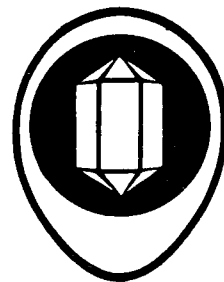


Lanioturdus torquatus
Drosselwürger No. 3

MITTEILUNGEN

ORNITHOLOGISCHE ARBEITSGRUPPE



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

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SOUTH WEST AFRICAN CONTRIBUTION TO RAPTOR MEASUREMENT

AND PLUMAGE STUDY

Dr H.C. Biggs, Windhoek



Eagles Hawks and Falcons trapped by the balchatri technique are ringed, photographed, measured in detail and released. The basic aim is to compare aspects of the anatomy of the different raptor species from a functional viewpoint. Two persons in SWA are involved at present.

Trapping procedure

The different raptors are trapped by the balchatri trap based on the traditional Indian design. The trap consists of a wiremesh or other suitable holding cage for the bait (mice, rats, or budgies). The cage is covered with nylon (fishing line) nooses which snare the birds' legs when it attempts to catch the bait. The verge of the road is usually the most suitable place (large open space giving view to bird, birds next to road not shy and thus do not fly off before trap is set). The trap is dropped from a motor vehicle travelling slowly past the bird. The car stops about 100 m

away and the bird is given a few minutes to come down to the trap. One third to one half of birds (hungry) fly down, attempt to attack the bait, and are caught (flap and attempt to fly off). Their legs

are then freed from the nooses and the birds processed. The technique can be endlessly varied to suit the situation - for instance Black Eagles R 133 seldom sit near roads, and here the trap (baited with dassie) has to be dropped by hand in an open patch of veld. For most species, however, the best catches are made on roads, where anything from 2 to 10 birds may be caught and processed ($\frac{1}{2}$ hour each) in a day, usually without any injuries to the bait animals. Legal Aspects - see previous newsletter.

Data obtained from the bird

Firstly all birds are ringed with South African standard rings. These have a unique number and the words "Inform Zoo Pretoria". The central ringing organisation SAFRING (previously called NUBRA) houses all the ringing data (locality, date etc.) and handles all the retrap and recovery data automatically. The retrap/recovery percentage in raptors is about 5%, but considering that only hundreds are ringed annually in Southern Africa, this ringing effort cannot be expected to produce statistically significant results relating to movement in a short while. However, several spectacular individual recoveries have been made (Southern African Steppe Buzzards R 154 annually to Russia). The outstanding question still remains where the Wahlberg's Eagle R 137 overwinters. Southern African rings have produced absolutely no result (Sub Saharan Africa?), and a wing-tagging project - involving colour tags with numbers visible at a distance - has now been undertaken to attempt to solve this problem.

The birds are then colour photographed from back and front, with wings stretched out in a particular way (so that wing area, in cm^2 , can be determined later from the projected slide). The ring number, a scale, and photographic colour control charts are included in the photo. In this way it is hoped to build up a total collection of all plumages of all age groups, sex variations, and colour variations, in as many raptor species as possible.

Certain species appear to have only 2 plumages (juvenile and adult) but have considerable variation between individuals e.g. Rock Kestrel R 123. Here probably 100 or more individuals will have to be photographed to obtain a reasonable idea. Species with only 2 plumages and little variation between individuals e.g. Chanting Goshawk R 165 need a smaller collection. Other species again e.g. Tawny-Steppe Eagle R 134/5 have 3-6 subadult plumages and an adult plumage(s), with considerable variation between individuals in each plumage. A fully representative photographic series of such birds would probably involve several hundred photos.

Good photographs of perched or flying (untrappable) birds are also collected to attempt to increase the number of plumage types. Fresh road kills and captive birds are also photographed and measured if available.

Good flight shots of all species in various flight attitudes, even if only in silhouette, are also collected to help clarify species identification on the wing, and to help understand various modes of flight.

The third part of the processing involves detailed measurements with calipers and sliding tapes, of head structure, leg structure, and tail structure. There are about 25 measurements in all, and they are used in functional calculations such as:

$$\text{Swallowing volume} = \pi \left(\frac{\text{gape width}}{2} \right)^2 \times \text{gape length}$$

Preliminary analysis of data shows, for instance, that Snake eagles have a swallowing volume almost twice the size of that

of Martial or Hawk Eagles.

Wing Structure length = humerus length + ulna length + wing length.

Preliminary analysis shows that the wing structure length of the Black-breasted Snake-Eagle is far greater than that of the Aquila eagles.

In the early stages of the project problems were experienced with accuracy of measuring, but the sources of error were investigated and a quality control check instituted. The exact range of accuracy of each measurement is now known, and all new measurers joining the project have to standardise with the original measurers.

Laborious manual analysis of data with a hand calculator produced promising results, and it was decided to collect data for a trial computer run later this year. At least 20 individuals of each species (20 of each sex for sex characters) must be collected to produce reasonable results.

Other data collected includes full state of moult, notes on body condition, ectoparasites, and mass (in g). The wing loading ($\frac{\text{mass}}{\text{wing area}}$) is then calculated later.

If a measured bird is retrapped, it is remeasured for interest but not for the series. (Most raptors appear to fledge from the nest 'full grown' i.e. their final size, and with few exceptions (Bateleur) do not undergo changes in shape of wing or tail). Change in mass and progress in state of moult is naturally noted.

While travelling on the roads looking for raptors to trap and photograph, a count of raptors seen is kept, with a note made against each entry of the veld type, the locality, the time, and the activity (perched, soaring, eating etc.). This is not, as originally thought, of much use in censusing raptors, but it has added to knowledge of distribution and daily activity patterns. Each hunting attempt is noted in as much detail as possible, with an entry SHA (successful hunting attempt) or UHA (unsuccessful hunting attempt).

Trapping Potential of SWA

Central SWA. is a trapping paradise, for the following reasons:

1. Terrain generally open.
2. Few perches in semi-desert areas - birds use telephone poles.
3. There is generally a high density of raptors (less so in the Khomas Hochland) with tremendous buildups often seen after good rains in the semi-desert areas.

Particular success can be achieved in trapping large numbers of:-

- R 114 Lanner
- R 122 Greater Kestrel (Pro-Namib, Kalahari)
- R 123 Rock Kestrel
- R 141 African Hawk Eagle
- R 142 Martial Eagle
- R 146 Black-breasted Snake-eagle
- R 165 Chanting Goshawk

Also fairly common and trappable are:-

- R 117 Red-necked Falcon (Pro-Namib)
- R 120 Western Red-footed Kestrel (migrant following rain)
- R 126 Pygmy Falcon (Pro-Namib, Kalahari)
- R 130 Black-shouldered Kite (locally common e.g. Okahandja, Kalkfeld)

Inhalt: Dr. H.C. Biggs: South West African Contribution to Raptor
Measurement and Plumage Study
Anfrage aus der Bundesrepublik Deutschland

Fortsetzung von Seite 3:

- R 137 Wahlberg's Eagle (Bushveld)
- R 152 Jackal Buzzard)
- R 153 Augur Buzzard) (Khomas Hochland)
- R 154 Steppe Buzzard
- R 161 Shikra (Little Banded Goshawk)
- R 162 Gabar Goshawk

Present in large numbers, difficult to trap:-

- R 128/9 Black and Yellow-billed Kite
- R 134 Tawny Eagle (have trapped one)
- R 135 Steppe Eagle (rain migrant; have trapped one)

Any persons interested in obtaining more information

- (i) About the project in general, should contact
Dr A.C. Kemp, Bird Department, Transvaal Museum,
P.O.Box 413, Pretoria 0001, RSA.
- (ii) about raptors or raptor-trapping in SWA, should contact
the author, P.C.Box 20120, Windhoek 9100, SWA.

WELCHER FARMER BIETET EINEM VOGELLIEBHABER UNTERKUNFT?

Wir erhielten von Herrn Albert Hausmann, Küpershof 18, D-4650 Gelsenkirchen / BRD, die folgenden Zeilen:

"... Heute moechte ich Ihnen nur kurz mitteilen, dass ich Ihrem Rat entsprechend bei den von Ihnen empfohlenen Farmern angefragt habe, ob ich auf deren Farm evtl. fuer 14 Tage zwecks Vogelbeobachtung unterkommen kann. Hoffentlich wird meine Anfrage wenigstens von einer dieser Familien positiv beantwortet. Ich werde ja bestimmt keinerlei Umstaende machen.

Seit dem 6. April bin ich nach einigen Tagen Aufenthalt in der Vogelwarte Helgoland hier im Seevogelschutzgebiet Wangerooge-Ost. Die Brutvoegel sind bereits hier eingetroffen, sitzen aber noch unlustig herum, denn es ist doch noch recht kalt. Wir haben Temperaturen von nur 8 bis 10 Grad C. Noch stehen hier an den Flutsaeumen tausende nordische Limikolen, die sich nicht entschliessen koennen weiterzuziehen. In deren Brutheimat Skandinavien ist es ja noch kaelter als bei uns zur Zeit..."

Welche Farmerfamilie haette Freude daran, Herrn Hausmann fuer eine kurze Zeit aufzunehmen?

Beitraege erbeten an die Redaktion; Veroeffentlichungen in der Sprache des Einsenders; Nachdruck nur mit Quellenangabe; die Gesellschaft traegt keine Verantwortung fuer die von den Autoren vertretenen Ansichten; als Schriftleiter verantwortlich: W. Sydow, Frau M. Zingel (Verlagsassistentin).
