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Bats in the Eilat region (Israel), spring 2002

By NADEJDA ZELENOVA, Rybachy, and REUVEN YOSEF, Eilat

With 3 figures

Bats (*Mammalia*; *Chiroptera*) comprise more than a third of the mammals of Israel and yet are the least studied (SHALMON et al. 1994). Information pertaining to their distribution, occurrence and ecology is comparatively sporadic and little research has been conducted on this very diverse group. Hence, here we present data on the biometrics, breeding status and habitat of 39 individuals of six species trapped accidentally during spring 2002 (March-June) at the avian ringing station of the International Birding and Research Centre in Eilat (IBRCE). We set up mist-nets with the purpose of avian spring migration research in four different habitats adjacent to Israel's southern city of Eilat (29°33 N, 34°57 E) – in vineyards, tomato fields, date palmeries, and IBRCE's Bird Sanctuary (table 1). The first three are agricultural areas while the last is a conservation project wherein the local land-fill has been turned into an eco-friendly area primarily to allow the migratory bird populations of Eurasia to stage after the crossing of the Sahel, Sahara and Sinai deserts in the spring (YOSEF 1996). We trapped, measured, and released in good health a total of 32 **Egyptian Fruitbat** (*Rousettus aegyptiacus*; *Pteropodidae*), two each of **Hemprich's Long eared Bat** (*Otonycteris hemprichii*; *Vespertilionidae*), and **Grey Long-eared Bat** (*Plecotus austriacus*; *Vespertilionidae*), and one each of **Eastern (Arabian) Barbastelle** (*Barbastella leucomelas*; *Vespertilionidae*), **Lesser Rat-tailed Bat** (*Rhinopoma hardwickii*; *Rhinopomatidae*), and **Kuhl's Pipistrelle** (*Pipistrellus kuhlii*; *Vespertilionidae*). Following the lack of data on most of the bat species of Israel, especially from the Eilat region, we decided to collect biometrics of the bats caught at the IBRCE during spring 2002 and hope to contribute to furthering our understanding of this interesting and little-known order, most of which are protected by law (SHALMON 1993).

Egyptian Fruitbat. - The only representative of this tropical family in Israel. A total of 32 trapped: two in March in the IBRCE Bird Sanctuary, 27 in April (including 3 females with babies on 21, 22, and 27 April, fig. 1), and three in May. The palmeries are obviously the preferred habitat for the species although the reason for this remains unclear because the dates are inedible in spring. The average arm length was 88.83 mm ± 3.97 SD, n = 27, range 80.2-97.3 and average body mass 98.67 g ± 12.21, n = 27, 81.0-119.1. The arm length and body mass found in our study is at the lower end

Table 1. Habitats in which bats were trapped in Eilat during spring 2002. Arranged in taxonomic order following MENDELSSOHN & YOM-TOV (1987)

Species	Total number of individuals	Habitat			
		Vineyard	Palmeries	Tomato field	Birdpark
Rousettus aegyptiacus	32	-	29	1	2
Rhinopoma hardwickii	1	-	-	-	1
Plecotus austriacus	2	2	-	-	-
Otonycteris hemprichii	2	-	-	-	2
Pipistrellus kuhlii	1	-	-	-	1
Barbastella leucomelas	1	-	1	-	-

Fig. 1. Female *Rousettus aegyptiacus* with baby. Foto: REUVEN YOSEF

of the range presented by SHALMON (1993) and body mass is out of the range of the data by MAKIN (1994) who reported a range of 120-200 g. We found no significant differences in arm length between males (n = 13) and females (n = 19; Student's t-Test two-tailed, P = 0.14), only in body mass (P = 0.00005; table 2). This does not concur with SHALMON (1993) who stated that males are larger than females. Of the 13 males and 19 females trapped, nine (69 %) and 11 (58 %) resp., had enlarged reproductive organs suggesting breeding activity.

Since little is known about the wintering biology and population status of the species in the desert region of Israel (MAKIN 1994), and because SHALMON (1993) does not mark the arid regions of Israel as part of the species distribution, the information presented here is of special interest and may constitute data from either an hitherto unknown xeric population of which no information exists; or, allowing for the fact that we have set up mist nets in the palmeries since 1996 and not trapped the species prior to spring 2002, it is possible that the group we caught is a recent invasion to the region. In any case, the three females with young prove the existence of an established breeding colony/ population in the region.

Table 2. Arm length and body mass of male (n = 13) and female (n = 19) Egyptian Fruit Bat at Eilat, spring 2002

Sex	Average	SD	Range	
male	Arm length	90.3	2.74	83.8-93.6
	Body mass	109.4	8.79	96.1-119.1
female	Arm length	87.9	4.41	80.2-97.3
	Body mass	91.95	8.78	81.0-108.0

Lesser Rat-tailed Bat. – A bat of arid areas. Distribution includes North Africa, Israel, Saudi Arabia and east to India. A nocturnal insectivore that is active mostly in the summer (SHALMON 1993). One was trapped in the IBRCE Bird Sanctuary on 11 June and was an adult male, with developed reproductive organs.

Kuhl's Pipistrelle. – A common resident in the Mediterranean habitats. Distribution includes most countries of the Mediterranean Basin, Central Europe, and Africa (MAKIN 1994).

Table 3. Biometrics of bats trapped at Eilat, spring 2002

	Date	sex	Age	Arm length	Body mass	Reproduction attributes
Rhinopoma hardwickii	11.06	m	ad	56.4	9.5	+
Plecotus austriacus	02.05	m	ad	38.9	5.4	-
	02.05	f	ad	40.7	7.8	-
Pipistrellus kuhlii	09.05	f	ad	33.3	5.7	-

Fig. 2. Wing of *Pipistrellus kuhlii*, showing the white fringe on the trailing edge of the wing, between f5 and body. Foto: REUVEN YOSEF

Fig. 3. *Otonycteris hemprichii* at Eilat, spring 2002. Foto: REUVEN YOSEF

MENDELLSOHN & YOM-TOV (1987) report that the species is also found in arid areas up to Sede Boker in the Negev desert highlands but none reported along the Arava Valley or Eilat. The individual trapped at Eilat on 9 May was an adult female that had no obvious signs of breeding (table 3; fig. 2).

Hemprich's Long-eared Bat. – This species is monotypic and appears to be restricted to arid regions (MENDELLSOHN & YOM-TOV 1987, MAKIN 1994). To date, very few individuals have been caught/observed in Israel and little is known about their ecology in the region. Sorrowfully, the two trapped at Eilat were only photographed (fig. 3) but no biometrics was taken.

Grey Long-eared Bat. – In Israel, the species is only found in the desert regions (SHALMON 1993). To date, only singles trapped except in March 1976 when a cluster of about 30 was discovered in the Arava Valley in hibernation (MAKIN 1994). Both the individuals were caught in the vineyards and were non-breeding adults. The body mass of the two individuals is low, but within the range presented by SHALMON (1993).

Eastern (Arabian) Barbastelle. – Is a taxonomically complex species but its forms/morphs are rare where found (MAKIN 1994). Only one individual caught to date in Israel, in Eilat on 4 April 1970, also during a bird-ringing project by BRURIYA GAL. This individual is in the zoological collection on the Hebrew University. The individual trapped in this study was preserved by BS and resides in the national zoological collection at the Tel Aviv University. The individual was caught in the palmeries of Kibbutz Eilot.

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Zusammenfassung

(Fledermaus-Nachweise aus Eilat (Israel), im Frühjahr 2002)

Fledermäuse (*Mammalia*; *Chiroptera*) umfassen mehr als ein Drittel aller Arten der Säugetierfauna Israels, aber sie sind bisher am wenigsten untersucht worden. Daten über ihre Verbreitung, zum Vorkommen und zur Ökologie liegen kaum vor, und nur wenige Untersuchungen wurden an dieser vielgestaltigen Gruppe überhaupt bislang durchgeführt. Aus diesem Grunde stellen wir in dieser Arbeit Angaben zur Körpermasse, zum Fortpflanzungsstatus und zum Lebensraum, gewonnen an 39 Individuen in 6 Arten, zusammen, die in der Vogelberingungsstation des Internationalen Vogelbeobachtungs- und Forschungszentrums Eilat im Frühjahr 2002 (März bis Juni) zufällig in aufgestellte Vogelfangnetze geraten sind. Die Fledermäuse wurden auf landwirtschaftlich genutzten Flächen (Dattelpalmen, Tomatenfelder, Weingärten) und im lokalen Vogelschutzgebiet gefangen, gemessen und gewogen und unverzüglich wiederfreigelassen. Bei den von uns nachgewiesenen Flughund- bzw. Fledermausarten handelt es sich um: Ägyptischer Flughund – *Rousettus aegyptiacus*, *Pteropodidae* (32 Ex.), Hemprichs Langohrfledermaus – *Otonycteris hemprichii*, *Vespertilionidae* (2 Ex.), Graues Langohr – *Plecotus austriacus*, *Vespertilionidae* (2 Ex.), Östliche (Arabische) Mopsfledermaus – *Barbastella leucomelas*, *Vespertilionidae* (1 Ex.), Hardwicks-Klappnase – *Rhinopoma hardwickii*, *Rhinopomatidae* (1 Ex.) und Weißrandfledermaus – *Pipistrellus kuhlii*, *Vespertilionidae* (1 Ex.).

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NADEJDA ZELENOVA, Biological Station, Rybachy 238535, Kalinigrad reg. Russia. e-mail: rybachy@bioryb.koenig.su

REUVEN YOSEF, International Birding & Ringing Center in Eilat, P.O.Box 774, Eilat 88000, Israel. e-mail: ryosef@eilatcity.co.il