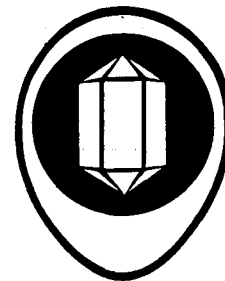


Lanioturdus torquatus
Drosselwürger

MITTEILUNGEN

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OBSERVATIONS ON THE BREEDING OF THE AFRICAN HAWK EAGLE

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I N T R O D U C T I O N

A pair of African Hawk Eagles Aquila fasciata were studied during the breeding seasons of 1972 and 1973 on the farm Aris (22° 5' S 17° 10' E) 30 kilometres south of Windhoek in South West Africa.

Information was collected on parental behaviour, development of young, and the effect of local weather conditions on availability of prey and its influence on development of the nestling.

M E T H O D S

Three visits were made during 1972, and weekly visits were made throughout the fledging period of 1973 from 19 August to 20 October.

Aerial photographs and ground surveys were used to determine the size and distribution of different habitats.

R E S U L T S

(i) HABITAT

The study nest was situated in a belt of riverine woodland chiefly composed of Acacia karoo, A. giraffae and Ziziphus mucronata, flanking the Aris River, a non-perennial water course. There was virtually no undergrowth apart from scattered clumps of Phaeoptilan spinosum and Acacia saplings. This, and the structureless soil surface are thought to be due to a dense concentration of cattle at the time.

The ecological distribution of birds on a neighbouring farm, Gochaganas, was briefly studied during 1973. Due to their ecological similarity the habitat figures given in Table 1 (see P. 2) are also applicable to Aris (Fig. 1, see p.3). Although riverine woodland was found to be one of the least extensive habitats it supported the greatest number of species. Populations of Crowned Guineafowl Numida meleagris and Red-billed Francolin were found to occur at a density of three per hectare in this habitat. Flock size ranged from two to eight with a mean of six.

TABLE 1. Relationship between size of habitat & number of bird species

Definition	%area	Hectares	No. species
Bushveld	65	6663,15	48
Hills	10	1025,1	17
<u>Triraphis</u> beds	8	820,08	19
Acacia savanna	6	615,06	4
Riverine woods	5	512,55	55
Barren	4	410,55	1
Agricultural	2	205,02	18

(ii) THE NEST

The nest was thought to have been used for a number of years as a very obvious series of layers was noted. It was 12 metres from the ground, below the crown of a large A. karoo. The following measurements were made towards the end of the 1973 fledging period when further repair was considered unlikely to occur.

Diameter at top: 1100 mm x 800 mm

Diameter of cup: 430 mm x 360 mm

Depth of cup: c. 50 mm

Overall depth of nest: 880 mm

Before breeding commenced in 1973 a considerable amount of repair was undertaken, raising the top of the nest by c. 150 mm.

Lining, chiefly composed of green Rhus lancea sprigs was present at every visit until one week before fledging. A thorny Z. mucronata twig was found in the lining on one occasion.

(iii) PARENTAL BEHAVIOUR

The female always flew extremely close overhead when the tree was climbed, and sometimes perched about two metres above the nest when I handled the eaglet. These attacks were always initiated by the female and on a number of occasions when only the male was present, he made no show of aggression until the female arrived, usually within minutes. The female once flew at me when I was c. 1,5 km from the nest site, before flying there herself.

The adults called a great deal and their calls were similar to those described by Brown and Amadon (1968) and McLachlan and Liversidge (1970) as a loud "melodious and fluting 'klu-klu-kluluee' or 'kluee-kluee'":

The distribution and percentage use of the frequently used perches during the attacks are given in Figure 2.

The 1973 incubation period was between 35 and 40 days. The eggs were 63 x 53 mm and 61,5 x 50,5 mm. One was infertile and remained in the nest until the chick was three weeks old when removed by myself. The incubation period is given as 42½ to 43½ days and 35 to 40 days by Brown and Amadon (1968) and McLachlan and Liversidge (1970) respectively.

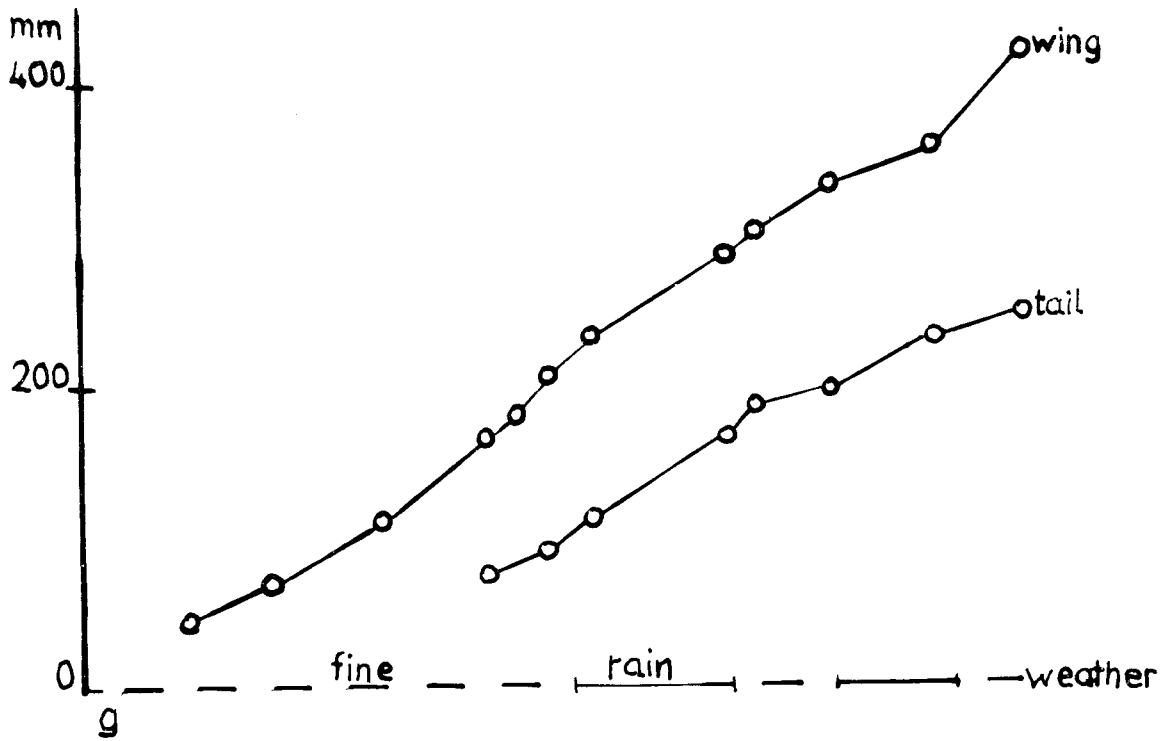


Fig:1 Growth of nestling

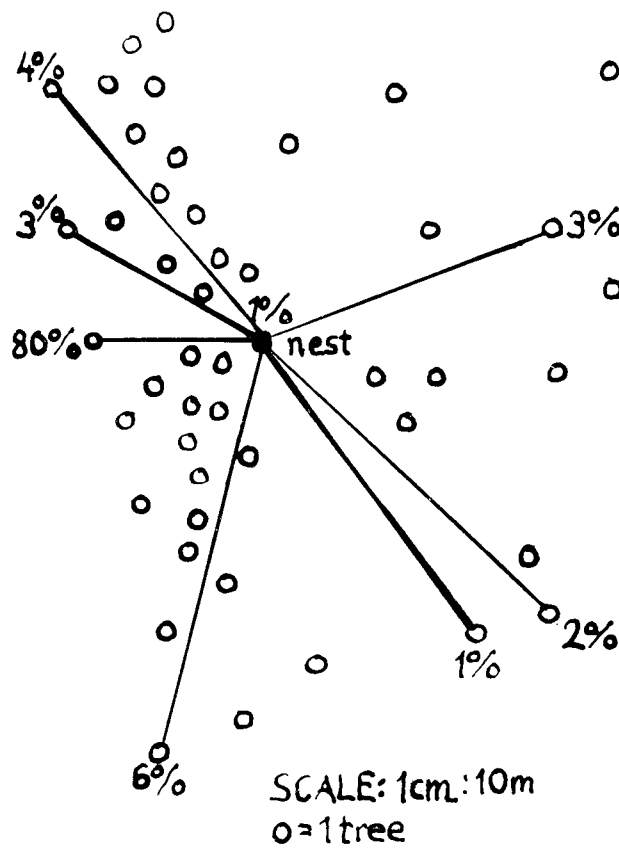


Fig.2 Perches used by adults

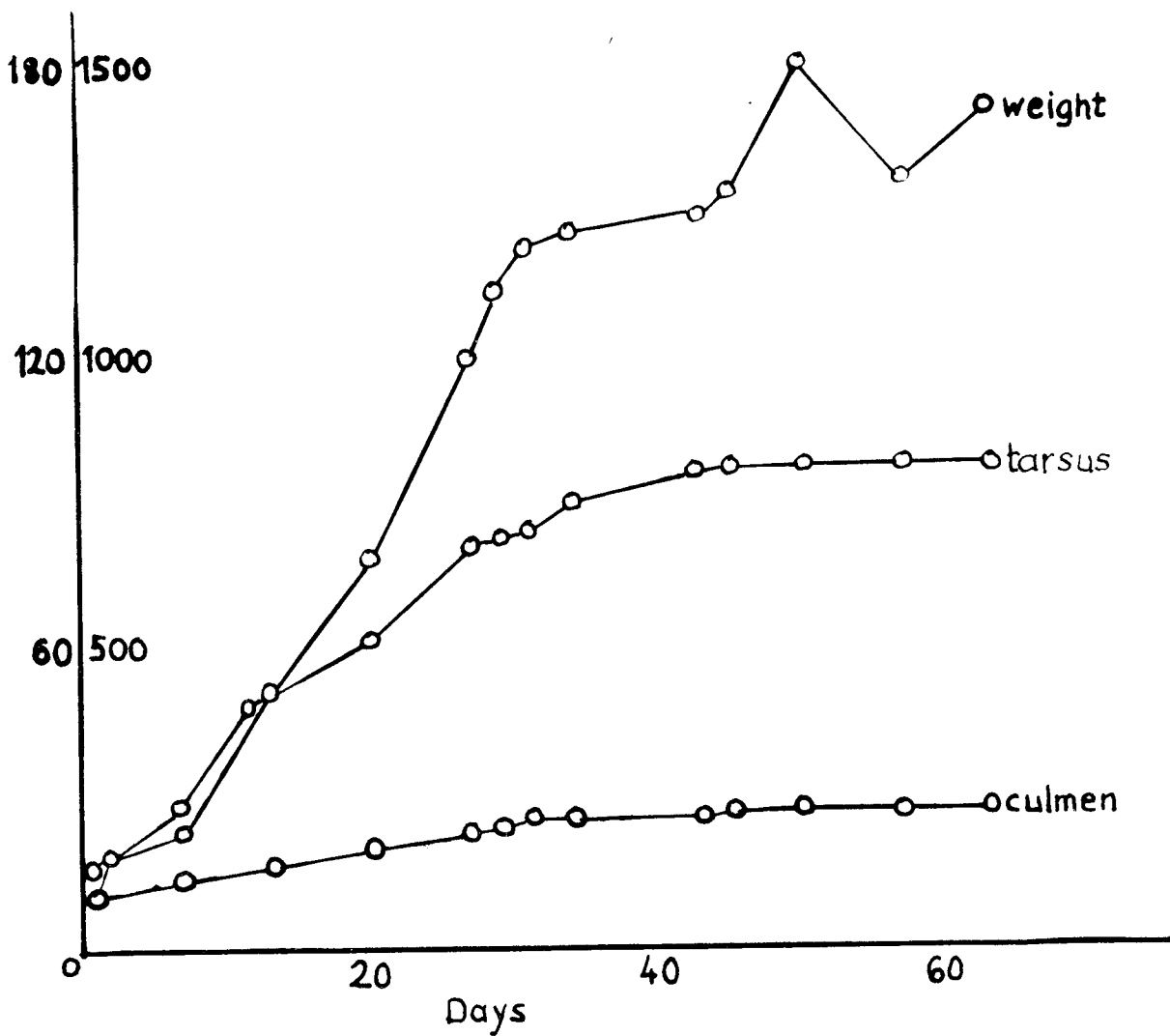
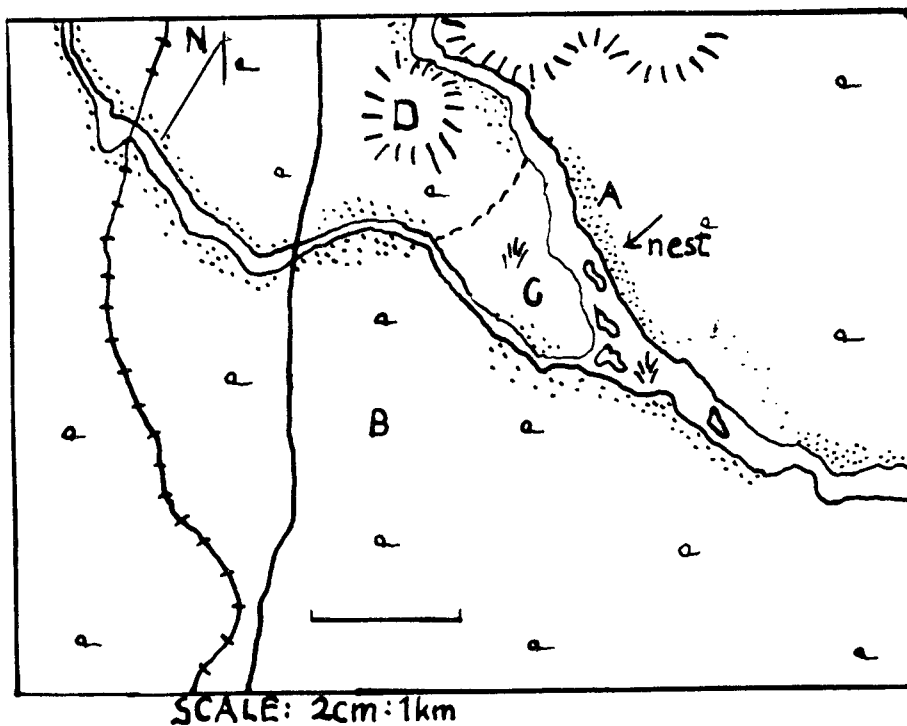


Fig. 3

MAP SHOWING HABITAT TYPES & POS. OF NEST:



A: RIVERINE ACACIA
 B: BUSHVELD

C: TRIRAPHIS BEDS
 D: HILLS

(iv) DEVELOPMENT OF YOUNG

1972

The nest was discovered when the eaglet was c. 31 days old. Its age was estimated by a comparison with data collected from the 1973 eaglet. The second visit was made when it was c. 46 days old and the third at c. 53 days. The nest was revisited at c. 79 days and found to be deserted. Since the 1973 fledgling flew at 63 days, it is possible that this fledgling had left the nest.

1973

The hatching date of this chick was known, and weekly visits were made until it was 63 days old.

The day-old chick was gunmetal-grey dorsally and paler underneath. Brown and Amadon (1968) record "dark brownish" chicks "pale below". The second down coat, which was greyish-white, was visible at 20 days. At this stage the head was covered with brownish-grey down and the cere and rictal flanges were changing from dark grey to yellow.

At 27 days the remiges and retrices were partly unsheathed and the scapulars were emerging. Pin feathers could be felt along the spinal tract. At 34 days the eaglet was still very downy. At 43 days the body was ventrally covered with rufous-brown feathers, except for a broad downy "V" across the chest. This was visible until 50 days. There was also a large downy patch at the back of the head at this stage. Feathering of the head took place rapidly towards the end of the fledging period.

Threat behaviour was first noted on the 7th day. The eaglet was never observed to adopt the intruder position. This threat display developed with age. The eaglet usually stood on the far edge of the nest and faced the intruder with spread wings and open bill. Wing slapping, as in the Tawny Eagle Aquila rapax (Steyn, 1973) and in the Martial Eagle Polemaetus bellicosus (pers. obs.) was not experienced.

When 63 days old the eaglet took off from a branch one metre from the nest when the tree was climbed. The well-worn bark of this branch indicated that it may have been regularly used for exercising. It took me about 50 minutes to find the eaglet, and for most of this time the female circled about 50 m above me. She later perched on a tree about two kilometres from the nest. The eaglet was found perched on a log beneath this tree, and was returned to the nest. At this stage, the primaries and secondaries were not fully grown. These feathers are often not fully grown when the fledgling leaves the nest (Brown and Amadon 1968). Growth measurements of the chick are given in Figure 3. (see p. 4)

In 30 days the weight increased from 93 grams, with a full crop, to over 1000 g. For the first 20 days it gained an average of 30 g per day. Little weight was gained between the 34th and 43rd days. From then until the 50th day 308 g were gained.

By the 43rd day the tarsii and culmen were fully grown. This enables the eaglet to tear up its own food and thus release both parents for foraging at a stage when the eaglet's appetite is at a peak (Brown and Amadon 1968). (to be continued)

LITERATUR-HINWEISE

THE OSTRICH, Vol. 45, No. 3, September 1974: A.J.F.K. Craig: Reproductive behaviour of the male Red Bishop Bird. - C.C.H. Elliott: Sixteenth ringing report for Southern Africa. - G.L. Maclean: Egg-covering in the Charadrii. - D.N.S. Tomlinson: Studies of the Purple Heron, Part 1: Heronry structure, nesting habits and reproductive success. - J. van Heerden: Botulism in the Orange Free State Goldfields. - Short Notes: N. Zambatis: Nectar feeding by Forktailed Drongo. - W.R.J. Dean: *Dicrurus adsimilis* robbing *Dendropicos fuscescens* of food. - G. Wilson: Incubating behaviour of the African Jacana. - W.R.J. Dean, I.A.W. Macdonald & C.J. Vernon: Possible breeding record of *Cerococcyx montanus*. - J.C. Sinclair: Arrival of the House Crow in Natal. - N. Myburgh & G.J. Broekhuysen: Cape Turtle Dove breeding on the ground. - D.M. Skead: Bird weights from the Central Transvaal bushveld. - B. Every: A partial albino Ground Woodpecker. - G.L. Maclean: Vocal imitation in *Galerida magnirostris*. - B.G. Donnelly & J. Webber: A Forktailed Drongo tethered by grass inflorescences. - C.W. Benson & M.P. Stuart Irwin: On a specimen of a *Sarothrura ayresi* from the Transvaal in the Leiden Museum. - L.H. Brown & K.B. Newman: "Anting" in African passerine birds. - W. Fraser: Copulatory behaviour of *Falco araea*. -

DIE GEFIEDERTE WELT, Jg. 98, No. 7, 1974, S.135: W. Gilges: Die Flamingos von Südwest-Afrika.

BONNER ZOOLOG. BEITR., 25. Jg., H. 1-3, 1974: H.E. Wolters: Prof. Dr. G. Niethammer, 28.9.1908 - 14.1.1974, S.1 - J. Niethammer: Veröffentlichungen von Prof. Niethammer, S.6 - H. Kumerloeve: Günther Niethammer, dem Freunde und Kollegen zum Gedächtnis, S. 17 - J. Reichholf: Biotopwahl und Schwarmgroessen bei den neotropischen Kuckucksvoegeln *Crotophaga ani* L. und *Guira guira* (Gmel), S.118 - W. Scherzinger: Die Jugendentwicklung des Uhus (*Bubo bubo*) mit Vergleichen zu der von Schneule (*Nyctea scandiaca*) und Sumpfohreule (*Asio flammeus*), S. 123 - W. Makatsch: Ueber einige wenig bekannte Vogeleier. (Mit Farbabb.), S. 148. -

S.A. JOURNAL OF SCIENCE, Vol. 70, No. 5, 1974, p 157: J.D. Skinner & C.P. Skinner: Predation on the Cattle Egret (*Bulbulcus ibis*) and Masked Weaver (*Ploceus velatus*) by the Vervet Monkey (*Cercoptes aethiops*). -

CIMBEBASIA, Ser.A, Vol. 2, No. 15, 1974: G.L. Maclean: Arid - Zone adaptations in Southern African Birds (with 1 Fig.). -

NEWS SHEET No. 86, Witwatersrand Bird Club.

ARNOLDIA, Vol. 6, No. 34, 1974: M.P.S. Irwin, P.A. Clancy: Appraisal of the generic relationships of some African Forest - Dwelling Robins (Aves: Turdidae). -

HEDIGER, Heini (Die Strassen der Tiere): J. Szijj: "Zugstrassen" der Voegel. - D.H. Müller-Schwarze: Tierstrassen in der Antarktis. -

NATUR UND MUSEUM, Bd. 104, H. 7, 1974: J. Steinbacher: Ein Vogel mit Tragetaschen, das amerikanische Zwergbinsenhuhn. -

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(continuation)

(v) PREY

Birds constituted 30% of the prey recorded and mammals 70%. Almost the opposite trend was found by Brown (1952) in Kenya. Brown and Amadon (1968) state that "about half of the kills are Avian."

Due to the high degree of nest hygiene few pellets were found, but one containing the following insect remains was of particular interest. There were 28 Cydnidae (Herteroptera), two Curculionidae (Coleoptera) and one Zophosis burkei (Coleoptera: Tenebrionidae). These insects are closely associated with Tribulus campestris, a thorny Xerophytic plant widespread in the area (M. Penrith pers. comm.). A Gerbille Desmodillus auricularis is known to feed extensively on these thorns and the small mammalian bones also found in the pellet were probably from this animal.

Table 2 lists the prey found on the nest. Most prey items were fresh and all were headless. Many were completely plucked.

TABLE 2. Prey found on nest

Aves	
<u>Streptopelia capicola</u>	1
<u>Francolinus adipes</u>	1
<u>Numida meleagris</u>	1
Total	3
Mammalia	
<u>Procavia capensis</u>	1
<u>Suricata suricatta</u>	3
<u>Xerus inauris</u>	1
<u>Lepus capensis</u>	1
<u>Desmodillus auricularis</u>	1
Total	7

DISCUSSION

Two periods of unusually wet conditions occurred during September and October. They were 18 to 30 September and 7 to 14 October. I wish to emphasise that since these conditions were of an extremely local nature, the figures recorded at Ondekaremba, the nearest weather station, do not co-incide chronologically with my own. Ondekaremba is about 50 km north-east of the nest and the peak of the wet period was recorded there on the 26th October. The normal total for October is 10,3 mm over a period of three days. In 1973, 53,3 mm fell over a period of seven days. A light drizzle was falling when I visited the nest on the 7th of October.

The Ground Squirrel Xerus inauris and the Surikate Suricata suricatta, both burrow dwellers, do not emerge under such conditions (Smither 1970). Bones belonging to Desmodillus auricularis,

a gerbille which feeds on the thorns (Roberts 1954) and possibly on the insects as well, were found in the pellet. Although normally nocturnal it is possible that the gerbille emerged when it was overcast and was caught by the African Hawk Eagle. The Crowned Guineafowl N. meleagris and the Red-billed Francolin F. adspersus are mostly inactive when it is wet (pers. obs.).

In response to the above factors the weight of the eaglet dropped sharply. Between its 31st and 45th day only 83 g were gained. An average of 36 g per day had been gained in the preceding 29 days. Between its 50th and 57th day it lost 236 g, 15,3% of its body weight. It left the nest on its 63rd day weighing 1455 g after having regained 126 g.

It is accepted that parental feeding rates are reduced towards the end of the fledging period but it can be seen from the above discussion that those factors investigated did have an adverse effect on the development of the eaglet.

A C K N O W L E D G E M E N T S

I am indebted to Messrs D. Voigts and Hamm the owner and manager of Aris and Gochaganas respectively for their permission to work in the area. My thanks are also due to Mr D.E. Ludwig for much assistance during the study, and to Mr J. Cooper for helpful criticism of the draft copy.

R E F E R E N C E S

- Brown, L.H. 1952. On the biology of large birds of prey in the Embu District, Kenya Colony. Ibis.
- Brown, L.H. and Amadon, D. 1968. Eagles Hawks and Falcons of the world.
- McLachlan, G. and Liversidge, R. 1970. Roberts Birds of South Africa. Cape Town C.N.A.
- Smithers, R.N. 1970. Mammals of Eotswana.

ZUR MUCKENPLAGE IN WALVIS BAY

An den Ufern des Abwasserteiches bei Walvis Bay ist ein dichter Pflanzenwuchs entstanden, das Paradies einer zahl- und artenreichen Vogelwelt, aber auch die Brutstätte für Mückenlarven, die der nahen Stadt lästig werden. Der Stadttechniker, Herr F.E. Tworeck, berichtet in einem Schreiben vom 30. April 1974 an Herrn von Schwind, Swakopmund, über sein Bemühen, die Brutstätte zu vernichten, aber das Paradies zu erhalten.

"Wuchernder Bewuchs aus Ried und Queckgras hat im Laufe der Jahre mehr und mehr Brutmöglichkeiten für Mücken geschaffen.

Solange kaltes und windiges Wetter herrscht, sind die Mücken keine Plage, aber bei warmem Wetter und leichten östlichen Winden nehmen die Mücken in der Stadt so überhand, dass sich das Publikum regelmäßig beschwert.

Verschiedenes wurde versucht, um der Mückenplage Einhalt zu gebieten. U.^a wurden verschiedene Fischarten eingesetzt, auch Froesche, aber es scheint, als ob nur die Guppies sich halten konnten. Da in grossen Teilen der Seen Sauerstoffmangel herrscht, können die Fische auch nicht überall hin.