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African Bat Conservation News

Inside this issue:

Above: Wahlberg's epauletted fruit bat (*Epomophorus wahlbergi*), Ngala Lodge, Kruger National Park, August 2002– **ECJ Seamark**

Download sites for ABCN:

http://www.nfi.org.za/mammal/abcn/ABCN.htm

http://flyingfur.typepad.com/abcn/abcn.html

Notes from the Editor:

The year of the rooster, has started off so fast, that I still feel as if I'm in 2004. Is time speeding up, or am I getting older and can not pack in as much as in the past?

Talking about time, it has come to my attention that Dr. Wim Bergmans, has recently retired from the Amsterdam Museum. Dr. Bergmans is well known for his contribution to the taxonomy and ecology of African fruit bats (Megachiroptera), he has discovered and described numerous new species of African fruit bats (See Recent literature for latest paper). I hope that Dr. Bergmans uses his retirement to undertake all the activities that he has been putting off for so long. But I do hope that he will keep his guiding hand and his vast knowledge of African Megachiroptera available to us future taxonomists/conservationists.

A recent competition was held in the University of KwaZulu Natal, involving the electronic departments, where final year students teamed up to create business and also to develop workable products. One team took on the project of designing a low cost bat datalogger (see page 2 for further details). I hope that this project does not end but is pursued as a viable option, after the students graduate.

— **Ernest C.J. Seamark**

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RESEARCH AND CONSERVATION ACTIVITIES

BioAdvanced Tecnology System (BATS)

BY: Kavish Misthry, School of Electrical, Electronic and Computer Engineering University of KwaZulu-Natal Durban South Africa. Email: 201295797@ukzn.ac.za.

I am a part of a group of final year electronic engineering students (known as the B.A.T.S. Team) at the University of KwaZulu Natal. We are in the process of producing a data logger/loft monitor for the purposes of recording technical data regarding the behaviour of bats living in the lofts of houses/buildings. We are conducting a survey regarding the viability of our proposal and how we could make it useful to conservationists and/or scientists. See below for information about the Bat Logger 2005.

BAT LOGGER 2005

The Bat Logger 2005 has a dual range of data acquisition and the data logging system is real time and stand alone, it has the ability to acquire, process and log data without direct computer control. The powerful yet easy-to-use hardware and software enables you to log a wide range of measurements. The Bat Logger 2005 is a low cost device which is easy to use. This will make it accessible to all bat enthusiasts from all over the world.

It has a low power consumption which is not only environmentally safe but also has the added benefit of lasting for at least 6 months between battery changes. The batteries will be rechargeable further promoting environmental awareness.

The Bat Logger 2005 will be robust and rugged. This durable casing will allow the Bat Logger 2005 to be able to withstand unwanted effects of water damage and other weather conditions. The sturdy construction of the Bat Logger 2005 will also provide years of trouble free usage.

Applications

The Bat Logger 2005 is compact and easy to transport. It is also rugged and robust and this durability will enable the user to implement the device in a variety of environments where one may find bats.
These include lofts, caves, bat houses, buildings and mines.

How to use Bat logger 2005

The user does as little as possible to use the device. This user friendly attribute of the product means that the user simply has to insert the batteries switch the device on and place it in the required environment. Thereafter the user will simply remove the Bat Logger 2005, download the data onto his PC via USB 2.0, re-insert new batteries and place the device in the environment.

Technical specifications

Accuracy

Measurement at	25°C	–45°C to 60°C	DC
Voltage	0.15%	0.25%	DC
Current	0.25%	0.35%	DC
Resistance	0.20%	0.30%	

Temperature and Humidity Sensor

The SHT15 Temperature & Humidity sensor is ultra low power consuming less than 30µW and has a response time of at least 5 seconds. It offers a temperature accuracy of 0.5ºC and humidity accuracy of ±2% RH.

USB 2.0 Speeds

High Speed	-	480 Mbits/sec Full Speed
	-	12 Mbits/sec Low Speed
	-	1.5 Mbits/sec

Accessories included

Cables:	1.5m USB 2.0 cable, battery charger
Software:	Interface software to MS Excel & MS Access
Manuals:	“Getting Started with Bat Logger 2005” User’s Manual

Dimensions

150(L)x90(W)x50(H)mm, Weight - 125g (excl. battery)

Warranty

The Bat Logger 2005 is covered by a 2 year warranty on workmanship and parts. For further information on the Bat Logger 2005, or for useful downloads, visit the BATS web site at bats.5u.com or contact your nearest dealer.

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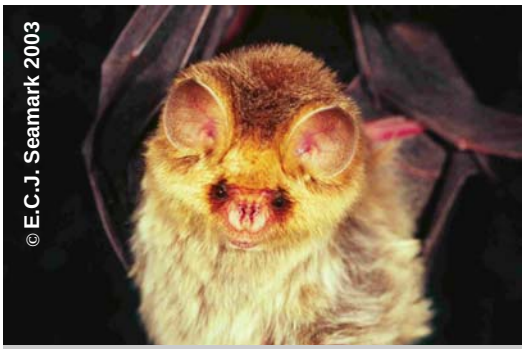
SCIENTIFIC CONTRIBUTIONS

African Bat Conservation News publishes brief notes concerning the biology of bats, new geographical distributions (preferably at least 100 km from the nearest previously published record), sparsely annotated species lists resulting from local surveys including roost counts and echolocation and sonograms of bat species occurring on the African continent and adjacent regions, including the Arabian peninsula, Madagascar, and other surrounding islands in the Indian and Atlantic oceans.

Correction and update of distribution data for *Cloeotis percivali* Thomas, 1901 (Chiroptera: Rhinolophidae: Hipposidernae) in southern Africa

BY: Ernest C.J. Seamark (507 San Martino, 199 Troye Street, Pretoria, 0002. Email: tehome@mweb.co.za).



Above - Short-eared trident bat (Cloeotis percivali), from Miggies gat, Mpumalanga, South Africa, December 2002 (TM 46644).— ECJ Seamark

The short-eared trident bat (*Cloeotis percivali* Thomas 1901) occurs along the eastern parts of the sub continent, from Kenya in north-eastern Africa to northern KwaZulu Natal, South Africa (TAYLOR 1998). MICKLEBURGH *et al.* (2004) listed global populations as vulnerable (A2bc + A3bc; C1), while FREIDMAN & DALY (2004) listed South African populations as critically endangered (A2, a). *C. percivali* is known from ten quarter degree squares in South Africa (FREIDMAN & DALY 2004). Only two of these locations (cave in Sudwala area- Miggies Gat cave 2530BC and Jozini dam 2731AC), were known to be active roosts at time of assessment (D. Jacobs & P. Taylor *pers. comm.*, Transvaal Museum records, Durban Natural Science Museum records), the remaining 8 sites were seen to be historical as they range between 1915 and 1958, with one site Figaro mine (2531BC), visited in 1988 by I.L. Rautenbach (Transvaal Museum records), but it has not been visited since and I do not know if the roost still exists.

One location plotted in FREIDMAN & DALY (2004), is incorrect. This mistake arose through RAUTENBACH (1982), who examined specimens in the collections of the Transvaal Museum obtained from 5 locations (Komatipoort, Mooimesiesfontein, Rustenburg, Waterberg and Wonderboom). SKINNER & SMITHERS (1990) recognized three locations from the former Transvaal province (Pretoria, Rustenburg sector and at Komatipoort in the east). Examining the Transvaal Museum (TM) collections I found that three of the 5 locations cited by RAUTENBACH (1982) are the same location. I verified this using the Transvaal Museum mammal catalogue book, which shows the series TM 1669-1676 caught by "W. Powell" at "Mooimijsjesfontein Rustenburg" in "1915". The skin label of the type specimen for *C. p. australis* Roberts, 1917 (TM 1670), supports this, but the spelling in ROBERTS (1917) indicates the location as "Mooimeisjesfontein, Rustenburg". The skin labels for the remainder of the series vary in the spelling and region, reading "Mooimijsjesfontein, Rustenburg" (TM 1669, TM 1671, TM 1673), "Mooimysjesfontein, Rustenburg" (TM1672), "Mooiymysjesfontein, Waterberg" (TM 1674), "Mooimysjesfontein, Waterberg" (TM 1675), and "Mooimysjesfontein, Rustenburg" (TM 1676). Although the labels of TM 1675 and TM 1676 read Waterberg and Rustenberg respectively, both these specimens were caught on the same day (26/V/1915). Variations in spelling occur in ROBERTS (1951, 1953), where the type location for *C. p. australis* Roberts, 1917 is spelled "Mooimeisiesfontein", and in the description notes it is spelled "Mooimeisjesfontein". RAUTENBACH (1982) further complicates matters, where in the gazetteer it states "Mooimeisiesfontein, Farm 147; Thabazimbi 25°01'S, 27°37'E". The 1:50 000 map sheet (2527BA Assen) has the spelling "Mooimeisjesfontein 147 JQ", but this site is closest to the town of Assen and not Thabazimbi.

COTTERILL (2001) found two specimens from South Africa in the Royal Ontario Museum (ROM), (ROM 77892 & 77893; Rooiberg, 23°08'S, 28°24'E). Using the Microsoft Encarta World Atlas (1998 edition) and verified using the

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Readers Digest Atlas of South Africa (1984), I found no locations called Rooiberg near the coordinates given by COTTERILL (2001). The Readers Digest Atlas of South Africa indicates a mine at a Rooiberg locality (24°46'S, 27°44'E), in Limpopo Province. Further investigation is needed but this location probably should be read as – Waterberg area, 39 km SE Thabazimbi, Rooiberg (24°46'S, 27°44'E).

ROBERTS (1951, 1953), referred to an additional location for *C. percivali* "… a single juvenile specimen from Uitkyk Farm, Krugersdorp…" but he did not state where or if the specimen was accessioned, and I did not find specimens from here in the Transvaal Museum. By searching farm names, I found three farms with the name "Uitkyk" in Gauteng Province, all in the south eastern sections of Nigel and Heidelberg districts. Taking historical boundaries into consideration, Krugersdorp district would have extended into present day North-West Province and I found no farms with the name "Uitkyk" within a 100 km of the present day boundaries of Krugersdorp (Mogle City). The use of the word "Uitkyk" may be colloquial.

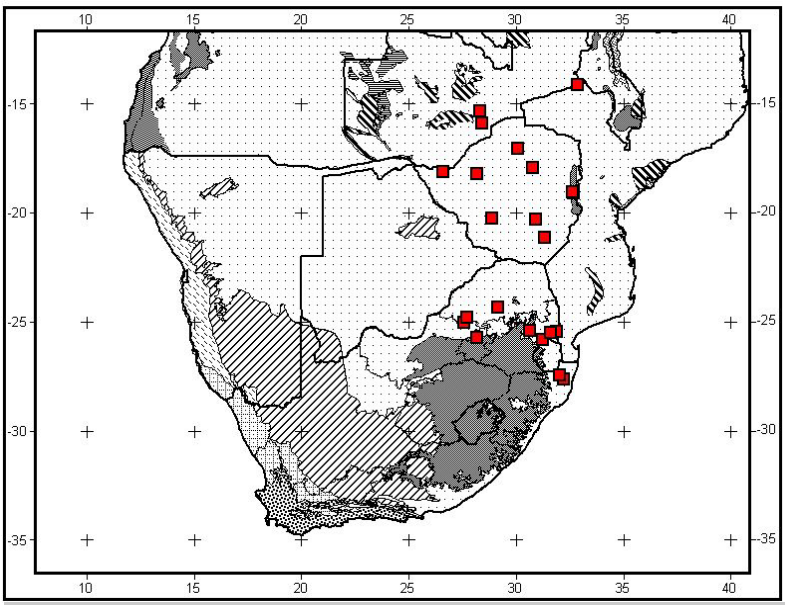

Figure 1: Distribution map of *Cloeotis percivali* superimposed on to a biome map for Africa. - -Savanna, -Grassland, - Succulent Karoo, - Nama-Karoo, - Fynbos, - Desert.

Figure 1 indicates point locations of known sites from which there are museum data for southern Africa (see appendix 1 for further details), overlaid on biome maps of RUTHERFORD & WESTFALL (1994), http://www.platzafirca.com/vegetation/vegmain.htm covering South Africa, Swaziland, Lesotho, Namibia and Botswana; while for the remainder of Africa OLSEN & DINERSTEIN (1998) and OLSEN *ET AL.*. (2001) http://worldwildlife.org/science/data/terreco.cfm biome code were used. This confirms the suggestion by SKINNER & SMITHERS (1990), that *C. percivali* is associated with the Savanna biome, even though some roosts lie very close to the areas where there is a transition between grassland and savanna biomes.

This species may be more numerous than the museum specimens indicate; ROBERTS (1956) suggested that this bat could "enter and leave through the narrow entrance by virtue of its small size, I anticipate that it will be found in other caves frequented by porcupines, which can squeeze through comparatively relatively narrow crevices to their safe retreats within". When entering Miggies gat to search for *C. percivali*, I found none, but that evening a harp-trap set at the entrance to the roost caught many (>35) *C. percivali* , and four additional species I had not seen when searching the roost. ROBERTS (1951, 1953) stated that "…series from Rustenburg district was procured by Mr. W. Powell when trapping porcupines with a wire-netting trap set at the entrance to caves in hillsides." Therefore alternative trapping methods should be used when surveying for *C. percivali*.

Acknowledgements

For collecting through the ages- A. Roberts, R.B. Copley, A.G. White and W. Powell, and in the future- Corrie Schoemann and Samantha Stoffberg. Brock Fenton, Peter Taylor and David Jacobs for comments and review of MS. Teresa Kearney for assistance and access to the collections of the Transvaal Museum.

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Appendix 1: Specimen details used in plotting figure 1. DNSM- Durban Natural Science Museum, Durban; KMMA- Koninklijk Museum voor Midden-Afrika, Tervuren; NHMZ- Natural History Museum of Zimbabwe, Bulawayo; ROM- Royal Ontario Museum, Toronto; TM- Transvaal Museum, Pretoria.

SOUTH AFRICA: GAUTENG: Pretoria, Wonderboom cave (25°41'S, 28°12'E): TM 2101- 2102. KWAZULU NATAL: Mkuzi, Mkuzi Game Reserve, Mantuma camp (32°37'S, 32°14'E): DNSM 1616, DNSM 4071. Pongola, Jozini, Pongolapoort Dam (Pongola dam), dams inspection tunnels (27°25'S, 32°04'E): DNSM 4570 – 4571, DNSM 4594 – 4596, DNSM 4598 – 4600, DNSM 4702 – 4703, DNSM 4805, DNSM 5100 – 5101, DNSM 6195 - 6201, DNSM 7115. LIMPOPO PROVINCE: 24 km SE Potgietersrus, Howel Davies Caves (24°20'S, 29°11'E): TM 34575 – 34577. Waterberg area, 39 Km SE Thabazimbi, Rooiberg (24°46'S, 27°44'E): ROM 77892 - 77893. MPUMALANGA: 11 km ENE Malelane, Figaro mine (25°27'S, 31°37'E): TM 39774. 3.2 km N Komatipoort (25°26'S, 31°56'E): TM 17503. Sudwala Caves area, Miggies gat cave (25°23"S, 30°41'E): TM 46644. NORTH-WEST PROVINCE: Assen, Farm: Mooimeisjesfontein 147 JQ (*syn.* Mooimysjesfontein, Mooiymysjesfontein) (25°01'S, 27°37'E): TM 1669 – 1676.

SWAZILAND: Wyldesdale (ca. 25°49'S, 31°16'E): TM 1987 – 1989.

ZAMBIA: Kafue Gorge (ca. 15°51'S, 28°27'E): KMMA 29243 - 29244, NHMZ 10067, NHMZ 10072 – 10075. Missale Old Mine (14°07'S 32°52'E): NHMZ 20103, NHMZ 20177, NHMZ 20189. Ngwerere cave (15°18'S 28°20'E): ROM 73970.

ZIMBABWE: Chinhoyi, Kaukua cave (17°02'S, 30°05'E): NHMZ 31143. Deka - Zambezi confluence (18°05'S, 26°38'E): HZM -. Esigodini, Falcon College (20°13'S, 28°55'E): NHMZ 56205, NHMZ 56526. Great Zimbabwe (20°16'S, 30°56'E): NHMZ 58497 – 58498. Harare, Lake Mcllwaine (17°54'S, 30°47'E): NHMZ 58474 – 58475, NHMZ 58492. Mutare (19°00'S, 32°40'E): NHMZ 19885, NHMZ 25859, NHMZ 33408 – 33410, NHMZ 58173 – 58175, NHMZ 58477 – 58491, NHMZ 58493 – 58496, NHMZ 58499 – 58506, NHMZ 58509 – 58517, NHMZ 58736 – 58737, ROM 64787 – 64803, ROM 64808 – 64810, ROM 64821 – 64822, ROM 64825 – 64828, ROM 64836. Triangle, MacDougall's Tunnel (21°07'S, 31°22'E): NHMZ 58507. Umtali mine adit (19°04'S, 32°41'E): DNSM 3685, DNSM 5183, TM 34662 – 34675, TM 34800 – 34801, TM 34809 – 34813, TM 38265. Sengwa Wildlife Research Station (18°10'S, 28°13'E): NHMZ 64805 – 64808, ROM 83964, ROM 87395, ROM 88422.

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RECENT LITERATURE

5th Southern African Society for Systematic Biology Conference

Goudini Spa, Western Cape Province, South Africa, 2-4 February 2005

Poster Presentations (5th Systematic Society of Southern Africa Conference)

TAXONOMIC INFORMATION SYSTEM (TAXIS) FOR AFRICAN CHIROPTERA MAMMALIA).

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Geographic Information Systems (GIS) modelling has become a valuable tool in conservation planning. Unfortunately, maps can lie just as easily as statistics and probably are believed easier. Errors in taxonomic identification, and circumscription together with spatial positions (latitude and longitude) and temporal habitation, are three of the major causes of error in GIS modelling, in turn inaccurate conservation plans. TAXIS (Taxonomic Information System – http://www.bio-tools.net) is a database software providing an interactive and user-friendly tool to facilitate processing of taxonomic information. The TAXIS 3.5 database has been used to collate taxonomic information, samples (museum vouchers), literature data, and geographic records for African bat species. Presently version 1.1 of the African Chiroptera database recognizes 420 taxa (5 superfamilies, 7 families, 54 genera, 275 species and 60 subspecies), including synonyms and associated references. Only a fraction of the available samples (16,383) have been recorded in version 1.1, but all samples have been examined by the authors. It is envisaged that over time additional collaborators will join the project and will manage the data at the generic level, keeping the necessary information up to date. Annually updated versions of the database, can be made available (via web), keeping non-taxonomic researchers (e.g. ecologists, and conservationists) informed on recent acceptable taxonomic changes, instead of waiting every 10-15 years for the next (pseudo popular press) publication or having to compile a listing from many different sources, to update their taxonomic understanding. As TAXIS 3.5 has GIS capabilities, this information can be used as the foundation for GIS modelling and hopefully the corrected taxa identification can be used in GIS modelling for conservation plans, in the future.

Paper Presentations (5th Systematic Society of Southern Africa Conference)


Samantha Stoffberg

MOLECULAR SYSTEMATICS OF SOUTH AFRICAN RHINOLOPHIDS (MAMMALIA: CHIROPTERA).

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The family Rhinolophidae (Bell 1836) consists of a single genus *Rhinolophus* Lacépède 1799. This genus is exclusively Old World with approximately 71 species occurring throughout the Africotropical, Australian, Indomalayan, Oceanian and Palaearctic regions. Ten of the African species of horseshoe bat occur in South Africa where they are widely distributed. Rhinolophid species are often distinguished on the basis of body size, position of the anterior upper premolar, and differences in the shape and size of noseleaves around the nostrils. Previous phenetic analyses on external and cranial features, as well as allozyme studies recognize three clades within the South African rhinolophids. However, the composition of these groups differ, largely as a result of use of different data sets and in some cases, insufficient taxonomic sampling. Consequently, phylogenetic relationships among the South African rhinolophids are not yet resolved. We made use of the mitochondrial cytochrome *b* gene as well as three nuclear introns and conducted parsimony, likelihood and Bayesian analyses in an attempt to resolve the relationships among South African horseshoe bats. Our results indicate that the clade comprising *R. swinnyi, R. capensis*, *R. denti* and *R. simulator* is well supported. Furthermore *R. blasii* and *R. landeri* appear to be very different from the other South African rhinolophids.

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PUBLISHED PAPERS

AL-JUMAILY, M.M., 2004: Recent records of bats from Yemen including *Plecotus* cf. *austriacus* (Fischer, 1829) (Mammalia; Vespertilionidae) new to the country. -- *Myotis*, 41/42: 57-68; Bonn.

Locality records and biological observations are given for *Eidolon helvum*, *Rhinopoma hardwickii* (including Socotra Id.), *Coleura afra*, *Nycteris thebaica*, *Rhinolophus clivosus*, *Asellia tridens* (including Socotra), *Chaerephon pumila*, *Miniopterus schreibersii* (in cave inhabited by *Otomops martiensseni*), *Scotophilus leucogaster*, *Pipistrellus kuhlii*, *Plecotus* cf. *austriacus* (1st record for Yemen). The faunal relations of the 27 species of Yemeni bats are briefly outlined and potential threats to conservation are indicatcated.

BENDA, P.; HULVA, P.; & GAISLER, J. 2004. Systematic status of African populations of *Pipistrellus pipistrellus* complex (Chiroptera: Vespertilionidae), with a description of a new species from Cyrenaica, Libya. *Acta Chiropterlogica* 6(2): 193-217.

Above - Type locality of *Pipistrellus hanaki*: Wadi Al Kuf, ca. 5 km SW of Al Bayda, Cyrenaica, Libya. – **Petr Benda**

Above - Portrait of *Pipistrellus hanaki* Benda, Hulva & Gaisler 2004. – **Petr Benda.**

The distribution of pipistrelles of the *Pipistrellus pipistrellus* complex (= *P. pipistrellus* s.l.) reaches only marginally the African continent. These bats are known only from a narrow belt of the Mediterranean zone in Maghreb and from NE Libya. We analysed museum specimens of African populations of *P. pipistrellus* s.l. using both morphologic and genetic techniques and compared them with Eurasian specimens of the complex. The African representatives of *P. pipistrellus* complex include two morphologically, genetically and geographically distinct populations. One of them inhabits the Mediterranean part of Cyrenaica, Libya. Belonging to the *P. pygmaeus* genetic lineage, these bats are represented by larger and more rusty coloured individuals with large massive rostrum and canines. In morphologic traits, this population differs significantly from all Western Palaearctic populations of the *P. pipistrellus* complex. These bats differ by about 6–7% in genetic distance from *P. pygmaeus* s. str. Within the *P. pygmaeus* lineage Libyan bats seem to be unique in their echolocation calls: the maximum energy of terminal frequencies was recorded at about 45 kHz. We consider the Libyan pipistrelles to represent a separate species, *Pipistrellus hanaki* sp. nov. Another distinct African pipistrelle population inhabits the Mediterranean parts of NW African countries, Morocco, Algeria and Tunisia. Individuals from the latter population are small and somewhat darker members of the *P. pipistrellus* genetic lineage, with relatively short and narrow mesial part of rostrum. Although both morphological and genetic differences between this population and Eurasian *P. pipistrellus* s. str. were found (genetic distance about 3–5%), they are probably not sufficient for the separation of this form at the specific level. However, the differences from European samples show rather not a cline character and therefore potential subspecific level of NW African *P. pipistrellus* has to be taken into consideration.

***Key words*: *Pipistrellus pipistrellus*, *Pipistrellus pygmaeus*, Africa, morphology, morphometry, cytochrome *b*, mitochondrial DNA, taxonomy.**

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BENDA, P., HANÁK, V., ANDREAS, M., REITER, A. & UHRIN, M., 2004: Two new species of bats (Chiroptera) for the fauna of Libya: *Rhinopoma hardwickii* and *Pipistrellus rueppellii*. -- *Myotis,* 41/42: 109-124; Bonn.

Rhinopoma hardwickii and *Pipistrellus rueppellii* were both collected at Al Jaghbub (Giarabub), 29°45'N - 24°31'E, Tubruq Distr., Cyrenaica, close to the western border of Egypt. -- *Rh. hardwickii* possesses taxonomic characters (colouration, size, skull proportions) divergent from neighbouring and Saharan conspecifics. Besides species (*Rh. muscatellum*) and specimens from Asia, the comparisons concern African specimens of *Rh. hardwickii* (from Egypt, Morocco, and Mauritania) and *Rh. microphyllum* (from Egypt, Mauritania and Senegal). A single *P. rueppellii* is of extremely small size, actually the smallest specimen of all compared (from Egypt, Algeria, Morocco, Senegal, Nigeria, Central African Republic, Sudan, and Iraq).

Above - *Rhinopoma hardwickii* from Al Jaghbub oasis, NE Libya. –**Petr Benda.**

Above - *Pipistrellus rueppellii* from Al Jaghbub oasis, NE Libya –**Petr Benda.**

BENDA, P., RUEDI, M. & AULAGNIER, S. 2004. New data on the distribution of bats (Chiroptera) in Morocco. *Vespertilio* 8: 13-44.

New records of 24 bat species from Morocco are presented, including *Rhinopoma microphyllum*, *Rhinopoma hardwickii*, *Nycteris thebaica*, *Rhinolophus ferrumequinum*, *Rhinolophus mehelyi*, *Rhinolophus blasii*, *Hipposideros cafer*, *Asellia tridens*, *Myotis punicus*, *Myotis nattereri*, *Myotis mystacinus*, *Eptesicus isabellinus*, *Hypsugo savii*, *Pipistrellus pipistrellus*, *Pipistrellus kuhlii*, *Pipistrellus* (*kuhlii*) *deserti*, *Pipistrellus rueppellii*, *Nyctalus leisleri*, *Otonycteris hemprichii*, *Barbastella barbas tellus*, *Plecotus teneriffae*, *Miniopterus schreibersii*, *Tadarida teniotis*, and *Tadarida aegyptiaca*, some of which are only rarely mentioned in the literature. Previously, *O*. *hemprichii* and *T*. *aegyptiaca* were known from Morocco only from bone remnants. Here, these species are documented from this country for the first time by records of live individuals. *P*. (*k*.) *deserti* is reported from Morocco for the first time.

***Key words*:** Bats, distribution, Maghreb, North Africa.

BERGMANS, W., & VAN STRIEN, N. 2004. Systematic notes on a collection of bats from Malawi. I. Megachiroptera: Epomophorinae and Rousettinae (Mammalia, Chiroptera). *Acta Chiropterlogica* 6(2): 249-268.

From July 1986 to August 1991 the junior author collected bats in various localities in Malawi. About 450 of these animals were preserved. In the present study the Megachiroptera are reported. Epomophorinae (Megachiroptera) collected in Malawi by H. Jachmann in 1982 are also reviewed. In addition, a number of specimens in collections in Malawi, Zambia and Zimbabwe have been examined by the junior author, while data on some other samples from Malawi in various other collections, examined earlier by the senior author, have been reconsidered as well. The combined collections contain eight species of Megachiroptera, including *Epomophorus* cf. *labiatus*, *E. gambianus crypturus*, a new species of *Epomophorus* (described herein), *E. wahlbergi*, *Epomops dobsonii*, *Rousettus aegyptiacus leachii*, *R. lanosus*, and *Eidolon helvum*. For the new species, an IUCN Red List category is proposed.

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STADELMANN, B.; JACOBS, D.S.; SCHOEMAN, C.; RUEDI, M. 2004. Phylogeny of African *Myotis* bats (Chiroptera, Vespertilionidae) inferred from cytochrome *b* sequences. *Acta Chiropterlogica* 6(2): 177-192.

The genus *Myotis* is comprised of about 100 species that are unequally distributed between the Northern (81% of the species) and the Southern hemisphere (19% of the species). Only eight species of *Myotis* occur in the Ethiopian region, but this is the only biogeographic region with representatives of all four classical subgenera, suggesting a diverse assemblage of morphotypes. We used sequences of a mitochondrial DNA gene (cyt *b*) to investigate the evolution and the phylogenetic position of seven of the eight Ethiopian species, and compared them to a broad sampling of *Myotis* from the World and of other vespertilionids. Phylogenetic reconstruction was based on 91 complete sequences representing 79 species of bats. The two endemic southern African species of the subgenus *Cistugo* were not placed within the genus *Myotis*, but were basal to the vespertilionid radiation, as suggested by earlier work based on karyology. The remaining Ethiopian species formed a strong monophyletic clade within *Myotis*, further stressing the importance of biogeography as a good predictor of phylogenetic relationships. This Ethiopian clade includes one Western Palaearctic and one Oriental species, both of which probably secondarily colonized these areas from the Ethiopian region. Molecular dating based on Bayesian inferences suggest that these faunal exchanges occurred at the end of the Miocene, while the split of the Ethiopian clade from the other Old World *Myotis* dates back to the middle Miocene, quite early in the *Myotis* radiation. Thus, the relative paucity of species in sub-Saharan Africa cannot be attributed to a late entry into this continent. Instead, these molecular results suggest that other evolutionary processes are responsible for the poor species diversity of *Myotis* found in Africa today.

***Key words*:** *Cistugo*, African *Myotis*, Vespertilionidae, cytochrome *b*, molecular dating

Above - Long-tailed serotine bat (*Eptesicus hottentotus*) - AS100 from Goodhouse, caught in November 2002.—**Manuel Ruedi, Museum Geneva**.

Above - De Winton's long-eared bat (*Laephotis wintoni*) - AS139 from Algeria State Forest, caught in November 2002.—**Manuel Ruedi, Museum Geneva.**

Above - Angola hairy bat (*Cistugo seabrae*) - AS081 caught at Goodhouse in November 2002-**Manuel Ruedi, Museum Geneva**.

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GOODMAN, S.M. ; & CARDIFF, S.G. 2004. A new species of *Chaerephon* (Molossidae) from Madagascar with notes on other members of the family. *Acta Chiropterlogica* 6(2): 227-248.

We describe a species of *Chaerephon* (Molossidae) new to science from western Madagascar. This bat differs from the other two *Chaerephon* occurring on the island and from comparably sized African and Asian *Chaerephon* based on measurements, pelage and wing coloration, and cranial and dental characters. *Chaerephon* sp. nov. occurs at three sites in the drier western portion of the island. We also provide some natural history and distributional information on other Malagasy members of this family.

***Key words*:** *Chaerephon*, Molossidae, new species, distributional records, western Madagascar

Above left—Field assistants Jean Jimmy Manesy and Jean Philémon Tolanga with harp trap at the entrance to the Grotte d'Andrafiabe near the Andrafiabe campground. Holotype was captured near the top of the bank in the background.— **Scott G. Cardiff .**

Above right- Entrance to Grotte d'Andrafiabe (Grand Axe Nord) in the Deuxième Canyon as seen from across the canyon in the entrance to the Grotte Cathédrale (Andrafiabe Grand Axe Sud)- **Scott G. Cardiff .**

Above center- Deuxième Canyon (Canyon 'Betsoadia'), through which *Mormopterus jugularis* and *Chaerephon jobimena* fly upon emerging from the Grotte d'Andrafiabe (Grand Axe Nord) and Grotte Cathédrale (Grand Axe Sud)- **Scott G. Cardiff .**

Right above- Vegetation in front of Andrafiabe campground entrance to Grotte d'Andrafiabe, near which the holotype was captured.— **Scott G. Cardiff .**

Right below- *Chaerephon jobimena*, dark morph male (SGC 92)- **Scott G. Cardiff .**

Left above- *Chaerephon jobimena*, dark morph male (SGC92) - **Scott G. Cardiff .**

Left below- *Chaerephon jobimena*, reddish morph female (SGC 95) - **Scott G. Cardiff .**

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STOFFBERG, S. & JACOBS, D.S. 2004. The influence of wing morphology and echolocation on the gleaning ability of the insectivorous bat *Myotis tricolor*. *Canadian Journal of Zoology* 82: 1854-1863.

On the basis of its external morphology, *Myotis tricolor* (Temminck, 1832) should be able to both aerial feed and glean. Furthermore, this bat is known to use broadband calls of short duration, reinforcing the prediction that it gleans. However, results from this study indicate that *M. tricolor* does not commonly glean. This conclusion was reached after studying the foraging behaviour of *M. tricolor* in a flight room. We presented *M. tricolor* with mealworms, moths, mole crickets, beetles, and cicadas in a variety of ways that required either gleaning and (or) aerial feeding. Although *M. tricolor* readily took tethered prey, it did not take any of the variety of insects presented to it in a manner that required gleaning. We therefore compared its wing morphology and echolocation calls with those of several known gleaners, *Nycteris thebaica* E. Geoffroy, 1818, *Myotis lucifugus* (Le Conte, 1831), and *Myotis septentrionalis* (Trouessart, 1897), and an aerial forager, *Neoromicia capensis* (A. Smith, 1829). In a discriminant analysis wing-tip shape was the only variable to provide some degree of discrimination between species, with *M. tricolor* having more pointed wing tips than the known gleaners. Discriminant analysis of echolocation-call parameters grouped *M. tricolor* with the other *Myotis* species and separated it from *N. capensis* and *N. thebaica*. However, *M. tricolor* did not use harmonics as did the other *Myotis* species. The apparent failure of *M. tricolor* to glean might therefore be due to its relatively pointed wings and narrow-bandwidth echolocation calls, owing to the absence of harmonics in its calls.

Above - Cape serotine bat (*Neoromicia capensis*) from Ngala lodge area, Kruger National Park, South Africa in Aug. 2002.– **ECJ Seamark.**

Above - Common Slit-faced bat (*Nycteris thebaica*), Sudwala Caves area, Mpumalanga, South Africa, Dec 2002– **ECJ Seamark**.

Above - Temminck's hairy bat (*Myotis tricolor*), Sudwala Caves area, Mpumalanga, South Africa, Dec 2002
—**ECJ Seamark**

RAHARIMANGA, V., ARIEY, F., CARDIFF, S. G., GOODMAN, S. M., TALL, A., ROUSSET, D. & ROBERT, V., 2003. Haemoparasites of bats in Madagascar. *Archives de l'Institut Pasteur de Madagascar* 69(1-2): 70-76.

This study aims to evaluate the prevalence and density of haemoparasites in wild malagasy bats. Among the 440 bats, belonging to 14 species sampled in 5 localities in different bio-climatic zones of the island, 93 (21%) showed at least 1 haemoparasite with, by order of frequency, Haemoproteidae (15,7% of 440 bats), microfilariae (7.0%) and Trypanosoma (0,7%). Among these 93 bats, 92 (99%) belonged to the family Vespertilionidae. Four bat species. cell endemic to the Madagascar region (Madagascar and Comoros), were found to harbour parasites : *Miniopterus manavi* with Haemoproteidae (38% of 129 individuals), microfilariae (23%) and Trypanosome (2%); *Myotis goudoti* with Haemoproteidae (24% of 68 individuals) and microfilariae (1%); *Miniopterus gleni* with Haemoproteidae (23% of 13 individuals); and Triaenops furculus with Haemoproteidae (4% of 28 individuals). The sex of bats was not linked to parasite prevalence. Within *Miniopterus manavi*, those individuals with greater weight also had a higher prevalence of microfilariae: and within the individuals harbouring microfilariae lire greatest weights corresponded to the highest dense; of microfilariae. Ten bat species (with 202 individuals examined) were negative for any haemoparasite This study is the first to provide evidence of haemoparasites in Malagasy bats: it provides interesting insights, especially concerning the parasite distribution per bat species and families, the pathogenicity of this type of parasitism and the parasite transmission by arthropod vectors.

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NOTICE BOARD

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Zoological Society of Southern Africa Conference

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Further information: http://www.ru.ac.za/conferences/zooento2005/

10th European Bat Research Symposium

To be held at: National University of Ireland, Galway, Ireland, 21-26 August 2005

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- 36th Annual North American Symposium on Bat Research, to be held in Wrightsville Beach, North Carolina, USA, 18-21 October 2006. [http://www.nasbr.org]
- 37th Annual North American Symposium on Bat Research, tentatively scheduled for Mexico in 2007. [http://www.nasbr.org]