ARTICLES & REPORTS

25 YEARS OF RINGING THE WHITERUMPED SWIFT

R.K. Schmidt

At first I hated the Whiterumped Swifts *Apus caffer* as they interfered with my observations of the Greater Striped Swallow *Hirundo cucullata* by occupying the clay nests of the swallows and breeding in them (Schmidt 1962. Ostrich 33 : 3-8). Later I found them fascinating and studied their breeding biology (Schmidt 1965. J.F. Ornithologie 106 : 295-306).

I started ringing Whiterumped Swifts in February 1961 and stopped, for the purpose of this paper, at the end of 1985. During that period I ringed 193 adults and 277 nestlings. The birds were caught in nests they had robbed from swallows; most such nesting sites were in Plumstead, a suburb of Cape Town, and a few at Philippi, a farming area on the Cape Flats.

I recaptured 65 of 180 adults (36,1%), many of them several times, after at least one migration. These swifts are absent from the southwestern Cape from April until the end of August. So far there has been no long-distance recovery of a ringed bird which would give a clue to the winter quarters of the swifts breeding here.

NEST FIDELITY

Recapture of ringed birds indicates a strong attachment to their commandeered nests. Under natural conditions these nests often fall after two or three years. I reinforced the original clay nests with Plaster of Paris and furnished them with observation holes closed by a detachable lid, which did not seem to interfere with breeding. This treatment made the nests very durable and explains the many records of long-term nest fidelity.

43 birds were recaptured in the same nests where they had been ringed as breeding adults, the periods being given in Table 1 (overleaf). It is nest site attachment that is important, not partner fidelity, because the two birds of a pair do not usually return from their wintering quarters on the same day; there seems to be no pair bond during the non-breeding season.

Another 17 birds changed to a different nest, sometimes more than once, for unknown reasons. Two such birds were controlled for eight seasons; one was caught in two nests about 1 km apart from each other; the other changed to a second nest only 100 m away after two seasons in the first. The second nest later remained unoccupied for two seasons. After that interval, which it must have spent somewhere else, the swift returned to the second nest.

TABLE 1

NUMBERS OF RINGED ADULT WHITERUMPED SWIFTS RECAPTURED AT THEIR NESTS IN CONSECUTIVE SEASONS

2 seasons	17 birds
3 "	8 "
4 "	11 "
5 "	2 "
6 "	1 "
7 "	2 "
8 "	1 "
9 "	1 "

RECAPTURE OF RINGED JUVENILES

Only three of the 277 ringed nestlings (1,08%) were recaptured as breeding adults. This shows that at least some of the fledged chicks return to the vicinity of the area, where they hatched. Two of them were 4 years 8 months and 4 years 11 months old respectively.

The third was recaptured on 29 September 1976, sitting on an egg in a nest at Plumstead, which was about 1 km away from where it had been ringed on 29 November 1974, an interval of 1 year 10 months. This indicates that Whiterumped Swifts can start breeding in the second season after fledging.

LIFE EXPECTANCY

65 ringed adults were recaptured after at least one migration. Table 2 (overleaf) shows the survival rates. As the Whiterumped Swift apparently starts breeding at the age of about two years, four birds in Table 2, which were recorded during eight breeding seasons, must have reached an age of at least nine years.

MOULT

Moult occurs in some of these swifts from December, when they start their second brood, to March which marks the end of the breeding season and their departure from the Cape Town area.

On 22 December 1974 a bird (ring number EO2426) incubating two eggs was moulting P1 and its covert on both wings. The primary was still in pin with 6-7 mm (right) and 2-3 mm (left) of the vane protruding. The right wing had eight and the left nine old primaries. No other feathers on body or wings showed moult. On 8 February 1975, EO3414 had the first primaries in pin and nine old primaries on both wings; on 9 March both first primaries had grown to full-length and there were still nine old primaries on each wing.

On 20 February 1977, EO3442 had on both wings P3-10 old, P1 three-quarters out of quill, P2 quill just opening. Its mate, EO3441, showed no moult. On 24 January 1986, EO8686 sitting on an infertile egg, had on both wings nine old primaries; the innermost primaries were in fully-developed closed quills about 10-12 mm long. One covert next to the innermost primary was also in closed quill. In addition, on 24 January 1986, in another nest, EO8687 incubating two eggs, had ten old primaries and showed no moult. On 19 February 1986, EO6819 had P1 new, P2 was in pin which had just opened, P3-10 were old.

The Little Swift *Apus affinis* in Cape Town also seems to start moulting during the breeding season. On 14 February 1986, I recaptured EO8661 (first ringed as adult on 26 October 1983) during its third season in the same nest; on both its wings P7 was about half-grown and several primary coverts had blue quills and thus showed moult

FOOD

When being ringed the Whiterunped Swift sometimes regurgitates the ball of insects with which it feeds the chicks. On two occasions I saved samples and had them examined by professional entomologists.

TABLE 2

SURVIVAL RATES OF RINGED ADULT WHITERUMPED SWIFTS *APUS CAFFER*
EACH YEAR EXTENDS FROM SEPTEMBER TO END OF MARCH

YEAR	60/1	61/2	62/3	63/4	64/5	65/6	66/7	67/8	68/9	69/70	70/1	71/2	72/3	73/4	74/5	75/6	76/7	77/8	78/9	79/80	80/1	81/2	82/3	83/4	84/5	85/6
1960/1	4	2	2	2	1	1	1																			
61/2		4	1																							
62/3			10	7	7	4	1	1																		
63/4				7	4	1	1																			
64/5					9	2	1																			
65/6						12	1	1	1	1																
66/7							14	6	4	1	1	1	1	1												
67/8								10	3																	
68/9									11	6	5	3	1	1	1											
69/70										14	1	3	2	2	1	1	1									
70/1											7	2	2	2	2	1	1	1								
71/2												6	4	2	1											
72/3													3	1	1											
73/4														6	2	1										
74/5															9	2	2	2	2	1	1					
75/6																5	1									
76/7																	4									
77/8																		8	3	3	2	1				
78/9																			6	2	2	1	1	1	1	1
79/80																				2						
80/1																					6	6	3	3	1	1
81/2																						5	2	2	2	2
82/3																							4	1		
83/4																								4		
84/5																									8	4

One sample collected on 18 March 1986 at 11.30 a.m. contained winged females of one species of ant, the South African Fire Ant *Solenopsis punctaticeps*; many of these ants were still alive.

The contents of the second sample collected in February 1985, are listed in Table 3 (pages 8-9). It contained five species of spiders from three families, plus some which could not be determined. Among the insecta were represented six families of Diptera, six of Hemiptera, four of Coleoptera and four of Hymenoptera. The leaf-hopper *Glossocratus afzelii* (family Cicadellidae) made up about half of the content in numbers, but as this is by far the largest of the insects caught, it probably constituted more than 75% by weight.

CLUTCH SIZE

In Roberts' Birds of Southern Africa 5th Edition 1984, the clutch size of Whiterumped Swift is given: 1 - 2 - 5 eggs (usually 2).

I recorded 263 clutches with

C/1	C/2	C/3
17	238	8
6,46%	90,50%	3,04%

Of the eight 3-egg clutches only one produced three chicks which fledged. In two cases three chicks hatched, but only two survived. The Whiterumped Swift starts incubating when the second egg is laid; the third egg is laid 48 or even 72 hours after the second. This leads to delayed hatching of the third chick which is thus at a disadvantage when competing for food and usually dies. In two cases the third eggs did not hatch, but contained almost fully developed embryos. The other three clutches came to grief.

The long intervals between laying show the strain which the production of eggs exerts on the female and it seems unlikely that one hen can lay a clutch of four or five eggs. Thus the single records of C/4 and C/5 (Brooke 1971. Ostrich 42: 5-36) in 119 Zimbabwean nests are almost certainly examples of two females laying in one nest.

TABLE 3

ARTHROPODS REGURGITATED FROM CROP OF
WHITERUMPED SWIFT *APUS CAFFER*
FEBRUARY 1985

Class	Order	Family	No. of Specimens	No. of Species
Arachnida	Araneida	Theridiidae	2	2
		Drassidae	1	1
		Salticidae	5	2
		Undetermined	2	?
Insecta	Diptera	Bibionidae	13	2
		Drosophilidae	2	2
		Lonchaeidae	1	1
		Sepsidae	1	1
		Sphaeroceridae	1	1
		Undetermined	1	1
	Hemiptera	Aphididae	8	?
		Lygaeidae	6	3
		Cicadellidae *Glossocratus afzeli*	31	1

Class	Order	Family	No. of Specimens	No. of Species
Insecta	Hemiptera	Cicadellidae *Nesoclutha erythrocephala*	1	1
		Cicadellidae *Recilia* sp.	1	1
		Delphacidae	7	?
	Coleoptera	Chrysomelidae *Chaetocnema natalensis*	9	1
		C. capensis	1	
		Nitidulidae *Carpophilus hemipterus*	1	
		Scarabaeidae *Aphodius* sp.	1	
		Bruchidae *Bruchus pisorum*	2	
	Hymenoptera	Formicidae *Monomorium* sp.	2	
		Halictidae	2	
		Eurytomidae	5	
		Eupelmidae	2	1?

CONSERVATION

During the 25 years that I have observed these swifts in Plumstead, I have been struck by the almost complete disappearance of the Greater Striped Swallow as a breeding bird from that suburb. This has resulted in a scarcity of nests which the swifts can occupy for breeding and may eventually lead to a decline of the Whiterumped Swift population in urban settlements. The swifts only rarely use holes under roofs for nesting; in one such site a pair of European Starlings *Sturnus vulgaris*, that had built a nest there probably acted as guides for the swifts and attracted them to the site.

I have made several attempts at attracting swifts by hanging up nesting-boxes for European Starlings, which are common in Cape Town, but although some of these were used by starlings for breeding, they have never been occupied by swifts. Unfortunately some people who liked to have swallows nesting on their verandahs destroy the nests when they are used by swifts. By comparison with swallows, swifts cause rather a mess during the breeding period as the droppings of the chicks accumulate under the nest whereas swallows carry the faeces away.

The decrease of swallows in cities is possibly caused by a scarcity of food, a consequence of air pollution, and a lack of clay for nest building. The wide-ranging swifts can easily overcome a shortage of food near their nesting sites. It would be a pity if these dashing fliers had to leave our cities owing to the loss of nesting places.

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R.K. Schmidt, 8 Devonport Road, Tamboerskloof, CAPE TOWN, 8001

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