

## APOSTLE BIRDS IN THE MURRAY LANDS

By K. J. MACK

My first encounter with the Apostle Bird (*Struthida cinerea*) was on May 3, 1957, at Boorara H.S., south-west Queensland, when about 50 birds provided me with a display of their antics. I learnt that the local people had no special love for them as they were so fearless that they would actually enter the station buildings, particularly the kitchen unless the door was kept shut. Since then I have also heard of instances along the River Darling in N.S.W. of Apostle Birds being used for bait in Yabbie pots. Rather than this attitude towards them, I have developed a strong admiration for this gregarious, intelligent species and have endeavoured to make a special study of them, but distance has precluded any great success.

My first South Australian sighting was on October 12, 1957, when a lone specimen (unusual for this communal species) was observed south of Gairloch Hut, Mutooroo Station, in the north-east of the State. Enquiries with the Curator of Birds at the S.A. Museum, Mr. H. T. Condon, proved that I had located an almost new species for S.A., the last recording being stated as "... at Naracoorte in 1925, of mysterious origin." Subsequently, by reference to Condon's "Handlist of the Birds of South Australia" it was noticed that Hood, in the *South Australian Ornithologist*, 13, 1935, p. 118, had reported Apostle Birds in native pines a few miles from Naracoorte.

Nevertheless, it appears that my Mutooroo sighting was the first for that region, which is surprising, for I soon learnt that Apostle Birds, no respecters of state boundaries, are moderately plentiful in adjacent N.S.W. Bushmen in the Mutooroo — Lilydale region were amazed that this was the first recording from their district, for they declared that Lousy Jacks, as they know the species, had been living there since time immemorial, in the Mulga (*Acacia aneura*) watercourses and Black Oak (*Casuarina cristata*) scrubs.

Spurred on by our Mutooroo find, my wife and I were thrilled to observe eight at Hideaway Dam on December 1, 1957, and on June 2, 1958, twenty near Cronje Hill and ten at Amateur Hut (all on Lilydale Station).

Further discussion with Mr. Condon led to my taking a specimen at Amateur on August 3, 1958. This was the sixth skin of an Apostle Bird to be added to the S.A. Museum collection, and the first from South Australia. At that time concern was expressed about bird trappers' activities and the finding of the species was not published, Mr. Condon giving me every credit for the discovery but being deliberately vague about the location.

The first nest located was in a *Casuarina* tree south of Cronje Hill on October 16, 1958, and one of the three eggs was taken for the Museum's collection. This nest was removed on January 11, 1959, and another nest, in a Mulga tree east of Harry's south-east Hut, Mutooroo, was, on October 1, 1960, likewise removed, having been recently used for nesting. Both nests were forwarded to the S.A. Museum.

As a result of numerous excursions, principally in the area bounded by the N.S.W. border, River Murray, Morgan, Burra and the Broken Hill railway line, interesting facts about the species habitat and population have been recorded together with other habits, such as breeding and feeding.

### BREEDING

The mud nest is scarcely larger than that of a Magpie-Lark and is lined with stems of Spear Grass (*Stipa* spp.). I have found that a horizontal branch is always used, occasionally making use of a fork, with the branch being as small as 2" or up to 4-5" in diameter. Nesting is predominantly in Mulga and Black Oak trees at a height never exceeding 30 feet. The only other trees used, to my knowledge, are Black Box (*Eucalyptus largiflorens*) and Native Pine (*Callitris preissii*), both near the River Murray, at Chowilla and north-west Bend, and Murtho respectively. I have never seen Apostle Birds nest, nor even remain, in mallee country, but they must travel through this type of country on their nomadic wanderings.

In Cayley's *What Bird is That?* and Leach's *An Australian Bird Book*, I notice that the number of eggs quoted varies between five and eight, but nests in the area covered by me have contained from two to

four, usually three. The nest is hardly made to accommodate three young after the first week after hatching. I can only conclude that Messrs. Cayley and Leach studied birds in a very different environment, with much larger nests.

The nests are strong, being interwoven with grass and they last for one or two years. Although I have observed the White-winged Chough use one nest for three consecutive years, each year adding about an inch in height, I have never noticed the Apostle Bird do this. Usually they nest some miles away from the previous year's site. As long as there is suitable soil available, they seem well equipped to make the mud nest from a natural pool or by using water from a trough or dam. Distance from the source of mud or water seldom exceeds 300 yards.

Apostle Birds are communal nest builders and I would very much like to study the way in which birds split into breeding parties each year. At breeding time a large flock of about 30 birds seems to split into two breeding groups of 12 to 15 birds and although both groups may draw their mud or water from the same source they keep strictly to individual territories. Two groups at Harry's Hut, in November, 1964, nested within 300 yards of each other, but did not clash to my knowledge, watering at different times and feeding in distinct areas. On another occasion, at Cronje Dam, on January 1, 1959, fifteen birds comprised a nesting party which jointly worked two nests in Black Oak trees some forty yards apart.

Whether all birds assist in building and/or brooding I do not know; only colour banding would give the answer. However, these breeding groups of 8-15 birds rear an average of two to three young only each year, and from my observations only one batch is reared per nest. They seem to build in July-August and lay in September, the young appearing from mid-October and flying during November, but in one instance eggs were found in January.

During a two week vacation in October, 1958, spent at Amateur, south of Cronje on Lilydale Station, my wife and I observed an unusual nesting area in Black Oak trees near a leak in a pipeline. In an area of half an acre, Apostle Birds, White-winged Choughs, Magpie-Larks, White-winged Trillers and Willy Wagtails were nesting. It is of interest that this group includes all Australian mem-

bers of the mud nest building family Grallinidae and that four of the five were black and white. There was much clamour, but the only aggressive behaviour observed, apart from at our approach, was if the Magpie-Larks approached too close to the Apostle Birds' nest. There were ten Apostle Birds in this nesting group, with three eggs in an exquisitely made nest.

### FEEDING AND FLYING

Perhaps half the daylight hours are spent foraging for grain and insects on the ground, but this is governed by the availability of food, which in turn is dependent on the season or man's generosity. In a drought year, with the land bare of ground-cover due to grazing, they will spend most of the time feeding. Normally feeding starts at dawn and continues until between 0800 and 1100 hrs., when they start coming in to water. When watering, the entire group seldom approaches, but small parties of six to eight drift in at a time. They then return to feeding or enjoy a siesta.

The beak of the Apostle Bird is large and strong compared with the bird's size and apart from shallow digging around grasses and other small plants, much time is spent scratching with the beak under trees, bushes and logs.

Cayley declares that Apostle Birds hop along the ground in a rather quaint manner, but I have noticed that when feeding they walk, and reserve any hopping for when a minor squabble develops or when preparing to make a gentle flight. They fan their tails when excited. When disturbed they have the ability to rise like a helicopter to the nearest branch, making their loud, grating, ratchet-like call, but when feeding they remain rather quiet and merely 'talk' amongst themselves. Some scolding is evident, reminiscent of the peck order in poultry, but I have never seen them fight. Apart from when rising from the ground to the nearest tree, the remainder of the flying consists of gliding intermingled with flapping, all on a horizontal plane, and during this exercise, the species, for once, remains relatively silent.

Apostle Birds are particularly partial to wheat and kitchen scraps and these attributes must assist their population. A boundary-rider friend of ours, the late Harry Hynes, from the south-east hut bearing his name in Mutooroo, used to endeavour to keep the

Apostle Birds out of his fowl yard, but after years of trying Harry admitted defeat, for the birds always managed to find a way in and eat the grain. Harry was also obliged to cover the wheat bin in the shed such as the birds' brashness, and when he walked across to feed the fowls, night and morning, he never forgot his hat, from the time the birds took a liking to his cranium. Over the years, between 1941 and July, 1966, Harry came to like the company of these lovable feathered friends and purposely threw grain out for them when feeding his fowls, and a permanent population of twenty to thirty birds became established.

After the birds have fed and watered they invariably indulge in an intriguing ceremony. Six to eight birds line up on a branch and preen for half an hour or more, but they seem to pay as much attention to their neighbours' feathers as their own. This apparent delousing habit has led to the bushmen's name of Lousy Jack.

#### HABITAT AND POPULATION

Although rather sedentary, occasional nomadic wanderings take them miles away from the two areas, shown shaded on the plan, where permanent populations occur. Populations must vary due to numbers leaving these territories for a period and of course, interchange along the N.S.W. border must occur. The main population is in the Mutooroo-Lilydale region and the smaller one is in the Chowilla-Hypurna region.

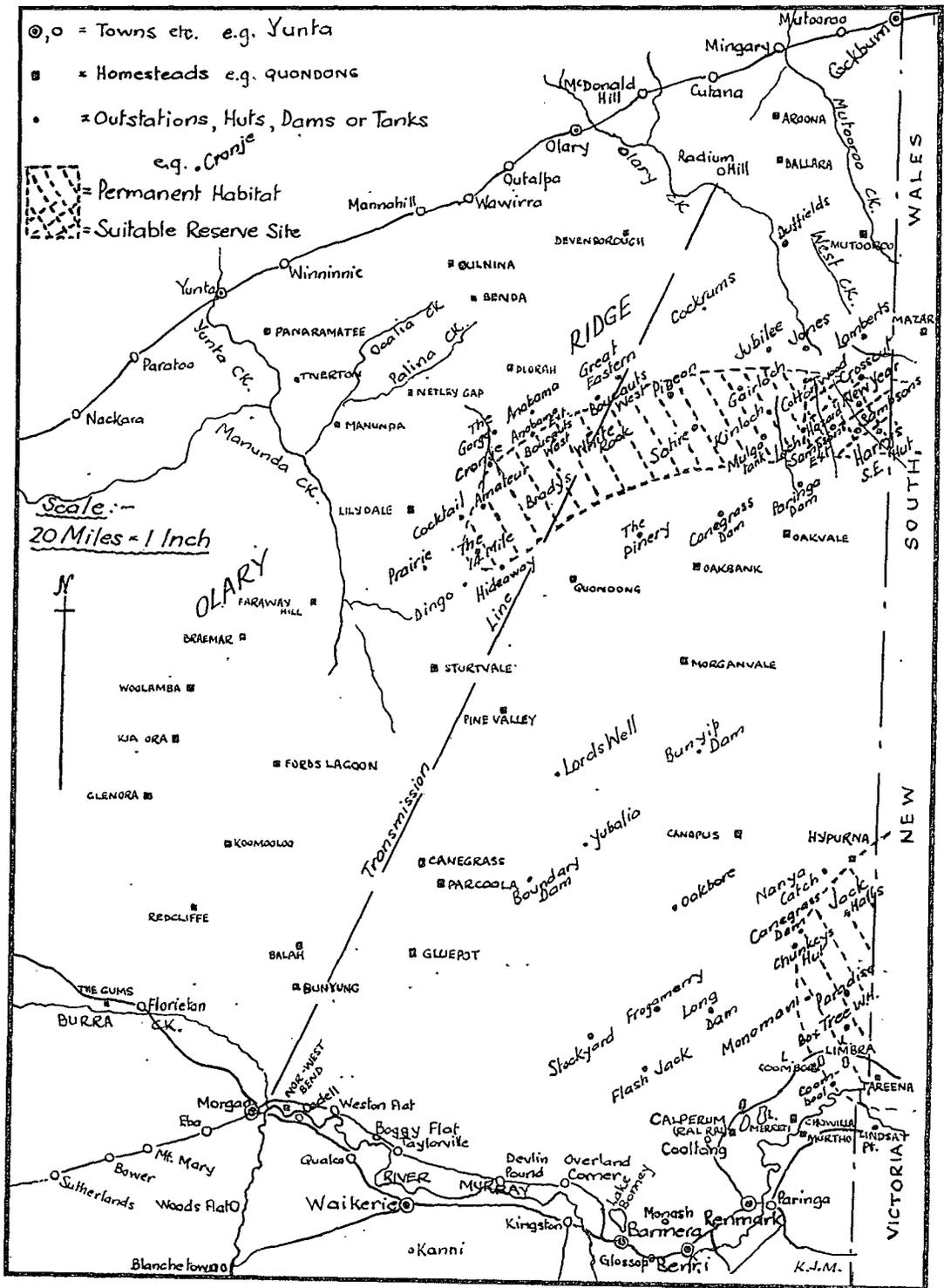
#### (α) Mutooroo-Lilydale.

Since October, 1956, I have visited this region on 37 occasions, usually for a week-end, but some visits were in the nature of travelling through to other destinations, while twice a week or more was involved. Whereas on over 30 of these visits no special attempt to locate Apostle Birds was made beyond keeping eyes and ears alert, they were encountered on 26 visits, as follows.

- 12-10-57: 1, near Gairloch, Mutooroo.  
 1-12-57: 8, Hideaway Dam, Lilydale.  
 2-6-58: 20, near Cronje Hill, Lilydale, playing in abandoned babbler nests.  
 10, Amateur, Lilydale.  
 3-8-58: 8, Amateur, Lilydale.  
 16 to 26-10-58: 10, south of Cronje Hill, breeding in Black Oak. Three eggs.  
 21-10-58: 8, Brady's, Lilydale.  
 10-1-59: 15, near Cronje Dam, the entire 15 composing a breeding party operating two nests in *Casuarina* trees two chains apart, there being 3 and 4 eggs respectively.

- 18-3-59: 7, Cronje Extension Tank, south of Cronje Hill.  
 22-3-59: 9, Hideaway.  
 22-8-59: 12, near Cronje Dam, feeding on household scraps from a tank-sinkers' camp. The birds were tame, coming to within a few feet of humans.  
 6, Great Eastern, Mutooroo.  
 11-10-59: 9, Amateur.  
 12, Cronje.  
 7, Anabama Extension, Lilydale.  
 15, Pigeon, Mutooroo.  
 16-9-60: 6, Kairloch, Mutooroo.  
 1-10-60: 10, Loch Hazard, Mutooroo.  
 20, Harry's Hut, Mutooroo; two nests, each with 3 eggs in Mulga trees.  
 3-9-61: 12, The Gorge, Lilydale.  
 9, Cronje.  
 6, Dingo, Lilydale.  
 14-10-61: 15, Cocktail, Lilydale.  
 15-10-61: 5, Boucaut's West, Lilydale.  
 8, Pigeon.  
 10, Jubilee, Mutooroo.  
 6, Gairloch, Mutooroo.  
 9-10-62: 9, The 14 Mile, Lilydale.  
 15, Amateur, breeding in Mulga tree, three young.  
 6, White Rock, Mutooroo.  
 10-10-62: 20, Harry's Hut.  
 10-11-62: 17, Harry's Hut, breeding in Black Oak tree; two young.  
 7, Crosscut, Mutooroo.  
 12, New Year, Mutooroo.  
 15, Cottonwood, Mutooroo.  
 10, Loch Hazard.  
 5-4-63: 18, Harry's Hut; two banded for C.S.I.R.O. Bird-Banding Scheme, the first, I believe, for South Australia.  
 7-4-63: 15, Harry's Hut; two more banded.  
 12-5-63: 12, Harry's Hut.  
 20-7-63: 13, Harry's Hut; 3 banded.  
 21-7-63: 13, Harry's Hut; 1 banded.  
 5-10-53: 20, Harry's Hut; 7 banded.  
 6-10-63: 20, Harry's Hut; 4 banded, including two nestlings in a Black Oak.  
 14-12-63: 4, Harry's Hut; 1 banded.  
 15-12-63: 12, Harry's Hut; 3 banded.  
 16-12-63: 15, Harry's Hut; 1 banded.  
 18-7-64: 17, Harry's Hut.  
 7-11-64: 15, Harry's Hut; 10 banded, including three nestlings in a Mulga.  
 8-11-64: 12, Harry's Hut; 2 banded. These last two groups were separate.  
 3-10-65: 8, Loch Hazard.  
 6, Sampson's Extension, Mutooroo.  
 20, Harry's Hut.  
 23-10-65: 30, Harry's Hut; 2 banded.  
 24-10-65: 30, Harry's Hut; 6 banded.  
 12, Loch Hazard.  
 6, Crosscut.  
 2-5-66: 20, Harry's Hut.  
 8, Loch Hazard.  
 23-4-67: 10, Loch Hazard.  
 12, Oakbank H.S.

In addition to the above, C.S.I.R.O. bander C.M. (Murray) Bishop has encountered Apostle Birds this season (1966-67) at Duffield's Well, Mutooroo, in large



DISTRIBUTION OF THE APOSTLE BIRD

numbers. On September 11, 1966, he saw about 100 (of which he banded 22) feeding on medic and wild geranium (*Erodium* sp.). After feeding and watering, up to 60 birds remained perched on fallen logs. Returning on October 10, 1966, he found more Apostle Birds, feeding all day due to grazing having depleted the herbage. Despite unfavourable conditions twelve were banded, and one bird banded in September was retrapped.

From the above figures I have assumed that the area shaded on the map is permanent habitat and the local people substantiate this. The preferred habitat is Mulga plains interspersed with Black Oak rises, where the watercourses spread out on the southern side of the Olary Ridge. The shaded area represents about 450 square miles, but to estimate the birds' population is not so easy. The following week-end sightings give some idea of density:—

October, 1959,	43.
October, 1960,	36.
October, 1961,	44.
October, 1962,	50.
November, 1962,	61.
October, 1965,	48.

My estimate is that there must be at least 300 birds in this region. Bandings known to me total 78, retraps being 10, all at banding place.

#### (b) Chowilla-Hypurna

This is a smaller area with a smaller population. I have not kept detailed records within this region, but I have never seen flocks of the size of those at Mutooroo-Lilydale. In population per square mile I am sure they are less dense, except perhaps for an area around Coombool Outstation. Apostle Birds have been recorded at Lake Coombool, Lake Limbra, Box Tree Waterhole, Paradise, Monoman Dam, Chunky's, Jack Hall's, Hypurna H.S. and Chowilla H.S. Again they occur in adjoining N.S.W. and the S.A. occurrence must be regarded as the western limit of habitat.

The class of country varies from that of the Mutooroo-Lilydale region, in that except for two small clumps near Box Tree Waterhole there is no Mulga. Vegetation around Coombool O.S. and Lakes Coombool and Limbra is mainly Black Box, with Red Gum (*Eucalyptus camaldulensis*), Black Tea Tree (*Melaleuca lanceolata*) and Coobah (*Acacia stenophylla*). Further north Black Oak pre-

dominates on the flats and gravelly rises, with mallee on the ridges.

I doubt if there would be more than 100 birds normally present in this area. C.S.I.R.O. banders D. M. Cornish and C. M. Bishop, with whom I have associated a lot in this area, agree that this is a fair estimate.

#### (c) The Nomads

My first indication that Apostle Birds occurred south of the Mutooroo-Lilydale region was in May, 1958, through Mr. W. G. Snell of Canopus Station, who reported seeing a small flock. Later, in October, 1958, my brother Dave (D. B. Mack), joining in the search, located Apostle Birds between Murtho H. S. and Lindsay Point in Victoria. During a joint excursion to this area on November 2, 1958, we noted 12 birds breeding in a Native Pine (*Callitris preissii*) near an inland swamp bordered by Black Box, with some Black Oak. This was the first known recording for the River Murray. The next visit by Apostle Birds to the Murray known to us was in July, 1961, when a dozen spent about three weeks on the fringe of the Monash fruit settlement, but they did not breed there and could not be located later. Mr. R. Noll of Murbko relates that several birds stayed for a short while a few years ago at Kanni, which is Mallee country south of Waikerie.

At Cooltong, in October, 1964, about eight stayed for a short period on the northern fringe of the settlement and likewise disappeared without apparently breeding. Between April, 1966, and June, 1967, there has been greater nomadic movement than usual, for flocks have been sighted at Morgan — Cadell, Canegrass H.S., between Morganvale H.S. and Oakbank H.S. and at Glossop. Don Cornish recorded nine at Glossop on June 6, 1966, and 25 at the same place on June 20. On June 22, I sighted a dozen in a Cadell pear orchard. After hearing that they were at Taylorville, I located 20 Apostle Birds on August 27, 1966, one mile east of Morgan. Contact with local people revealed that the birds, not seen by them previously in the Morgan-Cadell district, arrived late in April, 1966, and much searching since August 27, resulted in establishing that the group could be as large as 30-40 and regularly ranges between Morgan — New Era on the south side of the River and Nor' West Bend on the

north side. There was also a report of a few at Taylorville and Boggy Flat.

During the weekend of October 15-16, 1966, Mr. R. G. Ohlmeyer observed the following groups: 12-15 at Canegrass H.S., 12-15 between Morganvale and Oakbank Homestead and 12 at Nor' West Bend, where the Morgan-Taylorville road crosses Burra Creek.

The flocks at Canegrass and Morganvale-Oakbank are well south of their usual habitat, but still in Black Oak country, while the Nor' West Bend group would be part of the group(s) somewhere between Morgan and Taylorville.

This Nor' West Bend group, as I shall call them, presented a challenge to me as a bander. Here was my chance to band some youngsters, perhaps even some adults and then await retraps or recoveries elsewhere.

After much searching and appealing through the local press, the nesting site was located by Mr. A. H. Brockmeyer on his Nor' West Bend Station, on November 4, 1966. There were two nests, each about 30' up in Black Box trees, about a quarter of a mile from the homestead, one about 200 yards, the other about 400 yards from the River Murray. Grey river-flat clay had been used, as distinct from the red earth used further north. It was noted that the paddock carried a moderate cover of grass and Mr. Brockmeyer advised that he had not grazed this paddock since the 1956 flood to encourage regeneration. This grassed area was, to me, significant, in view of the bare earth in most other places.

The nests were inspected on November 5, using a mirror on a long pole; one (pictured page 138) having four eggs, the other empty. The maximum number of birds counted was 30. Following a report by Mr. Brockmeyer, an inspection on November 27, revealed that neither nest contained eggs and no young had hatched. It is presumed that a predator such as a goanna may have been responsible; human interference was unlikely as the site was known to only four of us and Mr. Brockmeyer kept a close watch lest there should be any disturbance.

There was no further attempt at laying and as far as is known there has been no further nesting attempt since. The birds gradually left the homestead site, only five remaining on January 10, 1967, and all had deserted the site by January 15.

However, it appears that the group still resides in the district, as many as 25-30 having been seen by me on May 24 in a Cadell orchard feeding on the ground in a newly sown cereal cover crop. I was loathe to attempt banding during nesting and as they do not seem to have remained in any one site since, my banding aspirations have been dashed.

Lack of food, due mainly to dry seasons, is thought by me to be the reason for this nomadic streak in the Apostle Bird. I have tried to analyse the four known River Murray occurrences, in 1958, 1961, 1964, and 1966/67. The 1958 records at Murtho (and Canopus) were merely extensions of the nearby permanent habitat and may be ignored as being significant, for regular breeding has been noted by Murray Bishop and myself between Coombool O.S. (in Black Box country) and Jack Hall's (Black Oak Plains).

Regarding 1961 and 1964, weather records along the River Murray and the Peterborough-Broken Hill railway line would not give a true indication of the rainfall in the Lilydale-Mutooroo region and vicinity, but personal observations recorded at the time showed both years to be dry in that region. For instance, there was hardly any Spear Grass (*Stipa* spp.), no Koonamore (or Hardnut) Daisies (*Erodiohyllum elderi*), no Everlastings (*Helichrysum* spp.) and only a few stunted Sturt Peas (*Clianthus formosus*), these four plants being good indicators of the season.

The period from January, 1966, until the time of writing, early June, 1967, has been particularly dry, with Waikerie monthly rainfall readings being, in points,

1966		1967	
January	... .. 77	January	... .. 52
February	... .. 184	February	... .. 46
March	... .. 8	March	... .. 14
April	... .. 8	April	... .. 13
May	... .. 34	May	... .. 27
June	... .. 41	Total (5 months)	
July	... .. 56	152 points.	
August	... .. 16		
September	... .. 45		
October	... .. 96	Annual average	
November	... .. 8	964 points.	
December	... .. 263		
1966 Total 847 pts.			

The 271 points in January-February, 1966, and the December, 1966, rain were of little benefit due to summer temperatures. Of the

remaining 465 points in fourteen months, the largest individual rain was 36 points, so that the seasons, agriculturally and for flora and fauna, have been very poor in the Waikerie area. Drought conditions are likewise known to occur north to the Mutooroo-Lilydale region and I suspect that this is why the Apostle Birds moved. I imagine that they have drifted from homestead to homestead, looking for food and somewhere suitable to breed and be able to feed their young.

On the evidence to date, I consider it highly unlikely that they will remain along the River more than a month or two if the season breaks and that, if next season improves (say as good as 1956 or 1963) the Apostle Birds will remain in their permanent habitat.

The occurrences of Apostle Birds at Naracoorte in the south-east in 1925 and 1935, Glen Osmond and Cockatoo Valley in the Mount Lofty Ranges in 1961 and 1965 respectively are mystifying for anyone familiar with the species in its more usual habitat of Mulga, Black Oak and inland plains with their arid type of vegetation.

### CONSERVATION

Preservation of the habitat in a near natural condition is the answer. The species' rather slender grip in S.A. must have been altered by white man for both bad and good. The grazing of the birds' habitat must have had an adverse effect on this ground feeding species, while on the credit side they can,

in some places, with additional permanent watering points provided by man, inhabit a wider area, previously of little value. The birds also find food at homesteads and occupied huts. The presence of Apostle Birds in the Mutooroo-Lilydale and Chowilla-Hypurna regions may also be an indication that these properties are not overgrazed.

If an area of the Mutooroo-Lilydale region, say in the south-east corner of Mutooroo between Harry's Hut, Loch Hazard, Cottonwood and Crosscut, were created a flora and fauna reserve, not only would the Apostle Bird be assured of preservation, but also many other interesting and valuable species of flora and fauna. Among the flora of this area are approximately ten species not present in any S.A. reserve, and a further nine are reserved only in the Koonamore Reserve, of an area of 960 acres only.

Hence a move to conserve the Apostle Bird, an intelligent, engaging and joyful species, in S.A., would have other widespread advantages and by acting now, an area still in rather good condition from man's occupation, could be preserved.

### REFERENCES

1. Cayley, N.W., *What Bird is That?*
2. Condon, H.T., "A Handlist of the Birds of South Australia with Annotations," *S. Aust. Ornith.*, 23, 1962, 85-150.
3. Leach, J.A., *An Australian Bird Book*.
4. S.A.O.A., "Bird Report 1965," *S. Aust. Ornith.*, 24, 1966, 99-107.
5. Specht, R.L. and J. B. Cleland, "Flora Conservation in South Australia, 1," *Trans. Royal Society of South Aust.*, 85, 1961, 177-196.