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Abstract: A checklist of the mammals of the Republic of Yemen, with their current status and distribution, is provided. Data were obtained from literature and supported by fieldwork carried out during the period 1994 to 1997. Seventy-one species of terrestrial mammals were found to occur in Yemen. They belong to eight orders and 24 families. They include six insectivores, 23 bats, one baboon, 16 carnivores, one hyracoid, eight artiodactyls, one hare, and 15 rodents. Marine mammals are not included in this review. Each of the 71 mammal species is assigned to one of eight categories according to its affinity with taxa of Arabia, continental Africa, Asia, and the rest of the world. Four species are human introductions. Two species are endemic to Yemen and eight are endemic to Arabia. Twenty-two species have their probable original distribution in Africa, seven species in parts of Asia. Twenty species are distributed in Africa, Arabia, and Asia. Five species have extended their distribution to Europe in addition to Africa and Asia. The remaining three species have a very wild distribution.

# Review of the mammals of the Republic of Yemen

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## مراجعة لثدييات الجمهورية اليمنية

مسعى الجميلي

**خلاصة:** أعطيت قائمة بأنواع الثدييات مبينة وضعهم الحالي و توزعهم في الجمهورية اليمنية. بنيت هذه الدراسة على معلومات جمعت من الأبحاث المنشورة سابقا ومدعمة بدراسات ميدانية تمت خلال ١٩٩٤ و ١٩٩٧. وجد أن هناك ٧١ نوعا من الثدييات الأرضية في اليمن، تنضوي تحت ٨ رتب و ٢٤ عائلة. وتتضمن ثدييات اليمن ٦ أنواع من أكلات الحشرات و ٢٣ نوعا من الخفاشيات ونوع واحد من قردة البابون و ١٦ نوعا من أكلات اللحوم ونوع من الوبريات و ٨ أنواع من شفعية الأضلاف ونوع من الأرانب و ١٥ نوعا من القوراض. أما الثدييات البحرية، فلم تتضمن في هذه المراجعة.

تم وضع كل نوع ضمن واحدة من التصنيفات الثمانية تبعا لأصولها الحيوانية (عربية وأفريقية وآسيوية ومن بقية العالم). ويبدو أن هناك ٤ أنواع مدخلة ونوعين متوطنين اليمن فقط و ٨ أنواع متوطنة لشبه الجزيرة العربية. كذلك تبين الدراسة على أن هناك ٢٢ نوعا يحتمل أن يكون توزعهم الأصلي في أفريقيا و ٧ أنواع في أجزاء من قارة آسيا. ومن الأنواع التي تعيش في اليمن، ٢٠ نوعا منها تنتشر في أفريقيا وشبه الجزيرة العربية وآسيا، وخمسة منها توسع انتشارها لتصل إلى أوروبا إضافة إلى أفريقيا وآسيا. أما الأنواع الثلاثة الباقية، فهي ذات انتشار واسع جدا.

## INTRODUCTION

The Republic of Yemen occupies an area of more than half a million square kilometres in the south-western part of the Arabian Peninsula. It is separated from the eastern coast of Africa by the Bab el-Mandeb Strait. The country belongs to the Ethiopian (Afrotropical) zoogeographical

region, and to the East African subregion which includes tropical Africa and tropical Arabia (WALLACE 1876). Yemen is bordered by two seas, the Red Sea which extends for 450 km to the west and the Arabian Sea which extends for more than 1200 km to the south. The northern and eastern borders face the desert of the Rub al-Khali. Parallel to the western coast of Yemen are the Sarawat mountains, in which the highest mountain in Arabia, Jabal Nebi Shu'aib is located, attaining a height of 3760 m. These mountains are under the influence of the south-westerly monsoons and their annual rainfall reaches 1000 mm (KAUL & THALAN 1979). To the south and east, there is a marginal elevation which includes the Kaur mountains, the Hadramaut and Mahra plateaus. The annual rainfall in these regions is only 100 mm or less. Due to its vast area and the diverse environments, Yemen has a rich mammalian fauna. Undisturbed natural habitats have provided a suitable refuge area for many species.

There have been many attempts to assess the distribution and status of the mammals in Yemen. Reports during the 1800's and the first 50 years of the twentieth century were based on information gleaned from travelling naturalists rather than actual surveys (e.g. GLASER 1886; YERBURY & THOMAS 1895; NOACK 1896; THOMAS 1900; ANDERSON & DE WINTON 1902; DE WINTON et al. 1903; MITCHELL 1904; NEUMANN 1906; BURY 1911, 1915; DOLLMAN 1927; DE BEAUX 1931; POCOCK 1935, 1944; MORRISON-SCOTT 1939; HAYMAN 1941; SCOTT 1942; ELLERMAN 1948; THESIGER 1949). During the second half of the twentieth century, studies on the status of the mammalian fauna in Yemen became more systematic. These studies were crowned by those of Harrison which were published in his fabulous three-volume book "Mammals of Arabia" (HARRISON 1964, 1968, 1972). More data were added in its second edition (HARRISON & BATES 1991). Moreover, other scientists have made important contributions to our knowledge on the occurrence and distribution of the mammals in Yemen. These include HAYMAN & HARRISON (1950), HAYMAN (1952), SANBORN & HOOGSTRAAL (1953), PAGE (1954), THESIGER (1959), POPOV (1960), HOECK (1962), STEWART (1964), SHEPHERD (1965), EL-ERYANI (1966), HARRISON (1967, 1971, 1985), ATALLAH & HARRISON (1967), SEARGENT (1974, 1976), BAHMANYAR & LAY (1975), SCARAMELLA (1976), NADER (1979, 1982, 1985, 1990), NADER & KOCK (1982, 1987, 1990), GROVES (1983, 1997), BATES & HARRISON (1984), HARRISON & BATES (1984), BROCKIE (1985), FINCH (1985), GROVES & LAY (1985), WRANIK (1986), EVANS (1987), HUTTERER & HARRISON (1988), AL-SAFADI (1989, 1990, 1991, 1992, 1994), DELANY (1989), AL-SAFADI & NADER (1990, 1991), NADER & AL-SAFADI (1991, 1993), WRANIK et al. (1991), GRETH et al. (1993), OBADI (1993 a, 1993 b), SHOWLER (1996), STUART & STUART (1997), and AL-JUMAILY (in press).

The historical information on 'the mammals of Yemen' was in fact data on the status of mammals in The People's Democratic Republic of Yemen (South Yemen), and/or the Yemen Arab Republic (North Yemen). These two areas were reunited on 22 May 1990, and became one country - The Republic of Yemen. A separate list of the mammals of the united Republic of Yemen is not available.

The present work reviews the current status and distribution of the mammal fauna in Yemen. It is based on the available literature and original fieldwork carried out by the author. Although the fieldwork is ongoing, it appears that a current checklist of the mammals occurring in Yemen and their distribution is urgently required.

## MATERIALS AND METHODS

Data on the occurrence and distribution of mammals in Yemen was obtained principally from HARRISON (1964, 1968, 1972), HARRISON & BATES (1991), GROVES (1997), and from the pub-

## Family Felidae – Cats

*Felis silvestris* Schreber, 1777 – Wild cat

*Felis (Catus) silvestris* Schreber, 1777. — Die Säugethiere in Abbildungen nach der Natur [...] 3: 397.

Subspecies: *F. s. tristrami* Pocock, 1944 is present in Yemen.

Material: 1 ex., Hadda street, Sana'a, 15.VI.1994, BCSU 51.

Distribution: POCOCK (1951) reported that specimens previously recorded from Aden and Lahej by YERBURY & THOMAS (1895) are possibly feral hybrids with domestic cats. AL-SAFADI & NADER (1990) recorded the species from Wadi Warazan, Quatabah, Wadi al-Barh, and Wadi Zabid. OBADI (1993 a) collected a specimen from Wadi Shaqwat in al-Mahra in August 1982, and saw a road casualty between Aden and Abyan in July 1983. A road casualty was found in Hadda street, Sana'a on 15 June 1994.

*Felis margarita* Loche, 1858 – Sand cat

*Felis margarita* Loche, 1858. — Rev. Mag. Zool. Paris (2) 10: 49, pl. 1.

Subspecies: *F. m. harrisoni* Hemmer, Grubb & Groves, 1976 is present in Yemen.

Distribution: The record for this species is the one captured at Beihan and presented to London Zoo (HAYMAN 1952). AL-SAFADI (1990) mentioned its presence in the eastern desert, at the borders of the Rub al-Khali.

*Caracal caracal* (Schreber, 1776) – Caracal lynx

*Felis caracal* Schreber, 1776. — Die Säugethiere in Abbildungen nach der Natur [...] 3: pl. 106, text, 3: 413, 587 (1777).

Subspecies: *C. c. schmitzi* (Matschie, 1912) is present in Yemen.

Distribution: This species has been recorded from Haithalhim and Habil (YERBURY & THOMAS 1895), Wadi el-Kabir (THOMAS 1900), and Dhala (HARRISON & BATES 1991). AL-SAFADI (1990) mentioned its occurrence in the woods and the heavily vegetated areas in the southern and south-eastern parts of North Yemen. OBADI (1993 a) saw a few specimens in Wadi Hassan, Abyan and also in Ahwar and Thamud. He saw a live specimen brought from al-Habilayn, Lahej to Zangibar (probably sometime during the 1980 s).

*Panthera pardus* (Linnaeus, 1758) – Leopard

*Felis pardus* Linnaeus, 1758. — Systema Naturae, 10<sup>th</sup> ed. 1: 41.

Subspecies: *P. p. nimr* (Hemprich & Ehrenberg, 1833) is present in Yemen.

Distribution: According to SANBORN & HOOGSTRAAL (1953) the species was scarce but widespread in the North Yemen highlands, seldom if ever ranging into the coastal lowlands. SCOTT (1942) saw one specimen killed near Ta'iz. The species is also known from the highlands behind Aden and from Jabal Hasha, Mahfid, and Beihan (HARRISON & BATES 1991). OBADI (1993 a) stated that the subspecies *P. p. nimr* is nowadays confined in its distribution to an area between Habil Jabr, east of Radfan to al-Kaur mountains, Lodar, Abyan. He saw the skins of five specimens killed in Lodar in the years 1982, 1983 and 1986. OBADI (1993 b) mentioned that the number of leopards killed by locals in Lodar during the years 1979-1986 were: four in 1979, two in 1980, four in 1981, two in 1982, eight in 1983, and two in 1986. They are killed by shepherds in revenge for attacks on their sheep. He added that during one night in June 1983, locals in Umdrib village, Lodar, killed three leopards. Recently the author saw a specimen on display in a cage in Tahrir square, Sana'a, during the summer of 1994. STUART & STUART (1997) stated that the leopard population in Yemen is very low. They added that the average number killed each year was 1.8 individuals (probably based on information from OBADI 1993 b).

*Acinonyx jubatus* (Schreber, 1776) – Cheetah

*Felis jubata* Schreber, 1776. — Die Säugethiere in Abbildungen nach der Natur [...] 3: pl. 105, text, 3: 392, 586 (1777).

Subspecies: *A. j. venaticus* (Griffith, 1821) is present in Yemen.

Distribution: The cheetah is probably extinct in Yemen. According to HARRISON (1972), an individual was seen by J.T. Ducker in March 1963 in Wadi Mitán, South Yemen.

## Order Hyracoidea – Hyraxes

## Family Procaviidae – Hyraxes

*Procavia capensis* (Pallas, 1766) – Hyrax, dassie

*Cavia capensis* Pallas, 1766. — Miscellanea Zool.: 30, pl. 3.

Subspecies: *P. c. jayakari* is present in Yemen.

Distribution: This species is not rare in the hills behind Shukra (THOMAS 1900). It has been found in Ta'iz (SANBORN & HOOGSTRAAL 1953) and Mocha (HARRISON 1985). BROCKIE (1985) found it very common in the Tihama foothills above 400 metres and EVANS (1987) included sight records from Shibam/Kawkaban, Wadi Hammam Ali, Suq as-Sabt, and found their droppings 94 km (by road) S of Sa'da. OBADI (1993 a) trapped a pregnant female from Zughainah near Lodar on 3 August 1983. After three days, it gave birth to three young, a female and two males, fully haired with open eyes. A specimen was brought to the author in May 1995. It was bought in Sana'a market, as locals in the mountains eat it. Finally, SHOWLER (1996) saw four specimens at: Jabal Iraf, 10 km NW of Jabal Iraf (13°09'N 44°12'E), Wadi Mararah, and Kawkaban.

## Order Artiodactyla – Artiodactyls

## Family Bovidae – Cattle, goats, sheep and antelopes

*Capra ibex* Linnaeus, 1758 – Ibex

*Capra ibex* Linnaeus, 1758. — Systema Naturae, 10<sup>th</sup> ed. 1: 68.

Subspecies: *C. i. nubiana* F. Cuvier, 1825 is present in Yemen.

Distribution: According to THESIGER (1959), the species occurs in the mountainous hinterland of South Yemen and ranges eastwards to Hadramaut. HARRISON & BATES (1991) stated that it had ceased to be common in the central part of the country and was mainly found in the thinly populated districts in the south-east. OBADI (1993 a) reported seeing a piece of a male's head-skin with a tribesman who mentioned hunting it near al-Baidha in 1983. He received a horn belonging to a male, hunted in the mountains north of Ahwar in 1987. He saw specimens near Mayfa'a, (south Shabwa), and collected several horns, some of them belonged to newly hunted animals in al-Ma'adi at the southern border of the Hadramaut Plateau. He reported seeing a tribesman hunting a female with its only young in October 1987. SHOWLER (1996) mentioned that a local hunter claimed to have shot about 70 ibex in the last year or so in the general vicinity of the hills north of Ras Fartak, south-eastern Yemen.

*Oryx leucoryx* (Pallas, 1777) – Arabian oryx

*Antelope leucoryx* Pallas, 1777. — Spicilegium Zoologica [...] animalium species 12: 17.

Subspecies: HARRISON & BATES (1991) stated that there is no basis for accepting the southern Arabian form *O. l. latipes* as a distinct subspecies.

Distribution: STEWART (1964) quoted unconfirmed reports that *Oryx* was still present in the Wadi Jauf area. There is a specimen from Hadramaut in the British Museum Natural History (HARRISON & BATES 1991). SHEPHERD (1965) reported the capture of three specimens from eastern South Yemen in order to provide the nucleus of a captive breeding stock.

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