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ON THE MEDIAEVAL ANIMAL REMAINS COLLECTED FROM BORAL, CALCUTTA, WEST BENGAL

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INTRODUCTION

During February, 1986 a pond locally known as Tripura Sundari Dighi at Boral (c 22° 29'54" N, 88°35' 20"E) near Calcutta, West Bengal (see Loc. map) was dug for renovation. Dr. Shibaprasad Banerjee, a resident of that locality informed the Director, Zoological Survey of India that a number of prehistoric animal remains were unearthed while digging the said pond. So, the Palaeozoology Division under the leadership of Shri S. Banerjee surveyed and collected the animal remains from the site.

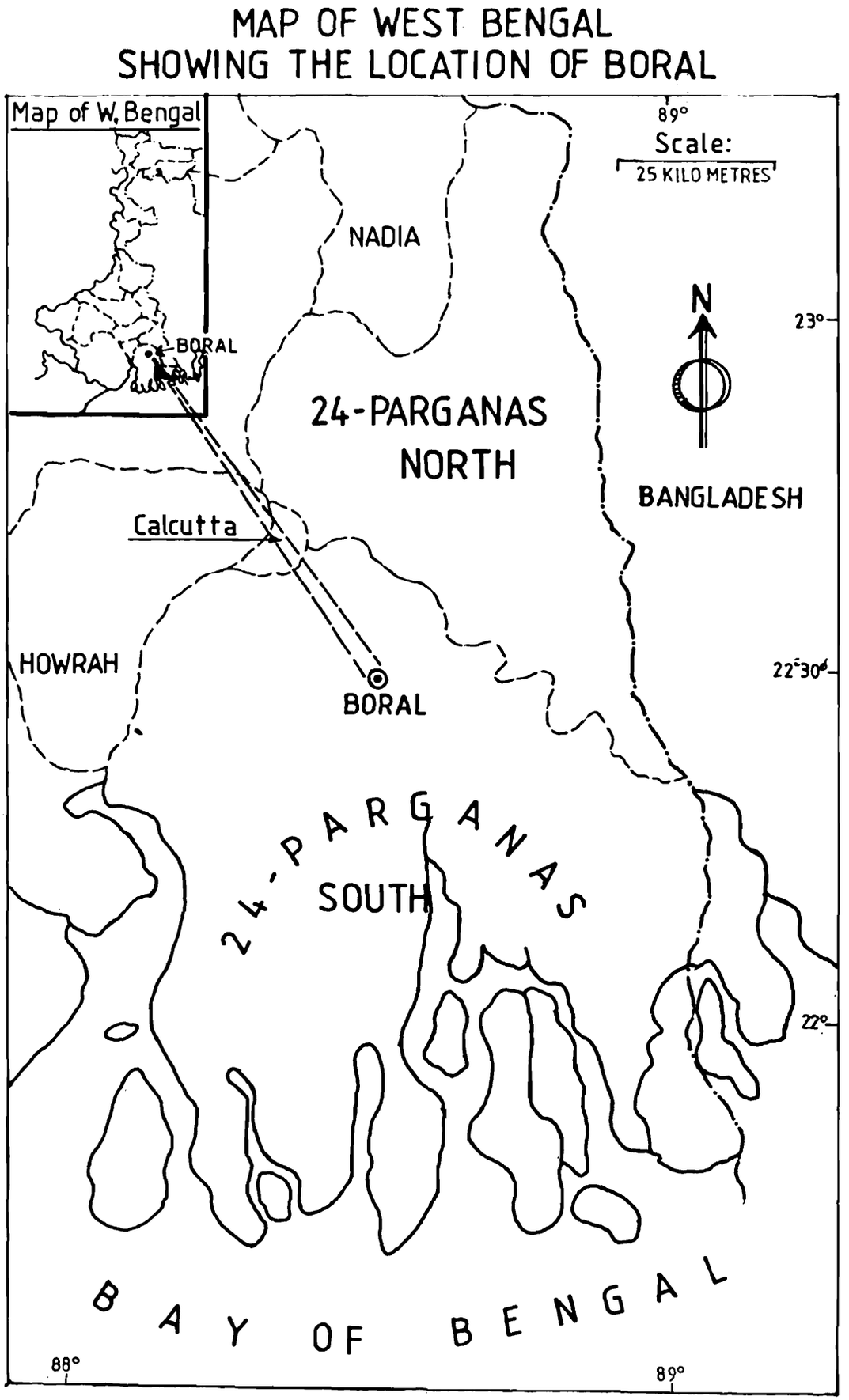
The Dighi had old ruins of "British Nil Kuthi" on the northern side, an old temple of Baro Thakur Panchanandatala on the western side, a great Banyan tree on the eastern side and the present locality on the southern side. All the remains were found from an area of 400,000 sq. meter.

Besides animal remains, many terracota figurines such as a female sunga head, elephant head, folk dog, stamp for decoration and numerous black and red ware potteries, ivory casket, etc. were found. Based on the study of archaeological material, the Archaeology Department is of the opinion that the cultural sequence of Boral ranges from 1st century B. C. to late Mediaeval upto 14-15 century A. D.

The animal remains reveal the existence of the following species :

Trionyx gangeticus Cuvier; *Chitra indica* Gray; *Crocodylus porosus* Schneider; *Canis aureus* Linnaeus; *Elephas maximus* Linnaeus; *Cervus duvauceli* Cuvier; *Sus scrofa cristatus* Wagner; *Bos namadicus* Falconer; *Bos gaurus* H. Smith; *Bubalus bubalis* (Linnaeus), (both wild and domesticated) and *Bos indicus* Linnaeus.

Total number of animal remains is 83. The predominant bone remains are those of Zebu or domestic humped cattle (*Bos indicus* Linnaeus) which is about 45% of the total collection, and of *Bubalus bubalis* (Linnaeus) which is about 26%. Interestingly in the collection, the remains of wild animals are more in number than the domesticated varieties in contrast to other sites where the remains of the domesticated animals outnumber those of wild.



Map of West Bengal showing the locality of Boral

The systematic account of the species present in the collection is given below :

Systematic Account of Species	*No. of bones*
Class : REPTILIA	
Order : CHELONIA	
Family : TRIONYCHIDAE	
Trionyx gangeticus Cuvier	2
Chitra indica Gray	5
Order : CROCODILIA	
Family : CROCODYLIDAE	
Crocodylus porosus Schneider	1
Class : MAMMALIA	
Order : CARNIVORA	
Family : CANIDAE	
Canis aureus Linnaeus	7
Order : PROBOSCIDEA	
Family : ELEPHANTIDAE	
Elephas maximus Linnaeus	2
Order : ARTIODACTYLA	
Family : CERVIDAE	
Cervus duvauceli Cuvier	1
Family : SUIDAE	
Sus scrofa cristatus Wagner	1
Family : BOVIDAE	
Bos namadicus Falconer	2
Bos gaurus H. Smith	2
Bos indicus Linnaeus	38
Bubalus bubalis (Linnaeus) Wild	6
Bubalus bubalis (Linnaeus)	16

THE ANIMAL SPECIES

Trionyx gangeticus Cuvier (The Ganges soft-shelled turtle) :

Fragment of hypoplastorn and a femur (pl. -1. fig.-b).

Chitra indica Gray (The River turtle) :

Fragment of carapace, epiplastron, hypoplastron, scapula and a humerus (pl.-1. fig. -a).

Crocodylus porosus Schneider (The Marsh Crocodile) :

Only a broken skull was found in this collection (pl.-1, fig.-c & d). Presence of this species testifies that the area was rather marshy and was connected with river.

Canis aureus Linnaeus (The Jackal) :

A very good representative collection of this species was found from Boral. This consists of a skull, 1st molar, right humerus, left and right femur, left tibia and left pelvis (pl.-1, fig.-e& f).

Elephas maximus Linnaeus (The Elephant) :

Detached plates of molar tooth (pl.-2, fig. -e). The origin of *Elephas maximus* is not yet been ascertained with certainity . Badam (1984) opined that *Elephas hysudricus or Elephas namadicus* of Indian Pleistocene is the probable ancestor of *Elephas maximus.*

Cervus duvauceli Cuvier (The Swamp Deer) :

This species of deer is represented in the collection by an antler (pl.-2, fig.-f).

The distribution of this species is north of the Ganges from Kumaon (U. P.) to Assam and Madhya Pradesh. However, the antler from Boral testifies its one time existence in the swampy areas of southern West Bengal which was the periphery of extended Sundarbans a few centuries ago.

Sus scrofa cristatus Wagner (The Pig) :

Only a single specimen of lower jaw of the species was found in this collection (pl. -2, fig. -d).

Sus scrofa cristatus is common throughout Peninsular India and a subspecies of *Sus scrofa,* the wild boar of the Lower Pleistocene which is still extant in the Indian jungle. It is assumed that all the domesticated Indian pigs owe their ancestry to this Wild species.

However, archaezoologists are of the opinion that the pig constituted one of the most important animals in the development of culture in the Prehistoric period of the Old World (Nath, 1961).

Bos namadicus Falconer (The Extinct Cattle) :

Upper right 1st and 2nd molar teeth of this species were found (pl. -2, fig. -c).

Bos namadicus is an extinct species of the family Bovidae. This species was reported from India as early as Middle to Late Pleistocene of Narmada Alluvium, Older Alluvium of Penganga and Yamuna and the Billa Surgam Cave of Kurnool (Badam 1979).

Recently one of the authors (S. Banerjee) reported *Bos namadicus* from Mochpal (Early Historic), Bharatpur (Chalcolithic) and Susunia (Late quaternary) all in West Bengal (Banerjee 1976, 1981; Banerjee and Saha 1976).

Bos gaurus H. Smith (The Indian Bison):

Bos gaurus is represented in this collection by a fragmentary left femur and a 3rd phalanx (pl. -3, fig. b &d). The Gaur is a distant and wild relative of the present day cattle and is found in the forests throughout India.

Bos indicus Linnaeus (The Humped Cattle) :

The bulk remains of bone fragments are those of *Bos indicus*. Out of 83 fragments of animal remains collected from Boral, 38 specimens are of *Bos indicus* (pl.-2, fig. -a & b).

Comparatively a large collection of *Bos indicus* from Boral indicates that the human inhabitants of this site maintained a large herd of cattle for milk as well as for agriculture.

Table-1. Comparative measurements (in mm.) of Right humerus, Left metacarpal, and Left astragalus of *Bubalus panihatensis* (Banerjee and Saha in press), *Bubalus maruvatoorensis* (Ghosh, *et al* :1972) *Bubalus bubalis* (Linnaeus) (domesticated) and *Bubalus bubalis* (Linnaeus) (Wild).

	B. Panihatiensis	*B. maruva-toorensis*	*B. bubalis* (domesticated)	*B. Bubalis* (wild)
	Sub-recent	L. Pleistocene	Recent	Mediaeval
	Panihati	Maruvatoor		Boral
	West Bengal	Tamil Nadu	Calcutta	West Bengal
Right humerus				
Maximum length	362		310	356
Proximal end length	130 +	-	121	131
Proximal end width	78 +			116
Distal end length	120 +	106	98	104

	B. Panihatiensis	*B. maruva-toorensis*	*B. bubalis* (domesticated)	*B. Bubalis* (wild)
	Sub-recent	L. Pleistocene	Recent	Mediaeval
	Panihati	Maruvatoor		Boral
	West Bengal	Tamil Nadu	Calcutta	West Bengal
Distal end width	69	54.5	80	89
Head length	164		70	85
Head width	72		69	80
Medial shaft				
Transverselength	74	-	60	63
Left metacarpal :				
Maximum length	245		195	235
Proximal end length	90		65	79
Proximal end width	54		39	44
Distal end length	98	-	70	86
Distal end width	50	-	36	40
Lateral length	61		36	52
Transverse length	35		26	
Left astragalus				
Maximum length	100		76	84
Maximum width	65		46	48

Bubalus babalis (Linnaeus) (The Indian Wild Buffalo) :

The collection of wild buffalo consists of right humerus, right radius left metacarpal, atlas, cervical vertebrae and left astragalus (pl. -3 & 4, fig. -3a, c, e, f, & 4a & d).

The bones of this species are larger than those of the domestic variety but smaller than those of *B. panihatiensis* (See Table 1). However, the ridges for the attachment of muscles of the present collection are more prominent.

Generally it is difficult to differentiate between the bones of the wild and domestic buffalo due to lack of comparative material as stated by Clason (1977). The general concensus of opinion is that the Indian Wild Buffalo is the direct lineal descendant of the gigantic *Bubalus palaeindicus* Falconer of Siwalik Hills which gave rise to present day domestic buffaloes in India (Nath 1961). Badam (1984) also agrees with this view but he emphasises that very little is known about the process of its domestication, although it was domesticated within the subcontinent. However,

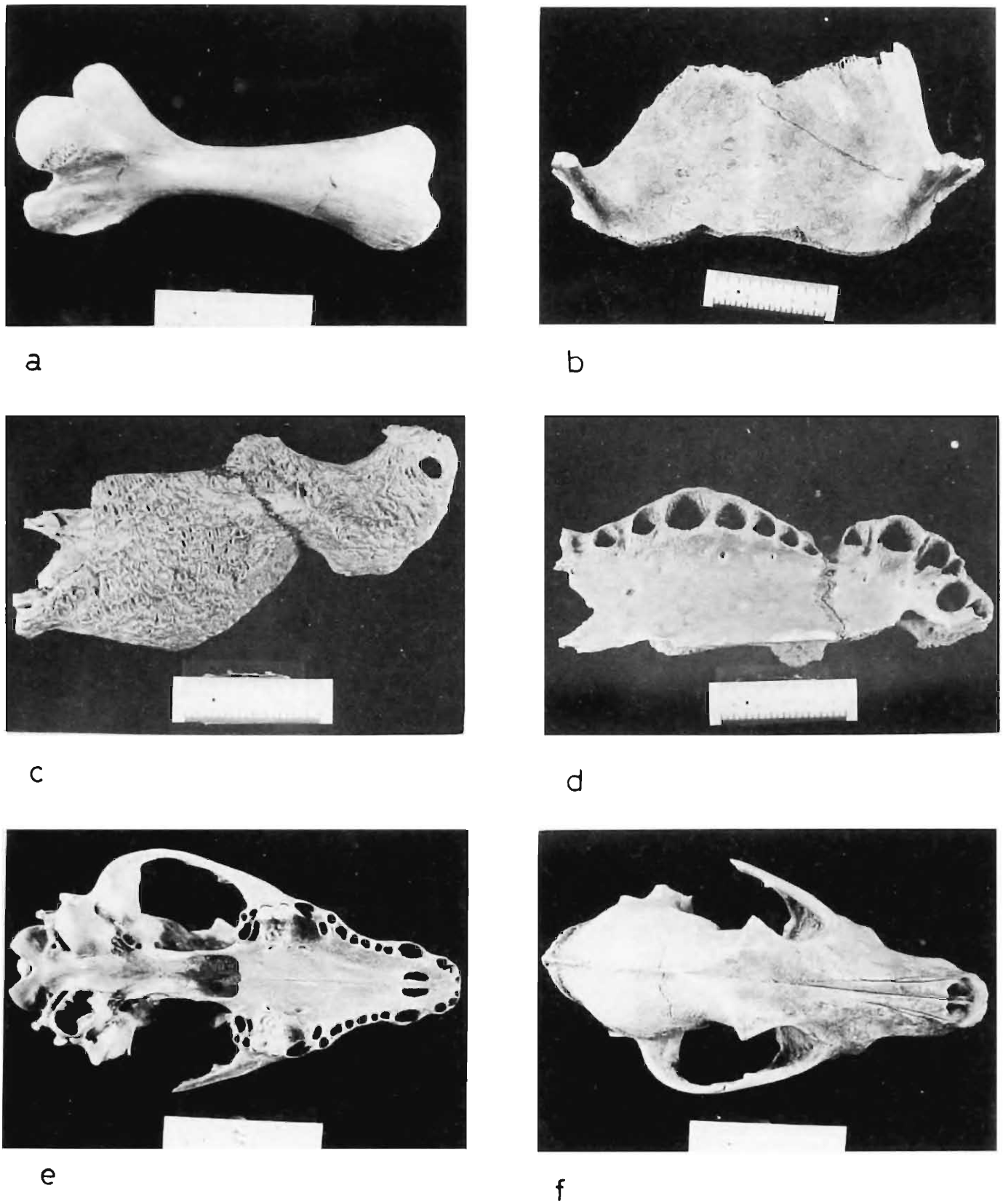
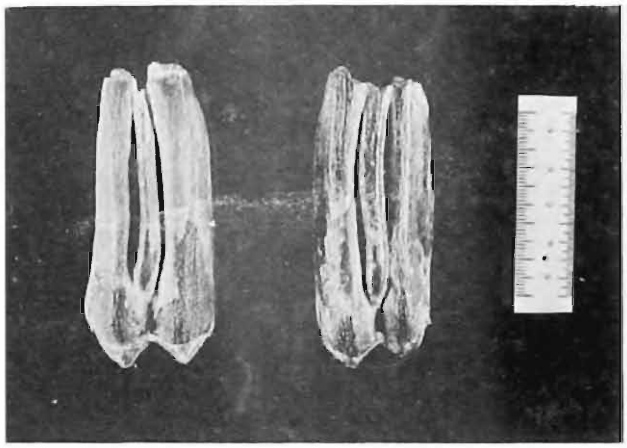


Plate-1 : (a-f)

(a) Left humerus of *Chitra indica* Gray; (b) Fragment of Epiplastorn of *Trionyx gangeticus* Cuvier; (c) Fragment of skull (right side) of *Crocodylus porosus* Schneider-Dorsal view; (d) -Ventral view; (e) Skull (slightly broken) of *Canis aureus* Linnaeus -v; (f) Dorsal view.

a

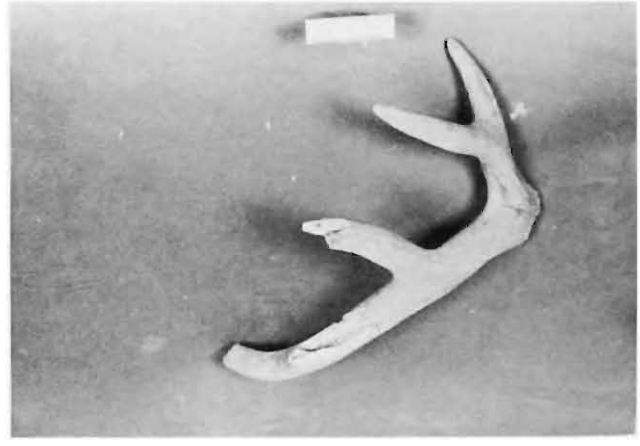
b



c

d

e



f

Plate-2 : (a-f)

(a) Right metatarsal of *Bos indicus* Linnaeus; (b) Right radius with ulna of *Bos indicus* Linnaeus; (c) Upper right 1st and 2nd molar of *Bos namadicus* Falconer-Labial view ; (d) Lower jaw of *Sus scrofa cristatus* Wagner; (e) Detached plates of molar tooth of *Elephas maximus* Linnaeus; (f) Fragment of antler to *Cervus duvauceli* Cuvier.

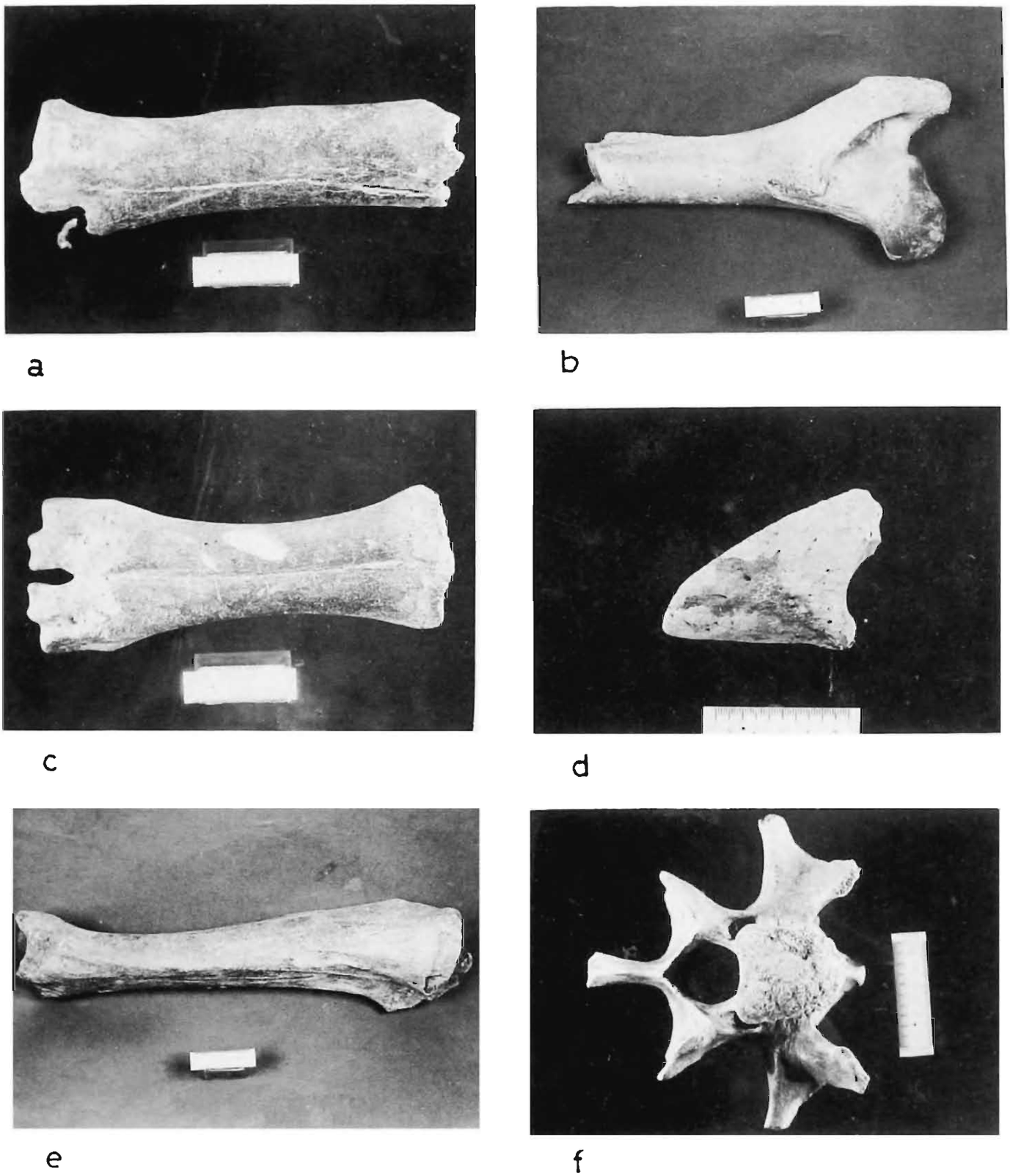


Plate-3 : (a-f)

(a) Right radius of *Bubalus bubalis* Linnaeus; (b) Proximal end of left femur of *Bos gaurus* H. Smith; (c) Left metacarpal of *Bubalus bubalis* (Linnaeus) (wild); (d) Third phalanx of *Bos gaurus* H. Smith; (e) Left tibia of *Bubalus bubalis* (Linnaeus) (wild); (f) Cervical vertebra of *Bubalus bubalis* (Linnaeus) (Wild).

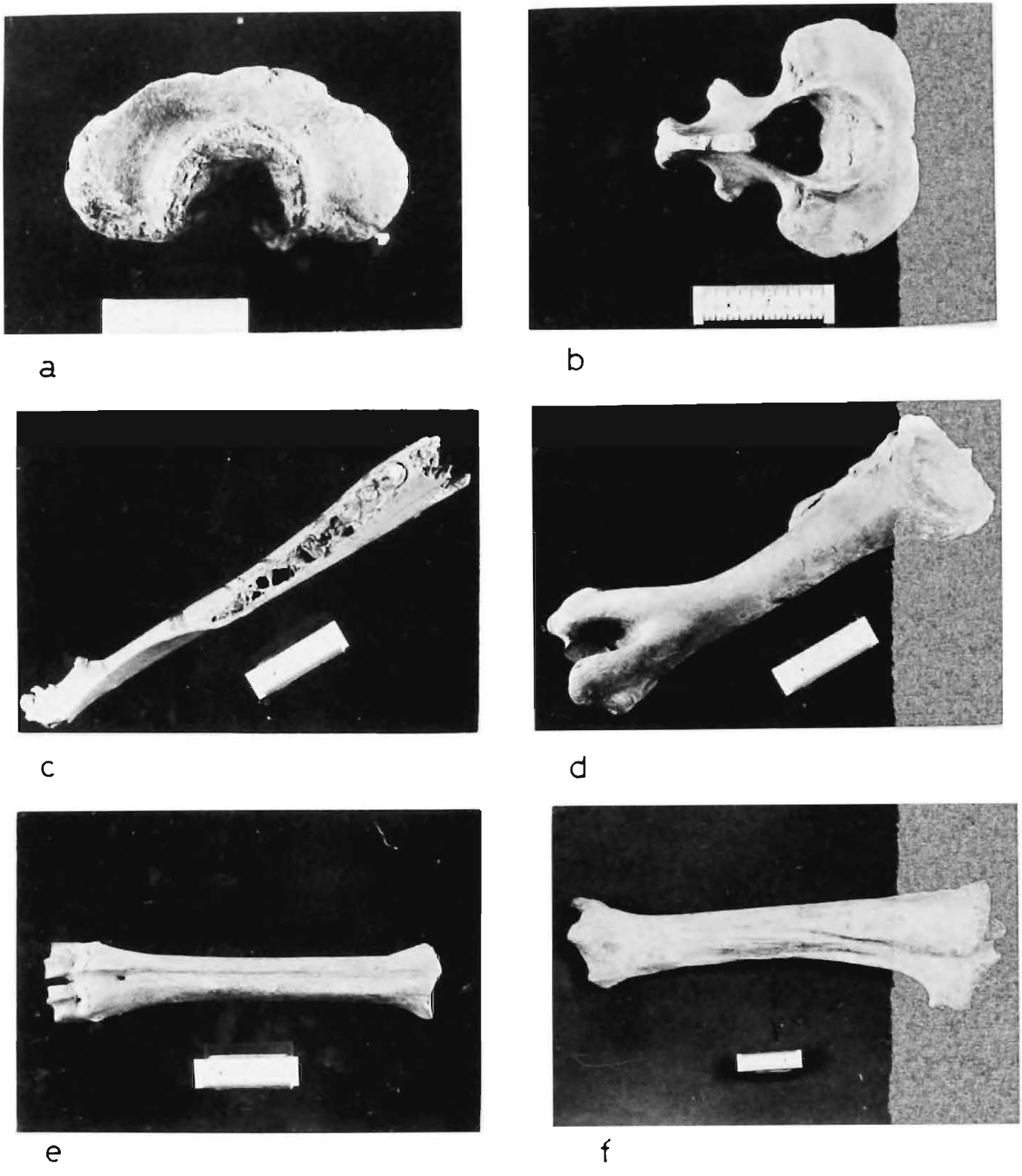


Plate-4 : (a-f)

(a) Atlas vertebra of *Bubalus bubalis* (Linnaeus) (Wild); (b) Atlas vertebra of *Bubalus bubalis* (Linnaeus) (Domesticated); (c) Left mandible with 3rd molar of *Bubalus bubalis* (Linnaeus) (Domesticated); (d) Right humerus of *Bubalis bubalis* (Linnaeus) (Wild); (e) Left metacarpal of *Bubalus bubalis* (Linnaeus) Domesticated); (f) Right tibia of *Bubalus bubalis* (Linnaeus) (Domesticated).

Ghosh (1985) stated that buffaloes were domesticated in India during early agricultural period (2000-3000 B. C).

Occurrence of both wild and domestic buffaloes together was also reported by Nath (1963) from the historical levels of Nagarjunakonda.

Bubalus bubalis (Linnaeus) (The domestic Buffalo) :

Sixteen skeletal fragments of domestic *Bubalus bubalis* are present in this collection (pl. -4, fig. -b, c, e, & f).

The above mentioned fauna reported from Boral also have been unearthed from different sites in India, which has been presented in a tabular form (See Table -2).

DISCUSSION

Boral is situated 20 km south of Calcutta. It was quite a famous place in ancient days and had its own cultural importance. It is said that a King of the Sen dynesty known as Sujagya Sen had built the original temple of Tripura Sundari near the dighi (pond) about 700 years ago. The old ruined temple has been replaced by a new one and the deity in it is regularly worshipped.

The archaeological antiquities collected from this pond indicate that the civilization in this locality was as old as 1st Century B. C.

The remains of *Cervus duvauceli, Elephas maximus, Bos gaurus, Bos namadicus* and *Bubalus bubalis* (wild) testify their one time existance in the forests of Sundarbans.

The remains of domestic buffalo and cattle amply prove that there was a civilization and the human inhabitants used to maintain herds of buffalo and cattle for milk and agriculture

The most interesting finding of Zoological interest is the remains of *Bos namadicus* Falconer from Boral. Recently *Bos namadicus* has been reported from Susunia, in Bankura District (Banerjee & Saha 1976) which is about 20,000 years old and from Mochpal, Barasat, North 24-parganas District (Banerjee 1976) which is about 2000 years old. The third report is from Bharatpur, Burdwan District (Banerjee 1981). Ghosh (1977) described a subspecies of this species from Chandraketugarh, North 24-Parganas District in West Bengal. All these reports suggest that this species had a fairly wide distribution in West Bengal at least 20,000 years ago upto recent times.

SUMMARY

Altogether 12 species belonging to both wild and domestic species of animals have been reported from Boral, a Mediaeval site in West Bengal. The occurrence of these animal remains testify that pastoralism was mainstay of the economy of the local people augmented by hunting

T able-2 : Showing the occurrence of different species reported upon from Boral, along with other prehistoric sites in India

CULTURE	LOCALITY	DATE	*Trionyx gangeticus*	*Chitra indica*	*Crocodylus porosus*	*Canis aureus*	*Elephas maximus*	*Cervus duvauceli*	*Sus scrofa cristatus*	*Bos namadicus*	*Bos gaurus*	*Bubalus bubalis* (wild)	*Bubalus bubalis*	*Bos indicus*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MEDIAEVAL	BORAL	200 BC-1100 AD	+	+	+	+	+	+	+	+	+	+	+	+
EARLY HISTORIC	MOCHPAL	200 BC-200 AD	+							+				
	CHANDRA KETU GARH	200 BC-200 AD								+				
IRON AGE	ARIKAMEDU	20-50 AD							+					+
	SARNATH	1200 AD					+		+				+	+
	NAGARJUNA-KONDA	200 BC-1200 AD					+		+	-			+	+
	JAUGADA	400 BC-300 AD	+						+				+	+
	HASTINAPUR	800-300 BC	+				+	+	+				+	+
	UJJAIN	500BC	-	-	-	-	+	-	+		-		+	+
	BHARATPUR	200 BC-1000 AD	-	-	-	-	-	-	+	-		-	+	+

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CHALCOLITHIC	NASIK	1300-1000BC	+	-	-	-	-		+				+	+
	NEVASA	1300BC	-	+	-	-	-	+	+				+	+
	INAMGAON	1600-700BC		-	-	-	+		+	-	-		+	+
	NAGDA	1600-1200BC	+	+	+	-	+	+	+	-	-		+	+
	NAVDATOLL	1600-1400BC	-	-		-	+		+	-	-		+	+
	DAIMABAD	2000-1000 BC	-	-	-	-				-			+	+
	KAYATHA	2000-1300 BC					+		+	-	-		+	+
	SOMNATH	2200-1200 BC	-		-	-			+	-		-	+	+
	AHAR	2200-1300 BC			-			-	+	-	-		+	+
	BHARATPUR	1000 BC	+		-	-		+	+	+	-		+	+
HARAPPAN	RANGPUR	2000-800 BC	-					+	+	-			+	+
	RUPAR	2000-800 BC	+				+	-	+	-	-		+	+
	SURKOTADO	2100-1700 BC		-					-	-	-	-		+
	LOTHAL	2300-1800 BC			-	+	+		+	-			+	+
	KALIBANGAN	2300-1900 BC					+	+		-	+		+	+
NEOLITHIC	BRAHMAGIRI	500BC-200 AD							+				+	+
	NAGARJUNA-KONDA	2500-1500 BC						+	+				+	+
	SANGANKAL	1600-1500 BC												+

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	HALLUR	1700-1000 BC									-			+
	MASKI	1800-1000 BC										-	+	+
	PALYAMPALLI	1700-1400 BC												+
	TIKKAIKOTA	1800-1500 BC												+
	T. NARSIPUR	1800-1500 BC												+
	PIKLIHAL	2200 BC					+						+	+
	UTNUR	2400-2000 BC							+					+
	KODEKAL	2500 BC											+	+
MESOLITHIC	ADAMGARH	5500-900 BC							+				+	+
	LANGHNAJ	2000 BC							+				+	+
	BAGOR	4500-3300 BC							+				+	+

and agriculture. Authors are also in the opinion that *Bos namadicus* had a fairly wide distribution in West Bengal.

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