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Ethnographic and Folk Culture Society

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wooden frames, interlaced with wattle screens and plastered with mud and cowdung.

In the north, in Malwa (Navdatoli), the huts were both round and oblong, built of a wooden frame and wattle and daub walls. The floors were made of cowdung. The settlements of Maharashtra seem to have been very similar to those of Malwa.

The sites

ASH-MOUNDS AND HABITATION SITES IN THE SHORAPUR DOAB

The oldest sites, the ash-mounds, were comprehensively discussed by Allchin (1963) and recently by Paddayya (1971, 1973). Allchin put forward the theory that the ash-mounds were cattle pens, in which the cattle dung was regularly burnt. The animal bones that were collected from these sites do not support this theory, since most of them seem to be slaughter garbage. If the sites are not closely linked to a settlement, it seems that they may also have been habitation sites.

At present about sixty mounds are known. These are distributed in the Gulbarga, Raichur and Bellary districts of North Karnataka and Anantapur and Kurnool districts of Andhra Pradesh. On the basis of his excavation at Utnur (Mahabubnagar district of Andhra Pradesh) and his study of surface evidence from other mounds, Allchin (1961, 1963) put forward the view that these mounds were cattle-pens in which the accumulated cowdung was burnt on ceremonial occasions reminiscent of present day festivals like Holi and Pongal.

The ash-mounds and habitation sites described below are situated in the Shorapur Doab, Gulbarga district, Karnataka (Paddayya 1973 : 4-11). The area is a triangular tract lying between the Krishna and Bhima rivers. Climatically it is semi-arid and forms part of the deciduous thorn-forest zone. The sites under study are generally confined to the hilly southwestern zone of the Doab.

KODEKAL—KKL

The ash-mound at Kodekal is situated approximately 4 km southeast of Kodekal village and 8 km from the left bank of the Krishna river. The mound lies in a small valley with a mountain stream, bordered on both sides by granite hills. The mound was originally 45.7 m in diameter and was 4.6 m high. At present, the diameter is only 36.6 m, and the height 3.6 m. In 1967, two small trenches were dug into the mound. In the largest, measuring 3.6 x 3.0 m, six layers could be distinguished (fig. 5). The bones were mainly collected in (TF–748) layer 4 and 6, dated by C 14 at 4285 ± 85 B. P. – 2335 B.C. (Paddayya 1971). According to the excavator, every bone was collected, and a number of them could be identified. Most of the bones were covered with a thin grey crust. The majority of the identified bones (table 2) belonged to cattle, followed by sheep/goat, pig, dog and small rodents. One bone may be of a deer. A carpometacarpus is from a bird the size of a domestic duck. Part of the bones were earlier identified by Shah (1973), who also found horse, buffalo , gazelle, swamp deer, spotted deer and domestic fowl. The bones of horse, deer and domestic fowl were not among the collection I myself saw. It is possible that part of the *Bos* sp. bones were from buffalo, though they seemed to be a homogeneous sample. One maxilla and one mandibula of cattle still had the deciduous dentition (table 14). Four fishbone fragments were also found.

Cattle predominated over the other species, which is in agreement with the observations of Allchin (1961) and Alur (manuscript) on the animal remains of Utnur. Although he does not mention it, it seems that Allchin is also describing a number of selectively collected animal remains.

BUDIKAL—BHL. s

The Budikal ash-mound is situated 0.8 km north of Budikal village on a sandstone plateau. The original large mound was damaged by a cart-track. The bones of this site are surface finds (table 2). No other bones than those of *Bos* sp. could be identified. One tibia was fossilised and belongs to a large fossil *Bovid.*

KANNEKOLUR—KKR. 1

In the vicinity of Kannekolur two ash-mounds were found. The bones which will be discussed here came from the first. This mound is situated 0.8 km northwest of the village on the right bank of the Kannekolur nulla. The bones were surface finds and seemed slightly rolled, having rounded ridges. Sixteen bones belonged to *Bos* sp. and two to the small ruminants, sheep/goat.

KUPI-KP

The site is situated 1.6 km northwest of Dimanhal. The mound no longer exists, the bones were surface finds. Neolithic habitation material and ashy earth covered an area of one acre. Six bones belonged to *Bos* sp.

MALLUR—MLR—1 AND 2

Two ash-mounds occur at this place. Mallur 1 is situated northeast of Mallur, the mound originally measured 6 m in diameter and was 1.5 m high. Mallur 2 is situted ± 33 m west of Mallur 1 and forms no real mound. Ash was found over an area of 13.7 x 9 m, to a depth of 0.9 m. Four bones could be identified with certainty as belonging to *Bos* sp.

THIRTH—TH

The mound of Thirth was found on the same sandstone plateau as Budikal and 1.6 km west-northwest of the village Tirth. It measures 11 x 8.2 x 1.8 m. The bones were surface finds. Six cattle bones could be identified.

SITES IN MADHYA PRADESH AND MAHARASHTRA

KAYATHA—KTH

Kayatha, situated 25 km east of Ujjain, was discovered by V. S. Wakankar in 1964. During a trial excavation in 1968-69 by the Deccan College under the direction of Dr. Z. D. Ansari, two trenches, A and B, were dug. In trench A, five habitation phases could be distinguished; in trench B phase I was missing (fig. 4, table 14). There appear to be three phases preceding the arrival of iron. Phase I (c. 2000-1800 B. C.) has Harappan affinities, in phase II (c. 1700-1500 B.C.)a Harappan seal was discovered, and in phase III (c. 1500-1200 B. C.) pottery of the Malwa and Jorwe traditions. Phases IV (c. 600–200 B. C.) and V (c. 200 B. C.–600 A. D.) belong to the historical period (Ansari and Dhavalikar 1975).

The dwelling-mound is situated on the left bank of the Choti Kalisind, a tributary of the Kalisind, which is in turn a tributary of the Chambal. These rivers are dry most of the year. A fairly large village at present crowns the mound of Kayatha which makes large scale excavation impossible. The surrounding area is undulating, fertile and has reasonable rainfall; it belongs to the dry deciduous forest zone. From phase I, II, III and IV, bones were collected (table 3). It appears that nearly all of them were the long bones of *Bos* sp. An antler fragment of a deer beloning to period II was picked up, as well as the horn-core of a black buck. The value of the Kayatha bones lies mainly in the fact that they help to provide an insight into the Bovid

population of the region. A few bones of the small ruminants were also found: a mandibula of a three-year-old smalll ruminant (sheep/goat) from the transition layer of phase II/III, and two of one-year and $1\frac{3}{4}$-year-old animals in layer III. Of *Bos* sp., a maxilla of an approximately $\frac{1}{2}$-year-old animal was collected from phase II. Maxillae of animals with adult sets of teeth, when slaughtered, were found in phase II, phase II/III, and in phase ? Of the mandibulae, four were of animals not yet three years old; two from phase II, and phase II : III, and one from phase III. A larger number of mandibulae with adult sets of teeth belong to phase I, phase II/III and phase IV (table 13).

NAVDATOLI—NVT

The dwelling-mound of Navdatoli is situated on the left bank of the Narbada river, opposite Maheshwar, where an old north-south route crossed the river. The Narbada flows to the west in a rift region and discharges its water into the Gulf of Cambay near Broach. The Narbada has a succession of several wide valleys, that of Navdatoli is 24 km long and 12 km wide. In the north, it is bordered by the hills of the Vindhya range, in the south, by those of the Satpura range. The important tribal group of the Bhil still lives in the region today. Navdatoli was excavated in the period of 1952-53 and 1957-59 by Prof. Sankalia, Dr. Deo and Dr. Ansari. Four mounds could be distinguished. The bones which were collected came from mound IV. Here, four trenches were dug, the major ones being trench I and II. The trenches were divided into a grid system (fig. 6) (Sankalia, Deo and Ansari 1971). Four main periods could be distinguished.

d. Medieval Islamic – $\pm$1400 A. D.;
c. Late Early Historic – $\pm$100 A. D. – 300 A. D.;
b. Early Historic – $\pm$100 A. D. – 300 A. D.;
a. Chalcolithic—phase 1, 2, 3, 4 – $\pm$1600 – 1300 B. C.

Bones were only collected from layers belonging to the first period. The inhabitants lived in round and rectangular houses. Since the bones were collected selectively, it is unnecessary to separate the material of the three trenches. In spite of the selective collecting, a relatively large number of species could be identified (table 4). Bones of *Bos* sp. were the most numerous, both sheep and goat could be identified with certainty, and also black buck, gazelle, buffalo and nilgai. Deer remains may belong to the spotted deer or hog deer and the swamp deer or sambar. One fish-bone and the remains of tortoises were found. Compared with the other sites the large amount of pig bones is conspicuous. Although the bones were selectively

collected it seems that the pig really could have been of more importance as a food animal in Navdatoli than in the other sites. This is probably due to the environment which is comparatively humid. Nowadays, rice growing is possible along the river, and in ancient times the valley would have been more wooded than at present.

At present, the Narbada Valley is part of the territory of the Bhil, one of the large tribal peoples still to be found in India. The inhabitants of Navdatoli may have been the early ancestors of the Bhil. The Bhil are nowadays first and foremost cattle breeders and cultivators, but they also work for wood contractors (Koppers and Jongblut 1942-45). Their most important domestic animals are the buffalo and the zebu. Every Bhil tries to have at least one buffalo and two zebus. Of the buffalo a smaller and a larger breed are recognized. Those are crossbred because the crossbred cow is supposed to give more milk. The cow is used for milking, the bull for work. The bull, male goats and cocks are the sacrificial animals of the Bhil. The bull may be consumed. Pig, horse, dog and cat are not mentioned. Chakraborti and Mukherji (1971) also mention fishing and the hunting of pigs, small game and birds. Hunting was still done with arrows, but snares were also used.

It appears that in prehistoric Navdatoli a proportion of the pigs were slaughtered when approximately 1/2 year old, most of the other animals were slaughtered when two years old or older (table 16). The majority of the slaughtered bovids reached the age of three years or more (table 16). Comparatively few calves were slaugtered.

An interesting feature of Navdatoli is the pottery, decorated with paintings of many animal species including mammals, birds, reptiles and insects (fig. 7, 8, 9). It seems that the ancient inhabitants of Navdatoli took a keen interest in the animals in and around their settlement. Of interest is that domestic animals are comparatively scarce. Most frequent are the pictures of black buck and peacock, for many centuries the two species most often used in Indian art and decoration. Only the ♂ black buck is depicted, the ♀ seems to be absent.

The domestic ox is depicted four times (fig. 7, A 1-4). In two cases it seems that the tips of the horns are gaily decorated, which is still done. Goats are depicted possibly, three times. One scene shows two heads, one clearly with a beard, the second shows one and half animals with straight horns and spotted bodies, they may be pied goats. Fig. 7, B2 shows an animal, also with relatively straight horns, busily browsing from the vegetation. The dog is depicted three times (fig. 7, C 1,2,3). Fig. 7, C 3 may be the picture of a fowl, wild or domesticated, fig. 7, C 2 may be a goose,

fig. 7, C 1 a pigeon; in either case it is uncertain whether domestic animals are meant. The same holds for the numerous paintings of the peacock. It seems that but few deer are represented (fig. 8, A 1, 2, 3), the pig and nilgai are missing. Of the large carnivores the tiger and the panther occur, as well as two foxes. The rodents are represented by the hystrix. Other birds are a row of flamingos and a bird of prey or vulture (fig. 8, A 1, 2, 3). Fig. 8, A 4 seems to be a stylized little egret with flowing headfeathers. The reptile world is represented by tortoises. The plastic shape of a crocodile was moulded on to a pot. Finally, four insects have to be mentioned (fig. 8, C 1-4).

The species portrayed on the pottery are an addition to those that could be identified from the bones. It seems that all these species could be expected in the valley. The domestic animals were kept in the settlement, the antelopes and pigs roamed in the grassy plains, the large carnivores lived in the woods, the birds belong to the marshy region and the tortoises and crocodiles belong to the river. Birds of prey and vultures circling above the Indian villages are still a common sight.

NEVASA—NVS

Present-day Nevasa is a village of regional importance, partly built on an ancient dwelling-mound, situated on the right bank of the Pravara river, before it joins the Godavari river. The Godavari is one of the large rivers of the Deccan, flowing east and ending in the Bay of Bengal. The river formed a broad flat valley, reminiscent of the valley system of the Danube in Central Europe. It seems that the earliest farmers of the northwest Deccan settled on the banks of the Godavari and its tributaries. There were three excavation campaigns (Sankalia, Deo, Ansari and Eberhardt 1960). The bones collected during the first in 1954 were described by Eapen (1960), those of 55/56 and 59/61 are discussed here. The bones of the excavation of 55/56 belong to four periods (fig. 10).

Period VI—Muslim-Maratha 1400-1700 A. D.;
Period V—Indo-Roman 100-300 A. D.;
Period IV—Early historic 300 B. C.—100 A. D.;
Weathered horizon
Period III—Chalcolithic 1300—1000 B. C.

The bones of 59/61 belong to the Chalcolithic period and are connected with Jorwe ware.

During the excavations of Nevasa, most bones were thrown away, and only a small, in all probability not representative, collection was kept. Although Eapen does not mention it, this also seems to have happened in

1954. In Chalcolithic Nevasa (tables 5-11), *Bos* sp., buffalo, sheep/goat, pig, horse, donkey or wild ass, dog and a small cat were found. In historic Nevasa, most of those animals were also present. Of the wild animals, three antelope species, nilgai, four horned antelope, and black buck can be mentioned. Two species of small carnivores are present, of which one may be the domestic cat, the other a mongoose. Remains of deer, mostly antler fragments, may have belonged to sambar, swamp deer or the spotted deer.

Bones of fowl, probably domesticated, were found in Chalcolithic Nevasa as well as in Muslim–Maratha Nevasa. The remains of a large fowl were found in the Muslim–Maratha layers. A maxilla of a young elephant was collected in the layers of the Indo–Roman period. Tortoise remains seem to have been collected from all periods. Three species could be distinguished. A number of bones of small rodents were found in all layers. It seems that most are of the rat and the bandicoot rat; both are animals with burrowing habits and could have intruded the ancient remains.

In Nevasa the opportunity was missed to see whether there was a change in diet in the Early Historic and Indo–Roman periods. As we cannot even assume that the bias in collecting was always the same, we can learn nothing more than that cattle and small ruminants seem to have been the most frequently slaughtered animals. The species found are indicative of the surroundings, the antelopes needed grassy plains, the deer could live there too, the pig, which is more a forest animal, is absent. The fowl were probably domesticated.

INAMGAON—INM

Inamgaon is a dwelling-mound on the right bank of the Ghod river, a tributary of the Bhima, which belongs to the drainage system of the Krishna river, the second, large, east flowing river system of the Deccan. The valley is narrow and the region is very dry at present.

Inamgaon lies on the border of the thorn-scrub region in which, more southward, the ash-mounds are also located. Contrary to the other dwelling-mounds, which were still habitated, Inamgaon was deserted at c. 700 B. C. At present it has the form of a horse-shoe-shaped sanddune.

Inamgaon was excavated by Dr. Z. D. Ansari and Dr. M. K. Dhavalikar from 1968-71 (fig. 11). Three occupation periods could be distinguished (fig. 4).

Period III—late Jorwe (c. 1000-700 B. C.);
Period II—early Jorwe (c. 1300-1000 B. C.):
Period I—Malwa (c. 1600-1300 B. C.)

In Inamgaon the remains of *Bos* sp. and the small ruminants were most frequently collected. Horse, dog and pig are represented by one bone each. A large number of horn-cores of the black buck was found, two of a nilgai and one of a four-horned antelope. Eight fragments may belong to the spotted deer, and six to the sambar or swamp deer. All these species indicate a relatively open vegetation, and an area covered with grass and bushes.

Two phalanges of an animal that may have been a rhinoceros or an elephant were found, but have still to be identified (fig. 17). A fragment of a heavy long bone must have been of an elephant or rhinoceros. The elephant lives in forests, the rhinoceros prefers swamp and grass regions.

During a short visit to Inamgaon in 1972, I observed that among the bones that were not brought to Poona there were numerous shells of freshwater mussels, which must have been collected in the river. Fish bones were not found, but the river today contains catfish and carp, which can be easily caught (Ansari, pers. comm.). It seems not improbable that the ancient inhabitants of Inamgaon were also fishermen.

Discussion of the species

The bones were identified as far as was possible without the help of an extensive comparative collection of recent skeletons and with only a few reference works.

The selective collecting of the larger bones by the archaeologists made my task easier because it limited the collection mainly to the remains of the suborder of the Ruminantia. Of those, the Bovidae took the first place, followed by the Suidae and Cervidae. Few remains could be ascribed to the Equidae, Canidae, Felidae and the Muridae. The bones from the Bovidae and the Cervidae could be distinguished easily in most cases. The identification as to species was often difficult or impossible. Although most bones of the large Bovidae belong, in all probability, to the domestic ox (*Bos taurus* in *s. s.*), we also have to reckon with the presence of the gaur (*Bos gaurus*) and its domestic form the gayal (*Bos gaurus frontalis*), the wild buffalo (*Bubalus*

Desert cat—*Felis lybica* Foster, 1780
Domestic cat—*Felis catus* Linnaeus
The leopard cat—*Felis bengalensis* is found all over India. The animal frequents grassland, scrub and jungle.
The desert cat—*Felis libica*, is found in the Indian desert region and in the dry zone of central India, also near Poona in the Deccan.

Both the two above mentioned species and the domestic cat can be expected in Nevasa where the cat remains were found. Prashad describes the skull of a cat from Harappa as domesticated, but Conrad (1966) thinks it more likely that it belonged to *Felis ornata* (Indian desert cat). The domestic cat was mentioned for the first time in the textbook of Kautilya (4th/3rd century B. C.).

In Nevasa III, the long bones of a young cat were found (nr. 823H *13*). The skull, vertebral column and the bones of the fore and hind feet are missing. The bones seem to have belonged to an animal slightly larger than a present-day domestic European cat. Also from Nevasa III, a l. mandibula of a catlike animal was collected (fig. 15 f), which seems to belong to the same species as the r. mandibula found in Nevasa 1959/61 (fig. 15 c). A r. mandibula (fig. 15 f) from the Weathered horizon, a l. mandibula (fig. 15 c) from Period V, and a r. mandibula from Period VI belong to the same species and in all probability to the domestic cat. The other two mandibulae were found in the oldest layers of Nevasa and probably do not belong to domesticated animals.

(measurements in mm)

	III	W	V	VI
length of :				
teeth row	5053	3254	1543	627
M_1		22.0	18.0	22.2
diastema		8.1	6.2	8.5
	(5.5)	4.0	6.0	

Of all five mandibulae only the pars molaris was found and of the two oldest, the M_1 is missing (fig. 15e, f).

The domestic cat is often thought to be the descendant of the desert cat : *Felis lybica*, and first domesticated in the middle of the 2nd millennium B. C. in Egypt. When and how the cat was brought to India is unknown. It is not even certain at all that the cat was domesticated only in Egypt—none of the other species or subspecies of small cats occurring in areas outside Egypt.

PROBOSCIDAE

ELEPHANTIDAE

Indian elephant—*Elephas maximus Linnaeus*, 1758

The Indian elephant is still found in the Western Ghats, Orissa, Bihar, Uttar Pradesh, West Bengal and Assam. They frequent areas with tall forests. The Indian elephant is smaller in size than the African. The male has large tusks, the females only small, scarcely protruding, tusks.

In Nevesa V (nr. 5541 I 4), a maxilla of an apparently young animal was found (fig. 16).

In Inamgaon, a fragment of a heavy long bone was collected. It is not possible to tell to what part of the skeleton it belongs. Only elephant and rhinoceros can have such massive bones. For either species the surroundings of Inamgaon did not seem to be too favourable.

There is evidence that as far back as the Indus civilisation the elephant was domesticated (Conrad 1966; Brentjes 1965), although the elephant never became a real domestic animal like others. The time it takes before an elephant can be used for work, results in the majority of the animals being caught when grown up and then tamed and trained.

RHINCEROTIDAE

Great one-horned rhinoceros—*Rhinoceros unicornis* Linnaeus, 1758

Asiatic two-horned rhinoceros—*Didermoceros sumatrensis* Fisher, 1814

See Indian elephant

EQUIDAE

Horse—*Equus caballus* Linnaeus

Donkey—*Equus asinus*

Asiatic wild ass—*Equus hemionus* Pallas, 1775

At present two subspecies of the wild ass are found in India; in the north *Equus hemionus Kiang*, the Tibetan wild ass, and in the west in the deserts of the Rann of Cutch and Baluchistan *Equus hemionus Khur*, or the Indian wild ass. The latter subspecies is readily tamed when young. After growing up they become recalcitrant and vicious and cannot ordinarily be trained to accept a harness.

The domestic ass was first domesticated in Egypt at the end of the third millennium B. C. (Boessneck 1953), and was brought from there to Mesopotamia. According to Wheeler (1968) there existed an intensive trade between the Indus Valley cultures and the Near East. Thus it is not unlikely that the domestic ass was known in Western India during the Indus Valley culture.