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As a veterinary medicine student, in 1985, my interest in Indian art and archaeology was strengthened during a bachelor course given at the Faculty for South Asian Languages and Cultures by Karel van Kooij. As a result of his great enthusiasm, it was that I decided to add as many art history lessons as possible to the curriculum of my secondary study, that of Indology. The rest of this curriculum was devoted to Sanskrit, in which I evidently finished my PhD. Sanskrit, and to a lesser extent Prakrit, had my interest, not only because of the inspiring lessons and admiration for classic literature of my teachers, the late Leendert van Daalen and Henk Bodewitz, for which I am very grateful, but also because it is the key to the understanding of Indian culture and religion. In the field, I learned to appreciate archaeological objects and to observe preserved details by Fabio Martini of the University of Sienna, Italy. Needless to say, my love for animals was well fed during my primary study, that of veterinary medicine. Later, it was John de Vos of Naturalis, Leiden, who learned me to see differences in external appearance of the various mammalian species. The late Paul Sondaar taught me the principles of zooarchaeology. The combination of art history, archaeology, literature, mythology and zoology finally culminated in this project, *Animals in Stone*.

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Alexandra van der Geer

## INTRODUCTION

This book is written for indologists and art-historians to introduce them into the world of animal life and diversity in South Asia. It is at the same time written for zoologists to introduce them to the world of art and folklore of the same South Asia. The contact zone between the three disciplines—indology, art history and zoology—has been meagrely explored, which is regretful considering the potential impact of interdisciplinary knowledge. Stated in a more direct way, scholars from these three fields may learn from each other, but this is practically impossible due to the lack of sufficient reference material. The book tries to fill that gap by providing references for scholars working in various disciplines to make data available on South Asian mammals from the fields of zoology as well as art history (fig. 1).

The topics that are addressed in the book are based upon evidence from stone sculpture, in relation to what is known from texts—religious as well as literary—archaeological remains and, in some cases, other forms of the material culture. The main purpose is twofold. Firstly, to provide an overview of how Indian peoples of the past perceived their natural environment and the fauna of which humans are just another element. Secondly, to illustrate the evolution in time and the migration in space of these views. Written texts provide clues, but that is not enough. Visual arts are a valuable addition and that is the realm to which this book belongs. It illustrates the way Indian peoples from the remote past till roughly the colonial period perceived the animal kingdom around them (fig. 2).

The subject is limited to the South Asian subcontinent. But what makes this region so interesting for zoologists as well as for indologists and art historians? The answer lies in its long-term geological isolation, which resulted in a local evolution of animals, art and culture with now and then influxes from the east and the west. Once, the South Asian subcontinent was connected to what we now call Africa. Evidence for this are, amongst others, the dinosaur remains in the Deccan traps of Central India. Gradually, the South Asian landmass broke off. It formed an isolated continental island during the Mesozoic, drifting slowly towards the Palaearctic landmass in the North. The collision—which took place some forty million years ago—resulted in the formation of



Fig. 1. For the indologist, this is Nandi, the vahana of the Hindu god Shiva, as worshipped at Mysore in Karnataka. For the art-historian, this is a giant monolithic statue, dated to 1659–1672, carved at Mysore. For the zoologist, this is evidence of the role in religion of *Bos indicus*, the humped cattle of South Asia. For the geologist, this is an artefact made out of volcanic rocks, mainly composed of a black granite originating from the Chamundi Hills.

Photograph: courtesy L. Meerson

the world's highest mountain range: the Himalayas. This uplift goes on, with a rate of about one cm per year, because the Indian plate continues to move towards the north with a speed of three to four cm per year.

The long-term isolation of South Asia, in the past by the surrounding oceans and later also by the relatively inaccessible Himalayas, resulted in a unique endemic fauna, originally with an African stamp, but with its own, isolated local evolution. Many species are restricted to this subcontinent and are not found in the wild elsewhere in the world. Famous examples are the Indian elephant, the blackbuck, the nilgai, the four-horned antelope, the spotted deer and the Indian rhinoceros. Disappearance from South Asia means disappearance from our planet. Put differently, information about these animals can be found only in South Asia. Not only the natural environment was shaped by the long-



Fig. 2. The role of animals in human society seen through the eyes of the artist and translated into a stone sculpture. Mammalapuram, Tamil Nadu, granite. Photograph: courtesy E. Sentner

term isolation. The same is valid for the human culture. The rather isolated position of the subcontinent, due to the Himalayan mountain chain and the oceans, provided the South Asian cultures an opportunity to develop relatively undisturbed. South Asia is so to speak the opposite of a melting pot. Local elements had the chance to be preserved and to evolve into a unique combination that is not seen elsewhere.

There is, however, more than the geological isolation which makes South Asia one of the most intriguing areas in the world. There is also its vastness. South Asia forms a subcontinent on its own and is known for its extreme variety of physical features. As a result, also its flora and fauna are immensely rich. Not only in number—quantity—, but also in variety—quality—. The same is valid for its human cultures, which adapted to local conditions and developed regional differences. The material culture and the social system of, for example, pastoralists from the Thar desert are not the same with those of the rice farmers of Tamil Nadu. Both are restricted to the local availability of materials and have a social system that fits their respective lifestyle best.

South Asia is used throughout this work in the geographical sense. It consists today of several nation states: India, Pakistan, Bangladesh, Nepal, Bhutan, Sikkim and Sri Lanka. Tibet belongs, zoologically and geologically speaking, to Central Asia and is therefore not included. The Nicobar and Andaman island chains, though politically speaking part of India proper, are excluded as well, because they are geologically and zoologically related to the Pegu district of Myanmar—former Burma—. For convenience, I use the short term India regularly throughout this book instead of South Asia as can be inferred already from its subtitle.

### ZOOGEOGRAPHY

The natural border of the vast South Asian subcontinent consists of the Himalayas and related mountain chains in the north, northwest and northeast, and of the Indian ocean in the south, southwest and southeast. These borders make it difficult for land mammals to access. Access was only possible from the north and northwest along the few mountain passes, from the west along the desert terrains along the coastal route during the monsoons, when they are reasonably easy to cross, and from the east through the tropical evergreen forest belt along the coast.

Roughly speaking, the subcontinent can be divided into two main zoogeographic units:<sup>1</sup> on one side the West Himalayas and the arid western part—the Palaearctic section—, and on the other side the East Himalayas, the humid eastern part and the peninsula with Sri Lanka—the Oriental section—. Typical animals of the Palaearctic section, such as the ibex, the khur, the lion, the cheetah, the gazelle, the hangul or red deer and the bharal or blue sheep, entered India from the west and are found also in Central Asia and the Near East or even further. Typical animals of the Oriental section, such as the tiger, the muntjac, the hog deer, the sambar deer, the monkeys, the leopard and the red dog or dhole, entered from the east and are also found in Myanmar, Assam, southern China or further eastward. Apart from

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<sup>1</sup> R. Pocock, *The fauna of British India including Ceylon and Burma. Mammalia—vol. 1, Primates and Carnivora (in part), Families Felidae and Viverridae* (The Hague: W. Junk, 1976; reprint of 1939, London: Taylor and Francis).



Fig. 3. The tropical thorn forests of the dry part of the Indo-Gangetic plain.  
Photograph: courtesy A. Kamphorst

the Palearctic and Oriental elements, there are also exclusively Indian elements, which are not found outside India. These are, for example the blackbuck, the blue cow or nilgai, and the barasingha or swamp deer. The richest fauna in terms of biodiversity is found in the forests of the Western Ghats and the South Indian hills.

In reality of course, the picture is more complicated. South Asia south of the Himalayas can roughly be divided into four parts: west, east, north and south. The western part belongs to the Arabian-African desert range, which extends westward through Baluchistan and Iran to Iraq and Saudi Arabia. This is the dry part of the extensive Indo-Gangetic Plain, characterized by tropical thorn forests (fig. 3) and desert zones (fig. 4).

The eastern part forms the humid part of the Indo-Gangetic Plain and is element of the tropical evergreen forest belt of East Asia. In the deltas of the large river systems of the Ganges and the Brahmaputra, mangrove swamps and tidal islets make up the unique wet ecosystem of the Sundarbans.

The northern part consists of the alluvial plains of the three large rivers Indus, Ganges and Brahmaputra. These plains are enclosed by the Himalayas in the north and the Vindhya range and the rift of the

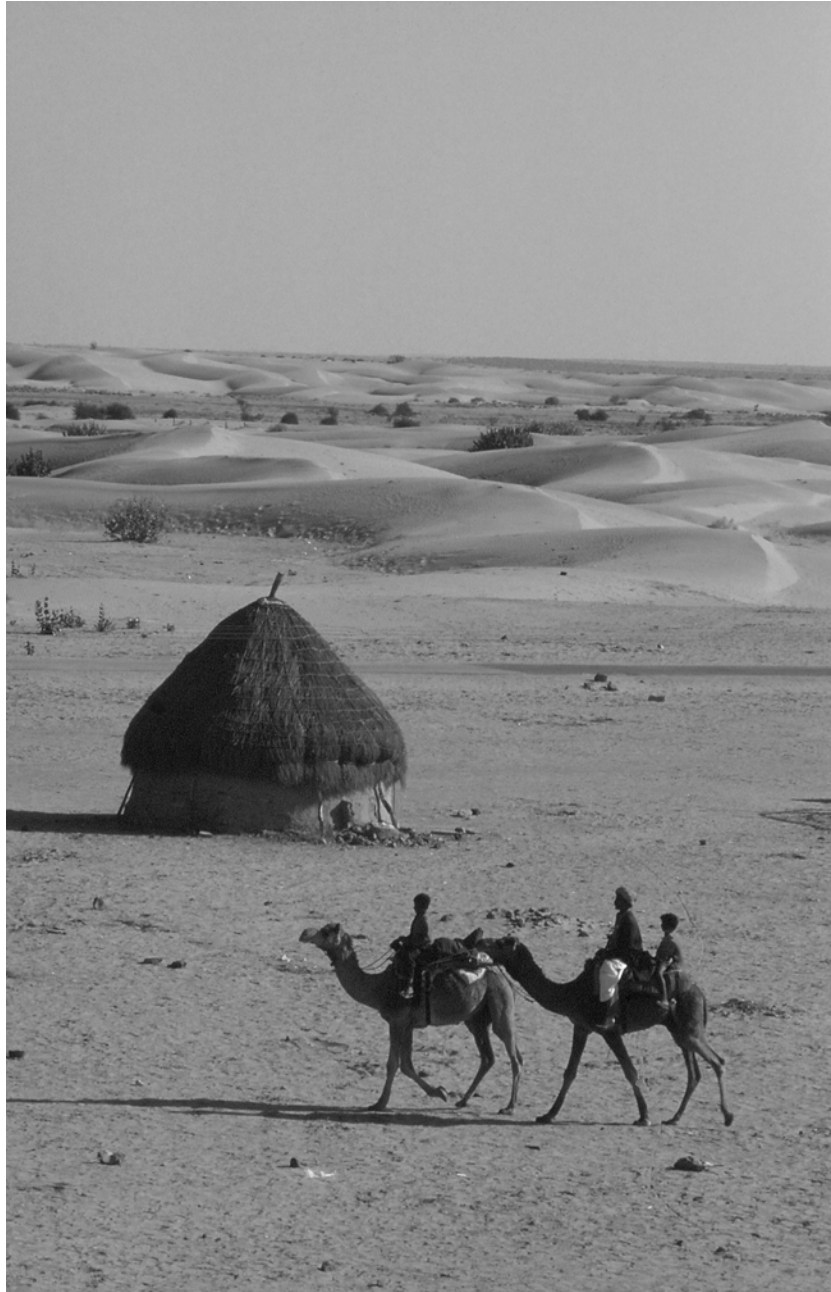


Fig. 4. The Thar desert of the dry part of the Indo-Gangetic plain. Photograph: courtesy A. Kamphorst





Fig. 5. The tropical dry evergreen forest of the Eastern Ghats. Photograph: A. van der Geer

Narbada river in the south. This part forms the transition between the arid zone of the west and the humid zone of the east. It is characterized by tropical moist deciduous forests, often consisting of sal trees, in its eastern half and tropical dry deciduous forests in its western half. This latter dry part continues into the Deccan tablelands of central India).

The southern part comprises the Eastern and Western Ghats along the eastern (Malabar) and western (Karnataka) coast respectively and the vast tableland in between. This tableland is characterised by hills and grass-covered plains, intersected everywhere by the tributaries of the six main rivers. Its climate is comparatively dry, due to the Western Ghats, which intercept the south-west monsoon so that most of its waters are released already on the seaward slopes in the form of exceptionally heavy rainfall. The ecology differs therefore as well: dense tropical wet forests with lofty evergreen trees and luxuriant growing bamboos on those seaward slopes of the Western Ghats, tropical dry deciduous forests, thorn forests and wide, open, grass-covered areas in the rest, intersected by forested gorges of the river systems, and tropical dry evergreen forests along the Eastern Ghats (fig. 5).

The Himalayas themselves contain a series of ecological habitats ranging from alpine, non-deciduous forests on the foothills (fig. 6) to



Fig. 6. The alpine forests of the Himalayan foothills. Shimla, The Mall below Barnes Court. Photograph: ASI, 1905–1915, courtesy Kern Institute, Leiden, the Netherlands

alpine meadows above the tree-line and bare rocks and permanent snow at high altitudes.

Sri Lanka belongs geologically and zoologically speaking to the southern part.<sup>2</sup> The separating Palk Strait was sometimes wider, sometimes smaller than it is today, based upon evidence from findings of fossils of marine species inland—coinciding with a wider strait—and of terrestrial species offshore—coinciding with a narrower strait—. Sri Lanka can roughly be divided into two parts. Firstly, a comparatively dry zone in the northern, eastern and south-eastern part, covered with jungle. Secondly, a moderately wet to wet zone in the centre and the south-western part, covered with forests and grasslands. The mammalian fauna of the first zone resembles that of the tableland of South India, whereas that of the second zone resembles more that of the Western Ghats. Their ancestors came from India, to which the island was con-

<sup>2</sup> C. Fernando, *Ecology and biogeography in Sri Lanka*, Monographiae Biologicae 57, ed. H. Dumont (The Hague: W. Junk, 1984).

nected at least twice in the geologically recent past by means of a land bridge: once during the last Ice Age (Pleistocene), and once much later during the Holocene. This latter connection may have lasted into the palaeolithic period. Since the end of the last connection, the fauna got isolated and evolved into the peculiar forms now characteristic for Sri Lanka. In general, Sinhalese mammals are up to 20% smaller than members of the same species on the mainland and are taxonomically often placed into subspecies on their own.

In all these parts of South Asia, a fauna is found that is adapted to the ecological needs of its region. The vegetation and with it the fauna ranges correspondingly from alpine through temperate up to tropical, and from arid desert through moist grasslands and deciduous forests up to wet evergreen jungles. In the western plains a large number of desert species is found. On the tablelands of the south, the savanna-loving species, like gazelles and antelopes, prevail. In the open, deciduous hill forests, deer, Indian bison and dholes thrive. In the Sundarbans of the east, only water-loving animals can survive, such as swamp deer, tigers and crocodiles. The fauna of the Himalaya range is adapted to the strong winds and the extreme cold of high altitudes: all mammals bear a thick underfur to preserve their warmth. For example, the Himalayan tahr has long hairs all over its body and a heavy mane below the throat, whereas its sister taxon, the Nilgiri tahr, lacks all these. Arctic conditions prevail on the higher summits of the Himalayas, against tropical conditions below the foothills of the same Himalayas.

#### ENVIRONMENTAL CHANGE

South Asia no longer represents an unspoiled patchwork of various ecosystems. Here as well as elsewhere in the world, mankind adapted the landscape to its own needs and ideas, which resulted in a sometimes dramatic change including loss of original flora and fauna. The human impact starts with small villages which have hardly any influence on the natural environment. However, with the rise of large settlements, even in the seemingly empty desert zones (fig. 7), the human impact on the environment is enormous. This impact is especially clear when it comes to species which are at present on the brink of extinction. Once, cheetahs and lions were hunting gazelles and antelopes on large parts of the subcontinent. Nowadays, the cheetah is extinct in India and lions are restricted to natural reserves, such as the Gir Forest in



Fig. 7. The desert-town Jaisalmer, Rajasthan.  
Photograph: courtesy A. Kamphorst

Gujarat. Though tigers and most wild herbivores are protected, it may even so be too late to save them from extinction. The once so common rhesus monkey needed special attention and protective laws to escape near-extinction (see section 28.1.3). Faunal diversity is steadily diminishing in front of our eyes. Sculptures from the past may thus represent a richer natural world.

Another reason for decrease in biodiversity lies in the climatic change over the past millennia. The clearest example of climate change and its impact on human culture is provided by the area including the Indus Valley of Pakistan and the western part of Rajasthan. Nowadays, less water is retained here than during the times of the Harappa culture of the Bronze Age. An indication of this is shown by some freshwater plants that grew in that region some 2,000 years B.C.E., but that are absent nowadays.<sup>3</sup> This means that the inhabitants of those settlements knew a larger variety of flora and fauna than is visible today. The impoverishing of the natural habit is only partly due to human-induced

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<sup>3</sup> G. Singh, "The Indus Valley Culture. Seen in the context of postglacial climatic and ecological studies in North-West India," *Archaeology and Physical Anthropology in Oceania* 6 (1971), 177–189.

soil erosion and destruction of original vegetation. The major impact is ascribed to the climate. During the period between roughly 8,000 and 1,500 B.C.E., the region had three times more rainfall than it has today.<sup>4</sup> This coincides precisely with the period of the rise and growth of the Harappa culture. The increasingly drier climatic conditions in western Rajasthan and the Indus Valley were further accelerated by the rise of the Aravali hill chain and a westward shift of all rivers of the Sindh system.<sup>5</sup> As a side effect, lake levels started to drop in western Rajasthan around 2,000 B.C.E., eventually resulting in the salt lakes (*rarms*) of today.<sup>6</sup>

Notwithstanding the gradual decrease in biodiversity, the total richness of the vertebrate fauna of the South Asian subcontinent is still immense: about 365 mammal species, almost 1300 bird species, more than 400 reptile species and about 180 amphibian species are known to science today.

#### DOMESTICATION OF ANIMALS

A very limited number of wild species—wild in the sense of living independently of human handling and control—have been domesticated worldwide. An even more limited number was originally domesticated in South Asia, such as the gayal or mithan. The majority comes from elsewhere, like the horse. The Indian elephant is indigenous to South Asia, but it cannot be considered domesticated in the proper sense.<sup>7</sup> Its breeding is often uncontrolled and wild partners are regularly involved. In the past, renewal and expansion of the herd was possible only through capture of wild elephants. The taming of this large animal is, however, done with success and Indian elephants are used on a large scale. Their occurrence outside South Asia is purely due to trade and

<sup>4</sup> G. Singh, R. Joshi, S. Chopra and A. Singh AB, "Late Quaternary history of vegetation and climate of Rajasthan desert, India," *Philosophical Transactions of the Royal Society, London* 267 B (1974), 467–501.

<sup>5</sup> Ibidem.

<sup>6</sup> M. Kajale and B. Deotare, "Late Quaternary environmental studies on salt lakes in western Rajasthan, India: a summarised view," *Journal of Quaternary Science* 12, 5 (1997), 405–412.

<sup>7</sup> J. Clutton-Brock, *Domesticated animals from early times* (London: Heinemann and The British Museum, 1981).

transport in the past. The tame Indian elephant formed one of India's export products.

In a number of cases, the relation between the wild and the domestic forms that we see nowadays in South Asia is clear: the wild water buffalo gave rise to the domestic buffalo, the gaur to the domestic gayal or mithan, and the yak to the domestic yak. For other domestic animals in South Asia, the relationship with their wild relatives is less evident. Domestic sheep and goats are not necessarily directly related to the wild sheep and goats of Pakistan, western India and the Himalayas. The zebu, or humped cattle, might have another ancestor than the aurochs from western Asia<sup>8</sup> as is commonly supposed. It may also have been a local, South Asian development, descending either from a close relative of the extinct *Bos namadicus* or from a variety of the banteng as is suggested by genetic studies. Wild boars may have been locally domesticated in South Asia, independent of southeastern Asia. Both the horse and the donkey were imported in early historical times; the first from Central Asia, the second—indirectly through the civilizations of western Asia—from Africa. However, they have a sister taxon in western and southern Asia, the khur or onager, and it is more than a hypothetical possibility that khurs were interbred with horses from time to time. Khurs are faster runners with a greater endurance than the imported horses. A hybrid would combine the good qualities of both, much like mules and hinnies, the hybrids of horse and donkey. The origin of the domestic dog was taken for granted for a long time, and the grey wolf was considered its direct and sole ancestor. At present, this is doubted by some, who suggest a role for the jackal in the dog's ancestry. An unproven, yet interesting and not unlikely hypothesis separates the dog from the other *Canis* species. In this view, the early dogs came on their own to human settlements, taking advantage of the waste without posing a threat to the inhabitants as wolves and jackals did. The behaviour of present-day pariah dogs of South Asia indeed seems to confirm this idea. The domestic cat might go back to the desert cat, but there are more small wild cats that could have stood at its origin. The camel and the dromedary are closely related to each other, but the question as to what extent and in what form is not answered to

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<sup>8</sup> W. Herre and M. Röhrs, *Haustiere, zoologisch gesehen* (Stuttgart: Fischer, 1973); H. Epstein and I. Mason, "Cattle," in *Evolution of domestic animals*, ed. I. Mason (London and New York: Longman, 1984), 6–27.

date. Most likely, their domestication took place in Central and West Asia, from where they were imported to South Asia.

The domestication of the animals that are in use nowadays in South Asia took place already a long time ago, much earlier than the beginning of the historical period. This means that the only evidence comes from the fields of zooarchaeology, in the form of animal remains, and archaeology as representations of animals in the material culture. At present, the following dates and loci are generally accepted as providing the earliest records of the beginnings of the domestication process,<sup>9</sup> in chronological order. For sheep this is around 9,000 B.C.E. in north-eastern Iraq, for goats at 8,000 B.C.E. in western Asia, for humped cattle at 8,000 B.C.E. in the Indus Valley, for pigs at 7,000 B.C.E. in southeastern as well as in western Asia, for taurine cattle at 6,400 B.C.E. in Turkey and northeastern Iran, for dogs at 5,000 B.C.E. in eastern Europe, for donkeys at 4,000 B.C.E. in Egypt, for horses at 2,500 B.C.E. in Ukraine and Turkestan, for camels at 2,500 B.C.E. in central Iran, and for the water buffalo possibly around 2,500 B.C.E. in the Indus Valley, or maybe already earlier in southern China. The first evidence of tame Indian elephants comes from the Greater Indus Valley in Pakistan at 2,350–1,750 B.C.E. These early records do not necessarily imply that these dates and places coincide with the first steps of domestication. On the contrary, the data represent nothing more than the oldest datable remains of presumably domestic animals. Zooarchaeological remains are scarce, reliable datings are often impossible, and the distinction between early domestic and wild forms of the same species is difficult to make. What emerges from the general picture is that sheep and goats were the first animals to be domesticated, followed by cattle, dogs, and donkeys, and that horses, camels and water buffaloes were the last ones. Possible explanations include a gradual shift from nomadic and pastoral cultures to more settled cultures, an increasing importance of transport of agricultural and other products, a increased availability of large amounts of fodder, the introduction of rice cultivation and the discovery of animal use in warfare.

<sup>9</sup> Data compiled from F. Zeuner, *A History of Domesticated Animals* (London: Hutchinson, 1963); J. Clutton-Brock, "The mammalian remains from the Jericho Tell," *Proceeding of the prehistoric Society* 45 (1979), 135–158; Clutton-Brock, op. cit. (1981); I. Mason, ed., *Evolution of domestic animals* (London and New York: Longman, 1984); M. Felius, *Cattle breeds—an Encyclopedia* (Doetinchem: Misset, 1995).

Evidence of domestication processes on the subcontinent can be traced back as far as the pre-pottery Neolithic period of the seventh millennium B.C.E.<sup>10</sup> In this respect, the Indus Valley site of Mehrgarh in the Kachi Plain between the Kirthar and Suleiman mountain ranges of Baluchistan is especially important. Several levels of occupation have been excavated here, ranging from a sixth millennium B.C.E. pre-pottery Neolithic period through the mid-third millennium early Harappa period.<sup>11</sup> Six kilometres further, at the site of Nausharo, the occupation sequence can be followed. Here, the levels range from the beginning of Mehrgarh period VII until the mature Harappa period.<sup>12</sup> This continuous occupation of the Kachi Plain gives crucial insight into the early agricultural evolution in the northwestern edge of the subcontinent. The dates suggest a gradual import of either the technique of domestication or of the domestic animals themselves, or both, some two millennia later than in the regions to the west.

From the animal bones collected at Mehrgarh, it appears that in the beginning wild animals dominated the faunal remains, with only the goat as a possibly domestic form. Young goats were sometimes given as burial gift as is seen in the large cemetery of Mehrgarh III, dated to c. 6,000–5,500 B.C.E., for example grave no. 287 with no less than five complete goats.<sup>13</sup> For the younger layers till the early Harappa period, the opposite is the case and the bones belong almost exclu-

<sup>10</sup> R. Meadow, "Early Animal Domestication in South Asia: A First Report of the Faunal Remains from Mehrgarh, Pakistan," in *South Asian Archaeology 1979*, ed. H. Härtel (Berlin: Dietrich Reimer Verlag, 1981), 143–179; R. Meadow, "Faunal exploitation in the Greater Indus valley: a review of recent work to 1980," in *Studies in the archaeology of India and Pakistan*, ed. J. Jacobson (New Delhi: American Institute of Indian Studies, 1986), 43–64; J.-F. Jarrige, "Die frühesten Kulturen in Pakistan und ihre Entwicklung," in *Vergessene Städte am Indus. Frühe Kulturen in Pakistan vom 8. bis 2. Jahrtausend*, ed. Philipp Von Zabern (Mainz am Rhein: Von Zabern, 1987), 50–66.

<sup>11</sup> J.-F. Jarrige and M. Lechevallier, "Excavations at Mehrgarh, Baluchistan: Their Significance in the Prehistorical Context of the Indo-Pakistani Borderlands," in *South Asian Archaeology 1977*, ed. M. Taddei (Naples: Instituto Universitario Orientale, 1979), 463–535; J.-F. Jarrige and R. Meadow, "The Antecedents of Civilization in the Indus Valley," *Scientific American* 243, 2 (1980): 122–133; M. Lechevallier and G. Quivron, "The Neolithic in Baluchistan: New Evidences from Mehrgarh," in *South Asian Archaeology 1979*, 71–92; J.-F. Jarrige, "Economy and Society in the Early Chalcolithic/Bronze Age of Baluchistan: New Perspectives from Recent Excavations of Mehrgarh," in *South Asian Archaeology 1979*, 93–114.

<sup>12</sup> Jarrige, op. cit. (1987), 65.

<sup>13</sup> P. Sellier, "Mehrgarh: Grabstätten und Bestattungsritus," in *Vergessene Städte am Indus* (1987), 83–94, 85, fig. 62.



sively to domestic sheep, goat and cattle.<sup>14</sup> Gradually, cattle became more important than sheep and goat. The first figurine from Mehrgarh that can be identified as a representation of cattle is that of a humped bull from the early fourth millennium B.C.E.<sup>15</sup> It is not clear whether all cattle belonged to the humped cattle or whether the latter existed side by side with taurine cattle. The pre-Harappa assemblage from Balakot at the Windar River in the Indus Valley is dominated by the remains of cattle, sheep and goats, similar to what is seen at the younger pre-Harappa layers of Mehrgarh. Only few remains of wild animals, belonging only to gazelles, wild boars and khurs, are present among the animal remains. Three important additions are shown by the animal record of the following Harappa period: the water buffalo appears as part of the domestic stock, the large nilgai was hunted, and fish became an important dietary element.<sup>16</sup> From roughly contemporaneous mature Harappa period sites, it appears that young goats, though seemingly less important than in previous period, continued to be given as burial gifts, for example in one of the graves from Lothal at the Gulf of Cambay in Gujarat<sup>17</sup> and one from Harappa itself (fig. 8). Evidences for the next steps in the domestication process come from Pirak, east of Mehrgarh on the banks of the Nari River in the Indus valley. Pirak shows three major periods of occupation dating between the early second and early first millennium B.C.E.,<sup>18</sup> coinciding with the mature Harappa period and a post-Harappa period. From this site the first bones and figurines of camel and horse are known.

Apart from the Indus Valley, traces of early domestication are known from peninsular India as well. Evidence of prehistoric stock-breeding comes from inland Gujarat and Rajasthan, where bones of cattle, goats and/or sheep were found at the sites Langhnaj,<sup>19</sup> Adamgarh and Bagor;<sup>20</sup> the latter site is radiocarbon dated to 4,500 B.C.E.<sup>21</sup> The

<sup>14</sup> Meadow, op. cit. (1986).

<sup>15</sup> Jarrige and Lechevallier, op. cit. (1979), 486.

<sup>16</sup> Meadow, op. cit. (1986).

<sup>17</sup> M. Halim, "Die Friedhöfe von Harappa," in *Vergessene Städte am Indus* (1987), 206–214, 213.

<sup>18</sup> Jarrige and Lechevallier, op. cit. (1979).

<sup>19</sup> J. Clutton-Brock, *Excavations at Langhnaj: 1944–'63. Part II. The fauna* (Poona: Deccan College, 1965).

<sup>20</sup> V. Misra, "Two late Mesolithic settlements in Rajasthan. A brief review of investigations," *Journal of the University of Poona (Humanities)* 35 (1971), 59–79.

<sup>21</sup> D. Agrawal, S. Gupta and S. Kusumgar, "Tata Institute Radiocarbon Date List IX," *Radiocarbon* 13, 2 (1971), 442–449.

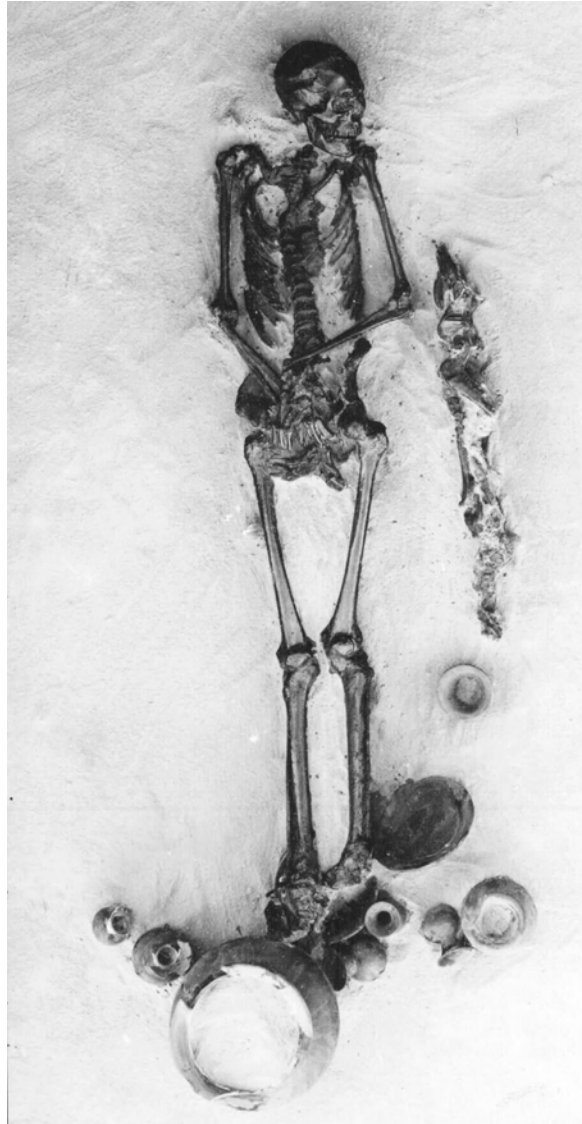


Fig. 8. Burial with a human, a goat and burial pottery. Harappa, Indus Valley, Pakistan, Harappa Period, c. 2,300–1,750 B.C.E., skeleton H 689. Photograph: ASI, 1933–35, courtesy Kern Institute, Leiden, the Netherlands

Neolithic sites with remains of domestic cattle, goats and sheep in the Belan valley in the Vindhya Range of Madhya Pradesh yielded dates between 4,500 B.C.E. and 6,500 B.C.E.<sup>22</sup> These dates from northwestern and central India are similar to those from the Indus Valley and are suggestive of a widespread agriculture, be it a pastoral-nomadic or a sedentary culture. The earliest evidence from the south comes from Kodekal in Karnataka, radiocarbon dated to about 2,300 B.C.E.,<sup>23</sup> which makes it contemporaneous with the mature Harappa period of the northern sites. Similar evidence and dates come from Assam and Nagaland in the east.<sup>24</sup> These younger dates from the south and east might indicate the development of agriculture at a later period in these regions, but lack of sufficient data makes such tempting conclusions hazardous and premature.

#### ATTITUDE TOWARDS ANIMALS

South Asian peoples are commonly known to have a respectful attitude towards animals. This attitude is in fact part of a more general respect for nature and life in all its forms. The basis for this may lie in the notion of rebirths in the Indian religions—Hindu, Buddhist, Jain and Sikh—. In this cyclic system of rebirths (*samsara*) animals as well as humans take part. The system is complicated and falls well outside the scope of this book, yet some short remarks can be made for a basic understanding. The working principle of the cycle of rebirths is that one is reborn based upon the net outcome or fruit (*phala*) of the total of one's actions (*karma*). One may be reborn as a human or as an animal and the other way around, an animal may be reborn as an animal or as a human. Actions have to be seen in their broadest sense and range from all sorts of physical activities to attitude, speech, thoughts and so on. The rules on the morality of actions together form the concept of *dharma*, or the law. For more detailed information on *dharma* and rebirth as an animal, see the section Animals in Indian Religion below. As is

<sup>22</sup> G. Sharma, "Beginnings of agriculture: new light on transformation from hunting and food gathering to the domestication of plants and animals: India a primary and nuclear centre," *Journal of Central Asia* 6, 1 (1983), 51–64.

<sup>23</sup> K. Paddayya, "Radiocarbon dates of South Indian Neolithic culture," *Antiquity* 45 (1971), 134–138.

<sup>24</sup> A. Clason, *Wild and domestic animals in prehistoric and early historic India* (Lucknow: Ethnographic and Folk Culture Society, 1979).

evident, attitudes towards animals are often interwoven with or founded in religion. Therefore, what is discussed here and below under separate headings is in reality greatly connected to each other; any separation is perforce artificial. Under the present heading, attitudes are discussed that seem to have no basis at all in religion—such as hunting, that are only partly religious—such as dietary rules—, or those that may have roots in an earlier religious system and are thus not conceived anymore as necessarily religious—auspicious animals, bull games and the like—. Animal roles in society which have a strong basis in religion are dealt with under the next heading.

There is substantial evidence for hunting in South Asia in the past. In ancient literature, occasional references can be found to a game park, or *mrigavana*<sup>25</sup> in Sanskrit.<sup>26</sup> One such ancient park or forest might have been that of Ishipatana near Sarnath in Uttar Pradesh, where the Buddha is said to have held his First Sermon. Attracted by his speech, even the wild animals came to listen. In iconography, the event is sometimes indicated by a pair of antelopes, gazelles or deer flanking a wheel.<sup>27</sup> Most likely, such a *mrigavana* was not some sort of natural park for the preservation of deer, but more something like royal hunting premises, where the aristocracy hunted *mriga*, game, thus not just deer, but antelopes, gazelles and wild boar as well. This can be inferred from historical times, in which both Mughal rulers and Hindu rajahs held game parks in vogue, to which later also British officers were invited to participate in a hunt (*shikar*). The Mughal emperor Jahangir had such a hunting resort at Sheikhpura in Pakistan (fig. 9). Here, he had a hunting pavilion built for himself at the centre of an artificial lake, and a memorial tower for his favourite deer, which he called Mansaraj ('royal meat'). Actually, many natural parks of today were the hunting grounds of maharajahs and Mughal emperors of the past. Examples in Rajasthan are the Natural Reserves Ranthambhor and Sariska, Darrah Wildlife Park, and Keoladeo National Park, to name just a few. In historical times, royal hunting was a social event by means of which the ruler displayed his wealth, prestige, power and

<sup>25</sup> Generally, the word is translated as 'deer park', because the Sanskrit word *mriga* means both wild animal as well as more specifically deer. The term *vana* actually denotes forest rather than park.

<sup>26</sup> B. Bidari, "Forests and trees associated with Lord Buddha," *Ancient Nepal* 139 (1996), 11–24.

<sup>27</sup> See further sections 1.1.3 (antelopes), 2.1.3 (spotted deer), 7.1.2 (nilgai) and 22.1.3 (gazelles).



Fig. 9. Hunting resort of the Mughal emperor Jahangir (reign 1605–1627). Sheikhpora, Pakistan. Photograph: courtesy Sarfraz Hayat

authority.<sup>28</sup> It was expensive, because all sorts of hunting weapons, horses, dogs and elephants were needed in large numbers, apart from the large permanent staff of the hunting department of the court and the hundreds of recruited assistant employees for each hunt. The largest annual hunts corresponded to the Hindu Holi festival, probably in relation to the harvest: the grounds would be cleared from dangerous carnivores and the wild herbivores would not eat the full-grown plants. The killing of wild herbivores as we know now, in reality increases the potential danger of carnivores: they have to turn to domestic herbivores, and in the worst case, to humans. Princely hunting was abolished in 1962, but for many species this came too late.

That hunting was practiced and allowed under the Hindu and Mughal rulers is further evidenced by the many *shikar* paintings<sup>29</sup> and

<sup>28</sup> S. Welch, ed., *Gods, Kings and Tigers: The Art of Kotah* (New York and Cambridge: Asia Society Galleries and Harvard University Museums, 1997).

<sup>29</sup> See for example those of the Maharana of Mewar in Andrew Topsfield's book, *City Palace Museum, Udaipur: Paintings of Mewar Court Life* (Ahmedabad: Mapin Publishing, 1990).

other artworks, see for example an ivory palanquin leg from seventeenth century Orissa (fig. 10). A hunter with hunting dogs spears a running deer, while behind him a companion follows on horseback. The Hindu legal principles clearly accept hunting. The *dharma* books explicitly mention some wild animals that are edible, such as wild boars, gazelles, and deer. The ancient epics contain many references to hunting. For example in the *Mahabharata*, the Indian bison is hunted by the Kauravas and offered for breakfast<sup>30</sup>. In the *Ramayana*, Rama hunts a golden deer, pushed to do so by his wife Sita.<sup>31</sup> The *Manasollasa* written by king Bhulokamalla Someshvara of the twelfth century has a complete section on royal hunting,<sup>32</sup> which is not surprising because Hindu Rajputs are notorious for their hunting boar, deer and birds.<sup>33</sup> Islamic rules don't object against hunting either and especially hunting on horseback was popular. Even the khurs, close relatives of their own highly esteemed horses, were on their game list. The Persian king Bahram was surnamed Gor, because of the incredible amounts of khurs—*gor* in Persian—he hunted<sup>34</sup> and it is reasonable to assume that his Indian friends were not much different.<sup>35</sup> Despite the general approval of hunting, there were always people who were against hunting. In this respect, a story is told of emperor Akbar, who at the age of thirty-six banned the Mughal hunting technique known as *qamargah*. This technique included the enclosure of game animals within a circular stockade while beaters drove them towards the emperor, who was accompanied by hunters and trained cheetahs. In this way it was easy to kill a large amount of animals without much effort. Once, during such a *qamargah*, Akbar once had a mystic experience and got disgusted by the unfair slaughter.<sup>36</sup>

<sup>30</sup> *Mbh* 3.229.10 and *Mbh* 3.251.12. respectively.

<sup>31</sup> *Ram.* 3.42 ff, S. Chaudhuri, "Concordance of the fauna in the Ramayana," *Indian Historical Quarterly* 28, 29, 30 (1952–1954). See also section 2.2.4, last paragraph.

<sup>32</sup> P. Arundhati, *Royal life in Manasollasa* (New Delhi: Sundeep Prakashan, 1994); P. Arundhati, *Games and pastimes in Manasollasa* (New Delhi: Sharada, 2004); R. Krotten-thaler, *Die Jagd im alten Indien: unter Berücksichtigung des mrgayavinoda-Kapitels im Manasollasa* (Frankfurt and New York: P. Lang, 1996).

<sup>33</sup> J. Tod, *Annals and Antiquities of Rajasthan, or The Central and Western Rajput States of India*, 2 vols. (London: Routledge and Kegan Paul, 1972; reprint of 1892), vol. 1, 57.

<sup>34</sup> *Ibidem*, 190.

<sup>35</sup> Local guides in the Rann of Kutch, descendants of Gujarati Jhala Rajputs, relate that the khur was hunted there until 1950 (J. Kamphorst pers. comm. 16/07/2007).

<sup>36</sup> A. Wink, *Al-Hind: The Making of the Indo-Islamic World*, vol. 2, *The Slave Kings and the Islamic Conquest, 11th–13th Centuries* (Leiden-New York-Köln: Brill, 1997). The story brings to memory a similar experience of the Mauryan emperor Ashoka of the mid-



Fig. 10. Leg of an ivory palanquin with a hunting scene. Orissa, 17th century. Brooklyn Museum of Art, 1992.83, New York. Photograph: courtesy The Brooklyn Museum of Art, New York

From the above, it might be concluded that hunting was a privilege for the royal class. However, the relative abundance of evidence of princely hunting is mainly responsible for this one-sided picture. Writing and painting was always done by and for the upper class—or, in the medieval context, elite—males. Information about hunting by rural and tribal people of today, but also of historical times, is readily available, and there is no reason to assume that their skills and techniques were invented no earlier than yesterday. Some casts are even traditionally associated with hunting, for example the Bagmari's, or tiger slayers, and most tribals live as hunter-gatherers. Tribals kill wild animals for two reasons: for food and to protect themselves. The number of hunting and catching techniques is vast<sup>37</sup> and falls beyond the scope of this book. I limit myself therefore to a single example, that of the pitfall and the goat. A huge round pit is dug, leaving a central pillar of earth untouched. On this pillar a goat is placed and the pit is concealed with a net and a layer of leaves. The bleating of the goat in the evening attracts the leopard or tiger, but just before attacking he will fall down into the pit with the net and the leaves. The cat is usually killed with spears which are thrown into the pit, or it is caught with the net, in case of cheetahs in the past. The method is widespread and practiced also today (fig. 11).

The attitude towards animals when edibility is at stake has been described to some detail in brahmanical texts. Since ancient times, strict rules have been formulated about what should be eaten by whom. These rules are mostly written down in the *dharma* handbooks.<sup>38</sup> There are various ancient brahmanical handbooks on dharma, dating from roughly the third century B.C.E. to the fourth century C.E. According

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third century B.C.E. After many wars, he saw the true nature of the massacre at the battlefields of Orissa and he decided to abstain further from warfare and killing living beings in general. He converted to Buddhism, a religion whose followers abstain from injuring and killing animals intentionally (*Patimokkha* 8.7.61).

<sup>37</sup> Described in detail by K. Kirkpatrick, "Aboriginal Methods employed in killing and capturing game," JBNHS 52, 2–3 (1955), 285–300 and S. Daver, "A novel method of destroying man-eaters and cattle-lifters without fire-arms," JBNHS 49, 1 (1950), 52–66.

<sup>38</sup> *Apastamba Dharmasutra* 1.17.14–39, *Gautama Dharmasutra* 17.22–38, *Baudhayana Dharmasutra* 1.12.1–15, *Vasistha Dharmasutra* 14.33–48, *Manava Dharmashastra* 5.4–26, *Yajñavalkya Smṛiti* 1.170–178, and *Vishnu Smṛiti* 51.21–42; cited from P. Olivelle, "Food for thought. Dietary rules and social organization in ancient India," Ninth Gonda lecture, held on 16 November 2001 on the premises of the Royal Netherlands Academy of Arts and Sciences (Amsterdam: Royal Netherlands Academy of Arts and Sciences, 2002).





Fig. 11. Tiger trap in Hazaribagh National Park, Jharkhand. Photograph: courtesy J. Kamphorst

to these, vegetables are the paradigmatic food with only very few dietary restrictions, such as garlic and red resins of trees. This is not the case for the animal kingdom: only very few may be eaten. The rules are complicated and different textbooks list different rules. For example, the *dharma* handbooks forbid all carnivorous animals as food. Medical texts on the contrary allow for it, describing the medical and dietary properties of each kind of carnivorous animal, the meat of which is considered as particularly nourishing.<sup>39</sup>

The medical texts classify animals based on habitat and ecology; this classification is meant to describe health effects. The *dharma* texts follow a completely different classification, based on morphological features of the animal; this classification defines edibility. Entire classes are forbidden to eat while others are allowed; exceptions are simply listed without explanation. The precise classification and rules about edibility are beyond the scope of this Introduction, but a few words have to be said to clarify the principles. The general rule is that if an animal falls in one of the forbidden classes, it is forbidden, even if it falls in several permitted classes as well.<sup>40</sup> An edible animal should thus not have a single inedible feature. Inedible features for mammals are: having incisors in both upper and lower jaw (*ubhayatodat*), being single-hoofed (*ekashapha*), having five nails (*panchanakha*), being a carnivore (*kravyad*), living in the village (*gramya*), living solitary (*ekacara*) and being unknown (*ajnata*). Edible features for mammals are more or less the opposite: lacking incisors in the upper jaw (*anyatodat*), being double-hoofed (*dvishapha*), living in a farm (*pashu*) or in the wild (*mriga*, *aranyaka*).

Exceptions exist, and the classic example is that of the five five-nailed animals (*pancha panchanakhas*). They are edible and are simply listed without further explanation (*shvavidh*, *shalyaka*, *shasha*, *kachchhapa*, *godha*); these are the porcupine/the hedgehog, the pangolin, the hare, the tortoise/the turtle/terrapin, and the monitor lizard.<sup>41</sup> Another case is the rhinoceros, which is often listed among the five-nailed animals.

<sup>39</sup> See F. Zimmermann, *The Jungle and the Aroma of Meats: An Ecological Theme in Hindu Medicine* (Berkeley: University of California Press, 1987), 159–179 on the medical texts *Charaka Samhita* and *Sushruta Samhita*.

<sup>40</sup> Olivelle, op. cit. (2002), 20.

<sup>41</sup> The exact species are not unambiguous, because the words *shvavidh* and *shalyaka* both may refer to porcupine, hedgehog or pangolin (Zimmermann op. cit. (1987), 174). I hold that, at least in this rule, the porcupine and hedgehog are lumped together, based upon their spiky coat, just as the tortoise (terrestrial), turtle (aquatic, sea) and terrapin (aquatic, freshwater) are considered similar.

It is an odd-toed ungulate, closely related to the horse, but with three hooves on each foot instead of one. The Indian classification does not have an odd-toed class, but a one-toed class instead, so the rhinoceros cannot be classified properly. Although it falls in several prohibited classes (),<sup>42</sup> it is generally considered edible in the legal texts and listed together with the allowed five five-nailed animals.<sup>43</sup> The edibility rules in the Hindu *dharma* books seem thus rather ad hoc and certainly do not follow strict taxonomical rules.

Edibility of animals is a much less complicated matter in Buddhist textual sources. In principle, meat and fish eating is allowed, provided that the animal was not specifically killed for the follower of the Buddha. The meat of a few animals, apart from human flesh, is, however, strictly forbidden for monks: that of elephant, horse, dog, lion, tiger, leopard, bear, hyena and snakes.<sup>44</sup> The dog is commonly considered impure and disgusting, unfit to be eaten. The restrictions on eating the big cats, the bear, the hyena and the snakes are entirely based on personal safety, because the smell might stir the anger of their living fellows and instigate their attack. The elephant and the horse should not be eaten because they are linked to royalty. The dietary regulations seem thus not so much based upon (ritual) purity but on personal safety, except for the dog. The consumption of wild members of the dog family apparently is not considered a real threat: meat of wolves, jackals, and dholes is not prohibited.

Cows and bulls belong to the class of animals which may be considered particularly auspicious. The first evidence in South Asia for this is found on the seals, terracotta and pottery from the Indus Valley in Pakistan and produced in large quantities during the Harappa period (late third early second millennium B.C.E.). Since the script remains undeciphered till date,<sup>45</sup> it is impossible to say something definite about the depicted animals, although some tentative statements can be made.

<sup>42</sup> Being five-nailed (*panchanakha*), living solitary (*ekacara*), and having incisors in both upper and lower jaw (*ubhayatodat*).

<sup>43</sup> S. Jamison, "Rhinoceros Toes, *Manu* v. 17–18, and the Development of the Dharma System," *JAOS* 118 (1998), 249–256.

<sup>44</sup> *Suttavibhanga* 1.218–219.

<sup>45</sup> Although numerous decipherments have been proposed, especially the last twenty years, none has been generally accepted by the scientific community. The biggest obstacles are the unidentified substrate language, the short average length of the inscriptions—less than five signs—, and the absence of a bilingual text—a 'Rosetta stone'—.

First of all, it is striking that such a broad range of (male) animals, wild as well as domestic, was depicted,<sup>46</sup> whereas at the same time the vast majority seems limited to the large bovid bulls only. This indicates that bulls had a special status, be it sacrificial or divine or both, probably not unlike its status more to the west in Asia Minor and around the Mediterranean, where the bull sacrifice was of major importance.<sup>47</sup> One of the Indus Valley seals seems to combine the three different species of bull into one, resulting in a three-headed bull (see section 4.2). Another interesting seal depicts a man wearing a mask with two bull horns. He sits in a yogic posture on a throne or seat, surrounded by animals (fig. 12). The animals can be identified as a wild water buffalo, an elephant, an ibex, a tiger, and an Indian rhinoceros.<sup>48</sup> The figure is commonly interpreted as Lord of Beasts (Pashupati), an epithet that has also been used for the Vedic god Rudra and his Hindu counterpart Shiva. The proposed continuity between these figures is, however, only based upon speculation and observed similarities, but without the decipherment of the script, such statements cannot be proven with certainty, though they are very evocative.

Auspicious animals in early Buddhist art appear to be the lion, elephant, bull and horse, which possibly were considered guardians of the four wind directions, respectively north, east, west, and south. This is at least the impression one gets when visiting the stupas (*cetiya*s) of Sri Lanka, where the pillars of the side platforms (*vahaldakas*) are crowned with these four animals. The same four animals walk on the border of moonstones at the entrances of Sri Lankan monasteries, for example at Anuradhapura (fifth century). Three of these animals figure as capitals of emperor Ashoka's pillars (third century B.C.E.), spread throughout northern India;<sup>49</sup> the horse capital seems missing. The abacuses of these same pillars are adorned as well with the same four animals; here, the

<sup>46</sup> These are the zebu, the Indian bison, the aurochs or an early taurine breed, the water buffalo, the urial, the ibex, the markhor, the blackbuck, the Indian rhinoceros, the Indian elephant, the tiger, the lion, the domestic dog and the hare.

<sup>47</sup> S. Athanassopoulou and Y. Tzedakis, *The Bull in the Mediterranean World: Myths & Cults* (Athens: Hellenic Ministry of Culture, 2003). Today, this once widespread sacrifice is limited to a few places only, for example the Tauros Hill near Agios Paraskevi on the island of Lesbos (Greece), where a decorated bull is sacrificed every year on July 26th.

<sup>48</sup> See further sections 8.2.1 (buffalo), 12.2 (ibexes), 17.2.1 (elephant), 35.2.1 (tiger), and 37.2.1 (rhinoceros).

<sup>49</sup> The lion at Rampurva, Lauriya Nandangarh, Basarh, Sarnath and Sanchi, the elephant at Sankisha, the bull at Rampurva and Salempur.



Fig. 12. The so-called 'Pashupati' seal (DK 5828) with an ascetic figure, wearing a horned mask and surrounded by several animals. Mohenjo-daro, Indus Valley, Pakistan, Harappa Period, c. 2,300–1,750 B.C.E., steatite. Photograph: ASI, 1928–29, courtesy Kern Institute, Leiden, the Netherlands

horse is not lacking. The exact interpretation of these auspicious four is still unclear. Apart from being linked to the wind directions, it has been suggested that these four animals represent the eternal cycle of rebirths (*samsara*) and the escape from it (*nirvana*), in which the elephant symbolizes birth, the bull decay, the lion illness, and the horse death.<sup>50</sup>

<sup>50</sup> N. Wijesekera, *Sculpture*, Archaeological Department Centenary (1890–1990) Commemorative Series 4 (1990), 75; quoting Vitana. The idea seems to be confirmed by moonstones bearing depictions of only the elephant and the horse, for example at the Vatadage of Polonnaruwa (figured in J. Boisselier, *Ceylon, Sri Lanka* (Geneva: Nagel Verlag, 1979), pl. 102). A related symbolism might be found at Kathmandu in Nepal,

Another explanation for the auspicious four animals is that they are based upon an earlier worship of sun and moon, with the elephant as the vehicle of Indra/Aditya, the lion as the symbol in the sun god's banner, the horse as the vehicle of the sun, and the bull as both symbol of the sun and vehicle of the moon.<sup>51</sup> A straightforward interpretation is that they simply represent royal symbols: the lion to claim royalty, the elephant to destroy the enemies, the horse to expand and conquer, and the bull to fertilize the kingdom. After all, Buddhism always flourished under royal patronage and the Buddha himself was a prince and heir to the throne. The auspicious four are then not necessarily part of a religious framework.

More or less the same auspicious animals are found on the stupa itself as decorative bands consisting of rows of four-footed animals (*chatushpada pamtī*) and of geese (*hamsa pamtī*).

The use of rows of identical animals as auspicious decoration<sup>52</sup> is very widespread and found from the earliest till the latest religious architecture. It is not limited to the stupa,<sup>53</sup> nor to Buddhist architecture. Alternating rows of walking geese, elephants, horses and lions, mythical or more naturalistic, with and without riders, abundantly decorate the Hindu temples of the Hoysala dynasty of Karnataka (fig. 13). Apparently, the auspiciousness of the same set of animals (elephants, lions, horses, geese, but not bulls)<sup>54</sup> is not limited to a certain period, region or religion. These animals simply *are* auspicious in India.

The ancient sacrificial value may lie behind the most well-known aspect of Indian attitude towards animals: that of the Hindu taboo on

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where the pedestal of a giant sculpture of a thunderbolt (*dorje*) is adorned with twelve animals walking in procession, much like the auspicious four, but now with eight more animals. They represent the twelve zodiac signs, and thus stand for the annual cycle of seasons, the inevitable rebirth, prospering, flowering and death of nature.

<sup>51</sup> Wijesekera, op. cit. (1990), 75. In Asia Minor and around the Mediterranean, bull and lion indeed were linked to the moon—night, winter, darkness—and sun—day, summer, light—respectively, especially so in myths in which the lion killed the bull; see Athanassopoulou and Tzedakis, op. cit. (2003). The horse, pulling the sun god's chariot along the celestial path is related to the sun as well; the role of the elephant, however, remains unexplained.

<sup>52</sup> E. Fisher, *Buddhist Art and Architecture* (London: Thames & Hudson, 2002, rev. ed.; first ed. 1993).

<sup>53</sup> Also the throne or Seat of Enlightenment at Bodhi Gaya and the abacus of Ashoka's pillar at Lauriya Nandangarh, both in Bihar, are decorated with rows of geese, similar to those of the stupas and the inner circle of moonstones.

<sup>54</sup> Why the bull is left out of these more than just decorative bands is unclear, but probably its ancient sacrificial value stands in the way.



Fig. 13. Detail of a plinth with three animal series. Keshava temple, Belur, Karnataka, 12th century, soapstone. Photograph: courtesy A. Moorjani

killing cattle. Until at least the fourth century, the cow and bull were still listed among the permitted animals by the *dharma* texts.<sup>55</sup> By the early eleventh century, this seems not to have been the case anymore according to Alberuni's observations. In the period before, a change in attitude must have taken place and especially the cow was raised in status. The poet Bharavi of the sixth century describes cows as fond mothers and even as mothers of the earth.<sup>56</sup> Nowadays, cows and their calves are allowed to roam freely through the village in search for (the scarce) food. Old and miserable cattle are sometimes taken special care of in so-called *gosadans* or *gupsalas*, of which there are about a thousand in India. The Kappiliyan tribe of Madurai in southern Tamil Nadu breeds a very small kind of zebu, of which they use the oxen as fast runners. Their cows are not milked and when an animal dies, it is

<sup>55</sup> P. Olivelle, "Abhaksya and abhojya: An Exploration in Dietary Language," *JAOS* 122, 2 (2002), 345–354; Olivelle, "Food for thought" op. cit. (2002).

<sup>56</sup> *Kīr* 4.10, 4.31–32.



Fig. 14. Cows often have to find their own food, including garbage and plastic bags. Jodhpur, Rajasthan. Photograph: courtesy J. Kamphorst

buried as a whole.<sup>57</sup> In the past, there was even a holy herd (*devaru api*) of this Kappiliyan breed. The bull, called the king bull (*palladu aou*), had his own caretaker and was treated like a deity. In Nepal, calves are dedicated to Shiva and released after the death of a wealthy Hindu. These cows (*sandhi*) and bulls (*sandhe*) are well fed; bulls roam freely through the villages, cows usually disappear in one of the herds.

The taboo on killing cattle has, unfortunately, other aspects as well. Grass is rare and not enough to sustain all cattle. Many cattle have thus to feed on household garbage and whatever they find in the streets (fig. 14) or on refuse dumps. Calves are often underfed, because the milk of their mothers is used for human consumption. In some areas where there are too many non-productive cows, they are bound and die from hunger. In spite of the fact that the females are esteemed and worshipped, the bull calves are the ones which get all their mother's milk, whereas the cow calves get only half of it; normally, young bulls are raised with care and trained, while young cows are left on their own. As a result, many cows are underfed and are more like skin over bone. This is the more amazing upon further reading of the poet Bharavi:

<sup>57</sup> W. Gunn, "Cattle of Southern India," *Bulletin of the Department of Agriculture, Madras* 3, 60 (1909).



the ox, in contrast to the cow, is a model of low position, being devoid of all sense of shame and having no control over its sense organs<sup>58</sup> and the bull is arrogance incarnate.<sup>59</sup>

In the ancient Mediterranean world, bull fighting had a religious meaning. The bull fighting, ending with the death of the bull, was replaced by another form of sport, in which the bull survived, for example the bull leaping of the Minoans of Crete (Greece). The bull teasing in southern India might be explained in a similar light. In some regions this is still a popular amusement of an innocent nature. For example in Allanganallur near Mellur, the bulls are decorated with colours and ornaments and their horns are painted. Trumpets are blown to encourage the bulls to run. The aim is to catch the bull by its horns or hunch as a proof of strength and courage; if the bull escapes, the prize goes to the owner.<sup>60</sup>

#### ANIMALS IN INDIAN RELIGION

The most obvious role of animals in religion is that of sacrificial animal (fig. 15). Rules on animal sacrifices are complicated and not easy to unravel. It is said that animal sacrifice arose out of food habits: whatever one eats is ceremoniously offered to the deity and then consumed by the participants, and thus all human food consists of divine leftovers.<sup>61</sup>

In principle, all kinds of animals, domestic as well as wild, can be sacrificed, but it seems that this was done only in the context of the horse sacrifice (*ashvamedha*; see section 18.1.4.3), the most important sacrifice of all. The text promises that by offering all kinds of animals along with the horse both worlds—the observable world and the other world—are obtained by the sacrificer.<sup>62</sup> This was, however, an exceptional sacrifice and as a rule victims were chosen from a much more limited list.

<sup>58</sup> *Kūr* 11.33.

<sup>59</sup> *Kūr* 4.11.

<sup>60</sup> Other examples are the *jallikattu* (“jellicut” in colonial English) and the *mathuppongal* in southern Tamil Nadu. A colourful cloth with coins was put between and around the horns of a young bull, which had to be taken off by the participants, as described by Gunn, op. cit. (1909) and W. Crooke, “Bull-Baiting, Bull-Racing, Bull-Fights,” *Folklore* 28, 2 (1917), 141–163.

<sup>61</sup> W. O’Flaherty, *Tales of sex and violence: folklore, sacrifice and danger in the Jaiminiya Brahmana* (Chicago: University Press, 1985), 36.

<sup>62</sup> *TB* 3.9.3.1.



Fig. 15. A goat sacrifice in a courtyard. Photograph: ASI, 1910–1930, courtesy Kern Institute, Leiden, the Netherlands

Wild animals were as a rule excluded: to kill a wild animal in sacrifice would destroy the sacrifice.<sup>63</sup> Even for the *ashvamedha* the wild animals were not killed, but eventually released after the fire was carried around them. The allowed animals are all domestic or farm animals (*pashu*). Among these, there is a hierarchical order, which is as follows: human, horse, bull, ram and goat;<sup>64</sup> the human victim is thus the highest of all possible victims and considered a domestic animal as well.

Goats and sheep had a special ritual status in ancient India as they are most close to the prolific creator god Prajapati, in that ‘they bear young three times a year and produce two [offspring] three times [per year]’.<sup>65</sup> Although goats have been accorded a lowly position in hierarchical listings of animals, they are the most common sacrificial animals till the present day.

Apart from the prescribed animals in the above mentioned brahmanical texts, there are different permitted animals in other texts. For example, the water buffalo is allowed in the Hindu text *Tantrasara*.<sup>66</sup> The brahmanical system was mainly meant to establish the role and position of the uppermost class, that of the priestly Brahmins who controlled the sacrifices, and it is thus very likely that different sacrificial rules were in vogue in other layers of the society, and certainly with people outside the Vedic society: outcasts, tribals, pastoralists. For Buddhists, animal sacrifice was clearly prohibited.<sup>67</sup>

As mentioned above, the Indian religions all accept the principle of the eternal cycle of rebirths (*samsara*), to which not only humans but also animals and gods are subject. Only by doing the right deeds one can escape this cycle and attain liberation (*nirvana*) or merge with Brahma. The rules on how to behave are known as *dharma*, the law. In the brahmanical texts on *dharma*, the majority of rules in which animals are involved have to do with sacrificeability (*medhya*) and edibility (*bhakshya*) of animals. Buddhist ideas on the *dharma* (*dhamma* in Pali), dealing with human-animal relationships are found in their canonical

<sup>63</sup> *Ibidem* 3.9.1.2–4.

<sup>64</sup> B. Smith and W. Doniger, “Sacrifice and Substitution: Ritual Mystification and Mythical Demystification,” *Numen* 36, 2 (1989), 189–224. *Ibidem*, 220, footnote 31 for references on human sacrifice. See also *ShB* 6.2.1.18.

<sup>65</sup> *ShB* 4.5.5.6, 9 and 5.2.1.24; cited from B. Smith, “Classifying animals and humans in ancient India,” *Man* (London) 26, 3 (1991), 527–548; see, however, section 32.1.3.

<sup>66</sup> P. Pal, *Hindu religion and iconology, according to the Tantrasara* (Los Angeles: Vichitra Press, 1981). The *Tantrasara* was written around 1000 by Abhinavagupta in Kashmir.

<sup>67</sup> *AP* 2.42, 4.151, *Matakabhatta Jataka*, for the story, see section 32.2.5.

texts, the *Tripitaka*<sup>68</sup> or Three Baskets. These texts explicitly mention the type of animal, but not so much the precise species, in case of rebirth as an animal due to bad *karma* (*kamma* in Pali). For example, those who creep or slink along in their present life, such as robbers, are most likely reborn as creeping or slithering creatures, such as a snake, a scorpion, a centipede, a mongoose, a cat, a mouse, an owl, or the like.<sup>69</sup>

A significant part of the Buddhist rules deals with proper conduct towards animals, all within the context of morality (*shila*), which falls in the three parts of right speech, right action and right livelihood. They are often illustrated with a story or tale, for example that of the ox Nandivishala.<sup>70</sup> According to this story, once, a Brahmin, the owner of the ox, put a bet with a merchant that his ox can pull a hundred carts tied together. At the contest, the Brahmin shouted at his ox, calling it a hornless rascal. In response, the ox made no effort to pull. The Brahmin, grieving about his loss of money, was approached by his ox, which asks him why he had used bad language. The ox suggested renewal of the contest but this time without insulting words. The Brahmin agreed and now encouraged his ox with friendly words. This time, Nandivishala pulled the heavy load for its master and thus brought him wealth.

Another source for views on *dharma* originates from the Buddhist emperor Ashoka (reign 273–232 B.C.E.) of the Maurya dynasty of North India. He let some principles of the law be recorded on stone pillars and rock boulders, so as to make it everlasting. His fifth pillar edict orders for the protection of the animals and prohibits the slaughtering of pregnant cattle, goats and sheep, goats, sheep and pigs which are with young or lactating, and young animals in general up to the age of six months. He also dictated that an animal must not be fed with another animal. From his text it can be concluded that the wild mammals that were to be preserved are bats, porcupines or hedgehogs, squirrels, deer, bison, khurs, and further a vague rest category, comprising all other four-footed animals which are not utilised nor eaten.<sup>71</sup>

<sup>68</sup> Consisting of three parts, being the *Sutta Pitaka*, the *Vinaya Pitaka* and the *Abhidhamma Pitaka*.

<sup>69</sup> *AP* 5.289, cited in McDermott, op. cit. (1989), 269.

<sup>70</sup> Told in the *Suttavibhanga* 4.5 of the *Vinaya pitaka*; cited from McDermott, 1989: 271, op. cit. The story is repeated in the Pali *Jataka* 28.

<sup>71</sup> Prater, S.H., 1971. The book of Indian animals. Bombay: Natural History Society (3rd revised edition, 1st ed. 1948).

Loosely related to *dharma* is the system of undertaking vows, self-imposed rules that differ from the standard rules. A vow is generally undertaken as an expiatory punishment or to attain a desired goal (e.g. heaven, immortality, a boon). A vow can be anything, for example, abstaining from cutting one's finger nails or from using one's speech, walking on one leg, sleeping with the head downwards and so on. An interesting type of such vows is that of behaving like an animal, having their forms, wearing their hides, horns, and so on. In the literature, these have specific names, such as *kukkuravatika* and *govratika*, one who behaves like a dog and a bull respectively.<sup>72</sup> The Buddhist text is not very positive about such behaviour, because the Buddha remarks that, if successful, such a vow makes you a dog or bull and you will be reborn as a dog or a bull; if unsuccessful, you go to hell. The Hindu view on animal vows is quite different, as appears from the epic *Mahabharata*. A *govratika*, who lies anywhere and eats and wears anything, wins the heaven and becomes immortal.<sup>73</sup> The vow does not necessarily have to be undertaken for a life time: Bhishma speaks of taking the bull-vow for three days and nights only, followed by a stay of one day along with the cattle themselves.<sup>74</sup>

#### ANIMALS AND INDIAN GODS

A number of major and minor deities have permanent animal features, apart from instances of metamorphosis into an animal form and back as occurs in several myths. The majority of these are the zoocephalic forms—forms with a human body and an animal head—. Why the head and not the body is not clear, but it might be related to the sacrificial value of the head. In many sacrifices, only the head is used for further ritual and not the decapitated body; see, for example section 8.1.2.2 on the buffalo heads offered to Bhadra Kali in Nepal.

The most famous zoocephalic deity is the elephant-headed Hindu god Ganesha (see section 17.2.15; fig. 16), one of the most popular South Asian deities today. Some other Hindu zoocephalic deities are

<sup>72</sup> Described, for example, in the Buddhist text *Kukkuravatikasutta* of the *Majjhimanikaya*. See also G. Thite, "Animalism in ancient India," *Journal of the Oriental Institute* 21 (1971–1972), 191–209.

<sup>73</sup> *Mbh* 5.97.13–14 and *Mbh* 1.86.17, respectively.

<sup>74</sup> *Mbh* 13.75.19.

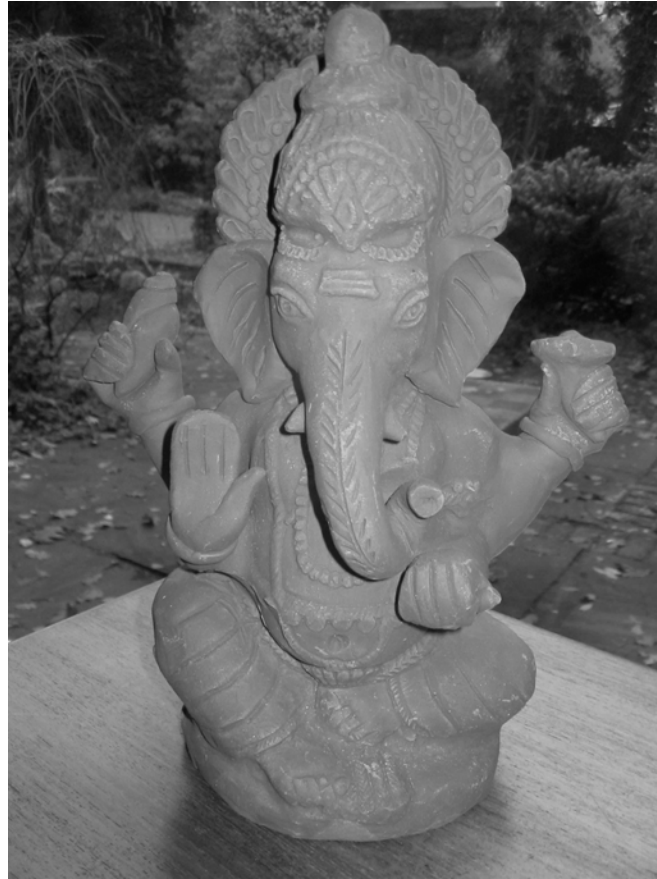


Fig. 16. The elephant-headed Hindu god Ganesha. New Delhi, 20th century, terra cotta. Private collection. Photograph: courtesy J. Kamphorst

the lion-headed Narasimha, the horse-headed Hayashiras and Hayagriva, the boar-headed Varaha, the jackal-headed Shivaduti, and the sow-headed Varahi.<sup>75</sup> Animal heads are also characteristic of some of the protector deities of Tibetan Buddhism, such as the buffalo-headed Yamantaka,<sup>76</sup> the horse-headed Hayagriva, and the eight Tibetan Buddhist female deities of the afterdeath *bardo*. The protector deities

<sup>75</sup> See sections 33.2.6 (Narasimha sculptures), 18.1.4.3 (Hayashiras and Hayagriva in religion), 39.1.3 (Varaha myth), 39.2.2 (Varaha sculptures), 39.2.3 (Varahi sculptures), and 11.2.2 (Shivaduti sculpture) respectively.

<sup>76</sup> See sections 8.1.2.2 (Yamantaka myth) and 8.2.3 (buffalo-headed Yama sculptures).

of the city gates of Kathmandu in Nepal are equally animal-headed: the horse-headed Hayashya (eastern gate), the sow-headed Sukarasya (southern gate), the dog-headed Shvanasya (western gate) and the lion-headed Simbasya (northern gate).

Mythical snakes (male *naga*, female *nagini*) are worshipped all over rural South Asia. They are either represented as humans with a five- or seven-headed snake-hood or as five- or seven-headed snakes. Other complete animal forms, apart from these snakes, are extremely rare. Only one such zoomorphic deity is widely popular: Hanuman, the Hindu monkey god (fig. 17). Hanuman, son of the god of the wind, plays a crucial role in the epic Ramayana as rescuer of Sita, the wife of Rama, who was abducted and kept in the palace of Ravana on Sri Lanka.<sup>77</sup> Varaha, the boar incarnation of the Hindu god Vishnu is sometimes entirely zoomorphic as well. Commonly, he is only boar-headed, but there are a few early depictions in which also his body is that of a boar.<sup>78</sup> Matsya and Kurma—Vishnu's fish and turtle incarnation respectively—are always wholly zoomorphic. These two cold-blooded incarnations are rarely depicted and were never very popular.

A major role played by animals in Indian religion is that of divine vehicle or mount (*vahana*) to carry the various deities. For this role not only the obvious riding animals are chosen, such as the horse, the bull, and the tortoise (fig. 18) but also the seemingly unfit as far as size or strength is concerned, such as the bandicoot rat. The majority of Hindu and Vedic deities each have their own personal vehicle. Several of the Jain tirthankaras are also associated with a personal vehicle, and a few of the Buddhist bodhisattvas and protective gods ride an animal vehicle, too. The earliest surviving examples of such divine vehicles are seen on the railing pillars of a now vanished Buddhist stupa at Bharhut in Madhya Pradesh, dated c. 100 B.C.E.. Here, benevolent male and female ogres—male *yaksha*, female *yakshi* or *yakshini*—are depicted, each standing on an animal, a human figure or a dwarf. The most well-known animal vehicles are Shiva's bull calf Nandi or Vrishan, and Vishnu's eagle Garuda.<sup>79</sup> These vehicles have a personal name and may even be portrayed independent of their masters and worshipped on their own. The independent status of Nandi might be explained by the special

<sup>77</sup> See further sections 38.1.3 (Hanuman myth) and 38.2.2, 38.2.3 (Hanuman sculptures).

<sup>78</sup> See further section 39.2.2.1.

<sup>79</sup> Garuda is also the vehicle of the transcendent Buddha Amoghasiddhi.



Fig. 17. The Hindu monkey god Hanuman. Modern concrete statue (20th century) along the trail up to the Hanuman temple (16th century) in the Tirumala hills of Tirupati, Andhra Pradesh. Photograph: courtesy S. Harsha





Fig. 18. The river goddess Yamuna standing on her tortoise. Northern India, 10th–11th century, reddish sandstone. Linden Museum, SA 36796 S, Stuttgart, Germany. Photograph: A. van der Geer, courtesy Linden Museum, Stuttgart

role of bulls since ancient times in sacrifice (see also above) and fertility rituals. The same holds for Garuda, who is connected with the serpent lore<sup>80</sup> and plays a crucial role in the ancient belief in the *nagas* as their antagonist.<sup>81</sup> Until recent, and likely still today, people in South India daily say an evening prayer to Garuda to ward off snakebites.<sup>82</sup> A few other vehicles have personal names too, such as Indra's elephant Airavata.<sup>83</sup> The majority of vehicles, however, have no name. Neither do they have a parallel in other religions, with the exception of the sun god Surya. He rides a chariot drawn by seven horses, like the sun gods of other ancient civilizations.<sup>84</sup>

In one case an animal functions as the vehicle of a non-mythological being. In the Karni Mata temple at Deshnok, Rajasthan, rats are believed to be the vehicles of the souls of departed devotees of the folk-goddess (*sagati*) Karni, waiting to be reborn.<sup>85</sup> As such, they are fed and given milk, sweets (Plate 6) and shelter; it is forbidden to kill, injure or disturb them. This situation is, however, unique and seems to have no parallel, not in India or elsewhere.

#### ANIMALS IN STONE

The aim of this book is to present an overview as complete as possible at the present stage of knowledge, of the way in which Indian mammals were depicted throughout the centuries and throughout the subcontinent. I compare the sculptures with the living animal and with each other and based on these comparisons, I'll describe the sculptures, focussing on how naturalistic, stylistic or erroneous the animal figure is, and which other sculptures it resembles. The animal sculptures are described in their context, including the role of the animal in society,

<sup>80</sup> Known as *Garudavidya* or *Vishaharividya*.

<sup>81</sup> S. Dangle, *Legends in the Mahabharata with A brief survey of folk-tales* (Delhi: Motilal Banarsidass, 1969).

<sup>82</sup> J. Dubois, *Hindoo Manners, Customs, and Ceremonies*, transl. H. Beauchamp (Oxford: Clarendon Press, 1906; first ed. (in French), 1825), 250.

<sup>83</sup> This originally Vedic major god was degraded in Hinduism to the status of a minor god, as guardian of the east and lord of the rain, and with him his elephant. See further sections 17.1.2.3 (Airavata myth) and 17.2.14 (Airavata sculptures).

<sup>84</sup> See further section 18.1.4.3.

<sup>85</sup> J. Kamphorst, "In Praise of Death. Religious Identity and Martial Ethos in Rajasthan (South Asia)," Ph.D. thesis Leiden University, 2008. See further sections 3.1.3 (Karni Mata legend) and 3.2.2 (Deshnok sculptures of rats).

because the context may have played a role in the depiction and vice versa, the depiction informs about the context. Regarding the vast geographic area and the immense amount of stone sculptures, the reader should not expect a complete listing of all occurrences. Many art pieces had to be excluded in order to present a clear picture. Pieces that are more or less the same do not contribute much to a better understanding, nor do pieces that are too badly eroded, unless crucial features are still visible. Yet, notwithstanding the inevitable gaps, this book contributes not only to our knowledge of animal depiction in Indian stone sculpture, but also to our knowledge of the perception of Indian people of the various animals and to our knowledge of past distribution of Indian animals.

As we will see, the depiction of animals in stone sculpture covers a large time span, beginning with the famous steatite seals found in the Indus Valley of Pakistan, roughly dating from the mid-third to the mid-second millennium B.C.E. These seals are supposed to have been used in trade<sup>86</sup> and perhaps in ritual. The majority of the seals bears the image of an animal, either realistic or mythical. Despite their miniature size, the animal figures are impressively realistic and clearly show that the sculptors had a good eye for the animals around them. Another proof of that the artists recorded accurately what they saw are the seals with the rhinoceroses.<sup>87</sup> The typical folded skin with prominent knobs is copied with precision on the small seals. Zebu bulls, bison bulls and elephants form the main theme, followed by rhinoceroses, tigers, water buffaloes and occasionally, markhors, crocodiles and lions. Horses are lacking all together. A large number seems to depict some kind of unicorn, but this is in my view a misunderstanding. The image is better interpreted as an aurochs in profile with its typically long, forward curving horn.<sup>88</sup> Another remarkable animal image is that of a three-headed bull, which in my view expresses the idea of the three known *Bos*-bulls (zebu, bison and aurochs) all combined in one.<sup>89</sup> Not all images on seals can be explained, like, for example, a seal with a long-necked animal with spots all over its body which appears to resemble a giraffe

<sup>86</sup> U. Franke-Vogt, "Die Glyptik der Harappa-Kultur," in *Vergessene Städte am Indus* (1987), 193; S. Atre, "Harappan seal motifs and the animal retinue," *BDCRI* 49 (1990): 43–51, 43.

<sup>87</sup> See further section 37.2.1.

<sup>88</sup> See further section 6.2 for examples and discussion.

<sup>89</sup> See further section 4.2.

but there is no evidence of contact with sub-Saharan Africa.<sup>90</sup> Another puzzling seal is that with a strange yaklike animal with a long hairy coat, upward curved horns and a long proboscis reaching the ground. Hairy elephants—not mammoths—could theoretically still have lived in the Himalayas some 4,000 years ago, but horns were never borne by elephants. A yak bound by a thick cord attached to the muzzle could theoretically be a possibility, but as far as I know, such a cord has not been depicted on other seals.

After the Indus Valley period, there is an archaeological silence of about a millennium as far as animal sculptures are concerned. There are some scattered post-Harappa ruins, but seals are absent. After about 800 B.C.E. a new urbanisation phase seems to have taken place, judging from the archaeological remains of settlements and fortifications, but no animals in stone sculpture have been found there, yet. The first sculpted animals coincide with the Mauryan dynasty, who gave shape to the first large-scale Indian empire, ranging from what is today Afghanistan into peninsular India; only the south was not under their control. The animal sculptures are mainly in the form of pillar capitals and abacuses. One such capital—the famous quadruple lion-capital of Sarnath in Uttar Pradesh of the mid-third century B.C.E.—figures today as the official emblem of the Republic of India.<sup>91</sup> The domestic animals of this period—zebu bulls, horses and elephants—were carved with great care and some indicate a deep affection of the sculptor towards the animal. The lions are different: static and artificial, in great contrast with, for example, the lively swift running horse on one of the abacuses.<sup>92</sup>

From that time on, more and more cultural remains have survived, ranging from decorative reliefs to freestanding independent statues as we will see. Animals play a role as auspicious beings on ornamental parts, as vehicles to carry their divine masters, sometimes independent of their masters, as hero or side-figure in narrative reliefs, as mere attributes to indicate a setting, as proof of royal power, as door guardians to palaces and temples, or to carry an architectural unit. The majority of sculpted animals is anonymous; only very few are based on a real, historical animal. The best examples of the depiction of historical

<sup>90</sup> See Chapter 23 for discussion of import of giraffes in historical times.

<sup>91</sup> See section 33.2.2.1 for description and similar lion capitals.

<sup>92</sup> See section 18.2.2 for description.

animals are given by the hero stones (*devalis*) scattered throughout the Great Indian Desert in Rajasthan.<sup>93</sup> Rajput heroes or great leaders who died for a 'noble' cause, such as winning back stolen cattle, and fights with other clans over water wells are immortalised and deified on memorial stones on which they are depicted as riding their faithful horse and sometimes, depending on the circumstances of their death, with cattle or a dromedary.<sup>94</sup> Their wife or wives may be depicted on the same stone as well, as in the case when they were burnt alive on the funeral pyre of their husband to become a *sati* (literally: good wife) but also sometimes female cattle keepers<sup>95</sup> are depicted as accompanying heroes. In other cases, a sun and a moon are depicted above the horse rider.<sup>96</sup> Most of these warrior heroes or folk gods are known by name, and so are their horses, for example, the hero Pabuji and his mare Kalmi or Kesar (fig. 19).<sup>97</sup>

In some regions a profusion of animal sculptures strikes the eye, or at least during certain times, whereas in other regions animal motifs were only sparingly used. Examples of an animal invasion into stone sculpture are the railings and gateways around the Buddhist stupas at Sanchi in Madhya Pradesh of the first two centuries, and the splendid Hindu rock-cut caves, boulders and statues at Mammalapuram in Tamil Nadu of the seventh and eighth century. A great variety of mammals, realistic as well as mythical, are sculptured on these monuments as silent proofs of the skilfulness of the artists of Sanchi and Mammalapuram alike. This appears to be much less so in the case of the stupa railings of Amaravati in Andhra Pradesh of the second and third centuries. No doubt the art of Amaravati is unsurpassed and its stupa complex must have been a world wonder in its time, but as we will see, the human figures easily outnumber those of the animals. The few carved mammals are now more often than not of a mythical nature. Also the Buddhist architecture on Sri Lanka from before the tenth century is not particularly rich in animal sculpture. Some of these

<sup>93</sup> See section 18.2.7 for examples of these hero stones.

<sup>94</sup> J. Kamphorst, "The deification of South Asian Epic Heroes: Methodological Implications," in *Epic Adventures. Heroic Narrative in the Oral Performance Traditions of Four Continents*, ed. J. Jansen and H. Maier (Muenster: LIT Verlag, 2004), 89–98.

<sup>95</sup> Charani *sagatis*, see further glossary.

<sup>96</sup> Some Rajput lineages claim descendancy from the moon, others from the sun.

<sup>97</sup> J. Kamphorst, "The Warrior-hero Pabuji," in *Devotional Literature in South Asia; Current Research 1997–2000*, ed. W. Callewaert and D. Taillieu (New Delhi: Manohar, 2002), chapter 18.



Fig. 19. A herostone for Pabuji Dhamdhal Rathaur riding his mare Kalmi or Kesar. Koli temple, Koli, Rajasthan, c. 17th century, yellow sandstone.  
 Photograph: courtesy J. Kamphorst

sculpted animals, however, are portrayed with extraordinary skill and emotion and are almost alive, such as the bathing elephants of Naga Pokuna at Isurumuni of the second half of the first millennium.<sup>98</sup> Quite different is the situation in India during the Islamic period, between roughly the twelfth and the eighteenth century, during which period animal sculptures are remarkably rare. Despite the passion and scientific interest in nature in all its forms in the Islam, which is evident from the minutely painted miniatures, manuscript illustrations, mosaics and inlays,<sup>99</sup> animal sculptures are extremely rare and seem mainly limited to elephant statues at gates.<sup>100</sup> Decoration of their architecture in India is mainly restricted to the two-dimensional plane. In the mean time, Hindu patrons continued commissioning monumental sculptures, on which animals often flourished. They are sometimes full of life with round shapes and almost bulging out of their stony prisons on the Hindu temples of Tamil Nadu of the sixteenth and seventeenth century. In other cases they are more static, plump and grotesque, such as the freestanding life-sized horse and elephant statues at Konarak's Sun temple in Orissa of the thirteenth century.<sup>101</sup>

Bound to the limitations of skill and experience, the wishes and demands of the commissioner, the prevalent opinions and not to forget the limitations of the material itself, including available space, the artists depicted the animals from amazingly naturalistic to highly stylized or completely erroneous. In the latter case one may wonder whether the artist ever saw the creature he had to depict. This is often the case with the lion, an animal belonging to the fantastic realm in the imagination of the common people, only seen by the happy few in most regions. Erroneous details of many lions are, for example, large bulging eyes, rows of blunt, herbivorous teeth, and even hornlike structures (fig. 20). Zebu bulls and cows, on the contrary, were familiar to everybody and practically all zebu sculptures are naturalistic, in the sense that the animal has been depicted accurate in all its details. Realistic details of zebras are, for example, the densely wrinkled dewlap, the almond-shaped

<sup>98</sup> See section 17.2.3 for description and similar examples.

<sup>99</sup> See, for example, R. Nath, "Depiction of animate motifs at the tomb of I'timad-ud-Daulah at Agra," *Islamic Culture* 47, 4 (1973), 289–300; S. Parihar, "Depiction of animate motifs on the Muslim monuments of the (East) Punjab & Haryana—a survey," *Journal of the Pakistan Historical Society* 40, 3 (1992), 185–193.

<sup>100</sup> See section 17.2.10 for some examples.

<sup>101</sup> See section 17.2.8 and fig. 270 for the elephant statues and section 18.2.2 and fig. 317 for the horse statues.



Fig. 20. An unrealistic lion with bulging eyes, blunt teeth and horns. Architectural relief, style of Bhumara, post-Gupta Period, 6th–7th century, red sandstone Brooklyn Museum of Art, 78.195.2, anonymous gift, New York. Photograph: courtesy The Brooklyn Museum of Art, New York



eyes and the typical hump. In principle each animal, whether familiar to the artist or not, may sometimes be reproduced in a highly stylized way. In such cases, there is nothing artificial about the animal and the details that are carved are accurate, yet, the animal could not have lived as such. The outlines are often schematic and many details are left out to stress the basic shape or desired features of the animal.

The animal motifs evolve as time passes by and follow the general patterns of stylistic developments. Changes in depiction—trends—of animals through the centuries can be expected and are indeed observed in, for example, the horse sculptures. The small, plump and large-headed horse of the centuries before the Common Era is replaced by a larger, more elegant and small-headed horse in the early second millennium. This trend is visible in all regions but not everywhere at the same time. The question is addressed whether this trend can be entirely attributed to change and evolution in style or not. The degree in which the horse itself changed throughout the centuries obscures the picture and different peoples appeared to have favoured a different horse breed. In many cases, trends are even less clear, or not visible at all, due to the limited amount of available stone sculptures. This is the case with the rhinoceros. Rhinoceros sculptures are practically limited to the Indus Valley of the mid-third to the mid-second millennium B.C.E. and to Nepal. The total absence from later periods and other regions makes it impossible to define a trend. For other animals, the situation is somewhat better, but still their rareness in stone may mislead us. Where only few sculptures are known, it is rather easy to discern a ‘trend’, but where numerous specimens are known, the picture often becomes confused and more than one trend may be observed, or the earlier observed trend loses its validity. This is the case for the almost overdepicted animals like the lion and the elephant. There appear to be so many sculptures, all different to some extent, that general statements are difficult to make. The only trend that might be present in the lion sculptures is that they become more fantastic and more mythical through time, possibly as a result of their dwindling numbers but also due to an increasing urbanization, which enlarges the distance between the people and wildlife.

## SCULPTURES AND STONES

The type of stone used for carving differs greatly from region to region. This implies that limitations which are due to the nature of the material also differ between regions. Some types are found in larger areas, whereas others are more limited in distribution. The most important rocks and the areas where they are quarried or used in situ are given below. The list is not complete, but represents the bulk of animal sculptures and architecture mentioned in this book.

Rocks are classified into three main classes: sedimentary rocks, igneous rocks and metamorphic rocks. Sedimentary rocks are formed of layers of sediments that are either the leftovers when the water evaporates or are settled down wind-blown particles. Examples of sedimentary rocks are sandstone<sup>102</sup> and limestone.<sup>103</sup> Sandstone is formed out of layers of sand as the name already suggests. Limestone consists of fine layers of millions of microscopic exoskeletons of micro-organisms that once lived in the sea. Sedimentary rocks are ideal for sculptures, although they may dissolve under influence of weather conditions. Igneous rocks are of a volcanic origin and are formed when magma or lava hardens. The velocity of the cooling down determines the grain size of the crystals that are formed within the rock. Examples of igneous rocks are basalt,<sup>104</sup> andesite and granite.<sup>105</sup> Basalt is very fine-grained, whereas andesite and granite are coarse-grained with larger crystals. Igneous rocks are very hard or even glasslike and are ideal for a long-lasting sculpture, but not particularly easy to carve. The large crystals in granite make the carving of minute details impossible. Metamorphic rocks finally, are either sedimentary or igneous rocks that have undergone textural or structural changes due to extreme pressure and/or heat. The type of rock that is produced depends on the original rock and the conditions

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<sup>102</sup> Sandstones: buff or yellowish brown in Rajasthan, Uttar Pradesh, Madhya Pradesh, Punjab, Haryana and Bihar, red in Madhya Pradesh and Uttar Pradesh (mottled red around Mathura), grey in Madhya Pradesh, cream and tan in Rajasthan, Pakistan and Uttar Pradesh, and cream-coloured in Madhya Pradesh.

<sup>103</sup> Limestones: greenish white and white in the coastal region of Andhra Pradesh, white in Pakistan, crystalline (dolomite) in Sri Lanka, grey in Rajasthan, and cream and tan in Pakistan.

<sup>104</sup> Basalts: black in Orissa, Bihar, West Bengal and Bangladesh, dark grey-green in Bihar and Bengal.

<sup>105</sup> Granites: Madhya Pradesh, Maharashtra, Tamil Nadu, Andhra Pradesh and Karnataka.

of the pressure and temperature. There are many types of metamorphic rocks and they all have very different characteristics: slates and phyllites, schists, gneisses, soapstones—steatite, serpentinite and potstone—, and marbles. Slates and phyllites are fine-grained, but easily split into thin parallel layers and thus not favoured for sculptures.<sup>106</sup> Schists are coarse grained, more firm and recognized by flakes of mica, chlorite or other minerals.<sup>107</sup> They are rather easy to carve and do not split easily. Gneisses are coarse grained, too, but more massive and banded; they do not split in layers, but in blocks.<sup>108</sup> Mica and other flakes, such as chlorite, are missing. This makes gneiss even better for sculpture, although it is almost as hard as basalt, which makes carving time-consuming. Soapstones are fibrous metamorphic products from the Earth's core and one step before falling apart into talcs.<sup>109</sup> They are homogenous and soft, lack any extraneous crystals and are of appealing colours; they are extremely easy to carve, but damage easily. Also marble is a homogenous metamorphic rock, but much harder; its parent rock is limestone and not core material.<sup>110</sup> Marble is ideal for sculpture, not too hard, without crystals or flakes. As with limestone, it however dissolves under influence of weather conditions (acid rain). To all rocks applies that mineral contents, either as flakes, crystals or diffuse, may influence the final colour; for example, the mineral chlorite makes a rock green. The addition 'chloritic' is then added to the name: chloritic schist, chloritic basalt.

## NOTES TO THE READER

Diacritics have been omitted, because this book is meant for a wider audience than for Indologists and other initiates. For Indian names of persons, texts and divinities, the English pronunciation is followed, thus Shiva rather than Siva. The modern transliteration is hereby followed, thus abandoning earlier fashions of using u for a and ee for i: *sati*, not

<sup>106</sup> Slate (black) and phyllites: Bihar, Bengal and Bangladesh.

<sup>107</sup> Schist: blueish grey and grey in Afghanistan, Pakistan, Punjab, Rajasthan, Bihar, West Bengal, Bangladesh, Haryana, Uttar Pradesh and Himachal Pradesh, green in Rajasthan, Maharashtra, Andhra Pradesh and Karnataka.

<sup>108</sup> Gneiss: Tamil Nadu, Sri Lanka and Orissa.

<sup>109</sup> Soapstone (steatite): Pakistan, Karnataka.

<sup>110</sup> Marble (white): Rajasthan and Gujarat.

*suttee*. For the cerebral r, the combination ri is used, thus *matrika* and Krishna, not *matrka* and Krsna. The spelling of geographical names conforms to the accepted norms in Roman script, thus Sri Lanka and not Shri Lanka. In cases where the geographical name has changed, the modern name is given throughout the text, thus Chennai for Madras and Mumbai for Bombay. Cities and sites are located in the present-day states.

The animal species mentioned in this book are referred to by both their vernacular or common name and their formal or scientific name, consisting of a genus name and a species name (binominal name). For this, I follow the formal names as used in Walker's *Mammals of the World*.<sup>111</sup> This implies that, for example, the name *Bubalus bubalis* is used for both the wild and the domestic water buffalo, instead of reserving that name for the domestic form and *Bubalus arnee* for the wild form.<sup>112</sup> Zoological information on Indian mammals is mainly derived from Walker's, Pocock and Prater.<sup>113</sup>

Further, this book is not an art historical book. Therefore, references to periods and styles are not given (for an overview of the various periods and styles, see the Time Table at the end of the book). Works of art are accompanied by a date only, according to the Common Era (B.C.E. and C.E.; the latter addition is omitted unless there is ambiguity). These dates are compiled from widely accepted and available general art historical works,<sup>114</sup> and more specific works on Buddhist

<sup>111</sup> R. Nowak, *Walker's Mammals of the World*, 2 vols. (Baltimore and London: The Johns Hopkins University Press, 1999, sixth ed.).

<sup>112</sup> There is in general no agreement about the exact relation of domestic and wild species. Most scientific names are based upon the domestic species and according to some, should thus exclusively be used for these species. Their wild relatives then have to be named differently. Although I certainly see the value of such a distinction, I agree with Walker and most others that the morphological and especially the genetic difference between the wild and the domestic species is too small to justify a specific status. The only accepted exceptions are that of the dog (*Canis familiaris*) and the cat (*Felis catus*), whose direct ancestors are not known with certainty.

<sup>113</sup> R. Pocock, *The fauna of British India including Ceylon and Burma. Mammalia—vol. 1, Primates and Carnivora (in part), Families Felidae and Viverridae* (The Hague: W. Junk, 1976; reprint of London: Taylor and Francis, 1939); S. Prater, *The book of Indian animals* (Bombay: Natural History Society, 1971, third rev. ed., first ed. 1948).

<sup>114</sup> J. Harle, *The Art and Architecture of the Indian subcontinent* (Harmondsworth, Middlesex: Penguin Books, 1987; reprinted with corrections (first ed. 1986); V. Dehejia, *Indian Art* (New York and London: Phaidon Press, 1997); F. Asher, ed., *Art of India: Prehistory to the Present* (New Delhi: Encyclopedia Britannica India, 2003). Iconographic features of Indian deities are taken from T. Rao, *Elements of Hindu Iconography*, 4 vols.

and Hindu art and architecture.<sup>115</sup> Apart from a date, art works are also specified with their geographical location, monument name and, where relevant, their place on the monument. In the case of loose sculptures, their place of origin is given. In two cases, an additional geographical location is given because they have a status on their own and are widely known as such.

The first case is that of the Indus Valley. From here an important, large-scaled Bronze Age culture is known, generally referred to as the Harappa Period (see above). The flourishing period of this Indus Valley culture is not sharply defined and started roughly at the beginning of the third millennium B.C.E. and ended in the middle of the second millennium B.C.E. Precise dates are scarce. The architectural remains are famous and consist mainly of large, well-planned cities with efficient drainage systems and a grid pattern of roads. The brick settlements are found over a vast area spanning more than a million square kilometres in the Indus Valley in its broadest sense, which runs from the highlands of Afghanistan to the coast of Gujarat and the Jumna (Yamuna) river in Uttar Pradesh. The most famous settlements are Mohenjo-daro and Harappa in Pakistan and Lothal in Gujarat. The art works found in the Indus Valley comprise thousands of steatite seals with animal figures, many ringstones, vast quantities of terracotta (women, animals and phallic emblems, toys), jewellery, a few bronze figures, and very few stone sculptures. Till date, there is no consensus on the decipherment of the script, written on seals.

The cities in the Indus Valley, known as Melukkha by the Sumerians and Akkadians, were part of a lively trade route with lower Mesopotamia (present-day Iraq), especially because of the carnelian (tin) from the Gujarat peninsula;<sup>116</sup> tin is an essential component for the production of bronze. The city culture vanished rather suddenly in the middle of the second millennium B.C.E., likely because of a shift in the river system, which resulted in flooding of some cities and drought around others.

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(Varanasi: Indological Book House, 1971; reprint of 1914–1916) and from F. Bunce, *An encyclopaedia of Hindu deities, demi-gods, godlings, demons and heroes*, 3 vols (New Delhi: D.K. Printworld, 2000).

<sup>115</sup> R. Fisher, op. cit. (2002) and G. Michell, *Hindu Art and Architecture* (New York: Thames and Hudson, 2000).

<sup>116</sup> M. Astour, “Overland trade routes in ancient Western Asia,” in *Civilizations of the Ancient Near East*, ed. J. Sasson (London: Hendrickson, 1995), vol. 1, 1401–1420.

What happened next to the inhabitants is unknown. The older theory of a massive invasion of horseback riding tribes who called themselves Aryan, or “Noble Ones”, who spoke a form of early Sanskrit, cannot be proven as contributing to the fall of the Indus Valley culture. Instead, current archaeological data indicate that an indigenous cultural development took place within the area with a fundamental restructuring of society from within and the rise of a social elite which referred to itself as Aryan.<sup>117</sup> If this proves to be true, links between animal forms in Indus Valley objects and similar ones in later Indian culture might be present indeed. One of the most cited possible link is that between a male figure in yogic posture surrounded by animals, depicted on an Indus Valley seal and the later Hindu god Shiva in his aspect of lord of the beasts.<sup>118</sup>

The second case is that of Greater Gandhara. The region includes the easternmost ancient Persian province Gandhara, which area extends from roughly the Khyber Pass area of the Afghanistan-Pakistan frontier to the Peshawar region and Taxila in Pakistan. The Swat valley and Buner in Pakistan form also part of Greater Gandhara. It formed an art historical entity roughly between the second century B.C.E. to the seventh or eighth century C.E.<sup>119</sup> In the first centuries of the Common Era, Gandhara formed part of the international trade route between Gujarat and the Roman world and the Red Sea area; ivory, silk, onyx, agate etc. were exchanged for gold, silver and iron.<sup>120</sup>

The surviving Gandhara sculpture is remarkably homogeneous in style, although regional variations and a gradual development can be discerned.<sup>121</sup> The overwhelming majority consists of Buddhist cult objects in the form of statues and figures of Buddhas and Bodhisattvas, votive

<sup>117</sup> Wink, op. cit. (1997) and references therein; G. Possehl, *The Indus Civilization: A contemporary perspective* (Walnut Creek: Altamira Press, 2002).

<sup>118</sup> On the ground of the presence of five species of wild animals (a water buffalo, an elephant, a tiger, a rhinoceros and a pair of ibexes), the figure is generally referred to as Pashupati or lord of the beasts, a possible forerunner of an early Rudra-Shiva form; see section 8.2.1. The scene is also sometimes compared to a somewhat similar setting of the teaching Buddha on his seat below which a pair of antelopes or deer (*mriga*) sit (see sections 1.2.1 and 2.3.3).

<sup>119</sup> K. Behrendt, *The Buddhist Architecture of Gandhāra*, Handbook of Oriental Studies, Section 2, South Asia 17 (Leiden and Boston: Brill, 2004).

<sup>120</sup> V. Begley and R. De Puma, ed., *Rome and India: The Ancient Sea Trade* (Madison: University of Wisconsin Press, 1991).

<sup>121</sup> See for an overview and discussion, Behrendt, op. cit. (2004). The Gandhara sculptures are mainly of a blue-grey schist, with only a few sculptures of green phyllite, stucco or terracotta.

(miniature) stupas and reliquaries, narrative reliefs,<sup>122</sup> and architectural ornaments for Buddhist monasteries and stupas. Many themes and ornaments are derived from classical Greco-Roman examples: garland bearing *putti*, atlantes, tritons and dragons, acanthus and vine leaves, wrestler-types (*bravi*) in a Roman lower garment (*subjaculum*). Scenes from Greek mythology occur on toilet trays and box lids: Aphrodite beating Eros with her slipper, and Herakles fighting the Nemean lion. Naturally, Indian and western Asian motifs abound, too, for example the lion heads, Indian costumes and lotus petals to mention just a few, but it was the classical Greco-Roman—or Hellenistic-influenced—stamp that initially attracted the British in the 1860s.

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<sup>122</sup> K. Behrendt, “Narrative Sequences in the Buddhist Reliefs from Gandhara,” in *South Asian Archaeology 2001: Proceedings of the Sixteenth International Conference of the European Association of South Asian Archaeologists* 2, ed. C. Jarrige and V. Lefevre (Paris: Éditions Recherche sur les Civilisations, 2005), 383–392.