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ANIMAL REMAINS FROM BHARATPUR (DISTRICT BURDWAN, WEST BENGAL, INDIA)

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(With 1 Plate)

INTRODUCTION

This report deals with the collection of animal remains from Bharatpur, District Burdwan, West Bengal, on the left bank of the river Damodar, about 7 km. southwest of Panagarh railway station, under Budbud Police Station. The remains were excavated by the Eastern Circle of the Archaeological Survey of India jointly with the Museum and Art Gallery Department of the University of Burdwan in 1971.

The excavation revealed four cultural sequences from Microlith-Chalcolithic phase to the Medieval period of 9-10 century A. D.

The animal remains belong to the following cultural phases :

1. Chalcolithic Culture : This culture, which flourished about the end of first millennium B. C., was also evident at Ujjain, Maski, Nagda and Nevasa prehistoric sites.
2. Iron Age Culture : This culture developed here towards the end of the last century of the prechristian ere. Iron Age culture is also recorded at Jaugada and Ujjain prehistoric sites.

The skeletal remains, even the long bones like the humerus, radius, femur and tibia are fragmentary and fragile, making them unsuitable for correct measurement, except for a few bones like the astragalus and phalanges.

The total number of animal remains are 374 fragments in both the cultures. The predominant bone remains are those of the Zebu or the domestic humped cattle (*Bos indicus* Linnaeus), which forms about 50% of the total collection. Next to this are the remains of Man, comprising about 24%, and the remaining 26% consist of other groups of animals.

The remains of domestic animals present in the collection are: *Gallus* sp., *Canis familiaris* Linnaeus, *Equus caballus* Linnaeus, *Camelus dromedarius* Linnaeus, *Sus scrofa* Linnaeus, *Bos indicus* Linnaeus, *Bubalus bubalis* (Linnaeus), *Ovis orientalis vignei* Blyth and *Capra hircus* Linnaeus.

The remains of wild animals recorded from this collection are of *Cervus duvauceli* Cuvier, *Axis axis* Erxleben, *Muntiacus muntjak* Zimmerman, *Boselaphus tragocamelus* Pallas and *Bos ? namadicus* Falconer.

The species and varieties of the domestic and wild fauna identified from the skeletal remains are given in Table 1.

TABLE 1

Chalcolithic culture :	*No. of examples*
Class PISCES	
Order TELEOSTEI	
Teleostean fish (Undet.)	37
Class REPTILIA	
Order CHELONIA	
Family TRIONYCHIDAE	
Trionyx gangeticus Cuvier	1
Class AVES	
Order GALLINAEFORMES	
Family PHASIANIDAE	
Gallus sp.	1
Class MAMMALIA	
Order PRIMATES	
Homo sapiens Linnaeus	42
Order CARNIVORA	
Family CANIDAE	
Canis familiaris Linnaeus	1
Order PERISSODACTYLA	
Family EQUIDAE	
Equus caballus Linnaeus	1
Order ARTIODACTYLA	
Family CERVIDAE	
Cervus duvauceli Cuvier	6
Axis axis Erxleben	8
Muntiacus muntjak Zimmermann	2
Family SUIDAE	
Sus scrofa Linnaeus	13
Family BOVIDAE	
Boselaphus tragocamelus Pallas	15
Bos ? namadicus Falconer	10
Bos indicus Linnaeus	168
Bubalus bubalis (Linnaeus)	19
Ovis orientalis vignei Blyth	3
Capra hircus Linnaeus	5
Iron Age culture :	
Class PISCES	
Order TELEOSTEI	
Teleostean fish (Undet.)	2
Class MAMMALIA	
Order PRIMATES	

Iron Age culture :	*No. of examples*
Homo sapiens Linnaeus	46
Order PERISSODACTYLA	
Family EQUIDAE	
Equus caballus Linnaeus	2
Order ARTIODACTYLA	
Family SUIDAE	
Sus scrofa Linnaeus	1
Family CAMELIDAE	
Camelus dromedarius Linnaeus	1
Family BOVIDAE	
Boselaphus tragocamelus Pallas	4
Bos indicus Linnaeus	20
Bubalus bubalis (Linnaeus)	5
Ovis orientalis vignei Blyth	1

DESCRIPTION

Teleostean Fish (Carp)

In the Chalcolithic culture, the fish remains consisted of a portion of mandible, a few rib fragments and a number of fragments of the body of vertebrae. In the Iron Age culture only two broken body of the vertebrae were found. These remains are very similar to recent forms. Fish remains have also been recorded from the prehistoric sites of Harappa, Mohenjodaro, Kausambi, Hastinapura and Kalibangan, but not from any site having Chalcolithic or Iron Age culture. The vertebrae appear to belong to some species of carp.

Trionyx gangeticus Cuvier (Ganges soft-shelled turtle)

In the Chalcolithic culture only a small fragment of the carapace was found. This species is also reported from the prehistoric sites of Harappa, Rupar and Hastinapura, from the Chalcolithic sites of Nagda and Nasik, as well as from the Iron Age culture sites of Jaugada.

Gallus sp. (Domestic fowl)

Only a single distal end of the humerus is present from the Chalcolithic culture. *Gallus* sp. was also reported from Harappa, Mohenjodaro, Rupar, Lothal, Brahmagiri and Kalibangan, and in the Iron Age culture from Jaugada. The specimen resembles the bones from prehistoric sites and recent specimens.

Canis familiaris Linnaeus (Pariah dog)

A fragment of the ulna was found from the Chalcolithic culture. Remains of dog have also been reported from the prehistoric sites of Harappa, Mohenjodaro, Rupar, Lothal, Brahmagiri, Burzahom and

Kalibangan, and in the Iron Age culture at Jaugada. The presence of the oldest domesticated animal is very interesting.

Equus caballus Linnaeus (Horse)

One fragment of the left tibia from the Chalcolithic culture, two fragments of metatarsals and a fragment of the tibia from the Iron Age culture were found. On comparing the fragments with the corresponding bones from other prehistoric sites and the recent specimens present in the Z. S. I. collection, they are found to be nearly identical. *Equus caballus* was earlier reported from the prehistoric sites of Harappa, Mohenjodaro, Rupar, Lothal, Hastinapura, Ujjain, Taxilla and Kalibangan. The horse was probably used for transportation of man as well as a beast of burden.

Cervus duvauceli Cuvier (Swamp deer)

In the Chalcolithic culture *Cervus duvauceli* is represented by six bones consisting of four phalanges and two calcaneii ; none was from the Iron Age culture. The phalanges and calcaneum are similar in shape and size to those of the recent *Cervus duvauceli* present in the Z. S. I. collection. It has also been reported from the prehistoric sites of Harappa, Rangpur, Nevasa, Nagda, Hastinapura, Nagarjunakonda and Kalibangan. The presence of these remains at Bharatpur indicates that in bygone days the site was surrounded by forests.

Axis axis Erxleben (Spotted deer)

Eight fragments were identified from the Chalcolithic zone (four fragments of antlers, two fragments of metatarsals, one fragment each of metacarpal and radius). *Axis axis* has also been reported from Brahmagiri, Nagarjunakonda and Kalibangan prehistoric sites. Its occurrence in the prehistoric days proves that this animal was an old inhabitant of Bengal, where it exists even today.

Muntiacus muntjak Zimmermann (Barking deer)

From the Chalcolithic culture only a fragment of the right calcaneum and a proximal portion of the right radius were found. These are nearly identical with those bones of the recent specimen present in the Z. S. I. collection. This species has also been recorded from the prehistoric sites of Nagarjunakonda and Kalibangan.

Sus scrofa Linnaeus (Domestic pig)

In the Chalcolithic culture 13 fragments consisting of a few teeth and limb bones were found, but in the Iron Age culture only one upper molar is available. The remains of domestic pig has been reported

from many prehistoric sites of India. The pig might possibly have been kept as a domesticated animal.

Camelus dromedarius Linnaeus (Camel)

One upper first molar was found from the Iron Age culture zone. Remains of the camel have also been recorded from the prehistoric sites of Harappa, Mohenjodaro, Kalibangan and Kausambi.

Boselaphus tragocamelus Pallas (Nilgai or Blue Bull)

Nineteen skeletal remains consisting of teeth, vertebrae and fragments of limb bones were identified from the Chalcolithic and Iron Age cultures of Bharatpur. Remains of this species have also been reported from the prehistoric sites of Lothal, Nasik, Nagarjunakonda, Burzahom and Kausambi. In those days the Nilgai possibly lived in the surrounding forests of Bharatpur in West Bengal.

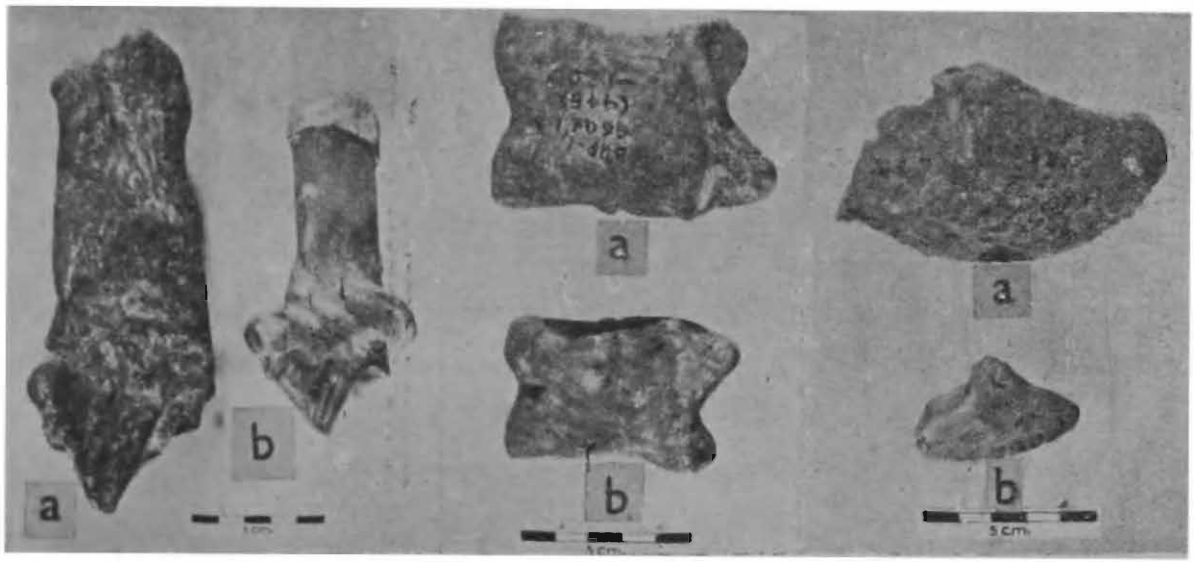
Bos ?namadicus Falconer

Ten fragmentary bony remains were found only from the Chalcolithic culture, none from the Iron Age culture. They are the proximal portion of the ulna, a fragment of condyle of the rib, a fragment of the rib, right astragalus, broken first phalanx, a fragment of cervical vertebra, right scaphoid, right lunate, right calcaneum and third phalanx. These bones are similar in structure and shape to those of the recent *Bos indicus* found in India, but in size they are much larger (Table 2).

TABLE 2.—Comparative measurements (in mm) of some bones of *Bos* sp. from Bharatpur with that of *Bos indicus* Linnaeus and *Bos gaurus* H. Smith present in Z. S. I. collection.

	Bos indicus	*Bos gaurus*		Bharatpur specimen
Right Calcaneum		Male	Female	
Max. length	128.7	160.0	154.0	183.5
Max. width	56.5	53.1	57.7	74.5
Width of tuber calcanei	34.2	47.8	53.5	58.0
Right Astragalus				
Max. lenght	69.6	72.4	65.7	84.0
Max. width	43.4	52.0	52.0	57.6
First Phalanx				
Max. length	60.0	67.3	64.2	—
Prox. width	28.6	40.0	39.6	40.5
Third Phalanx				
Max. length	60.0	67.8	70.0	100.0
Max. width	17.7	25.0	24.0	41.7
Max. height	34.3	43.6	42-6	68.4

BANERJEE PLATE III



Skeletal remains of the *Bos ?namadicus* Falconer from the prehistoric site of Bharatpur excavation together with skeletons of recent *Bos indicus* Linnaeus in the collection of Zoological Survey of India.

1. a—Right calcaneum of *Bos ?namadicus*, b—Right calcaneum of recent *Bos indicus* ; 2. a—Right astragalus of *Bos ?namadicus*, b—Left astragalus of recent *Bos indicus* ; 3. a—Third phalanx of *Bos ?namadicus*, b—Third phalanx of recent *Bos indicus*

The calcaneum has been compared with that of the extinct ***Buffelus bubalis pa'aekerabau*** now *Bubalus bubalis* var. *palaeindicus* (Falconer) exhibited in the galleries of the Indian Museum (No. K-27/870), and is found to be almost equal in size. But the tubercalcis is much broader, the girth much greater and the breadth below the subtentaculum broader in *Buffelus bubalis palaekerabau*. As such the calcaneum from Bharatpur does not belong to the genus *Bubalus*.

Fossil *Bos namadicus* Falconer has been reported from India as early as Middle Pleistocene of Narmada alluvium, old alluvium of Penganga and Yamuna river and Billa Surgam cave of Kurnool. Recently, the author reported *Bos namadicus* from Susunia and Mochpal in West Bengal (Banerjee, 1976).

Bos indicus Linnaeus (Humped cattle)

The bulk of collection of bone fragments is of *Bos indicus*, consisting of 188 fragments from both the cultures. The remains are all fragmentary. The available teeth do not show any specialised pecularities and generally resemble those from other prehistoric sites of India as well as recent domestic humped cattle.

In the Iron Age culture not a single fragment of vertebra is found. A single fragment of the distal end of metacarpal, proximal end of the metatarsal, a first phalanx (length 50 mm.), a second phalanx (length 36.5 mm.) and a horn core was found. The remains resemble those of the smallar short-horned variety of the humped cattle found from the other prehistoric sites of India and those recent cattle of West Bengal.

In the Chalcolithic culture the remains of the humped cattle constitute the largest lot. The vertebrae are incomplete and broken, except a sixth cervical vertebra (body length 70.2mm.). The limb bones are fragmentary except a few phalanges, *viz.*, first phalanx (length 53.3mm.), second phalanx (length 38.6 mm.) and a scapho-cuboid (length 57.5 mm.). The remains of the humped cattle in this culture resembles those of the humped cattle from other prehistoric sites of India and the recent domestic humped cattle.

The large number of remains of *Bos indicus* indicates that the human inhabitants there probably maintained large herds of cattle. The presence of a few of the bones showing definite cut marks by sharp instruments, tends to prove that they were probably slaughtered for sacrifice or for food.

Bubalus bubalis Linnaeus (Buffalo)

Altogether 24 fragments of remains were found of which five are from the Iron Age culture and 19 from Chalcolithic culture.

In the Chalcolithic culture a few teeth and portions of the mandible are available. In shape and size they approach corresponding bones of recent domesticated buffalo. The maximum length of the glenoid cavity and that of the neck of the broken scapula from Bharatpur is 58 mm. and 60.2 mm. respectively and those of the recent buffalo scapula present in the Z. S. I. collection is 60.2 mm. and 65 mm. respectively. *Bubalus bubalis* has also been reported from the prehistoric sites of Mohenjodaro, Harappa, Rupar, Rangpur, Nagda, Hastinapura, Brahmagiri, Nagarjunakonda, Taxilla, Burzahom and Kalibangan. It has also been reported from the Chalcolithic culture of Nasik, Lothal, Maski and Ujjain, and from the Iron Age culture of Jaugada.

Scanty remains of this species was probably because human inhabitants of those days did not maintain large herds of the buffalo.

Ovis orientalis vignei Blyth (Domestic sheep)

The remains of the domestic sheeps were very few. In the Chalcolithic culture two distal fragments of the left humerus and a lower third molar, and in the Iron Age culture a second molar have been found. The teeth resemble those of the recent domestic sheep. The length of the condylar portion of the distal end of the humerus from Bharatpur is 27 mm. and that of recent specimen is 27.7 mm. Domestic sheep has earlier been reported from many Prehistoric sites of India.

Capra hircus Linnaeus (Domestic goat)

From the Chalcolithic culture only four fragments of bones of the domestic goat have been identified. They consist of a portion of the mandible with the third and second molars, the proximal end of the scapula, a fragment of rib and a fragment of ilium of the pelvic girdle. All the fragments are similar in shape and size to those of the recent domestic goat. The fragment of ilium is charred. Domestic goat has also been reported from many prehistoric sites of India.

Homo sapiens Linnaeus (Man)

From the Chalcolithic culture 42, and from Iron Age culture 46, fragments of human remains were found. In the Chalcolithic culture a fragment of the maxilla with the third molar, a fragment of the pelvic girdle, calcaneum, astragalus, a few fragments of ribs, carpal bone, broken bodies of the vertebrae, phalanges, broken metacarpals and metatarsals were found. In the Iron Age culture a premaxilla with an incisor tooth, distal end of the humerus, patella, carpal, broken ribs, clavicle, broken metacarpals and metatarsals, a fragment of the pelvic girdle, fragments of vertebrae, calcaneum, phalanges and astragalus were found.

Discussion and Conclusions

The excavation at Bharatpur has highlighted the presence of an early Damodar Valley civilisation in eastern India. This has been named as "Mini Mohenjodaro" by the Archaeological Survey of India. The earliest occupants of this site were Neolithic-Chalcolithic people who practised the mixed economy of hunting and food gathering-cum-agriculture as is amply proved by the appreciable number of remains of domestic animals like *Bos indicus*, *Bubalus bubalis*, *Sus scrofa*, etc. They probably depended on hunting as well as fishing as are evident from the remains of two deer *Cervus duvauceli* and *Axis axis*, and teleostean fishes.

The next period at this site is Copper Age followed by the Iron Age cultures without an interruption, but shows an overlapping with the preceeding period. During this period the number of species and their remains obtained are fewer than in the Chalcolithic culture.

Animal remains in the other cultural phases were curiously absent. The pattern of culture seems to be almost similar to that found at Mahisdal on the bank of the river Kopai in Birbhum district. In the Mahisdal also the number of species and the remains are reduced in the Iron Age culture as compared to the Chalcolithic culture.

The occurrence of deer suggests that the area was forested in those days. It is also interesting to note that no other remains of any species of Canidae have been found from this site except a fragment of ulna of dog.

The most interesting find are the remains of *Bos ?namadicus* Falconer, which is being reported for the first time from a site excavated by the Archaeological Survey of India. The fragments are not fossilised. In the Siwaliks of India *Bos acutifrons* occurred, which Pilgrim (1939) regarded as the possible ancestor of the pleistocene wild cattle, *Bos namadicus* of India. Fossil remains of *Bos namadicus* have been roported from India as early as middle pleistocene of Narmada alluvium, old alluvium of Penganga and Yamuna Rivers and Billa Surgam cave of Kurnool. Recently, the author (1976) has reported *Bos namadicus* from Susunia, Bankura district, West Bengal which is about 20,000 years old, and from Mochpal, Barasat, 24 Parganas district, West Bengal which is estimated to be about 2,000 years old. The remains of *Bos ?namadicus* from Bharatpur, Burdwan district, West Bengal, indicates that this species survived in eastern India in recent times at least two thousand years ago and it seems to have had a fairly wide distribution.

Following the convention in archaeology, I have used the names *Canis familiaris* Linnaeus for the domestic dog, *Bos indicus* Linnaeus

for the domestic humped cattle, *Bubalus bubalis* (Linnaeus) for the Indian domestic buffalo, *Ovis orientalis vignei* Blyth for the domestic sheep and *Capra hircus* Linnaeus for the domestic goat. Z. S. I. is used as abbreviation of Zoological Survey of India.

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