SUNBIRD AND SUGARBIRD SEASONS

A. Craig and C. Simon

Since 1986 when a student undertook a behavioural study of Cape Sugarbirds *Promerops cafer*, AC has been ringing sugarbirds and sunbirds sporadically in the Grahamstown area, though the tally cannot compare with that achieved by intensive team ringing in the Western Cape (Fraser *et al.* 1989). Both sugarbirds and sunbirds have been ringed on the farm Springfield (33°21'S 26°31'E), and sunbirds at several sites in town, including an old quarry on the Rhodes University campus, the Grahamstown Botanical Gardens, and some private gardens. Birds have been held in captivity temporarily for experimental studies (Lloyd 1989, 1991), and since March 1990 we have been monitoring sunbird activity in the Botanical Gardens. This will be an ongoing project, but here are some preliminary results, and speculations for comment by other Active Nectarivore Catchers.

Of the six sunbird species in our area, the Collared Sunbird *Anthreptes collaris* and Grey Sunbird *Nectarinia veroxii* are primarily birds of forest and the dense Valley Bushveld. Lesser Doublecollared Sunbirds *N. chalybea* also occur in forest, but often frequent gardens and other more open habitats, even in arid areas. Greater Doublecollared Sunbirds *N. afra* are typical of open bushveld and savanna, while Malachite Sunbirds *N. famosa* are found in patches of fynbos, montane grasslands, and open areas including Karoo. Black Sunbirds *N. amethystina* generally avoid dry country, but otherwise can be found in almost any habitat. The total number of birds ringed to date (as at 3 October 1990) are shown in Table 1 (page 11).

Grey Sunbirds are monomorphic in plumage, and at this stage we are unable to distinguish the sexes. Overall more males than females have been caught - but there may be a locality bias. At Springfield the sex ratio of Malachite Sunbirds caught was 45 males: 21 females, whereas for birds from the Botanical Gardens it was 4 males: 13 females, and our counts there also showed a preponderance of females. The sex ratio of birds caught is most skewed in the Greater Doublecollared Sunbird, yet our impression from observations in the Botanical Gardens is that the birds are usually found in pairs.

At Springfield cultivated proteas cover an area of about 3 ha, which provides breeding territories for 4-5 male Cape Sugarbirds each season. One colour-ringed male has occupied the same territory in four successive seasons, although he has

not been recaptured. Out of the breeding season other sugarbirds visit the area, and there seem to be a number of transient subadult males. Suitable habitat in our region consists of a number of isolated patches of proteas, most of them artificially planted. Sugarbirds are seen quite regularly in the proteas in the Botanical Gardens, but never more than three birds, and although we have seen males displaying, on the basis of tail-length they appear to be subadult birds. Nesting has not yet been recorded at this site. Moulting birds have been caught between November and April. There are a few records of birds feeding on aloes (see also Skead 1967), but they never occur far from proteas. Sugarbirds sometimes react aggressively to Malachite Sunbirds, particularly male birds, but ignore other sunbirds. There is a specimen of Gurney's Sugarbird *Promerops gurneyi* in the Albany Museum, labelled "Grahamstown 1890", and there have been some reports of birds resembling this species. However, we have no confirmed records of Gurney's Sugarbird west of the Great Fish River.

In this region it appears that only the Malachite Sunbird has an eclipse plumage, during which the long central tail feathers are also lost. Moulting birds have been caught from January to April with a few in May; during May in three different years, some birds showed interrupted wing moult, with two distinct feather generations. Young males seem to develop the first metallic green feathers on the head or wing coverts, and sexual dimorphism in wing length is already marked in birds in their first plumage. The moult of Greater and Lesser Doublecollared Sunbirds has been described previously (Lloyd & Craig 1989); young males are often encountered with the first few red feathers on the breast, but there is no evidence that birds lose the nuptial plumage once it has been acquired. In male Black Sunbirds the iridescent patch on the throat seems to appear before any other indications of the adult plumage. Birds with wing moult have been found in April, May and June, and two cases of interrupted moult were noted in May 1990.

The counts in the Botanical Gardens showed that the numbers of all species peaked during May and June, which coincided with the flowering period of the aloes. Once the aloes were over, Malachite Sunbirds were rarely encountered, and from May until September Black Sunbirds outnumbered all other species. Grey Sunbirds were only observed feeding on nectar, but Black, Malachite and Lesser Doublecollared Sunbirds were all noted as hawking insects almost twice as often as they were recorded feeding on nectar. Greater Doublecollared Sunbirds were seen taking nectar more often than hawking insects. The activities of individual birds were noted only when they were first sighted, so that this does not represent a time budget. Nevertheless it would seem that the relative importance of insects and nectar in their diet needs closer study.

TABLE 1

NUMBERS OF SUGARBIRDS AND SUNBIRDS RINGED IN THE GRAHAMSTOWN AREA

SPECIES	M	F	J	TOTAL NO.	RETRAPS	MAX.TIME (MONTHS)
CAPE SUGARBIRD	25	23	0	48	13	25
COLLARED SUNBIRD	1	0	0	1	0	
GREY SUNBIRD				2	0	
GREATER D.C. SUNBIRD	29	13	6	48	5	28,5
LESSER D.C. SUNBIRD	13	10	0	23	0	
MALACHITE SUNBIRD	52	34	6	92	5	14
BLACK SUNBIRD	20	15	7	42	0	
TOTAL	140	95	19	256	23	

Sunbird song has been recorded in all months, and this is supported by a questionnaire sent to members of the Diaz Cross Bird Club, who were asked to note when sunbirds were seen, what plants they were feeding on, and whether the birds were singing or not. Both adult and subadult males sing, but observations in captivity show that female doublecollared sunbirds will also sing, and their song may not be distinguishable from that of males (Brieschke, pers. comm.). In the Botanical Gardens, intraspecific aggression was most often observed in Malachite and Black Sunbirds, but interspecific aggression was rare. There was no indication that the birds were defending feeding territories, and the few re-sightings of colour-ringed birds suggested that there was a rapid turn-over of individuals, with none remaining for longer than three months.

Aloes, *Tecomaria* and *Leonotis* seem to be the favourite sources of nectar for all species except the Collared Sunbird, which would seldom encounter them in its normal forest habitat (Skead 1967). Proteas are utilised primarily by Malachite and Greater Doublecollared Sunbirds, rarely by Lesser Doublecollared Sunbirds, and not at all by Black Sunbirds. At Springfield, where there is a large tract of cultivated

proteas, Greater Doublecollared Sunbirds are common residents, but the first Lesser Doublecollared Sunbird was not recorded until the third season of ringing there, and this species has only been noted in the garden around the house. As previously reported by Skead (1967), both Greater and Lesser Doublecollared Sunbirds will take juice from figs; they often dislodge fruit from the *Ficus burttdavyi* trees in the old quarry and the Botanical Gardens (I. Waters, pers. comm.).

So far we have an indication that the sunbirds visiting the Botanical Gardens are a mobile population, but we don't know how far they may move. Hopefully in the coming year some of the birds ringed there previously will return, which may tell us something about their time-table. We also need to look more closely at song, diet and social behaviour. This will require detailed observations of individual birds, without being distracted by the lively spectacle of many birds in varied plumages dashing to and fro.

ACKNOWLEDGEMENTS

We are grateful to Mr. A. Rennie and Mr. R. Human (successive owners of "Springfield"), Rhodes University, and the Directorate of Nature and Environmental Conservation for permission to ring birds on their property. Additional information and assistance was provided by M. Bean, H. Brieschke, P. Lloyd, D. Mitchell, A. Palmer, A. van Zyl and I. Waters. The work has been supported by a research grant from Rhodes University.

REFERENCES

FRASER, M.W., McMAHON, L., UNDERHILL, L.G., UNDERHILL, G.D. and REBELO, A.G. 1989. Nectarivore ringing in the Southwestern Cape. Safring News 18: 3-18.

LLOYD, P. 1989. Sucrose concentration preferences of three southern African sunbirds. Ostrich 60: 134-135.

LLOYD, P. 1991. Feeding responses of greater double-collared sunbirds *Nectarinia afra* to changes in sucrose concentration, and their relation to optimal foraging models. S. Afr. J. Sci. 87: 67-68.

LLOYD, P. and CRAIG, A.J.F.K. 1989. Morphometrics, moult, and taxonomy of the *Nectarinia afra/Nectarinia chalybea* complex of South African double-collared sunbirds. Ann. Cape Prov. Mus. (Nat. Hist.) 18(6): 135-150.

SKEAD, C.J. 1967. 'The sunbirds of southern Africa'. Cape Town: A.A. Balkema.

A. Craig and C. Simon, Department of Zoology and Entomology, Rhodes University, GRAHAMSTOWN, 6140