

NEW DISTRIBUTIONAL RECORDS OF BATS FOR THE
REPUBLIC OF SOUTH AFRICA, WITH SPECIAL
REFERENCE TO THE KRUGER NATIONAL PARK

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- Abstract* — Data on the distributions of seven species of bats in South Africa are discussed. Four species, *Hipposideros commersoni*, *Pipistrellus rueppellii*, *Tadarida ansorgei* and *T. fulminans* are reported for the first time from South Africa and all but *T. ansorgei* from the Kruger National Park. *Rhinolophus simulator* and *Kerivoula lanosa* are recorded for the first time from the Kruger National Park. The subspecies relationship of *Eptesicus hottentotus* in the eastern part of South Africa is reviewed.

Introduction

The small mammal fauna of the Kruger National Park was reviewed most recently by Pienaar, Rautenbach and De Graaff (1980). At that time 100 species were reported as occurring in the park. Subsequently Rautenbach & Espie (1982) reported two additional species of bats. As more information becomes available on the small mammals of the Kruger National Park it appears that the species richness of small mammals, especially bats, is as high or higher than in any region of South Africa. Consequently, a research project was initiated designed to lead to a better understanding of the repro-

ductive strategies of six of the most common but representative species of bats. This project centers on the bat populations in the extreme northern region of the Kruger National Park. As the project developed, additional information was acquired on even more species of bats.

At the same time, mammal survey work in other regions of eastern South Africa, particularly in a number of provincial reserves in the Natal Province, has added substantially to the understanding of bat distribution in the Republic as well as recording a species of bat not previously reported from South Africa.

This paper summarizes the distributional records of bats new for South Africa and also for the Kruger National Park. It is likely that as survey work continues in the lower elevations of the Natal Province and as more research develops on the small mammals of the Kruger National Park, additional new records of mammals will be made.

Materials and methods

Voucher specimens cited in this paper are deposited in the mammal collection of the Transvaal Museum, Pretoria (TM), or in the reference collection of the Kruger National Park, Skukuza (CHIR.NKW). Measurements were taken with a dial calliper and are expressed in millimetres. Coordinates for localities are listed only for the first reference to the locality.

Accounts of species

Hipposideros commersoni marungensis (Noack, 1887)

A single adult female of Commerson's leaf-nosed bat was mist-netted on 2 October 1983 under the riverine forest canopy at the Old Picnic Site (22° 26'S; 31° 18'E) along the Levuvhu River in the northern Kruger National Park. The specimen was originally accessioned in the Transvaal Museum Mammal Collection (TM36473) but is now deposited in the Reference Collection of the Kruger National Park (CHIR.NKW 167). Selected measurements of this individual are as follows: forearm, 92,2; alveolar condylocanine length, 27,6; and alveolar maxillary tooththrow (C-M³), 10,7.

This specimen of *H. c. marungensis* represents the first record of this species for South Africa (Smithers 1983). Smithers & Wilson (1979) and Smithers & Lobao Tello (1976) respectively record the species from the Sabi River region of Zimbabwe and in Mozambique as far south as 22°S.

Rhinolophus simulator K. Andersen, 1904

The Bushveld horseshoe bat has been reported from most of the Transvaal Province (Rautenbach 1982), central Mozambique (Smithers & Lobao Tello 1976), and northeastern Zimbabwe (Smithers & Wilson 1979). It has not been reported as part of the mammal fauna of the Kruger National Park (Pienaar 1963; Pienaar *et al.* 1980). On 16 June 1983 a single specimen (CHIR.NKW 165) was captured in North Cave, 5 km east of Metsi-Metsi Windmill on the Nwazwitsontso spruit (24° 48'S; 31° 58'E). This individual was a non-pregnant adult female. Selected measurements are as follows: forearm, 43,7; condylocanine length, 15,8; and alveolar length of maxillary tooththrow, 6,3.

Eptesicus hottentotus (A. Smith, 1833)

The long-tailed serotine bat (*Eptesicus hottentotus*) has been reported from the Pafuri area of the northern Kruger National Park (Rautenbach 1982; Rautenbach & Espie, 1982) and from the Itala Nature Reserve in Natal (Rautenbach, Nel & Root, 1981). Previously this species has been reported from the Drakensberg of Natal (Sclater 1901) and Zimbabwe National Monument, Zimbabwe (Smithers & Wilson 1979). These new records close the distributional hiatus of the species in southern Zimbabwe and eastern South Africa. The Itala Nature Reserve specimen (TM31756) is an adult male that is referable to the nominate subspecies based on large size (forearm, 50,2; greatest length of skull, 21,3) (Schlitter & Aggundey, *in press*). In South Africa the nominate subspecies occurs generally in the southwestern and western Cape Province. The Kruger National Park specimens are referable to the smaller subspecies, *E. h. bensoni* Roberts, 1946 which occurs in Zimbabwe, Zambia, Malawi, and Mozambique. Of the six KNP specimens available, two adult males (TM34239, TM36879) from Anthrax Camp (22° 25'S; 31° 12'E) and Fig Tree Camp (22° 25'S; 31° 11'E), respectively, show forearms of 47,7 and 47,8 and greatest length of skull of 19,1 and 18,3. Additional specimens from the intervening area will be required to understand the morphometrical relationships of the two subspecies in this region of southern Africa.

Pipistrellus rueppellii rueppellii (Fischer, 1829).

Rueppell's bat occurs over much of the savanna of Africa but has not yet been reported from South Africa (Smithers 1983). Smithers & Wilson (1979) report the species from the Pesu River Gorge (22° 16'S; 31° 12'E) of Zimbabwe, about 6 km northeast of the Limpopo River international boundary. Recent captures with the aid of mist nets in the Pafuri area of the northern Kruger National Park verify the occurrence of Rueppell's bat in South Africa. Six individuals from three collecting sites have been retained as voucher specimens while more than a dozen were released at the time of capture. Four specimens of this species were retained from samples taken at Fig Tree Camp. These specimens, which are adult unless otherwise indicated, were captured on 1 September 1983, 28 November 1983 (subadult male), 27 January 1984, and 2 April 1984. One specimen each was retained from Levuvhu River Bridge (22° 25'S; 31° 13'E) on 25 April 1984 and the Old Picnic Site on 27 May 1984. Selected measurements of an adult male (TM37034) and female (TM36791) are as follows: forearm, 33,6, 36,9; condylobasal length, 13,4 13,6; and alveolar length of maxillary tooththrow, 4,8, 5,1. Judging from the charcoal colour of the pelage and wing membranes, the specimens from the northern Kruger National Park should be referred to the nominate subspecies rather than to *P. r. vernayi* Roberts, 1932.

Kerivoula lanosa (A. Smith, 1847)

Two species of woolly bats of the genus *Kerivoula* occur in southern Africa but neither is well known (Smithers 1983). Rautenbach, De Graaff & Pienaar (1979) reported an adult male of *Kerivoula argentata* Tomes 1861 as the first record of the genus from the Kruger National Park. Subsequently a single specimen of lesser woolly bat (*Kerivoula lanosa*) was collected in the

Pafuri area of the park. This individual, a subadult male (TM36960), was captured on 12 April 1984 in mopane woodland at the junction of the Nyala and Main roads (22° 26,5'S; 31° 13'E). The specimen was taken with a harp trap set in front of a corrugated iron culvert under the main road. Rautenbach *et al.* (1979) expected this species to be taken in the park as it was known from the Njelele River, ca 60 km west of the park. Selected measurements of the specimen are as follows: forearm, 31,3; condylobasal length, 11,7; and alveolar length of toothrow, 4,9.

Rautenbach (1982) referred the Njelele River record from the Transvaal Province to the subspecies *K. l. lucia* Hinton, 1920. This new record is a subadult with incompletely fused epiphyses in the wings and is not in adult pelage, thus it can not be referred with certainty to any subspecies. Cranial measurements seem to agree more with those of *K. l. lucia* as listed by Hill (1977).

Tadarida ansorgei (Thomas, 1913)

The distribution and systematics of Ansorge's free-tailed bat was reviewed by Eger & Peterson (1979). The southernmost record for the species was reported by them (*op. cit.*: 1889-1890) from Gwelo in central Zimbabwe. Smithers & Wilson (1979) map its occurrence on the Sabi River in southeastern Zimbabwe. On 25 September 1982 an adult female Ansorge's free-tailed bat (TM35351) was captured in a mist-net set in the Mkuze riverbed north of Mthlopi in the Mkuze Game Reserve (27° 47'S; 32° 12'E). The reserve is located in northeastern Natal Province. This specimen of *T. ansorgei* represents the first record for this species in the Republic of South Africa.

Eger & Peterson (1979) point out the morphological similarity between *T. ansorgei* and *T. bivittata*. Based upon the small size of this Natal specimen and the score resulting from the classification coefficients given by Eger & Peterson (1979), we identify this individual as *T. ansorgei*. Selected measurements of this specimen are as follows: forearm, 46,7; second phalanx of fourth digit, 11,1; condylobasal length, 17,5; mastoidal breadth, 10,7; height of braincase, 6,4; interorbital width, 6,2; and alveolar length of maxillary toothrow, 6,9. The female weighed 15,0 grams. This specimen does not exhibit the dark colour of the pelage on the chin found on more northern individuals. Rather the pelage of the chin is reddish brown in colour and is darker than the hairs of the remainder of the belly. Dorsally the individual is in the reddish brown colour phase.

Tadarida fulminans (Thomas, 1903)

The Madagascar large free-tailed bat was originally recorded from Madagascar but is now known to be widespread although localised in eastern Africa (Smithers 1983). Up till now the species has not been reported from South Africa. Three specimens have now been mist-netted in the Pafuri area of the northern Kruger National Park. An adult female, captured on 2 October 1983 under riverine forest canopy at the Old Picnic Site, was formerly accessioned as (TM36474) but is now deposited in the reference collection of the Kruger National Park as (CHIR.NKW 168). A second specimen, an adult male (TM 37083), was taken on 28 May 1984 at the same locality. Another

adult male (TM37033) was caught on 25 April 1984 at the Levuvhu River Bridge. Selected measurements of an adult female (CHIR.NKW 168) and male (TM37033) are as follows: forearm, 58,1, 57,7; condylobasal length, 21,2, 21,5; and alveolar length of maxillary toothrow, 8,4, 8,7.

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