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NOTES ON BATS (MAMMALIA: MICROCHIROPTERA) FOUND IN THE TAUNG DISTRICT, BOPHUTHATSWANA, SOUTH AFRICA

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SUMMARY

Notes are published on a small collection of Microchiroptera from the Taung district, Bophuthatswana, in the Republic of South Africa, consisting of specimens of the following species: *Rhinolophus denti*, *Rhinolophus* cf. *capensis*, *Nycteris thebaica*, *Eptesicus hottentotus*, *Eptesicus capensis*, *Miniopterus schreibersii*, and *Tadarida aegyptiaca*.

INTRODUCTION

The knowledge of the distribution of many species of bats in the South African subregion and elsewhere remains patchy. An extensive study was undertaken by Herselman & Norton (1985) to determine the distribution and status of bats in the Cape Province. They suggest that for a more accurate picture of the uncommon, solitary species, there is a need for more intensive, localised netting programmes.

This study endeavoured to compile a species list and make behavioural observations of the bats found in the Taung district of Bophuthatswana, an area partial excluded by Herselman & Norton (1985).

METHODS

This study was conducted between April 10 and July 5, 1985. Taung is a district of Bophuthatswana, one of the so-called "homelands", situated in the Northern Cape Province of the Republic of South Africa (Locus- 2724 DA).

Two mistnets and shotgun were used for collection. Specimens were killed with ether or chloroform and preserved in 70% alcohol. Time and temperature at collection were recorded.

Mistnets were set at six different locations: (1) between two trees by the Harts River; (2) next to a maize field among a row of trees; (3) next to a small irrigation dam; (4) by the lip of a river gorge; (5) in the gardens

of residential houses on the university campus; (6) in front of a mine tunnel (Norlim), and Norlim Quarry (Thomeng).

Mistnets were set just before sunset for a varying time period, usually dependent on bat activity for a total of 38 net hours.

SPECIES ACCOUNT

In the following account museum number is given, Fa = forearm, TL = total length, T = tail length, Hft = hindfoot length from heel to end of claw, E = ear length from the notch of the ear to furthest extremity of the cartilage of the ear, W = weight in grams. All measurements are in mm and were taken by the author.

Specimens are deposited at the Zoölogisch Museum Amsterdam (ZMA). Hayman & Hill (1971) and Mammals of South Africa (Smithers, 1983) were used for determinations. Determinations were verified by Wim Bergmanns (ZMA).

RHINOLOPHIDAE

Rhinolophus denti Thomas, 1904

ZMA 22.652: 1♂, 5-VII-1985, Fa 41, TL 60.1, T 22, Hft 8.1, E 15.3, W 6.7, disused Norlim Quarry, Thomeng, 3 km south of Buxton (27°42'S 24°36'E).

This species was last recorded from the Cape Province, from Louisvale near Upington and Kuruman before 1940 (Roberts, 1951). Taung district is 350 km east of the known range for *R. denti*. Smithers (1971) reported this species from Khuis on the Molopo River, Botswana, which is 300 km to the north. There seems to be no reason why it should not still occur in the Northern Cape though Herselman & Norton (1985) suggests it may be very rare or even extinct.

This specimen was collected in a ruined mine structure which formed a 2 x 2 x 20 m cement, semi-dark room in a hillside. The specimen was roosting on the ceiling at the rear of the room with another species of *Rhinolophus*, which was not collected. Staining on the ceiling suggested three other resting places, 0.5 to 1 m apart, of undetermined species. As the author

reached the rear of the room, a large *Rhinolophus* left its roost and flew up and down the room whereas the *R. denti* remained at its resting place even when the author came close to observe with a torch.

Lack of recent records from the Cape, its behaviour, and the isolated location where the specimen was collected may suggest that it is greatly affected by human disturbances.

Rhinolophus ?capensis Lichtenstein, 1823

ZMA 22.651: 1♂, 10-V-1985, Fa 50.1, TL 82, T 27.5, Hft 10.4, E 17.5, W 17.7, disused mine tunnel, Norlim (Buxton) (27°37'S 24°37'E). The specimen was netted at 22.10hr (17.5°C) as it left the mine tunnel.

The taxonomy of this species is still unclear. Hayman & Hill (1971) use the presence of the premolar within the toothrow to differentiate *capensis* from *clivosus*. In this specimen the premolar appeared to be in the toothrow excluding *clivosus* and *darlingi*. Due to the similarity of *darlingi* and *capensis* and the overlapping degree of variation, Erasmus & Rautenbach (1984) differentiate between these two species on allopatry; *capensis* being restricted to the coastal areas of the southern and south-western Cape (Hayman & Hill, 1971; Smithers, 1983).

Herselman & Norton (1985) and Erasmus & Rautenbach (1984) identified specimens from this locality as *R. darlingi*. Due to the ambiguity in differentiating between these two taxa, it may be assumed that the specimen collected in this study and the specimens collected by Herselman belong to the same taxon.

NYCTERIDAE

Nycteris thebaica E. Geoffroy, 1818

ZMA 22.650: 1♂, 10-V-1985, Fa 45.6, TL 95, T 47.2, Hft 11.9, E 33, W 13, disused mine tunnel, Norlim (Buxton). The specimen was netted at 22.45hr (16°C) as it flew out of the tunnel.

N. thebaica is widely distributed over most of Africa (Hayman & Hill, 1971). This species has not been reported from the Northern Cape, how-

ever Herselman & Norton (1985) state it occurs throughout the western, south-western and eastern parts of this province.

VERSPERTILONIDAE

Eptesicus hottentotus A. Smith, 1833

ZMA 22.663: ♀, Fa 51.4, TL 124, T 45.6, Hft 11.4, E 14.1, W 25.3.
 ZMA 22.664: ♀, Fa 50.3, TL 122, T 46.6, Hft 9.4, E 14.8, W 24.4.
 ZMA 22.665: ♂, Fa 47.7, TL 112, T 40.8, Hft 12.3, E 14.2, W 20.4, 10-V-1985, disused mine tunnel, Norlim (Buxton). The two females were netted flying out of the tunnel at 20.45hr (19°C) and 21.40hr (17°C) and the male flying in at 23.30hr (16°C).

Five specimens were collected by Herselman (1980) from a small hollow at the tunnel entrance at this location between 1976-79. The tunnel is situated near a permanently-filled dam, fed by springs. The dry river course above the dam is fairly wooded.

Eptesicus capensis Smith, 1829

Sixteen *E. capensis* were caught (10 males, 4 females, 2 not sexed). Of these 9 were preserved (ZMA 22.653 - 662), 8♂, Fa 33.7, TL 83.3, T 28.9, Hft 7.6, E 11.1, 2♀, Fa 34.6, TL 85.0, T 30.1, Hft 7.5, E 10.5 (avarage measurement).

This species is by fair the most common species found in the Taung area. It was collected or seen in all habitats sampled and was common in residential areas especially in gardens with trees, over agricultural fields, and particularly numerous over small irrigation dams were 'sipping' was observed.

More males were collected than females. Males were collected from just before sunset and onwards, whereas no females were collected before 20.00hr.

Resting places observed included: a small crevice formed on the ceiling of the room described above (at Thomeng); 3 flying from a mine tunnel (Norlim); cracks in roofs of houses; a single individual behind a seldom-used dart board in an open garage.

Below 16°C, activity of *capensis* (observation and collection) was greatly reduced. No aerial activity was observed below 10°C. Greatest activity occurred at 21°C and above.

Miniopterus schreibersii natalensis

Smith, 1834

Colony (ca 100-150 specimens) inhabiting old mine tunnel, Norlim (Buxton). Colony (20-30 specimens) at Thomeng, 3km south of Buxton. ZMA 22.666-674. 4♂, Fa 45.1, TL 105.5, T 48.1, Hft 10.2, E 9.7. 5♀, Fa 45.9, TL 106.4, T 46.1, Hft 10.7, E 8.9.

M. schreibersii is widely distributed in the South African subregion including the Cape Province. Herselman & Norton (1985) reported this species from the Norlim tunnel between 1976-79.

Emergence occurred shortly after sunset (May 11) (21°C). Bats were observed returning from 22.00hr (16°C) until 24.00hr (14.5°C), when the net was closed, and again between 05.30-06.15hr (10°C).

The colony at Thomeng was located 7-10m in a semi-dark room between a gap formed in the ceiling. As one was pryed from its resting place, it flew directly into the daylight.

Two species of dipteran ectoparasites (Nycteribiidae) were collected from three specimens of *M. schreibersii*: five males of *Nycteribia (N.) schmidlii scotti* Falcoz, and five males and six females of *Penicillidia (P.) fulvida* (Bigot). Eight ectoparasites of both species were found on one individual *M. schreibersii* female.

MOLOSSIDAE

Tadarida aegyptiaca (Geoffroy, 1818)

[*T. a. bocagei* (Seabra, 1900)]

ZMA 22.675: 1♂, 23-IV-1985, Fa 22, TL 108, T 41, Hft 9, E 17, W 14.9: Taung village (co-ordinates: 27° 35'S 24°47'E); netted as it flew between houses on the univeristy campus, Taung at 18.40hr (18°C).

Though not recorded from the Taung area by Herselman & Norton (1985), this species occurs

widely over the South African subregion (Smithers, 1983).

CONCLUSION

E. capensis is the most common and widespread species in this area. *M. schreibersii* and *T. aegyptiaci* are within their known range. *R. denti*, reported herein, from Taung extends easterly its known distribution and shows that it is still present in the Cape Province. Presence of *E. hottentotus* indicates this isolated population is stable.

The mine tunnel at Norlim produced 5 of the 7 species collected. The semi-dark room at Thomeng had 4 species. These two locations are the only known suitable sites for cave-dwelling species in the area.

This study occurred during the autumn and winter months when bat activity was reduced. Sampling during the summer months would provide a clearer picture of species present and may indicate movements of certain species.

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REFERENCES

- ERASMUS, B.H. & I.L. RAUTENBACH, 1984. New records of occurrence of six species of mammals in the northern Cape Province.- *S. Afr. J. Wildl. Res.*, 14: 91-96.
- HAYMAN, R.W. & J. EDWARDS HILL, 1971. Order Chiroptera, 2: 1-73, in: J. Meester & H.W. Setzer (eds), *The Mammals of Africa: an identification manual*. (Smithsonian Institution Press, Washington D.C.).
- HERSELMAN, J.C. & P.M. NORTON, 1985. The distribution and status of bats (Mammalia: Chiroptera) in the Cape Province.- *Ann. Cape Prov. Mus. (nat. Hist.)*, 16 (4): 73-126.
- ROBERTS, A., 1951. *The Mammals of South Africa*. (Trustees of the Mammals of South Africa Book Fund, Johannesburg).
- SMITHERS, R.H.N., 1971. *The Mammals of Botswana*. (Trustees of the National Museum of Rhodesia, Salisbury).
- , 1983. *The Mammals of Southern African Subregion*. (University of Pretoria, Pretoria).

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