desire to watch and study birds in their natural environment.

Its realization lies in the protection of wildlife via the protection of its habitat, and there is no dispute with the axiom that the destruction of habitat is concomitant with the destruction of its inhabitants. Herein lies the intrinsic relevance of environmental conservation to the study of ornithology and its adherents, for indeed "wildlife conservation is dependent on the survival of suitable habitat which for many species is rapidly disappearing" (Report of the National Estate, 1974).

RESERVE REQUIREMENTS

The protection of birds and their habitat "demands a plan, in which the core is management of the wilderness, and an enlightened exploitation of its wild resources based on scientific research and measurement" (Fisher *et al.* 1969). There has been a very marked paucity of such research in respect of birds and their habitat needs in Queensland and elsewhere in Australia. Such research is essential before we can reasonably determine the nature and size of reserves required for bird protection, and the demand for such research is central to conservationist arguments. In many environmental issues, the conservation line postulates that research is required before the development in question is approved. This research should determine the consequences of the proposed development on the natural environment before any decision is made. A development which may constitute a threat to bird life in the area proposed, should not be permitted until it can be empirically indicated just what its consequences will be.

Diamond (1975) stresses the need to reserve large and undivided tracts of land in reserves. If land is broken into smaller reserves, they should be located in close proximity to each other and linked by dispersal corridors. In 1974, an important symposium on 'a National System of Ecological Reserves in Australia' recommended that each ecological reserve should be large enough to remain viable and should be representative of several inter-related landscape types. It should be zoned so as to provide a core area which would be afforded special protection, and a buffer area in which controlled human use for education, study and recreation would be encouraged.

Main and Yadov (1971) suggest that 20,000 hectares is the minimum reserve size required in Western Australia to adequately protect wildlife populations in that state. There is little published information available on the reserve requirements of bird species. Crome (1971) suggests that small reserves, from one to two thousand hectares, cannot adequately support nomadic fruit pigeon populations. Obviously habitat requirements of different bird species vary considerably, with such species as the ground parrot (*Pezoporus wallicus*) and rufous scrub-bird (*Atrichornis rufescens*) having very specialized requirements.

Seebeck (1976) provides an appropriate example of the much-needed data about the ecological requirements of birds. In determining the habitat needs of the powerful owl (*Ninox strenua*), Seebeck draws an analogy with the great horned owl of North America, a bird of similar size and proportion. In estimating that a breeding pair of powerful owls requires approximately 250 possums per year, and that suitable vegetation supports approximately 3.2 possums per hectare, it is concluded that a pair of owls would need a feeding range of at least 800 hectares of optimum habitat to survive.

FORESTRY

The preservation of Queensland forests is essential to the survival of a large number of bird species. Specht *et al.* (1974) noted that in Queensland 46 forest alliances have been identified. Only 17% of these forests have reasonable conservation status. No less than 26% have no protection at all and a further 38% have a poor conservation status rating. A major proportion of Queensland's remaining natural forests is in the form of State Forest and is therefore subject to forestry practices.

In relation to the effects of selective logging on bird populations in Wiangerie State Forest, New South Wales, Pattemore and Kikkawa (1974) noted that there must be a limit "to the severity of local damage and the extent of areas affected, beyond which the 'buffering' capacity of rainforest is impaired". Selective logging has been in operation for a considerable period of time in Queensland's State Forests. It would appear reasonable to suggest that, in view of the above reservation, careful and detailed research be undertaken into those areas proposed for new logging activities: to determine the extent to which logging should be permitted (if at all) with minimising its consequences for birdlife.

Frith (1977a) states that "heavy logging to the stage where the figs, white cedars, quandongs and epiphytes are affected is disastrous to wompoo pigeons". From unpublished observations of the Wildlife Research

Group (Queensland) in south-east Queensland rainforests, the extent of logging has been so great in some localities that some common rainforest bird species, including fruit pigeons, are either absent or relatively scarce. In other sites where damage to the canopy has been minimal, some species such as *Sericornis* and other small passerines appear in greater numbers than in contiguous untouched rainforest.

The Queensland Department of Forestry is continuing its programme of clearfelling natural forestland in State Forests and replanting with monocultural softwood plantations. Gravatt (1974) comments that "unless a mosaic of vegetation types of considerable size is retained within extensive areas of pines, virtually all vegetarian birds will be eliminated". His reservations are confirmed by Bevege (1974) who notes that, in relation to the softwood programme in the south-east Queensland coastal lowlands, "figures would indicate a partial adaption to pines in 12% of bird species with presumed complete adaption in only two percent", and that current planning prescriptions which aim at 100% conversion (from natural forest to pine) "will result in significant loss of wildlife values to the complex".

Disney and Stokes (1976) show that "the loss in diversity of species and actual numbers of individuals is very great when native forest is removed for pines". Recent unpublished surveys by the Wildlife Research Group (Queensland) in the Beerwah *Pinus ellioti* softwood complex support their findings. The recent report of the House of Representatives Standing Committee on Environment into the softwood programme strongly recommends to government authorities that, in future, urgent consideration be given to purchasing already-cleared marginally-economic lands for softwood planting in lieu of continuing current practices.

At the time of writing, a woodchip export industry has been approved for south-east Queensland. There is little information available on the effects of woodchipping in southern states on bird populations. Tyndale-Biscoe and Smith (1969) detailed the harmful consequences of woodchipping on a mammal species. Over-mature and very old trees, most of which are left in the forest during normal logging operations, are heavily utilised by woodchipping interests. Calaby (1966) points out that these trees are crucial for the survival of a wide range of animals. Birds which utilise these trees include owls, owl-nightjar, kingfishers, dollar-bird and treecreepers. Recent research in Victoria, (P. Rawlinson, *pers. comm.*), indicates that with some species these trees must be at least 100 to 150 years of age before they support suitable hollows for wildlife. Under current woodchip operations, clearfelling rotations are usually of the order of 30 to 40 years.

SELECT AREAS AND HABITATS

Southern Rainforests:

The rainforests of south-east Queensland and north-east New South Wales support a number of endemic, localised species of bird. The Albert lyrebird (*Menura alberti*) is fairly common in subtropical rainforest in some parts of south-east Queensland, but its known distribution is extremely limited. According to regular reports, it appears to have suffered a dramatic decline in numbers on Mt. Tamborine. It was also reported from the Blackall Range (Cayley 1931), but the rainforests there have since been almost totally cleared leaving the bird no suitable habitat.

The rufous scrub-bird (*Atrichornis rufescens*) is confined to Antarctic beech (*Nothofagus moorei*) forests in subtropical and temperate rainforest at high altitudes. Much of its known distribution lies within existing national parks and its future appears secure at this stage as it is the coastal rainforest scrubs of southern Queensland which have suffered at the hands of land developers.

In reference to the blue-browed or southern race of the fig parrot (*Opopsitta diophthalma coxeni*), the naturalist R. Illidge in 1924 wrote that "in the Blackall Range the scrubs are disappearing yearly at an enormous rate, and with them must go these little birds, as also most others. The same is occurring with the D'Aguilar Range. All those I knew at Gympie are down, and the greater part of Brookfield long since disappeared". This bird is confined to the lowland scrubs of south-east Queensland and north-east New South Wales. A flock seen near Bonalbo feeding in fig trees in 1962 is the only published reference to it since 1960, although recently two birds were reported from Lamington National Park (Corfe 1977). It was once common in the scrubs of southern Queensland, and in the lowland rainforests of the 'Big Scrub' of north-east New South Wales which has since been almost totally cleared for dairying. Its future must at this stage be considered doubtful.

Another denizen of the lowland rainforests, the black-breasted quail (*Turnix melanogaster*) is confined to eastern Queensland and north-eastern New South Wales. It is a ground-dweller of the lowland scrubs with a profusion of understorey thickets and is considered to be rare throughout its range.

The southern (plumed) race of the marbled frogmouth (*Podargus ocellatus*) is another rarity similarly confined in distribution. Until recently, it was known in Queensland from only two authentic records, and in New South Wales it has been recorded less than seven times from rainforests at Dorrigo, Bellingen, Woolgoolga and Lismore.

Northern Rainforests:

No less than 13 species of birds are confined to the rainforests of the Cairns region in northern Queensland. Most are found commonly in the rainforests from just south of Cooktown to Mt. Spec north of Townsville. Some are restricted within their range to confined altitudinal limits: the Atherton scrub-wren (*Sericornis keri*) is restricted to the highlands above 650 metres, and the golden bowerbird (*Prionodura newtoniana*) does not generally occur below 900 metres. These species are still common within their restricted range although a great deal of destruction of their habitat has occurred. Less than 10% of the Atherton Tableland scrubs still remain.

Once again, the most serious damage inflicted to date has been upon lowland rainforest. This habitat has all but disappeared in coastal northern Queensland south of the Daintree River and in that area persists only in small pockets. Its soils are favoured by sugar cane, dairying and other primary industries. Large areas of lowland rainforest and adjacent mountain ranges, still in pristine, natural condition, are to be found along the coast north of the Daintree almost to Cooktown. It is of concern that the expansion of pastoral and timber activities in this region is planned. A number of north Queensland rainforest-inhabiting birds, such as the white-tailed kingfisher

(*Tanyseptera sylvia*) and large-tailed nightjar (*Caprimulgus macrurus*) are restricted to lowland rainforest and do not occur at higher altitudes. A number of others, including the rufous owl (*Ninox rufa*) and cassowary (*Casuarius casuarius*) are much more numerous in rainforest at lower altitudes.

Cape York Peninsula:

The lowland rainforests of the Iron Range-McIlwraith Range complex on Cape York Peninsula support the only known Australian populations of the eclectus parrot (*Eclectus roratus*), red-cheeked parrot (*Geoffroyus geoffroyi*) and green-backed honeyeater (*Glycichaera fallax*), the latter being known only from the scrubs of the Claudie River. This region is a major stronghold in Australia for other species of Papua-New Guinea origin, such as the palm cockatoo (*Probosciger aterrimus*) and magnificent rifle-bird (*Ptiloris magnificus*). It is believed that from a bird conservation perspective, it is essential that the rainforests of this region be afforded permanent protection in the form of national park-land.

Kikkawa (1976) notes that 108 species of water-birds and 258 species of land-birds have been recorded from Cape York Peninsula north of Latitude 16°. One species, the white-streaked honeyeater (*Lichmera cockerelli*) and a number of races are endemic to this region, often referred to as the 'Cape York Wilderness'. Less than 5% of the landmass of the peninsula is currently committed to development, and it is considered that Queensland is in a unique position to instigate long-term planning procedures in order to protect the important ornithological and other natural values in this area.

Cape York Peninsula supports a mosaic of vegetation types including the most extensive mangrove forests in Australia, large tracts of heath-land, and a variety of rainforest, including the peculiar scrubs of Lockerbie near the tip of Cape York. A number of regrettable instances have occurred on the peninsula in the past. One-tenth of the Lockerbie scrubs, for example, were cleared nearly ten years ago for a cattle venture which has yet to develop.

Open woodland interspersed with termite-mounds in central Cape York Peninsula is the habitat of the golden-shouldered parrot (*Psephotus chrysopterygius*), pairs of which fetch up to \$10,000 on the overseas black market. There is some doubt about the present status of this bird, but certainly many observers have reported difficulty in locating it, and it seems to have disappeared from parts of its range.

South-east Queensland:

Situated less than 120 kilometres by road from Brisbane, the Conondale Range contains a wide variety of vegetation ranging from dry open-forest on the western slopes to wet sclerophyll and rainforest. Four major types of the latter have been identified there, including forest with close affinities with the scrubs of the Blackall Range and the 'Big Scrub' of North-east New South Wales, most of which have long been cleared. This region supports a great variety and abundance of birds.

In October, 1976, the marbled (plumed) frogmouth (*Podargus ocellatus plumiferus*) was recorded in the Conondales (Roberts and Ingram 1977).

It has since been noted in at least two localities on regular occasions, and thus this is the first area in which this bird has been regularly recorded. The fig parrot (*Opopsitta diophthalma*) has been seen in the Cononadales in the past. Several pairs of powerful owl (*Ninox strenua*), and sooty owl (*Tyto tenebricosa*) are known. Other rare species recorded include the black-breasted quail (*Turnix melanogaster*) and red goshawk (*Erythrotriorchus radiatus*). The area lies at or is close to the northern distributional limit of the southern logrunner (*Orthonyx temminckii*), red-browed treecreeper (*Climacteris erythroptis*), new holland honeyeater (*Phylidonyris novaehollandiae*) and the southern races of the sooty owl, marbled frogmouth and pale-yellow robin (*Eopsaltria capito*). It is the southern distributional limit of the dusky honeyeater (*Myzomela obscura*) and contains an abundance of fruit-pigeons and other more common rainforest birds.

The major threat to the future of the Cononadales lies in the clearing of rainforest and wet sclerophyll forest for hoop pine (*Araucaria cunninghami*) plantations. Another practice of concern is 'blackbutt enrichment', an operation which involves the clearing of rainforest and replanting with a monoculture of *Eucalyptus pilularis*. Selective logging is in operation throughout the Conondale Range and should be carefully controlled in future. This area is biologically so important that its future should not be forsaken for forestry interests without there first being a complete and independent inquiry into the conservation needs of the wildlife and forests found there. A list of birds recorded from the Cononadales has been published (Roberts 1977b).

A total of 142 species of land birds are known from the coastal sand mass of Cooloola, (Roberts and Ingram 1976). The heaths of the Noosa Plain in particular support a number of rare species. The southern emu-wren (*Stipiturus malachurus*) is known in Queensland only from this locality. The grass owl (*Tyto longimembris*), turquoise parrot (*Neophema pulchella*) and king quail (*Excalfactoria chinensis*) have been recorded there.

Ingram (1975) has stressed the importance of the Noosa Plain to the future of the ground parrot (*Pezoporus wallicus*) on mainland Australia. Large numbers of this species occur in the heaths of the Noosa Plain. Much of its habitat in Australia has been destroyed and it is considered to be a species in danger of extinction (Fisher *et al.* 1969). Other than Cooloola, the only other areas on mainland Australia of note in which ground parrots survive in numbers are Barron Grounds in New South Wales, Malacoota and Wilson's Promituary in Victoria, and Two People's Bay in Western Australia.

Regular controlled burning of the ground parrot's habitat in Cooloola has been conducted by the Queensland Department of Forestry for a number of years. It is believed that the mechanics of this kind of operation should be left in the hands of skilful and observant field staff, and that burning should be preceded by a carefully prepared management plan which should determine the dynamics of this practice and where and when controlled burning should be conducted.

It has been suggested, that the eastern bristle-bird (*Dasyornis brachypterus*) has declined in numbers in south-east Queensland where it is patchily distributed and confined to montane heaths. A number of observers have commented on its disappearance from some localities in Lamington National Park, and have suggested that this may be due to

the exuberant density and height of heath which has resulted from fire-prevention management. If these reports are confirmed, clearly there is a need for research into the habitat requirements of this species as a matter of urgency.

The Urban Environment

"All remaining areas of natural and near-natural land close to centres of settlement should be considered for their possible addition to the reserve system" (Report of the National Estate, 1974). The presence of native birds within the urban environment is dependent to a large extent on the protection of areas of native vegetation within that environment. The "green-wedge" corridor system in Melbourne, for example, has successfully preserved sizeable tracts of bushland amongst suburbia and, in many suburbs, a variety of native bird species can be seen. In Brisbane, the protection of such areas as the Mouth Coot-tha parklands and Sandgate Lagoons will ensure the occurrence of some species within Greater Brisbane for as long as their reserve status is maintained. It is important that the further alienation of remaining pockets of natural vegetation within towns and cities be prevented.

In the home garden, native birds can be attracted by a number of means. Salter (1970) gives some guidelines on the most suitable plant species to use. Those plants which have open flowers, for example, *Boronia*, *Eriostemon* and *Thryptomene*, are of little use as a food supply to birds. It is possible to select a range of plants having sufficient variety in their respective flowering seasons to make food-producing blossoms available all year round to a variety of honeyeaters and parrots.

Some natives, for example those members of the *Calothammus* genus and some of the *Grevillea* genus, flower all year round. Salter's book suggests a wide range of suitable trees to plant, including *Grevillea*, *Callistemon*, *Eucalyptus*, *Maleleuca*, *Banksia* and *Acacia* species. As far as possible, those trees planted should preferably be native to the surrounding area. A pond enhances both the beauty of the garden and its appeal to visiting birds.

Wetlands

In relation to the conservation needs of waterfowl, it has been well established that waterfowl breeding habitat depends on the size and frequency of the flooding of inland rivers (Frith 1977b). It is obvious that continued control of their headwaters, in the interests of water conservation, has far-reaching adverse effects on waterfowl breeding. The preservation of coastal swamplands and wetlands is the second prerequisite to waterfowl conservation. The prevention of flooding in the inland rivers by water conservation projects, and the lack of coastal swamps due to drainage, may ultimately have devastating consequences for the breeding stock of most species of Queensland waterfowl.

It has been estimated (Cowan 1973) that numbers of the magpie goose (*Anseranas semipalmata*), burdekin duck (*Tadorna radjah*), freckled duck (*Stictonetta naevosa*), white pygmy goose (*Nettapus coromandelianus*), shoveler (*Anas rhynchotis*), chesnut teal (*A. castanea*), grey teal (*A. gibberifrons*), white-eyed duck (*Aythya australis*), blue-billed duck (*Oxyura australis*) and pink-eared duck (*Malacorhynchus membranaceus*) have decreased substantially in numbers since the year 1900. In coastal Queensland south

of Townsville where the burdekin duck was once quite common, for example, it now survives in small numbers in a very few localities, such as the swamps around St. Lawrence.

Queensland is still in a relatively good position because large areas of wetland remain in south-western and northern Queensland. It is essential that most of such areas, like the Townsville Common, be afforded protection as a matter of high priority.

Mangroves:

A number of Queensland birds exist almost solely in mangroves, including the broad-billed flycatcher (*Myiagra ruficollis*), white-breasted whistler (*Pachycephala lanioides*) and chesnut rail (*Eulabeornis castaneoventris*). Mangrove forests become increasingly tall and complex the further north they occur, and correspondingly the birdlife therein becomes increasingly diverse and abundant. During a survey on Horn Island in the Torres Strait, for example, 36 of a total of 61 species recorded were found in mangroves, and no less than 12 species were found only in mangroves (Roberts 1977a).

In recent years, massive destruction of mangroves in Queensland has occurred. Clearing, draining and filling around Moreton Bay has destroyed large areas of mangroves, in addition to those forests around Cairns, Gladstone, Noosa Heads and the Gold Coast to mention but a few localities. The discharge of tailings and other effluents into the sea can kill mangroves and this has happened, for example, at Trinity Bay near Cairns. Mangroves are important not just because of the birds they support, but for their part in maintaining suitable mudflats and associated habitats which are the home of our migratory and sedentary waders and large numbers of other water-birds. The destruction of these mud-trapping plant communities results in severe silting and eroding of contiguous mudflats.

The Queensland Government's Coastal Management Study has recently recommended that, except for those areas required for essential waterfront uses, the remaining areas of mangroves and salt marsh of significant value to fisheries or other purposes in south-east Queensland be preserved. It further recommends that important areas of freshwater swamp be selected for conservation purposes.

The Australian Government has recently signed a treaty with Japan for the protection of migratory birds. This agreement stipulates that each government shall endeavour to establish sanctuaries and other facilities for the management and protection of migratory birds. The two governments shall exchange data and publications regarding research on migratory birds and shall encourage the formulation of joint research programmes. The list of species covered by the Agreement includes 27 members of the family Charadriidae and 39 other species common to both nations.

BIRD TRAPPING AND SMUGGLING

Bird-smuggling has certainly shown its consequences on Queensland's avifauna. A number of species are becoming increasingly rare in this state, such as the star finch (*Bathilda ruficauda*) and Gouldian finch (*Chloebia gouldiae*). The southern form of the black-throated finch

(*Poephila cineta cineta*), for example, was once quite common in parts of south-east Queensland, and throughout its range which extends to the Atherton Tableland. It is now confined to a very few pockets of favoured habitat.

In its report on fauna trafficking, the House of Representatives Standing Committee on Environment and Conservation notes that penalties in existing fauna legislation act as little deterrent to fauna traffickers and recommends increased penalties. The Committee recommended that the Commonwealth Government establish within the Bureau of Customs a permanent, full-time National Fauna Squad and a central fauna trafficking intelligence unit. It further recommended that the existing Council of Nature Conservation Ministers (which consists of ministers from all states responsible for the environment) consider, as a matter of urgency, uniformity and adequacy of legislation between the states and territories so that neighbouring states and territories have legislation that is not in conflict. The Committee strongly recommended that the Commonwealth Government give additional financial support to the current Biological Resources Study and to other research to firmly establish the extent of Australia's wildlife populations.

CONCLUDING COMMENTS

There is an important role for amateur and professional ornithologists to play in assisting the conservation of birds and their environment. The appalling paucity of research data on the distribution, abundance and ecology of birds and their conservation needs has already been referred to. The recording, collation and presentation of observations in the field by ornithologists will help meet this need. Furthermore, there is a strong case for the constant surveillance by naturalists of areas considered to be of importance to wildlife conservation, potential national parks and reserves, and developments which may constitute some threat to wildlife. The enhancement of the urban environment for birds can also be improved by the individual in his or her own garden.

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NOTES ON BIRDS IN THE DARWIN AND NORTHERN AREAS OF THE NORTHERN TERRITORY

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INTRODUCTION

The status and distribution of many bird species in the Northern Territory is imperfectly known, even in the relatively densely settled area around Darwin. There is no handbook of birds in the Darwin area, the main sources of information being Crawford (1972) and Storr (1977). The checklist by Storr (1977) relies mainly on published records. The lack of a local journal for the publication of sight records, which may not be of sufficient interest for interstate or national publications, causes many observations to be unrecorded in the literature.

This paper records observations by the author as well as those from other people who have been active in the Darwin area (see Acknowledgements for initial code). The account is rather fragmented, but the species and their records have been chosen to consolidate or add to our existing knowledge of birds in the Darwin area, as published by Crawford (1972), and add information to Storr's (1977) checklist. Some field descriptions are included in the text where they are of interest. All records have been checked to ensure correct identification. The terms 'dry season' (May to October), and 'wet season' (November to April), are used rather than the customary four seasons of temperate climates. Crawford (1972) gives a short summary of the geographical and vegetational features of the Darwin area.

SPECIES LIST

Emu *Dromaius novaehollandiae*

J. McKean (pers. comm.) considers the species to be thinly distributed on the subcoastal plains, rather than rare or absent as suggested by Storr (1977). There are several records from the plains to the south-west of Darwin, from north-west of Adelaide River township and parts of the Daly drainage (CC, JMK).

Species records are:

- sometime 1972: 1 Black Fellow Creek crossing, Daly River Road (JW);
- 20 March 1973: 1 hit by car about 15 km north of Adelaide River township (CD);
- 15 July 1973: 1 adult with two chicks on the Wangi Road, about 60 km south of Darwin (HT);
- 15 August 1973: 2 between Jimmy's Creek on the Old Point Stuart Road (JB, PP);
- 17 August 1973: 1 half-grown bird near Howard Springs, about 24 km south-east of Darwin (DH);

18 August 1973: 1 Gunn Point (DH).

Wedge-tailed shearwater *Puffinus pacificus*

An occasional wet season visitor, often after storms. The following records are in addition to those in Storr (1977):

3 January 1975: 1 East Point, Darwin (HT);

23 January 1976: 1 Lee Point, Darwin (JE, ØJ);

13 February 1977: a beach-washed specimen picked up on this date at Rapid Creek, Darwin and later handed to AS.

Brown booby *Sula leucogaster*

J. McKean (pers. comm.) found this species common in the Gulf of Carpentaria in the dry seasons of 1966, 1967 and 1972. It is probably a regular visitor in small numbers to the Darwin area in the wet season. There are also recent records of birds in the dry season in Darwin.

19 August 1977: 1 adult, off Lee Point (HT);

20 August 1977: up to 10, 6-mile marker, Darwin Harbour (CD).

Black cormorant *Phalacrocorax carbo*

This species was not recorded by Crawford (1972), and was 'bracketed' by Storr (1977) who apparently regards all the Northern Territory records as dubious and comments that most of them are from observers who fail to mention *P. sulcirostris*. Although its status remains uncertain, the following records are presented:

12-13 August 1972: 2 off Wangi Road, about 40 km south of Darwin (HT);

11 September 1976: 1 near the Victoria River at about 15°40' 130°55' (FC, TW, JE);

29 November 1976: 1 Sanderson Sewage Ponds, Darwin (PR);

Nov/Dec. 1976: present at Low Level Reserve, Katherine (MR);

1 January 1977: single bird at Low Level, Katherine (MR);

26 May 1977: single bird at Low Level, Katherine (MR);

16 June 1977: single bird at Low Level, Katherine (MR);

14 November 1976: 1 near Sweet's lookout on the Finniss River (JE, AH);

3 August 1977: 5 Kapalga (RG, JE, AH);

18 September 1977: 1 Seven-mile Lagoon, Wildman River (CD, SH, AT, HT).

Pied cormorant *Phalacrocorax varius*

Storr (1977) is sceptical of sight records for this species and considers the only authentic record is that of a specimen collected near Darwin on 8 December 1971. He seems to exaggerate the difficulties of distinguishing this species from *P. melanoleucos* and his summary of its status as 'uncertain' does not reflect the true situation. J. McKean (pers. comm.) has seen the species on numerous occasions along the coasts of Arnhem Land and the Gulf of Carpentaria. J. McKean also states that the species has been seen nesting on an island in the Sir Edward Pellew Group in the Gulf of Carpentaria, and in mangroves along Cooper's Creek near Cannon Hill on the subcoastal plains. He further remarks that it probably breeds on Maria Island in the Gulf of Carpentaria, where nests attributable to this species have been found. As a maritime species, its occurrence is likely to have been underestimated by land-based observers. Some of the following records suggest that the Victoria River drainage may be another area where the species could be common.

In Darwin, it seems to be a dry season vagrant:

- 16 March 1974: 1, Sanderson Sewage Ponds, Darwin (JMK, JE);
- 30 November 1974: 1, Sanderson (DS, JMK);
- 14 August 1976: 1, Sanderson (PR, HT);
- 2 May 1977: 1, Sanderson (HT);
- 11 June 1977: 1, between Gunn Point and the South-west Vernon Island;
- 19 July 1977: at least 6 on the Victoria River near Timber Creek (CD, SH);
- 21 July 1977: 1, West Baines River at Victoria Highway (CD, SH);
- 18 September 1977: 3, Seven-mile Lagoon, Wildman River (CD, HT).

Yellow-billed spoonbill *Platalea flavipes*

The status of this species is still uncertain, although it seems to be at least an occasional dry season visitor to the northern coastal plains. In Katherine it may be a regular wet season visitor in small numbers (MR). The following records add to those published by Crawford (1972):

- 14 June 1975: 1, Muirella Park (HT);
- 16 August 1976: 1, near Beatrice Hill (JE);
- 2 July 1977: 1, Marrakai area (PR);
- 9 July 1977: 1, Leanyer Swamp, Darwin (HT);
- 16 July 1977: 1, Leanyer Swamp, Darwin (HT);
- 3 September 1977: 3, near Beatrice Hill (NM, HT).

Black swan *Cygnus atratus*

Storr (1977) gives this species the status of a rare vagrant to the Northern Territory, north to Avon Downs and notes Parker's (1969) breeding records for the wet years 1966-7. There is a recent record north of this area and two from the coastal plains:

- 8 April 1977: 1, Lake Woods (CC);
 22 May 1971: 1, Thring Creek (12°45'/131°53') (IM);
 11 October 1972: 2, near Alligator Head, Marrakai (PT).

Garganey *Anas querquedula*

One record from Darwin:

- 2 March 1975: 1, Sanderson (HT).

The bird was on water with five black duck *Anas superciliosa*. The garganey was "teal-size" and obviously smaller. The upperparts were a mottled brown, being browner than a grey teal, *A. gibberifrons*, the underparts were also buffer than that species. There were distinct head-markings of a dark-brown crown-stripe and a line through the eye. In flight the garganey showed a dark-green speculum, edged with white, and pale blue-grey wing-coverts, indicating a male in eclipse plumage. The observer has had previous field experience with the species in Europe.

Letter-winged kite *Elanus scriptus*

From June 1977 onwards there was a small irruption of this species around Darwin. To my knowledge these are the first records for this species for the northern part of the Northern Territory.

- 4 June 1977: 1, near Lee Point, Darwin (DJ). First Darwin record.
 June/July 1977: subsequent observations in the Sanderson/Leanyer area of Darwin, several observers (AS, CD, SH, CP, HT). At least two birds present and photographic record (HT).
 16 June 1977: 1 killed at Animal Industry and Agriculture Branch farm, about 18 km north of Katherine; also photographic record (MR).

Square-tailed kite *Lophotinia isura*

Storr (1977) seems wary of most sight-records of this species and suggests in his accounts of it and the black-breasted buzzard *Hamirostra melanosterna*, that they can be confused with each other and also with black kites *Milvus migrans*. Personal experience suggests that most observers can distinguish the three species without too much trouble. The name "square-tailed" has caused a number of people to misidentify black kites which sometimes have square-tipped tails.

- 16 October 1972: 1, about 17 km north of Adelaide River township (GR, IM, JMK);
- 28 July 1974: 1, junction of Oenpelli and Goodparla Roads (HT);
- 14 June 1975: 1, near Mudginberry Station (HT);
- 25 July 1975: 1, Ranger Station, South Alligator River (HT);
- 1 August 1975: 1, Phillip Creek, Stuart Highway (JE);
- 23 May 1977: 1, Low Level Reserve, Katherine (MR);
- 31 July 1977: 1, South Alligator River crossing on El Sherana Road, near UDP Falls turn-off (JE).

Black-breasted kite *Hamirostra melanosternum*

I suggest that Storr (1977) is wrong in implying that this species is relatively scarce in the northern part of the Northern Territory, and perhaps more surprising is Crawford's (1972) omission of the species from his Darwin list, mentioning it only under *Lophoetinia isura*. Slater (1970) omits it from his distribution map north of about 15 degrees latitude. All this published information is misleading as the species seems to be common around the northern coastal plains, sometimes visiting the fringes of Darwin. Also, the species does not present any field identification problems.

Most observers familiar with the species in the Darwin area agree that it has a very distinctive flight-style, tilting from side to side when gliding on upswept wings. It has a noticeably short, rounded tail. Dark phase birds are almost unmistakable with very dark underparts. Only the dark local subspecies of the brown falcon *Falco berigora melvillensis* may be confused with it for it has a similar gliding flight. The brown falcon, however, has a much longer tail and lacks the white 'bulls-eyes' usually present on the wings of the dark phase black-breasted kite.

Between 1974 and 1977 there are numerous records and a road-killed specimen from the Humpty Doo area, about 50 km south-east of Darwin (JE, PR, JMK, HT). The author has personal records from the Darwin area, Mary River, Pine Creek, Larrimah, from near Copperfield Creek on the Claravale Road and from several points on the Arnhem Highway, east of Darwin. The species has also been recorded from Katherine, Pine Creek and Roper Bar (MR). It is at least an occasional carrion eater. The Humpty Doo road-kill appeared to have been feeding on a dead agile wallaby *Wallabia agilis* and the author has seen a bird on the carcass of a water-buffalo *Bubalus bubalis*.

Black falcon *Falco subniger*

Storr (1977) gives no records for this species north of Dunmarra (16°40'/133°23') and Crawford (1972) does not mention it at all. It is known to occur on the coastal plains east of Darwin but its status there is unknown. There was a small irruption of this species in the Darwin area during the 1977 dry season and this may be related to a similar increase in letter-winged kites at the same time (see above).

- 11 June 1973: 1, about 30 km west of Stuart Highway on Daly River Road (JMK);
- 15 November 1973: 1 Humpty Doo (CPR);
- 29 April 1974: 1, near Holmes Jungle, Darwin (IM);
- 11 June 1976: 1, Arnhem Highway between South Alligator River and Flying Fox Creek (JMK, HT);
- 11 June 1976: 1, near Humpty Doo (JMK);

There are several undated records for the Humpty Doo area. At the time of writing, details of records in the Darwin area for the 1977 irruption were:

- 12 June 1977: 1, near CSIRO, Berrimah (JE);
- 26 June 1977: 2, Sanderson (GB, JE);
- 2 July 1977: 1, Darwin airport (PR);
- 9 July 1977: 1, near Holmes Jungle (HT);
- 9 July 1977: 1, Sanderson (HT);
- 7 August 1977: 1, Holmes Jungle Swamp (RG, CP, JE, HT);
- 14 August 1977: 1, Buffalo Creek (CD, SH, AT, HT);
- 21 August 1977: 1, Leanyer Swamp (AT, HT).

Black-tailed native-hen *Gallinula ventralis*

The following seems to be the most northerly record for the Territory:

- 13 April 1975: 1, about 20 km south of Adelaide River township on the Stuart Highway (AT, HT).

Sooty oystercatcher *Haematopus fuliginosus ophthalmicus*

J. McKean (pers. comm.) suspects that the distribution of this species coincides with the coral reefs over which it prefers to feed. It is far more common around offshore islands and their associated coral reefs than it is on the mainland coasts. McKean (pers. comm.) has found it on the Vernon Is. off Darwin, on Maria Is., and on the Sir Edward Pellew group in the Gulf of Carpentaria.

The species is found around the Gove peninsular and although Officer (1976) does not record it from that area, Boekel (1976) recorded it once in ten months. K. Grant (pers. comm.) has recorded it from the Gove area and the writer has one record:

- 3 July 1977: 1, Wallaby Beach (HT).

The species seems to be a scarce visitor around Darwin. Crawford (1972) published one personal record from Lee Point. There are two subsequent records from the same place:

8 September 1976: 1, Lee Point (HT);

23 January-25 March 1977: 1, Lee Point (HT, JE).

Red-kneed dotterel *Erythrogonys cinctus*

Status uncertain, but apparently an erratic dry season visitor which is sometimes fairly common. Following Crawford's (1972) two records in 1969 for Leanyer Swamp, there have been no records until 1975:

21 June-14 September 1975: present at Sanderson, with a maximum of about 35 on 6 July (HT);

15 August-2 December 1976: present at Sanderson (HT);

4-8 May 1977: 1, Sanderson (AS, PR).

There are at least two recent records from outside Darwin:

13 July 1975: 3, Fogg Dam (HT);

11 April 1977: 2, Katherine Sewage Ponds (MR).

Wandering tattler *Tringa incana*

Apart from H.B. Gill's record of a bird at Fannie Bay, Darwin, as quoted by Storr (1977) there are no other records for the Northern Territory. Condon (1975) regarded it as common but this probably stems from Crawford (1972) who considered the two tattlers to be conspecific and used the name *T. incana* for the grey-tailed species which is a regular visitor.

Redshank *Tringa totanus*

There is at least one more record to add to the three cited by Storr (1977):

14-15 November 1976: 1, Sanderson (PR, HT);

A medium-sized wader of typical *Tringa* build, upperparts browner than *T. nebularia*. Next to *T. stagnatilis* was much larger, stockier and browner on the upperparts. Bill orange-yellow with black tip; legs orange-yellow, suggesting an immature bird. In flight it showed a barred tail, white rump and large white patches on the secondaries. Its call was a melodious "tu-le" when flushed. The author is familiar with the species in Europe and also in Timor where it probably winters (McKean *et al.* 1975).

Bridled tern *Sterna anaetheta*

Storr (1977) mentions this species as being storm-blown in 1973 and 1974. There is an additional record:

22 February 1975: 1, Lee Point (HT).

Domestic pigeon *Columba livia*

This species is not recorded by either Storr (1977) or Crawford (1972), nor specifically for the Northern Territory by Condon (1975). The species now seems to be established in Darwin and apparently at Nhulunbuy/Gove (Boekel 1976).

Flock pigeon *Phaps histrionica*

An occasional visitor to Darwin, with seven records between March 1974 and December 1976. Maximum flock was:

2 September 1974: 26, near Holmes Jungle (JMK, HT).

Barn swallow *Hirundo rustica*

There are at least five more records of this species to add to those detailed by Klapste (1977) for the Northern Territory. It may be a regular wet season visitor in small numbers; all eight records are between 10 September and 30 March. The unpublished records are:

15 February 1974: 15, along the Adelaide River, about 10 km north of Humpty Doo. One collected - CSIRO Aust. Nat. W/L. Coll. No. 17009;

30 March 1974: 1, Sanderson (JMK, HT);

2 November 1974: 1, Holmes Jungle Swamp (JMK, HT);

10 September 1976: 2, Sanderson (HT);

19 November 1976: 1, Sanderson (AT, PR, HT).

Yellow wagtail *Motacilla flava*

There are three recent records of this species which may be a regular migrant or wet season visitor in small numbers. In addition there are several other records for which no details are available.

31 December 1973: 3, East Point, Darwin, including one adult bird (HT);

23 May 1976: 1 male, Sanderson (HT);

30 September 1976: 2, Sanderson (LR);

13 April 1977: 1 male, Sanderson (HT).

The 1976 and 1977 birds both had bright yellow underparts, paler on the vent, strongly undulating flight and a persistently repeated "weet" call. The 1977 bird was closely observed and had an olive-green back, blackish wings, blackish tail with white outer tail feathers. The head was a blue-grey with a white eyebrow.

The author has experience of several subspecies of *M. flava* and also the grey wagtail *Motacilla cinerea* in Europe and South-east Asia. Under fair conditions there should be little problem in distinguishing *M. cinerea* on back colour, relative length of tail, and the call which is quite distinct.

Gouldian finch *Erythrura gouldiae*

It seems that this species was regularly seen in Darwin ten or fifteen years ago and actually breeds near the site of Darwin hospital at Kahlin (DJ). Apart from undated records (CF) there have been two recent records not obviously attributable to aviary escapees:

25 August 1974: about 15 in a garden in Fannie Bay; mostly juvenile birds (DG);

13 March 1977: 2, Dynah Beach, Darwin (CP).

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A SPECIMEN RECORD OF HUTTON'S SHEARWATER FROM BOOBY ISLAND, QUEENSLAND

D.P. VERNON

During the night of 3 April 1976, a specimen of Hutton's shearwater, *Puffinus huttoni*, flew into the lighthouse on Booby Island, Torres Strait, 10°38'S., 141°51'E. and was killed. It was weighed, measured, colour notes obtained and then preserved in alcohol by Mrs. Ann Hersom. In due course, the specimen was donated to the Queensland Museum, where it was prepared as a study skin with wings outstretched and was then registered 016479.

This is the first specimen record for Queensland and the most northerly record for the species. Prior to this, species distribution for Queensland was known from three sight records which were cited by Corben, Roberts and Ingram (1974). The authors stated "An observation of Hutton's shearwater was made on 12 May 1971, when Michael J. Carter, who had field experience of Hutton's shearwater in Victoria, and H.B. Gill were travelling by boat between Mission Beach and Beaver Cay, North Queensland (Carter, pers. comm.). Good views of a single *P. huttoni* were obtained not far from Beaver Cay (17°50'S.)...Less than a month later, on 5 June 1971, one of us (C.C.) observed a single Hutton's shearwater from Point Lookout, North Stradbroke Island (27°25'S., 153°33'E.)...and a flock of about twelve fluttering shearwaters and one Hutton's shearwater was encountered on calm water east of the southern tip of Moreton Island (27°21'S.)" on 12 August 1973.

Distribution of the species is given by the Checklist Committee (F.C. Kinsky, Convenor), Ornithological Society of New Zealand (1970), as "Breeding seaward Kaikoura Range from about 4000 ft; ranging south to Banks Peninsula, north to the Auckland area and west to the Great Australian Bight". Apart from the recent Queensland reports, Australian distribution was provided by Serventy, Serventy and Warham (1971) as "A regular visitor to the seas off South Australia (Kangaroo Island), less often to Western Australia and rarely to New South Wales." McGill (1960) lists the fluttering shearwater, *P. gavia*, but not *P. huttoni* in his species list of the birds of New South Wales.

Of its migratory movements, Condon (1975) says "Leaves N.Z. seas during autumn and returns in spring often wintering off N.S.W., Vic. and S.A., ...reaches south Western Australia on occasions." Corben, Roberts and Ingram (1974) believe that "Hutton's shearwater is probably a regular, if somewhat rare visitor to the south eastern coast of Queensland, but that its occurrence in the north is most likely to be accidental." The north Queensland records are April and May and future observations may show a movement up the coast of Queensland after the breeding season. Data on the nesting of this species in the north-east of the South Island of New Zealand is provided by Harrow (1965).

Criteria for separating *P. huttoni* from *P. gavia* and from the larger Manx shearwater, *P. puffinus*, are provided in a table by Kinsky and Fowler (1973). In *P. huttoni* the under-wing covert feathers are off-white with dark shafts and smudgy brown outer vanes and the under tail covert feathers are white but with the lateral feathers having dark brown edges on the outer vanes. The longest under tail covert feathers are white, and smudged with brown toward the tips.

Details of the specimen 016479 are as follows: Sex unknown, weight 280 g., total length 335 mm, wingspan 715, wing 216, tail 69, tarsus 41.5, culmen 37, middle toe and claw 50. Iris was dark brown, bill black, tarsus and webbed feet pink and black.

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REVIEWS

WILD AUSTRALIA by Douglas Dorwood, illustrated by John Olsen, Collins, Sydney.

The current interest in Australian wildlife has been marked by a proliferation of books dealing with various aspects of our native plants, animals and landscape.

Unfortunately, many of the non-technical works have often been marred by inaccuracies, poor standards or obtuseness.

It is, therefore, quite refreshing to find that WILD AUSTRALIA departs quite significantly in presentation, format and scope from its often inelegant contemporaries. Although the book is based on an ABC television series of the same name, WILD AUSTRALIA is not simply a rehash of the Television scripts. Dorwood and Olsen have produced a book which is in many respects, quite singular in its approach to what is now a well worn subject.

The book has two themes. First, birds and men. Although, the expressed

theme is the effect of men on birds, it is obvious that the book treats the reverse theme - the aesthetic experience of being involved with birds. The treatment of men/birds could easily become one of gloom and pessimism. Significantly, Dorwood and Olsen, while not painting an exactly rosy picture have succeeded in avoiding the rhetorical dogmatism so often present in "conservation" oriented treatments.

The second theme concerns the natural landscape and the subtleness of natural beauty. Other books have investigated this subject, the attempts varying from superficial, as in AUSTRALIA IN COLOUR, to sophisticated as in CRADLE COUNTRY. Among "ornithological" works we find Pizzey's A TIME TO LOOK or Sharland's BIRDS OF THE SUN attempting to cover essentially similar ground as WILD AUSTRALIA. However, all these books use conventional format-text and photographs. Dorwood and Olsen have extended these media, as Dorwood observes in the introduction,

"Some things the camera could not do, this is where John Olsen came in. He could see....subtleties extremely well; he did not just illustrate birds."

Olsen succeeds admirably in capturing these subtleties. His abstract, expressionist, almost oriental style of illustration (see for example "Frog in the Rain", p. 116) captures a feature of his subjects (an essence?) which "field guide" illustrations rarely, if ever do.

Olsen himself freely admits the capturing the "feeling for the whole" is more important to him than is the expression of purely, logical relationships. Anyway, "accurate" portrayal of the subjects, e.g. albatrosses (Ch. 2), or eagles (Ch. 3) is available via the excellent quality photographs.

The book remains a synthesis of text, photograph and illustration - each supplementing and extending the others. Each chapter appears to have been carefully planned to maximize the impact of each element. For example, leading each chapter is a full page photograph or illustrations - hinting at the experiences to follow.

In conclusion, the end result is a pleasing, witty and entertaining book. My favourite chapters were "Albatross Island", "Above the Gorge", "To the Escarpment" and "The Receding Wetlands". One is left to hope that more books of this quality are to be forthcoming.

Gregory V. Czechura.

BIRDS OF THE NORTHERN TERRITORY by G.M. Storr, Spec. Publ. West. Aust. Mus., No. 7, 1977, 130 pp. Price \$3.50 (plus 60¢ postage).

This publication is a revision of the List of Northern Territory Birds (*Spec. Publ. West. Aust. Mus. No. 4*) brought out in 1967 and also written by Glen Storr. For those who are familiar with Storr's list of Queensland birds (*Spec. Publ. West. Aust. Mus. No. 5*), comparisons between it and the present list are inevitable. The most notable difference between the two is the hard cover of the Queensland list. This was excellent for field use but it caused the price to be excessive for most people. The present list's soft cover will show the wear but its reasonable price makes up for it.

The list is prefaced by a short introduction where we are told that the scope of the paper is generally the same as in the previous Northern Territory list. However, the bibliography has been omitted, the gazetteer is limited to place names mentioned in the text, and taxonomic references cited in the previous list and in the Queensland list are not repeated. The introduction is followed by the main body of the text which is excellently set out in phylogenetic order of the families. The notable changes in format from Storr's two previous lists are the use of species as the basic unit and not the subspecies and the corollary of no common names for subspecies. The text is followed by an informative gazetteer, and finally the index.

Comparisons of the number of taxa listed in the two Northern Territory lists yielded the following figures. In the first list, 346 species were listed with 11 species with 2 or more subspecies. In the second list, 380 species are listed with 19 with two or more subspecies including, the grey fantail with four. A hybrid of *sitella* is also listed. Overall 36 species were gained, 2 were lost, and 4 subspecies were lost and 8 gained. Of course, some of the losses and gains are purely taxonomic reinterpretations.

Comparisons with the Queensland list is more meaningful in trying to gauge any changes in Storr's bird classification. The following were noted: - *Geopsittacus* and *Pezoporus* have been combined; the blue-faced honeyeater has been put in *Melithreptus*; the gouldian finch is placed in the same genus as the blue-faced finch; the white-gaped honeyeater has been removed from *Meliphaga* and the genus *Stomiopera* resurrected for it; the land rail is placed in *Gallirallus* and not *Rallus*; the red-breasted babbler has disappeared (probably forever at last); the desert fly eater (*Gerygone mungii*) has been separated off from *G. fusca* (the western warbler for those with short memories).

Normally in reviews of this nature, one now appraises the correctness of these taxonomic decisions. However, I do not believe this is possible. In lists like this we are presented with results only, i.e. we are neither given the data on which the classifications are based nor the methodology which led to the decisions. Some other criteria must be used to judge the value of Storr's work. This can be done best by looking at his place in Australian avian systematics and at his taxonomic methods. Two major clues towards where he stands, are the following statements from the first Northern Territory list and the Queensland list respectively.

"The unit adopted is the subspecies but conceived more broadly than is customary among my colleagues. If we wish to pay more than lip service to stability we must discard the notion that nomenclature can or should reflect all subtleties in geographic variation. Subspecies must be so defined that further accessions and refinement of analyses will not easily disturb nomenclature however much they may modify our knowledge of distribution and variation."

"I continue to take a hard view of subspecies and genera. My aim has been to recognise only those subspecies which can be precisely defined in terms of morphology and geography; and I have tried to eliminate genera that are not doing the work of genera."

Both these statements are very practical but notably are descriptions of goals. We are not told how to achieve them. For insights into his methods for constructing classifications we must look elsewhere. Few

ornithologists realise that Glen Storr's greatest contribution to the systematics of Australian vertebrates has been in reptiles and not birds. Since 1960 he has published over 30 papers on reptiles. His impact in herpetology has been far reaching, and it is amongst these papers we find the answers to the riddle of his methods. Stated simply, the classifications he proposes are based on his judgement and familiarity with the group he is studying. Or stated even more simply, he has no rigorous methodology, only an immaculate eye for making creative, as well as extremely useful classifications. This approach places him with eminent practical taxonomists such as R.E. Blackwelder. The difficulties associated with this approach, however, is that those who wish to use the classifications have no way of being involved in the decision making procedure. That is, we can only make the decision to accept or reject a resultant classification and this decision will be based mainly on the proposer's reputation. No doubt humans can be trained to be very efficient classifiers, but I think the demand for rigorous methodologies so that one can see how taxonomists go from their raw data to a resulting classification, is not unreasonable. This is simply an appeal to make taxonomy more explicit and objective.

But I do not mean this as a criticism of Storr. His approach is symptomatic of the historical stage and state of vertebrate systematics in Australia. So much of the basic taxonomy has not been done, and with conservation pressures and demands from other disciplines who use classifications, urgency, pragmatism, and speed must be the emphasis. He certainly has achieved this and it is only in this context that his work can be judged. One cannot criticise him for the lack of a rigorous methodology for making classificatory decisions if all other Australian bird taxonomists are doing the same.

There is one aspect of the list that does worry me. This is non-use of the vernacular names for distinct subspecies. This was foreshadowed in the Interim List of Passerines. Tucker's paper (*Br. Birds*, 1949, 42(5-7)) is usually invoked to support this change, although I am not sure if this applies to Storr's decision. However, I feel that this is an excellent chance to discuss the problem.

I think no common name for distinct subspecies is open to philosophical, theoretical and practical objections. As Cain (1954, *Animal Species and Evolution*) noted, when Carl Linne, (the man who popularised the binomial system of nomenclature) placed his binomial names on the bird species of Europe, he was recognising the folk taxonomy of the European people. Stated simply, so many of the common names we use evolved outside of ornithologists and taxonomists; e.g., magpie, willie wagtail, and galah. The Australian situation is certainly not as clear cut where some of the common names were dreamed up by book writers and checklist compilers especially where no Europeans had come in contact with birds inhabiting remote regions. Even so, these names permeated into general ornithological usage where they are the main vehicle of communication. Summing up, what if we asked a question, "Why shouldn't distinct animals have common names?" One can identify them easily, e.g. golden shouldered parrot, naretha parrot, chestnut-breasted quailthrush, red-collared lorikeet, plumed frogmouth, cloncurry parrot, bar-breasted honeyeater, buff-sided robin, etc. This leads to the next question, "What is a species?" I have discussed elsewhere (*Sunbird* 1977, 8:28) the problem of species definition. Most of the birds above are doomed to be regarded as either species or subspecies as time goes on depending on lumping and splitting trends. They are unfortunate in that they are very distinct and do not

overlap in geographical range with other similar related forms.

This leads to the final argument used for not having common names for subspecies. That is, subspecies should not have common names because it encourages non-taxonomists to try and identify them. That is, the general ornithological public in their misuse will introduce all types of inaccuracies into the literature (supposedly only taxonomists with large series of specimens can identify subspecies). I suppose it follows species are easy to identify? e.g. the crows, ravens, wedge-bills, sandpipers, stints, prions, giant petrels, etc. One may answer, that those cited above are biological species, but the accusation is not that the general ornithological public can't tell what a species is, but that the difference between subspecies are small and confusing to all but taxonomists. Tucker (1949) in *British Birds* is used to support these claims, but he himself did not accept the biological species concept for defining species (p. 163). The degree of difference he was criticising for the subspecies of English birds, if used in the Australian situation for defining subspecies, would multiply the number of taxa more than four fold. His argument was not aimed at distinct subspecies (p. 202). The final problem is a conservation one. Wildlife services throughout the nation use the species as a basic unit for their work. The situation has already arisen in some states where attempts to have conservation measures introduced for some rare and distinct forms have failed because they were only subspecies. The sinking of distinct allopatric forms which hover in the grey area of the biological species concept, endangers them in terms of management.

Summing up, until taxonomists arrive at a situation where a consistent application of a practical species concept gives a stable classification, common names should be allowed for distinct subspecies. If common names are not given to them, we will be faced in the future with the humorous situation of bird species periodically appearing and disappearing out of the consciousness of the general ornithological public. (It leads to an old joke: Question - When is the red-collared lorikeet not a red-collared lorikeet? Answer - When it is *Trichoglossus haematodus rubritorquis*).

Overall, Birds of the Northern Territory is a mammoth and invaluable work. Glen Storr should be thanked for writing it. While the writing of these lists is time-consuming and with little creative feed-back for the author, they are necessary and in demand. The tasks Storr has set himself, like this list, have gone a long way to clarifying our knowledge of the taxonomy and distribution of Australian vertebrates.

(For the bibliophiles amongst us, the List of Northern Territory Birds *Spec. Publ.* No. 4 is still available for \$1.50 plus 40 cents postage. It is only 60 cents postage if both No. 7 and No. 4 are bought together).

Glen Ingram

WHISTLING KITE FEEDING ON BLACK-SHOULDERED KITE

J.C. WALTER and R.W. WALTER

Most of the published information on the food of the whistling kite (*Haliastur sphenurus*), records that the species is mainly a carrion eater, but also captures small mammals and fish (Calaby 1969, 1976; McDonald 1973; and Slater 1970). A recent observation by us suggests the possibility that this species also preys on other birds.

On 29 May 1977, between Nerwin and Melrose Crossing on the eastern Darling Downs, a whistling kite was observed feeding on the carcass of a bird approximately 30 m from the road. The bird was on ploughed ground 15 m from a red gum (*Eucalyptus camaldulensis*), which was the only tree within 1 km radius.

When disturbed, the whistling kite flew close by and was attacked by four black-shouldered kites (*Elanus notatus*) which had been roosting in the red gum. The whistling kite dropped its prey and was pursued into the distance by the other four kites.

On recovering the carcass it was identified as a juvenile black-shouldered kite. It was fully feathered and too large for a nestling. The head and most of the entrails had been removed. The carcass appeared quite fresh as it was still warm and the leg muscles were contracting.

As black-shouldered kites are infrequently killed by cars in this area, and the carcass was still in a very fresh state, we consider it a strong possibility that the young black-shouldered kite was killed by the whistling kite.

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