

THE BIRDS OF THE ADDO NATIONAL PARK

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INTRODUCTION

Although it is the elephants *Loxodonta africana* that have brought fame to the Addo National Park, without doubt it is the so called 'Addo Bush' that is unique to the area. It is this dense succulent vegetation that has provided the food and shelter that have allowed such huge creatures to isolate themselves and survive man's murderous habits. The Addo bush dominates the 17,000 acres of the Park and covers 90% of the area. There are other small areas of different vegetation types that have been well documented by Archibald (1954).

The original intention of this study was to establish whether this unique vegetation-type had a distinctive avifauna of its own and to determine the ecological factors which influence birds presence in the area. At the same time with other somewhat similar vegetation types present it was hoped to determine whether these other vegetation types influenced any differences in avifauna.

Method

After a preliminary inspection of the whole area, five sites were selected as typical of the five vegetation types. These sites were then visited at regular intervals for a minimum period of half an hour. The assumption being made that such a period of time was sufficient to determine the *regular residents* present, allowing for either seeing or hearing the birds whilst walking through the area. The emphasis of this enquiry is placed upon the regular residents of the area.

Circumstances permitted only one full visit a month and in a period of 28 months from August 1960 to January 1963, 23 full counts were completed and six incomplete counts were made. Apart from notes on all birds seen, their food where possible was noted and any breeding was recorded. Details under each species are listed below.

The nature of the bush made it impractical to commence immediately with a method that would enable a quantitative and qualitative analysis of the avifauna. The present results are therefore a preliminary qualitative survey of the avifauna and are adequate to indicate that there is no avifauna specific to the Addo bush.

General environment

The park lies about 30 miles from the coast of Algoa Bay but local climatic conditions are independent of the coastal conditions and more associated with the inland karrooid conditions. The average altitude is about 450 feet a.s.l. and the highest point is 1,120 feet. On the north the dry Coerney river valley separates the park by about 5 miles from the Zuurberg mountains. The Coerney river flooded in 1963 after an eleven year, dry spell. Average rainfall from the nearest recording station (5 miles away) is 15.54 inches per annum distributed as shown in Table 1. Maximum temperature recorded at the Citrus research station Addo, from January 1959 to December 1963 was 86.54°F, minimum was 40.64°F.

TABLE 1
Average monthly rainfall and temperatures
(taken at the Citrus Research Station, Addo)

| Rainfall 1950-1963, inches: | | | | | | | | | | | |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| J. | F. | M. | A. | M. | J. | J. | A. | S. | O. | N. | D. |
| 1.37 | 1.31 | 2.31 | 1.21 | 1.23 | 0.53 | 0.81 | 1.51 | 1.59 | 1.33 | 1.43 | 1.16 |
| Temperature 1959-1963 Centigrade: | | | | | | | | | | | |
| Maximum: | | | | | | | | | | | |
| 28.5 | 29.2 | 27.2 | 25.1 | 22.5 | 22.7 | 21.4 | 23.2 | 24.5 | 24.9 | 26.8 | 28.2 |
| Minimum: | | | | | | | | | | | |
| 15.9 | 16.3 | 15.3 | 12.1 | 8.2 | 5.9 | 5.4 | 6.8 | 9.5 | 11.4 | 14.4 | 15.0 |

Vegetation

The classification of the veld types follows Archibald (loc. cit) in detail. Changes in vegetation since the work of Archibald do not appear to be significant except where man has interfered. Namely in the antelope camp where bush was cleared. Here *Galenea* has taken over as ground cover.

Two experimental areas of $\frac{1}{4}$ of an acre each were fenced off on Zuurkop in an open patch of Bontveld and in cleared ground in the Antelope camp. On Zuurkop it was only for a month or two after rains that the grass within the fence was better than outside the fence. However, the fence was not koedoe-proof. In the Antelope-camp the fenced area was conspicuous for its lush growth compared to the overgrazed surroundings. Here the grasses were dominant and prevented *Galeanea* and succulents dominating the ground cover, as occurred outside the fence. *Carissa bispinosa* was the only shrub growing up within the cleared area.

Several species of plant which are conspicuous within the Park have not been mentioned by Archibald. It is probable that these plants may not

be good indicator species but they do attract the attention of the public. A few of these have been added to Table 2 with the flowering times. Spekboomveld occupies nearly 90% of the area, 23% of which is open Spekboomveld. Karoobushveld (6½%), mixed Shrub and Grassveld (1½%), Bontveld (3%) and Coastal bush (1%) make up the remaining vegetation. The dominant flowering species were collected and these are listed in Table 2.

TABLE 2

The dominant species of plants in each vegetation type and the recorded flowering or fruiting months: Underlined months indicates prolific flowering; brackets indicates fruit or berries.

| | |
|---|---|
| 1. KAROO BUSHVELD (6½%) | |
| <i>Pentizia globosa</i> Less. | F. Ap. <u>My</u> O. |
| <i>Justicia orchioides</i> L.f. | Au. N. |
| <i>Lampranthus</i> sp | O |
| <i>Ruschia orientalis</i> L. Bol. | Ju. Jy. O. N. |
| <i>Sutera campanulata</i> (Benth.) O. Ktze. | |
| <i>Cryophytum aitonis</i> (Th.) N. E. Br. | O. |
| <i>Mesembrianthimum defoliatum</i> | O. N. |
| <i>Galenia pubescens</i> (E.et Z.) Druce. | O. N. |
| 2. MIXED SHRUB AND GRASSVELD (½%) | |
| <i>Polygala microlopha</i> DC. | O. |
| <i>P. virgata</i> Th. | Ap. Jn. O. |
| <i>Sutera microphylla</i> (Benth.) Hiern. | F. Mar. <u>Ap.</u> <u>My.</u> Ju. Jy. <u>Au.</u> <u>S.</u> O. |
| <i>Anthospermum cilare</i> L. | <u>O.</u> <u>N.</u> |
| <i>Agathosma capensis</i> (L.) Dumm. | |
| <i>Walafrida decipiens</i> (E. Mey.) Rolfe. | Ap. |
| 3. BONTVELD (3%) | |
| <i>Scutia indica</i> Brongn. | |
| <i>Grewia occidentalis</i> L. | (Jan.) F. Mar. O. |
| <i>Royena pallens</i> Th. | (Ju.) (O). |
| <i>Maytenus cymosus</i> (Soland.) Exell. | (Ap.) (Ju.) (O.). |
| <i>Rhus incisa</i> L.f. var <i>obovata</i> (Sond) Schonl. | |
| <i>Rhus longispina</i> E. et Z. | (Au.) (O.). |
| <i>Ehretia rigida</i> (Th.) Druce. | |
| <i>Pteronia incana</i> (Burm.) DC. | F. Ap. <u>My.</u> O. |
| <i>Chascanum dehiscens</i> | |
| <i>Pelargonium multifale</i> Jacq. | |

4. COASTAL BUSH (1%)

| | |
|--|---|
| <i>Sideroxylon inerme</i> L. | (J) (F) Mr. (Ap.) My.) Ju. (Au.) (O.) N. D. |
| <i>Schotia speciosa</i> Jacq. | J. F. Mr. Jy. <u>Au.</u> S. D. |
| <i>Pterocelastrus tricuspidatus</i> (Lam.) Sond. | (O). |

5. SPEKBOOMVELD (90%)

| | |
|---|--|
| <i>Portulacaria</i> Jacq. | <u>Ja.</u> (F.) O. <u>N.</u> <u>D.</u> |
| <i>Sansevieria thyrsoiflora</i> Th. | |
| <i>Azima tetraacantha</i> Lam. | |
| <i>Asparagus</i> sp. Mr. | |
| <i>Sapparis citrifolia</i> Lam. | |
| <i>Euclea undulata</i> Th. | (Au.) |
| <i>Schotia speciosa</i> (see 4 above) | |
| <i>Crassula argentea</i> Th. | Jy. <u>Au.</u> |
| <i>Rhus longispina</i> (see 3 above) E. et Z. | |

Other food sources or conspicuous plants not listed above: wide spread in the park.

| | |
|---|---|
| <i>Rhigobum obovatum</i> Burch. | Ja. F. (Ap.) O. |
| <i>Aloe africana</i> Mill. | Ju. Jy. Au. (O.) |
| <i>A. striata</i> Haw. | <u>Au.</u> (O.) |
| <i>Senecio longifolius</i> L. | Ap. <u>My.</u> <u>Ju.</u> Jy. Au. S. N. |
| <i>Rhiosicus digitatum</i> (L.f.) Gilg et Br. | (O.) |
| <i>Viscum rotundifolium</i> L.f. | (Ap.) My. (Ju.) (Au.) |
| <i>Juncea</i> | |
| <i>Stapelia</i> | |
| <i>Cadaba juncea</i> (Sparm.) Harv. | O. N. D. J. |
| <i>Cotyledon canipanulata</i> | My. Au. S. O. N. D. |
| <i>C. velutina</i> Hook. f. | S. O. N. D. J. |
| <i>Pachypodium succulentum</i> (Th.) DC. | O. N. |
| <i>Plumbago capensis</i> Th. | F. Mr. Ap. My. Ju. Jy. Au S. O. |
| <i>Tecomjeria capensis</i> (Th.) Spach. | Ap. My. Ju. Jy. |
| <i>Euphorbia mauritania</i> L. | Au. S. O. N. |
| <i>Haemanthus</i> | F. Mr. |
| <i>Oxalis stellata</i> E. et Z. | F. Mr. Ap. My. |
| <i>O. semiloba</i> Sond. | F. Mr. Ap. My. |
| <i>Bulbine frutescens</i> (L) Willd. | Au. S. O. N. D. |
| <i>Urginea altissima</i> (L. F.) Bak. | Mr. |
| <i>Ammocharis coronica</i> (Ker Gawl) Herb. | J. F. |

From an ecological point of view it is important to note that there is considerable variation from year to year in the 'seasons' of flowering and seeding of individual species of plants. This variation is apparently influenced by precipitation. This aspect becomes important in considering the general ecology of the area since the movements of the birds in following certain food sources, is not predictable from one year to the next. This aspect of local movements is complicated by the not too distant Coastal bush and Zuurberg areas where similar but quite unrelated seasonal changes take place independantly of the other areas and may not dovetail with each other. Thus if any birds may have local movements influenced by flowering or seeding in all three regions, its movements become unpredictable.

Apart from the local shift of the flowering times of the plants there is another complicating local condition. This is what is loosely but lucidly referred to as 'good, or bad years' and whilst good seasons may apply to a small area of veld it may also apply to individual species of plants. Thus for example in the autumn of 1962 the Sneezewood came into prolific bloom, the likes of which had not been noted at least for the previous six years. This phenomena of a particular plant having an unusually good year may give rise to an erroneous impression of a population eruption in a bird species.

The Avifauna

A total of 120 species of birds was recorded in 23 visits and doubtless this number could be increased, particularly in respect to birds of the habitats in and around Ceasars dam. The number of species seen on any one visit varied little from the average figure of 44 (see Table 3).

TABLE 3

Number of bird species recorded on each completed count.

| | J. | F. | M. | A. | M. | J. | J. | A. | S. | O. | N. | D. |
|------|----|----|----|----|----|----|----|----|----|----|----|----|
| 1960 | | | | | | | | 44 | — | 36 | 38 | 39 |
| 1961 | 44 | 44 | — | 44 | 39 | 46 | 44 | 50 | 51 | 48 | 43 | 48 |
| 1962 | 45 | 49 | 49 | 41 | — | — | — | 49 | — | — | 43 | 40 |
| 1963 | 40 | | | | | | | | | | | |

There was no seasonal variation of numbers of species seen on visits but weather did influence the variety seen. Thus for example the lowest six counts of 40 or less species on a visit were recorded, with one exception on hot humid days whilst the two highest counts of over 50 and 51 species were taken on cool days. This agrees with similar observation by J. S. Taylor (1948) in the Fort Beaufort area.

TABLE 4

The list of species recorded showing breakdown into numbers of months each species was recorded in the Park. Status of breeding or migration indicated.

Key to Symbols: B — Breeding Species
 P — Palaearctic migrant
 E — Ethiopian migrant
 L — regular local movements
 S — Summer
 W — Winter

| <u>Resident</u> | <u>Recorded 7-10 months in the year</u> |
|-------------------------------------|---|
| <i>Struthio camelus</i> . B | <i>Podiceps ruficollis</i> . B |
| <i>Ardea melanocephala</i> | <i>Tadorna cana</i> |
| <i>Alopochen aegyptiacus</i> . B | <i>Stephanibyx coronatus</i> . B.Ls. |
| <i>Sagittarius serpentarius</i> . B | <i>Burhinus capensis</i> |
| <i>Numida meleagris</i> . B | <i>Upupa africana</i> |
| <i>Fulica cristata</i> . B | <i>Jynx ruficollis</i> |
| <i>Afrotis afra</i> | <i>Hirundo albigularis</i> . B.E. |
| <i>Streptopelia capicola</i> | <i>Hirundo dimidiata</i> . E. |
| <i>Stigmatopelia senegalensis</i> | <i>Cecropis abyssinica</i> . B.E. |
| <i>Turtur chalcospilus</i> | <i>Ptyonoprogne fuligula</i> . B |
| <i>Colius striatus</i> | <i>Erythropygia leucophrys</i> . B. |
| <i>Urocolius indicus</i> | <i>Lamprocolius nitens</i> |
| <i>Dicrurus adsimilis</i> | <i>Nectarinia famosa</i> B |
| <i>Andropadus importunis</i> | <i>Hyphanturgus ocularius</i> . B |
| <i>Cossypha caffra</i> . B | <i>Crithagra albigularis</i> |
| <i>Erythropygia coryphaeus</i> | <i>Emberza flaviventris</i> . B.L. |
| <i>Apalis thoracica</i> . B | |
| <i>Cisticola fulvicapilla</i> | |
| <i>Cisticola subruficapilla</i> | 16 species |
| <i>Prinia maculosa</i> | 9 breeding species |
| <i>Parisoma subcaeruleum</i> . B | |
| <i>Sigelus silens</i> . B | |
| <i>Motacilla capensis</i> | |
| <i>Lanius collaris</i> . B | |
| <i>Laniarius ferrugineus</i> | |
| <i>Tchagra tchagra</i> | |
| <i>Telophorus zeylonus</i> . | |
| <i>Cinnyris afer</i> . B | |
| <i>Passer domesticus</i> . B | |
| <i>Passer melanurus</i> . B | |
| <i>Crithagra sulphurata</i> . B | |
| <i>Poliospiza gularis</i> | |
| 32 species | |
| 15 breeding species | |

Recorded 4-6 months in the year

Hagedashia hagedash
Elanus caeruleus
Buteo buteo (oreophilus)
Buteo rufofuscus
Pternistus afer
Gallinula chloropus
Tringa glareola. P
Streptopelia semitorquata
Apus caffer. Ls
Halcyon albiventris
Phoeniculus purpureus. Lw
Tricholaema leucomelas
Indicator indicator
Hirundo rustica. P
Corvus capensis
Anthoscopus minutus
Turdus olivaceus
Calamocichla gracilirostris. B
Sylvietta rufescens. Ls.
Batis capensis
Anthus leucophrys. B. Ls.
Cinnyris chalybeus. Ls
Zosterops pallidus
Ploceus capensis. B
Ploceus velatus. B.L.
Euplectes orix. B.L.
Serinus scotops

27 species

5 breeding species

Recorded 1-3 months in the year

Phalacrocorax africanus
Ardea cinerea
Bubulcus ibis
Nycticorax nycticorax
Ixobrychus minutus
Scopus umbretta
Ibis ibis. E
Plectropterus gambensis
Anas undulata
Falco peregrinus
Falco tinninculus
Polemaëtus bellicosus
Haliaëtus vocifer. B
Buteo buteo (vulpinus). P
Accipiter tachiro
Polyboroides typus
Charadrius tricollaris. (B)
Ooena capensis. Ls
Clamator jacobinus. E
Chrysococcyx klaas. E
Bubo africanus
Apus affinus. Ls
Apus melba. Ls
Merops apiaster
Coracias garrulus. P
Lophoceros alboterminatus. L
Pogoniulus pusillus
Cecropis cucullata. E
Riparia riparia
Psalidoprogne holomelaena. Ls
Oriolus larvatus
Pycnonotus capensis
Cameroptera brachyura
Batis pririt
Anthus similis. Ls
Dryoscopus cubla
Chlorophoneus olivaceus
Creatophora cinerea. Ls
Spreo bicolor
Chalcomitra amethystina
Coccopygia melanotis. Lw
Lagonosticta rubricata
Estrilda astrild
Serinus mozambicus
Crithgra flaveventris

45 species

2 breeding species

The resident species recorded as present for all months of the year totalled only 32 (see Table 4). In addition to this figure there were 16 that were present from seven to ten months and doubtless in a long sequence of observation about ten of these would move into around the year category. The absence of any particular species suited to the area that might be referred to as typically endemic is worth emphasising. Amongst the resident birds there are certainly some that are typically inhabitants of dryer areas such as for example the Black Korhan, Karoo Robin and Tit-babbler but these same species occur in the more humid areas in the immediate vicinity of the coast. The Red-faced Mousebird is perhaps the only bird within the Park that is limited there, to the dryer areas and yet this species also occurs in the humid coastal "fynbos": the species thus seems to be locally influenced to habitat.

There were 45 species that were recorded for three or fewer months of the year. The most interesting aspect of this group is the occasional vagrant that is recorded; invariably these vagrants occur in the vegetation type with which the species is normally associated. Thus for example the Black-headed Oriole which was recorded once, occurred in the only patch of vegetation where the epiphytic moss *Usnea* occurs in the Park. *Usnea* being typical of the normal forest habitat of the Oriole in these regions. Similarly the Bleating Bush Warbler, Pririt Flycatcher, Nicholson's Pipit, Olive Bush-shrike and Ruddy Waxbill were all observed in restricted localities typical of each species. One does not consider remarking upon the fact that the Little Brittern for example was only seen in the reeds, because even to our eyes the reed habitat is so obviously different from the surrounding xerophytic vegetation. Perception of minor differences of habitat by the passerines mentioned above is quite obviously more acute than in the case of man and small differences between the various vegetation types must carry greater significance than we realise. This idea does not clash with the earlier statement that there are no typically endemic species to the Park. The birds mentioned in this paragraph are typically of moister, denser bush except the flycatcher and pipit. The pipit is influenced by physiographic factors; open tracts of land with little ground cover. The flycatcher occurring in open Karoid vegetation.

The list of breeding species must be considered very incomplete since such common birds as Cape Turtle Dove and Sombre Bulbuls were not included. Thus thirty-one species known breeding represents only 26% of the species recorded.

Twenty-nine species are regarded as migrants (25% of total). Four of these are palaeartic forms and seven Ethiopian. There are 18 birds which show some regularity in local movements. Two of these the Masked Weaver and Red Bishop Bird, however, only come into the Park to breed and this breeding is itself not a regular affair.

Unexpectedly the Park has no records of any species of Lark. Larks generally inhabit areas superficially similar to the open areas in the park.

It is possible that ground predators may have an influence on the absence of larks, though the presence of breeding pipits would not bear this out. Also it is worth noting the paucity of raptors since this group normally tend to become more common in our semi-desert areas. In this respect too it is worth noting that the incidence of palaeartic raptors in no way competes with the indigenous species.

ECOLOGICAL ADAPTATIONS

Because of the xerophytic nature of the vegetation and the constantly re-appearing droughts of differing degrees of seriousness, there is probably greater need for specialization of food than occurs under less rigorous conditions. This has served to show up in a few instances the selective feeding habits of certain species; the seed-eaters as a group are mainly affected. The neat manner in which these seed-eaters find adequate food whether there is severe drought or good rains is illustrated.

The two commonest fringillids are the Bully Seed-eater and the Streaky-headed Seed-eater. The only seed-eater that consumed the petals of the flowering Spekboom, the dominant plant of the area, was the Bully Seed-eater. Under drought conditions the spekboom is reputed to flower more prolifically than in wet periods. At the same period of the year the Streaky-headed Seed-eater feeds on dried composit heads. When the Spekboom is in seed both species consume the fleshy "seed-pod" although the latter species does show a greater preference for other food sources such as the small fleshy fruits of the prostrate mesembryanthemums (*Rushia* etc.) the green pods of *Rhigozum*, or the Aloe seed-heads. These are all plants that do well even in drought. During the rainy periods many other flowering plants are available and the competition for food is thereby eliminated.

A third member of the fringillid family is the White-throated Seed-eater which is remarkable for the fact that it occurs only within one area of the park and this area is less than ten acres in extent. This species was recorded feeding on Aloe heads and *Senecio* flowers and both these plants are widespread in the park. It is quite evident that food supply did not influence the distribution of this species in the area for if it had, the bird would have been found everywhere in the park.

The Red-faced Mousebird showed a distinct habitat preference for the dryer vegetation types, being wholly absent from the coastal bush and mixed scrub. The interesting aspect of this statement is the fact that the colony concerned fed freely upon Milkwood and *Royena* berries; two species of the trees that occur most commonly in the two vegetation types mentioned. Thus again food supply does not seem to influence the local distribution in this instance of the Red-faced Mousebird. The Speckled Mousebird showed fluctuations in numbers and seasonal movements to different vegetation types that agree well with the food supply. Thus they eat the Spekboom seeds in late summer and in spring are drawn up to the Bontveld where *Rhus longispina* and *Rhiocisus* supply an abundance of berries.

DISCUSSION

Although there was no attempt to conduct a quantitative study, it is apparent that at least qualitatively the birds of the Addo National Park are poor compared with other areas. Winterbottom (1962a) on two visits to the Bontebok National Park records 104 species with 70 common to both visits. This is high by many standards. For example Skead (1946) and Taylor (loc. cit.) in census work over a smaller restricted habitat in the Eastern Cape record a total of 55, 55, and 61 species involving 50, 50 and 98 counts. In an attempt to compare the present work with that of the last two mentioned, the number of species for each habitat as recorded are tabulated (see Table 5). It might be mentioned that it was difficult to follow in detail the breakdown of habitats as suggested by Winterbottom and Skead (1962) but where possible this is done in Table 5.

TABLE 5

Number of species recorded for each habitat listed. The column W & S — the reference habitat suggested by Winterbottom and Skead (1962).

| W. & S. | Vegetation type | No. | W. & S. | Habitat | No. |
|---------|---------------------------|-----|---------|-----------------------|-----|
| D5 | 1. Spekboom open | 9 | B1, 2 | Near water | 21 |
| D3 | Spekboom dense | 14 | 1 12 | Near homestead | 9 |
| D7 | 2. Karoid | 30 | — | Widespread | 23 |
| — | 3. Mixed and grass | — | E 2 | Open areas | 7 |
| — | 4. Bontveld | 7 | — | Single records | 10 |
| — | 5. Coastal bush | 9 | | | |

From this breakdown the maximum possible number of species that could have been recorded on one day during all counts would have been 70 from one general habitat. This is done by adding Karoid areas, open areas and all species that were widespread. It is doubtful that such a figure would ever have been reached particularly since the highest number seen on any one visit, which involved several habitats was only 51. Bearing in mind that Skead and Taylor's work covered 28, 37 and 2 acres whereas the present work covered 17,000 acres (though obviously not in as great detail) one would have expected a greater variety at Addo than in fact was the case.

The largest number of species that was recorded from any one restricted habitat as delimited by Winterbottom and Skead (loc. cit.) was 30 species found in Karoid vegetation. In view of the fact that this habitat formed only 6½% of the area it would indicate that such a habitat is better for birds than the Spekboomveld. The Spekboomveld had only 23 species in it though many of the 23 widespread species occurred in it as well (this latter point also applies to the karoid habitat). Thus for variety of species Spekboomveld is particularly poor. The dominant impression of the habitat is one of dense formation of succulent and xerophytic vegetation which

supplies shadow and refuge for the more skulking species; the ground cover is one of light compost of loose decayed vegetable matter. Flowers are present throughout the year to a varying degree. Food for both vegetable and animal feeding birds would seem to be adequate but possibly there is a lack of variety owing to the uniformity of the habitat.

Faunistically the avifauna is somewhat mixed with elements from both the arid west and humid east coast elements. Separating out the recorded breeding species only 60% are not dependant upon water or human habitation and all these are widespread in their breeding habits. One species *Cinnyris afer* does tend to belong more to the eastern element and three others which undoubtedly breed in the area are likewise eastern *Laniarius ferrugineus*, *Tchagra tchagra* and *Andropadus importunis*. The area of the National Park is evidently a transitional zone where despite the impressions of dominant arid-west type habitat the avifauna tends to be more eastern-coastal. The absence of larks and other karoooid species supports this supposition. Many of the species from the coastal scrub or moister areas occur as vagrants but some such as the *Tchagra tchagra* (see Winterbottom 1962b p. 6) *Andropadus importunis* and *Cinnyris afer* are resident. With the apparent anomaly of a superficially arid-west habitat occupied by an apparently humid coastal avifaunal element, one is compelled to bring in the elephant to the discussion. The distribution of this animal and the Buffalo is generally associated with more luxuriant or at least semi-tropical habitats in our south eastern regions although it is true enough in central Africa they are perhaps frequent in open savanna. Acocks states that the Addo bush and the Sundays River scrub are derived directly from the Alexandria forest which is a relict of the coastal tropical forest near the coast some 40 miles from Addo "The Sundays River scrub is however just as succulent as the Fish River scrub (except that the succulents are mostly smaller) and even more thorny and tangled". The Fish River scrub on the other hand when affected by man is invaded by Karoo, *Rhenosterbos* and *Fynbos*. This would indicate that at the Addo National Park the fauna and flora tend to be associated with the east-coastal tropical element although the superficial appearance of the habitat is that of the semi-arid west element.

It is noted that the avifauna in this transitional zone is unusually poor. This is in contrast to Poynton's (1961) statement about lizards which are unusually richly developed in transitional faunas.

It has been shown that food supply at least for several seed and berry feeders does no influence the local detailed distribution of some species of birds. Also it has been shown that under local conditions at least in the Red-faced Mousebird the species remains in only the dryer areas although 30 miles away on the coast the same species may be found permanently in very much moister conditions. Quite a few of the vagrants were shown to have occurred in habitats to which they would normally have been associated had they resided in the area. These habitats are recognised by the plant

species which under local conditions possess a slightly modified life-form. In the denser vegetation the superficial appearance of the vegetation is similar to its normal moister habitat; in the more open vegetation of a karoid nature there is also a superficial appearance to "typical" karoo. In considering the Coastal bush for example there is little doubt that at least at Addo it is hotter and dryer than it would be thirty miles away at the coast. These two factors then, temperature and humidity either separately or together may contribute to the fact that the vagrant species are not resident in the area. The vegetation itself or even as the end product of environment does not play an important role in the local distribution of bird species at Addo.

Observations on species observed. Number in brackets donates number in Roberts Birds of South Africa.

THE OSTRICH (1) *Struthio camelus* Volstruis

This bird is nearly always to be seen in the open areas about the elephant feeding-area in front of the wardens' houses. Though normally a bird of more open country the Ostrich here inhabits the whole park, penetrating into the more open spaces between Spekboomveld in the Elephant Camp. Grazing upon vegetation; the Spekboom itself is utilized though strangely enough, through habit of feeding with head bent down, the birds have never been seen eating the leaves at head-height.

Eggs have been recorded from October to January though small young less than two months of age were recorded in August. Courtship was observed in August and curious throat vibration calling of the male was heard both during the day and at night.

DABCHICK (6) *Podiceps ruficollis* Duikertjie

This little diving bird is recorded only on the dam near the warden's house. Normally a resident species elsewhere there are no records during the winter months June and July. Only one pair is present except when these have young.

The young have been recorded from December to January.

REED CORMORANT (50) *Phalacrocorax africanus* Rietduiker

Recorded only twice in April and May 1961 after rains had fallen in the general vicinity.

GREY HERON (54) *Ardea cinerea* Blou Reier

Only one record of this bird at the dam near the wardens house on 11th August 1961.

BLACK-NECKED HERON (55) *Ardea melanocephala* Swartkop-reier

This bird has only been recorded in the open Karoid vegetation. Seldom more than one seen at a time though two and sometimes three may

be feeding widely separated in the Antelope Camp. Recorded every month of the year except June.

CATTLE EGRET (61) *Bulbulcus ibis* Bosluisvoël

A flock recorded once 8th January 1963. Open area.

NIGHT HERON (69) *Nycticorax nycticorax* Nagreier

A record 28th December 1961 of one bird at the dam near the wardens house. It had a frog in its bill, probably *Xenopus*.

LITTLE BITTERN (67) *Ixobrychus minutus* Woudapie

A single bird recorded at dam near warden's house. 19th April, 1961.

HAMERKOP (72) *Scopus umbretta*

One bird recorded after rains in June 1961 when it was feeding near a catchment pool within the elephant camp.

WOOD IBIS (76) *Ibis ibis* Nimmersat

Several recorded from December to February at Ceasars Dam.

HADEDAH (84) *Hagedashia hagedash*

This species is common in the Zuurberg across the valley of the Coerney river. They do range out at irregular periods and have been recorded feeding on the open ground in the Antelope Camp. February, June, September and November are the months they have been seen but they could occur any month of the year. From two to six birds have been seen at one time.

SPUURWING GOOSE (88) *Plectropterus gambensis* Wilde-makou

An occasional visitor to Ceasars dam. December.

EGYPTIAN GOOSE (89) *Alopochen aegyptiacus* Kolgans

A tame bird near the warden's house attracts wild birds down throughout the year. They are occasionally seen at other dams and up to 50 have been seen at Ceasars dam.

Young birds have been recorded in April, September and December.

SOUTH AFRICAN SHELDUCK (90) *Tadorna cana* Bergeend

Recorded usually in pairs from April to October on any dam in the Park. It is unusual to see more than one pair at any one watershed except at Ceasars Dam where several were recorded in December.

Small young have been seen from August to October.

YELLOWBILL (96) *Anas undulata* Geelbek

Numbers up to 8 may be seen on occasions on the dam near warden's house.

- SECRETARY BIRD** (105) *Sagittarius sepentarius* Sekretarisvoël
 There is a resident pair which breeds annually in the antelope camp where one or other of the adults may be seen throughout the year. The feeding method of this species can be closely watched as it jabs at large insects or lizards with clenched talons, having its crest feathers spread out in a halo around its head.
 Eggs may be present from July to September and the young, though it leaves the nest after three months (in November and December), remains with its parents until March in the Antelope Camp.
- PEREGRINE FALCON** (113) *Falco peregrinus* Slegvalk
 A single bird has been seen over the Karooidveld near Ceasars Dam.
- ROCK KESTREL** (123) *Falco tinninculus* Rooivalkie
 There are only two records (May and July) of this species; on the second occasion a rat-like animal was caught in the open Spekboomveld.
- BLACK SHOULDERED KITE** (130) *Elanus caeruleus* Blou Valkie
 Single birds only, have been recorded in the karooid areas of Antelope Camp and Rhino Camp.
- MARTIAL EAGLE** (142) *Polemaëtus bellicosus* Breëkop-arend
 Only recorded once in the antelope camp February 1961.
- FISH EAGLE** (149) *Haliäetus vocifer* Visarend
 At Caesars Dam 30th April, 1962. Has bred at the dam in the past.
- JACKAL BUZZARD** (152) *Buteo rufofuscus* Jakkalsvoël
 Single records of adult and juvenile birds in the Antelope Camp were made in January, April, October and November.
- STEPPE BUZZARD** (154) *Buteo buteo (vulpinus)* Bruin Jakkalsvoël
 Single birds seen in October, December and January in Antelope Camp.
- MOUNTAIN BUZZARD** (155) *Buteo buteo (oreophilus)* Berg-jakkalsvoël
 Single bids seen in Spekboom and open Spekboomveld and once in the Antelope Camp; from October to March. More common than previous two species probably spreading out from the Zuurberg valleys.
- AFRICAN GOSHAWK** (160) *Accipiter tachiro* Afrikaans Sperwer
 A single record of a bird on Zuurkop where it occured in mixed Bontveld and Coastal vegetation which is the nearest one can get to forest conditions within the Park.
- BANDED GYMNOGENE** (171) *Polyboroides typus*
 A single record of immature bird over Spekboom. Probably wandering from the Zuurberg where several pairs live.

RED-NECKED FRANCOLIN (188) *Pternistis afer* Rooikeel-fisant

Not frequently seen this bird has been recorded in pairs in the Spekboom veld and in parties in the Antelope Camp. Recorded in February, March, July to September and November.

GUINEAFOWL (192) *Numida meleagris* Tarentaal

This is a resident species and so far as can be ascertained the bird has never been re-introduced locally so that this must constitute a pure original Eastern Cape stock.

The birds are present throughout the year and occur in the thickest Spekboom as well as in open areas. They are nearly always to be seen near the elephant feeding area.

Chicks were recorded in May 1961 some weeks after rain had fallen in the Park.

MOORHEN (210) *Gallinula chloropus* Waterhoender

Single birds have been recorded in the reeds of the dam near wardens house from November to March.

COOT (212) *Fulica cristata* Bleshoender

Turns up for a short period in the small dam near warden's house after rains. In April 1963 they reared a family.

A few birds occur on Caesars dam all the year round.

BLACK KORHAAN (225) *Afrotis afra* Swart Korhaan

There are two pairs resident in the Antelope Camp and another two in the Rhino Camp all occurring only in Karooid vegetation. The breeding has not been recorded.

TREBLE-BANDED SANDPLOVER (238) *Charadrius tricollaris* Drieband strandlopertjie

This species used to breed annually near the warden's house, but the dry conditions became too severe after 1959. Subsequently there has only been two records of single birds in the Park, near the old nesting site and at a waterhole.

CROWNED PLOVER (242) *Stephanibyx coronatus* Kiewietjie

Not common, odd records of pairs June to January. One regular pair appear in July near the Rhino camp (open Karooid area) and bred every spring, leaving with their young in November.

WOOD SANDPIPER (264) *Tringa glareola* Bosruiter

Single birds seen at water holes from September to January. Not at all common.

DIKKOP (275) *Burhinus capensis*

Odd single birds may be met with anywhere in the Park and flocks of

4 to 8 birds occur in the more open areas. Recorded only from August to February.

RED-EYED TURTLE DOVE (314) *Streptopelia semitorquata* Groot Ringduif

An irregular species that occurs only in the area of the warden's house where it feeds on the open areas in some numbers.

CAPE TURTLE DOVE (316) *Streptopelia capicola* Tortelduif

Ubiquitous, this species may be heard calling almost anytime of the day at any place in the Park. There is some fluctuation in numbers when more birds are to be seen from April through to September. This is not a regular variation in numbers and is presumably due to availability of food both outside and inside the Park.

LAUGHING DOVE (317) *Stigmatopelia senegalensis* Rooibors-duifie

Though common in the vicinity of the homestead throughout the year there is only one record of a bird in the Park proper.

NAMAQUA DOVE (318) *Oena capensis* Namakwa-duifie

Only two records from December and January in Karooid vegetation.

EMERALD SPOTTED DOVE (321) *Turtur chalcospilos* Groenvlekduifie

Present throughout the year in Spekboom veld, Bontveld and Coastal vegetation or open spaces within this type of vegetation. May be heard calling at any time of the day throughout the year but they call a lot from August to November.

JACOBIN CUCKOO (348) *Clamator jacobinus* Nuwejaarsvoël

An occasional visiting individual may be heard calling in the Park from October to February.

KLAAS'S CUCKOO (351) *Chrysococcyx klaas* Meitjie

A single record 27th November, 1961.

SPOTTED EAGLE OWL (368) *Bubo africanus* Gevlekte Ooruil

This bird has only been recorded twice when disturbed from thick bushes in the open Spekboom.

WHITE-RUMPED SWIFT (383) *Apus caffer* Witkruiswindswawel

Odd single records or groups up to 4 have been recorded from October to March. They are usually hawking insects low over the Spekboomveld.

LITTLE SWIFT (385) *Apus affinus* Klein Windswawel

A single bird seen 19th April, 1961.

ALPINE SWIFT (386) *Apus melba* Grootste Windswawel

A single bird recorded 30th January, 1962.

PIED BARBET (432) *Tricholaema leucomelas* Bont-houtkapper
Single records of birds Feb. to April and again July to October.
All records from Spekboomveld or Karoooid vegetation. Recorded eating
berries of *Rhus longispina*.

TINKER BARBET (436) *Pogoniulus pusillus* Rooikop-tinker
A single record of a bird 19th April, 1961, that was inspecting the
ripe fruits of *Viscum* in the Rhino camp.

GREATER HONEYGUIDE (440) *Indicator indicator* Groot Heuningwyser
Single birds recorded from the Antelope camp and more regular in the
Milkwood tree next to the Jan-wal wallow (Bontveld).

WRYNECK (453) *Jynx ruficollis* Draaihals
Seen and heard mainly in the Karoooid vegetation, once in open
Spekboom and once in mixed Bontveld. It would seem that they show a
preference for areas where the trees are widely dispersed and with sparse
foliage.

EUROPEAN SWALLOW (493) *Hirundo rustica* Europese Swawel
Once the bulk of the migrants have arrived this species is quite common
hawking low over the vegetation. The earliest record here is 18th November
and latest record is 19th April.

Birds on passage use the reeds near the homesetad dam to roost
overnight usually in the last week of March and first week in April. In
1963, 100 birds were caught and ringed.

WHITE-THROATED SWALLOW (495) *Hirundo albigularis* Witkeelswawel
There is a resident pair that breeds on the back stoep of the assistant
warden's house. They may be seen in this area from the end of September
(27th is earliest date) to the end of March (28th being the latest date).

In one season this pair is said to have reared 5 broods.

Nesting starts immediately upon arrival and continues through to March.

PEARL-BREASTED SWALLOW (498) *Hirundo dimidiata* Pêrelborsswaweltjie
Found throughout the summer in the area of the Antelope camp and
less frequently over the Jan-wal wallow. Recorded from 27th September
when one or two birds may be seen, through to January when small flocks
up to 8 birds may occur. In February and March flocks are always recorded
and the impression is gained that there is quite a movement of leisurely
migrating birds over this area during those two months. The latest record
was 28th March.

LARGER STRIPED SWALLOW (502) *Cecropis cucullata* Groot streepswawel
Odd pairs recorded. They nest at Coerney station just outside the
reserve.

LESSER STRIPED SWALLOW (503) *Cecropis abyssinica* Klein streepswawel

There is a resident pair at the warden's residence. Recorded from 31st October to 19th April.

These birds commence breeding on arrival and continue to March. One nest was built against corrugated iron and the parents lost the young due to overheating of the metal. Despite this, two attempts to breed in early 1960 were followed by two attempts in late 1960: the dead chicks being removed on each occasion.

ROCK MARTIN (506) *Ptyonoprogne fuligula* Kranswawel

Nesting at warden's residence with young recorded in October but they have reared late broods in March.

SAND MARTIN (508) *Riparia riparia* Oewerswawel

Seen on one occasion 11th August, 1961, in company with the Rock Martins.

BLACK SAW-WING SWALLOW (511) *Psalidoprocne holomelaena* Saagvlerk swawel

Single birds noted flying low over Bontveld in October and December. This species is common in the forested areas of the Zuurberg and these birds have probably wandered from that area and were hawking insects over vegetation of the nearest type to their normal haunts.

FORK-TAILED DRONGO (517) *Dicrurus adsimilis* Pylstert-byvanger

Recorded throughout the year but the numbers seem to fluctuate depending apparently upon local conditions rather than season. The birds may be seen in all vegetation from the edges of the densest Spekboom to the open Karooid areas.

BLACK-HEADED ORIOLE (521) *Oriolus larvatus* Swartkopwielewaal

Recorder once only, 14th December, 1960, in the Coastal bush area. Since the trees here actually have *Usnea* hanging from upper branches this area can be considered similar to their normal habitats.

BLACK CROW (523) *Corvus capensis* Swart Kraai

Recorded irregularly either one or two birds. It was believed that the species was resident at a period when jackals were particularly abundant.

PENDULINE TIT (531) *Anthoscopus minutus* Kapokvoël

Recorded irregularly from February to August but only from the Karooid vegetation near the Rhino camp. Parties of up to five birds seen.

CAPE BULBUL (543) *Pycnonotus capensis* Kaapse tiptol

Recorded on one occasion only, 27th September, 1961, near the warden's residence. This is the only known record of this species in Spekboom veld. This locality must be the nearest that the three members

of the genus *Pycnonotus* occur to each other since both the other two species are known from the Zuurberg.

SOMBRE BULBUL (551) *Andropadus importunus* Willie

A common resident species found throughout the park. The familiar call may be heard all the year, though some weather conditions seem to keep birds quieter and the full song is heard best from September through to February.

CAPE THRUSH (553) *Turdus olivaceus* Kaapse lyster

This normally resident species was recorded in numbers from January to May 1961, in September 1961 and in December 1962. It is curious that the bird was not seen or heard on any other occasion. The only explanation possible is that the severe drought developing during this period forced the species from the forested foothills of the Zuurberg. Although the Park is hotter and with predominantly xerophytic plants, not normally attractive to this species, the vegetation is better adapted to the then prevailing drought conditions than is the riverine forest.

CAPE ROBIN (581) *Cossypha caffra* Janfrederik

Resident but secretive and not as commonly seen as is usually the case for such a confiding species. Recorded in all areas and types of vegetation but seems commonest in the densest Spekboom.

A fledgling was seen being fed in December.

KAROO SCRUB ROBIN (583) *Erythropygia coryphaeus* Slangverklikker

A resident species occurring in open Spekboomveld, Karoooid vegetation and Bontveld. A good songster that sings best from September to November.

WHITE-BROWED SCRUB ROBIN (588) *Erythropygia leucophrys*
Gestreepte Wipstert

A common resident that is more frequently heard than seen. It has been found in all vegetation types. Sings particularly well after rains and during the period September to November.

One pair feeding young in dense bush in November.

CAPE REED WARBLER (604) *Calamocichla gracilirostris* Kaapse Rietsanger

There is a resident pair in the reeds of the homestead dam. Also occurs at Caesars dam. Breeding recorded in April.

CROMBEK (621) *Sylvietta rufescens*

Recorded in a variety of habitats from December to April but not common.

BAR-THROATED APALIS (622) *Apalis thoracica* Bandkeel-kleinjantjie

A common resident species that occurs throughout the Park in all types of bush. Their call may be heard at any time of the day throughout the year.

Nesting activity recorded in October and courtship in March and June in addition to the spring period.

BLEATING BUSH-WARBLER (627) *Camaroptera brachyura* Kwêkwêvoël

There is one record 24th October, 1961, in the coastal vegetation which is its normal habitat in the Zuurberg and coastal areas.

NEDDICKY (637) *Cisticola fulvicapilla* Neddikkie

The plaintive weeping note of this common resident may be heard throughout the Park, all the year round.

It might be noted that the juvenile plumage of the local race is not grey below so that the observer may see the lighter colour phase more typical of the Transvaal form.

GREY-BACKED CISTICOLA (638) *Cisticola subruficapilla* Grysrugtinginkie

This bird is confined to two small areas within the karoid vegetation. Near the north corner of the Rhino camp and near the dam in the centre of the Antelope camp. Both areas are similar in the life form of the vegetation having patches of low bushes and denser stands of low vegetation. The birds are present throughout the year but are very quiet and secretive from January to March and may have to be flushed up during this period to be seen.

KAROO PRINIA (651) *Prinia maculosa* Karoo-langsterttinginkie

A common resident species that is found throughout the park but is commonest in the open Spekboom and Karoid vegetation.

TIT-BABBLER (658) *Parisoma subcaeruleum* Tjeriktik

A common resident species in the Karoid vegetation of Rhino camp and recorded less often elsewhere throughout the park. Seems to prefer the dryer bare vegetation.

Fledglings are recorded for December.

FISCAL FLYCATCHER (665) *Sigelus silens* Fiskaalvlieëvanger

A common resident species that is found throughout the reserve perched on prominent sites near the roads. Usually more conspicuous in song and display from August to December.

The breeding seasons appear to be affected by rainfall for the breeding which is simultaneous throughout the park normally takes place in August but may be carried over to February. Young birds being fed by parents have been recorded from November to February. Good rains induces courtship and song in the species.

CAPE FLYCATCHER (672) *Batis capensis* Bosbontrokkie

There are several records of this species in all types of vegetation but it seems commonest in Spekboomveld. It is possibly resident in the thicker

Spekboom areas since there are several records from one particular area scattered at intervals throughout the year. On the otherhand they may possibly come down from the Zuurberg valleys where the species is found in every month of the year.

PRIRIT FLYCATCHER (674) Batis pririt Pirit-bosbontrokkie

There are three records of this species from the open Karooid areas of the Rhino and Antelope camps. A female Cape Flycatcher was seen once in a bird party in karooïd bush where this species occurs but this is the only instance of any ecological overlap and it is likely that the bird party had drawn the Cape Flycatcher into the area. The Pirit Flycatcher has not been noted with bird parties.

CAPE WAGTAIL (686) Motacilla capensis Kwikkie

Recorded all months except May and November. It is possible there is a resident pair near the homestead dam but otherwise appears irregularly near waterholes and on the road near the railway line.

NICHOLSON'S PIPIT (693) Anthus similis Nicholsonse Koester

Recorded only from October to December 1960 and again in December 1961. This species occurred on the open stony areas in the Antelope camp and on Zuurkop. It is distinguished from the next species by distinct throat markings; also it settles on bushes.

It would seem physiography influences the distribution rather than anything else since it occurred only on open stony ground.

PLAIN-BACKED PIPIT (694) Anthus leucophrys Donker Koester

Recorded from October to January and in 1962 recorded at the end of April (see below). Seen in areas not far from the above species but always on open ground that was not stony.

A nest was found in December in a grassy area situated under a small *Juncea* bush. The young were still being fed at the end of January and one young did not leave the area until after the end of April although the rest of the family had disappeared by then.

Whereas the adult has practically no throat markings and a narrow eye stripe the juvenile bird has heavy conspicuous throat spotting and a broader eyestripe than the adult. The juvenile shows a distinct spotting on head, neck and back and spots on the wing are more conspicuous than adult.

FISCAL SHRIKE (707) Larius collaris Laksman

Resident species that occurs in the more open areas such as Karooid vegetation or in open Spekboom along the roads. No count exceeded six birds in the reserve so that it is not as common as its conspicuousness would indicate.

Fledglings recorded in January successive years.

BOUBOU SHRIKE (709) *Laniarius ferrugineus* Waterfiskaal

A common resident recorded everywhere there is dense bush and even in small patches of bush. Because the singing is likely not to be heard on occasions especially when hot and humid conditions prevail, it is difficult to be certain whether mid-summer or mid-winter silence is a seasonal phenomena.

PUFFBACK SHRIKE (712) *Dryoscopus cubla* Sneeuwal

Recorded once in the coastal forest, mixed conditions on Zuurkop 14th December, 1960.

TCHAGRA SHRIKE (713) *Tchagra tchagra* Tjagra-laksman

A resident species found in all types of vegetation with bushes. Quite common and heard singing from September to January.

OLIVE BUSH SHRIKE (717) *Chlorophoneus olivaceus* Groen Boslaksman

Recorded in August, September and March in the same coastal forest/mixed vegetation singing well. On all occasions it was the Ruddy phased bird.

BOKMAKIERIE (722) *Telophorus zeylonus* Bokmakierie

A resident species found throughout the reserve and nearly always occurring in pairs. Breeding activity recorded in September and October.

WATTLED STARLING (735) *Creatophora cinerea* Vaal spreeu

Recorded on 16th August, 1960, and 28th August, 1962, common nearby in the Sunday River Valley. In open areas only.

PIED STARLING (746) *Spreo bicolor* Witgat-spreeu

Recorded in the open on only two occasions at the elephant feeding area. Its absence is not understood since it is such a common species in the Sunday River Valley.

This species has established a night roost in the reeds of the dam near the homestead since the middle of 1963.

CAPE GLOSSY STARLING (737) *Lamprocolius nitens* Klein Glansspreeu

A sporadic visitor likely to be seen at any time of the year. It was only recorded near the homestead and on a hillside near the ranger's house in the Antelope camp. Usually three or less in number the highest record was of six birds in a flock.

MALACHITE SUNBIRD (751) *Nectarinia famosa* Jangroentjie

For some unknown reason not recorded for the months May, November and December. This bird is common from June to September when the aloes and strelitzia in gardens are in flower but otherwise occur singly or in pairs attending boorbloom flowers. Two birds were ringed near the warden's house which were seen for a week and not recorded again.

Nests with young were recorded in August and September both in Karoooid vegetation and within two feet of the ground, nowhere near water. This is unusual for the species, at least in the western Cape, where they nearly always nest near a stream.

LARGER DOUBLE-COLLARED SUNBIRD (758) *Cinnyris afer* Groot rooi-
borssuikerbekkie

A resident species particularly common when the Aloes are in full flower. Except for the period March to May the birds sing well and are usually conspicuous. Moulting has been recorded in March and this is probably the reason why in this area only single birds are seen from March to May.

Nesting activity has been recorded from June to August and fledglings were recorded in April. Although some pairs are presumed to be resident and may be found in the same area regularly, many new pairs come into the reserve during the breeding period and groups occur when the aloes are in flower.

LESSER DOUBLE-COLLARED SUNBIRD (760) *Cinnyris chalybeus* Klein
Rooiborssuikerbossie

Recorded only during the summer months November to January and one in April. Habitats include coastal forest areas on Zuurkop, open Spekboom and thick Spekboom. One bird singing well in thick Spekboomveld had three males of the larger species singing nearby. Not seen feeding on aloes when that flower is abundant.

BLACK SUNBIRD (772) *Chalcomitra amethystina* Swart Suikerbekkie

Two records, one feeding on Aloes in August and the other in "immature" plumage singing well in February. Spekboomveld.

CAPE WHITE-EYE (775) *Zosterops pallidus* Kaapse Glasogie

Not common and sporadic in appearance. Evidently they do not like the xerophytic vegetation although there were two separate records from Spekboomveld. In August the orange-pollen on their foreheads indicates that the species feeds on Aloe heads.

HOUSE SPARROW (784) *Passer domesticus* Europese Mossie

First recorded a pair on 16th August, 1960, although the bird could well have been there earlier. By May 1961 the birds were on the stoep and the first nest was recorded in August 1961. By October 1961 the species was noted on the reserve fence near Coerney Station. Numbers do not seem to have exceeded 6 at any time although they rear fledglings successfully. Associate freely with the following species.

CAPE SPARROW (786) *Passer melanurus* Mossie

A resident species that occurs near the warden's buildings with only one March record of small flocks in open Spekboomveld and one record of a single male calling from dense Spekboomveld.

Nest building seen in September.

- SPECTACLED WEAVER** (791) *Hyphanturgus ocularius* Brilwewer
 An odd bird or pair may be met anywhere in the reserve at any time of the year.
 Nesting activity recorded in November and January.
- CAPE WEAVER** (799) *Ploceus capensis* Kaapse Wewer
 Present at the homestead dam for odd nesting periods and recorded feeding from the ground in galenea in the Antelope camp. Also feed on aloe heads in August when they have orange foreheads from pollen. Non-breeding plumage recorded from January and February.
 Breeding takes place after rains as for example in April and May 1962 when the birds were breeding in non-breeding plumage.
- MASKED WEAVER** (803) *Ploceus velatus* Swartkeelgeelvink
 Recorded only at the homestead dam when they breed there November 1961 to January 1962 and in May 1963 when the birds were breeding in non-breeding plumage after exceptional rains.
- RED BISHOP BIRD** (808) *Euplectes orix* Rooi Kaffirvink
 Curiously enough I have only recorded this species at the homestead dam in late summer or autumn and always in breeding plumage 19th April, 1961, 28th March, 1962, 30th April, 1962, 5th November, 1962, 11th December, 1962, 8th January, 1963, April 1963. In small numbers when present.
- SWEET WAXBILL** (825) *Coccyzygia melanotis* Swie
 Recorded from coastal forest vegetation near the wallow Janwal — July and August 1961.
- RUDDY WAXBILL** or Firefinch (1833) *Lagonostictarubricata* Kaapse Robbin
 One bird recorded in Karooid vegetation (31st Oct., 1960) of the Antelope camp feeding in a bushy patch of grass with green seedheads. Possibly descended from the Zuurberg where the species is known.
- COMMON WAXBILL** (843) *Estrilda astrild* Rooibekkie
 One group seen feeding in open karooid veld of Antelope camp 20th April, 1962.
- FOREST CANARY** (858) *Serinus scotops* Gestreepte Kanarie
 Recorded at intervals only in the "coastal" bush vegetation at the wallow janwal. This is a common species in the forests of the Zuurberg.
- YELLOW-EYE CANARY** (859) *Serinus mozambicus* Geeloog-sysie
 Single record 18th November, 1960, in karooid area.
- BULLY SEED EATER** (863) *Chrithagra sulphurata* Geel Dikbeksysie
 A bird that occurs throughout the year but without reliably being found

in any one place for any length of time. All the observations have been made in open Spekboomveld and in the mixed Coastal vegetation on Zuurkop.

This is one of the few species in the reserve that does not suffer from lack of food during drought. This is because it is very partial to the minute fleshy petals of the Spekboom which flowers best during dry years. No other seed-eaters were seen feeding on the flowers and this species was not seen feeding on the seed heads.

Breeding activity in the form of nest building was noted in January, May and September.

WHITE-THROATED SEED EATER (865) *Crithagra albigularis*Witkeel-
dikbek sysie

This bird was recorded only in one area of perhaps not more than ten acres in the Karoooid vegetation of the Rhino camp. Recorded December to April, June, July and October, so there does not appear to be any pattern in its coming and going. It is curious that its habitat is so confined. The only feeding was noted on the flowering heads of *Senecia longifolia* a species of plant which occurs more commonly in the open Spekboomveld. Also seen feeding on the flowering aloe heads which likewise occurs throughout the reserve.

YELLOW CANARY (866) *Crithagra flaviventris* Geelsysie

Flocks recorded on two occasions 16th August, 1960, and 31st October, 1960, on the outside fence of the Park.

STREAKY-HEADED SEED-EATER (867) *Poliospiza gularis* Streepkop-sysie

A resident species that is found in all types of vegetation though it shows a slight preference for the more open Spekboomveld and Karoooid areas. This species was noted feeding upon the seeds of Spekboom and the green pods of *Rhigozum obovatum* whenever these food sources were available. They were also seen feeding on seed capsules of a creeping stapelia, berries of *Rhus longispina*, small fruit of prostrate mesem, and on dried compositae flower heads.

No nesting activity was noted and in fact no singing was recorded.

GOLDEN-BREASTED BUNTING (874) *Emberiza flaviventris*. Rooirug-geel
Streepkoppie

A summer visitor recorded in open Spekboomveld and coastal bush from September through to February and a pair seen in April. A nest with 3 eggs was recorded in November. Nearly always seen feeding on the ground.

SUMMARY:

The general environment and vegetation of the Addo National Park are given. The avifauna is discussed qualitatively (120 Species) in terms of resident species (32) and irregular visitors (45), breeding (31) and migratory species (29). Ecological adaptation especially by fringillids are given. Discussions cover analysis and comparisons of avifauna in relation to habitat, faunistic elements and detailed factors that influence local distribution. A list of species with detailed observation is given.

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