



## EDITORIAL



This is the second issue of *Bird Numbers* to celebrate the 10th Anniversary of the establishment of the Avian Demography Unit. In the July issue we featured the ADU's annual report and articles by several present and past members of staff. In this issue we feature articles by the postgraduate students of the unit.

The ADU currently has more students than ever before – a total of 15 Masters and PhD students, all of whom are being supervised or co-supervised by Prof. Les Underhill, Director of the ADU. Something which you may not realize is that Les also lectures in the Department of Statistical Sciences. In view of his full academic load, it is remarkable that Les also manages to lead the ADU successfully and pursue his own research.

Looking over the contributions of the students, you will notice a strong seabird emphasis. This is partly coincidental, partly because of expertise and experience available in the ADU, and partly the result of funding availability, especially for research on the African Penguin. This area of exper-

tise will receive another major boost when a strong ADU contingent travels to the Prince Edward Islands in December 2001 to help carry out a comprehensive census of the breeding colonies there.

Another clear emphasis in the students' projects is that of producing information which will assist in the management and conservation of threatened populations. This is in keeping with the ADU's tradition of running public-participation projects which have the objective of providing conservation-related information to the public and professionals.

We live in an era of environmental degradation and species extinctions, an era which demands a commitment from biologists to make a contribution to saving the organisms and ecosystems that we study. I am proud to say that the ADU has made and demonstrated such a commitment over the past 10 years, and will be carrying the same commitment forward into its teen years.

*James Harrison*

### The ADU at 10

The ADU's tenth year is near completion. It has been, like the nine preceding it, a busy and challenging year. It started with a six-figure donation which enabled us to balance the income and expenditure flow for the ninth year. There have been many other highlights, and the following paragraphs represent a selection of them.

2001 saw our first involvement with the Earthwatch Institute, a USA-based NGO that sends volunteers to help research projects with labour-intensive fieldwork. Our other partners in the Earthwatch project, which field-tested a revolutionary new design of penguin flipper band, were Marine and Coastal

Management, Robben Island Museum and Bristol University. Dr Peter Barham, from the H.H. Wells Institute of Physics at Bristol University, inventor of the new bands, has been appointed an Honorary Research Associate of the University of Cape Town, in the ADU. The project continues in 2002.

We have set up an important link with the University of Groningen in the Netherlands. Dr Henk Visser, in the Centre for Isotope Research there, is also an Honorary Research Associate, and co-supervises Kathy Calf's PhD project. The value of the Dutch sponsorship of Kathy's project is another six-figure sum, providing the doubly labelled water and

associated analyses. Henk is planning to set up further joint projects, and will be visiting in January 2002.

Through the UK branch of the Earthwatch Institute, the Darwin Initiative has provided three years of sponsorship for penguin research. The Darwin Initiative is the UK government's way of funding projects that contribute to the objectives of the Biodiversity Convention.

The White Stork satellite-tracking project generated so much fascinating information that the project's sponsors, the Vogelwarte Radolfzell in Germany, allocated eight transmitters to storks in South Africa in 2001, three more than last year. In the new year, when they leave their nests at the Tygerberg Zoo in Cape Town, you will once again be able to follow their movements on the ADU website. As I write this, Doug Harebottle is on the 'White Stork Tour' around South Africa with Willem van den Bossche, of BirdLife Belgium, who has come to Cape Town to fit the tracking devices to the storks.

Seabirds have provided an important focus in 2001. At the start of the year, at the request of the Minister of Environmental Affairs and Tourism, Mr Valli Moosa, the ADU coordinated an inter-governmental meeting at which the Agreement on the Conservation of Albatrosses and Petrels was negotiated. WWF-SA has sponsored a project that is being spearheaded by John Cooper, assisted by Michelle du Toit, to do the preparatory work for a similar agreement to help conserve the seabirds shared between South Africa, Namibia and Angola – nine of the 15 species of seabird are endemic to the region, and nine are listed in the new South African Red Data book.

René Navarro, who is responsible for the ADU's website, and I received the SANCOR 'Marine and Coastal Communicator of the Year Award'. This was in recognition of the impact that the ADU website had made during the *Treasure* oil spill last year, especially the way that the satellite tracking of 'Peter', 'Pamela' and 'Percy' was used to make the public aware of the 20 000 other

penguins that were steadily being cleaned by SANCCOB.

SAP Southern Africa, who sponsored the satellite-tracking of the three Ps last year, sponsored the publication of *The Adventures of Peter the Penguin* this year. Written by PhD student Phil Whittington, this book, for children of all ages, captures what it is like to be a penguin. It represents a new way of getting the conservation message across. It is an excellent stocking filler.

The Southern African Frog Atlas Project has made, excuse the pun, big leaps towards conclusion. James Harrison, Marius Burger – who independently made the headlines by being trapped in a coup in the Central African Republic – and Harold Braack have made great progress, and the quality of the database for the frog atlas project rivals that of the bird atlas project, in spite of fieldwork being much more complex.

The ADU's DTP team, Felicia Stoch and Marja Wren-Sargent, tackled a range of assignments. Ongoing commitments include the production of journals for the Royal Society of South Africa and the International Wader Study Group, and they have helped both organizations to get their journals back on track and on time.

Two final acts remain for 2001. The first is 'the move'. During December we relocate into a suite of newly refurbished offices. Almost everyone will have an office of their own, with a window they can actually see out of. We are grateful to UCT for the provision of this space. But we'll undoubtedly miss the camaraderie of the somewhat motley bunch of open-plan offices into which we have continuously and miraculously squeezed extra 'workstations' for the past 10 years.

Our second final act is to provide five workers for the Millennium Survey of the Prince Edward Islands. Five members of the ADU, John Cooper, Michelle du Toit, Marienne de Villiers, Phil Whittington and myself, sail south on 10 December for ten days of hectic fieldwork counting nesting albatrosses, penguins, petrels and other seabirds on Prince Edward Island and Marion Island.

The expedition is under the overall leadership of Dr Rob Crawford of Marine and Coastal Management and it is an honour and privilege to be invited to participate.

I have three bottom lines for 2001. Firstly, as James Harrison points out in his editorial, it has been for the ADU the year of the student, and this is reflected in the articles in this edition of *Bird Numbers*. They are an exceptionally talented group – the future is in good hands. Secondly, I would like to place on record my appreciation of the commitments

of time and energy given to the ADU by so many people: staff, students, volunteers, regional project coordinators, and all the project participants. You have all helped to achieve the ADU dream. Thirdly, I need to underline our appreciation of all the ADU's sponsors. A few have been mentioned in the paragraphs above, but most have not, and they need to know that their support, whether large or small, is deeply appreciated. Thank you.

*Les Underhill (Director)*

## The invasion from KwaZulu-Natal

We welcomed five new members of staff to the ADU in 2001, all from KwaZulu-Natal.

**Jenny Griffin** was born and schooled in Durban, has a Nature Conservation Diploma, and a BSc (Hons) in Zoology from the University of Cape Town. Having worked on a project which involved measuring mussels on the shore, she decided that if she ever did research of her own choice, she wanted to work with animals that had 'personality'. She has realized her dream (she describes her MSc project on African Penguins on p. 23). Jenny is in charge of the ADU finances.

**Kathy Calf** grew up in Kloof, and did her BSc and BSc (Hons) at the University of Natal in Durban. She completed her MSc, on Cape and Gurney's Sugarbirds, at the University of Stellenbosch. 2000 was spent in the USA gaining field experience on several research projects. When she is not contending with Robben Island's Ostriches (see p. 20) where she does most of her PhD fieldwork (see p. 18), she assists with the administration of SAFRING.

**Janine le Roux** is also from Durban, and was part of the same class as Kathy doing a BSc and BSc (Hons) at the University of Natal. After graduating, she worked as a medical rep in London and Cape

Town. Near the beginning of 2001 she decided that her heart was in biology, and has recently started an MSc on Swift Terns. Her project will need observers all along the South African coastline – if you live near the shore, please keep a watch on the ADU website, so that you can see how you can help Janine with her fieldwork. She also assists with SAFRING administration.

**Michelle du Toit** lived in Richards Bay until she finished school, and then did a BSc, BSc (Hons) and MSc at the University of Pretoria. The fieldwork for her MSc was done on Ichaboe Island near Lüderitz (see p. 9). She joined the ADU in September, and is working on a seabird conservation project funded by WWF-SA. She would dearly like us to find her a PhD project on the loneliest island imaginable.

**Marienne de Villiers** went to school in Durban, and completed a BSc, BSc (Hons) and a Higher Diploma in Education at the University of Natal, Durban, before doing an MSc on porcupines and a PhD on wild dogs. She has recently joined the ADU for two years on a postdoctoral scholarship, and will work on seabird behaviour. In the study of behaviour, Marienne brings a new set of skills to the ADU.



## LETTER TO THE EDITOR



In order to facilitate my study on Long-crested Eagles *Lophaetus occipitalis*, several have been ringed over the past 20 years and coloured rings attached. On 3 October 1992, Bruce Leslie and I ringed and attached a blue patagial tag to a male Longcrested Eagle which was estimated to be about three years old at the time. It was caught next to a small plantation of eucalypts and was often seen in the same area, until early this year. The plantation was felled and left to return to marsh about two years ago. Since then it has been seen frequently in another part of the farm, approximately one kilometre from that site. This is over moist grassland that is used for cattle pastures and where treated effluent from the nearby citrus factory is sprayed.

These observations were on H.L. Hall and Sons' Farm, Mataffin, just outside Nelspruit, Mpumalanga (2530BD Nelspruit).

The last sighting was on 5 October 2001, which makes the eagle about 12 years old. This may confirm my theory that the male Longcrested Eagle stays in the breeding territory while the female may wander around after breeding. This theory has not been proven, but a ringed female was found dead 19 km away from where it had bred and been ringed on this farm.

If anyone observes this blue-tagged eagle, I should be very grateful if they will let me know where it was seen and the date.

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The following people raised money through sponsorship for the BIRP Spring Promotion: A.L. Chester, G.H. Collett, C.A. Cook, R.J. Cooper, J.E. Glendinning, Noel Gray, L. Haines, G.M. Hardingham, P.A. Palmer, I. Sharp.

We appreciate your support for the work of the Avian Demography Unit.

## DONATIONS

The Avian Demography Unit is still battling to keep on the financial straight and narrow. If your birding has been enriched by participation in the projects of the ADU, please consider making a donation. Apart from accommodation and computing facilities provided by the University of Cape Town, all expenses, including salaries, need to be covered by sponsorships, donations and contracts. Donation cheques should be made payable to the University of Cape Town (not the ADU), and posted to the ADU, University of Cape Town, Rondebosch, 7701. The University issues a tax certificate in terms of Section 18A of the Tax Act; donations are deductible for income tax purposes.

The ADU does not have any formal membership. Anyone wanting to participate in an ADU project is welcome to do so and will receive *Bird Numbers* free of charge. Although it is not required, we would like to encourage you to join BirdLife South Africa if you are not already a member. BirdLife South Africa is an important sponsor of the ADU and a collaborative partner in its work. (The address is: PO Box 515, Randburg 2125, e-mail: [info@birdlife.org.za](mailto:info@birdlife.org.za).)

Anyone who is not an active participant in ADU projects, but would like to be on the *Bird Numbers* mailing list, should send R30 per annum to cover printing and postage.

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## Getting involved

If you would like to get involved in any of the ADU's projects, either write to **Projects, Avian Demography Unit, University of Cape Town, Rondebosch, 7701**, or send an e-mail to [adu@maths.uct.ac.za](mailto:adu@maths.uct.ac.za). Tell us which of the projects interests you, and we will get back to you with the relevant information.

## Partial leucism in Whitechinned Petrels

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Leucism is one of the more frequent pigmentation anomalies among birds, but its incidence differs among taxa. Some species, such as the Whitechinned Petrel *Procellaria aequinoctialis*, appear to exhibit partial leucism relatively frequently (Mougin 1970; Nicholls 1978). The size of the white chin also varies considerably among Whitechinned Petrels, and these differences vary to some extent among populations (Murphy 1936). Many birds from New Zealand populations lack white chins entirely, but this has not been reported for birds from colonies in the Indian and Atlantic Ocean sectors of the Southern Ocean (Marchant & Higgins 1990).

In this note I report the frequency of partial leucism among a sample of Whitechinned Petrels collected around the Prince Edward Islands (46°45'S, 37°50'E) in the Southern Ocean, south-east of Africa. I also test whether leucism is sex-linked, and if it is correlated with the size of the chin patch or with the extent of white webbing between the toes. Finally, I summarize recent field observations of partially leucistic Whitechinned Petrels off southern Africa.

### Methods

Substantial numbers of Whitechinned Petrels are killed by the longline fishery for Patagonian toothfish *Dissostichus eleginoides* that operates under licence in the South African Exclusive Economic Zone around the Prince Edward Islands (e.g. Ryan *et al.* 1997). Most birds killed are collected by fishery observers and returned to Cape Town. I examined all Whitechinned Petrels collected during 1998–2000 for partial leucism. For a sample of 50 birds I also scored the size of the white chin patch and counted the number of white toe webs. Chin patch size was scored from 0 (absent) to 3 (large) in inter-

vals of 0.5: a small patch (score 1) was confined to the area between the lower mandibles, a medium patch (2) extended down the throat beyond the base of the mandibles, and a large patch extended up onto the sides of the mandibles to the gape. All birds were sexed by inspection of the gonads, and all but one bird (a recently fledged juvenile) were adults.

### Results and discussion

A total of 365 Whitechinned Petrels was examined for leucism. By far the most common feature was the presence of a variable-sized white patch on the belly, which was present in 17.8% (n=65) of birds. In 15 (4.1%) birds, the patch was confined to the skin and down on the brood patch, but in the remaining 50 (13.7%) it extended to include at least some of the adjacent contour feathers, forming a white blaze on the belly. The white patch tended to be centred on or close to the midline of the bird, but was often larger on one side than the other. There was no difference between sexes in the incidence of this belly patch ( $\chi^2=0.01$ , NS).

Mougin (1970) reported white belly patches in some Whitechinned Petrels at the Crozet Islands, and Nicholls (1978) reported several seen at sea off South Africa. If it occurs in almost 20% of birds, as my data suggest, it is surprising that the feature has otherwise been overlooked. It is likely that, like the chin patch, belly patches differ in size and frequency between colonies. I encourage other field workers to record its incidence at other breeding sites.

The only other evidence of leucism was a single white outer tail feather in one bird (that lacked a belly patch) and a white thigh feather on another bird (that had a white belly patch). Two birds also had pale patches of skin on the sides of one tarsus, possibly

linked to the pale webbing between the toes. Both these birds had extensive pale toe webbing. Overall, the number of toe webs with white bases ranged from 0–4, with an average of 1.6 ( $\pm$ SD 1.6).

Other than white belly patches, previous records of leucism in Whitechinned Petrels include birds with white flight and body feathers, as well as one apparently completely white individual (Shewell 1952; Mougin 1970; Nicholls 1978). Recent observations off the Western Cape province of South Africa, and at sea off the Prince Edward Islands, confirm that virtually any part of the plumage can be white, but no further completely white birds have been seen (B. Rose and J.W. Enticott pers. comm.; pers. obs.). Some birds have symmetrical white patterns on both wings, making them particularly striking. I recently observed a bird with a large white belly and vent and huge white chin which superficially resembled an Atlantic Petrel *Pterodroma incerta*. A relatively common feature is to have patches on the head, especially the crown and nape. These individuals potentially can be confused with Spectacled Petrels *P. conspicillata*, but the latter species has symmetrical white spectacles that always form a ring around the eye and often join in front to form a distinctive white frons; they never extend to the crown or nape. Mougin (1970) recorded birds with white crown patches breeding at the Crozets.

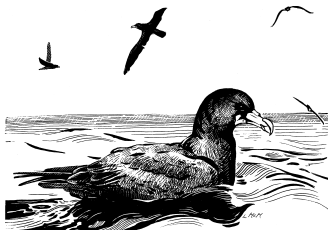
Although birds cannot be aged reliably, it is unlikely that the size of the chin patch changes with age, because young birds exhibit the full range of patch sizes at fledging (indeed, they are visible even in downy chicks). Chin size in the sample of birds from the Prince Edward Islands ranged from very small (0.5) to large (3), with a mean score of 2.1 ( $\pm$ 0.7). Females had somewhat smaller chin patches (mean 1.6 $\pm$ 0.7) than males (2.1 $\pm$ 0.7,  $t_{48}=1.74$ ,  $P<0.1$ ), but this might be an artefact of the small sample size for females ( $n=6$ ) which results from the strong male-biased mortality of Whitechinned Petrels in this fishery (Ryan & Boix-Hinzen

1999). There was no relationship between the size of the white chin patch, number of toe webs with white bases, or the presence of a white belly patch (rank correlations and contingency tables all  $P>0.1$ ). This suggests that there is not a single, variably expressed gene controlling the absence of pigmentation in Whitechinned Petrels.

### Acknowledgements

I am grateful to Jim Enticott and Barrie Rose for sharing their observations of aberrant Whitechinned Petrels at sea. Financial and logistical support for research on reducing seabird mortality on longlines was received from the World Wide Fund for Nature – South Africa, the South African National Antarctic Programme, the Charl van der Merwe Foundation, the Department of Environmental Affairs and Tourism, the University of Cape Town and the National Research Foundation.

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Whitechinned Petrel by L. McMahon (ASAB I).

## 'Soaked' Cape Gannets at Ichaboe Island, Namibia

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Ichaboe Island (26°17'S, 14°56'E) is a 6.5 ha island situated c. 48 km north of Lüderitz on the Namib coast, and is approximately 1.4 km offshore. The breeding colony of Cape Gannets *Morus capensis* at Ichaboe, one of only six worldwide (BirdLife International 2000), decreased from 144 000 in 1956 to 16 453 in 1999 (du Toit 2001). Likewise, the area occupied by breeding birds decreased from 5.52 ha in 1956 to 0.56 ha in 1996 (Crawford 2000), a decrease of 90% over 40 years.

These population trends are attributable, to a large extent, to a decline in prey availability (Crawford 2000). In addition, population numbers at Ichaboe are affected by (1) Cape fur seals *Arctocephalus pusillus pusillus*, which regularly take both adult and juvenile gannets as prey at Ichaboe, (2) predation by Kelp Gulls *Larus dominicanus* on eggs and small chicks, (3) marine pollution, (4) long-line fisheries which take gannets as an accidental 'by-catch', and (5) disturbance by humans. A sixth mortality factor is that of waterlogged, or 'soaked' gannets (du Toit 2001); this is the first published record of this phenomenon.

### Soaked gannets

In calm conditions, gannets have difficulty taking off from the water. Some birds' feathers then become waterlogged due to having lost their waterproofing, and they are unable to fly. These soaked birds then become weaker as they try to take off, and may eventually die of hypothermia. Those that are able to swim ashore and haul out usually survive, and only once their feathers are dry are they able to fly again.

Because the whole plumage does not always become soaked, some form of external contamination is suspected. The contaminated

feathers have a yellow discolouring and smell slightly fishy; some are sticky to the touch. Contaminated feathers are often localized to the upper wings, or the tail. It is most likely an oil-based contaminant that compromises the feathers' interlocking capability, causing the bird to become waterlogged.

Soaked gannets are often weak and thin, and the veins on their feet (which are usually green) may turn blue – this phenomenon has also been seen in other weak and ill gannets that are not soaked. Gannets may become soaked repeatedly, such that they are unable to forage efficiently. The loss of weight and condition may be a direct result of this.

It is suspected that once a gannet becomes soaked, even if it is able to dry out again, it will become soaked again (re-soaked). Of nine soaked gannets that were colour-ringed at Ichaboe Island on one day, two were found dead on the island the next day, one was re-soaked, and another found dead at Swakopmund.

The need for a more intensive ringing programme on soaked birds was highlighted, and this commenced in December 2000.

### Ringling and retrap study

Soaked gannets can be recognized by their inability to take off from the water. They are less buoyant, and sit deeper in the water than healthy birds. If strong enough, they will swim to land, or even attempt to haul out on a boat. The plumage is wet, and often with a yellow tinge; severe contamination results in a deep yellow discoloration, with the feathers being sticky to the touch and smelling slightly fishy. The feathers do not interlock, and the birds have a scruffy appearance. At Ichaboe, groups of up to 7 soaked birds were often seen stand-

*unable to forage efficiently*

become soaked again (re-soaked). Of nine soaked gannets that were colour-ringed



ing together, away from the breeding colonies.

A total of 719 soaked gannets were recorded at Ichaboe from April 1996 to May 2000, one quarter (179) of which were in the last 6 months. An intensive ringing and retrap study was conducted on soaked gannets at Ichaboe Island between December 2000 and April 2001. Out of 170 soaked birds (including two Cape Cormorant *Phalacrocorax capensis* adults, 135 Cape Gannet adults and 33 gannet fledglings) observed during this time, 93 gannets (80 adults and 13 juveniles) were ringed. Of the adult gannets, only two had black scapulars; most were in full adult plumage. The veins on the feet of 17 of the adult gannets were blue. Where feasible, the bird was weighed ( $n = 86$ ) when wet, and in a few cases ( $n = 21$ ) kept in a pen until dry, and weighed again. The average difference between the wet and dry weight (i.e. weight of water absorbed) was 191.67 g; the maximum was 400 g.

The majority of the birds were contaminated on their wings, back and belly, with the sides and tail the next most abundant as areas of localized waterlogging. Seventeen birds were soaked on one side only; one bird in particular was discoloured, soaked through and sticky on only the left-hand side – this bird was later found dead.

Out of the 93 birds ringed during this study, 14 were resighted. Of these, 11 birds were resoaked – one bird was resoaked three times – and two resoaked birds were found dead. Only one gannet that had been soaked was seen in good condition at least one month later. In addition to the live soaked birds, 14 soaked gannets were found dead on the island, and a further 11 adrift. Another soaked bird (not ringed) had a longline hook embedded in its neck, and died one day later.

The adult gannet that was found resoaked on three occasions was successfully rehabilitated. After careful washing of the plumage and frequent showering with fresh water, this bird regained its waterproofing and was released.

## Discussion

It is suspected that the birds are contaminated by fish oil. Gannets often scavenge hake *Mer-*

*luccius* spp. offal at demersal trawlers. The offal forms an oily slick when dumped at sea. When adults feed the chicks with the same stuff, it can be messy, resulting in contamination of the chicks' plumage too. Repeated contact with the contaminant may result in a loss of waterproofing.

Almost 90% of the soaked gannets observed were in winds of less than 10 knots, as these birds find it difficult to take off from the water when there is little wind. Guano on the feathers may aggravate the contamination and subsequent waterlogging. Soaked gannets often try to wash themselves, which is unsuccessful as it leads to becoming resoaked. Samples of contaminated feathers have been collected, but not yet analysed.

In the light of the number of dead soaked gannets found ( $n = 27$ ), the general poor condition of soaked gannets, and the likelihood that a bird will become repeatedly soaked, it may be speculated that a large proportion of soaked gannets that were ringed and are unaccounted for, may have died out at sea. If birds that become soaked eventually die, this is an important mortality factor to consider in the decline of the gannet population of Ichaboe.

## Acknowledgements

We wish to thank Dries Nel for sponsoring the rings used for this study. The study was carried out as part of the fieldwork for a Masters study, under the auspices of the Mammal Research Institute at the University of Pretoria. The Namibian Ministry of Fisheries and Marine Resources provided logistical support.

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## Unusual items in the diets of some southern African birds

**Mark Brown**

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Recent reports by members of SABIRDNET, of birds eating food items not listed in the literature, prompted this short note. Here I summarize items of interest that form part of bird diets that may not have been sufficiently reported previously. The list is by no means complete, and will hopefully lead to similar reports.

### Results

A comparison between diets recorded in Roberts (Maclean 1993), and other reported dietary components of 31 southern African bird species, is given in Table 1. Two interesting trends stand out. Firstly, many fruit- and seed-eating birds include insects and other invertebrates in their diet. My own observations reveal two peaks in this behaviour. During winter when food is scarce, fruit and seed-eaters will opportunistically take any invertebrates available, and just before and during the breeding season they will increase their intake of invertebrates. Secondly, several insectivorous birds appear to take large amounts of fruit, seed and other scraps, during winter in particular.

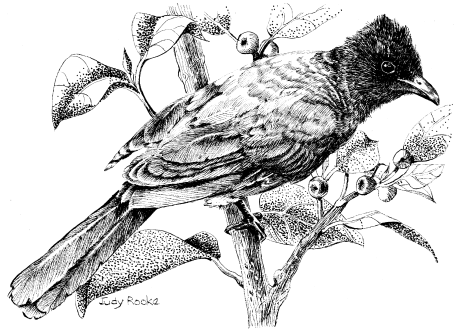
### Discussion

Scientists are often quick to classify organisms into categories. This is also the case with feeding guilds of birds, e.g. frugivorous, insectivorous, seed-eating and nectarivorous birds. Recent observations both in the lab and in the field (own unpubl. data) suggest that often these categories are misleading. This note records various species from different categories which include a range of items

in their diets. My observations indicate that this occurs on a regular basis and that caution should be exercised, when working on bird diets, not to overlook this issue. For example, Blackeyed Bulbuls *Pycnonotus barbatus* currently held in aviaries need regular amounts of mealworms in their diet to remain healthy and maintain weight, even though they are reported to be specialist frugivores.

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Blackeyed Bulbul by J. Rooke (ASAB II).

**Table 1.** Records of dietary items previously under-recorded in the diets of 31 southern African bird species.

Species	Diet listed in Roberts (Maclean 1993)	Additional food items recorded	Reference
Barbet, Blackcollared	fruit, insects	avocado, mealworms, flower buds	
Barbet, Crested	fruit, invertebrates, bird eggs	mealworms, attacking a Cape Robin, bread	
Boubou, Southern	insects, bird eggs & young, grain, fruit, porridge	fruit, cheese, mieliepap	
Bulbul, Blackeyed	fruit, nectar, insects	mealworms, bread, fresh buds, flowers	
Bulbul, Cape	fruit, nectar	mealworms, mieliepap	
Canary, Yelloweyed	seeds, insects, flowers	pawpaw	
Dove, Laughing	seed	mealworm, hot chips	
Flycatcher, Fiscal	insects, fruit, nectar, porridge	bread	
Flycatcher, Marico	insects, rarely small fruits	cheese, bread	
Flycatcher, Spotted	insects	fruit, cheese, mieliepap	Campbell 2000: <i>Albatross</i> 339
Francolin, Cape	leaves, bulbs, fruit, insects	hot chips	
Hornbill, Grey	invertebrates, rodents, frogs, reptiles, seeds, fruit, peanuts	cheese, bread	
Hornbill, Redbilled	invertebrates, seeds, weaver eggs	cheese, bread, bacon	
Hornbill, Trumpeter	fruit, large insects	avocado	
Hornbill, Yellowbilled	invertebrates, rodents, seeds, fruit	cheese, bread, sweetcorn, bacon	
Ibis, Hadedda	invertebrates, small reptiles	bread	
Lourie, Grey	fruit, flowers, buds, leaves, insects, nestling birds, seeds	cheese, bread	
Mousebirds, Speckled	fruit, leaves, seeds, nectar	mealworm, bread	
Neddicky	small insects	large mealworms	
Pigeon, Rock	seeds, green shoots	apples	
Plover, Crowned	insects	seed	Wright 2000: <i>Promerops</i> 241
Robin, Cape	invertebrates, fruit	cheese, flowers, seed, suet cake	
Shrike, Fiscal	insects, rodents, birds, reptiles, seed, scraps	hot chips, wholewheat bread, mashed potatoes	
Sparrow, Cape	seeds, insects, buds	kikuyu grass, cheese	Wilson 2000: <i>Bokmakierie</i> 190
Sparrow, House	seed, fruit, insects, scraps	hot chips, bone meal	
Starling, Redwinged	fruit, nectar, invertebrates	avocado	
Swallow, Lesser Striped	insects	pigeonwood berries	
Thrush, Olive	invertebrates, fish, nestling birds, fruit, seeds	cat food, dog food, bread	
Weaver, Cape	seed, insects, nectar, bread	hot chips	
White-eye, Cape	insects, nectar, fruit	peanut butter, cooked rice, chicken, roast fat, bread	
Woodhoopoe, Redbilled	insects	aloe nectar	Butchart 1999: <i>Hornbill</i> 53