

Zooarchaeological Study of Animal Remains of Daimabad (Maharashtra) A Chalcolithic Site of Deccan

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ZOOLOGICAL SURVEY OF INDIA



OCCASIONAL PAPER No. 351

**ZOOARCHAEOLOGICAL STUDY OF ANIMAL
REMAINS OF DIAMABAD (MAHARASHTRA) :
A CHALCOLITHIC SITE OF DECCAN**

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*Edited by
The Director, Zoological Survey of India, Kolkata*

**Zoological Survey of India
Kolkata**

CITATION

Pal, T.K., Talukder, B. and Baraik, B. 2013. Zooarchaeological Study of animal remains of Diamabad (Maharashtra) : A Chalcolithic site of Deccan. *Rec. zool. Surv. India, Occ. Paper No.*, **351** : 1-51, (Published by the Director, *Zool. Surv. India*, Kolkata)

Published : July, 2013

ISBN 978-81-8171-347-6

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PRICE

India : ₹ 475/-

Foreign : \$ 30; £ 25

Published at the Publication Division by the Director, Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053 and printed at East India Photo Composing Centre, Kolkata-700 006.

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OCCASIONAL PAPER**

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INTRODUCTION

Fifties of the Twentieth century marked an important period in the archaeological studies in India while a number of Chalcolithic sites were discovered in the Ahmednagar, Nasik and Dhule Districts of Maharashtra. The results of these excavations could trace back the history of human culture in this part of Deccan from Early Historic period to Chalcolithic period. There have indeed been certain characteristic differences in the stages and objects of the culture at locations but it was evident that the Chalcolithic Culture evolved in a considerably large area of Deccan and where fusion with Post-Harappan culture from further west was noticed before the Early Historic period. Ahmednagar District, which lies in the semiarid zone of Deccan with low-irregular rainfall, was earlier considered popularly as a 'famine district' because of phenomenal crop failure. However, the area was once a site of a number of Chalcolithic cultural sites like, Jorwe, Nevasa, Daimabad, etc. A number of phases of Chalcolithic Culture were recognised amongst several sites in Pune, Nasik, Ahmednagar, Dhule and Wardha Districts of Maharashtra (Text Fig. 1) but the stratigraphic positions of the phases in relation to age were not quite clear until the results of excavation in Daimabad were available. The archaeological significance of Daimabad lies not only in presenting the stratigraphic chronology of at least five phases developed through years but it had brought to our notice about the presence of various animals and plants which threw light on the past vegetation and wild animals around Daimabad as well as agricultural crops and domestic livestock of the ancient people.

LOCATION AND HABITAT

Daimabad is currently a deserted village located on the bank of river Pravara (19° 31' N and 74° 42' E), a tributary of river Godavari, in Shrirampur taluka of Ahmednagar District at a distance of 6 km. south of Padhegaon railway station on Daund-Manmad Section of Central Railway (Text Figs. 2, 3). The site is located on a 10 m. high alluvial flat surface in the vicinity of a meandering loop of river Pravara. The site was earlier called 'Dalimbabad' or 'Dalimb Bag' as pomegranate orchards were developed in the 17th-18th Century A.D. during Nizamshahi rule in the area. The ruin of mud citadel of Muslim ruler was also present in the site. The archaeological site measuring about 1000 m.x 500 m. situated near the river bank and occupational deposit of the past culture rose about 10 ft. (or 3.03 m.) above the river bed upon black soil (Text Fig. 4). The river Pravara originated from the eastern slope of the Sahyadri Range near Ratangad and flows eastwards in the plain up to Daimabad and from

where the river took northerly course to join river Godavari near Toka. It is believed that the Chalcolithic Culture developed sporadically in Pravara river valley and this development could largely be contributed to high rainfall in the hills during monsoon causing floods downstream in the valley area. The drainage caused alluvial deposit as well as making the valley potential for agriculture and human settlements. Clay-rich and moisture retaining black soil of Daimabad perhaps attracted the ancient agrarian folk to settle down in the area.

Daimabad area of Pravara valley consists of a Late Pleistocene alluvial deposits which gradually merge with the valley sediments. Beneath these sediments lie basaltic rocks of Cretaceous-Triassic age. Veins or lenticular patches occur in the basaltic rocks of siliceous minerals like, jasper, agate, chalcedony, crystal, etc. These minerals were probably utilized by the Chalcolithic folk for manufacturing microliths and other objects. The area, coming under Godavari-Pravara basin, is largely a plain area known as Kopergaon plain which bears deep and rich clayey black soil.

Climate-wise Daimabad comes under the semiarid zone of the country which receives rainfall of about 60 cm. per year. Despite having a fertile soil the agriculture could not flourish much in recent past due to low water availability. December is the coldest month with the daily temperature ranges from 11.7°C to 28.5°C. However, the area occasionally receives cold waves of North India dropping the minimum temperature to about 2°C to 3°C. May is the hottest month while the temperature normally ranged between 22.4°C and 38.9°C, which occasionally raised up to 43°C to 44°C.

The vegetation in Daimabad area is dry deciduous type with trees, shrubs and creepers produce several fruits, vegetables and leaves. As the natural vegetation of the area cannot be called more than scrub jungles, only a few wild animals are seen in this environ. Fox, jackals, gazelle, hare etc. are still noticed; a few game birds and cranes visit the area in seasons, and many fishes abound in the pools and river waters in wet seasons (see Maharashtra State Gazetteers, 1976).

HISTORY OF EXCAVATION

The archaeological potentiality of the mound at Daimabad was pointed out first by Bopardikar in 1958 (see IAR, 1959) while making a thorough ground survey for identifying prospective sites for archaeological exploration and the mound was first excavated by M.N. Deshpande in 1959 (see Sali, 1986). Four trenches [DMD-1, DMD-2, DMD-3 and DMD-4] were laid on the southwestern part of the mound. DMD-1 was laid on the higher level, at a distance from the river and was divided into serial squares (viz., A, B, C,... series). All the trenches were excavated to certain depths and on the basis of recovered potteries and microliths Deshpande divided the occupational site into three phases (viz., I, II and III). The phase-I exhibited thick

and coarse greyware consisting of large globular urn and flared rim. Microliths characterized by pen-knife blades, made up of chalcedony were recovered. In phase-II potteries with black paintings on red surface were predominant. Fragmentary copper craft was also recovered. In phase-III painted Jorwe potteries were prevalent which comprised concave-sided carinated bowls; paintings were mostly geometric and linear. Microliths were recovered in more numbers than in phase-I and II. Remnants of dead and burial were evident in all the phases.

After Deshpande's excavation in 1959 a renewed interest about Daimabad was generated while an occasional digger recovered about four remarkable bronze crafts in the occupational site in 1974. S.R. Rao resumed excavations in four sectors (*viz.*, I-IV) in 1974-75 (see IAR 1979; Rao, 1978) and Deshpande's excavational area (DMD-1 to 4) was coming under Sector I. Rao divided the cultural sequence in the site into three Periods (Periods-I to III). He opined that the Malwa Culture prevailed before the Jorwe Culture and indicated the presene of Late Harappan potteries. The excavation in the site was continued by S.A. Sali from 1975-76 season to 1978-79 season. According to Sali (1986) the Chalcolithic Culture of the site was divided stratigraphically and periodically into five phases as follows :

Phase-I : **Savalda Culture** (c.2200-2000 B.C.) – 20-30 cm. thick deposit of blackish-brown soil atop the black soil having a contact with overlying layer of the succeeding phase.

Phase-II : **Late Harappan Culture** (c.2000-1600 B.C.) – Greyish-brown deposit ranged up to 50 cm. bearing a contact with overlying deposit of succeeding phase.

Phase-III : **Daimabad Culture** (c.1800-1600 B.C.) – Earlier termed as Buff and Cream-ware Culture and subsequently designated as Daimabad Culture (Sali, 1983). The cultural deposit extending up to a height of 80 cm., reddish in colour and having an overlap with the Malwa Culture in the uppermost 30 cm.

Phase-IV : **Malwa Culture** (c.1600-1400 B.C.) – The cultural deposit extending up to a height of 80 cm., pink-brown in colour and there was an overlap with the Jorwe Culture in the uppermost 20 cm.

Phase-V : **Jorwe Culture** (c.1400-1000 B.C.) – Surface deposit, mostly whitish grey in colour and had a varying depth, maximum up to 2 m. There were two layers in the uppermost deposit of 30 cm. with brownish tinge.

SOILSCAPE AND PALAEOENVIRONMENTAL SITUATIONS

It has earlier been mentioned that the surroundings of the Chalcolithic site of Daimabad consists of Late Quarternary alluvium on the basaltic rocks of Triassic-Cretaceous age. Rajguru (1986) presented a profile of the soilscape of the site where a dark soil band of about 10 cm. thickness occurs between the strata of Late Harappan phase and Daimabad phase. The

laboratory analysis showed that there was a large similarity in mineral and chemical composition of virgin black soil over brownish silt of alluvium and dark brown band covering habitational debris of Late Harappan phase. Dark brown layers over Late Harappan deposits and alluvial silt were weathered alluvial horizons representing buried soils of Middle Holocene and Early Holocene respectively. Both were pedocalic vertisols, signifying savannah vegetation with hot semiarid climatic condition. Pedocalic brown soil over Late Harappan deposit was indicative of desertification and arid phase of at least one hundred years, while soil remained weathered and submature. It is apparent that there were climatic shifts in past which also influenced biota as well as human settlements.

The river Pravara, that receives watercourses originating mostly from Western Ghats, had graveley bed. This river which holds marginal water during dry season swells and flooded during monsoonal months due to high rainfall in the catchment areas. Daimabad encountered remarkable floods in recent past during 1947, 1956 and 1969. During the flood of 1969 about 15-20 m. high clay, silt and sand were deposited above the modern bed level of the river (Majumder *et al.*, 1970). Layers of deposition of clay with pebble grade material were observed in the cuttings at different depths of the Sections. It was difficult to justify deposition of pebbles and gravels at a height of 15 m. with the flood situations of the river in recent times. It is conjectured that environment during the Middle Holocene was not stable but had undergone dynamic changes. Buried soil and prevalence of gravels in deposition due to flood indicate a change in environmental condition. According to Rajguru (1986) signs of flood during Jorwe times (c.3400-3000 ybp) was due to major climatic change in the area. He (*op. cit.*) inferred frequent floods in Daimabad around 1000 B.C. (or c. 3000 ybp) due to climatic deterioration. Wasson *et al.* (1983) deduced from the study of lake sediments in Rajasthan that the climate in Thar Deserts remained subhumid around 7000-5000 ybp and became dry and semiarid after 3000 ybp. Naidu (1996, 1999) indicated drier condition with less rainfall during 3500-1200 ybp and moist condition with higher rainfall during 5000-3500 ybp in the Indian subcontinent. This generalised finding may however be critically cross-checked with the depositional profiles of Daimabad archaeological site.

SYSTEMATIC ACCOUNT OF ANIMAL REMAINS

The animal remains of Daimabad archaeological site present in the repository of ZSI are worked out and the result of it is presented in Table-1.

Table-1. Systematic analysis of animal remains recovered from Dimabad archaeological site.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Chitra indica</i> Gray	1	Fragment of hypoplastron	DMD 2	L-E-O S-13	Broken
	1	Fragment of hypoplastron	DMD 1	L-B2 S-10	Broken
<i>Canis familiaris</i> Linn.	1	Left calcaneum	DMD 1	L-B2 S-10	Broken
<i>Felis catus</i> Linn.	1	Distal fragment of right humerus with supracondylar foramen	DMD 1	L-B2 S-8	Broken
	1	Distal fragment of right humerus with olecranon fossa and supracondylar foramen	DMD 1	L-B2 S-10A	Broken
<i>Axis axis</i> Erxl.	1	Distal fragment of left tibia	DMD 2	L-O-A S-2	Broken
	1	Distal end fragment of right femur	DMD 2	L-O-A S-2	Broken
<i>Sus scrofa cristatus</i> Wag.	1	Left calcaneum	DMD 1	L-B S-10 A	Complete
	1	Left horizontal ramus of mandible with teeth	DMD 2	L-E-O S-13	Charred
	1	Right calcaneum	DMD 1	L-B2 S-9A	Complete
	1	1 st phalanx	DMD 2	L-E-O S-11	Broken
<i>Bos indicus</i> Linn.	1	Right upper 1 st molar tooth	DMD 2	L-O-II S-14	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Fragment of 3 rd and 4 th metacarpal	DMD 2	L-O-II S-14	Broken
	1	Fragment of pelvis with a portion of acetabulum	DMD 2	L-O-II S-14	Sub adult
	1	Distal epiphysis of large metacarpal	DMD 2	L-O-II S-14	Broken
	1	Left combined trapezoid magnum	DMD 2	L-O-II S-14	Broken
	1	1st phalanx	DMD 1	L-Nil S-7	Slightly broken
	1	Shaft of rib	DMD 2	L-E-O S-11	Charred
	1	Lumber vertebra	DMD 2	L-E-O S-11	Charred
	1	3 rd phalanx	DMD 2	L-E-O S-9	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-18	Complete
	1	Lower left 3 rd premolar tooth	DMD 1	L-B2 S-18	Complete
	1	Lower right 3 rd premolar tooth	DMD 1	L-B2 S-18	Broken
	1	Lower right 1 st premolar tooth	DMD 1	L-B2 S-18	Complete
	1	3 rd phalanx	DMD 1	L-B2 S-17	Broken
	2	2 nd phalanx	DMD 1	L-B2 S-7	1 complete 1 sub adult
	1	Proximal fragment of left large metacarpal	DMD 2	L-E-O S-4	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	2 nd phalanx	DMD 2	L-E-O S-4	Slightly broken
	1	3 rd phalanx	DMD 2	L-E-O S-16	Broken
	1	2 nd phalanx	DMD 2	L-E-O S-2	Broken
	1	Rib with head and tubercle	DMD 2	L-E-O S-6	Broken
	1	Left upper 2 nd premolar tooth	DMD 2	L-O-II S-7	Complete
	1	Right upper 1 st molar tooth	DND 2	L-E-O S-13	Complete
	1	Left calcaneum	DMD 2	L-E-O S-13	Broken
	1	Right scaphocuboid	DMD 2	L-E-O S-15	Charred
	2	Incisor teeth	DMD 2	L-E-O S-15	1 complete 1 broken
	1	Left upper 1 st premolar tooth	DMD 1	L-B2 S-11	Sub adult
	1	Right upper 1 st premolar tooth	DMD 1	L-B2 S-11	Broken
	1	Left cuneiform	DMD 1	L-B2 S-11	Broken
	1	2 nd phalanx	DMD 2	L-E-O S-2	Charred
	1	Fragment of molar tooth	DMD 1	L-E-O S-9	Broken
	1	Lower 1 st molar tooth	DMD 2	L-E-O S-9	Slightly broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Right cuneiform	DMD 1	L-B2 S-10	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-19	Complete
	1	Distal fragment of large metatarsal with condyle	DMD 1	L-B2 S-9	Broken
	1	3 rd phalanx	DMD 1	L-B2 S-9	Broken
	1	Right lunate	DMD 2	L-B2 S-19	Broken
	1	3 rd phalanx	DMD 1	L-B2 S-5	Broken
	1	Spine of thoracic vertebra	DMD 1	L-B2 S-5	Broken
	1	Lumber vertebra	DMD 1	L-B2 S-9	Slightly charred
	1	Fragment of atlas vertebra	DMD 1	L-B2 S-13	Broken
	1	Lower left 3 rd molar tooth	DMD 2	L-E-O S-12	Complete
	1	Fragment of rib	DMD 2	L-E-O S-12	Broken
	1	Right ulna	DMD 1	L-B2 S-11	Broken
	2	Fragments of ribs	DMD 1	L-B2 S-11	Broken
	1	Right upper 1 st molar tooth	DMD 2	L-E-O S-12	Charred
	1	Fragment of rib with head	DMD 2	L-E-O S-12	Charred

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Shaft of rib	DMD 2	L-E-O S-12	Broken
	2	Fragments of ribs	DMD 2	L-E-O S-12	Broken
	2	2 nd phalanx	DMD 2	L-E-O S-12	Broken
	1	1 st phalanx	DMD 2	L-E-O S-12	Broken
	1	Thoracic vertebra	DMD 2	L-E-O S-12	Broken
	1	Distal fragment of left tibia	DMD 2	L-E-O S-12	Broken
	1	Left vertical ramus of mandible with condyle	DMD 2	L-E-O S-12	Charred
	1	Left lower 1 st molar tooth	DMD 2	L-E-O S-9	Charred
	1	Left lower 2 nd molar tooth	DMD 2	L-E-O S-9	Broken
	1	Fragment of rib	DMD 1	L-B2 S-8A	Broken
	1	Fragment of right lunate	DMD 1	L-B2 S-8A	Broken
	1	Spinous process of thoracic vertebra	DMD 1	L-B2 S-19	Broken
	1	Distal fragment of large metacarpal	DMD 2	L-E-O S-10	Broken
	1	2 nd phalanx	DMD 2	L-E-O S-10	Complete
	1	Cervical vertebra	DMD 2	L-E-O S-12	Charred

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	1 st phalanx	DMD 2	L-E-O S-12	Complete
	1	Left scapho-cuboid	DMD 2	L-E-O S-Nil	Sub adult
	1	Left 2 nd premolar tooth	DMD 2	L-E-O S-Nil	Broken
	1	Fragment of atlas vertebra	DMD 2	L-O-II S-4B	Broken
	1	Right horizontal ramus of mandible with 2 nd molar tooth	DMD 2	L-B2 S-3	Broken
	1	Fragment of horn core	DMD 2	L-B2 S-3"	Broken
	1	Proximal fragment of left large metatarsal	DMD 2	L-B2 S-3	Broken
	1	Fragment of shaft of rib	DMD 2	L-B2 S-3	Broken
	1	Fragment of horizontal ramus of mandible	DMD 2	L-B2 S-3	Broken
	1	Right lower 3 rd premolar tooth	DMD 2	L-E-O S-5	Broken
	1	3 rd phalanx	DMD 2	L-E-O S-5	Complete
	2	Distal epiphysis of left radius	DMD 2	L-E-O S-5	Broken
	1	Right horizontal ramus of mandible without teeth	DMD 1	L-B2 S-10	Broken
	1	Right lower 2 nd molar tooth	DMD 1	L-B2 S-10	Sub adult

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Lower 3 rd molar tooth	DMD 1	L-B2 S-10	Broken
	1	2 nd premolar tooth	DMD 1	L-B2 S-10	Broken
	1	Distal fragment of right metatarsal with condyle	DMD 1	L-B2 S-10A	Broken
	1	Right horizontal ramus of mandible with 3 rd molar tooth	DMD 2	L-E-O S-13	Tooth complete
	1	Fragment of rib	DMD 1	L-B2 S-13	Charred
	1	Right upper 3 rd premolar tooth	DMD 1	L-B2 S-13	Broken
	1	Distal fragment of right radius	DMD 1	L-B2 S-13	Broken
	1	Left upper 3 rd molar tooth	DMD 1	L-B2 S-13	Broken
	1	Left lower 3 rd molar tooth	DMD 2	L-E-O S-13	Broken
	1	Left lower 3 rd premolar tooth	DMD 2	L-E-O S-13	Broken
	1	Incisor tooth	DMD 2	L-E-O S-13	Complete
	1	Horizontal ramus of mandible	DMD 2	L-E-O S-13	Broken
	4	Fragments of shaft of rib	DMD 2	L-E-O S-13	Broken
	2	Fragments of rib with head and tubercle	DMD 2	L-E-O S-13	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Shaft of left tibia	DMD 2	L-E-O S-13	Broken
	1	Distal fragment of left radius	DMD 2	L-E-O S-13	Broken
	1	Fragment of scapho-cuboid	DMD 2	L-E-O S-13	Broken
	1	Distal fragment of humerus	DMD 2	L-E-O S-7	Charred
	1	Left scapula with a portion of glenoid cavity	DMD 2	L-E-O S-8	Charred
	1	2 nd phalanx	DMD 2	L-E-O S-8	Complete
	1	Right horizontal ramus of mandible	DMD 2	L-O-II S-16	Broken
	1	1 st phalanx	DMD 2	L-O-II S-16	Broken
	1	Shaft of rib	DMD 1	L-B2 S-10	Broken
	1	Proximal fragment of large metatarsal	DMD 1	L-B2 S-10	Broken
	1	1 st phalanx	DMD 2	L-E-O S-10	Complete
	2	Fragments of rib	DMD 2	L-E-O S-10	Broken
	1	Shaft of large metatarsal	DMD 2	L-E-O S-10	Broken
	1	Fragment of 1 st phalanx	DMD 2	L-E-O S-10	Charred
	1	2 nd phalanx	DMD 2	L-E-O S-4	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Shaft of large metatarsal	DMD 2	L-E-O S-4	Broken
	2	Fragments of rib	DMD 2	L-E-O S-4	Broken
	1	1 st phalanx	DMD 2	L-B2 S-18	Broken
	1	Fragment of rib	DMD 2	L-B2 S-18	Broken
	2	Upper molar teeth	DMD 2	L-B2 S-18	Broken
	1	Neural spine of thoracic vertebra	DMD 1	L-B2 S-16	Broken
	1	Left ischium of pelvis	DMD 1	L-B2 S-10	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-10	Complete
	1	3 rd phalanx	DMD 1	L-B2 S-10	Complete
	1	Left lower 1 st molar tooth	DMD 1	L-B2 S-10	Broken
	1	Fragment of rib	DMD 2	L-E-O S-15	Charred
	1	Neural spine of thoracic vertebra	DMD 2	L-E-O S-15	Broken
	1	Right calcaneum	DMD 2	L-E-O S-15	Charred
	1	Vertical ramus of mandible	DMD 1	L-B2 S-9A	Charred
	1	Left upper 1 st molar tooth	DMD 1	L-B2 S-9A	Sub adult

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	2 nd phalanx	DMD 1	L-B2 S-9A	Complete
	1	Right calcaneum	DMD 2	L-E-O S-15	Charred
	1	Articular process of cervical vertebra	DMD 2	L-E-O S-15	Broken
	1	Left combined trapozoid and magnum	DMD 2	L-E-O S-15	Broken
	1	Spine of thoracic vertebra	DMD 2	L-E-O S-15	Broken
	1	Radius and ulna	DMD 2	L-E-O S-11	Charred
	1	Upper molar tooth	DMD 2	L-E-O S-11	Broken
	1	1 st phalanx	DMD 2	L-E-O S-11	Broken
	1	Proximal fragment of right tibia	DMD 2	L-E-O S-4	Sub adult
	1	Distal fragment of right tibia without epiphysis	DMD 2	L-E-O S-4	Sub adult
	1	3 rd phalanx	DMD 2	L-E-O S-4	Complete
	1	Upper molar tooth	DMD 2	L-E-O S-4	Broken
	1	Proximal fragment of large metatarsal	DMD 1	L-B2 S-9A	Broken
	1	1 st phalanx	DMD 1	L-B2 S-9A	Complete
	1	3 rd phalanx	DMD 1	L-B2 S-9A	Slightly broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Right upper 2 nd molar tooth	DMD 2	L-E-O S-3	Complete
	1	Right upper 3 rd molar tooth	DMD 2	L-E-O S-3	Complete
	1	Blade of left scapula	DMD 2	L-E-O S-13	Broken
	1	Fragment of rib	DMD 2	L-E-O S-13	Broken
	1	Left lower 2 nd molar tooth	DMD 2	L-E-O S-13	Complete
	1	Atlas vertebra	DMD 2	L-B2 S-16	Complete
	1	Fragment of rib	DMD 2	L-B2 S-16	Broken
	1	Fragment of atlas	DMD 2	L-E-O S-3	Broken
	1	2 nd phalanx	DMD 2	L-E-O S-3	Complete
	1	Lower molar tooth	DMD 2	L-E-O S-3	Broken
	1	Proximal fragment of left ulna	DMD 1	L-B2 S-14	Broken
	1	Distal fragment of large metacarpal with condyle	DMD 1	L-B1 S-14	Broken
	1	1 st phalanx	DMD 1	L-B1 S-14	Complete
	1	Shaft of left humerus	DMD 2	L-E-O S-13	Broken
	1	Fragment of rib	DMD 2	L-E-O S-13	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	3 rd phalanx	DMD 2	L-E-O S-13	Complete
	1	Caudal vertebra	DMD 2	L-E-O S-4	Broken
	2	Fragments of ribs	DMD 2	L-E-O S-4	One charred One broken
	1	1 st phalanx	DMD 2	L-E-O S-4	Complete
	1	Thoracic vertebra	DMD 2	L-E-O S-4	Charred
	1	Fragment of occipital	DMD 2	L-E-O S-14A	Broken
	1	Right scaphoid	DMD 2	L-E-O S-14A	Broken
	1	Medial condyle of right humerus	DMD 1	L-B2 S-10	Charred
	1	1 st phalanx	DMD 1	L-B2 S-10	Charred
	2	Condyles of large metacarpal	DMD 1	L-B2 S-10	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-10	Complete
	2	1 st phalanx	DMD 1	L-B2 S-10	One broken One complete
	1	3 rd phalanx	DMD 1	L-B2 S-10	Complete
	1	Right upper 3 rd molar tooth	DMD 1	L-B2 S-10	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Proximal fragment of right ulna with olecranon process and trochlear notch	DMD 1	L-B2 S-10	Broken
	2	Left ulna	DMD 1	L-B2 S-10	Broken
	1	Fragment of left scaphoid	DMD 1	L-B2 S-10	Broken
	1	Left cuneiform	DMD 1	L-B2 S-10	Broken
	1	Left lateral malleolus	DMD 1	L-B2 S-10	Broken
	1	Left combined trapezoid and magnum	DMD 1	L-B2 S-10	Broken
	1	Left pelvis	DMD 2	L-E-O S-13	Broken
	2	Fragments of rib	DMD 2	L-E-O S-13	One charred One broken
	1	Upper left 1 st premolar	DMD 2	L-E-O S-13	Broken
	1	Right vertical ramus of mandible	DMD 2	L-E-O S-13	Broken
	1	Shaft of right tibia	DMD 1	L-B2 S-9	Broken
	1	Shaft of large metacarpal without epiphysis	DMD 1	L-B2 S-9	Broken
	1	Right upper 1 st premolar	DMD 1	L-B2 S-9	Broken
	1	Proximal fragment of large metatarsal	DMD 1	L-B2 S-17	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Shaft of left tibia	DMD 1	L-B2 S-13	Broken
	1	Distal fragment of left humerus	DMD 1	L-B2 S-13	Sub adult
	1	Fragment of rib with head and tubercle	DMD 1	L-B2 S-13	Broken
	1	1 st Phalanx	DMD 1	L-B2 S-13	Complete
	1	Fragment of cervical vertebra	DMD 1	L-B2 S-13	Broken
	1	Left upper 2 nd premolar tooth	DMD 2	L-E-O S-11	Broken
	1	Atlas vertebra	DMD 2	L-E-O S-11	Charred
	1	Fragment of right ischium of pelvis	DMD 2	L-E-O S-11	Broken
	1	Right upper 1 st premolar	DMD 1	L-B2 S-14	Broken
	1	Lower 2 nd molar tooth	DMD 1	L-B2 S-14	Sub adult
	1	Fragment of rib	DMD 1	L-B2 S-14	Broken
	1	Fragment of right combined trapezoid and magnum	DMD 1	L-B2 S-14	Sub adult
	1	Distal fragment of right humerus with portion of medial condyle	DMD 1	L-B2 S-16	Broken
	1	Proximal fragment of left radius	DMD 1	L-E-O S-10	Sub adult

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	3	Fragments of ribs	DMD 1	L-E-O S-10	Broken
	1	Left scaphocuboid	DMD 1	L-B2 S-3A	Broken
	1	Fragment of atlas	DMD 1	L-B2 S-3A	Broken
	1	Fragment of vertebra	DMD 1	L-B2 S-3A	Broken
	1	Fragment of radius	DMD 1	L-B2 S-3A	Broken
	1	Right upper 1 st premolar	DMD 1	L-B2 S-19	Complete
	1	Lumber vertebra	DMD 1	L-B2 S-19	Sub adult
	1	Left horizontal ramus of mandible	DMD 2	L-E-O S-12	Sub adult and charred
	1	Atlas vertebra	DMD 2	L-O-E S-12	Broken
	1	Left calcaneum	DMD 1	L-B2 S-9A	Charred
	1	Shaft of left tibia	DMD 2	L-CA S-2	Broken
	1	Proximal part of left humerus	DMD 2	L-CA S-2	Broken
	1	Left pelvis	DMD 2	L-E-O S-12	Broken
	3	Fragments of ribs	DMD 2	L-E-O S-12	One charred
	1	Caudal vertebra	DMD 2	L-E-O S-12	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Right scapula with portion of glenoid cavity	DMD 2	L-E-O S-12	Broken
	1	Left mandible	DMD 2	L-E-O S-12	Charred
	1	Distal fragment of left humerus without condyle	DMD 2	L-E-O S-12	Sub adult
	1	Epicondylar of humerus	DMD 2	L-E-O S-11	Charred
	3	Shafts of ribs	DMD 2	L-E-O S-11	One charred
	1	Fragment of rib with head and tubercle	DMD 2	L-E-O S-11	Broken
	1	Fragment of rib	DMD 2	L-E-O S-11	Broken
	1	Shaft of humerus	DMD 2	L-E-O S-11	Broken
	2	Thoracic vertebrae joined together	DMD 2	L-E-O S-11	Broken
	1	Atlas vertebra	DMD 1	L-B2 S-8	Charred
	1	Distal fragment of large metacarpal	DMD 1	L-B2 S-8	Broken
	1	1 st phalanx	DMD 1	L-B2 S-8	Complete
	1	Left horizontal ramus of mandible	DMD 1	L-B2 S-8	Broken
	1	Right lower 3 rd molar tooth	DMD 1	L-B2 S-8	Complete
	1	Right upper 1 st molar tooth	DMD 1	L-B2 S-8	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Right upper 2 nd molar tooth	DMD 1	L-B2 S-8	Broken
	1	Left upper 3 rd premolar tooth	DMD 1	L-B2 S-8	Complete
	1	Right upper 3 rd premolar tooth	DMD 1	L-B2 S-8	Broken
	1	Right lower 1 st molar tooth	DMD 1	L-B2 S-8	Broken
	1	Fragment of atlas vertebra	DMD 2	L-E-O L-14	Broken
	1	1 st phalanx	DMD 2	L-E-O L-14	Complete
	2	Left calcaneum	DMD 2	L-E-O L-14	Broken
	1	Right lower 1 st molar tooth	DMD 2	L-E-O L-14	Complete
	1	Right lower 3 rd molar tooth	DMD 2	L-E-O L-14	Complete
	1	Left horizontal ramus of mandible with 2 nd , 3 rd premolar and 1 st molar tooth	DMD 1	L-B2 S-3	Broken
	1	Fragment of axis vertebra	DMD 1	L-B2 S-3	Broken
	1	Left vertical ramus of mandible with condyle and coronoid process	DMD 1	L-B2 S-3	Broken
	1	Shaft of large metacarpal	DMD 1	L-B2 S-3	Sub adult
	1	Left femur without epiphysis and head	DMD 1	L-B2 S-3	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Right upper 2 nd molar tooth	DMD 2	L-E-O S-14	Complete
	1	Left lower 3 rd molar tooth	DMD 2	L-E-O S-14	Broken
	1	Fragment of molar tooth	DMD 2	L-E-O S-14	Broken
	1	3 rd phalanx	DMD 2	L-E-O S-14	Complete
	1	1 st phalanx	DMD 2	L-E-O S-14	Complete
	1	Spine of thoracic vertebra	DMD 2	L-E-O S-14	Broken
	1	Right astragalus	DMD 2	L-E-O S-15	Complete
	1	2 nd phalanx	DMD 2	L-E-O S-15	Complete
	1	Fragment of rib	DMD 2	L-E-O S-15	Broken
	1	Fragment of atlas	DMD 2	L-O-II S-15	Broken
	1	1 st phalanx	DMD 2	L-O-II S-15	Complete
	1	Distal fragment of right radius	DMD 2	L-O-II S-15	Broken
	1	Right pubis	DMD 2	L-O-II S-15	Broken
	1	Distal fragment of large metatarsal	DMD 2	L-B2 S-13	Broken
	2	Distal fragments of large metacarpal	DMD 2	L-B2 S-13	One charred One broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	3	Fragments of epiphysis	DMD 2	L-B2 S-13	Broken
	2	Distal fragments of left radius	DMD 2	L-B2 S-13	Broken
	1	Fragment of large metatarsal	DMD 2	L-B2 S-13	Broken
	1	Upper 1 st molar tooth	DMD 2	L-B2 S-13	Broken
	2	Distal fragments of right radius	DMD 1	L-B2 S-6	Sub adult
	1	Thoracic vertebra	DMD 1	L-B2 S-6	Broken
	1	Shaft of metacarpal	DMD 1	L-B2 S-6	Broken
	1	Shaft of rib	DMD 1	L-B2 S-6	Broken
	1	Distal fragment of left tibia	DMD 2	L-O-II S-15	Broken
	1	Distal fragment of left humerus	DMD 1	L-O-II S-15	Broken
	1	Fragment of radius	DMD 1	L-O-II S-15	Broken
	1	Right astragalus	DMD1	L-B2 S-3	Broken
	1	1 st phalanx	DMD 1	L-B2 S-3	Complete
	1	Fragment of axis vertebra	DMD 1	L-B2 S-3	Broken
	1	3 rd phalanx	DMD 1	L-B2 S-3	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	11	Right calcaneum	DMD 1	L-B2 S-3	Broken
	1	Left horizontal ramus of mandible with 1 st premolar tooth	DMD 1	L-B2 S-3	Broken
	1	Left maxilla with 1 st & 2 nd molar teeth	DMD 1	L-B2 S-3	Teeth intact
	1	Right horizontal ramus of mandible	DMD 1	L-B2 S-3	Sub adult
	3	Fragments of ribs	DMD 1	L-B2 S-3	Broken
	1	Proximal fragment of large metacarpal	DMD 1	L-B2 S-3	Broken
	1	Proximal fragment of right femur	DMD 1	L-B2 S-8A	Broken
	1	Right upper 1 st molar tooth	DMD 1	L-B2 S-8A	Complete
	1	Left upper 3 rd premolar tooth	DMD 1	L-B2 S-8A	Complete
	1	Right upper 2 nd premolar tooth	DMD 1	L-B2 S-8A	Complete
	1	Fragment of rib	DMD 1	L-B2 S-8A	Broken
	1	Fragment of rib with tubercle	DMD 1	L-B2 S-8A	Broken
	1	1 st phalanx	DMD 1	L-B2 S-8A	Broken
	1	3 rd phalanx	DMD 1	L-B2 S-8A	Complete
	1	2 nd phalanx	DMD 1	L-B2 S-8A	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Fragment of atlas	DMD 2	L-E-O S-9	Broken
	3	Fragments of ribs	DMD 2	L-E-O S-9	Broken
	1	Left pubis of pelvis	DMD 2	L-E-O S-9	Broken
	1	Fragment of 1 st phalanx	DMD 1	L-B2 S-10	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-10	Complete
	1	Fragment of rib with head and tubercle	DMD 1	L-B2 S-10	Broken
	1	Fragment of left lunate	DMD 1	L-B2 S-10	Broken
	1	Fragment of left cuneiform	DMD 1	L-B2 S-10	Broken
	1	Fragment of left scaphoid	DMD 1	L-B2 S-10	Broken
	1	Left combined trapezoid and magnum	DMD 1	L-B2 S-10	Broken
	1	Left lower 1 st molar tooth	DMD 1	L-B2 S-10	Complete
	1	Left lower 3 rd molar tooth	DMD 1	L-B2 S-10	Broken
	1	Left upper 1 st molar tooth	DMD 1	L-B2 S-10	Complete
	1	Distal fragment of right tibia	DMD 2	L-E-O S-15	Charred
	1	Shaft of tibia	DMD 2	L-E-O S-15	Charred

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Proximal fragment of right large metacarpal	DMD 2	L-E-O S-15	Broken
	1	Fragment of rib	DMD 2	L-E-O S-15	Broken
	2	2 nd phalanx	DMD 2	L-E-O S-15	One complete
	1	Proximal fragment of right large metacarpal	DMD 1	L-B2 S-10	Broken
	1	Fragment of left cuneiform	DMD 1	L-B2 S-10	Broken
	1	Fragment of left scaphoid	DMD 1	L-B2 S-10	Broken
	1	Fragment of rib	DMD 1	L-B2 S-10	Broken
	1	Fragment of large metatarsal	DMD 1	L-B2 S-10	Broken
	1	1 st phalanx	DMD 1	L-B2 S-10	Complete
	1	Thoracic vertebra with portion of spine	DMD 2	L-O-II S-4B	Broken
	1	Fragment of rib	DMD 2	L-O-II S-4B	Broken
	1	Proximal fragment of left radius	DMD 1	L-B2 S-9A	Broken
	1	Left trapezoid and magnum	DMD 1	L-B2 S-9A	Broken
	1	Lower molar tooth	DMD 1	L-B2 S-9A	Broken
	1	Left horizontal ramus of mandible with 2 nd and 3 rd premolar teeth	DMD 1	L-O-II S-14	Teeth complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Left horizontal ramus of mandible with 1 st molar tooth	DMD 1	L-O-II S-14	Tooth complete
	1	1 st phalanx	DMD 1	L-O-II S-14	Complete
	1	Right lower 2 nd molar tooth	DMD 1	L-O-II S-14	Complete
	1	Right lower 3 rd molar tooth	DMD 1	L-O-II S-14	Broken
	1	Lateral condyle of right humerus	DMD 2	L-E-O S-14	Charred
	1	Right humerus with condyle	DMD 2	L-E-O S-14	Broken
	2	Shaft of right humerus (parts)	DMD 2	L-E-O S-14	Broken
	1	Right horizontal ramus of mandible	DMD 2	L-E-O S-14	Broken
	1	Vertical ramus of mandible with coronoid process	DMD 2	L-E-O S-14	Broken
	1	Right lower 3 rd molar tooth	DMD 2	L-E-O S-14	Charred
	1	Right horizontal ramus of mandible with dental foramen	DMD 2	L-E1-O S-12	Broken
	1	Spine of scapula	DMD 2	L-E-O S-12	Broken
	1	Left horizontal ramus of mandible	DMD 2	L-E-O L-13	Broken
	1	Fragment of atlas	DMD 2	L-E-O L-13	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	1 st phalanx	DMD 2	L-E1-O L-13	Complete
	1	Distal fragment of right radius	DMD 2	L-E-O L-13	Broken
	1	Right upper 3 rd molar tooth	DMD 2	L-E-O L-13	Complete
	1	Horizontal ramus of mandible with 3 rd molar tooth	DMD 2	L-E-O S-13	Charred
	1	Right upper 3 rd premolar tooth	DMD 2	L-E-O S-13	Complete
	1	Left upper 3 rd premolar tooth	DMD 2	L-E-O S-13	Complete
	1	Right upper 2 nd premolar tooth	DMD 2	L-E-O S-13	Broken
	1	Right lower 3 rd molar tooth	DMD 2	L-E-O S-13	Broken
	1	2 nd phalanx	DMD 2	L-E-O S-13	Complete
	1	Right calcaneum	DMD 2	L-E-O S-13	Broken
	1	Distal fragment of right tibia without epiphysis	DMD 2	L-E-O S-13	Sub adult
	1	Left lower 2 nd molar tooth	DMD 1	L-B2 S-1	Complete
	1	Distal epiphysis of left tibia	DMD 1	L-B2 S-1	Broken
	1	Distal fragment of right radius	DMD 1	L-B2 S-1	Broken
	1	3 rd phalanx	DMD 1	L-B2 S-1	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Left scaphocuboid	DMD 1	L-B2 S-1	Broken
	1	Distal fragment of large metatarsal	DMD 1	L-B2 S-1	Broken
	1	Distal fragment of left humerus with lateral and medial condyles, olecranon fossa and coronoid fossa	DMD 1	L-B2 S-17	Broken
	1	Atlas vertebra	DMD 1	L-B2 S-17	Broken
	1	Distal fragment of right tibia	DMD 2	L-E-O S-15	Broken
	1	Left acetabulum of pelvis	DMD 2	L-E-O S-15	Charred
	2	Fragments of ribs	DMD 2	L-E-O S-15	Broken
	1	Right upper 2 nd molar tooth	DMD 2	L-E-O S-15	Complete
	1	Left 1 st upper premolar tooth	DMD 2	L-E-O S-3	Complete
	1	Distal fragment of left tibia	DMD 2	L-E-O S-3	Broken
	1	1 st phalanx	DMD 2	L-E-O S-3	Complete
	1	Left ilium	DMD 2	L-E-O S-3	Broken
	1	Right upper 1 st molar tooth	DMD 2	L-E-O S-3	Complete
	1	Condyles of large metatarsal	DMD 2	L-E-O S-3	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Distal fragment of right humerus with medial and lateral condyles	DMD 2	L-E-O S-15	Broken
	1	Right scapula with portion of glenoid cavity	DMD 2	L-E-O S-15	Broken
	1	Proximal fragment of left 3 rd and 4 th metatarsal	DMD 2	L-E-O S-15	Broken
	1	Distal fragment of right humerus	DMD 2	L-E-O S-13	Sub adult & Charred
	1	Sacrum vertebra	DMD 2	L-E-O S-13	Charred
	1	Proximal fragment of left tibia	DMD 2	L-E-O S-13	Charred
	1	Shaft of right femur	DMD 2	L-E-O S-13	Broken
	1	Blade of scapula	DMD 2	L-E-O S-13	Broken
	3	Fragments of ribs	DMD 2	L-E-O S-13	Broken
	1	Articular process of cervical vertebra	DMD 2	L-E-O S-13	Broken
	1	Right patella	DMD 2	L-E-O S-13	Broken
	1	Medial condyle of right femur	DMD1	L-B1-2 S-5	Broken
	1	Distal fragment of left humerus with medial and lateral condyles and olecranon fossa	DMD 1	L-B1-2 S-5	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Distal fragment of right humerus with medial, lateral condyle and olecranon fossa	DMD 1	L-B1-2 S-5	Broken
	1	Shaft of rib	DMD 1	L-B1-2 S-5	Broken
	1	Axis vertebra with a portion of anterior articular process	DMD 1	L-B1-2 S-5	Broken
	1	Humerus with a portion of coronoid fossa	DMD 1	L-B1-2 S-5	Broken
	1	Thoracic vertebra	DMD 2	L-E-O S-8	Charred
	2	2 nd phalanx	DMD 2	L-E-O S-8	1 complete 1 charred
	1	Right ulna	DMD 2	L-E-O S-8	Broken
	1	Proximal fragment of large metacarpal	DMD 2	L-E-O S-8	Broken
	2	1 st phalanx	DMD 2	L-E-O S-13	One charred
	1	Fragment of 2 nd phalanx	DMD 2	L-E-O S-13	Charred
	1	Proximal fragment of large metatarsal	DMD 2	L-E-O S-13	Broken
	1	Distal fragment of right tibia	DMD 2	L-E-O S-13	Broken
	1	Fragment of rib with head and tubercle	DMD 2	L-E-O S-13	Broken
	1	Right upper 1 st premolar tooth	DMD 2	L-E-O S-13	Complete

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bos indicus</i> Linn.	1	Proximal fragment of left large metatarsal	DMD 2	L-E-O S-13	Broken
	1	Distal fragment of right humerus	DMD 2	L-E-O S-14	Broken
	1	Lumber vertebra	DMD 2	L-E-O S-14	Broken
	1	Fragment of rib	DMD 2	L-E-O S-14	Broken
	1	3 rd phalanx	DMD 2	L-E-O S-14	Complete
	2	Fragments of vertebra	DMD 2	L-B2 S-11	One charred
	1	1 st phalanx	DMD 2	L-B2 S-11	Broken
	1	Proximal fragment of large metacarpal	DMD 2	L-B2 S-11	Broken
	1	Distal fragment of left tibia	DMD 2	L-B2 S-11	Broken
	1	Left lower 2 nd molar tooth	DMD 2	L-B2 S-11	Complete
	1	Right upper 2 nd molar tooth	DMD 2	L-B2 S-11	Complete
<i>Bubalus bubalis</i> (Linn.)	1	Left proximal fragment of radius	DMD 2	L-E-O S-12	Charred
	1	2 nd phalanx	DMD 2	L-E-O S-15	Complete
	1	Fragment of right scapula with a portion of glenoid cavity	DMD 2	L-E-O S-13	Charred

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Bubalus bubalis</i> (Linn.)	1	Right scaphocuboid	DMD 2	L-O-II S-15	Complete
	1	Proximal fragment of right large metacarpal	DMD 1	L-B2 S-17	Broken
	1	Horizontal ramus of mandible with right 2 nd premolar tooth	DMD 1	L-B2 S-9	Tooth intact
	1	Left large metacarpal	DMD 1	L-B2 S-9	Broken
	1	Fragment of rib	DMD 1	L-B2 S-9A	Broken
	1	Blade of scapula	DMD 1	L-B2 S-9A	Broken
	1	2 nd phalanx	DMD 1	L-B2 S-9A	Complete
	1	Distal fragment of left tibia	DMD 2	L-E-O S-12	Broken
	1	Proximal fragment of right large metacarpal	DMD 2	L-E-O S-12	Broken
	1	2 nd phalax	DMD 2	L-E-O S-12	Complete
	1	Right horizontal ramus of mandible with 3 rd molar tooth	DMD 1	L-B2 S-4	Tooth intact
	1	Right pubis of pelvic	DMD 1	L-B2 S-4	Broken
	1	Right calcaneum	DMD 2	L-E-O S-15	Complete
<i>Ovis vignei</i> Blyth	1	Right pelvis with a portion of acetabulum and ischium	DMD 2	L-E-O S-12	Charred

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Ovis vignei</i> Blyth	1	Proximal fragment of right radius	DMD 2	L-E-O S-12	Broken
	1	Left large metacarpal without epiphysis	DMD 2	L-E-O S-12	Charred
	1	Shaft of large metacarpal without epiphysis	DMD 2	L-E-O S-10	Broken
	1	Proximal fragment of large metatarsal	DMD 1	L-B S-17	Broken
	1	Left pelvis	DMD 2	L-E-O S-7	Broken
<i>Capra hircus</i> <i>aegagrus</i> Erxl.	1	Distal fragment of left humerus	DMD 2	L-O-II S-7	Broken
	1	Fragment of shaft of right femur	DMD 2	L-B2 S-10	Broken
	1	Distal fragment of left radius	DMD 2	L-B2 S-10	Broken
	1	Left patella	DMD 2	L-B2 S-10	Broken
	1	Right upper 3 rd molar tooth	DMD 1	L-B2 S-9A	Complete
	1	1 st phalanx	DMD 1	L-B2 S-9A	Complete
	1	Proximal fragment of right large metacarpal	DMD 1	L-B2 S-15	Broken
	1	Lumber vertebra	DMD 1	L-B2 S-15	Broken
	1	Left lower 2 nd molar tooth	DMD 2	L-O-II S-6	Complete
	1	1 st phalanx	DMD 2	L-E-O S-13	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Capra hircus</i> <i>aegagrus</i> Erxl.	1	Shaft of large metatarsal	DMD 1	L-B2 S-9	Broken
	1	1 st phalanx	DMD 1	L-B2 S-9	Complete
	1	1 st phalanx	DMD 2	L-B2 S-7	Complete
	1	Left horizontal ramus of mandible with 1 st molar tooth	DMD 2	L-E-O S-4	Broken
	1	Left lower 3 rd molar tooth	DMD 2	L-O-II S-15	Sub adult
	1	1 st phalanx	DMD 2	L-O-II S-15	Broken
	1	Left upper 1 st molar tooth	DMD 2	L-B2 S-8A	Complete
	1	Left horizontal ramus of mandible without tooth	DMD 2	L-B2 S-8A	Broken
	1	Distal fragment of left humerus with medial and lateral condyles	DMD 2	L-E-O3 S-1	Broken
	1	Fragment of horn core	DMD 2	L-E-O S-11	Broken
	1	Fragment of atlas	DMD 2	L-E-O S-11	Broken
	1	Fragment of scapula	DMD 2	L-E-O S-13	Broken
	1	Left large metacarpal	DMD 1	L-B2 S-9	Sub adult
	1	Distal fragment of right humerus	DMD 2	L-E-O S-15	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Capra hircus aegagrus</i> Erxl.	1	Proximal fragment of right large metacarpal	DMD 2	L-E-O S-15	Broken
	1	1 st phalanx	DMD 2	L-E-O S-15	Complete
	1	Proximal fragment of left ulna with trochlear notch	DMD 2	L-E-O S-4	Sub adult
	1	Distal fragment of left tibia with medial malleolus	DMD 2	L-O-II S-15	Broken
	1	Left humerus	DMD 2	L-B2 S-13	Broken
	1	Fragment of rib	DMD 2	L-B2 S-13	Broken
	1	Right calcaneum	DMD 2	L-B2 S-13	Complete
	1	Left lower 1 st molar tooth	DMD 1	L-B2 S-10	Sub adult
	1	Shaft of left tibia	DMD 1	L-B2 S-10	Broken
	1	Proximal fragment of left humerus with head	DMD 1	L-B2 S-10	Broken
	2	Shaft of left radius	DMD 1	L-B2 S-10	Broken
	1	Proximal fragment of left radius	DMD 1	L-B2 S-3	Broken
	1	Distal fragment of right humerus	DMD 1	L-B2 S-3	Broken
	1	Right ilium of pelvis	DMD 1	L-B2 S-3	Broken
<i>Rattus rattus</i> Linn.	1	Proximal fragment of left femur with head	DMD 2	L-E-O S-10	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Rattus rattus</i> Linn.	1	Distal fragment of left femur with outer and inner condyles	DMD 2	L-E-O S-10	Broken
	1	Proximal fragment of left femur with a portion of trochanter	DMD 2	L-E-O S-10	Broken
	1	Left ilium of pelvis with a portion of acetabulum	DMD 2	L-E-O S-10"	Broken
	1	Distal fragment of left tibia with inner and outer condyles	DMD 2	L-E-O S-10	Broken
	1	Right tibia	DMD 2	L-E-O S-10	Broken
	1	Atlas vertebra	DMD 2	L-E-O S-10	Broken
	1	Distal fragment of right femur with a portion of shaft and inner and outer condyles	DMD 2	L-E-O S-10	Broken
	1	Proximal fragment of right femur with head portion and 3 rd trochanter	DMD 2	L-E-O S-10	Broken
	1	Proximal fragment of right femur	DMD 2	L-E-O S-10	Broken
	1	Shaft of right femur with 3 rd trochanter	DMD 2	L-E-O S-10	Broken
	1	Right tibia without epiphysis	DMD 2	L-E-O S-10	Broken
	1	Distal fragment of left femur	DMD 2	L-E-O S-10	Broken
	1	Right humerus	DMD 2	L-E-O S-10	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Rattus rattus</i> Linn.	1	Right ilium	DMD 2	L-E-O S-10	Complete
	1	Left tibia without epiphysis	DMD 2	L-E-O S-10	Sub adult
	1	Left tibia	DMD 2	L-E-O S-2	Slightly broken
	1	Right femur with head, greater trochanter, third trochanter, lesser trochanter, without distal epiphysis and condyle	DMD 1	L-B2 S-10	Broken
	1	Left femur with head, third trochanter and portion of greater trochanter, without distal epiphysis and condyles	DMD 1	L-B2 S-10	Broken
	1	Proximal fragment of left tibia	DMD 1	L-B2 S-10	Broken
	1	Fragment of pelvis with ulna and acetabulum	DMD 1	L-B2 S-10	Broken
	1	Left femur with a portion of head, greater and lesser trochanter without distal part	DMD 1	L-B2 S-10	Broken
	1	Proximal part of right femur with head, portion of greater trochanter and third trochanter	DMD 2	L-E-O S-13	Broken
	1	Left femur with head and outer and inner condyles	DMD 2	L-O-II S-4B	Broken
	1	Proximal fragment of left femur with head, portion of greater trochanter and third trochanter	DMD 2	L-O-II S-4B	Broken

Table-1. Cont'd.

Name of species	No. of material	Identity of Material	Site	Locus (L)/ Stratum (S)	Condition of material
<i>Rattus rattus</i> Linn.	1	Left horizontal ramus of mandible with incisor	DMD 2	L-B2 S-9A	Broken
	1	Proximal fragment of left femur with head	DMD 2	L-B2 S-9A	Broken
	1	Shaft of tibia	DMD 2	L-B2 S-9A	Broken
	1	Right tibia	DMD 2	L-E-O L-9	Broken
	1	Distal fragment of left femur with condyle	DMD 2	L-E-O S-7	Broken
	1	Proximal fragment of right femur with head	DMD 2	L-E-O S-7	Broken
	1	Distal fragment of left tibia	DMD 2	L-E-O S-7	Broken
	1	Proximal fragment of right femur with 3 rd trochanter	DMD 2	L-E-O S-7	Broken
	1	Shaft of tibia	DMD 2	L-E-O S-7	Broken
	1	Left tibia without distal portion	DMD 2	L-E-O S-7	Broken
	1	Proximal fragment of right femur	DMD 2	L-E-O S-7	Broken
	1	Left femur without distal epiphysis	DMD 2	L-E-O S-7	Broken
	1	Right femur without distal epiphysis	DMD 2	L-E-O S-7	Broken
	1	Right tibia without distal part	DMD 2	L-E-O S-7	Broken
	1	Proximal fragment of right tibia	DMD 2	L-E-O S-7	Broken
	1	Portion of pelvis with ilium and acetabulum	DMD 2	L-E-O S-7	Broken
	1	Proximal fragment of right femur with head and trochanter	DMD 2	L-E-O S-7	Broken

FAUNAL DIVERSITY

The animal species recovered from Daimabad, Aurangabad archaeological excavation have been presented in Table-2.

Table-2 : Animals recovered from Daimabad excavation and their present state of distribution

Group	Scientific of name	Common name	Present natural distribution
Reptilia : Chelonia	<i>Chitra indica</i> Gray	Narrow headed soft shelled Turtle	India (U.P., Bihar, West Bengal); Nepal; Pakistan: Indus and Gangetic river system; Malaysia and Thailand
	<i>Trionyx</i> sp.	Turtle	-
Aves	* <i>Gallus</i> sp.	Fowl	Not ascertaind
Mamalia : Carnivora : Canide	<i>Canis familiaris</i> Linn.	Domestic Dog	World-wide due to transhifment
	<i>Felis catus</i> Linn.	Domestic Cat	World-wide due to transhifment by human
Proboscidea : Elephantidae	* <i>Elephas maximus</i> Linn.	Indian Elephant	Western Ghats from Karnataka southwards, Orissa, Bihar, Foothill of Himalaya, West Bengal and Assam in India; Sri Lanka; Myanmar; Thailand; Vietnam; Malaysia; Indonesia
Perissodactyla : Equidae	* <i>Equus caballus</i> Linn.	Horse	Originally from North eastern Persia (Iran): North Western Afghanistan; Russia and Turkistan.
	* <i>Equus asinus</i> Linn.	Donkey	Wild from in East Africa (Sudan, Somaliland). Domestic from distributed in many parts of the world through human agency
Artiodactyla : Suidae	<i>Suc scrofa cristatus</i> Wagner	Boar	Throughout India; Pakistan; Sri Lanka; Nepal; Bangladesh; Myanmar; Indonesia; Malaysia and Vietnam. Domestic form distributed to many areas.

Table-2 : Cont'd.

Group	Scientific of name	Common name	Present natural distribution
Cervidae	<i>Axis axis</i> (Erxl.)	Chital/Spotted Deer	Peninsular India, West Bengal, Sikkim northwards to Kumaon Himalaya; Nepal and Sri Lanka
	* <i>Cervus unicolor</i> Kerr.	Sambar	Forests of India; Myanmar; Sri Lanka; Nepal; Indonesia (Sumatra, Borneo, Java); Malaysia; introduced to Australia and New Zealand.
	* <i>Cervus duvaucelii</i> Cuvier	Swamp deer/ Barsingha	Restricted to India; north of Ganges from Kumaon Himalaya to Assam and south of Ganga (principally in Madhya Pradesh).
	* <i>Tetracerus quadricornis</i> (Blainville)	Four horned Antelope	Peninsular India
Antilopinae :	* <i>Antilope cervicapra</i> (Linn.)	Black Buck or Indian Antelope	Plains of India; uncommon in forests and hilly tracts
Bovidae	* <i>Boselaphus tragocamelus</i> (Pallas)	Nilgai or Blue bull	From base of Himalaya to Karnataka, eastern Punjab, Gujarat and Assam
	<i>Bos indicus</i> Linn.	Domestic Cow	Distributed world wide through human agency
	<i>Bubalus bubalis</i> (Linn.)	Indian Buffalo	Terai and plains of Brahmaputra valley in Assam, Orissa, Madhya Pradesh and forests of Nepal. Domestic form distributed in many areas through human agency
Caprinae	<i>Capra hircus aegagrus</i> Erxl.	Goat	India; Pakistan; Baluchistan; Iraq; Iran; Asia Minor. Domestic form distributed in many parts of the world through human agency

Table-2 : Cont'd.

Group	Scientific of name	Common name	Present natural distribution
	<i>Ovis vignei</i> Blyth	Sheep	Wild form ranges from Gilgit, Aster and Ladak in Kashmir, eastward to northern Tibet, Punjab; Pakistan (Sind, Baluchistan) and southern Persia (Iran). Domestic form distributed in many parts of the world through human agency
Rodentia : Muridae	<i>Rattus rattus</i> Linn.	House Rat	Original home was India and Myanmar; presently distributed worldwide through shipment of commodities

NB. : Specie marked with asterisk (*) not currently examined; determined by Badam (1986)

Table-3 : Relative availability of specimens of different species in studied animal remains

Animal species	No. of specimens	Per cent occurrence
<i>Bos indicus</i> Linn.	445	79.74
<i>Rattus rattus</i> Linn.	42	7.05
<i>Capra hircus aegagrus</i> Erxl.	39	6.98
<i>Bubalus bubalis</i> (Linn.)	16	2.86
<i>Ovis vigeni</i> Blyth	6	1.07
<i>Sus scrofa cristatus</i> Wagner	4	0.71
<i>Felis catus</i> Linn.	2	0.35
<i>Chitra indica</i> Gray	2	0.35
<i>Axis axis</i> Erxl.	1	0.17
<i>Canis familiaris</i> Linn.	1	0.17

DISCUSSION

A number of archaeological sites excavated in central, western and south India have revealed the nature of Chalcolithic Culture that existed in past on the Indian soil. This culture had evolved almost at a time when the Indus civilization of Harappa and Mohenjodaro was disappearing. This culture had a wide expanse from Jammu to Daimabad (Maharashtra) and

from Sutkagendor (Pakistan) in the west to Alamgirpur (Uttar Pradesh) in the Ganga plains. On the basis of cultural objects and related items the Chalcolithic Cultures of India were divided into five regional groups, and Daimabad archaeological site was placed under the Northern Deccan group (see Pal *et al.*, 2004).

This region (Northern Deccan part) forms a link between the Malwa plateau of central India and the peninsular India. This region is drained by the river system of Godavari which finally falls into the Bay of Bengal and its black soil is well known for fertility. The climate of the area in remote past seemed to be wetter than the present situation and the early settlers were attracted by the fertility of the region. Favourable climatic features, availability of useful wild plants (see Vishnu-Mittre *et al.*, 1986), stone outcrops and availability of adequate freshwater had presumably influenced the early settlers to select this area at different phases of the Culture as their abode. A number of crop remains, out of the excavated items, were identified viz., wheat, barley, rice, ragi, kodon millet, sorghum, common pea, grass pea, horse gram, hyacinth bean, chick pea, lentil, black gram, green gram, linseed, safflower, ber, fox-tail millet, dak tarangheveda, tarla, cheno, etc. (see Kajale, 1977). A notable find was the charred sorghum as it represented the earliest record of charred grains in India. The recovery of charred grains from the Jorwe Culture phase (see Kajale, 1977; Vishnu-Mittre *et al.*, 1986) revealed that the farming activities flourished extensively during this phase, likely by the practice of double cropping and rotation of crops.

It appears from available evidences that the region of Daimabad remained continuously occupied during the period from the last quarter of the Third Millennium B.C. to about the end of the Second Millennium B.C. The situation reveals that this region of Maharashtra offered favourable environmental conditions for Chalcolithic Culture to flourish here. Apart from advanced farm practices the people of this culture were skilled in different arts and crafts, engaged in merchandise and long distance contacts. The society in all five phases was well organised, followed societal norms, used distinct classes of potteries, administered by heads and advised by noblemen or priests (see Sali, 1986). The Savalda cultural phase appears to be contemporary with the Mature Harappan Culture already developed in Gujarat and northwestern India. It is presumed that the people of both these Cultures had some sort of contacts and interactions, and in course of time the descendants of Harappan folk partially migrated towards south in the upper Godavari basin sometime around the early part of the Second Millennium B.C. These migrants were obviously advanced both culturally and in technological know-how than the original people of Savalda Culture. A culture thus developed which bore eroded form of Mature Harappan Culture. The exposed human residences of that time were less prosperous and less organised as compared to those recovered in the Indus Valley and in Gujarat during the Mature phase of Harappan Culture (see Sali, 1986). The descendants

however, preserved much of their Harappan traditions in pottery, house architecture, ornaments and metallurgy. The demand of urban life, once prevailing in their homeland, was not much felt by the descendants of Harappan Culture in Daimabad. But they also developed some sort of small township in this site. They had introduced fast wheel, mud-brick houses with flat roof, etc. in the culture developed in Deccan.

In about half a century a cultural shift was noticed in Daimabad where absence of the Harappan descendants was evident and control of the place was taken over by the people of a separate culture, called Daimabad Culture. These people had characteristic underfired potteries, known as *Daimabad ware*. There was use of quartz in the blade industry, smelting of copper as an occupation, and production of wheat, barley, lentil, grass pea, horse gram, different pulses, etc. in agriculture.

Around 1600 B.C. the people of a different culture from Central India or Malwa plateau arrived Daimabad with their traditional potteries, known as *Malwa ware*. Initially, the people of Daimabad Culture coexisted with the Malwans for a certain period but eventually they lost control of the place to the Malwans. The Malwa Culture in Daimabad showed certain deviations in pottery patterns than that noticed in Madhya Pradesh, and in the child burial practices. There was evidence of characteristic religious complex, specialized priestly classes and hereditary priesthood system (See Sali, 1986). They were followers of Vedic customs. Dhavalikar (1979), who made an indepth study of Malwa Chalcolithic people, presumed that they had come originally from outside India.

There was a transition from Malwa cultural phase to Jorwe Culture in around 1400 B.C. when sizeable traits of Malwa continued to exist while the newcomers introduced a number of newer elements in the human life of Daimabad. The Jorwe Culture had its name derived from the village Jorwe in Ahmednagar District on the bank of river Pravara where it was first discovered. The culture developed gradually in a large part of Maharashtra. The settlement area during this phase in Daimabad expanded in a larger territory with a bigger population size. As in the Malwa Culture the Jorwe people had their characteristic pottery, ceramic industry, blade industry, chalcedony drills, as well as tools and ornaments of copper. The twin-urn burial is also a characteristic feature of the Jorwe Culture. The people lived in mud houses and their subsistence was based on agriculture and animal husbandry. The trade and travel also flourished during this phase. The Godavari-Pravara valleys where the Jorwe Culture flourished bear a vast stretch of alluvium soil. The rich alluvial stretch was thinly vegetated and received enough water from the river Godavari and its tributaries. The Jorwe people were attracted by the favourable environment and rich potentialities of the area for developing human settlements. Available findings indicate that the Jorwe Culture came up during the second quarter of the Second Millennium B.C. and flourished after the middle of the Millennium.

The culture is largely a mix of the Malwa Culture from the north and the Neolithic Culture of the southern Deccan. The culture flourished for about five centuries which declined suddenly around the end of the Second Millennium B.C. The places were deserted by the Chalcolithic settlers. The Harappan elements or traits were quite apparent in the Jorwe Culture. However, the available evidences do not explain explicitly about the origin and disappearance of this culture (see Dhavalikar, 1985; Sali, 1986).

On the basis of recovered human skeletons from the burials in Daimabad site Walimbe (1986) commented on the identity of the Chalcolithic folk that they were a mixture of the Mediterranean and Protoaustraloid racial elements.

In addition to the archaeological objects, the excavation in Daimabad yielded large number of animal remains. A portion of these remains, present in the repository of ZSI, were systematically studied (see Table 1). A larger portion of the remains were examined earlier by Badam (1986) and he presented a synoptic report of the examination. Many of the animal forms determined by him were similar to the result of the present study, though some forms were not encountered amongst the material of the current study. A consolidated list of recovered animal forms (see Table 2) depicts about the faunal resources of the Chalcolithic folk. The skeletal remains of animals were mostly fragments of different bones which mineralised to a certain extent. The animals were mostly domestic forms and major share of the bones are also of these animals. The wild forms represented by five species viz., Chital, black buck, sambar, swamp deer and nilgai. The buffaloes were most probably not wild forms. The turtles (two species) were riverine animals; rats were inhabitants in and around human dwellings causing menace. The fowl appear to be the domesticated form of *Gallus gallus* and that was recorded from several prehistoric sites of India (see Pal & Talukder, 2009). Among the examined material, cattle (*Bos indicus*) bones were nonetheless more prevalent (79.74%) followed by rat (7.05%), goat (6.98%), buffalo (2.86%), sheep (1.07%) and boar (0.71%). The remaining four species (cat, dog, chital and turtle) comprised only 1.04% of the remains (see Table 3).

Apart from simple zootaxonomical approach the dimension of human-animal relationships in the past human societies have also been a salient point of archaeological studies in last three to four decades. The faunal analysis and condition of bony remains enabled us to develop idea about the meat/protein components of the human diet, nutritional enrichment and utility of animals as labour and protection forces (see Allchin, 1969; Allchin & Allchin, 1974; Alur, 1973a,b; Thomas, 1974; Badam, 1984; Thomas & Joglekar, 1994; Saha *et al.*, 2003; Pal *et al.*, 2004; Talukder & Pal, 2007; Nandy & Pal, 2009; Pal & Talukder, 2009, etc.). Cattle bones virtually dominated amongst most of the southern Chalcolithic and Neolithic sites (see Allchin, 1963a,b; Paddaya, 1975; Clason, 1977; Thomas, 1984; Badam, 1985; Sahu,

1988; Venkatasubbiah *et al.*, 1992; Thomas & Joglekar, 1994; Allchin & Allchin, 1974, 1982). It is conjectured that these cattles were indigenous breed domesticated local forms (Ghosh, 1989). Caprine (goat and sheep) bones were encountered in lesser number. These two animals are non-native forms of the peninsular India and were primarily domesticated in Southwest Asia (Mason, 1984; Davis, 1987; Legge, 1996; Meadow, 1996). These domesticated forms were introduced by either migratory folk or through trade practice. The Chalcolithic people were familiar with the dog (*Canis familiaris*) as the watch animal and for protectional purpose. The donkey (*Equus asinus*) and the bull (*Bos indicus*) were used probably as beasts of burden. The bulls were used in agriculture. The people were also not unfamiliar about the use of horse (*Equus caballus*) and elephant (*Elephas maximus*) as animals for transport and traction. Occurrence of the deer species viz., *Cervus unicolor*, *C. duvauceli* and *Axis axis*; black buck (*Antilope cervicapra*) and nilgai (*Boselaphus tragocamelus*) are of significance. The habitat condition in past were obviously much different from the present condition and that provided support base for these animals to thrive in wilderness. The available finds suggest that the Chalcolithic settlement was located near forested patch continued with browsing vegetation or grasslands.

The abundance of different bones and cultural implements from different levels indicated that the people of Daimabad were self-sufficient in their economy; relied greatly upon farming and emphasised on stock breeding of animals. Hunting of wild animals had secondary importance in their livelihood, and fishing was of less importance as apparent from the marginal consumption of fish and turtles by the Daimabadians (see Badam, 1986).

The available evidences and relevant information thus indicate that the Chalcolithic Culture was born in Godavari-Pravara basin of Maharashtra in the fourth quarter of the Third Millennium B.C., flourished in the Second Millennium B.C. and existed till the end of the Second Millennium B.C. or the onset of the First Millennium B.C. The ultimate phase (viz., Jorwe Culture) of this culture is considered to be the outcome of the blend of Malwa Culture from the north and the Neolithic Culture of the southern Deccan. Gradual progression and stage-wise development during the Jorwe phase are not substantially worked out yet. Moreover, cause of abrupt disappearance of the Chalcolithic Culture from its site in Maharashtra remained an unresolved issue to the archaeologists. Several of the Chalcolithic sites were later inhabited by the Iron Age people after left unoccupied for a long time. The use of iron tools and technology must have facilitated clearance of land and setting up of larger settlements as time progressed. The changing human population size and activity had influence upon the vegetation cover, opening up of pastoral land and introduction of non-native biota. Till now, we have inadequate knowledge about the chronological parallels and changing wild fauna in the peninsular India during the prehistoric human culture and civilization.

SUMMARY

A number of archaeological sites explored in parts of Maharashtra in 1950s revealed the presence of Chalcolithic Culture in a large area of Deccan. Daimabad, located in the Godavari-Pravara basin of Ahmednagar District was systematically excavated by the Archaeological Survey of India (ASI) during 1974 to 1979 after a primary investigation in 1959. These excavations projected a five-phase complexity and chronological sequence spanning an age between 2200 B.C. to 1000 B.C. Handful of evidences in form of stone artefacts, potteries, crafts, industries, and remains of plants and animals point out to the gradual progression in lifestyle of human folk as well as potentiality of the area as abode of the past human culture. Trait of Harappan elements in the evolved phase of the culture indicated contacts of Daimabad people with the descendants of the Harappans; and the ultimate phase displayed a blend of a culture from the Malawa plateau and the Neolithic elements of the southern Deccan. The analysis of animal remains, comprising mostly of hard exoskeletons of turtles and endoskeletons of vertebrates, revealed the presence of 2 species of Reptilia, 1 species of Aves and 16 species of Mammalia. Animal remains are mostly of different domestic animals and in which cattle bones outnumbered others. Various aspects like, past ecological set-up, human hyphen animal relationships, importance of various animals in subsistence and economy of the past human folk, major agricultural items, changing human societies, etc. have been assessed through the analysis of animal remains and information out the archaeological and other relevant studies.

ACKNOWLEDGEMENTS

We are indebted to the Director, Zoological Survey of India (ZSI) for providing necessary facilities for carrying out the study. The Director-General, Archaeological Survey of India (ASI) had placed the animal remains of the excavation from Daimabad archaeological site in the repository of the ZSI which formed the material basis for this study. Shri T.J. Baidya, Superintending Archaeologist, ASI, Kolkata provided pertinent literature and support for the study. Dr. Kaushik Ganguly, Centre for Archaeological Studies & Training (CAST), Kolkata helped generously in searching pertinent literature and documents in their library. Smt. S. Nandy and Shri D.K. Roy of ZSI extended various support and offered opinion about identity of some material. Shri Bishwanath Ghosh helped in computerized diagrams used in the document. Shri S. Choudhury made constructive comments on the primary draft of the manuscript.

REFERENCES

- Allchin, B. and Allchin, F.R. 1974. Some new thoughts on Indian Cattle : 71-77; In : J.E. Van Lohuizen-de Leeuw and J.N. Ubaghs (eds.) *South Asian Archaeology*, **1973**; E.J. Brill, Leiden.
- Allchin, B. and Allchin, F.R. 1982. *The Rise of Civilization in India and Pakistan*. Cambridge Univ. Press, Cambridge.
- Allchin, F.R. 1963a. *Neolithic Cattle Keepers of South India: Study of the Deccan Ashmounds*. Cambridge Univ. Press, Cambridge.
- Allchin, F.R. 1963b. Cattle and Economy in Neolithic South India. pp. 149-155; In : A. Maurant and F.E. Zeuner (eds.) *Man and Cattle*; Royal Anthropological Institute of Great Britain and Ireland, Glasgow.
- Allchin, F.R. 1969. Early Domestic Animals in India and Pakistan. pp. 317-322; In : P.J. Ucko and J.W. Dumbleby (eds.) *The Domestication and Exploration of Plants and Animals*, Duckworth, London.
- Alur, K.R. 1973a. Significance of Animal Remains in Archaeological studies. pp.111-117; In : D.P. Agrawal and A. Ghosh (eds.) *Radiocarbon and Indian Archaeology*, Tata Institute of Fundamental Research, Bombay.
- Alur, K.R. 1973b. The Faunal studies in Archaeology. *Indian J. Hist. Sci.*, **8**(1-2) : 99-113.
- Badam, G.L. 1984. Holocene Faunal Remains from India with special reference to Domesticated Animals. pp. 339-353; In : J. Clutton-Borck and C. Grigson (eds.) *Animals in Archaeology*, vol. **III**. *Early Harders and their Flocks*, British Archaeological Reports, Oxford, International Ser. 202.
- Badam, G.L. 1985. The Late Quaternary fauna of Inamgaon. pp. 413-415; In : V.N. Misra and Peter Bellwood (eds.) *Recent Advances in Indo-Pacific Prehistory*; Oxford & IBH Publishing Co., Bombay.
- Badam, G.L. 1986. Preliminary Report on the faunal remains from Chalcolithic Daimabad, Maharashtra. *Archaeological Studies*, Proceedings, Annual Conference of the Indian Society for Prehistoric and Quaternary Studies & The Indian Archaeological Society, BHU, Varanasi, pp. 93-100.
- Clason, A.T. 1977. Wild and Domestic Animals in Prehistoric and Early Historic India. *The Eastern Anthropologist*, **30** : 241-289.
- Davis, S.M. 1987. *The Archaeology of Animals*. Batsford, London.

- Dhavalikar, M.K. 1979. Early Farming Cultures of Central India. pp. 229-245; In : D.P. Agrawal and D.K. Chakrabarti (eds.) *Essays in Indian Protohistory*; B.R. Publ. Corp., Delhi.
- Dhavalikar, M.K. 1985. Genesis of the Jorwe Culture. pp. 32-41; In : S.B. Deo and M.K. Dhavalikar (eds.) *Studies in Indian Archaeology*; Popular Prakashan Pvt. Ltd., Bombay.
- Ghosh, A. (ed.) 1989. *An Encyclopedia of Indian Archaeology*. Vol. I & II, Munshiram Monoharlal Pvt. Ltd., Delhi.
- IAR, 1959. *Indian Archaeology 1958-59-A Review* (p. 15). Director-General, Department of Archaeology, Govt. of India, New Delhi.
- IAR, 1979. *Indian Archaeology 1974-75-A Review* (pp. 29-31). Director-General, Archaeological Survey of India, Govt. of India, New Delhi.
- Kajale, M.D. 1977. On the botanical findings from excavations at Daimabad, Chalcolithic site in Western Maharashtra, India. *Curr. Sci.*, **46**(23) : 818-819.
- Legge, A.J. 1996. The Beginning of Caprine Domestication in Southwest Asia. pp. 238-262; In : D.R. Harris (ed.) *The Origins and Spread of Agriculture and Pastoralism in Eurasia*, UCL Press, London.
- Maharashtra State Gazetteers 1976. Ahmadnagar District. Gazetteers Department, Govt. of Maharashtra, Bombay.
- Majumder, G.G., Rajguru, S.N. and Pappu, R.S. 1970. The Recent Godavari flood (September, 1969) and its relevance to Prehistoric Archaeology. *Bull. Deccan Coll. Res. Inst.*, **29** : 118-134.
- Mason, I.L. (ed.) 1984. *Evolution of Domesticated Animals*. Longman Scientific, London.
- Meadow, R. 1996. The Origins and Spread of Agriculture and Pastoralism in Northwestern South Asia. pp.309-412; In : D.R. Harris (ed.) *The Origins and Spread of Agriculture and Pastoralism in Eurasia*, UCL Press, London.
- Naidu, P.D. 1996. Onset of an arid climate at 3.5 ka in the tropics : Evidence from monsoon upwelling record. *Curr. Sci.*, **71**(6) : 715-718.
- Naidu, P.D. 1999. A Review on Holocene Climate changes in the Indian Subcontinent. *Mem. Geol. Soc. India*, No. 42 : 303-314.
- Nandy, S. and Pal, T.K. 2009. Animal remains from Jaugada Archaeological site, Orissa and their relevance to the Ancient Civilization. *Rec. zool. Surv. India, Occ. Pap.* No. **292** : 1-48.

- Paddaya, K. 1975. The Faunal Background to the Neolithic Culture of South India. pp. 329-334; In : A.T. Clason (ed.) *Archaeozoological Studies*; North Holland Publishing Co., Amsterdam.
- Pal, T.K., Talukder, B. and Ray, S. and Baraik, B. 2004. Animal remains excavated from Nagda Archaeological site (Madhya Pradesh) and their relevance to the Chalcolithic civilization of the place. *Rec. zool. Surv. India*, **103**(3-4) : 1-32 + 2 pls.
- Pal, T.K. and Talukder, B. 2009. Animal remains from Brahmagiri Archaeological site (Karnataka) and their relevance to the Ancient Civilization. *Mem. zool. Surv. India*, **21**(3) : 1-31 + 5 pls.
- Rajguru, S.N. 1986. Geoarchaeology of Daimabad. pp. 580-587; In : S.A. Sali, *Daimabad 1976-79*; Archaeological Survey of India, New Delhi.
- Rao, S.R. 1978. Late Harappan Daimabad. *Illustrated London News*, March-April, 1978.
- Sali, S.A. 1983. The Harappans of Daimabad. pp. 175-184; In : G.L. Possehl (ed.) *Harappan Civilization : A Recent Perspective*; Oxford & IBH, New Delhi.
- Sali, S.A. 1986. *Daimabad 1976-79*; Archaeological Survey of India, New Delhi.
- Saha, U., Ghosh, M. and Pal, T.K. 2003. Animal remains excavated from Lothal archaeological site (Gujarat) and relevance of the fauna to the ancient civilization. *Rec. zool. Surv. India, Occ. Pap. No. 222* : 1-162.
- Sahu, B.P. 1988. *From Hunters to Breeders (Faunal Background of Early India)*. Araunika Prakasam, Delhi.
- Talukder, B. and Pal, T.K. 2007. Animal remains from Nagarjunakonda archaeological site (Andhra Pradesh) and their relevance to the ancient civilization. *Rec. zool. Surv. India, Occ. Pap.*, No. **264** : 1-92.
- Thomas, P.K. 1974. Zoological Evidence from Prehistoric India with special reference to Domestication. *Bull. Deccan Coll. P.G. and Res. Inst.*, **34** : 195-210.
- Thomas, P.K. 1984. Faunal Assemblage of Veerapuram. pp. i-ix; In : T.V.G. Sastri, N. Kasturi Bai and J. Varaprasad Rao (eds.) *Veerapuram : A type site for Cultural Study in the Krishna Valley*; Birla Archaeological and Cultural Research Institute, Hyderabad.
- Thomas, P.K. and Joglekar, P.P. 1994. Holocene Faunal studies in India. *Man and Environment*, **19**(1-2) : 179-223.
- Venkatasubbaiah, P.G., Pwankar, S.J. and Joglekar, P.P. 1992. Neolithic Faunal Remains from the Central Pennar Basin, Cuddapah District, Andhra Pradesh. *Man and Environment*, **17**(1) : 55-59.

- Vishnu-Mittre, Sharma, Aruna and Chanchala 1986. Ancient Plant Economy at Daimabad. pp. 588-627; In : S.A. Sali, *Daimabad 1976-79*; Archaeological Survey of India, New Delhi.
- Walimbe, S.R. 1986. Palaeodemography and Protohistoric Daimabad. pp. 641-740; In : S.A. Sali, *Daimabad 1976-79*; Archaeological Survey of India, New Delhi.
- Wasson, R.J., Rajguru, S.N., Misra, V.N., Agrawal, D.P., Dhir, R.P., Singhvi, A.K. and Rao, K. 1983. Geomorphology, Late Quaternary Stratigraphy and Palaeoclimatology of the Thar dunefield. *Z. Geomorphology*, Suppl. Bd. **15** : 117-151.

INDIA PHYSICAL FEATURES

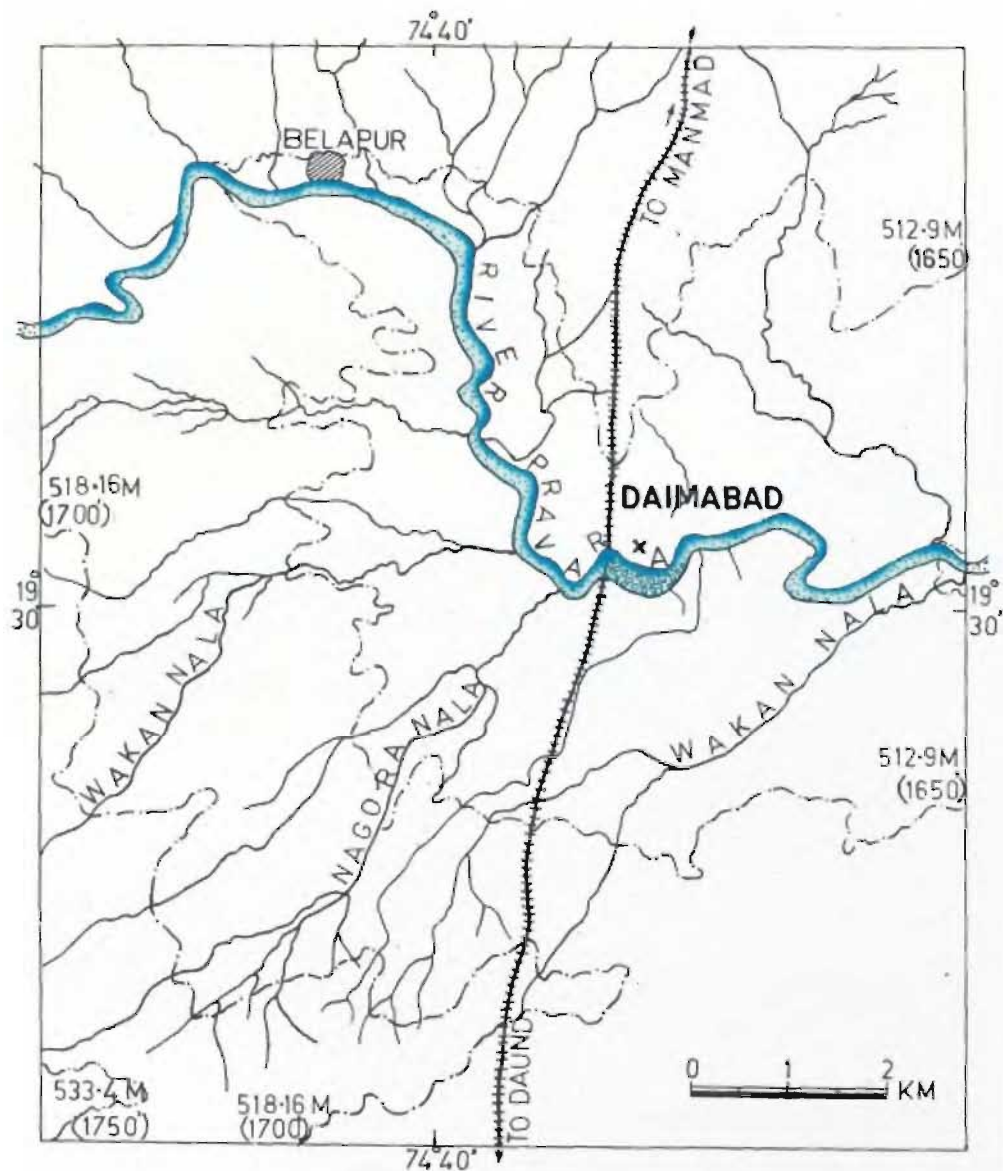
PAMIR
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MALWA PLATEAU
DECCAN PLATEAU
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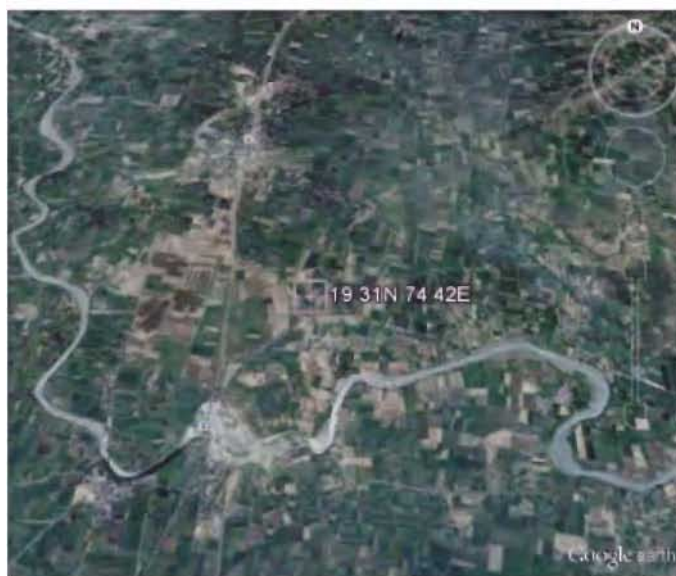
CHALCOLITHIC SITES

1	Songaoon
2	Inamgaon
3	Chandoli
4	Nasik
5	Jorwe
6	Daimabad
7	Nevasa
8	Apogaoon
9	Paunhar
10	Tekwada
11	Bahal
12	Dhule
13	Savalela
14	Prakash
15	Nandatali

1	Songaon
2	Imaimgaon
3	Chandoli
4	Nasik
5	Jorwe
6	Daimabad
7	Neyasa
8	Apegaon
9	Pannar
10	Takwada
11	Bahai
12	Dhule
13	Savalka
14	Pralkash
15	Nandotoli

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|----|-----------|
| 1 | Songaon |
| 2 | Imaimgoon |
| 3 | Chandoli |
| 4 | Nasik |
| 5 | Jorwe |
| 6 | Daimabad |
| 7 | Neyasa |
| 8 | Apegaon |
| 9 | Pannar |
| 10 | Takwada |
| 11 | Bahai |
| 12 | Dhule |
| 13 | Savalka |
| 14 | Pralkash |
| 15 | Nandotoli |







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