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references in the study of
bird and mammal distribution

Ethnographers have made good use of the earliest literature on the indigenous populations of the African sub-continent as a practical means towards an appreciation, not only of the life and times of those primitive peoples, but also of many a more remote problem touching even the archaeological field, such as the use of bored-stones, ostrich-eggshell beads and so on.

Although zoologists have dipped into and used these works from time to time there has been no real effort to extract data systematically volume by volume, and to present it in a readily available form with species related to localities and with the whole indexed for ready reference.

Having experienced the value of these early records in both mammal and bird work, not only for academic purposes, but also for their practical application in modern nature conservation, I feel that their value should be given some prominence.

The critical years are, perhaps, from 1652 to about 1800, although later works must be no more neglected than the more meagre records of the earliest Portuguese and French explorers before 1652. For most of us, translations of many books and papers will be necessary, but fortunately the careful records of the Cape kept under Jan van Riebeeck's orders and now translated into both English and Afrikaans, form a valuable starting point even though no zoologist was amongst his first colonists. It is here, for instance, that we read of South Africa's first efforts to protect game and to control vermin, and it is here, from history, that we are able to assess how the twin policy of fines for game poaching and bounties for vermin destruction have resulted in the steady extermination of the game and the stubborn persistence of much of the vermin!

My first serious introduction to the value of past journals came during a study of the spread of the Cattle Egret, *Bubulcus ibis*, throughout the sub-continent. With scientific literature meagre in its references, the obvious alternative was the historical literature, using the argument that, as the bird is so conspicuous, not only in its whiteness and in its flocking habits, but also in its preference for consorting with cattle and game, the traveller-diarist would surely make reference to it, the more so when it was considered that his mode of transport was the ox-waggon around whose oxen when outspanned the egrets would be likely to gather. But in no instance in the fifty or more appropriate books scrutinized did an author refer to this bird, whereas many a lesser bird, and its passing habits, received his

attention. On the basis of this negative evidence, plus the lack of later scientific and near-scientific records, it was safe to assume that the bird had not been a common inhabitant within recent times.

My next serious application to the historical record came when the National Parks Board of Trustees commissioned a documented list of the mammals which were known to have occurred in the Uitenhage and Cradock districts in order to help them plan the restocking of their national parks at Addo and Cradock (Skead 1958). For this I consulted at least 100 books of which about 30 provided reliable extracts. It proved a tough assignment involving, apart from the obvious theme, the thorny Bontebok-Blesbok controversy (in itself a major task of elucidation); and the controversial distributions of Burchell's Zebra *Equus burchelli*, the Blue Wildebeest *Gorgon taurinus*, the Gemsbok, *Oryx gazella*, the Black Rhinoceros, *Diceros bicornis* and many lesser mammals.

The work entailed in this project brought home to me the necessity for a series of extracted schedules ready for the use of zoologists. It was apparent, too, that, apart from any distributional data which would emerge, some appreciation of population dynamics beyond such oft-repeated inanities as "... game in countless thousands" would be obtained. More important, perhaps, was the occasional remark relating the mammal to its environment and the condition or nature of the vegetation, be it in drought or time of plenty.

But there were also the negative results. Why was there never a mention of Buffalo *Syncerus cafer* and Kudu *Strepsiceros strepsiceros* in the Great Fish River Valley north of Cookhouse, when they were frequently mentioned below that point? If we follow Sargent (1954) who has tried to correlate place names with mammal distribution, Buffalo would have been near Cradock, for was not Olive Schreiner's farm named "Buffelshoek"? Yet nobody has thought to write about Buffalo there, in country where they certainly could have thrived.

Such minor controversies serve a useful purpose in bringing a sense of caution and proportion into one's enthusiasm and make one realise that each deduction must be based on its merits, and on its probability in the light of other records and of what we now know. On this score it is most important that the extractor of historical records be not impressed or influenced by the repetition of a statement by author after author, if that statement is no more than an opinion, as in the case of the cock's-nest in a Penduline Tit's nest or the hermaphroditism of the Hyena. Such misconceptions are sometimes found in the distributional record too and must be guarded against, lest their repetition from author to author give them false provenance.

On the other hand, it not infrequently happens that, where an author's description has the reader confused as between one animal and another, some slight remark, even in a literary aside, touches on the very characteristic which marks that animal from its near relative, such as the white hairs on a Grysbok *Raphicerus melanotis*, absent in the Steenbok *R. campestris*. Another check on hasty assumption is the fact that the finding of a skull or bones in an improbable area (based on past records) may be explained by their having been taken there as a trophy, later to be discarded when the interest of the hunter evaporated. This is especially the case with elephant tusks, but even here other discoveries in contiguous localities can be used as corroborative evidence in association with an appreciation of the general environment.

Many of the early writers gave incomplete descriptions of the pigs they saw and it is largely because of this inadequacy that our knowledge of the distribution of the Warthog *Phacochoerus aethiopicus* is so lamentably inexact. Hyenas also suffer in this way, being too often lumped as 'wolves'. But in their case a lack of proper reference is of less concern than with the pigs because enough other data exist to present the picture as a whole. A strange lack of perception in the beholders occurs in their occasional inability to differentiate be-

tween the extinct Quagga *Equus quagga* and the Mountain Zebra *Equus zebra*, whose more complete locality-records we would dearly like to have.

Archaic nomenclature, tiresome though it is, need not present serious difficulties to the modern scientist when collating. Synonymies can help, particularly nowadays when teams of systematists, such as the South African Ornithological Society's List Committee, are rationalizing the nomenclature in the light of modern knowledge. But there is no doubt that in some cases the use of the same generic or specific name for different animals can be very trying. This is the result of an author's incomplete knowledge of his subject. Priorities were of little or no concern to him at that stage of African systematics, as instance Thunberg's, Lichtenstein's and Sparrman's errors in the use of the words *scripta* and *pygurgus* in the then nomenclature of the Bontebok *Damaliscus dorcas dorcas*, the Springbok *Antidorcas marsupialis* and the so-called Harnessed Bushbuck *Tragelaphus scriptus*. At times, even colloquial names divert the thoughts, as when reference to the Mountain Antelope leads the reader to believe he is concerned with the Mountain Reedbuck, or Rooiribbok *Redunca fulvorufula*, only to find that the author means the Springbok. Here again some verbal aside, such as reference to the white dorsal mirror, suddenly clarifies the issue.

With experience one comes to assess the reliability of an author's perspicacity in the field and, may it be said, his veracity; yet, with one exception, none can be disregarded incontinently. The exception is Damberger (1801) of whose book Mendelssohn in his African Biography says: "...one of the cleverest volumes of fabricated travel ever produced."

The celebrated Thunberg, perhaps of more interest to botanists, is always worth reading if allowance is made for a certain credulousness to which he was prone. Le Vaillant enjoys considerable prestige amongst South Africans, yet is regarded with scant respect by his own country's scientists who prefer the greater reliability of Verreaux.

Even modern compilers and interpreters of the early journals, when converting old books and manuscripts into more readily readable form, liberally braced with explanatory footnotes and glossaries, often err in their deductions as in the instance where the extinct Blaauwbok, *Hippotragus leucophora* is credited to the Transkei in error for the Bloubok, or Blue Duiker *Philantomba monticola*.

In the matter of readability and accessibility of the old records the very greatest credit is due to the Van Riebeeck Society, not only for being the means whereby these records are preserved by their very dissemination throughout the country, but also in the high standards demanded of and produced by their author-collaborators. Zoologists cannot be too grateful to the Society for this service.

Whereas the early records, for obvious reasons, tend to emphasize the larger mammals and larger birds, and even the most conspicuous of these, the smaller creatures are not neglected by the more competent authors. It is here that a well compiled and indexed catalogue is of the greatest value because the amount of work involved in searching for the few records in volume after volume (never properly indexed), might well deter even the most enthusiastic, whereas with each record extracted once and documented in the correct place, all this is saved.

With a background of these facts I initiated a system for use in the Kaffrarian Museum whereby, as each volume was read, be it Burchell, Barrow, Thunberg, Livingstone, La Trobe or many another, the relative mammal record was noted down under the following headings across a sheet of foolscap:

DATE	PAGE	LOCALITY	MAMMALS SEEN
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Thus it became possible to know at the flick of a page where and when Burchell had met, say Blesboks, or any other likely mammal. If the enquirer needed more detailed information, the page reference showed him where to find it in the original printed work. The great

importance of this catalogue became evident when it had built up over many authors and their volumes. The general picture of a mammal's distribution then came into perspective and, if necessary, could be plotted onto distribution maps. As a side issue, the cataloguing of the routes taken by the travellers became of historical as well as of zoological value and, to date, 31 such volumes have been condensed into a single filing cover, each mammal indexed for ready reference, but with the localities still sorely in need of their own index.

Since joining the staff of the Percy Fitzpatrick Institute of African Ornithology and therefore having to concentrate on bird-life, I have started a catalogue which differs from the mammal catalogue in that it does not act also as a chronological record of a traveller's day to day journey. Each extraction is still in chronological order but only the actual bird records and their localities are noted. The page headings in this instance are:

REF. NO.	PAGE NO.	YEAR	LOCALITY	BIRD DATA
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Books listed in the bibliography are numbered as the extractions are made, e.g. No. 6 may be Barrow and No. 8 Lichtenstein; this is for convenience of compilation. The number, 6 or 8, appears under the heading Ref. No. and the page on which the bird reference is found appears in the next column. The other headings speak for themselves. The benefit of this system over that for the mammals is that under Bird Data far more information is extracted and entered where this is deemed necessary. But, as with all books, the essential ingredient in this idea is an adequate index. To that end the index is compiled as the work proceeds. After an hour or two of extracting and entering, the index is written up, the task of only a few minutes, but one which if left until a bulky tome is erected becomes arduous and formidable.

In the course of the next few years with my work taking me to many out-of-the-way places and into homes where family treasures lie hidden, it is hoped to unearth journals and manuscripts which may reveal fresh facts on our fauna. I firmly believe that such works exist and, although most will be more historical than zoological in their content and value, they will be well worth looking for.

Nobody need be deterred from using the old records merely because they are old and because they were written by people whose knowledge of the country and its animals was inadequate, as indeed it could hardly have been otherwise. Provided the safeguards and checks I have suggested are employed, a fair appraisal of events is always possible, and always valuable.

SUMMARY

This paper is a brief appreciation of the value to be obtained from studying the journals, etc. of early settlers and travellers in the compilation of distribution records and charts. It emphasizes the difficulties of interpretation and suggests precautions, and hints at pitfalls when extracting data. Finally, an outline of a system for recording extracted mammal and bird distribution notes to the best advantage is presented, emphasis being laid on the necessity for a good index in each case.

REFERENCES

- DAMBERGER, C. F. 1801. Travels through the interior of Africa from the Cape of Good Hope to Morocco. Translated from the German.
 SARGENT, J. V. 1954. Place Names and the Fauna of the Cape before 1800 A.D. Report No. 11. Department of Nature Conservation, Cape Province.
 SKEAD, C. J. 1958. Mammals of the Uitenhage and Cradock Districts in Recent Times. *Koedoe*, 1: 19-59.

DISCUSSION

- Mr. Liversidge:* Has Mr. Skead explored the diaries of Ludwig Krebs who collected extensively in the 1820's and sent his material to the Berlin Museum, most of it labelled simply "Inner Kaffraria"?
- Mr. Skead:* I know of the diaries but have not investigated them.
- Mr. Davis:* I have also come up against the problem of Krebs type localities which sometimes appear to be wrong. There is for instance, a *Steatomys* recorded from Graaff Reinet which simply does not occur there.
- Dr. Winterbottom:* Did Andrew Smith ever produce a diary of his journey to Namaqualand? Many new forms which he described from that area have no detailed locality.
- Mr. Skead:* I do not know whether there was such a diary, but the trouble about Namaqualand is that named places were so few and far between.
- Dr. McLachlan:* I have also thought it possible that there might be a diary of Andrew Smith, recording the Namaqualand journey; but Professor Kirby says there was none.
- Dr. Pringle:* Unpublished records may also form important sources of information. For instance Wahlberg's diaries (ca. 1840) are in the archives of the Uppsala Museum but have not been published.

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Distribution of birds
in relation to
vegetation

INTRODUCTION

To say that in the preparation of this paper my mind has swung back and forth in considering the possible importance of vegetation for birds, is simply to express the delightful unpredictability of bird distribution. For two points stand out from the many analyses made: The first is that a species in southern Africa so often changes its habitat from one end of its distribution to the other, that it is not necessarily safe to assume that because it is a forest bird in the south it will be a forest bird in the north. The second is that abnormal conditions such as coldness in the tropics or wetness in the south-west arid regions produce peculiarities that cloud the normal pattern of distribution.

This study of bird distribution concerns the species, not families or orders, as suggested by Winterbottom (1960) for the determination of faunal affinities. The approach here adopted is that of Chapin (1932) who states: "Each species must be studied by itself, after which it may often be included in some general scheme that will enable us to view *in a not too unnatural perspective* the wider aspects of bird distribution" [my italics]. In the attempt at such an analysis, the distributions of the first 600 species numbered in Roberts (McLachlan & Liversidge 1957) have been plotted. Time prevented the entire 875 being included. It is inevitable in such a vast project to lose some detail of the finer distribution lines or extremities of distribution in the endeavour to reduce the pattern to coincide with the accompanying six maps (Figure 1). The species chosen out of the first 600 are those which have been illustrated by maps in McLachlan & Liversidge; the sea birds and those that are not common or sufficiently wide-spread have been omitted, leaving a total of 423. These 423 include non-breeding migrants many of which have distribution pattern similar to locally breeding species, though naturally these birds would not be included in faunal groupings for zoogeographic consideration.

BIRD DISTRIBUTION PATTERNS

The patterns have been separated into east, north-east, north, central-north, west/north-west and south components for convenience and because this seemed to be the only obvious grouping. Not covered in these maps are a total of 61 species found throughout southern Africa and 45 species which have an unusual distribution, but these are listed in Table 1.