LANIOTURDUS

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CONTENTS

Editorial

This special edition of Lanioturdus contains only three articles, all of a more scientific nature than most of the articles I have been publishing. I realize that these articles may not be everyone's cup of tea but I believe that it is important that they be published.

The first article on the Rockrunner, one of our near endemic birds, is by Julia Schweitzer who was studying at the University of Duisburg-Essen in Germany and who came to Namibia as a student specifically to make a study (for a university project) of this species about which little is known. Julia received a small sponsorship from the Namibia Bird Club while she was here. Her work, which was written in German, was shortened for Lanioturdus and translated by Holger Kolberg. Should any reader be interested in the complete work (in German) it can be obtained from Holger (holgerk@mweb.com.na).

The second article by Tony Tree and Mark Boorman deals with wader numbers on the Namibian coast. The collection of the data for this article took place in 1998 and 1999. I believe that it is important to publish articles such as this as the data therein could serve as a base for comparison for any future similar study that may be done. In the article it is stated that numbers of Red Knots were in decline. I think that we will find that they have declined even further in the last decade while even in those days Common Redshank was regarded as a regular visitor to Mile 4 Saltworks where it is regularly seen today.

The final article by Thomas Göttert and others deals with the bird species recorded on former rangeland on the south-western boundary of the Etosha National Park and the use of birds as bio-indicators to assess the quality and structural complexity of the habitat.

This is the final edition of Lanioturdus for 2011. The committee wishes all members happy birding over the festive season and prosperous birding for 2012. The editor of Lanioturdus, of course, wants to hear about all those interesting goodies you see out there over the holiday period.

Studies on the Rockrunner

Achaetops pycnopygius,

a little studied Namibian bird.

Julia Schweitzer,
Universität Duisburg-Essen, Germany[1]

Introduction

In 1972 Charles Clinning published his "Notes on the Damara Rockjumper, *Achaetops pycnopygius"* (MADOQUA 1972) as part of his contribution to the *Atlas of Southern African Birds*. Since then very few studies have been done on the Rockrunner and hence not much literature is available about this bird. Therefore the main aim of this study was to collect as much information as possible about this bird.

Rockrunners are part of the family Sylvidae (Leaf-Warblers, Babblers, Warblers) and their exact taxonomic relationship to other members of this family and in fact all other birds, has yet to be clarified. They are one of the birds endemic to Namibia and are distributed mainly in the central highlands of the country.

Methods

After initial visits to several localities, the National Botanical Garden in Windhoek was chosen as the main study area. The reason for this was that more birds were seen in the National Botanical Garden than in any of the other places visited.

Locality	Number of Sightings
National Botanical Garden Windhoek	5
Daan Viljoen Game Park	1
Avis Dam	1
Private Property Klein Windhoek	2

Table 1: Number of sightings of Rockrunner during the first visit to each locality.

The duration of the study was from the beginning of September 2007 to the beginning of March 2008 and daily observations were normally done from 06:00 to 17:00. Several observation stations were used in the botanical garden so as not to disturb the birds' natural behaviour. However, during the breeding period only the nest and an area of approximately 20 m diameter around it was observed in order to accurately document the behaviour of the adults and nestlings.

In order to identify individual birds, the birds had to be captured and marked with colour rings. To capture the birds two methods, mist nets and baited flap traps, were employed. Captured individuals were fitted with a unique colour ring as well as a metal ring issued by SAFRING. Several measurements were taken of each bird.

The National Botanical Garden is situated in the centre of Windhoek and is managed by the National Botanical Research Institute. One of the features of the garden is the many rocky outcrops, mainly mica schist, which provide an ideal habitat for the Rockrunners.

In order to investigate possible correlations between climatic factors and Rockrunner behaviour, climatic data was obtained from the Windhoek Meteorological Station, which is situated about 200 m away from the botanical

[1] This paper was translated from German and shortened by Holger Kolberg. Any misinterpretations are entirely the fault of the translator and not those of the author.

garden, hence data collected there could be used for the study.

Figure 1: Observation stations in the National Botanical Garden Windhoek, yellow flags = regular stations, red flags = stations during breeding (source: Google Earth 2 Feb 2009).

Results

Figure 2 shows the hourly frequency of observations during the day for November and December 2007. It can be seen that most sightings occurred between 06:00 and 09:00 in the morning whereas the fewest sightings were recorded in the time period from 11:00 to 13:00. The frequency of sightings increased again from 16:00 in the afternoon.

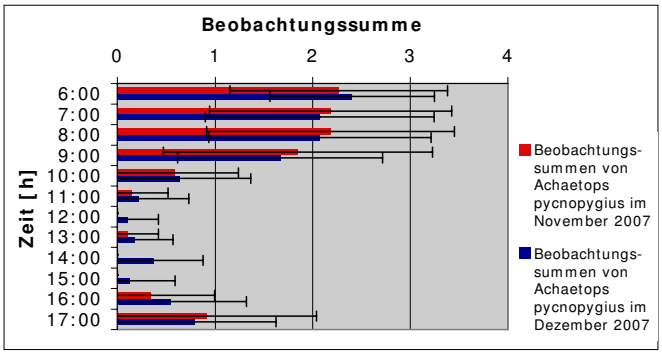

Figure 2: Total number of sightings of Rockrunner during the day. The graph shows the mean ± std deviation; n = 151. Red bars = observations during November 2007, blue bars = observations during December 2007.

Analysis of the daily sightings per month show 72 records for September 2007. Sightings decreased markedly in October and November 2007, but December 2007 proved to be the best month for sightings with 95 records.

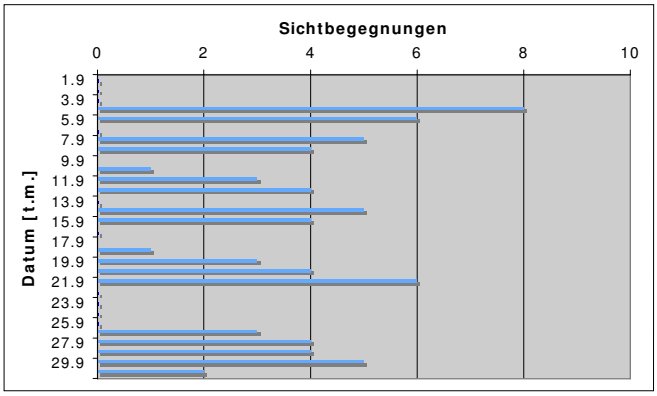

Figure 3: Daily sightings of Rockrunner during September 2007, n = 72.

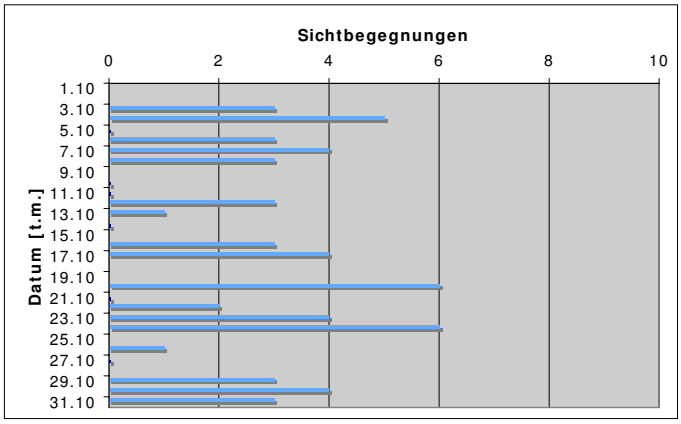

Figure 4: Daily sightings of Rockrunner during October 2007, n = 58.

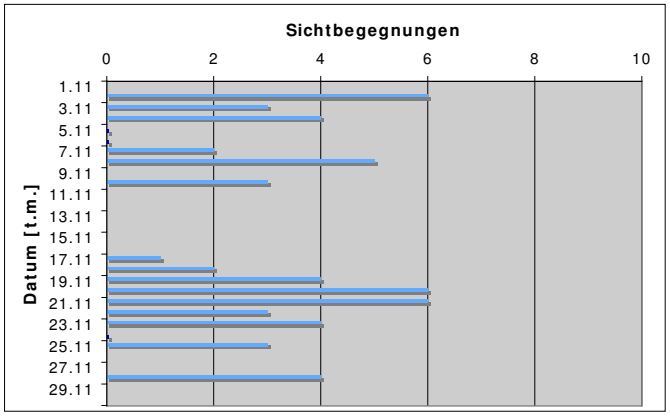

Figure 5: Daily sightings of Rockrunner during November 2007, n = 56.

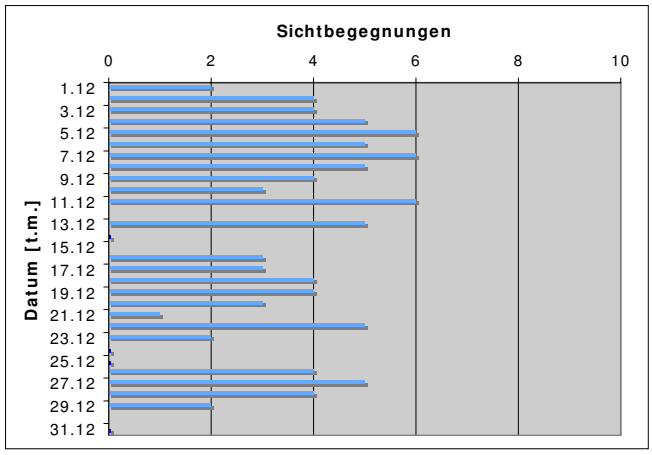

Figure 6: Daily sightings of Rockrunner during December 2007, n = 95.

Apart from a minimal correlation between relative humidity and sightings and, during December 2007, a low correlation between minimum temperature and sightings, no correlation could be found between climatic conditions and sightings of Rockrunners.

	Sept. 2007	Oct. 2007	Nov. 2007	Dec. 2007
Max. Temp. [°C]	-0,05	-0,07	-0,09	0,22
Min. Temp. [°C]	-0,04	-0,02	-0,31	-0,46
Rainfall [mm]	---	---	0,08	0,01
rel. Humidity [%]	0,04	0,32	0,45	-0,37
Wind [bft]	-0,34	-0,15	0,20	0,27

Table 2: Correlation coefficients between sightings of Rockrunner and climatic factors.

A frequency distribution of Rockrunner sightings in the National Botanical Garden for the months September to December 2007 shows that most sightings were recorded in the red and yellow areas.

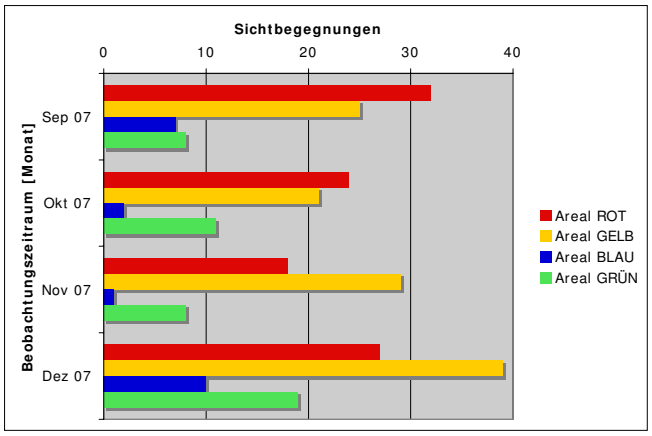

Figure 7: Monthly sightings of Rockrunner per area, n = 281. The colours correspond with the colour rings of each marked bird.

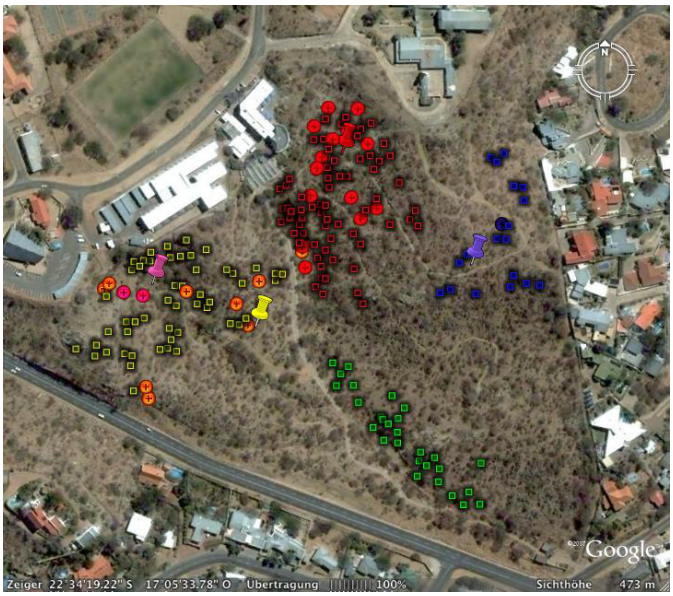

Figure 8: Capture localities (map pins) and sightings of Rockrunner in the National Botanical Garden. Circles = sightings of ringed birds, squares = sightings of unmarked birds, the colours correspond to the colour rings of the marked birds. To prevent cluttering not all 281 sightings are shown.

During the months of September to December 2007 a total of 18 capture attempts were undertaken, mainly in the National Botanical Garden. There a total of four birds were caught and colour ringed whereas only one bird was caught at both Daan Viljoen Game Park and Avis Dam.

	Number of attempts	Total number of mistnets	Total number of flap traps
National Botanical Garden Windhoek	15	30	26
Daan Viljoen Game Park	2	4	3
Avis Dam	1	2	0
Private Property Klein Windhoek	0	0	0

Table 3: Capture attempts during September to December 2007 in all four study areas.

All first captures of Rockrunners were achieved with mistnets, mainly in the afternoon, although nets were also put up in the mornings. Only the bird marked with a pink colour ring was re-trapped in a baited flap trap.

Date	Time	Capture success	Colour rings
07.09.2007	16:00 - 18:00	Yes	pink and blue
12.09.2007	09:00 - 11:00	No	
14.09.2007	16:00 - 18:00	Yes	red
21.09.2007	08:00 - 11:30	Yes (re-trap)	pink
17.10.2007	18:00 - 19:00	No	
18.10.2007	16:00 - 20:00	No	
24.10.2007	08:00 - 10:00	No	
25.10.2007	15:00 - 17:00	No	
31.10.2007	06:30 - 13:00	No	
03.11.2007	16:00 - 18:00	No	
13.11.2007	07:00 - 10:30	No	
14.11.2007	08:00 - 11:00	No	
23.11.2007	16:00 - 18:00	Yes	yellow
21.12.2007	18:00 - 20:00	No	
22.12.2007	17:00 - 20:00	No	

Table 4: Capture attempts and successes in the National Botanical Garden Windhoek during the period September to December 2007.

The ringed Rockrunner individuals were re-sighted several times. The bird marked with a red ring was seen 13 times, the yellow marked one nine times and the pink ringed one twice. The bird marked with a blue ring was only seen once after the initial marking and in the green area no Rockrunner could be captured and ringed.

Date	1/9/2007	2/9/2007	7/9/2007	7/9/2007	14/9/2007	23/11/2007
Area	Avis Dam	Daan Viljoen	Bot. Garden	Bot. Garden	Bot. Garden	Bot. Garden
Colour ring	---	Red	Pink	Blue	Red	Yellow
SAFRING No	BH60 187	BH60 188	BH4 4964	BH60 189	BH6 0191	BH6 0214
Mass [g]	35	30	32	31	34	37
Wing [mm]	69	69	72	70	73	72
Head [mm]	---	---	45	42	43	42
Bill [mm]	---	---	20	21	21	24
Tail [mm]	---	---	82	80	80	83
Tarsus [mm]	---	---	30	---	27	24
Moult	Prim old	Prim old	Prim old	Prim old	Prim old	Prim old

Table 5: Measurements and data on the captured Rockrunners.

All observed Rockrunners used a raised perch for vocalisation. This could either be a rock or the upper branches of a thornbush and the duration of vocalisation varied between two and forty six minutes, with the longer periods usually happening in the early mornings. From September to December 2007 there was a clear increase in the number of days where vocalisations were heard. The fewest vocalisations were heard in January 2008.

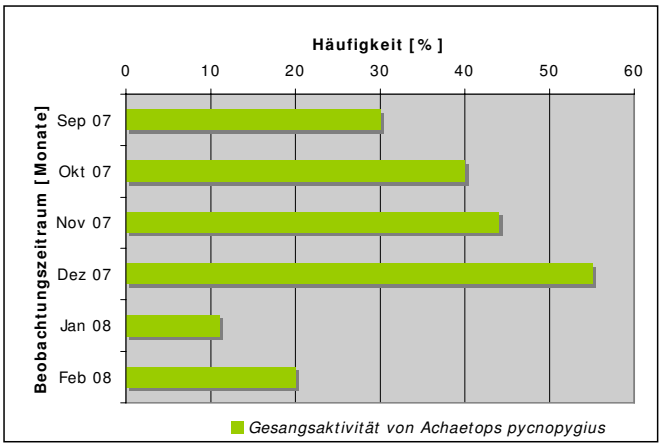

Figure 9: Vocalisations of Rockrunners from September 2007 to February 2008 expressed as a percentage of the number of observation days.

Figure 10 shows the location of all the perches where Rockrunners were observed singing at least twice. It is quite apparent that some areas were not utilised for vocalisation.

Figure 10: Location of perches used for vocalisation in the National Botanical Garden.

As soon as a Rockrunner started singing, another individual would answer within a short time as a matter of course. Each individual would sing two to three verses before the other one would react in turn. Several times more than two individuals were observed singing not too far apart from each other. In a situation where a lone Rockrunner was singing from a perch over a lengthy period of time, it was observed many times that another Rockrunner would approach the perch without any audible vocalisation. As soon as the two birds caught sight of each other the singing bird would stop vocalising.

In December 2007 the bird marked with a yellow ring was observed on three consecutive days vocalising from a particular perch at approximately 07:15. From this perch the bird would visit other perches, always in the same order, and the route was completed after a maximum of 35 minutes. During all vocalisations the Rockrunner would adopt a body position as illustrated in Figures 11 and 12.

Figure 11: Body posture of Rockrunners during vocalisation at the beginning of the verse, **Figure 12:** Body posture of Rockrunners at the end of vocalisation.

Rockrunners were rarely observed flying. The principal means of locomotion was walking and hopping, during which the bird would stop after four or five steps and scan the surroundings with an erect tail. The Rockrunners avoided open areas and preferred thick undergrowth in the study area. During perceived danger the individuals would only fly a short distance before seeking cover in thick bush.

In situations where a male Rockrunner met with another individual of the same sex, this would be chased away with loud calls, excitedly bobbing tails and short aerial attacks. This behaviour was observed several times from end-November to mid-December

2007 and the birds would often chase each other for several minutes, mainly running and hopping.

Several times the loud warning calls of Rockrunners would also attract other birds such as White-browed Sparrow-Weavers (*Plocepasser mahali)* and Southern Masked-Weavers (*Ploceus velatus)*, both of which occur plentifully in the botanical garden. On two occasions this resulted in the expulsion of a feral cat from the area. At the study site on the private property in Klein Windhoek this behaviour was observed several times, resulting in the chasing away of a yellow mongoose (*Cynictis penicillata*).

Similar behaviour was observed for the protection of the nest and eggs. It was noteable that the Rockrunner would not leave the nest during incubation but rather duck and remain motionless – this behaviour was observed at all three breeding sites. Once the eggs had hatched the adults would distract the predators by loud calls, tail bobbing and wing clapping and try to coax them away from the nest.

It was observed that the adults take turns incubating the eggs as one would wait at the nest entrance and then enter as soon as the other partner had flown off. During the day the Rockrunners would often not incubate the eggs, sometimes for up to two hours. Shortly after sunset both adults would return and on four occasions it was observed that one of them left the nest again after ten minutes.

At clutch II and III feeding of the chicks started two days after hatching. The times between feeding at this point varied between 15 and 20 minutes. Always only one Rockrunner was seen feeding and at times it would remain on the nest between feedings. On the day the chicks of clutch I fledged, the feeding time interval was steadily increased by the adults. Between 06:00 and 07:30 the chicks were fed about every 20 minutes, then there were two intervals of 30-40 minutes and the last feeding took place about 60 minutes before the chicks left the nest.

Adults would announce their arrival by a specific call near the nest. Only three to four days after hatching would the chicks react to this call by begging.

During the study period three nests were found. The first one was found at the National Botanical Garden on 27 December 2007. The chicks fledged from that nest the next day. On 19 January 2008 the same nest had three eggs in it. All three hatched but the chicks only survived a few days. The third nest was discovered on the private property in Klein Windhoek on 7 February 2008. Here the entire development cycle of the nestlings was documented.

	Clutch I	**Clutch II**	**Clutch III**
Eggs	---	3	3
Nestlings	---	3	2
Fledglings	2	0	2
Laying Date	30.11.2007	12.01.2008	04.02.2008
Hatching Date	13.12.2007	26.01.2008	18.02.2008
Fledging Date	28.12.2007	---	04.03.2008

Table 6: Breeding data of Rockrunners. Gray shaded blocks = dates calculated back from hatching or fledging.

The nest in the botanical garden was situated in the north-west of the area, near the main entrance to the garden. The pair used a 2 m high *Aloe littoralis* which had formed a branch at about 0.8 m and the nest was situated between the main stem and this branch. The nest in Klein Windhoek was in between the upright leaves of a sisal plant about 0.2 m above ground. Both nest entrances were facing north-east and were protected by the spiky leaves.

Figure 13: Nest in the National Botanical Garden, the arrow marks the nest entrance.

Figure 14: Nest in Klein Windhoek, the arrow marks the nest entrance.

The Rockrunners' cup-shaped nests were constructed entirely from grass of different lengths and thickness. The outside of the nest was made with thicker grass that was partly anchored to the substrate, whereas the inner nest was made of finer grass. The nest in the botanical garden had a slight widening of the rim made with thin grass on one side.

Each nest contained a clutch of three eggs. The eggs from clutch II all had the dimensions 22.45 x 14.45 mm.

Figure 15: Rockrunner nest from the National Botanical Garden, note the slight widening of the rim in the upper right-hand corner.

Height [mm]	**Cup depth [mm]**	**Inner ∅ [mm]**	**Outer ∅ [mm]**
85	51	75	145

Table 7: Dimensions of the nest from the National Botanical Garden.

The following photographs illustrate the development of the chicks at the property in Klein Windhoek:

Figure 16: Clutch on 7 February 2008.

Figure 17: Nestlings on 20 February 2008, two of the three chicks have hatched.

Figure 18: Nestlings on 24 February 2008, feathers are starting to grow.

Figure 19: Nestlings on 26 February 2008, feathers are emerging from sheaths, eyes are opening.

Figure 20: Nestlings on 29 February 2008, body feathers have developed, primaries and tail feathers still partly sheathed.

Figure 21: Nestlings on the day of fledging 4 March 2008.

The development of the chicks in this case took 16 days but it was observed that the chicks were reluctant to fly for several days after leaving the nest, rather preferring to walk and hop and always in the vicinity of the nest and near the parents.

The feeding of chicks could be observed at all three nests but an exact identification of the invertebrates which the adults brought to the nest was not possible. The food of the chicks consisted primarily of flightless arthropods such as millipedes (*Myriapoda*) and centipedes (*Scolopendra*), diverse caterpillars and also some small scorpions (*Scorpiones*). After the first rains in December 2007 in the National Botanical Garden the Rockrunners fed a lot of newly hatched solifugids (*Solifuga*) to the chicks. In January 2008 a lot of termites (*Isoptera*) were fed. Prey that was too large was divided at the place of capture and brought to the nest in small pieces. This happened especially with the millipedes.

Discussion

The Rockrunner's habitat preferences as described in the literature ("rocky slopes of hillsides…bordering dry watercourses") could be verified by this study. Not only do the rocks provide the birds with shelter and hiding places but they also act as perches for singing. This is manifest in the number of sightings recorded in the National Botanical Garden in areas where rocks are the dominant feature. Remarks in the literature that the Rockrunner was dependent on perennial water could not be confirmed. On the

contrary, in both the botanical garden and Daan Viljoen the habitat had ephemeral rivers in it while the property in Klein Windhoek had no river associated with it. It can therefore be reasoned that the birds are not directly dependent on any rivers but perhaps it is the structures associated with the rivers, i.e. rocky outcrops and dense riparian vegetation, that make the birds choose these habitats.

In terms of climatic conditions, it could be determined that Rockrunners are less active during the noon period. However, no clear proof could be found that this is directly correlated to temperature. Similarly, although there was increased activity after the first rains in December 2007, this could not be correlated with daily rainfall and it can only be assumed that this was rather as a response to the beginning of breeding.

Although climatic factors were not found to be influencing Rockrunner behaviour in this study, microclimate does appear to influence the choice of nesting site. Both nests were found to be in places that were sheltered from the strong west winds that can be experienced during the time of breeding. Exposure to these winds may cause the brood to fail. Similarly, both nests were sheltered from the noon sun which may have caused overheating of the brood.

During this study it quickly became apparent how well the Rockrunner is adapted to its environment. The few successful marking attempts verify the bird's shy nature which is quoted in the literature as one of the bird's characteristics. Not only the shy nature but also the bird's colouration makes it difficult to find them in the field, the cryptic colour providing perfect camouflage in the habitat preferred by the birds.

All measurements obtained from birds caught during this study are greater than those published in the literature. The data published in Roberts is from 1975 (n = 10) and the data from this study is from 2007 (n = 6). It is not clear whether Roberts' data is from one population or not and therefore comparisons cannot be made. If one applies the data published in Roberts, i.e. male birds have longer wing and tail feathers than females, then it can be presumed that the birds marked during this study are all males. The observed territorial behaviour of the yellow marked bird seems to strengthen this argument.

In the literature it is assumed that Rockrunners are territorial and the observations of marked birds during this study appear to confirm this. Typical territorial behaviour could be observed in the form of singing contests and tail bobbing.

Observations showed that both adults take part in incubating the eggs but they also leave the eggs unattended for lengthy periods of time. Only one bird was observed at the nest after the eggs had hatched. Data published in the literature about the size of the nests agrees with that found in this study. All nests published in the literature were found in large *Digitaria dinteri* grasstufts. This grass species is uncommon in the botanical garden and in most cases has been grazed to the roots by rock hyraxes and is thus not available as a breeding locality for Rockrunners. Both nests found during this study were in succulent plants and since the nest in the botanical garden was 1.2 m above the ground it is questionable that Rockrunners are classified as ground nesting birds utilising grasstufts. An interesting observation is the re-use of the nest in the botanical garden but it is not certain whether this was by the same pair or not.

During this study it could not be determined whether the onset of the rains also triggered breeding. There is no conclusive evidence that shows any correlation between rainfall and egg laying.

Selected Literature

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Wader data collected on the Namibian coast in late January/March 1998 and February/March 1999.

A J Tree and M Boorman

During the 1999 tern expedition to the Namibian coast a limited amount of time was spent in observing, counting and ringing waders. None of the counts made was complete owing to the vastness of the area and the limited numbers of observers. Further, at both Walvis Bay and Sandwich Harbour there is a continuous movement of birds at both ebb and flow tides with the possible resultant omission or over-counting of certain species. Details of certain counts made at each of the major sites on different dates appear elsewhere in this report. Specific information on high tide wader roosts at Walvis Bay is difficult to obtain and there is much variation in this respect between neap and spring tides. There is a strong likelihood of substantial movements of waders between Walvis Bay and Sandwich Harbour and other parts of the coastline between extreme tidal periods.

The emphasis of this report is the collation of the data collected during ringing and observations making mention of the more important counts. Only four nights were spent attempting to mist-net waders in 1999 although a few birds were also caught whilst netting terns at the Mile 4 Saltworks. Small numbers were also caught using a whoosh-net and torch and hand-net. To give a fuller picture data is incorporated from that collected during the pilot survey of the same area during late January/April 1998 by the authors. The ringing totals appear as two figures representing 1998 and 1999 respectively.

Wader ringing on this central section of coastline has occurred intermittently from the 1960s. Pre-1980 the major ringers concerned were Erwin Drygalla, Peter Becker, Tony Tree, Hu Berry, Derek Stanyard, Charles Clinning, Les Underhill, Dave Whitelaw and, more recently, Tim Osborne. The main species ringed were Curlew Sandpiper (1338), Ruddy Turnstone (334), Little Stint (254), Sanderling (209), Three-banded Plover (97), White-fronted Plover (77), Kittlitz's Plover (44) and Red Knot (38) (Underhill & Whitelaw 1977, H Kolberg pers. comm). Longer-term studies were carried out by Rod and Sigi Braby from 1987 to 1990 at the Hoanib River mouth and from 1992 to 1997 at Mile 4 Saltworks. Birds ringed during these two periods were mostly Curlew Sandpiper (858), Little Stint (272), White-fronted Plover (256), Chestnut-banded Plover (143) and Three-banded Plover (85) (R Braby pers.comm.). From 1996 to 2005 Mark Boorman and Sandra Dantu ringed waders intermittently at Mile 4 Saltworks and Swakopmund sewage works with a greater emphasis pre-1999. These were mostly White-fronted Plover (206), Curlew Sandpiper (178), Chestnut-banded Plover (153), Ruddy Turnstone (150) and Three-banded Plover (51). The older totals given in Underhill and Whitelaw (1977) referred only to palearctic waders and no figures were given for local species while Holger Kolberg's records are incomplete for these earlier days.

Moult data was recorded only for the primaries and assumption of breeding dress. Primary moult is shown as follows: 0 = old, 1= freshly dropped or in pin, 2 = emergent from pin to 33% grown, 3 = 33-66% grown, 4 = 66-99% grown, 5 = new, 8 = intermediate. As the data is relatively limited weights have been categorized on a bimonthly basis, eg. February (1) indicates first half of that month.

Ageing of palearctic migrants in the Safring databank is as follows: 5 = juvenile (1 July to