

ANIMAL REMAINS FROM CHIRAND, SARAN DISTRICT (BIHAR)

By

BHOLA NATH AND M. K. BISWAS

Zoological Survey of India, Calcutta

(With 2 Plates)

INTRODUCTION

This report is based on a collection of animal remains from the pre-historic site of Chirand, Saran district, Bihar. The remains belong to the Neolithic period *ca* 1700 B.C. The Chirand site is a Black Red Bare site and was excavated by the Archaeological Department, Government of Bihar, under the supervision of Dr. B. P. Sinha. Fortunately, the stratigraphy of this site has been determined, making it possible to assess almost precisely the fauna that lived in the area in the Neolithic times.

The following species are represented in the site : (a) A carp, (b) *Chitra indica* (Gray), (c) *Trionyx gangeticus* Cuvier, (d) *Bos indicus* Linn., (e) *Bubalus bubalis* Linn., (f) *Ovis aries dolichura* Duerst., (g) *Axis axis* Erxleben, (h) *Cervus duvauceli* Cuvier, (i) *Sus scrofa cristatus* Wagner, (j) *Elephas maximus* Linn., (k) *Rhinoceros unicornis* Linn. and (l) *Canis familiaris* (Linn.).

The skeletal remains are mostly fragmentary and fragile. The organic remains of the bones have been replaced by inorganic materials. The majority of the remains are of domestic animals, the most prominent being those of zebu or domestic humped cattle of India. The limited number of the Indian buffalo remains indicate that the inhabitants probably did not maintain this animal in such large numbers as compared to humped cattle. The remains of sheep and domestic pig are well-represented, showing that people then practised full-fledged domestication of these animals. The presence of remains of the dog at the site shows that the people domesticated this animal.

Among wild animals, two species of the deer family, *Axis axis* and *Cervus duvauceli*, are represented. The remains of the great Indian one-horned rhinoceros and the Indian elephant are noteworthy since these animals are no longer found in that area, and thereby shows that the

climate and physiography of the area during the Neolithic period was moist and swampy instead of the present day dry climate.

The Chirand remains resemble in their species those of Mohenjodaro (Sewell & Guha, 1931), Harappa (Prashad, 1936), Hastinapura (Nath, 1955), Maski (Nath, 1957), Adamgarh (Nath, 1967), Nagarjunkonda (Nath, 1968), Brahmagiri (Nath, 1968), Rupar (Nath, 1968) and Alamgirpur (Nath & Biswas, 1969).

SYSTEMATIC ACCOUNT OF THE ANIMAL REMAINS

Class PISCES

Order TELEOSTEI

A Carp

Broken opercular bone. Site : CRD XI. Cannot be identified further.

Class REPTILIA

Order CHELONIA

Family TRIONYCHIDAE

Chitra indica (Gray)

(Soft-shelled River Turtle)

One fragment of plastron. Site CRD XIII ; Stratum : (9) ; Locus : (6B).

In pattern and vermiculations this fragment resembles those of Mohenjodaro (Swell & Guha, 1931, p. 663), Harappa (Prashad, 1936, p. 14), Hastinapura (Nath, 1955, p. 108), Rangpur (Nath, 1968, p. 72) and Alamgirpur (Nath & Biswas, 1969, p. 44).

Trionyx gangeticus Cuvier

(Soft-shelled Turtle)

One fragment of hypoplastron. Site : CRD XIII ; Stratum : (9) ; Locus : (6A).

The single fragment of *T. gangeticus* corresponds to those of Mohenjodaro (Sewell & Guha, 1931, p. 644), Harappa (Prashad, 1936, p. 15) and Hastinapura (Nath, 1955, p. 108) as well as to those of the recent specimens in the collection of the Zoological Survey of India.

Class MAMMALIA

Order ARTIODACTYLA

Family BOVIDAE

Bos indicus Linn.

(Pl. I, fig. 5 & Pl.II, figs. 3, 4, 5 & 9).

1. Left ramus of the lower mandible. Site : CRD XI ; Stratum : (16) ; Locus : (14).
2. Left ramus of the mandible of an young one. Site : CRD XI ; Stratum : (17) ; Locus : (9b) ; Depth : 10 m.
3. Left 3rd lower molar. Site : CRD XI ; Stratum : (17) ; Locus : (10).
4. Broken sacrum. Site : CRD XI ; Stratum : (16) ; Locus : (18).
5. Broken horn core with a fragment of frontal bone. Site : CRD XI ; Stratum : (17) ; Locus : (17).
6. Fragment of ramus of the left lower mandible with 1-3 molars. Site : CRD XI ; Stratum : (16) ; Locus : (15).
7. Horizontal ramus of the right mandible with broken and eroded teeth. Site : CRD XI ; Stratum : (17) ; Locus : (9a) ; Depth : 10 m.
8. Third phalanx of hind foot. Site : CRD XI ; Stratum : (17) ; Locus : (24B).
9. Third phalanx of fore foot of a young one. Site : CRD XI ; Stratum : (17) ; Locus : (24A).
10. Axis vertebra (broken). Site : CRD XI ; Stratum : (17) ; Locus : (5) ; Depth : 10 m.
11. Fragment of horizontal ramus of left mandible with 1st and 2nd molar teeth of a young one. Site : CRD XIII ; Stratum : (9) ; Locus : (12D).
12. Left 3rd and 4th metatarsal of an adult one. Site : CRD XIII ; Stratum : (9) ; Locus : (3B).
13. Horn core of a young one. Site : CRD XIII ; Stratum : (9) ; Locus : (5).
14. Distal fragment of right femur. Site : CRD XIII ; Stratum : (9) ; Locus : (2A).
15. Left tibia. Site : CRD XIII ; Stratum : (9) ; Locus : (1).
16. Left 3rd and 4th metatarsal bone. Site : CRD XII ; Stratum : (9) ; Locus : (3A).

17. Proximal fragment of left ulna with semilunar notch and broken odontoid process. Site : CRD XIII ; Stratum : (9) ; Locus : (10).
18. Horizontal ramus of left mandible with 2nd, 3rd & 4th premolar and 1st molar. Site : CRD XIII ; Stratum : (9) ; Locus : (12C).
19. Thoracic vertebra with broken spinous process. Site : CRD XIII ; Stratum : (9) ; Locus : (4B).
20. Fragment of right upper jaw with 1st & 2nd molar and 3rd premolar teeth. Site : CRD XIII ; Stratum : (9) ; Locus : (12G).
21. Distal fragment of left femur. Site : CRD XIII ; Stratum : (9) ; Locus : (2B).
22. Horizontal ramus of right mandible with 1st, 2nd & 3rd molar teeth. Site : CRD XIII ; Stratum : (9) ; Locus : (11).
23. A fragment of rib. Site : CRD XIII ; Stratum : (9) ; Locus : (8).
24. Axis vertebra. Site : CRD XIII ; Stratum : (9) ; Locus : (4A).
25. Atlas vertebra. Site : CRD XI ; Stratum : (17) ; Depth : 10m.
26. Axis vertebra. Site : CRD XI ; Stratum : (17) ; Depth : 10m.
27. 3rd and 4th metatarsal bone with one of the distal condyles broken. Site : CRD XI ; Stratum : (17).
28. Fragment of horizontal ramus of mandible with 3rd molar tooth. Site : CRD XIII ; Stratum : (7).
29. Fragment of distal portion of radius. Site : CRD XI ; Burial 2 ; Stratum : (2).
30. Left astragalus. Site : CRD XI ; Burial 2 ; Stratum : (2).
31. Right astragalus. Site : CRD XI ; Burial 2 ; Stratum : (2).
32. Lumbar vertebra without spinous process. Site : CRD XI ; Burial 2 ; Stratum : A (1).
33. 5th Lumbar vertebra with broken transverse process. Site : CRD XI ; Burial 2 ; Stratum : (1).
34. 1st phalanx of fore limb. Site : CRD XI ; Burial 2 ; Stratum : (4).
35. 1st phalanx of fore limb. Site : CRD XI ; Burial 2 ; Stratum : A (4).
36. Upper portion of a cervical vertebra without body and transverse process. Site : CRD XI ; Burial 2 ; Stratum : (6).
37. Distal fragment of right tibia. Site : CRD XI ; Burial 2 ; Stratum : (3).
38. Fragment of the horizontal ramus of right mandible with an incisor tooth. Site : CRD XI ; Burial 2 ; Stratum : (7).

39. Ventral portion of a cervical vertebra with body and transverse foramina. Site : CRD XI ; Burial 2 ; Stratum : B (1).

The remains of humped cattle are fragmentary. The great frequency with which they are met with during the excavation as compared with the finds of other animals, indicates that the inhabitants used to maintain large herds.

All the remains resemble closely those of the smaller humped short-horned variety found from Mohenjodaro, Harappa, Hastinapura, Maski, Rupar and Alamgirpur. These bones also show close structural resemblances with those of the modern domestic humped cattle of India in the collection of the Zoological Survey of India.

***Bubalus bubalis* Linn.**

(Pl. I, fig. 10)

(The Indian Domestic Buffalo)

1. Horn core of an young one. Site : CRD XI ; Stratum : (17) ; Locus : (7A).
2. Broken horn core with a portion of frontal bone. Site : CRD XI ; Stratum : (17) ; Locus : (5).
3. Horn core with a portion of frontal bone. Site : CRD XI ; Stratum : (13) ; Locus : (7).
4. Horn core with a portion of frontal bone. Site : CRD XI ; Stratum : (17) ; Locus : (7).
5. 4th Cervical vertebra. Site : CRD XI ; Stratum : (17) ; Locus : (5) ; Depth : 10m.
6. 6th Cervical vertebra with broken spinous process. Site : CRD XI ; Stratum : (17) ; Locus : (5) ; Depth : 10m.
7. Thoracic vertebra without spinous process. Site : CRD XI ; Stratum : (17) ; Locus : (5) ; Depth : 10m.

The few remains of *Bubalus bubalis* Linn. show that the inhabitants did not maintain large herds of this animal.

The buffalo remains show very close structural resemblance with those of modern domestic animals. They are also similar to those of Mohenjodaro, Harappa, Hastinapura, Rupar, Brahmagiri and Alamgirpur.

Ovis aries dolichura Duerst

(Pl. I, fig. 4 & Pl. II, figs. 1 & 2)

(The Domestic Sheep)

1. Fragment of frontal bone with broken horn cores of both sides. Site : CRD XI ; Stratum : (16) ; Locus : (13).
2. Fragment of skull. Site : CRD XI ; Stratum : (16) ; Locus : (19).
3. Fragment of the left ramus of mandible with 4th premolar and 1st, 2nd and 3rd molar teeth. Site : CRD XI ; Stratum : (16) ; Locus : (15).
4. Left humerus without proximal extremity. Site : CRD XI ; Stratum : (17) ; Locus : (26).
5. Right scapula with broken blade. Site : CRD XI ; Stratum : (17) ; Locus : (11).
6. Fragment of right ramus of mandible with condyle and coronoid process and also with 3rd molar tooth. Site : CRD XIII ; Stratum : (9) ; Locus : (12A).
7. Fragment of horizontal ramus of mandible of a young one with 3rd & 4th premolars and 1st & 2nd molars. Site : CRD XIII ; Stratum : (9) ; Locus : (12B).
8. Broken skull (without nasal bone) with upper 2nd, 3rd & 4th premolars and 1st, 2nd & 3rd molars of the left side only. Site : CRD XI ; Burial 2.

The remains of the domestic sheep are fragmentary, and mostly belong to those of the young ones which shows that the people practised full-fledged domestication of this animal.

The fragments closely resemble those from Mohenjodaro, Harappa and Hastinapura.

Family SUIDAE

Sus scrofa cristatus Wagner

(Pl. I, fig. 3 & Pl. II, fig. 10)

(The Indian Domestic Pig)

1. Upper tusk or canine tooth. Site : CRD XI ; Stratum : (17) ; Locus : (25).
2. Left ramus of mandible with 4th premolar and 1st & 2nd molars of an young one. Site : CRD XII ; Stratum : (9) ; Locus : (12E).

3. Fragment of the skull without front and rear portion of a young one with 3rd & 4th premolars and 1st & 2nd molars. Site : CRD XI ; Burial 2.
4. Fragment of left ramus of mandible with 3rd & 4th premolar, 1st & 2nd molar, 1st & 2nd incisor and a broken canine teeth of a young one. Site : CRD XI ; Burial 2.

The remains of the domestic pig are mostly fragmentary. Not a single complete long bone or complete skull of the adult specimen is available and it is difficult to be certain about the size of the animal.

Similar remains have also been recorded from Mohenjodaro, Harappa, Hastinapura, Rangpur, Nagda and Rupar.

Family CERVIDAE

Axis axis Erxleben

(Pl. I, fig. 1)

(The Chital or Spotted Deer)

A fragment of antler. Site : CRD XI ; Stratum : (17) ; Locus : (21B) ; Depth : 10 m.

This solitary fragment has been carefully compared with those of the *Axis axis* Erxl. in the collection of the Zoological Survey of India and those of Prabhas (Nath, 1967, p. 66) and Brahmagiri (Nath, 1968, p. 75), and have been found to tally with one another.

Cervus duvauceli Cuvier

(Pl. I, fig. 2)

(Swamp deer or Barasingha)

1. Fragment of an antler with burr. Site : CRD XI ; Stratum : (17) ; Locus : (21A).
2. Two fragments of antler. Site : CRD XIII ; Stratum : (9).

These fragments have been carefully compared with those of *C. duvauceli* in the collection of Zoological Survey of India and those of Mohenjodaro (Sewell & Guha, 1931, pp. 649-673), Harappa (Prashad, 1936, p. 53), Hastinapura (Nath, 1955, p. 119) and Alamgirpur (Nath & Biswas, 1969, p. 50).

Order - PROBOSCIDEA

Family ELEPHANTIDAE

Elephas maximus Linn.

(Pl. I, figs. 11 & 12)

The Indian Elephant

1. Fragment of the upper molar tooth. Site : CRD XI ; Stratum : (17) ; Locus : (4).
2. Unciform bone of manus. Site : CRD XI ; Stratum : (17) ; Locus : (1) ; Depth : 10 m.

These remains resemble closely those of the modern specimens present in the collection of the Zoological Survey of India. The unciform bone of manus is quite intact and well preserved and belongs to an adult. These show the presence of wooded swampy area near the habitation site.

Similar remains have also been recorded from Mohenjodaro, Harappa, Hastinapura, Rugar, Lothal and Nagda.

Order PERISSODACTYLA

Family RHINOCEROTIDAE

Rhinoceros unicornis Linn.

(Pl. II ; figs. 6, 7 & 8)

(The Great Indian One-horned Rhinoceros)

1. Proximal fragment of ulna with semilunar notch and broken olecranon process. Site : CRD XI ; Stratum : (17) ; Locus : (6) ; Depth : 10.1m.
2. Left tibia without proximal and distal epiphysis. Site : CRD XI ; Stratum : (17) ; Locus : (3) ; Depth : 10.1 m.
3. Fragment of upper molar tooth. Site : CRD XI ; Stratum : (9) ; Locus : (9).
4. Complete left humerus. Site : CRD XII ; Stratum : (17) ; Locus : (3) ; Depth : 10m.

The presence of rhinoceros remains shows that the animal existed in the Neolithic period of prehistoric Chirand and that the climate at that time was moist and swampy instead of the present day dry climate,

Order CARNIVORA

Family CANIDAE

Canis familiaris (Linn.)

(Pl. 1, figs. 6, 7, 8 & 9)

The Domestic Dog

1. Right humerus. Site : CRD XI ; Burial 2 ; Stratum : (11).
2. Fragment of the shaft of left ulna without olecranon process and distal end. Site : CRD XI ; Burial 2 ; Stratum : (10).
3. Fragment of the distal portion of the shaft of right ulna. Site : CRD XI ; Burial 2 ; Stratum : (15).
4. 4th metatarsal of an young one. Site : CRD XI ; Burial 2 ; Stratum : (20).
5. Proximal fragment of right scapula with glenoid cavity, neck and a portion of blade. Site : CRD XI ; Burial 2 ; Stratum : (13).

These remains are fragmentary, but compared well with recent examples of *C. familiaris* and do not show any special peculiarity. The domestic dog was evidently a pet animal of the inhabitants.

ACKNOWLEDGEMENT

The authors wish to express their heartfelt thanks to the Director, Zoological Survey of India for encouragement and facilities provided.

SUMMARY

The prehistoric animal remains from the site of Chirand, Saran district, Bihar, have been studied. They belong to the Neolithic culture. Twelve species have been found. The remains are mostly those of domesticated animals, viz., *Bos indicus*, *Bubalus bubalis*, *Ovis aries dolichura*, *Sus scrofa cristatus* and *Canis familiaris*. Of the wild animals, the presence of *Axis axis*, *Cervus duvauceli*, *Elephas maximus* and *Rhinoceros unicornis* is noteworthy. The presence of all these animals in the Neolithic period suggests that the habitational sites at that time were situated amidst jungles and undulating grassy land. The reptilian remains are mainly those of the turtles, *Chitra indica* and *Trionyx gangeticus*.

REFERENCES

- NATH, B. 1955. Animal Remains from Hastinapura. *Ancient India*, 10 & 11 : 107-120, 4 pls,

- NATH, B. 1957. Animal Remains from Maski. *Ancient India*, **13** : 111-120, 2 pls.
- NATH, B. 1967. Animal Remains from Adamgarh Rock-shelter, Hoshangabad, Madhya Pradesh. *Indian Mus. Bull.*, **11** (1) : 29-37.
- NATH, B. 1968. Animal Remains from Brahmagiri (Mysore State, India). *Rec. zool. Surv. India*, **61** (1 & 2) : 65-88.
- NATH, B. 1968. Animal Remains from Rugar and Bara sites, Ambala district, E. Panjab, India. *Indian Mus. Bull.*, **3** (1 & 2) : 69-115.
- NATH, B. 1968. Animal Remains from Nagarjunkonda (Guntur district, Andhra Pradesh). *Rec. zool. Surv. India*, **61** (1 & 2) : 9-10.
- NATH, B. and BISWAS, M. K. 1969. Animal Remains from Alamgirpur, *Indian Mus. Bull.*, **4** (1) : 43-52, 1 pl.
- PRASHAD, B. 1936. Animal Remains from Harappa. *Mem. Archeol. Surv. India*, **51** : 1-60, 7 pls.
- SEWELL, R. B. S. and GUHA, B. S. 1931. Zoological Remains. In : *Mohenjodaro and the Indus Civilization*, London, (Arthur Probsthain), **2** : 649-673, 3 figs.