

The Mammals of Arabia

David L Harrison
Paul J J Bates



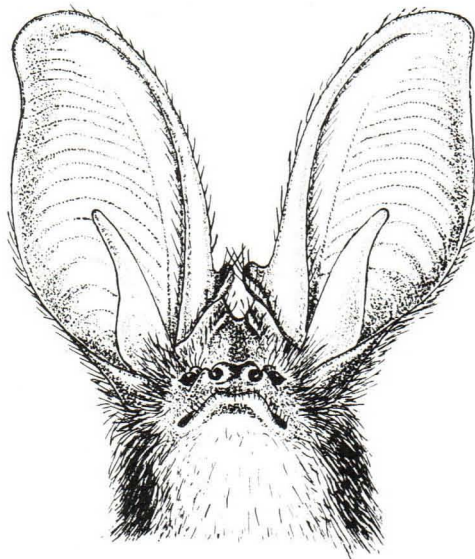
Harrison Zoological Museum

The Mammals of Arabia

Second edition

David L Harrison MA MB BCh PhD FLS FZS

Paul J J Bates MA PhD



Harrison Zoological Museum Publication 1991

Copyright © Harrison Zoological Museum 1991
Published by Harrison Zoological Museum
Bowerwood House, St Botolphs Road,
Sevenoaks, Kent, TN13 3AQ, England.

British Library Cataloguing in Publication Data

Harrison, David L. (David Lakin), 1926 -
Bates, Paul J. J. (Paul Jeremy James), 1961 -
The Mammals of Arabia: - 2nd edition

I. Title

599.0953

Systematics, geographical variation,
distribution, ecology and biology of the
terrestrial mammals of Arabia.

ISBN 0 9517313 0 0

Designed, typeset & printed by Lakeside Printing,
5 St Botolphs Road, Sevenoaks,
Kent, TN13 3AJ, England.

Dentition: The teeth are essentially similar to *C. caracal* but more robust, with the small upper premolar normally lacking. Miller (1912) noted the presence of a minute posterior basal cusp above the rudimentary cingulum of m_1 . This is occasionally present in young specimens of *C. caracal*.

Variation: It is probable that specimens from Arabia should be referred to *L. l. dinniki* which differs from *L. l. lynx* in its slightly greater size, (Ognev, 1935); there is considerable individual and perhaps seasonal variation in this subspecies in the USSR, and although the bold patterning of the pelage is most usual, almost uniform or weakly spotted individuals are not rare.

Distribution: *Lynx lynx* was formerly more widely distributed in the forested parts of Europe, where it is now restricted to Iberia, Scandinavia, Poland and the Balkans. It also occurs in Asia Minor, Iran, USSR, Mongolia and China.

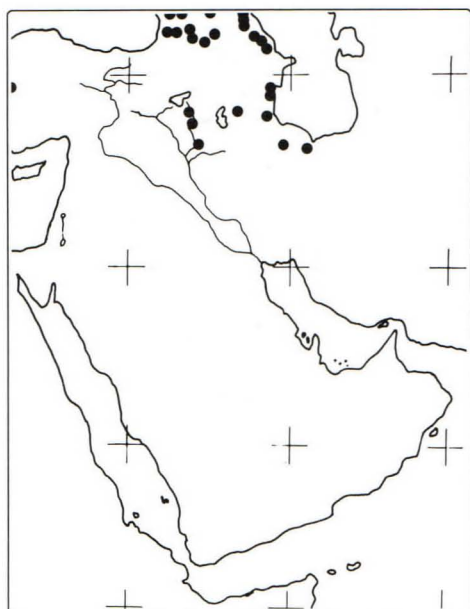


Fig. 246. Distribution of *Lynx lynx*.

In Arabia (Fig. 246), its range is very restricted. It is only known to exist, in recent times, in the mountains of Kurdistan, north Iraq, where it is probably very rare. Hatt (1959) noted a specimen in the BMNH collection from Zakho, and he also mentioned that according to Reed, two specimens were brought into Erbil Liwa during the winter of 1953-54. The occurrence of the Lynx in Palestine has never been confirmed; Tristram (1866) believed that he saw it and indeed stated that he obtained skins from locals to whom it was well known, (Tristram, 1888). It may well have existed in Israel, in former times, when the forests were more extensive. Aharoni (1930) was doubtful about its occurrence in Jordan and it seems likely that it has now completely disappeared from all these southern haunts.

Remarks: This is a forest predator, with arboreal habits. Its increasing scarcity in the northern Arabian peninsula is clearly attributable to the contraction of available habitat, resulting from progressive deforestation and also in some

regions to increased hunting pressure, as a result of the expanding human population. The species is certainly in urgent need of conservation in the region. It is a very strong animal, running rapidly and climbing trees with superb agility; it is also capable of leaping from tree to tree. It will apparently cover great distances in search of prey. According to Ognev (1935), the Lynx normally avoids water, but will swim across quite large stretches with relative ease when need arises. It will fight savagely when cornered. It hunts mostly between dusk and dawn, but may be active in the daytime, which it usually spends resting in a secluded den. It is very shy, cunning and stealthy, preying on quite large animals such as Wild Goats, Roe or Red Deer, as well as smaller mammals and birds. It has been known to attack Badgers and Foxes. Females give birth to two or three, rarely four young, early in the summer, in a nest constructed in a secluded spot under cover of tree roots, amongst boulders, in dense thickets or in an old hollow tree.

Genus *Panthera* Oken, 1816

1816. *Panthera* Oken, *Lehrbuch der Naturgeschichte Zool.*, 3(2): 1052.

These are large, formidable and powerfully built cats. The genus, as here understood (*sensu* Pocock, 1939), includes the Leopard, Lion and Tiger. The hyoid arch is modified, with the replacement of the median bone of the chain by a long elastic tendon which allows a great mobility of the larynx and distention of the back of the mouth. The tips of the digits have cutaneous lobes on each side of the claws, so that when retracted the claws are completely sheathed; the interdigital web extends to the digital pads. The skull has the dorsal profile flattish or tolerably evenly convex, not highly domed as in *Acinonyx*; the basicranial axis is nearly horizontal. The outer chamber of each tympanic bulla is small, with the partition close to the meatus.

Dental formula: $i\ 3/3\ c\ 1/1\ pm\ 3/2\ m\ 1/1 = 30$.

Panthera pardus (Linnaeus, 1758)

Leopard

1758. *Felis pardus* Linnaeus, *Systema Naturae*, 10th ed., 1: 41. Egypt.

1833. *Felis nimr* Hemprich & Ehrenberg, *Symbolae Physicae Mammalium*, 2: gg, pl. 17. (Founded partly on an Abyssinian skin and partly on an Arabian one. Type locality fixed by Harrison, 1968a as Mountains near Qunfida, Asir, Saudi Arabia).

1856. *Felis tulliana* Valenciennes, *Comptes Rendus de Seances de l'Academie des Sciences, Paris*, 42: 1035- 1039. Ninf, 40 km east of Smyrna, Western Asia Minor.

1927. *Panthera pardus saxicolor* Pocock, *Annals Mag. nat. Hist.*, 20: 213. Asterabad, Persia.

1932. *Panthera pardus jarvisi* Pocock, *Abstract Proc. zool. Soc. Lond.*: 546. Sinai.

External characters: The Leopard is the most robust of the Arabian cats; males exceed females in size. The tail is long and densely haired throughout. The face is without pronounced cheek ruffs. The ears are short, rounded off

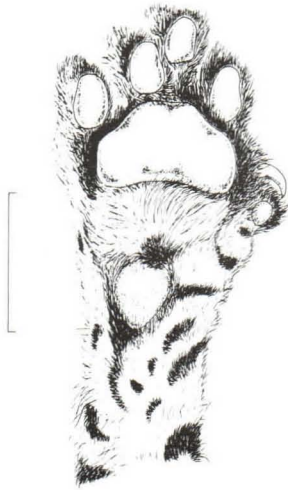


Fig. 247. Right fore foot of *Panthera pardus*. HZM.2.4233, Mahfid District, South Yemen. Scale = 50 mm.

above and entirely lack apical tufts. The limbs are moderately long and massive, with broad, rounded paws, (Fig. 247). The claws are cream-coloured, very powerful, fully retractile

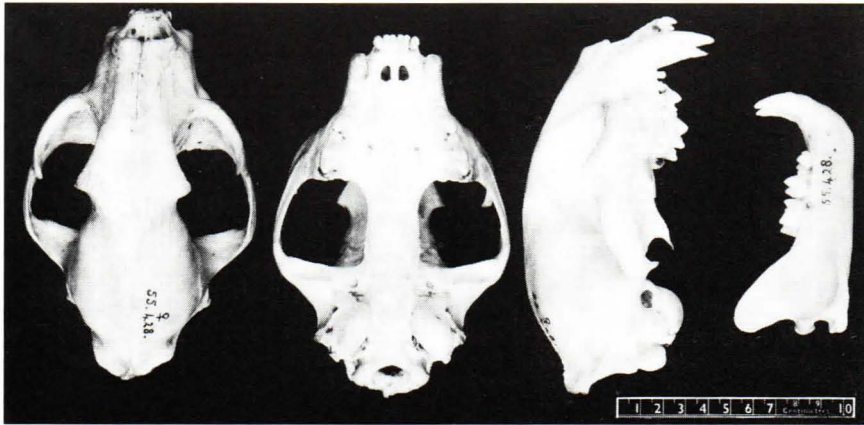


Fig. 248. Skull of *Panthera pardus*. BM.55.428, west of Beihan, South Yemen. Scale = cm. Photograph by Pamela Harrison.

and strongly curved. The claw of the pollex is highly developed. The digital, palmar and plantar pads are naked, dusky and smooth. The pelage of the Arabian subspecies *P. p. nimr* is short in the mid-dorsal region, with scanty underwool. The hairs radiate upwards from the sides of the neck, bifurcating into a Y shape on the occiput in front. On the ventral aspect, the hair is longer, soft and woolly. The coloration and pattern is subject to some individual variation. In general, the ground colour of the crown of the head and mid-dorsal region is a pale golden brown, fading to white or buffy white on the flanks, sides of the neck, cheeks and outer aspects of the limbs. The ground colour of the chest and belly is white throughout. The soles and palms are ash grey. The jet black spots and rosettes contrast very strongly with the ground colour. The rosettes are small and thick-rimmed, averaging about 22 mm in diameter on the upper flanks, their central areas pale golden brown like the mid-dorsal zone. The solid spots on the abdomen are large and numerous, those in the inguinal region, lower neck and inside of the forearms tending to coalesce into transverse bars. There is a broad, short, black band curving downwards and forwards

from the anterior canthus of each eye; however unlike *Acinonyx*, there is no prominent black stripe which extends all the way from each eye to the mouth.

Cranial characters: The skull is readily distinguishable by its robust size, heavy development and powerful dentition, (Fig. 248). The rostrum is moderately long and deep; the orbits are irregularly ovoid, with weak lachrymal projections on their antero-medial margins. The interorbital region is long, narrow and flattened above; the postorbital region is narrow and elongated, with its maximum constriction situated well behind the postorbital processes. The braincase is elongated, with distinct lateral bulges in the posterior frontals; the mastoid flanges are prominent and angular. The sagittal and lambdoid crests are well developed behind; the lambda is prominent and somewhat upturned, forming the most salient point of the skull. The palate is moderately long, with the postdental portion well developed; the mesopterygoid space is short and the external pterygoid plates are reduced to mere ridges. The tympanic bullae are moderately inflated, but with the outer chambers small; the paroccipitals are broad and closely applied to the backs of the bullae. The infraorbital foramina are nearly spherical and situated above the back of the second premolar. The mandible is robust and heavy.

Dentition: The teeth are robust; the canines are especially powerful and have well marked posterior cutting edges and a lateral groove; the postcanine space is wide. The first upper premolar is small; the second is relatively large, less laterally compressed than in *Felis*, the principal cusp with a weak secondary cusp at its anterior base internally, (absent in *Felis*), and a well developed secondary cusp above the cingulum posteriorly, (Fig. 249). The upper carnassial is normal, with the inner lobe well developed. m^1 is small, transversely elongated and virtually functionless. The cusps

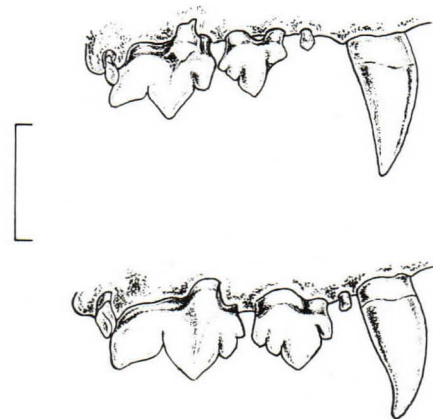


Fig. 249. Left maxillary dentition, from internal aspect. Above: *Panthera pardus*, BM.55.428, west of Beihan, South Yemen. Below: *Acinonyx jubatus*, BM.43.56, Busaiyah Wells, Iraq. Scale = 20 mm.



Fig. 250. Skins of two subspecies of *Panthera pardus*. Left: *P. p. tulliana*, BZM.4312, El Ammur, Israel. Right: *P. p. nimr*, HZM.2.4233, Mahfid District, South Yemen. Scale = 300 mm.

of the lower premolars are rather less trenchant than those of *Felis*; the first lower premolar has weak anterior and posterior basal secondary cusps. The second premolar has well developed anterior and posterior basal secondary cusps, the cingulum weak posteriorly. The lower carnassial (m_1) is without trace of a talonid.

Variation: Leopards from Arabia have been referred to four subspecies. *P. p. nimr* from peninsular Arabia is normally pale and averages small. The form *jarvisi* from Sinai is probably little more than a local variant of *nimr* with a slightly darker ground colour and brown spots; the skull of the holotype exhibits certain peculiarities but this may be individual variation. Leopards from Syria, Jordan and Israel have been assigned to *P. p. tulliana*; the colour of the mid-dorsal region tends to be decidedly tawny, darker than that of *nimr*; the rosettes are large in diameter, widely spaced and thin-rimmed; the coat is soft, smooth and long, especially in winter and the tail tends to be bushy, (Fig. 250). Specimens from the mountains of Kurdistan and Iraq are referred to *P. p. saxicolor*. This is a large form; the pelage is thick, soft and remarkably Ounce-like in winter; it is long and hairy with considerable underwool; the general colour is typically paler

than that of *tulliana* and the rosettes are smaller, thicker rimmed and less annular, they are deep chocolate brown in colour. The forms *tulliana* and *saxicolor* would appear to intergrade in western Kurdistan and eastern Turkey.

Distribution: *Panthera pardus* is widely distributed in tropical Africa. It is also known from North Africa, Asia Minor and Iran through to India, Sri Lanka, Tibet, Burma, China, Vietnam, Java and eastern Siberia.

In Arabia (Fig. 251), it is an inhabitant of the mountainous uplands and hilly steppes of the peninsula. In Iraq, *P. p. saxicolor* is known from a number of localities in the mountains of Kurdistan, although it would always appear to have been rare, (Hatt, 1959). Additionally it is known from Al Emerijje, near Rawa on the Euphrates, (Musil, 1927) and from just above Kut al Imara, on the River Tigris, (Hatt, 1959). *P. p. tulliana* is found in Syria; Von Lehmann (1965) described skins from Slenfe. Talbot (1960) noted their occurrence in the forests north of Latakia; near Jabal Akar; near the Sanjak border and in the Kassab forest. He also stated it had occurred in the vicinities of Palmyra; Nahura and Hama. It has occurred on a surprisingly large number of occasions in Israel, where it would appear to be flourishing in the Judean hills, (Ilani, 1988a). Other recent records from Israel and the West Bank include, the Samaritan Hills, (Ilani, 1986j); Enot Tzuqim; En Gedi area, (Ilani, 1986i); the vicinity of Makhtesh Ramon; Nahal Neqarot and Nahal Zin, (Ilani, 1983c). It has also been recorded many times from the hills of Galilee, although curiously never from southern Lebanon, (Harrison, 1968a). According to Ilani (1987p), Leopards were seen on the Israel/Lebanon border near Menara; other records included Mount Hermon; the southern Golan Heights and Nahal Beqeq in the northern Jordan Valley. Jordanian records include specimens from north of Aqaba; south of Petra; Wadi Zerqa, (Hardy, 1947); Ayun Buweirdeh, (Hart, 1891); Jubal Tubayq area, (Raswan, 1935); and the Maan area, (Seton-Browne *in litt.*). *P. p. jarvisi*

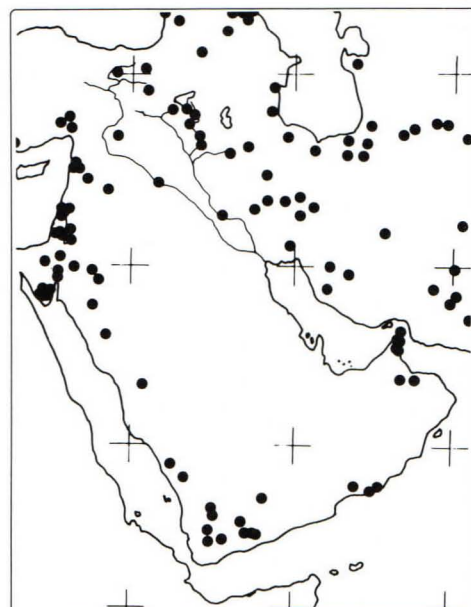


Fig. 251. Distribution of *Panthera pardus*.

is confined to the south of the Sinai peninsula, (Osborn & Helmy, 1980). *P. p. nimr* was described from the vicinity of Al Qunfida; a further specimen from the Asir (no exact locality) is in the BMNH collection and recently a live specimen was observed at Wadi Hiswa, (Gasperetti *et al.*, 1985). It is also known from the Hejaz, (Carruthers, 1909; Harrison, 1968a & 1972). According to Sanborn & Hoogstraal (1953), it was scarce but widespread in the North

Table 83. *Panthera pardus*: Specimens from Jordan, Sinai, Iraq, Oman & Saudi Arabia.

External measurements

	mean	range	s	n
L:	1971.1	1600 - 2261	307.7	10
T:	781.2	660 - 940	93.8	10
E:	44	44 - 44	-	1

Cranial & dental measurements

GTL:	193.3	166.3 - 213.0	17.4	6
CBL:	176.9	150.7 - 194.4	16.2	6
ZB:	121.0	105.3 - 132.4	10.2	7
BB:	73.1	67.1 - 76.8	3.8	6
IC:	40.1	35.7 - 43.8	4.7	7
C-M ¹ :	62.5	53.8 - 65.9	4.6	6
C-M ₁ :	69.6	59.2 - 74.9	5.6	7
M:	130.4	110.8 - 141.9	11.3	7

Yemen highlands, seldom if ever ranging into the coastal lowlands; Scott (1942) saw one killed near Ta'iz. It is also known from the highlands behind Aden; specimens from Jabal Hasha; Mahfid and Beihan are in the BMNH and HZM collections. Bury (1911) heard one in Wadi Khatib and further east Thesiger (1949) saw tracks in the Makhia, near Tamis. It exists in the wooded hills of Dhofar, being known from Jabal Qara, (Thomas, 1932) and Jabal Samhan, (Harrison, 1980a; Usher-Smith, 1985). In northern Oman and the Musandam region it is known from the vicinity of Ibri, (Harrison, 1968a); Tawi Mahbayl; the vicinity of Lima; Wadi Maqlayi, (Gasperetti *et al.*, 1985); Khasab (photograph by Sandy Gordon) and Jabal Yenit, (Gallagher *in litt.*, 1989). It is also recorded from Masafi, (Harrison, 1968a) and Qalidda Pass, (Harrison, 1971) in the U.A.E.

Remarks: This powerful predator is found in the mountainous and hilly terrain of Arabia. In marked contrast to the Cheetah, it seldom if ever ventures onto the open plains or desert. Although everywhere scarce, the number of recent occurrences in the region is surprising, for traditionally man has feared its presence, both for his own safety and that of his domestic flocks; it has been hunted extensively, (Sanborn & Hoogstraal, 1953). In Israel, the Leopard population would appear to be increasing and expanding into previously unoccupied territories, especially in the Negev area, a direct result of careful conservation measures, (Ilani, 1983c). It is predominantly a nocturnal animal, although it is occasionally seen in daylight. Raswan (1935) came upon an adult female with her two cubs in the Jabal Tubayq region, resting in the shade and feeding on the remains of a gazelle in the open. A Sleyb hunter accompanying him killed the adult Leopard and ate its heart raw, believing he would derive

strength from it. In Israel, it was observed that an old Leopard, of approximately 14 years, switched from hunting Ibex to Hyraxes when its strength began to fail, (Ilani, 1987j). Pocock (1939) noted that females give birth to two to four cubs, after a gestation of thirteen weeks, usually in a cave or secluded lair amongst boulders or sometimes in a porcupine burrow. According to Ilani (1988a), a Leopard from the Judean Desert region came into heat in March and gave birth at the end of June.

Genus *Acinonyx* Brookes, 1828

1828 *Acinonyx* Brookes, *Catalogue Anat. Zool. Mus.*

Joshua Brookes: 16, 33.

These are large cats with very long thin limbs. The Cheetah presents many peculiarities of structure which have led to its inclusion in a separate subfamily Acinonychinae. The digits are without trace of cutaneous lobes which constitute claw sheaths. The claws of the four main digits on the fore and hind feet are comparatively blunt and slightly curved, only partially retractile, but the claw of each first digit is large, sharp and strongly curved. There is a characteristic black stripe passing from the anterior canthus of each eye to the mouth. The bones of the skull are remarkably light and thin; the vault is highly domed above. The cheekteeth exhibit an unusual development of the secondary cusps on the premolars. Dental formula: i 3/3 c 1/1 pm 3/2 m 1/1 = 30.

Acinonyx jubatus (Schreber, 1776)

Cheetah

1776. *Felis jubata* Schreber, *Die Säugethiere in Abbildungen nach der Natur. ...*, 3: pl. 105; text, 3: 392, 586 (1777). Cape of Good Hope, South Africa.

1821. *Felis venatica* Griffith, *The general and particular descriptions of the Vertebrated Animals...*: 93. India.

External characters: This is a large cat, with a relatively small head, (Fig. 252). The ears are low and rounded, thickly haired on both aspects. The limbs are very long and slender and the claws are always more obvious than in the Leopard, owing to the lack of claw sheaths. The pelage is relatively short on the back and sides and longer on the belly. In some specimens, a distinct mane is present from the occiput to the shoulders. A black stripe, about 8 mm in width, curves downwards from the anterior canthus of each eye to the upper lip. The spots are solid, black and variable in size; the largest on the flanks is about 20 mm in diameter. The tail is ringed with black distally. The general colour of the body is tawny buff, becoming gradually paler on the flanks. The chest, belly and insides of the legs are whitish. The mane is irregularly tufted with black, giving the appearance of linear spots when the hair is depressed. The feet are tufted with brownish black around the digital pads and the bases of the claws.

Cranial characters: The skull, (Fig. 253), is remarkably light and thin-boned for its size. The nasal aperture is strikingly large. The orbits are also large, irregularly ovoid,