Observations on homing ability of some insectivorous bats

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The homing ability in four species of insectivorous bats, viz., *Rhinopoma microphyllum* (Brunnich), *R. hardwickei* Gray, *Taphozous perforatus* Geoffroy and *Hipposideros fulvus* Andersen, was studied from May 1976 through December 1977 at Jodhpur, located on the eastern fringe of the Great Indian desert between 26° 18' N latitude and 73° 8' E longitude and 241 m above the sea level.

The bats were collected from the following three localities around Jodhpur: 1. Mandore — A rock garden situated about 10 km north of Jodhpur. Bats inhabit an underground tunnel 180 m long and 4—6 m wide. 2. Bhimbharak — A natural cave about 13 km west of Jodhpur. 3. Udaimandir — An urban area about 2 km from Jodhpur. Bats inhabit an old deserted building.

The bats for homing experiments were marked with a luminous enamel paint. No banding was done.

The results, summarised in the Table, indicate that of the four bat species studied, *R. microphyllum* appears to be endowed with the best homing ability, and *Hipposideros fulvus* the least. Compared to *R. microphyllum* the homing ability in *R. hardwickei* and *Taphozous perforatus* was *considerably* low.

The homing ability in Chiroptera has been discussed by many authors (Ryberg 1947; Smith and Goodpaster 1958; Havekost 1960; Hassell 1963). Their results have been reviewed in detail by Davis (1966) and Griffin (1970). In the

Homing ability in different species of bats of Jodhpur

Home site	Release of bats			Recovery of bats No. recovered				Total homing
	Date	Number	Distance in km from home site	1st day after release	2nd day after release	3rd day after release	Total	%
			Rhinopoma microphyllum					
Bhimbharak	20th July 1976	26	14	17	2	—	19	73.1
Udaimandir	12th Sep. 1976	34	20	13	3	1	17	50.0
Udaimandir	20th Sep. 1976	37	26	9	—	1	10	27.0
Udaimandir	2nd Sep. 1977	11	45	—	—	1	1	9.1
			Rhinopoma hardwickei					
Bhimbharak	1st Jan. 1977	12	12	4	2	—	6	50.0
Bhimbharak	4th Mar. 1977	15	20	—	1	1	2	13.3
			Taphozous perforatus					
Mandore	10th Dec. 1977	30	12	7	2	2	11	36.7
Mandore	19th Dec. 1977	25	18	1	1	1	3	12.0
			Hipposideros fulvus					
Bhimbharak	10th Aug. 1977	7	6	—	—	—	—	0.0

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present study it was observed that the homing ability in bats reflected an inverse proportionality to the distance where it was released. Hassell (1963) reached the same conclusion with *Myotis sodalis* and reported that beginning with 44% returns at the smallest distance, 19 km, the percentage went down to one at 212 km and zero beyond it.

The longest flight back home in our studies was 45 km by one *Rhinopoma microphyllum*, 20 km for *R. hardwickei* and 18 km for *Taphozous perforatus*. The longest known homing flight, 724 km, was recorded for *Eptesicus fucus* (Smith and Goodpaster 1958, quoted by Griffin 1970).

It has been observed that migratory bats usually have better homing ability. Among the bats studied by us *R. microphyllum* is by far the best migrant and, therefore, it is not surprising that it also possesses very superior homing ability.

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Description of a new species of shrew of the genus *Crocidura* (Mammalia: Insectivora: Soricidae) from southwestern Iran

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Four species of the genus *Crocidura* Wagler, 1832, i. e. *C. russula* Hermann, *C. leucodon* Hermann, *C. suaveolens* Pallas and *C. zarudnyi* Ognev, have been sampled in Iran and Iraq (Hatt 1959; Lay 1967; Nader 1969; Anděra 1972). Seven specimens collected in 1971 and 1973 at three localities in Khuzistan Province, south-

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