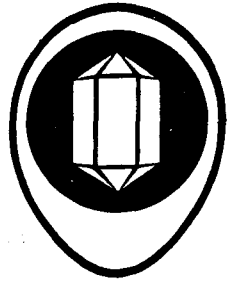


Lanioturdus torquatus  
Drosselwürger

## MITTEILUNGEN

# ORNITHOLOGISCHE ARBEITSGRUPPE



SCHRIFTLÉITUNG: POSTFACH 67, WINDHOEK, S.W.A.

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### "DIE LEBENSANPASSUNG DER VÖGEL IN EINEM HEISSEN UND TROCKENEN KLIMA"

Ornithologisches Symposium in Hardap, S.W.A. am 24. und 25. Sept. 1973;  
Veranstaltet von der S.A. Ornithological Society, Cape Town, und  
der S.W.A. Wissenschaftlichen Gesellschaft, Windhoek.

#### INHALT:

die Referate in Kurzfassungen.

FROST, P.G.H. and SIEGFRIED, W.R.: Behavioural adaptations of the Jackass Penguin to a hot, arid environment.	S. 3
KEMP, A.C. and M.I.: A study of the biology of Monteiro's Hornbill.	S. 3
WINTERBOTTOM, J.M.: Bergman's and Allen's rules in the Western Cape.	S. 4
MACLEAN, G.L.: Arid zone adaptations in Southern African birds.	S. 4
SKEAD, D.M.: Drinking habits of birds in the Central Transvaal Bushveld.	S. 5
WOODALL, P.F.: Some plovers transport water to their nests.	S. 5
SOSSINKA, R.: Early sexual development in the Zebra Finch as an adaptation to arid areas.	S. 6
JENSEN, R.A.C.: A comparative study of bird breeding ecology in the Namib Desert Park and adjacent rainfall areas of central South West Africa.	S. 6
SIEGFRIED, W.R. and FROST, P.G.H.: Egg temperature and incubation behaviour of the Ostrich.	S. 7
MACLEAN, G.L.: A contribution to the biology of the Social Weaver in the Kalahari Sandveld.	S. 7
MILSTEIN, P. le S.: Random movements as an adaptation to arid environments.	S. 9
WATT, J.S.: Breeding habits of the Chestnut Weaver.	S.10
Letter from the Chairman of the S.A. Ornithological Society	S.10

breeding birds in the arid zone of southern Africa continue to breed as long as favourable conditions last - up to nine months and possibly more.

Behaviour, parental care, and predators are also described and discussed.

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#### DRINKING HABITS OF BIRDS IN THE CENTRAL TRANSVAAL BUSHVELD

David M. Skead

Notes on the drinking habits of birds were made mainly in the Pienaar's River/Hammanskraal area of the central Transvaal between July 1967 and December 1970. The climate according to Koeppen's classification is referred to as Dry (B) Steppe (S) with an average annual temperature above 18° C (h), with the dry season occurring during the low-sun period (w), abbreviated to BShw. Little or no rain can be expected from June to September.

The habitat is mainly thorn bushveld, and water is generally available to birds at stock drinking troughs and where water seeps from hairline cracks in reservoirs. Water is also available from the seasonally flowing Pienaar's River, and small man-made dams when they hold water in summer.

Seventy one species from 25 families, including six subfamilies of the Ploceidae, were noted drinking. Most species appeared to drink more regularly during the dry winter months. There is probably a limited food supply then in the case of fruit-eaters, whilst seed-eaters only have dry seeds, 10% or less water content, available.

One hundred and ninety trapping days, of ten hours each, took place over a 40-month period from August 1967 to November 1970 at a water point on the farm Vaalbosch. During this time 164 Golden-breasted Buntings *Emberiza flaviventris* were trapped coming to drink. Analysis of the data showed that 137 were trapped in the months June-September, 18 in the months October-January and 9 in the months February - May. The highest numbers coincided with the dry winter month when the birds probably subsisted on a diet of dry seeds, but obtained enough water from their diet of insects, plant material and green seeds during summer and autumn.

While it is generally considered that granivorous species rely more on potable water than predators, insectivorous or herbivorous species, it has been shown that 80,3% of the 71 species listed include insects in their diet. Those species including seed in the diet amounted to 60,5%. Purely granivorous species only amounted to 18,3%, and purely insectivorous species 10,0% of the total recorded drinking.

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#### SOME PLOVERS TRANSPORT WATER TO THEIR NESTS

Peter F. Woodall

A White-fronted Plover *Charadrius marginatus* was observed on the Zambezi River dipping its breast and belly feathers into the water and then returning to its nest and wetting the sand. There are similar records in the literature for the White-headed Plover *Vanellus albi-ceps* and the Wattled Plover *Vanellus senegallus*. This behaviour pattern seems to be an adaptation to protect the eggs from excessive temperatures.

A microscopic examination of the structure of these breast and belly feathers revealed that some of the barbules were specialised

in a similar manner to that reported from the sandgrouse (Pteroclididae). Gravimetric experiments tended to confirm that these structures do assist in water retention, although not to the same extent as in the sandgrouse. This region of specialised barbules is visible macroscopically as a zone on either side of the rachis of breast and belly feathers, similar in position but narrower than that found in the sandgrouse.

A brief survey of local Charadriiformes has indicated that these specialised feathers are most developed in the Charadriidae and Scopelidae, although they are also present in certain Recurvirostridae and Glareolidae.

Both the behavioural and structural aspects of this investigation give additional support to the suggestion that the sandgrouse are more closely related to the Charadriiformes than to the Columbiformes.

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EARLY SEXUAL DEVELOPMENT IN THE ZEBRA FINCH  
AS AN ADAPTATION TO ARID AREAS

R. Sossinka

In the arid zones of Central Australia, the Zebra Finch underwent strong selection for several drought-adaptations. As a result, it can survive without any water for more than 18 months. A further adaptation is a natural hypersexualisation in adult birds. But the young-ones too are hypersexualized, as can be seen in the pronounced precocity at young males: They show a very rapid gonadal development without any juvenile refractory period, but with an increased testosterone production 30 days old, and they have mature sperm as early as 70 days old.

The importance of the natural selection pressure, caused by the sparse and irregular rainfall, which do not allow a long preparatory phase for reproduction, can be seen by a comparison between wild and domesticated strains of Zebra Finches. Domesticated ones, after more than 100 generations in captivity and being selected in quite another way than in the wild, are sexually less active and mature later than wild ones, being raised under identical conditions.

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A COMPARATIVE STUDY OF BIRD BREEDING ECOLOGY IN THE NAMIB DESERT  
PARK AND ADJACENT HIGHER RAINFALL AREAS OF CENTRAL SOUTH WEST AFRICA

R.A.C. Jensen

Just over 200 species of birds have been recorded so far from the 5000 square mile (1 312 000 ha) Namib Desert Park. About 45% breed there, most of them in the linear oases formed by the two major seasonally-flowing rivers traversing the Park from east to west, or in the narrow hilly eastern strip above the 100 mm isohyet.

Four other comparison areas with different topography, rainfall, altitude and distance inland were studied concurrently. Namib riverine breeders tended to nest earlier or showed prolonged breeding activity to nest earlier or showed prolonged breeding activity when compared with the summer-breeding inland populations of the same species. Birds breeding in the Namib Parks 100 mm isohyet region outside the rivers generally nested later in summer-autumn than their conspecifics further inland, in line with progressively later summer rains from east to west.