8. RINGING

THE FIRST TEN YEARS OF RINGING IN SOUTH AFRICA

G. R. McLachlan

Hon. Organizer Ringing S.A.O.S.

INTRODUCTION

The title of this paper is a slight misnomer as the period covered is actually slightly longer than ten years being from 1948 to mid-1961. However, as very few recoveries were recorded until mid-1951 and very little ringing was done during the first two years (see Table 1), the period during which the scheme has been in active operation may, in round figures, be considered as ten years.

The organization in South Africa of a scheme for the large-scale ringing of birds, dates back to 1946 when Dr. Austin Roberts and C. J. Skead wrote letters and articles in the *Ostrich* outlining procedures which should be adopted and some of the ornithological problems which could be elucidated by ringing birds of various species. Dr. Roberts suggested that particular emphasis should be placed on the ringing of certain species.

Dr. R. Bigalke, Director of the National Zoological Gardens, obtained the permission of the Trustees to use the Zoo as a forwarding address for the scheme. All rings used by the Society therefore bear the words "Zoo Pretoria" or "Inform Zoo Pretoria". This proved a happy choice and we are grateful to the Zoo for their co-operation and assistance in this regard.

At the Annual General Meeting of the Society in April 1948, Dr. H. Ashton, the first Honorary Organizer of the scheme was given a free hand to form his own migration committee and was promised £250 from the Bird Book Trust Fund. A committee was then formed consisting of the following members: Dr. H. Ashton, Dr. T. G. Nel, Mr. T. J. Steyn, Mr. J. Voelcker and Captain C. Pitman.

Although Dr. Ashton was organizer of the scheme, the records were centrally housed by the Transvaal Provincial Administration until 1951, when Dr. Nel was appointed to another post. It was then suggested that the organizer should keep the records himself and this has continued to be the system ever since.

The first order of rings amounted to 40,000 and bore the address "Zoo Pretoria." The use of this forwarding address has been criticized from time to time as it was felt that people might be chary of forwarding a ring from a bird they had shot, if it appeared to be a tame escapee from the Zoo. On the other hand finding a bird bearing this address far from the Zoo, seems to excite curiosity of people who wonder how it managed to stray so far. In fact, of course, it may have been ringed quite near the site of recovery.

All in all there does not seem to be a great deal of evidence that large numbers of rings are being withheld because of the address on them. People with a feeling of guilt at having shot an apparent Zoo escapee usually salve their consciences with some phrase such as "this duck and my bullet happened to collide by accident over my dam" or "this bird was killed by a member of my staff".

The early protagonists of a ringing scheme in Africa were rather gloomy about the prospects of recovering rings in so sparsely populated a country as Africa. To some extent this has proved true and the average recovery rate is only about 0.8%,

TABLE 1

BIRDS RINGED DURING THE DIFFERENT YEARS FROM 1948–1961

	1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61
Birds ringed	133	297	4,031	5,145	11,574	22,399	22,296	22,703	27,647	33,237	13,422	11,510	11,398

TABLE 2

NUMBER OF BIRDS RINGED BY CLUBS AND INSTITUTIONS. ALSO NUMBERS OF BIRDS RECOVERED. NOTE THAT IN EARLIER YEARS THESE ARE NOT STRICTLY IN THEIR CORRECT YEAR OF RECOVERY BUT ARE TAKEN FROM PUBLISHED REPORTS

Year	Total	Species	Recovered	Cape Bird Club	Natal Bird Club	Witwaters-rand Bird Club	Eastern Cape Wild Bird Club	Pretoria Bird Club	Rhodesian Ornitho-logical Society	Barberspan	Rondevlei	Entomo-logy Dept.
1948–49	133	26										
1949–50	297	78										
1950–51	4,172	148	14									
1951–52	5,145	155	46									
1952–53	11,574	141	87	5,464		4,457						
1953–54	22,399	153	200	6,367		7,818	4,000					
1954–55	22,596	156	188	6,643	50	6,756				106	2,431	
1955–56	22,703	181	217	298	104	15,149		298		2,324	2,381	
1956–57	27,647	204	125	302	933	11,195	625	858		4,118	3,019	599
1957–58	33,234	196	183	395	175	4,103	198	2,323	70	6,819	2,604	16,222
1958–59	13,422	213	125	786	212	4,392	1,000	2,514	560	1,259	2,191	2,357
1959–60	11,510	234	153	863	408	4,799	165	1,091	686	1,190	3,494	
1960–61	9,797	231	105	1,650	615	2,622	—	190	—	503	1,958	
Totals	184,629	—	—	22,768	2,497	61,291	5,988	7,674	1,316	16,319	18,078	19,178

or one return for every 125 birds ringed. However, this has not discouraged ringers and the occasional spectacular recovery from Russia or Central Africa always stimulates workers to greater efforts and compensates for the many weary hours of routine ringing, perhaps without a single subsequent recovery.

RESULTS

From quiet and hesitant beginnings, the scheme grew apace, with the results shown on page 256.

When the writer took over the organization of the scheme in 1956 it soon became clear that it was becoming too complex to be organized on a purely voluntary basis. The first task was to standardize the method of submitting ringing data. Previously these were sent in on variously-shaped pieces of paper which defied tidy filing. Finally a standard size of 5″ × 3″ was decided upon and suitable filing cabinets purchased. Data is entered on these cards in the following way:

Species: *Quelea quelea* Roberts No.: 805 No.: 582/00256

Date: 21.1.58 Local: Vaaldam 26°50′S : 28° 20′E. Age: Adult Sex: ♀

Ringer: Wits Bird Club

Fortunately in "Roberts Birds of South Africa", each species has a number and if this is quoted, problems of nomenclature can easily be solved by reference to the book. The filing of all data on standard cards greatly speeded up the preparation of Annual Reports but to compile a list of the numbers of birds ringed in any year, still required every card to be inspected by hand. A slow and laborious task. Furthermore research workers often wish to know how many birds of a given species have been ringed at such and such a locality during a certain period.

Accordingly it was decided to approach the Council for Scientific and Industrial Research for financial assistance, in order to:

(*a*) Place all the ringing data on Hollerith punch cards so that Annual Reports could be speedily compiled and research questions answered with a minimum amount of work. These cards would form a duplicate set which could be filed by species or in any other sequence instead of numerically as in the case of the 5″ × 3″ set.

(*b*) To obtain financial relief for members of the Society who had to buy their own rings, either directly or by using Club Subscriptions. It seemed wrong that members of the Society doing valuable research should have to pay for rings or use Club funds needed for other purposes.

The C.S.I.R. generously acceded to these requests and a start was made entering all the available data on Hollerith type cards. The following headings are used: Once again the value of the Roberts number was felt as each species had a number which could be used for the coding. Localities are designated by Latitude and Longitude and dates in the normal way (21.1.58). Age and sex are allocated numbers. Any additional data, which may be required in the future, can be added in blank columns. An unexpected by-product of this coding was the ease with which the Hollerith cards can be scanned visually as they have all the data *printed* along the top edge as well as punched into the card.

RINGING AND RECOVERIES

Active ringing started during 1948 and although only 133 birds were ringed the first year, this had increased to over 22,000 only five years later and has tended to stay at about that figure for the period under review, except in 1957-58 when it reached 33,000 due to the Department of Agriculture's intensive quelea-ringing programme.

Recoveries soon followed the initial ringing. The first was a Yellow-billed Kite (*Milvus*) ringed by Major Haydock at Luanshya, Zambia on 13.10.48 and recovered dead, north of Bulawayo on 20.12.48. The second was a Vulture (*Gyps coprotheres*) ringed at the Krantzberg (Transvaal) on 1.8.48 and killed a few miles south of Bulawayo in October 1949.

In the first ten years a total of 184,629 birds was recorded as being rung and 1,458 recoveries have come in. In addition about 100 recoveries cannot be traced indicating at a recovery ratio of 1 : 125 that some 12,500 ringing records have not been sent in (approximately $6\frac{1}{2}\%$).

TABLE 3

RECOVERY RATES OF SPECIES MOST COMMONLY RINGED

		%			%
61	Cattle Egret *Bubulcus ibis*	0·7	251	Curlew Sandpiper *Calidris testacea*	0·2
81	Sacred Ibis *Threskiornis aethiopicus*	0·6	253	Little Stint *Calidris minuta*	0·05
85	Spoonbill *Platalea alba*	0·96	288	Grey-headed Gull *Larus cirrocephalus*	1·5
89	Egyptian Goose *Alopochen aegyptiacus*	5·0	493	European Swallow *Hirundo rustica*	0·31
90	Shelduck *Tadorna cana*	1·2	504	Cliff Swallow *Petrochelidon spilodera*	0·13
96	Yellowbill *Anas undulata*	1·6	786	Cape Sparrow *Passer melanurus*	0·2
97	Redbill *Anas erythrorhyncha*	2·7	805	Red-billed Quelea *Quelea quelea*	0·24
106	Cape Vulture *Gyps coprotheres*	1·9			

Since the scheme has only been in operation for this short period, no data at all are available for many species but even so regular patterns have emerged for some, notably the following:

1. Cape Gannet *Morus capensis.*
2. Cattle Egret *Bubulcus ibis* (Fig. 1).
3. Sacred Ibis *Threskiornis aethiopica* (Fig. 2).
4. Grey-headed Gull *Larus cirrocephalus.*
5. Cliff Swallow *Petrochelidon spilodera* (Fig. 3).

Details of the emerging patterns in these species are as follows:

1. Cape Gannet *Morus capensis*

This species has been banded in large numbers; some 15,507 on Malagas Island by Dr. G. J. Broekhuysen and parties and 4,000 on Bird Island by the writer and J. Sneyd-Taylor. Recoveries show that while gannets over 3 years old do not disperse much beyond 300 miles from their nesting islands, young birds move great distances, up to 3,000 miles. Up the west coast of Africa they move as far as Northern Angola and Ghana and on the east coast to Moçambique. The ringing done on Bird Island indicates that young birds do not return to the island at the end of the first year. Dispersal patterns for the two localities are identical in spite of their being 500 miles apart. The results of the gannet ringing programme are summarized by Broekhuysen, Liversidge and Rand (*Ostrich* 1961 : 1).

2. Cattle Egret *Bubulcus ibis* (Fig. 1)

Cattle Egrets have been ringed in large numbers at various centres such as Rondevlei, Faithful Fountains near Port Alfred, Pietermaritzburg and the Witwatersrand. Once again the young show widespread dispersal but it must be realized that only $\frac{1}{2}$% of the birds ringed were ringed as adults. One long-distance recovery of an adult is available; ringed at Zeekoevlei, Cape Town, recovered at Somerset East.

One point immediately apparent from the recovery record of young birds is that they either stay within 80-100 miles of their birth place or they move long distances from 300 to 3,000 miles. Thus of the 121 recoveries, 93 or 77% were taken within 100 of the parent heronry, only 5 (4%) at distances between 100 and 300 miles and 23 (19%) at distances greater than 300 miles.

Dealing with the long-distance group only, Fig. 1. shows that in the case of Cattle Egrets ringed near Johannesburg, every one has been recovered within an arc of 20° of due north. It is admittedly difficult for birds ringed in Pietermaritzburg to go east or south and from Rondevlei to go west or south but from Johannesburg there is no such limitation. Of the 23 recoveries, 11 or 48% moved in direction within 20 degrees of north.

When we remember that the Cattle Egret is a comparative newcomer to South Africa this may possibly be some atavistic movement by the young back to the tropics whence they originally came.

3. Sacred Ibis *Threskiornis aethiopica* (Fig. 2)

As may be seen from Fig. 2 there is a strong tendency for birds ringed as nestlings in the Witwatersrand area to go north to the upper reaches of the Zambezi. However, many also go in the opposite direction, to Natal. When we remember that the Upper Zambezi is relatively sparsely populated, this northward movement may be greater than is apparent from the recoveries which have so far come in.

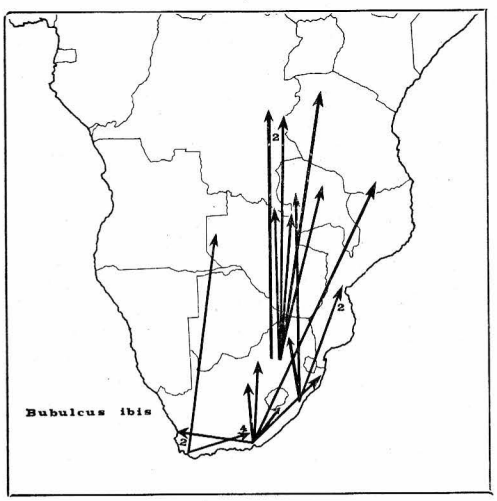

Figure 1

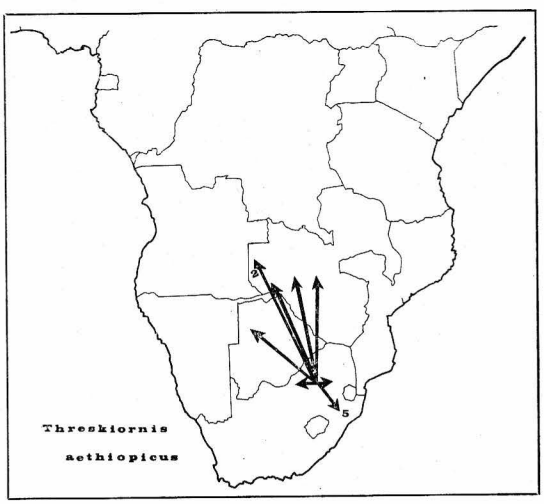

Figure 2

Figure 1. Movements of young Cattle Egrets.
Figure 2. Movements of sacred Ibises ringed as nestlings on the Witwatersrand.

Ibises have been recovered in this area mainly during the winter months, so there is the possibility that they return to the Transvaal to breed.

Only by recovering and then releasing birds, originally ringed in the Transvaal, along the upper Zambezi will this point be solved. This will be most difficult to arrange as most of these birds are shot by Africans.

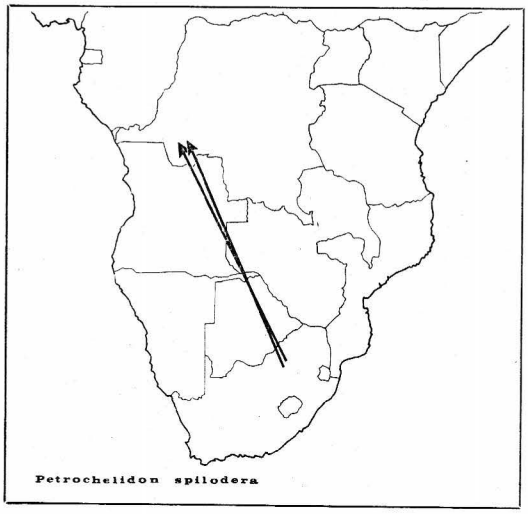

Figure 3

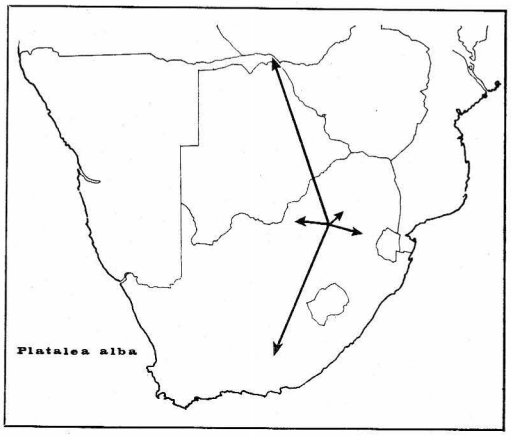

Figure 4

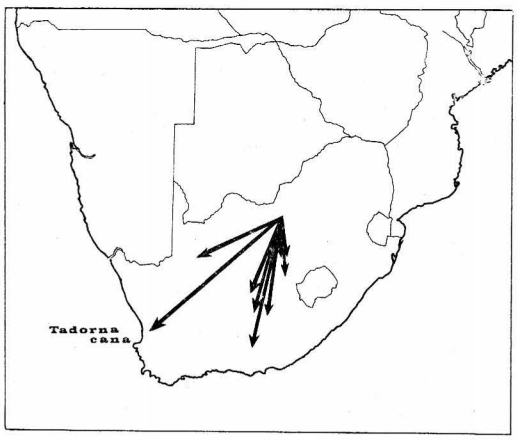

Figure 5

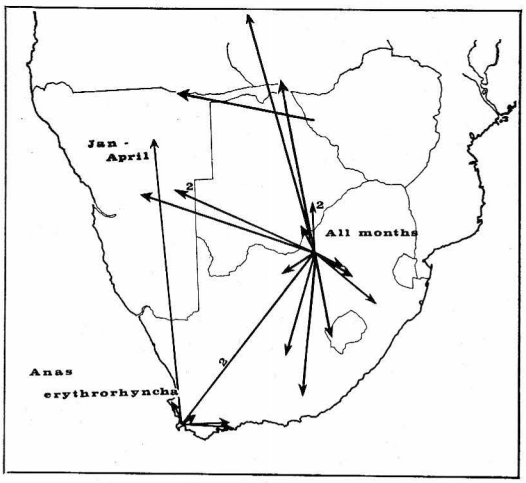

Figure 6

Figure 3. Movements of ringed adult Cliff Swallows.
Figure 4. Movements of African Spoonbills, ringed as chicks on the Witwatersrand.
Figure 5. Movements of adult S.A. Shelduck ringed at Barberspan.
Figure 6. Movements of ringed Red-billed Teal.

4. Grey-headed Gull *Larus cirrocephalus*

Birds ringed as nestlings on the Witwatersrand have been recovered on the east coast at Lourenço Marques and Durban. The young were ringed in July and August while recoveries cover the months January, March, May and June. Only further data will indicate whether birds return to the Witwatersrand or stay at the coast for the Spring.

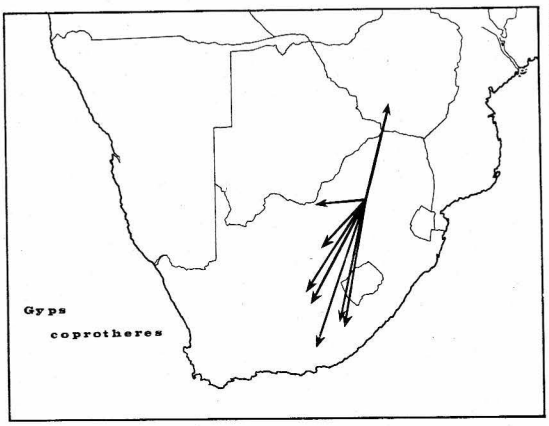

Figure 7

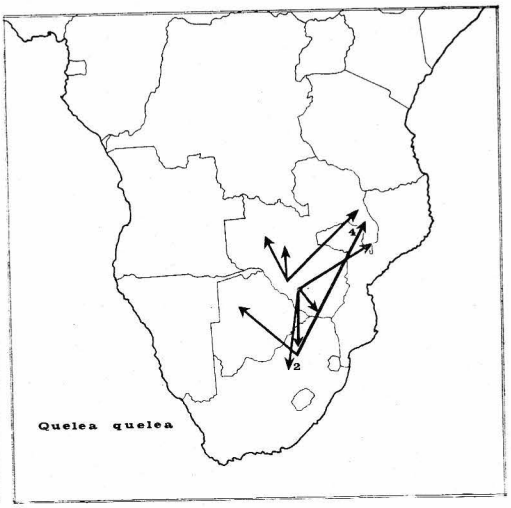

Figure 8

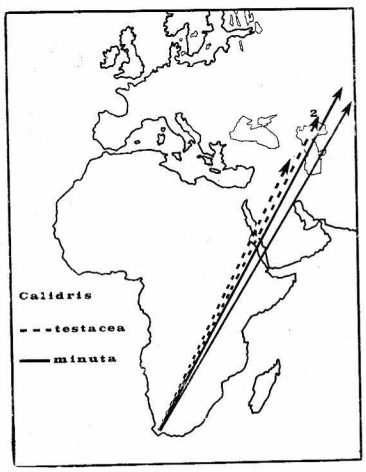

Figure 9

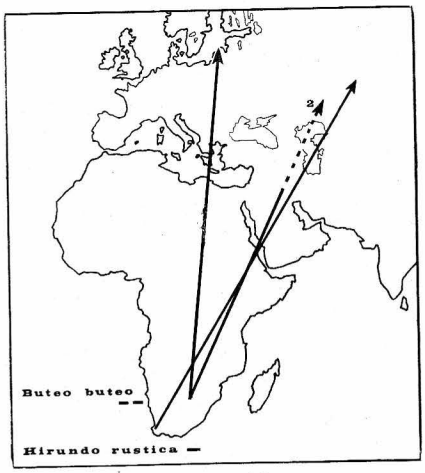

Figure 10

Figure 7. Movements of Cape Vultures ringed as chicks.
Figure 8. Movements of Red-billed Queleas ringed as adults.
Figure 9. Movements of Curlew Sandpipers and Little Stints ringed at Rondevlei, Cape Town.
Figure 10. Movements of Steppe Buzzards and European Swallows.

5. Cliff Swallow *Petrochelidon spilodera* (Fig. 3)

In spite of intensive ringing of this species in the Transvaal, only two recoveries are to hand. However, as may be seen from Fig. 3 the two birds were found very close to one another in West Africa and clearly indicate that the species winters in the Congo. One recovery, furthermore, shows that some of the birds reach the Congo by April 7th. On the other hand the other recovery was ringed in Johannesburg on April 4th.

In addition to the five species mentioned above, there are sufficient recoveries for some seven other species to show that they make random movements, rather than definite migrations, over the sub-continent. These movements may be of considerable extent but do not appear to be seasonal or to be consistently in any one favoured direction.

These species are:

1. Spoonbill *Platalea alba.* (Fig. 4)

From Fig. 4 it may be seen that ringed birds (all juveniles) disperse to all points of the compass. The one recovered on the upper Zambezi is of interest and may indicate a movement similar to that found in the Sacred Ibis. More data are required to prove this.

2. Shelduck *Tadorna cana* (Fig. 5)

Adults of this species have been ringed in numbers at Barberspan. Fig 5 shows that they disperse widely over the Karroo as far as the Western Cape. There does not appear to be any significance in the dates of ringing or recovery.

3. Yellowbill Duck *Anas undulata*

The Yellowbill Duck is also a restless species but does not travel the great distances covered by the Red-billed Teal; nor does it appear to be indulging in any regular movements. Shewell on the basis of extensive ringing at Barberspan shows that it seldom moves more than 150 miles from the place of ringing. The longest recorded are 360 miles, from Barberspan to Pietermaritzburg and 375 miles from Barberspan to Queenstown. No Rondevlei birds have ever turned up at Barberspan nor vice-versa.

4. Red-billed Teal *Anas erythrorhyncha* (Fig. 6)

This species is the great wanderer among South African ducks as may be seen from Fig. 6. To what extent these movements are seasonal does not emerge from the data as yet but it will be noticed that the four recoveries in northern South West Africa were all made in the summer months. This is only to be expected of course as it is an area of summer rainfall whereas the Western Cape is very dry in summer. Barberspan however is usually full all through the year though varying in the amount of water present. The optimum month there for Red-billed Teal is October.

5. Pochard *Netta erythropthalma.*

Although only three recoveries have come in, two show that this species is a great wanderer. Ringed in the Transvaal one was recovered in Ovamboland and the other on Lake Naivasha Kenya.

6. Cape Vulture *Gyps coprotheres* (Fig. 7)

As may be seen from Fig. 7 the young of this species disperse widely. Further data are required to establish whether they join other colonies or return to their own nesting ledges.

7. Red-billed Quelea *Quelea quelea.* (Fig. 8)

This species was the subject of intensive study by the Deparment of Agricultural Technical Services. With the data available during the period under review, there appears to be no definite migration in this species. Adults ringed in the south have been recovered 500 miles to the north in the same months one year or two years later. Conversely birds ringed in the north have been found in the Orange Free State almost exactly one year later. Movements therefore do not follow any definite patern but may be related to rain or other conditions in various areas. See Fig. 8 for directions of movement.

While recoveries in South Africa of birds ringed in Europe are quite commonplace, it was with great excitement that the first recoveries of locally ringed birds from Russia were announced in 1962. Two Steppe Buzzards were recovered in the Kuibyshev and Orenburg regions of the U.S.S.R. (Fig. 10). They had both been ringed in the Transvaal. A Little Stint ringed at Rondevlei in the Cape turned up in Russia at Bashkir near Sibai: 52° 41′ N; 58° 38′ E. and another at Karabutaksk, 49° 55′ N; 60° 08′ E.

Three Curlew Sandpipers ringed on the Cape Flats have been recovered, two near Dagestan 43° 00′ N; 47° 30′ E, and one near Guriev 47° 15′ N; 51° 52′ E. See Fig. 9. The recovery of two European Swallows ringed in South Africa and recovered in Russia is shown on Fig. 10.

In addition to those species which have proved to migrate or make irregular movements over the continent, several species have been recovered often enough to indicate they are completely sedentary, often being recovered in the same street or garden several years after being ringed. The data indicates this to be the case for the Cape Sparrow *Passer melanurus,* the Cape Turtle Dove *Streptopelia capicola* and the Laughing Dove *Stigmatopelia senegalensis.*

Recoveries achieved over the first ten years of the operation of the ringing scheme give encouragement for the future and certainly justify the inception of the scheme. The results so far obtained have greatly increased our knowledge of the birds involved and the patterns of migration proved and indicated will gradually become known in greater and greater detail.