Wild and Domestic Animals in Prehistoric and Early Historic India

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Publisher's Note

This volume is a dissertation based on three decades of excavations in the western part of the Indian peninsula carried out by the Archaeology Department of Deccan College, Poona. The focus is on the detailed study and analysis of faunal remains collected during these excavations, and the author's intention has been to supplement earlier studies in 1960, 1971 and 1975, with original observations and interpretations.

Clason studied part of a large collection of animal bones in 1972 and has presented their analysis in the perspective of food production, stock raising, subsequent cultivation and domestication on the one hand and climatic conditions and vegetation on the other. As an exposition of the Indian scene in prehistoric times, this work and its author have a decided claim to novelty.

The sixteenth publication of the Ethnographic and Folk Culture Society, (EFCS), this volume has already simultaneously appeared as a special number of *The Eastern Anthropologist* (Vol. 30 : No. 3). Though the objective of the EFCS since its inception in 1945 by late Prof. D. N. Majumdar, has been to publish material relating to folk culture, ethnography and social relations, publication of original work in physical anthropology, as well as prehistory and archaeology, has also progressed side by side. The Society's two earlier publications No. 4 (1963) and No. 15 (1977) on prehistoric archaeology have been well received.

The book had been edited by Late Dr. K. S. Mathur, Editor of *The Eastern Anthropologist*, but its publication was delayed due to his sudden demise on September 21, 1977.

Introduction

For three decades the Archaeology Department of the Deccan College in Poona has been carrying out the excavation of a number of prehistoric settlements in the western part of the Indian peninsula. During those excavations not only structural remains, pottery, stone and metal tools and other items of material culture were found, but also faunal remains, mostly bones. Part of these faunal remains were put at my disposal for examination during a stay in Poona in the second half of 1972. The object of my sojourn in India was not only to study the ancient animal bones, but also to make a beginning with archaeozoological research at the Archaeology Department of the Deccan College. My work on the faunal remains has to be considered in this context. I learned, however, only gradually that the animal bones which were put at my disposal were only a fraction of the bones available at the time of the excavations, and that the bones of some sites had already been studied and the results published at an earlier date by Shah (1971, 1973), Eapen (1960) and Alur (1975). As the purpose of those studies was mainly to provide the archaeologists with a list of species names I think it will be useful to supplement those studies with some of my own observations.

ARCHAEOZOOLOGICAL RESEARCH IN INDIA

The first archaeozoological studies in India were the result of the discovery of the large settlements of the Indus Valley culture and the excavations of Mohenjodaro and Harappa in present-day Pakistan in the 1920s and 1930s. Semour Sewell and Guha (1931) described the bones found during the early Mohenjodaro excavations. Prashad (1936) identified the bones of Harappa.

Little work has been done since then in India on the faunal remains found during excavations. Two publications exist which try to give a survey. The first is by Conrad (1966), who gave a detailed report on the evidence published up till 1966 (Paddayya 1974). The author surveyed the evidence known about animal remains from the farming settlements in the Quetta Valley and the Zhob-Loralai region and those of the Indus Valley culture. She not only discussed the scanty animal remains, but paid particular attention to the animals depicted on pot sherds, seals, copper plates, descriptions in old texts, the clay figurines, and amulets. The fauna of the later settlements are not discussed by Conrad. Added to the book is a most useful bibliography.

The second work is by Nath (1973) who enumerates the work he has done since 1955 on the faunal remains of Indian sites ranging from layers of the third and second millennium B.C. of Mohenjodaro and Harappa to the medieval layers of Sarnath from the 12th century A.D. In this work Nath gives useful lists of the species found at each site, illustrated with pictures of the more spectacular finds.

EARLY FOOD PRODUCTION IN THE MIDDLE EAST

It is thought at present that the main regions where the transition of food gathering to food production took place are to be sought in the Near East in the following areas :

1. the southern alluvial plain of Mesopotamia;
2. the low hills at the foot of the Zagros and Taurus mountains;
3. the valleys of those mountains;
4. the high plateaus of Turkey; and
5. the coastal area and the low hills of the eastern Mediterranean.

Here, not only the wild species of a number of our food grains are found, but also wild cattle, wild sheep, wild goat, wild pig and a small wolf—species that are considered to be the parent species of the domestic animals. Only the wild horse was missing in this region. Sheep and goat are considered to have been domesticated close to 10,000 B.P., followed at a later date by cattle, pig and dog (Reed 1969). In the absence of the wild horse, the half-ass—*Equus hemionus*—was domesticated at first, to be replaced by the real domestic horse after 3000 B.C. (Conrad 1966; Brentjes 1965). Others, however, think that the onager was never domesticated, but that the domestic horse came at an earlier date to the Near East than has been presumed until now (Herre & Röhrs 1973).

It is assumed that from the five regions mentioned above, stock-breeding spread to the west and north into North Africa and Europe, to the southwest

into the Nile Valley and East Africa and to the east into Afghanistan, India and the Far East (fig. 1). If the domestic animals themselves had not actually been spread, then at least the idea of domestication had. Why domestication took place is still an unanswered question. There is no evidence that there was a sudden change in climate (van Zeist 1969a, 1969b) or in culture. On the contrary, everything points to a gradual development. What is evident, however, is that in the Late Palaeolithic and Mesolithic man learned to exploit ever more 'niches' of his surroundings to obtain food, not only hunting the smaller and larger mammals and birds, but also collecting shell-fish and crustaceans (Reed 1969; Flannery 1969). This enabled him to live in permanent settlements. Probably it was this settled life that led in the first place to stock-breeding and plant cultivation. It is, however, not a certain result of a settled life. There is evidence that some 20,000 years ago in the tundra steppes of Central Europe, man established a fairly settled way of life based on the hunting of the woolly rhinoceros and a number of other species such as aurochs, musk-ox, etc. (Klein 1974). At that time, however, he never reached the stage of animal keeping.

It is noteworthy that thus far the oldest farming cultures known from Pakistan and India date no further back than the middle of the third millennium B.C. However, as there is evidence that west of this region in Baluchistan, Sind (Fairservis 1956, 1959) and the Near East (Clason 1974), and east of it in northern Thailand (Solheim 1972), farming cultures existed at a much earlier date, it seems only a question of time before traces of older farming communities will be found in Pakistan and India. The first results of archaeozoological research of the animal remains found at Bagor (Misra 1971; Thomas 1975) and Adamgarh point in this direction. The bones found in the oldest layers of the microlithic site of Bagor, dated by C14 at 4500 B.C. (Agrawal, Gupta and Kusumgar 1971) seem to have belonged to small ruminants (sheep/goat) and cattle.

CLIMATE, FAUNA AND VEGETATION IN PRESENT-DAY INDIA

For a better understanding of the evidence given by the animal bones, climate and vegetation have to be discussed.[1] We will use the term India in its geographical sense, to include Pakistan, Ceylon and Bangla Desh.

In the north, northwest and northeast, this region is bordered by mountain ranges, including the highest in the world, the Himalayas, and in the south, southwest and southeast by the Indian Ocean. Access to this vast area

1. The data are taken mainly from Prater (1971), *Book of Indian mammals*.

was only possible by mountain passess, and along the coasts. Zoo-geographical India is part of the oriental region. In the west it is part of the large deserts of Arabia end Africa, in the east of the tropical evergreen forests of East Asia. The whole of India can be divided into two subregions, that of the Himalayas and that of the Indian peninsula. In the former, some of the Indian mammals are found, but in the east the Sino-Indian element is marked and species are found that also live in Assam, Burma and southern China. In the west in the mountains of Kashmir and Western Ladakh they have been mainly supplanted by Indian species and forms, and by European and northern Asiatic forms. The second subregion, or India proper, is found south of the Himalayas. In the north we find here the immense stretches of the alluvial plains of Indus, Ganga and Brahmaputra, bordered in the south by the Vindhya Range and the rift in which the Narbada flows. The South has the form of a triangular table-land, slightly tilted to the east, bordered in the west by the Western Ghats along the coast of Maharasthra and Mysore, and the Eastern Ghats along the Madras coast. The animal life is marked by a true Indian fauna, of which black buck, nilgai and spotted deer are components.

When we are discussing the distribution of the animal species we have to remember that practically in the whole of India the original vegetation has been destroyed, and most of the present-day landscape is entirely man-made. In the west and centre, with an annual rainfall of 30 inches and less (figs. 2,3), vast areas were covered by a tropical thorn-forest. In the west of the peninsula and the east of the plain, tropical forest prevailed. In between those forest belts, and surrounding the thorn-forest nucleus, a vast region is found belonging to the tropical dry forest. It has been surmised, and there are indications for it in the West (Singh 1971), that in prehistoric times conditions could have been slightly more humid than today. Singh found that in the Indus Valley around 2000 B.C. fresh water plants were growing that are absent in this region at present. It has to be kept in mind, however, that the destruction of the original vegetation and the erosion of the top soil makes it difficult, if not impossible, for the available water to be retained for a longer time. In the period when the first farmers settled in the subcontinent the original vegetation was still present.

The trans-Indus districts of Punjab, Western Sind and Baluchistan form the eastern border of the large deserts, broken by the Indus Valley and bordered by the thorn-scrub region in the east. A large number of desert species are found here. The plains region has in the west still a number of desert forms, in the east it becomes more humid and merges into the Sunderbans, a vast area of swamp and tropical forests. The animals found here are

no different from those of the peninsula. The table-land has undulating plains separated by ranges of flat-topped hills. The Western Ghats cut it from the monsoon rains. In those plains large herds of gazelle and antelope were common. The jungle cat, the common fox, the Indian wolf, hares, rats and mice are still to be found. Gaur, sambar, chital and the cuon are species of the open deciduous hill forests. North and east of Nagpur the conditions are more humid; wild elephant, baffalo and swamp deer also occur in this area. The Western Ghats, finally, are a zone with great humidity and heavy rainfall in the monsoon. The forests of the Western Ghats and the south Indian Hill ranges have a richer fauna than the other parts of the peninsula.

It is interesting that in the southern hills species are found that also live in the higher forests of Assam and the Himalayas. The birds present a different picture from that of the mammals. Their distribution is less restricted by natural barriers than that of the latter. In India we have indigenous species, but also the winter migrants from northern Eurasia. In the Himalayas, birds migrate to higher and lower altitudes with the coming of spring and winter. Hill birds which breed in the Himalayas spend the winter in the southern Nilgiris (Salim Ali 1949). The migrating habits of some birds make it sometimes possible to decide in which season a prehistoric settlement was inhabited. Archaeozoological research may help to explain the present-day distribution of certain species that live in isolated mountain ranges.

Of the wild mammals that are living in India a number may have been domesticated. The wild gaur and the buffalo are still present, and in the most eastern regions also the banteng (Prater 1971). All three species have been domesticated. The domestic buffalo is found all over India, the mithan or gayal (domesticated gaur) and the Bali cattle (domesticated banteng) are, however, restricted to the eastern parts. Of the domestic cattle that roam the country it is not known whether a wild ancestor lived at any time in India. It is assumed that modern cattle are the descendants of the wild *Bos primigenius* from western Asia (Herre & Röhrs 1973; Epstein 1956). Wild sheep and goat are still found in Western India and the northern mountain areas, though their relationship with the domestic breeds is not clear. The wild boar was found in large parts of India and could have been locally domesticated. Both the horse and the donkey must have been introduced from elsewhere, and the wild half ass—the kiang—found in Western India, is not supposed to have been domesticated. The history of the dog and the cat is still unknown. The camel is restricted to the west and northwest. The elephant cannot be counted among the true domestic animals. Their breed-

ing is often not controlled by man and the animals have to be caught young to be tamed and trained for the work they are to do.

The material

The faunal remains of 11 prehistoric settlements were investigated. The bones from all sites were fractured, show cutting marks, and a number of them had been in contact with fire. It seems that these bones were the leftovers of meals or were slaughter-garbage. The bone samples range from a small number, if collected during surveys, to several hundreds collected during excavations. The state of preservation of the bones is in many cases reasonable, but they can also be brittle, and then break easily. In a number of instances fossilisation had already progressed considerably. Most of the bones were covered with a thin crust of grey material that was difficult to remove (fig. 14). In some cases it was so thick that it made precise identification difficult or impossible; especially where teeth-patterns were concerned. The different stages of fossilisation and the thin crust made weighing the bones superfluous, since values thus obtained could not have been compared with each other. The same holds for the number of bones. In Kayatha, Nevasa, Navdatoli and Inamgaon, the bones were selectively collected by the excavators. The skeletal parts that were collected and the nearly total absence of the bones of small species (tables 3–13) illustrate this clearly. In Inamgaon the bones which were not thought worth studying were still laid out in the 'sherd yard' when I visited the site in 1972. Unfortunately the data about the stratification of this 'sherd yard' were no longer available, otherwise the bones could still have been collected for study.

ARCHAEOLOGICAL BACKGROUND

Before discussing the sites we shall have to discuss briefly the archaeological history of India. The data were taken mainly from recent publications such as *The birth of Indian civilisation* (Allchin and Allchin 1968) and *Prehistory and Protohistory of India and Pakistan* (Sankalia 1974).

For many millennia, India was inhabited by the hunter-gatherers of the Early and Middle Stone Age, followed by those of the Late Stone Age, which is characterized by microlithic industries. From three sites in Gujarat and Rajasthan, Langhnaj (Clutton-Brock 1965), Adamgarh and Bagor (Misra 1971) there is evidence of early stock-breeding. The last mentioned settlement, dated by C 14 at 4500 B. C. (Agrawal, Gupta and Kusumgar 1971), preceded those of Baluchistan and Sind in the middle of the third mill. B. C. (Conrad 1966) by at least a thousand years. The next evidence comes from the cities of the Indus civilisation in the valleys of the Indus and its tributaries, which spread west to the region between the Jamuna and Ganga. Somewhat earlier or contemporary with the early Indus Valley culture is the settlement of Burzahom in the Vale of Kashmir. In the south of India, in the Karnatak region, another group of stock-breeders was found, contemporary with those of the Indus Valley cultures. The oldest, dated by C 14 at 2300 B. C., is Kodekal (Paddayya 1971). In the northeast also, in Assam and Nagaland, habitation traces belonging to this period are found. They show a close affinity with finds in southern China. Farmers spread further south into India in the period between 2000 B. C. and the beginning of our era. They settled along the courses of the rivers. In this period metal was introduced, first bronze, and later iron.

The sites of which the animal remains will be discussed in this paper are located in Malwa, Maharashtra, and Karnatak (fig. 3). Around 300 B.C. the historical period begins with the edicts of Emperor Asoka.

Basham (1971) gives us some idea of an early Indian village, which was a cluster of large and small huts grouped around a well or pond. The excavations in Nevasa showed that the houses were constructed from mud bricks and could be either round or rectangular. In the old days the villages may have been walled in. The earliest villagers would certainly not have known the cultural deserts of present-day India. In Malwa and Maharasthra the villages were mostly situated on river banks. The river valleys as well as the higher-lying land would have been covered by natural grasslands and woods. The natural vegetation would have been disrupted by clearings for land cultivation, only around the villages. Cattle, sheep, goat and swine must have been put to pasture outside the villages. In the seventh century A. D. dense jungle still lined the banks of the Ganga for many miles, according to an account by the Chinese Hsuan Tsang (Basham 1971). In the south, the hills were favoured for habitation, away from the rivers. The landscape may have had an open character of vast expanses of grass.

The houses of the villages in the south may have been circular huts with

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

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

The sites

ASH-MOUNDS AND HABITATION SITES IN THE SHORAPUR DOAB

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

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

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

KODEKAL—KKL

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

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

BUDIKAL—BHL. s

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

KANNEKOLUR—KKR. 1

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

KUPI-KP

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

MALLUR—MLR—1 AND 2

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

THIRTH—TH

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

SITES IN MADHYA PRADESH AND MAHARASHTRA

KAYATHA—KTH

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

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

population of the region. A few bones of the small ruminants were also found: a mandibula of a three-year-old smalll ruminant (sheep/goat) from the transition layer of phase II/III, and two of one-year and 1¾-year-old animals in layer III. Of *Bos* sp., a maxilla of an approximately ¼-year-old animal was collected from phase II. Maxillae of animals with adult sets of teeth, when slaughtered, were found in phase II, phase II/III, and in phase ? Of the mandibulae, four were of animals not yet three years old; two from phase II, and phase II : III, and one from phase III. A larger number of mandibulae with adult sets of teeth belong to phase I, phase II/III and phase IV (table 13).

NAVDATOLI—NVT

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

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

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

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

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

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

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

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

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

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

NEVASA—NVS

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

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

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

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

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

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

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

INAMGAON—INM

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

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

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

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

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

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

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

Discussion of the species

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

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

bubalis) and its domestic form *(Bubalus bubalis domesticus)* and the nilgai *(Boselaphus tragocamelus)*.

Of the small Bovidae, most bones belong to domestic sheep, *Ovis aries*, and to domestic goat, *Capra hircus*. Here we have to reckon, however, with the possibility that part of the bones may belong to the four-horned antelope, *Tetracerus quadricornis*, to the black buck, *Antilope cervicapra*, or the gazelle, *Gazella gazella*.

The bones were measured if this was possible. Most of the measurements were taken after Duerst (1930). The measurements were taken with a slide-rule, with a precision of 0.5 mm. The circumference of the horn-cores was taken with a cotton thread. It was often difficult to measure the teeth properly when they were covered by the thin crust mentioned earlier. The numbers used are those given by the excavators.

CANIDAE

Wolf—*Canis lupus* Linnaeus, 1758
Jackal—*Canis aureus* Linnaeus, 1758
Dhole—*Cuon alpinus* Pallas, 1811
Fox—*Vulpes bengalensis* Shaw, 1800

The Indian fox : *Vulpes bengalensis*, is found everywhere in India. The animal keeps to open country and rarely enters the forest. Many live in cultivated land bordering irrigation canals. The fox is a culture follower.
The dhole : *Cuon alpinus*, is found in central and eastern Asia, it lives in forests but is found occasionaly in open steppes.
The wolf : *Canis lupus*, is found in the north and in the dry open plains of peninsular India. The animals may live in forests, but in India they are more common in bare and open regions.
The jackal : *Canis aureus*, is found in nearly any environment, all over India.

In Kodekal, Kayatha III, Nevasa III '55/56, Nevasa '59/61, Inamgaon, Nevasa W and Nevasa V, bones of the Canidae were found.

In India we can expect the above wild species next to the domestic dog. The dhole differs from the other species in one characteristic, in the lower jaw the third molar is missing (Clutton-Brock 1965). Whether there are differences in the long bones I do not know. The wolf is supposed to be slightly larger than the dog, jackal and dhole. The fox is smaller than those species.

Most bones were collected at Nevasa and Inamgaon. Two maxilla were found at Nevasa III, they are badly preserved and dirty (fig. 13). A pre-maxilla may belong to maxilla nr. 4857 x 5. A left and a right maxilla of

one individual were found at Inamgaon (fig. 14 a above, 15 a), it seems that the pre-molars are slightly crowded. A left *proc. orb.* is probably of a second animal. Seven mandibulae collected at Nevasa could be measured (table 15).

In Nevasa W the l. maxilla of a young animal was found with the p^3M^1 and without M^2.

In Nevasa III '55/56 a l. mandibula of a young animal was found (nr. 6182 Y2. The length of M_1 and the height of the horizontal ramus are so small that we have to reckon with the possibility that it belonged to a fox. A second l. mandibula (nr. 3107 x *4*) also seems to be of a young dog (fig. 15 b). Five other mandibulae were found, of which nr. 4227 III '59/61 seems of a slender type (fig. 14 b middle).

In all cases, the teeth were more or less crowded, with P_4 partly screening M_1. In nr. 256 III '59/61, the M_3 was missing, and no alveole was present (fig. 14 b above). We have to reckon in this case with the possibility that this mandibula may be of a dhole. Because the M3 may also have been missing in the mandibula of the domestic dog, its absence is not conclusive. Of a fragment of a r. mandibula found at Inamgaon (A_2 *4*), the labial side was slightly burnt. Another r. mandibula (C_2 *4*), was that of a young animal (fig. 14a). Carving marks on the inner side of the mandibula seem to indicate that the animal was slaughtered.

In Nevasa III an atlas, a radius and an astragalus were found; in Inamgaon two r. humeri that belonged to large animals.

Clutton-Brock (1965) studied the remains of the Canidae collected at Langhnaj. She came to the conclusion that they probably belonged to the Indian wolf and described them as *Canis* cf. *lupus pallipes* Sykes, 1831. In Langhnaj no long bones were found, and the mandibulae made it possible to rule out the dhole. Clutton-Brock gave a number of measurements of recent dingo, wolf and domestic dog. The mean values of the skull measurements are given in a table. If we compare the measurements of the maxillae and mandibulae of Nevasa and Inamgaon with those measurements, we see that they fall into the range of the true domestic dog. Only mandibula nr. NVS 1272 III (fig. 14b under) is comparatively sturdy, the horizontal ramus is larger than those of the others, the length of M_1 falls in the upper range of the domestic dog and in the lowest of the wolf, as given by Clutton-Brock. We have thus to reckon with the possibility that the inhabitants of prehistoric Nevasa hunted the fox, the wolf and the Indian wild dog, and kept the domestic dog.

FELIDAE

Leopard cat—*Felis bengalensis* Kerr, 1720

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

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

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

(measurements in mm)

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

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

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

PROBOSCIDAE

ELEPHANTIDAE

Indian elephant—*Elephas maximus Linnaeus*, 1758

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

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

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

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

RHINCEROTIDAE

Great one-horned rhinoceros—*Rhinoceros unicornis* Linnaeus, 1758
Asiatic two-horned rhinoceros—*Didermoceros sumatrensis* Fisher, 1814
See Indian elephant

EQUIDAE

Horse—*Equus caballus* Linnaeus
Donkey—*Equus asinus*
Asiatic wild ass—*Equus hemionus* Pallas, 1775

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

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

Prashad (1936) describes the Equid bones from Harappa as *Equus asinus* Linnaeus. This is corroborated by Conrad (1966) who also thinks that the upper jaw fragments and a phalanx II belong to the domesticated ass, but the metacarpi which Prashad also identified as belonging to a domestic ass probably belong to a small horse and a wild ass.

The wild horse, a species that is not indigenous in India, was found north of the Caucasus in Eurasia. At the end of the Ice Age these wild Eurasian horses formed one species with two distinct subspecies, a western and an eastern. According to Nobis (1971) the western species was domesticated around 3000 B. C. in southern Russia, from where it spread to Europe, the Middle East and southern Asia. Zeuner (1963) states that, in any case, in latter periods the Chinese domesticated the local wild horses in China. According to Prashad (1936), and confirmed by Conrad (1966), a l. and a r. lower jaw of a horse were found in Mohenjodaro. Conrad thinks that the metacarpus and the phalanx II from Harappa which were also described as belonging to a horse by Prashad, possibly belonged to a donkey or a wild ass. In any case it is not surprising to find horse remains at ca. 2000 B. C. in India, if the first domestication took place around 3000 B. C. in southern European Russia. In Inamgaon, Nevasa and Navdatoli, Equid remains were collected in small numbers as well. It is difficult, however, to assign the fragments to species with complete certainty. From Inamgaon comes (nr. IA2 2) a l. M^2 (fig. 18e, table 13), which is thought to belong to a horse. At Navdatoli a large l. radius was collected (fig. 20a) which is also thought to be of a horse. From the same site comes a lower jaw, with M_1 M_2 and M_3 (fig. 19a, b), which probably belongs to a domestic donkey, as well as a radius (fig. 20b, table 13). Of a third radius it is not certain whether it belongs to an Equid. At Nevasa III a large l. P^4/M^1 was found, probably belonging to domestic horse (fig. 18b). Also considered to have belonged to a domestic horse are a r. M^3 and a r. and l. *pars incisiva* of Nevasa W. A r. mandibula fragment from Nevasa V probably also belongs to a horse, and a small number of fragmented cheek teeth of a lower jaw probably belong to a young horse (Nevasa ?). Finally, a small, badly damaged P^4/M^1 of Nevasa 1959/61 has to be mentioned (fig. 19e) which probably belonged to a donkey (table 13). In the ash-mounds and at Kayatha no equid remains were found.

SUIDAE

Indian wild boar—*Sus scrofa cristatus* Wagner, 1839
Domestic pig—*Sus scrofa*

Sus scrofa cristatus is considered to be a subspecies of *Sus scrofa* Linnaeus, 1758, and closely related to the European wild boar: *Sus scrofa scrofa*. The

Indian wild pig is distinctive for its sparser coat and its fuller crest of black bristles reaching from the nape right down the back. Osteologically, the skull of the Indian wild boar is considered to be more slender, and the *os lacrimales* of the skull of the Indian wild boar is less elongated, and comparatively higher. The same features are found in the domestic animals.

The Indian wild boar is found in most parts of India.

Little is known about the domestication of the pig in Asia, but it is generally accepted that the pig was domesticated in India. At what time the pig was domesticated it is difficult to say. In the hill settlements of Baluchistan no pig bones were found, this in contrast with Mohenjo-Daro and Harappa (Conrad 1966). The Indian wild boar lives in grass or scanty bush jungle, only sometimes in the forest. The domestic pig found in the villages is a small, high legged, inconspicuous animal, that feeds on garbage.

Pig remains are missing from the surface finds collected at the sites of the ash-mounds in Karnatak. In all other settlements, phase I and II of Kayatha excluded, a few pig bones were collected.

Only in Navdatoli a much larger number of bones, mostly of the upper and lower jaw, were picked up (fig. 21). Most of the lower jaws from Navdatoli were of young animals, only seven belonged to animals with a complete set of cheek teeth (table 15). Of those it seems that six are of domesticated animals (table 16). The M_3 of the seventh jaw exceeds the measurements of those of a skull of an old ♂ wild boar on loan from the collection of the Bombay Natural History Museum (table 15). Although I had no skeletons at my disposal of a recent wild boar and domestic pig, it seems to me that all the long bones that could be measured were of domestic animals. It is interesting that most of the pig jaws are from animals about half a year old, or from animals that were two years old or older. This indicates a policy in the slaughtering of pigs in Navdatoli. In how far this observation is reliable will have to be corroborated by future investigations. According to Prater (1971), wild boar breeds in all seasons, but there is a peak before and after the rainy season. If this should also apply to the prehistoric and the early historic domestic pig, the peak season in Navdatoli for births must have been May and October/November. The killing of half year-old pigs in Navdatoli would then correspond with the birth of new litters of pigs just before and after the rains. Singh (1966) mentions two breeding seasons for contemporary domestic pigs: August/September and February/March.

BOVIDAE-CERVIDAE

A large number of genera and species of the Ruminantia are still found

in India, although a number of them are nearly extinct. The species that could be identified belonged to three families: the Suidae (see above), the Cervidae and the Bovidae. The males of the Cervidae have antlers, the males as well as most of the females of the Bovidae have horns.

Although the bones of a number of species can be identified in most cases as to species, still, as they have a large number of characteristics in common, a representative collection of recent skeletons is needed to make this task easier and reliable. During my stay in Poona, I had not the advantage of such a collection and a number of bones could not be identified as to species. An added difficulty is a manifest sexual dimorphism in most species, with the result that the females of one species fall within the size range of the males of a smaller species next to it in size. Table 14, in which the height at the withers is given of a number of species, illustrates this clearly. In most cases it is possible to distinguish the Cervidae from the Bovidae. Both skulls and mandibulae are rather easy to identify and the long bones of the Cervidae have a number of characteristics in common that distinguish them from the Bovidae. The bones of the carpus and tarsus gave difficulties however in identification, especially when damaged.

CERVIDAE

One of the most conspicuous features of the Cervidae are the antlers of the males. Antlers are part of the frontal bone of the skull and belong to the skeleton. They grow yearly from a pedicle and are also shed yearly. The period of growing and shedding of antlers is fixed for a species. When ♂♂ skulls are found with antlers, or without, it will enable the archaeozoologist to establish approximately the season in which the animal was hunted if the growing and shedding periods for the region where the material is found are known. Also, when shed antlers are found, the collecting period is known, since shed antlers perish quickly when left lying outside. Antlers are useful material for the manufacturing of tools and ornaments, and were in prehistory widely collected by human beings.

Five deer species can be expected to have been hunted in the areas we are discussing.

Muntjak—*Muntiacus muntjak* Zimmermann, 1780
Chital or spotted deer—*Axis axis* Erxleben, 1777
Barking deer—*Axis porcinus* Zimmermann, 1780
Sambar—*Cervus unicolor* Kerr, 1792
Swamp deer—*Cervus duvauceli* G. Cuvier, 1823

The other Indian species have a more northerly or easterly distribution. The muntjak: *Muntiacus muntjak*, ranges over the larger part of India. The

height at the shoulder of an adult male is from 50–75 cm. It is found in thickly wooded hills and comes out to graze in the outskirts of the forests. The animal is not a culture follower. The young are born at the onset of the rains. The muntjak has a typical skull with small antlers placed on very elongated pedicles. The males have large canines in the upper jaw, which protrude at either side.

The spotted deer or chital : *Axis axis*, is found from the base of the Himalayas to the south of the Peninsula and Ceylon, wherever there is jungle combined with good grazing and enough water. In the arid plains it is unknown. The chital is a culture follower. In Madhya Pradesh and south India antlers are shed in August and September. A well-built stag stands 90 cm. at the shoulder.

Hog deer : *Axis porcinus*. At present, this species occurs on the low alluvial grass plains of North India from Sind and Punjab to Assam. The height at the shoulder is 61 cm. The animals favour grass jungles near river banks or open grass plains, provided the grass is not too high. In upper Sind they live in the scrub jungles of the upper Indus. In Burma they were once common in mangroves. The hog deer is a solitary animal, its young are born in April and May. Clutton-Brock identified the hog deer with certainty in Langhnaj. It is possible that in earlier times the hog deer was also found in the Peninsula.

The sambar : *Cervus unicolor*, is the largest Indian deer. The height at the whithers is approximately 140-150 cm. The sambar can be found in the wooded districts of India and Ceylon; it prefers forested hills near cultivated areas. In central and southern India the antlers are shed between the end of March and mid-April. The young are born at the commencement of the rains in late May or June.

The swamp deer : *Cervus duvauceli*, is limited to India and is nearly extinct. In former times, two forms were found, the real swamp-dwelling deer of the Terai, Uttar Pradesh, Assam and the Sunderbans; and a form that was found in the hard open grounds of Madhya Pradesh. It is thought that altogether there remain about 4,000 animals of both races.

The identification of the few deer remains found in Kannekolur, Kayatha, Navdatoli, Nevasa and Inamgaon as to species was in most cases impossible. It was, however, possible to make a good guess. Most bones collected are shed antlers and antler fragments, but a small number of mandibulae and long bones were also picked up. We have to admit of the possibility that a few of the astragali identified as *Bos* sp. belong to *Cervus unicolor* (fig. 37, 38, table 15). Antlers were collected at Kayatha, Navdatoli Nevasa and Inamgaon. Most of them are fragments, and could be divided

into three groups : 1. relatively heavy fragments of the "main beam" found in Nevasa. They could be of *Cervus duvauceli* or *Axis axis*; 2. smaller, flattened, fragments with a thick cortex and fine spongiosa. It is possible that these are not antlers but horn cores of a large gazelle; they are found in Nevasa and possibly Kayatha; 3. the third group are cut off antler tines, which can belong to *Cervus unicolor, Cervus duvauceli* or *Axis axis* as well. Three shed antlers were collected, two at Navdatoli and one at Inamgaon. One of those from Navdatoli had a circumference of the rose of approximately 150 mm. A recent ♂ skull of *Axis axis,* on loan from the Bombay Museum of Natural History, had a circumference of 160 mm. The other two antlers could not be measured. Of both antlers the main beam was cut off just above the rose, the first tine was present. This first tine has a "bump" that seems characteristic for *Axis axis* (fig. 28). The antler from Inamgaon was much smaller; part of its main beam was preserved. The circumference of the rose was approximately 85 mm. It is possible that this antler is from *Axis porcinus.*

The open vegetation of the dry thorn scrub forest around Inamgaon would have been a favourable biotope for this deer.

In Inamgaon a mandibula (fig. 22a) was found, with the deciduous molars $p_1p_2p_3$. The p_3 is deerlike, with two additional columns that are not found with the Bovidae. Three mandibulae of adult animals, and a *pars incisiva* of a young deer (fig. 22 b), were found in Nevasa. The adult mandibulae are too large for *Axis axis,* but could be of *Cervus unicolor* or *Cervus duvauceli.* In Inamgaon the distal part of a humerus was found. The bipartition by a shallow ridge of the *fossa coronoidales* is a clear indication that it belonged to deer. A similar fragment was found in Kannekolur. The width of the trochlea, 35.0; 37.0 mm. is less than that of small-sized red deer in Europe. In all probability those humeri are of *Axis axis.*

Both in Nevasa and Inamgaon one radius was found, and since the measurements of those two fall well into the range of the above mentioned *Cervus elaphus,* it is possible that they are from *Cervus unicolor* or *Cervus duvauceli.*

It seems that a badly-damaged bone fragment found at Nevasa could be a radius (63 B *1* '60).

A small part of the prox. ant. surface of a metacarpus in Kayatha could be of a deer. In Kayatha the diaphysis of a metatarsus of a small-sized deer, possibly *Axis axis* was collected. In Inamgaon 4 phalanx I were found, with the same length as those of *Bos* sp; they are, however, more slender. Whether they are from *Cervus unicolor* or from *Boselaphus* it is difficult to say (fig. 22c). Also in Inamgaon, a number of phalanx I were found, which are

slightly larger than those of sheep or goat. Two groups can be distinguished. Whether they are of *Axis* sp., *Gazella gazella* or *Antilope cervicapra* it is impossible to say at this moment.

Summarizing, we can say that although the remains of the Cervidae are scarce they may represent four species, *Cervus unicolor*, *Axis axis*, *Axis porcinus* and *Cervus duvauceli*. No indications for the existence of *Muntiacus muntjak* were found.

The antlers of Navdatoli, if they are of *Axis axis* may have been collected in August or September. The collected, and cut-to-pieces, antlers of *Axis axis* and *Cervus* sp. indicate that the prehistoric inhabitants of Inamgaon, Nevasa and Navdatoli used them as raw material for the manufacture of objects. The long bones indicate that deer were occasionally hunted or trapped, and used for food.

BOVIDAE

Subfamily Bovinae.

Tribe Boselaphini.	*Boselaphus—Boselaphus tragocamelus* Pallas, 1766
	Tetracerus—Tetracerus quadricornis Blainville, 1816
Tribe Bovine.	*Bos—Bos gaurus* H. Smith, 1827
	Bos taurus Linnaeus
	Bubalus—Bubalus bubalis Linnaeus, 1758
Tribe Antilopini.	*Antilope—Antilope cervicapra* Linnaeus, 1758
	Gazelle—Gazella gazella Pallas 1766
Tribe Caprini.	*Capra—Capra hircus* Linnaeus
	Ovis—Ovis aries Linnaeus

The main characteristic of this family is the horns, carried, in most species, by males as well as females. Exceptions are the nilgai and the black buck, the females of which species are hornless. The horns of domesticated sheep and goat tend to be smaller than those of the wild species, and finally to disappear altogether. Horns are part of the skin and are built up, just like nails, from ceratin. They cover the horn cores which are, like the antlers of Cervidae, part of the skeleton. Contrary to the antlers of the Cervidae, horn cores are not shed annually. The horn grows a little every year and in some cases the growth-rings can give a rough indication of the age of the animal. Horns are seldom found in an archaeological context. The horn-core is found frequently.

The bones of the Bovidae could in most cases be separated from those of the Cervidae.

Nilgai or blue bull : *Boselaphus tragocamelus*. The nilgai is a typical Indian species. It is found from the base of the Himalayas to Mysore. The animals

shun dense forest, and live in undulating plains covered with grass and scrub. The nilgai is not a culture follower, but freely enters cultivated areas where the animals damage the crops. In many parts of India they are not hunted, because they are considered to be near relations of cattle and thus sacred. An adult male stands 130-140 cm at the shoulder. According to Clutton-Brock (1965) the nilgai has the same overall size as the sambar and the bones have the same size too. The nilgai, however, belongs to the Bovidae, the sambar to the Cervidae, and it will be possible to distinguish between most of their bones. This proves, however, to be difficult for the astragali (fig. 35, 37); (see also cattle).

In Navdatoli, Nevasa III '55/56, Nevasa '59/61 and Inamgaon a few bones of the nilgai were collected.

Typical are the short, sturdy horn cores of the males, five of which were found : two in Nevasa III,and three in Navdatoli. The horn core is roughly triangular at the base, compact, without a hollow, and slightly bent forward (fig. 23a).

In Navdatoli two mandibulae were found that belong, in all probability, to the nilgai. They have the same length measurements as those of small cattle, but are more slender (table 15; fig. 23 b, c). In Inamgaon the proximal part of a metacarpus was found together with the distal parts of two metatarsi. The metacarpus is neither of a deer nor of a small ox. The anterior-posterior depth is larger with relation to the proximal width than in cattle (table 15, fig. 24 b). The two metatarsi are too small for cattle. The fascular grove that reaches down to the trochlea shows that they are not the metatarsi of a deer (fig. 24c, d). In the *Cervidae*, this grove always ends at the distal foramen. A number of the small astragali, described as *Bos* sp., may belong to *Boselaphus*, although they could also be of *Cervus unicolor* (see *Bos* sp.) (fig. 35, 37).

Clutton-Brock measured the astragali of a number of recent *Boselaphus* and *Cervus unicolor* skeletons in the collection of the British Museum (Natural History) in London. According to those measurements one astragalus from Kayatha III, and two from Inamgaon III, could belong to either species.

OTHER SKELETAL ELEMENTS

As I had no nilgai skeleton at my disposal for comparison, it is possible that some of the smaller bones described as *Bos* sp. may belong to *Boselaphus*; the possibility that this is so is small, however.

The group of phalanx I, already discussed with the *Cervidae*, may also contain bones of this species.

Four-horned antelope or chowsingha *Tetracerus quadricornus*. The four-horned antelope belongs, with the nilgai, to the *Boselaphini*, but is considerably smaller. An adult male has a shoulder height of 65 cm. The females are hornless. Typical for the males are the four small horns, the posterior of which reaches a length of 80-100 mm, the anterior of 10-25 mm. The four-horned antelope is found in peninsular India south of the Himalayas. It favours lightly wooded, undulating or hilly country. It needs water and seldom lives far from it. Young animals are born from October to February. The four-horned antelope is easily tamed when caught young.

At Inamgaon two r. posterior horn cores were collected. The cross section of the horn cores is more or less round (fig. 25a, b), they are slightly curved, solid and the tips are missing. One was of a comparatively young animal.

In Nevasa two right mandibulae were found which did not belong to one of the Caprini. They were small and slender (fig. 25c, d; table 15) and compared very well with the mandibula of a skull on loan from the Museum of Natural History in Bombay (table 15). A maxilla, also found at Nevasa, may be from the fourhorned antelope. It was, however, so thickly covered with the "crust" that certain identification was impossible. It seemed to have belonged to a young animal, and the second and third deciduous molars were still present.

The surroundings both of Nevasa and Inamgaon would have suited the fourhorned antelope. There are indications that in ca. 1000 B.C. the country must have been rather open without heavy forest.

BOVINI

Wild cattle—*Bos primigenius namadicus*
Dom. cattle—*Bos taurus* Linnaeus
Gaur—*Bos gaurus* H. Smith, 1827
Gayal or mithan—*Bos gaurus frontalis*
Wild buffalo—*Bubalus bubalis* Linnaeus, 1758
Domestic buffalo— *Bubalus bubalis domesticus*

Two wild species of the tribe of the Bovini are still living in India. *Bos gaurus* is mainly a hill animal at present, but comes down now and then for pasture. A large adult bull stands 195 cm at the withers, the average is 180 cm. In Madhya Pradesh the young are born between December and March. The gaur seems a culture fleer.

The domesticated gaur, the gayal or mithan : *Bos gaurus frontalis*, is found is the east in Assam and Bangla Desh, but not in the western part of the country, where the settlements here discussed are situated. This does not

exclude the possibility that in earlier times the mithan could have been found more westward than at present. We know little or nothing about the domestication history of the gayal (Simoons and Simoons 1968).

The wild buffalo : *Bubalus bubalis*, is found in the grass jungles of Nepal and Assam. In the south there are still a few herds in Orissa and the adjoining part of Madhya Pradesh. In the northeast the buffalo needs grass jungles in the neighbourhood of swamps, but in the south the animal lives in drier country with scattered trees and open expanses of grass. The wild buffalo is a culture follower, and enters cultivated areas. An adult male stands 170 cm. at the shoulder. The young are born in March, April and May.

Domesticated buffalo : *Bubalus bubalis domesticus*. The buffalo must have been domesticated in Asia, possibly in more than one locality, but we know very little about the process. According to Cockrill (1967), two major groups can be recognised: river buffaloes, which are found mostly in India, and swamp buffaloes, which are most plentiful in the great rice-growing lands east and south of Burma. The river buffalo prefers clear running water to mud, and is more suitable for milk production than the swamp buffalo. The swamp buffalo needs to wallow in mud. In 1961, there were in India approximately 51 million buffaloes, and 6 major buffalo breeds can be distinguished (Harbans Singh 1966).

According to Conrad (1966) some buffalo bones and teeth were found in Mohenjodaro. In Harappa also, bones of buffalo were found, according to Prashad (1936). Buffaloes are, however, less frequently depicted than cattle in the Indus Valley culture, and it is not clear whether the depicted animals were domesticated or wild.

Both in Navdatoli and Nevasa, much flattened horn cores with a distinct keel at the inner and outer curve were found which belong, in all probability, to the domestic buffalo (fig. 27a, b). In Inamgaon, the distal part of a metatarsus was found that seems to belong to a domestic buffalo, since the ratio between distal depth and distal width is the same as that of a wild buffalo measured by Clutton-Brock (table 15, fig. 39). The measurements are, however, much smaller, and are the same as those of *Bos* sp.

Wild cattle—*Bos primigenius namadicus* Falconer, 1859.
Cattle—*Bos taurus*.

No wild taurine cattle are found in India today, and it is not known whether in the period of first domestication, the wild *Bos primigenius namadicus* could still have been present in the country.

Nowadays it is generally accepted that the domestic cattle found in India are descendents of *Bos primigenius*, whether it was *Bos primigenius primigenius*

Bojanus, 1827 from West Asia, or *Bos primigenius namadicus* from India (Herre and Röhrs 1973). The most characteristic features of the present-day Asian taurine cattle are the dew lap and hump, which features distinguish it from European cattle. The earliest known cattle-remains are those from the Quetta Valley and the Zhob region in Baluchistan, (Fairservis 1956, 1959) dated ±3500 B.C. Not only bones were found, but prehistoric man left potsherds behind, on which he has depicted cattle with well-developed humps. The next information comes from the Indus civilisation. From this civilisation, too, not only bones were found, but cattle depicted on seals and pottery. Cattle figurines were made of copper and clay. The majority of those cattle are humped, but also hump-less animals were portrayed. As far as the Indus civilisation is concerned, we have thus to reckon with at least two different breeds of cattle, one with and one without a hump. At present, most of the cattle in India have more or less well developed humps. Harbans Singh (1966) distinguishes 26 major breeds. The humpless breeds are all imported from Europe. Olsen (1960) tried to work out the osteological difference between humped and hump-less cattle. The most characteristic difference is found in the *spina dorsalis* of the *thoracic vertebrae*. In the humped cattle they broaden dorsally, are flattened, and have a cleft due to the developed hump. Only one *spina dorsalis* of a *thoracic vertebrae*, which showed the peculiarities ascribed above, was found in Inamgaon. Of the other characteristics described by Olsen, only the flattening of the trochlea of the humerus was found in one piece collected in Nevasa 1959/'61. That no more bones clearly show the characteristics described by Olsen can have several explanations. Firstly the bones from the prehistoric settlement were badly damaged; secondly Olsen worked with humped cattle bred in the U.S.A.; and thirdly the possibility exists that some of the bones were of hump-less cattle. The finds from Inamgaon and Nevasa 1959/61 indicate, however, that at 1000 B.C. at least part of the cattle in this region had humps.

From the foregoing discussion it will be clear that we have to reckon with the existence of three wild species of the Bovidae and their domesticated forms, of which the domestic cattle can be humped or hump-less. In both wild and domestic Bovidae there exists a marked difference between the males and females, and to complicate the issue further we also have to consider the existence of castrates. It is evident that it will be difficult to identify the bones of the Bovidae found in prehistoric settlements in India to species as long as no data are known about the single species, the difference between the sexes, and the influence of castration on the skeleton. Even in Europe, where only two wild species of the Bovidae existed and only one was domesticated, it often proves difficult for the archaeozoologist to identfy the

Bovidae remains with certainty, and often they differ in opinion about which remains belong to wild and which to domesticated animals, especially if found in Neolithic settlements. In the following discussion of the bones of the Bovini they will be described as *Bos* sp. or cattle. Most of them may actually belong to domesticated cattle: *Bos taurus* L., with or without hump.

BOS SP.

It appears that, during excavations, various policies of bone collecting were followed at all the sites discussed. At Navdatoli, a large number of horn cores, upper and lower jaws were collected; long bones were nearly absent. At Kayatha however, nearly all the bones collected were long bones. At Inamgaon, skull as well as long bones were taken. As none of the complexes can give us any idea about the prehistoric reality, we will discuss the remains of *Bos* sp. found at all the sites as one complex.

Horn Cores

Most horn cores come from Navdatoli, a few from Nevasa and Inamgaon. Horn cores of cattle have a round or oval cross-section. The horn core of the buffalo is flattened or oval. The horn cores of the only gaur skull at my disposal were rounder than those of the wild buffalo measured by Clutton-Brock, but less round than those of the majority of horn cores found at Navdatoli (fig. 26).

One horn core from Navdatoli and one found at Inamgaon, both from unknown layers, differ from the others in being nearly totally round in cross-section. One horn core, nr. 2872 (fig. 27b) from Nevasa III, is flattened with a distinct keel both along the inner and the outer curve. Nr. 3395 from Navdatoli is flattened in the same way, but without keel (fig. 27b). A second horn core, also collected in Nevasa, is also flattened. Unfortunately the base is missing (it may belong to *Bubalus bubalis*). It seems that those horn cores could be identified as *Bubalus* (the small size makes it likely that they are from domestic buffaloes: *Bubalus bubalis domesticus*.) A horn core collected at Navdatoli, NVT nr. 2654, is small and sturdy, and is more flattened at the base than the other horn cores. A distinctive keel is missing however, so I counted it among *Bos* sp. (fig. 27c). In my opinion, all the other horn cores belong, without exception, to domestic cattle (fig. 28—31a). Whether those cattle were humped or hump-less it is difficult to say. It seemed that most of the horns were pointing sideways, and not upwards as is found in the present-day cattle in Maharashtra.

Two horn cores from Navdatoli have a faint depression at their bases (fig. 31a). Similar features have been described for European horn cores.

There, the phenomenon was thought to be the result of the fastening of a yoke on the horns. In Maharashtra, however, I have so far only seen cattle with the yoke fastened on the neck.

Atlas

At most sites and in most layers one or more atlasses were collected. Most of them were small, broken and only four could be measured. At NVS W (nr. 3108) a very large and heavy piece was found, which belongs to *Bos gaurus* or the wild buffalo—*Bubalus bubalis*. The other two measurable pieces from Nevasa are small and fall into the size range given by Grigson (manuscript) for Bengali Zebu. A fourth atlas is larger than the former and falls into the size-range of three Zebus in the collection of the Leiden Museum (Netherlands). These skeletons probably belong to animals which come from Indonesia. (Grigson manuscript)

Epistropheus

The epistropheus was also found in most layers. In a number of cases it could be measured. The largest was found at Kodekal, the smallest at Nevasa.

Other vertebrae

At most sites, vertebrae were collected. They were generally damaged. One *spina thoracalis* from Inamgaon (fig. 31c) had the dorsal broadening and cleft that is typical for the humped Zebu cattle. This piece is the only direct indication that, at least in Inamgaon, humped cattle were kept.

Maxilla

In Nevasa and Navdatoli, a number of maxillae with milk teeth were found. In some cases, the p^2 had a ridge at the posterior side. Because this feature was not familiar to me I considered the possibility that they might belong to *Boselaphus*. A weakness of this theory was the lack of other skeletal elements that could possibly be ascribed to the nilgai. Whether this ridge can be a feature of *Bos indicus* I do not know. Olsen (1960) does not mention it. Maxillae of adult animals were collected at most of the sites. Those from Nevasa and Navdatoli could be measured. It seems that some of the animals from Nevasa III were slightly larger than those from Navdatoli (table 15).

Mandibulae

Most mandibulae of young animals were collected at Navdatoli and Nevasa. It appears that the mandibulae of Nevasa were also slightly larger

than those of the animals from other sites. Mandibulae of adult animals were collected at most of the sites. M_3 was the tooth found most frequently. It seems that the length of some of the M_3 of Navdatoli and Nevasa III exceeds those of the other settlements.

Scapulae

Only a few fragments of scapulae were collected. Scapulae are easily damaged during the butchering process, and when fragments are not collected, the scapulae tends to be missing in a collection. A number of the articular ends of scapulae were available, and could be measured. These measurements could be compared with those of a ♀ and ♂ *Boselaphus tragocamelus*, and ♀ and ♂ *Bos gaurus*, *Bos gaurus frontalis* and *Bubalus bubalis* of the British Museum (table 15) as well as with the measurements taken by Grigson (manuscript) of recent zebu cattle in the 'Rijksmuseum van Natuurlijke Historie' at Leiden in the Netherlands and the 'Royal Museum' at Calcutta. The few subfossil specimens are larger than those of the nilgai, fall into the range of *Bos gaurus* and *Bos gaurus frontalis* but are smaller than the scapula of the wild buffalo, *Bubalus bubalis*.

Humerus

The humerus is a large bone, the distal end is compact and difficult to destroy. The proximal end is more brittle and is often destroyed during butchering, or gnawed at by scavenging dogs. Owing to this sturdiness, a number of distal ends were well preserved and collected. Two groups can be distinguished. The first has a width of the trochlea of between 59-76 mm, the second of between 78-82 mm. The trochlea width of a large humerus was 106 mm. This piece probably belonged to a wild buffalo. A humerus with a width of the trochlea of 94 mm was collected in Nevasa (NVS. nr. 1466). The width of the trochlea of the ♂ Gaur in the British Museum Collection measured 93.5. Whether those groups represent ♀♀ and ♂♂, two or more different species, or domestic races is difficult to say at this moment. Conrad (1966) points out that hump-less as well as humped cattle were depicted in the Indus Valley culture. Allchin (1961) also mentions the remains of small and large cattle found in the ash-mound of Utnur, which he thinks may correspond with the large and small breeds of humped cattle that are still found in that region at present.

A r. humerus (Nevasa '59/61) has the straight distal surface of the trochlea at the medial side, which according to Olsen is one of the characteristics of humped cattle. The other humeri show a more curved surface like those of European cattle. To me, this does not seem to be conclusive evidence,

It only indicates that the study of more material may give an answer to the question—in which ratio cattle with and without hump were slaughtered.

Radius

The proximal and distal parts of the radius are resistant, and even when the bones are broken for the extraction of marrow, they are often not seriously damaged. The proximal part could be measured. It appears that at least two groups can be distinguished; the first group has a max. prox. width of between 85-94 mm, the second of between 72.0-80.5. The numbers are too small however, to be relevant. The limits Grigson found for the Leiden animals were 82.5 and 93.5 and those for the Bengali animals at Calcutta 67-81. These measurements were 59.0 and 60.0 for the ♂ and ♀ *Boselaphus tragocamelus* of the British Museum. Those of *Bos gaurus* (♀ and ♂) 86 and 100 mm, of *Bos gaurus frontalis* 85.0 mm, and of the wild buffalo 116.0 mm. It seems therefore improbable that any of the bones belonged to the nilgai or the wild buffalo.

Ulna

The ulna is often badly damaged during butchering, and most of the fragments were not collected. The only ulna found at Kodekal seems to have belonged to a rather large animal.

Metacarpus

The metacarpus and metatarsus are solid bones, which are often broken into two or three parts to extract marrow, leaving the proximal and distal epiphysis undamaged (fig. 34). According to Clutton-Brock (1965) the distal end of the metapodia of the buffalo is wider but not deeper than those of cattle. This enables the toes to have a better possibility of spreading to a certain degree, to faciliate walking in mud. To what extent this is also applicable to the river buffalo I do not know. Altogether, little is known about the differences in the skeletons of cattle and buffalo. Clutton-Brock measured the metacarpus of a wild buffalo, and compared it with four of *Bos gaurus*, one of *Bos indicus* and two of *Bos frontalis* of the British Museum collection. We can calculate the ratio distal depth x 100/distal width, which should be lower for the buffalo than for cattle (fig. 33). The ratio for the wild buffalo is 46.6. The majority of the calculated ratios for the prehistoric sites is between 49-56. Two bones of Inamgaon gave ratios of 47.5 and 49, respectively. Two other bones of Inamgaon have ratios that are higher, 59 and 59.5. The ratios of the two metacarpi of *Bos frontalis* measured by Clutton-Brock are 59.3 and 60; the bones were, however, much larger than those of Inamgaon. Three of the four metacarpi of *Bos gaurus* have the same

index as that of the *Bos* sp. here discussed : 54.0; 55.6; 56.8; the fourth has a ratio of 58.3. It seems that the gayal has a sturdier metacarpus than the gaur. The width is in two cases slightly larger than that of *Bos* sp. The distal width of the metacarpi of Langhnaj is also larger, the ratio depth/width, however, lies between those of the *Bos* sp. and *Bubalus bubalis*.

The only thing that seems certain is that no *Bubalus bubalis* is present in the metacarpus samples. It seems, further more, that *Bos gaurus* is more slender than *Bos frontalis*, and that two bones of Inamgaon with a low ratio could belong to *Bubalus bubalis* domesticus, and the two other to *Bos frontalis*. The possibility that three large bones from Nevasa III with a width of 53.2; 54.2; 53.5 belonged to *Bos gaurus*, cannot be ruled out altogether. The majority of the remaining metacarpi belongs in all probability to *Bos* sp. This is also corroborated by the measurements of the recent metacarpus of *Bos indicus* in the collection of the British Museum. The measurements sometimes exceed those of the skeletons in the collection of the Royal Museum in Calcutta, and correspond with those of the measurements of the skeletons in Leiden. (Grigson, manusccript).

Pelvis

Only a few pelvis bones were collected.

Femur

The proximal and distal epiphysis of the femur are brittle and easily damaged. In butchering the femur is mostly broken up into many smaller fragments, and only a few have been collected.

Tibia

The distal end is the most frequently collected part. The measurments suggest the existence of a group of larger and smaller-sized animals (table 15).

Metatarsus

The metatarsus is, like the metacarpus, often broken up into two or three parts. The depth/width ratio was calculated for the distal epiphysis. What was surmised for the metacarpus, applies to the metatarsus as well (fig. 36). Clutton-Brock (1965) also measured the metatarsi of the animals mentioned above.

The depth/width ratio for the distal part of the bones of the prehistoric sites lies between 51.5 and 61.5 (fig. 35). One metatarsus of Navdatoli had a ratio of 64.0. The ratio of *Bos gaurus* and *Bos frontalis* lies between 59.6-63.5. The ratios of two metatarsi that may belong to *Boselaphus tragocamelus*

are 73 and 74. The ratio of a recent ♀ *Boselaphus* is actually 74.0. The ratio of *Bubalus bubalis* is 50.7. One bone from Inamgaon has a ratio that compares with that of the buffalo. The bone is, however, much smaller and could only have belonged to a domesticated animal. A metatarsus from Navdatoli and one from Kayatha, have a larger ratio than those of the others, 64.0 and 66.7. In general the evidence indicates that domestic buffalo was found in Inamgaon, and that it might be possible that *Bos gaurus* was hunted or domesticated in the west. Most of the bones seemed, however, to have belonged to *Bos taurus*.

Astragalus

The astragalus is often found in large numbers in prehistoric settlements; it is a solid bone, not easily destroyed (fig. 37). It proved difficult to distinguish between the astragalus of small *Bos* sp., *Cervus unicolor* and *Boselaphus tragocamelus*. Clutton-Brock measured six astragali of *Cervus unicolor* and three of the *Boselaphus tragocamelus*. She found that the length measurements for the two species are the same and that the ratio width trochlea/length does not differentiate them. They lie within the limits of the *Bos* sp. astragali collected at Kayatha, Navdatoli and Inamgaon. Two bones of Inamgaon and one of Kayatha I are considered to belong to *Boselaphus tragocamelus*, because their width is smaller than those of the others.

When we plot the length against the width of the trochlea in a diagram (fig. 38), a slight gap shows between 56.5 and 58.0 mm. The length of the measured astragali of the sambar and nilgai is smaller than 61.5. Clutton-Brock did not measure the astragali of the other *Bovini*. It seems that the astragalus of Nevasa III, with a length of 85.0, may have belonged to *Bos gaurus*.

In the diagram (fig. 38) the Langhnaj measurements are plotted as well. Three Langhnaj bones have a length of between 62 and 74 mm, three other bones are larger than the Wg bones, but smaller than the large astragalus from Nevasa III, which measured 85.0 mm, and is as large as the astragalus of a ♂ *Bos gaurus* of the collection of the British Museum (Nat. Hist.). We can surmise that the larger number of the astragali belonged to *Bos* sp., but that three are of *Boselaphus tragocamelus*, and a few other may be of *Cervus unicolor*, although it is not likely. The astragali of Nevasa III might belong to the wild gaur. The measurements of zebu cattle in the collection of the Royal Museum in Calcutta range from 56.6-75.4 and those of the Leiden Collection from 70.0-82.5 mm. (Grigson op. cit.).

Calcaneum

Only a small number of measurable calcanea were found. It appears that the calcanea of Nevasa III are slightly larger than those of Kayatha II, Navdatoli and Inamgaon III. Nr. 3934 of Nevasa IV is exceptionally large, and may have belonged to a wild bovid. The calcaneum of the ♂ *Bos gaurus* of the British Museum (Nat. Hist.) collection measured 175.0 mm. The measurements of zebu cattle given by Grigson are, for those in the collection of the Royal Museum in Calcutta : 99 and 111; for the specimens in the Leiden collection : 138-166; and for those of the Royal Veterinary College in London : 147-158. (Grigson op. cit.).

Phalanges I, II and III

At all sites a comparatively large number of phalanges have been discovered. Phalanges are often undamaged. It is difficult to distinguish the phalanges from fore and hind feet.

Phalanx I. At all sites phalanx I shows the same variation, only NVS 2423 '59/61 is slightly larger. INM III C 4 *4* is small. This specimen may belong to *Boselaphus tragocamelus*.

Phalanx II. The measurements of phalanx II also seem to be fairly constant.

Phalanx III. The collected phalanx III seemed more varied : large and small, sturdy and slender pieces have been found. In Kayatha II, the maximum length lies between 47 and 67 mm, in Inamgaon III, between 52.5 and 71.0 mm. It is difficult to make specific identifications, but most of them may belong to *Bos* sp.

SLAUGHTERING AGE (Table 16)

At Kayatha, one maxilla and three mandibulae were of animals younger than three years old when slaughtered. Most animals were killed when three years old or older. At Inamgaon, one mandibula was of an approximately half-year old animal, the others of animals of three years old or older. At Navdatoli, the majority of the maxillae and mandibulae collected seem to be of 3 year old and older animals; the same applies to Nevasa. It seems that most of the cattle reached maturity before being slaughtered, although the number of adult animals is possibly too high because the small, fragmented jaws of young animals might not have been collected. For determining the age at the time of death, the data are used which were given by Ellenberger and Baum (1943) for later maturing European cattle. The remains of the Indian cattle must also have belonged to late-maturing races, as Singh (1966) remarks that "under Indian village conditions, cattle are in general mature

at the age of approximately three years". This is actually also the age for the old European landraces.

TRIBE ANTELOPINE

Blackbuck or Indian antelope–*Antilope cervicapra*. The blackbuck favours open plains covered with scrubs or cultivation. It avoids dense forest. Blackbuck is essentially a culture-follower and not long ago it was still found in large numbers all over India (Schaller 1967). Although the blackbuck seems to be the most intensively hunted species since prehistory in India, it is only in the last decades that the number of animals reached nearly zero and the species is even threatened with extinction. The blackbuck ♂ is the animal most frequently depicted on Navdatoli pottery, it is part of Hindu and Buddhist art, and played an important role in the Moghul paintings. The hide of the male blackbuck was important both in the Hindu (Hubert et al. 1899) and the Buddhist religions. A torso of the well-known Buddha of Shanshi shows him wearing a blackbuck skin with the head and paws still attached to it.

An adult buck stands 80 cm at the shoulder. The females are smaller. The males carry characteristically tightly wound, straight horns. The stature of the blackbuck ♂♂ is the same as those of the spotted deer and domestic sheep and goat. The females may have the stature of a gazelle.

No skeletons of the blackbuck or gazelle were available for comparison in Poona, but skeletons seen in European museums gave me the impression that the gazelle skeleton is more slender than that of chital, sheep and goat. The blackbuck breeds at all seasons. It seems that the blackbuck is easily tamed and in Moghul art it is often depicted when being fed or led on a leash by beautiful women. One picture shows a blackbuck male adorned with brass horn-tips with streaming ribbons.

Remains of the blackbuck could be identified in all the settlements except in those of the south. The horn core was most frequently found (fig. 40a, b, c, d). Only two mandibula could be identified, one from Navdatoli and one from Nevasa III (table 15)(fig. 40e). It is possible that the bones of the blackbuck are very similar to those of sheep and goat. One proximal part of a metacarpus was found that seems more slender than that of a sheep/goat. As it was not of a deer we have to consider that it may be of a blackbuck or a gazelle. The many horn cores may have belonged to skins which were used in ritual rebirth practices (Hubert et al. 1899). The many pictures of the tamed blackbuck raise the question whether the blackbuck was ever domesticated in India, or semi-domesticated.

Chinkara or Indian gazelle—Gazella gazella

The male chinkara stands 65 cm at the whithers. It is a graceful little animal found in northwestern and central India. It lives in waste lands with scattered bush and thin jungle, and in deserts. The chinkara needs little water. Contrary to the blackbuck they are culture fleers and shun man. The chinkara breeds at all seasons. The horns of chinkara are gracefully curved. At Navdatoli two mandibulae (fig. 32b) of the chinkara were collected (table 4). The mandibula is more compact and also smaller than that of the four-horned antelope. The metacarpus mentioned above for the blackbuck could be of a gazelle. The fact that the animals shun man and live in small herds may account for the fact that they appear to have been less frequently hunted than the blackbuck.

TRIBE CAPRINI

Osteologically it is often difficult or impossible to distinguish between sheep and goat, especially when the bones are badly preserved or broken into small fragments. Boessneck, Müller and Teichert (1964) showed, however, that in a number of cases, when the bones are well preserved, it is possible to determine, with a degree of certainty, which bones belong to sheep and which to goats. Ellerman and Morrison Scott (1951) described the following differences between the skulls of wild sheep and goat.

Ovis:

5. Horns of males either in a spiral with the tips directed outwards, or bent in an arc of a circle with the tips pointing either forwards and slightly inwards, or towards each other behind the head.
6. Coronal suture projecting forward at an angle; lambdoidal suture forming a more or less straight line.
7. Lachrymal pit well-developed, or at least with its upper edge forming a distinct longitudinal ridge on the lachrymal bone.
8. Infraorbital foramen small and with a well-defined rim all around it: its diameter about equal to the length of the last upper premolar.
9. Upper ends of praemaxillae not wedged between the nasals and the maxillae.

Capra:

5. Horns scimitar-like and bent back in a more or less vertical plane, or twisted like a screw and pointing up or bent backwards over the neck in a single spiral turn with the tips pointing inwards and up.

6. Coronal suture straight; lambdoidal suture projecting forward in an angle
7. No lachrymal pit or longitudinal ridge on the lachrymal bone.
8. Infraorbital foramen large and with no well-defined rim anteriorly; its dorso-ventral diameter greater than the length of the last premolar.
9. Upper ends of the praemaxilla wedged between the nasals and the maxillae.

Ellerman and Morrisson Scott *op. cit.* recognise five species of sheep and goat each in Eurasia.

For sheep they are :

Ovis ammon, Ovis canadensis, Ovis laristanica, Ovis musimon, Ovis orientalis.

For goat they are:

Capra caucasica, Capra falconeri, Capra hircus, Capra ibex, Capra pyrenaica.

On sheep Ellerman and Morrisson Scott (op. cit.) remark that the characteristics of the four species found in Eurasia are distributed in a mosaic fashion and no one or two characteristics suffice to separate one from another. Even combining all the available characters it is difficult to draw a clear line between the reduced number of species here recognized. Perhaps it is better to consider all the sheep species as subspecies of one species.

Goat—*Capra* Linnaeus

Of the goat, three of the above-mentioned species still live in northern India. The domestic goat is spread all over the country.

Markhor—*Capra falconeri* Wagner, 1839. This species is still found in Afghanistan, Kashmir, Punjab and Baluchistan. An adult male may stand 95–100 cm at the withers according to Prater (op. cit. 1971). It has straight corkscrew-wound horns.

Ibex—*Capra ibex* Linnaeus, 1758. This species is found in Kashmir, Northern Punjab to Kumaon and in Afghanistan. It does not occur east of the river Sutlej. An adult male may reach 100 cm at the shoulder. The horns are curved like a scimitar.

Wild goat—*Capra hircus* Linnaeus, 1758. The wild goat is found in Baluchistan and Sind according to Ellerman and Morrisson Scott (*op. cit.*). A fullgrown male stands 95 cm at the withers. The horns are curved like a scimitar and have an anterior keel. In Sind the wild goat lives in small or large herds.

The last-mentioned species is considered to be the ancestor of all domestic goats. It is thought to have been first domesticated in West Asia around 10,000 B. C. (Reed 1969). Remains of sheep and goat are found in the ancient settlements of the Quetta Valley and the Loralai-Zhob region

(Fairservis 1956, 1959). It is generally accepted that these bones belonged to domesticated animals, although the wild species still live in this region as well. In the settlements of the Indus Valley culture, bones of sheep and goat were collected in small numbers. Conrad (1966) pointed out that the older bone identifications are not reliable enough to say that both sheep and goats were found. The animals that are depicted in various ways do not leave room for any doubt that the people of the Indus Valley culture kept both sheep and goat. I have not been able to ascertain how far south and east wild goat populations were found in Ancient India. The domestic goat is said to have been imported from West Asia, but it could just as well have been locally domesticated in the Western regions. If the domestic goat was imported initially, in later times it could have been cross-bred with animals from the local wild population.

Five horn cores of goat were found at Navdatoli and Nevasa. They are small and straight, with an oval cross section at the base (fig. 42a, b). One horn core at Nevasa seemed slightly twisted.

In 1961 there were approximately 60,000,000 goats in India of which 5 million were found in Maharashtra (Harbans Singh 1966).

Sheep—*Ovis* Linnaeus

Five species of sheep are recognized in Eurasia by Ellerman and Morrisson Scott :

Ovis orientalis Gwenlin, 1774; *Ovis ammon* Linnaeus, 1758; *Ovis laristanica* Nasanov, 1909; *Ovis musimon* Pallas, 1811; *Ovis canadensis* Shaw, 1804.

Of those species two are found in India.

Ovis ammon – the great Tibetan sheep or Marco Polo sheep, which is the largest known, and stands 110-120 cm at the shoulder. It may be found in Ladakh and Spiti. Its major range is, however, the Tibetan plateau. Prater (*op. cit.* 1971) describes the great Tibetan sheep as a different species, the Marco Polo sheep. Ellerman and Morrisson Scott (*op. cit.*) consider both to be one species.

Ovis orientalis –the Asiatic moufflon. According to Ellerman and Morrisson Scott this species is still found in Kashmir, Punjab and Baluchistan, but not in Sind. The animals in Ladakh reach a height at the withers of 90 cm, those of Punjab 80 cm.

Ovis aries L.—domestic sheep. Sheep are, together with the goat, the eldest known domesticated animals. *Ovis laristanica*, found in West Asia, and *Ovis orientalis* may both have been domesticated. Whether the domestic sheep were first imported, or were originally domesticated in the Punjab, is a question that cannot be answered at present. Possibly, both happened. As

stated earlier, sheep and goat were not identified in the Indus Valley culture. Their existence is, however, attested by clay figurines and depictions on pottery. Two horn cores of sheep were found in Navdatoli; they belong to one individual (fig. 41c). The horn cores are short and sturdy.

Sheep/goat—Most bones could not be identified as to species. Among the bones here described as sheep and goat there may be a few from the blackbuck. No skull bones were found. In all settlements, bones of sheep and goat were collected. It appears that in the south, where all the animal remains were found, fewer small ruminants were slaughtered than in the north. The scarcity of long bones in Kayatha seems due to a bias of the collector. The bones most frequently collected are the mandibulae. All those belonged to sheep or goat, a number were of young animals. The long bones were less frequently collected.

Scapulae—were found at Nevasa and Inamgaon.

Humerus—12 pieces were picked up at Inamgaon, two at Kodekal and two at Nevasa.

Radius and ulna—were collected only at Inamgaon.

Pelvis—there were only a few unmeasurable pelvis bones.

Femur—only a few fragments were collected at Kodekal, Navdatoli and Inamgaon.

Tibia—were primarily collected at Inamgaon.

Metacarpus—The metacarpus of the *Bovidae* can, in most cases, easily be distinguished from the *Cervidae*. To what extent they are distinguishable from those of the blackbuck is unknown to me. Those of gazelle will be smaller and more slender. A small metacarpus found at Kodekal may be of a gazelle.

Metatarsus—In Inamgaon a number of metatarsi were found of which the vascular groove was more pronounced than in the others (fig. 41d, e). There were no differences in the measurements. They could be of the blackbuck; they were, however, most likely those of sheep and goat.

Astragalus—The astragali of sheep/goat and blackbuck may prove to be difficult to separate. One astragalus collected at Navdatoli was much smaller measuring 26.5 cm. The other lengths lay between 30—32.5 Cms.

Phalanx I.—It seems that the phalanges of Inamgaon separate into three groups. Whether this is due to the small number or to the fact they are really of different species is not known with certainty. It seems, however, that they fall within the range from Nevasa. In summary, it is possible to be certain that both sheep and goat were present in prehistoric India east of the realm of the Indus Valley culture. It is impossible to say anything about

the ratio in which they were slaughtered, or the numbers in which they were kept.

The maxillae and mandibulae collected give us an insight into the slaughtering age (table 14). In Kayatha, two mandibulae were collected of animals younger than two years. In Inamgaon III, one mandibula was collected of an approximately one year-old animal, six were of animals older than two years. Of the mandibulae, 13 were of animals younger than two years. Apparently, one out of four animals was slaughtered after reaching maturity. In Nevasa, the majority of the animals were also slaughtered after reaching maturity. This seems to indicate that the animals were milked (sheep and goat) and the wool (sheep) collected. Since the bones were selectively collected this can be only a guess.

Order Lagomorpha

Fam Leporidae

Lepus nigricollis Cuvier, 1823—Indian hare or blacknaped hare.

According to Prater (1971), two subspecies of the Indian hare *Lepus nigricollis nigricollis* and *Lepus nigricollis ruficaudatus* are found in India. Ellerman and Morrisson Scott describe them as one species *Lepus nigricollis*.

Hares are still numerous in India, in cultivated areas with enough scrubs for hiding. It seems that the hare is a culture follower. In two places, the remains of hares were collected. In Kodekal a premaxilla, in Nevasa a r. mandibula, r. humerus, and r. femur. The mandibula was discovered in the weathered zone, the humerus and femur in period V.

In Europe the hare became more abundant during the Bronze and Iron Ages when man destroyed more and more of the forests. Until more evidence is available it is difficult to say whether something similar happened in some parts of India.

Order Rodentia

Fam. Hystricidae

Hystrix indica Kerr, 1972—Indian porcupine. The Indian porcupine is a large mammal that can reach a length of 70-90 cms (without tail). It is a large rodent found all over India from Cape Comorin and Ceylon to the Himalayas. The animal favours rocky hill sides, but can adapt itself to any type of country. In the daytime, it takes shelter in caves, or in burrows dug by itself. The burrows have a gallery and a chamber that are up to 150 cm below ground level. We should remember those burrowing habits of the

porcupine when we find the remains of porcupines in prehistoric settlements. In Nevasa two fragments of a mandibula were found (fig. 12).

Fam. Murinae

Genus *Rattus* Fisher, 1803

Rattus rattus Linnaeus, 1758. Wild rats originally occurred in Asia, parts of India, Ceylon, the Himalayan foot-hills, etc. The rat was spread over large parts of the world by human beings. In India the wild species is white, the communal dark. A species with a world-wide distribution as the rat has many races, but it is difficult to divide the species in well-defined races.

A number of the rodent bones collected may be of rats. Rats have burrowing habits. It seems that in the plains they favoured the dwelling mounds of human beings for digging holes and obtaining food. In Kodekal four long bones were found. A humerus 758 2(4) is probably of a rat, the proximal epiphysis was not yet fused with the shaft. Three femurs were collected. Nr. 755 2(4)is only a diaphysis; the epiphyses had not yet fused and were lost. The bone is larger than that of a recent rat in the Poona collection. The proximal part of a second femur was found. This specimen is smaller than that of the recent rat. The third femur was only a fragment. At Nevasa, a large number of rodent remains were collected from the levels III, V and VI. They represent more than one species. A number of bones may be of *Rattus* sp., although the measurements are slightly larger than those given by Ellerman (1961). A skull fragment and five mandibulae also belong to this group.

Bandicota indica Bechstein/Dacnomys ? 1800. Three mandibulae in Nevasa belong to a second group of animals which are much larger than the rat. They may belong to the bandicoot rat, which species is found in Ceylon and in Peninsular India, north upto Kathiawar. Like the rat, the bandicoot rat is found where human beings live.

cf. *Rhizomus sumatrensis* Raffles, 1821—large Bamboo rat. A skull found in Nevasa, is much larger than that of a rat. When compared with the skulls depicted by Ellerman (1961), it had the same dimensions as those of *Rhizomus sumatrensis*, at present not found further west than Burma.

Unidentified rodent

Five bones from small rodents found in Nevasa could not be identified as to species.

AVES—birds

Bird bones are, in general, lightly built, small, and easily damaged. Owing to this, only a few bird bones could be collected. This is regrettable, since bird remains especially can tell us much about the environment of a settlement.

India may be the country where fowl and peacock were first domesticated. Of both domestic birds the wild parent species *Gallus gallus* L. and *Pavo cristatus* L. still live in India.

Gallus gallus Linnaeus—red jungle fowl. The wild red fowl is found in northern India, in the Himalayan foot-hills as far as eastern Assam, and south to the Godavari river in eastern Madhya Pradesh. The red jungle fowl lives at the edge of the forest and comes out in the early morning and the afternoon to feed in the fields.

Clay statues of the domestic and probably of the wild fowl were found in Harappa, and there was also a fowl depicted on a sherd. According to Conrad (1968) the clay figures portray domestic animals, the one on the sherd a wild animal. Remains of the domestic fowl were found in Nevasa VI, which belonged to a large animal. (fig. 43).

Pavo cristatus Linnaeus—common peafowl. The wild peacock is still found in many parts of India today. The bird lives in dense scrub, and deciduous jungle, preferably in the neighbourhood of rivers and streams(Salim Ali 1968). The peacock motif was already used on a large scale by the Indus Valley culture. In Navdatoli also, the peacock was the bird most frequently depicted on the pottery. Here we find a large variety of displayingand non displaying peacocks (fig. 8D).

According to Conrad, one of the femora found at Harappa and described as domestic fowl, belongs to a peacock. Basham (1966) mentioned that the peacock was originally a food animal. It was the favourite dish of the Emperor Asoka, before he became a vegetarian. In the Middle Ages there were villages of peacock rearers, who supplied the birds to the king and other important people.

Aves sp.—Bones of other species were found at Kodekal and Nevasa, but could not be identified. An ulna of a small bird and a claw of a large bird were found in Nevasa V and Nevasa W. What seems to be a fragment of a skull was found in Nevasa IV. Another ulna was found in Nevasa ? and a tibiotarsus in Nevasa V. In Kodekal a metacarpus of a bird, the size of a fowl or duck was found.

REPTILIA—reptiles

Only few remains of reptiles were collected. The most conspicuous are those of the tortoises. It seems that the large crocodiles were not hunted although even at present they still live in a number of rivers and along seashores.

Tortoise

In several settlements the carapaces of tortoises were found. At least three species are present. Both Nath and Shah mention three species of which the remains were found in prehistoric settlements.

PISCES—Fish

Only a few fish bones were collected. Fish bones are mostly small and brittle, and they can be easily overlooked, although the bones of the large carp and catfishes must have been rather conspicuous. In Kodekal, where all the bones were collected, 4 fish bones were found. In Nevasa V the rays of the dorsal fins of three small ciprinides were found, in Nevasa '59/61 the jaw of a large fish. In Navdatoli a finray and some vertebrae that could not be identified.

At present, several carp and catfish species are among the most frequently caught fresh-water fish in the Indian rivers and tanks. Chandy (1970) reports that at present catfishes and carp constitute about 64 per cent of the fresh-water fish of India and are very important as a food. Also in ancient India, where the earliest settlements are found along the rivers, fish was, in all probability, an important constituent of the diet. According to Ansari (pers. comm.), Robur or *Tambda masa* (carp), *Labeo rohita* and Singala (catfish), *Mystus seenghala*, as well as a few other species were among the species caught in the river during the excavation campaign of Inamgaon.

MOLLUSCA—Molluscs

Although few molluscs were collected, in prehistoric Inamgaon, in particular, a river mussel (unidentified) must have been an important part of the daily diet.

Conclusion

From the earliest times, the inhabitants of the prehistoric and early historic settlements of the Shorapur Doab, Navdatoli, Nevasa, Inamgaon and Kayatha, kept the five domestic animals known at that time : cattle, sheep, goat, pig and dog. In later periods, the horse, the donkey, and poultry were added. The remains of cattle were the most frequently collected by the excavators. Those of pigs were collected only in small numbers, except in Navdatoli. The small ruminants (sheep and goat) take second place, except for the microlithic settlement of Bagor (Misra 1971) in Rajastan, where Thomas (1975) found that in the oldest layers sheep and goat dominated, as they did in the settlements in Baluchistan and the Loralai-Sind region. Animal proteins were not only obtained from domestic animals but also from wild ones. The sambar, chital, chinkara, blackbuck and nilgai were hunted, as well as smaller and larger carnivores.

It is not yet possible to obtain a clear picture of the stockbreeding and hunting practices of the settlements investigated, but there is little doubt that in the farming communities stockbreeding was practised alongside plant cultivation.

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TABLES & FIGURES

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Site	State	Phase	Culture/Period	Date
Kayatha	Rajashan	III	Jorwe	1500-1300 B.C.
		II	Malwe	1700-1500 B.C.
		I	Harappa	2000-1800 B.C.
Navdatoli	Madya Pradesh	I-4	Chalcolithic	1600-1400 B.C.
Nevasa (1955-'56)	Maharastra	VI	Moslim-Maratha	1400-1700 A.D.
		V	Indo-Roman	100-300 A.D.
		IV	Early Historic	300 B.C. - 100 A.D.
		III	Chalcolithic	1300-1000 B.C.
Nevasa (1959-'61)			Jorwe	1300-1000 B.C.
Inamgaon	Maharastra	III	Late Jorwe	1100-800 B.C.
		II	Early Jorwe	1300-1100 B.C.
		I	Malwe	1600-1300 B.C.

Table 1. The approximate duration of the habitation phases of Kayatha, Navdatoli. Nevasa and Inamgaon.

	KODEKAL, trench 1																															
	Bos sp.		Capra/Ovis		trench 2[xx]		Lepus sp.		Rodentia indet.		Rattus sp.		Canis familiaris		Sus sp.		Deer		Bos sp.[x]		Capra/Ovis		Avis indet.		Piscis indet.		surface find[xxx]		HALLUR		KANNEKOLUR		Cervus duvaucelii/ Axis axis		Bos/Cervus		Bos sp.		EUDIKAL		Bos sp.		TIRTH		Bos sp.		Capra/Ovis		KUPI		Bos sp.	
Skull	.		.				.		.		.		.		.		.		3	()	.		.		.		2		.		.		.		.		.		.		.		.		.		.	
Maxilla + praemaxilla	.		.				1		.		.		.		.		.		5	()	1		.		.		.		.		.		.		.		.		.		.		.		.	
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Mandibula	1		.				.		.		.		.		1		.		4	()	3		.		.		2		()		.		1		1		3		1		.		2	
Teeth mandibula	.		.				.		.		.		.		1		.		10		.		.		.		1		.		.		.		.		1		.		.		.	
Atlas	1		.				.		.		.		.		.		.		.		.		.		.		.		.		.		.		.		.		.		.		.	
Epistropheus	.		.				.		.		.		.		.		.		1		.		.		.		.		.		.		.		.		.		.		()		.	
Vertebrae	1		.				.		.		.		2		.		.		(1)		2		.		.		(9)		(1)		1		.		.		(1)		(1)		.		.	
Ribs	4		.				.		.		.		.		.		.		(6)		.		.		.		(6)		.		.		.		.		.		.		.		.	
Scapula	.		.				.		.		.		.		.		.		1		2	()	.		.		.		.		.		.		.		2		.		.		.	
Humerus	.		.				.		.		1		.		.		.		(6)		3		.		.		4		1		1		.		1		(2)		1		.		1	
Radius	1		.				.		.		.		(1)		.		.		4	()	.		.		.		.		.		.		.		3		4		.		.		.	
Ulna	.		.				.		.		.		.		.		.		5		.		.		.		1		.		.		.		1		1		.		.		.	
Metacarpus	1		.				.		.		.		.		.		.		4		1		1		.		2		.		.		.		1		3		.		.		.	
Pelvis	.		.				.		.		.		.		.		.		4	()	1	(0)	.		.		2	(0)	.		.		.		3		.		.		.		1	
Femur	.		1		.		2		1		(0)		1		.		.		4	(0)	1	(0)	.		.		1		.		.		.		.		3		(0)		.		.	
Patella	.		.				.		.		.		.		.		.		1		.		.		.		.		.		.		.		.		.		.		.		.	
Tibia	.		.				.		.		.		.		1		(0)		1	(2)	1	(0)	.		.		.		.		.		.		1		3		.		.		.	
Centrotarsale	.		.				.		.		.		.		.		.		1		.		.		.		.		.		.		.		.		.		.		.		.	
Calcaneum	.		.				.		.		.		.		.		.		.		(0)		.		.		1		.		.		.		1		2		.		.		.	
Astragalus	.		.				.		.		.		.		.		.		3		.		.		.		(3)		2		.		.		1		2		2		.		1	
Metatarsus	.		.				.		.		.		.		.		.		1		.		.		.		1		.		.		.		.		8		1		.		.	
O.carpi/tarsi	.		.				.		.		.		.		.		.		4		.		.		.		2		.		.		.		.		.		.		.		.	
Metacarpus/-tarsus	.		.				.		.		.		.		.		.		3	(9)	.		.		.		2		.		.		1		1		1		1		.		1	
Phalanx 1	.		.				.		.		(1)		.		.		.		1		(2)		.		.		.		.		.		.		.		3		1		.		.	
Phalanx II	.		.				.		.		.		.		.		.		3		.		.		.		1		.		.		.		.		.		.		.		.	
Phalanx III	.		.				.		.		.		.		(1)		.		3		.		.		.		1		.		.		.		.		.		.		.		.	

Table 2. A survey of the distribution of the bones collected from the ash-mounds.

() Identification is not certain.

[x] Long bones of young animals probably belonging to Bos (nr. 351.2 , 797 2 not included).

[xx] One unidentified vertebrae, three unidentified rib fragments, seven unidentified fragments. Two vertebrae of a small animal, probably not a mammal.

[xxx] Twelve unidentified fragments.

	I			II				Antilope cervicapra	II - III			III					IV			Antilope cervicapra	Cervus sp.		
	Bos sp.	Capra/Ovis		Capra/Ovis	Bos sp.	Deer			Bos sp.	Capra/Ovis		Canis sp.	Sus sp.	Deer	Bos sp.	Capra/Ovis	Sus sp.	Bos sp.				Bos sp.	Capra/Ovis
Hornacore/antler	.	.		.	1	1		1	.	.		.	.	.	3	.	.	1		2		1	.
Maxilla	.	.		.	9	.		.	3	.		.	.	.	6	.	.	.		.		1	1
Teeth maxilla	.	.		.	2	.		.	.	.		.	.	.	6	2	1	1		2		1	.
Mandibula	4	.		.	12(1)	.		.	9	1		.	.	.	.	.	.	.		.		.	.
Teeth mandibula	1	.		.	2	.		.	1	.		.	.	.	1	.	.	.		.		.	.
Atlas	.	.		.	.	.		.	1	.		.	.	.	2	.	.	.		.		.	.
Epistropheus	.	.		.	1	.		.	.	.		.	.	.	2(1)	.	.	1		.		0)	.
Vertebrae	.	(1)		(2)	7(1)	.		.	(6)	.		.	.	.	(9)	.	.	.		.		.	.
Ribs	.	.		.	(9)	.		.	(9)	.		.	.	.	3(1)	.	.	.		.		.	.
Scapula	.	.		.	.	.		.	.	.		.	.	.	4	.	.	1		.		1	.
Humerus	(1)	.		.	3	.		.	3	.		1	.	(1)	6	1	1	3		1		.	.
Radius	.	.		.	8	.		.	4	.		.	.	.	.	.	.	1		.		.	.
Ulna	.	.		.	1	.		.	.	.		.	.	.	6	.	.	2		1		.	.
Metacarpus	.	.		.	12	.		.	4	.		.	.	.	2	.	.	.		.		.	.
Pelvis	1	.		(1)	10	.		.	.	.		.	.	.	1	.	.	.		.		.	.
Femur	.	.		.	4	.		.	2	.		.	1	.	1	.	.	1		.		.	.
Patella	.	.		.	.	.		.	1	.		.	.	.	2	.	.	1		.		.	.
Tibia	.	1		.	3	.		.	1	.		.	.	.	.	.	.	1		.		.	.
Centrotarsale	.	.		.	2	.		.	.	.		.	.	.	1	.	.	1		.		.	.
Calcaneum	.	.		.	7	1		.	1	.		.	.	.	6	.	.	.		.		.	.
Astragalus	.	.		.	15	.		.	1	.		.	.	1*	2	.	.	1		3		.	.
Metatarsus	1	.		.	15	.		.	.	.		.	.	.	.	.	.	.		.		.	.
O.carpi/tarsi	.	.		.	8	.		.	.	.		.	.	.	12	.	.	4		.		2	.
Metacarpus/-tarsus	.	.		.	.	.		.	4	.		.	.	.	6	.	.	.		.		1	.
Phalanx I	1	.		.	14	.		.	6	.		.	.	.	4	.	.	.		.		.	.
Phalanx II	.	.		.	7	.		.	1	.		.	.	.	.	.	.	.		.		.	.
Phalanx III	.	.		.	10	.		.	.	.		.	.	.	.	.	.	.		.		.	.

Table 3. A survey of the distribution of the bones collected from Kayatha.

() Identification is not certain.

* Cervus cf. duvauceli.

	Rattus sp.	Rodentia indet.[x]	Equus caballus	Equus asinus[xx]	Sus sp.	cf Axis axis	cf Axis porcinus	Deer	Boselaphus tragocamelus	Bos sp.	Bubalus bubalis	Antilope cervicapra	Gazella gazella	Capra hircus	Ovis aries	Capra/Ovis	Reptilia indet.	Pisces indet.	Indet.	Homo sapiens
Horncore/antler	.	.	.	.	.	3	.	20	4	24	4	5	.	3	2	.	.	.	.	.
Maxilla	.	.	.	.	21	.	(1)	.	.	42	.	.	.	.	.	7 (2)	.	.	.	.
Teeth maxilla	.	.	.	.	.	.	.	.	.	23	.	.	.	.	.	1	.	.	.	.
Mandibula	.	.	.	3	47	.	.	.	(2)	82 (3)	.	(2)	2	.	.	55 (5)	.	.	.	1
Teeth mandibula	.	.	.	.	5	.	.	.	.	21	.	.	.	.	.	10	.	.	.	.
Vertebrae	.	.	.	.	.	.	.	.	.	(7)	.	.	.	.	.	.	.	.	2 xxx	.
Scapula	.	.	.	.	.	.	.	.	.	(1)	.	.	.	.	.	.	.	.	.	.
Humerus	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.
Radius	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Metacarpus	skeletal parts of 2 individuals	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Pelvis		2	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Femur		—	.	.	.	.	.	.	.	2	.	.	.	.	.	2 xxxx	.	.	.	.
Tibia		—	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centrotarsale		.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Calcaneum		.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.
Astragalus		.	.	.	.	.	.	.	.	7	.	.	.	.	.	—	.	.	.	.
Metatarsus		.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	8 fragments	.	.	.
Phalanx I		.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	1 worked bone	.

Table 4. A survey of the distribution of the bones collected at Navdatoli.

() Identification is not certain.

[x] Rodent, larger sized than a rat.

[xx] This bone probably does not belong to the site.

[xxx] Small animal, larger than middle sized rodent.

[xxxx] According to Shah (1971) 4 pieces belong to Chitra indica, 1 to Lissemy punctata, 1 to Tronyx gangeticus, 1 is indeterminable.

	Histrix indica	Rattus sp.	Rodent B[x]	Canis/Cuon	Large carnivore	Small carnivore	Equus caballus	Sus sp.	Cervus cf unicolor	Deer[xx]	Tetracerus quadricornis	Boselaphus tragocamelus	Bos sp.	Bubalus bubalis	Antilope cervicapra	Capra hircus	Capra/Ovis	Canis familiaris	Pisces indet.
Horncore/antler	.	.	.	.	.	.	.	.	.	10	.	1	4	1	9	2	.	.	.
Maxilla	.	.	.	.	.	.	.	.	.	.	1	.	38	.	.	.	6	.	.
Teeth maxilla	.	.	.	.	.	.	1	.	.	.	.	.	38	.	.	.	5	.	.
Mandibula	1	.	1	3	.	1	.	2	.	1	1	(0)	. 47	(0)	.	2	.	26	.	1
Teeth mandibula	.	.	.	.	.	.	.	.	.	.	.	.	. 24	(0)	.	(0)	.	(0)	.	.
Epistropheus	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Vertebrae	.	.	.	.	.	.	.	.	.	.	.	.	.	(2)	.	.	.	.	.	.
Ribs	.	.	.	.	.	.	.	.	.	.	.	.	.	(3)	.	.	.	.	.	.
Scapula	.	.	.	.	.	.	.	.	.	.	.	.	. 4	(0)	.	.	.	.	.	.
Humerus	.	.	.	(1)	.	.	1	.	.	.	.	.	. 16	(0)	.	.	.	.	(1)	.
Radius	.	.	.	.	.	.	.	.	1	.	.	.	.	4	.	.	.	.	.	.
Ulna	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Metacarpus	.	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.	.	1	.	.
Pelvis	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Femur	.	.	.	.	.	.	.	.	.	.	.	.	. 2	(0)	.	.	.	.	.	.
Tibia	.	1	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
Calcaneum	.	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.	.	1	.	.
Astragalus	.	.	.	.	.	.	.	.	.	(1)	.	.	. 10	.	.	.	.	1	.	.
Metatarsus	.	.	.	.	1	.	.	.	.	.	.	.	.	7	.	.	.	4	.	.
O.carpi/tarsi	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.
Metacarpus/-tarsus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phalanx I	.	.	.	.	.	.	.	.	.	.	.	.	.	7	.	.	.	.	.	.
Phalanx II	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
Phalanx III	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.

Table 5. A survey of the distribution of the bones collected at Nevasa during the campaign of 1959-1961.

() Identification is not certain.

[x] Bandicota indica/daenomys.

[xx] Are possibly not all of the same species.

3 Worked bones, 1 bone disc nom. diam. 31.5 mm, 1 bone point, 1 antler die, 1 piece of ivory (waste piece).

	Rodent A	cf Rattus	Canis familiaris	Vulpes sp.	Small carnivore	Equus caballus	Sus sp.	Cervus sp.	Cervus cf unicolor	Boselaphus tragocamelus	Bos sp.	Antilope cervicapra	Capra/Ovis	Gallus gallus	Bos/Bubalis
Horncore/antler	.	.	.	.	.	.	.	1	3	1	30)	2	.	.	.
Skull	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Maxilla	.	.	2	.	.	.	1	.	.	.	17	.	6	.	.
Teeth maxilla	.	.	.	.	.	.	.	.	.	.	33	.	4	.	.
Mandibula	2	.	.	1	1	.	.	.	.	.	21	.	12	.	.
Teeth mandibula	.	.	.	.	.	.	.	1	.	.	41	.	2	.	.
Atlas	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.
Epistropheus	.	.	.	.	.	.	.	.	.	.	10)	.	1	.	1
Vertebrae	.	.	.	.	.	.	.	.	.	.	03)	.	.	.	.
Ribs	.	.	.	.	.	.	.	.	.	.	(2)	.	.	.	.
Scapula	.	.	.	.	.	.	.	.	.	.	3	.	2	.	.
Humerus	.	.	.	.	.	1	.	(1)	.	.	4(3)	.	1	.	.
Radius	.	.	1	.	.	.	.	.	.	.	3	.	.	.	.
Ulna	.	.	.	.	.	.	.	.	.	.	4	.	.	.	.
Metacarpus	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Pelvis	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.
Femur	.	1	.	.	.	.	.	.	.	.	3	.	.	1	.
Tibia	.	.	.	.	.	.	.	.	.	.	2	.	3	.	.
Tibio-tarsus	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Calcaneum	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.
Astragalus	.	.	1	.	.	.	.	.	.	.	3	.	2	.	.
Metatarsus	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.
Phalanx I	.	.	.	.	.	.	.	.	.	.	7	.	4	.	.
Phalanx II	.	.	.	.	.	.	.	.	.	.	7	.	.	.	.

Table 6. A survey of the distribution of the bones of Nevasa, phase III (1955-1956).
() Identification is not certain.

	cf Hactus	Canis familiaris	Felis sp.	Equus caballus	Sus sp.	Cervus cf unicolor	Bos sp.	Antilope cervicapra	Capra/Ovis
Horncore/antler	.	.	.	.	.	2	2	2	.
Maxilla	parts of 1 skeleton	.	.	.	.	.	6	.	6
Teeth maxilla		1	1	1	1	.	9	.	3
Mandibula		.	.	.	.	.	9	.	6
Teeth mandibula		.	.	.	.	.	13	.	.
Atlas		.	.	.	.	.	1x	.	.
Epistropheus		.	.	.	.	.	2x	.	1
Vertebrae		.	.	.	.	.	1	.	(1)
Ribs		.	.	.	.	.	Ø	.	.
Scapula		.	.	.	.	.	3	.	.
Humerus		.	.	.	.	.	2	.	.
Radius		.	.	.	.	.	.	(1)	.
Metacarpus		.	.	.	.	.	1	(1)	.
Pelvis		.	.	.	.	.	10	.	.
Femur		.	.	.	.	.	1x	.	.
Astragalus		.	.	.	.	.	3	.	2
Metatarsus		.	.	.	.	.	3	.	1
Phalanx I		.	.	.	.	.	3	.	.
Phalanx II		.	.	.	.	.	1	.	.
Phalanx III		.	.	.	.	.	.	.	3

Table 7. A survey of the distribution of the bones of Nevasa, layer W (1955-1956).

() Identification is not certain.

x Large piece, probably Bubalus.

	Elephas maximus	Sus sp.	Cervus cf unicolor	Bos sp.	Antilope cervicapra	Capra/Ovis	Gallus gallus	Aves indet.	Reptilia indet.	Pisces indet.	Ruminant
Horncore/antler	.	.	2	.	2	.	.	1	.	.	.
Skull	.	.	.	.	.	.	.	.	.	.	.
Maxilla	1	1	.	4	.	3	.	.	.	.	.
Teeth maxilla	.	.	.	15	.	1	.	.	.	.	1xx
Mandibula	.	.	.	8	.	11	.	.	.	.	2
Teeth mandibula	.	1(1)	.	19	.	(3)	.	.	.	.	1
Atlas	.	.	.	2	.	.	.	.	.	.	.
Vertebrae	.	.	.	4	.	1	.	.	.	.	.
Ribs	.	.	.	(1)	.	.	.	.	.	.	.
Humerus	.	.	.	2	.	1	1	.	.	.	.
Radius	.	.	.	1	.	.	.	.	.	.	.
Metacarpus	.	.	.	1x	.	.	.	.	.	.	.
Pelvis	.	.	.	1	.	.	.	.	.	.	.
Femur	.	.	.	2	.	.	.	.	1 fragment tortoise	.	.
Calcaneum	.	.	.	2	.	.	.	.	.	1 fragment	.
Metatarsus	.	.	.	1	.	1	.	.	.	.	.
O.carpi/tarsi	.	.	.	1	.	.	1	.	.	.	.
Phalanx I	.	.	.	1	.	.	.	.	.	.	.
Phalanx II	.	.	.	(1)	.	.	.	.	.	.	.
Phalanx III	.	.	.	.	.	.	.	.	.	.	.

Table 8. A survey of the distribution of the bones of Nevasa, phase IV (1955-1956)

() Identification is not certain.

x Large piece probably Bubalus.

xx Ruminant with the size of small Bos taurus.

	Lepus sp.	Small rodent A	cf Rattus	Small rodent	Canis familiaris	Felis sp.	Equus sp.	cf Rhinoceros	Sus sp.	Cervus sp.	Deer	Cervus cf unicolor	Bos sp.	Antilope cervicapra	Capra hircus	Capra/Ovis	Aves indet.	Reptilia indet.	Pisces indet.
Horncore/antler	.	.	.	.	.	.	.	.	.	.	.	1	.	6	1	.	.	.	.
Skull	.	.	.	1	.	.	.	.	.	.	.	.	3	.	.	2	.	.	.
Maxilla	.	.	.	.	1	.	.	.	.	.	.	.	12	.	.	3	.	.	.
Teeth maxilla	.	3*	.	.	.	.	.	.	.	.	.	.	1	.	.	21	.	.	.
Mandibula	.	.	.	.	.	1	1	.	2	.	.	.	4	.	.	1	.	.	.
Teeth mandibula	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Atlas	.	.	1**	.	.	.	.	.	.	.	.	.	9	.	.	.	.	.	.
Vertebrae	.	.	+	.	.	.	.	.	.	.	.	.	9	.	.	.	.	.	.
Ribs	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Scapula	.	1+1	.	.	.	.	.	1	.	1	.	.	2	.	.	.	.	.	.
Humerus	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Radius	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ulna	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.
Metacarpus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pelvis	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Femur	1	.	.	.	.	.	.	.	2	.	.	.	1	.	.	.	.	.	.
Tibia	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Tibio-tarsus	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Centrotarsale	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Calcaneum	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Astragalus	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.	1	.	.	.
Metatarsus	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
Phalanx I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.
Phalanx II	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
																	4 fragments	3 fragments	

Table 9. A survey of the distribution of the bones of Nevasa, phase V (1955-1956).

() Identification is not certain.

* Rodent larger than a rat.

** Probably 1 individual.

	Small rodent*	cf Rattus	Sus sp.	Cervus cf unicolor	Bos sp.	Antilope cervicapra	Capra/Ovis	Gallus gallus
Horncore/antler	.	.	.	1	.	2	.	.
Skull	.	1	.	.	.	.	.	.
Teeth maxilla	.	.	.	.	2	.	2	.
Mandibula	1	.	2	.	.	.	2	.
Teeth mandibula	.	.	.	.	.	.	1	.
Ribs	.	.	.	.	(1)	.	.	.
Humerus	.	.	.	.	.	.	.	1
Radius	.	.	.	.	.	.	.	1
Ulna	.	.	.	.	.	.	.	1
Tibio-tarsus	.	.	.	.	.	.	.	1
Tarso-metatarsus	.	.	.	.	.	.	.	1
Phalanx I	.	.	.	.	1	.	.	.

Table 10. A survey of the distribution of the bones of Nevasa, phase VI (1955-1956).

() Identification is not certain.

* Dacomys/Bandicota.

	Rodent indet.	Rodent indet.*	cf Hatius	Rodent (small) indet	Rodent (large) indet	Canis familiaris	Felis sp.	Equus sp.	Sus sp.	Cervus sp.	Cervid (small)	Cervus cf unicolor	Bos sp.**	Antilope cervicapra	Capra/Ovis
Horncore/antler	.	.	—	.	.	—	.	.	.	1	.	1	1	2	.
Skull	.	—	—	.	.	—	.	.	.	.	.	.	.	.	.
Maxilla	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
Teeth maxilla	.	.	.	.	.	.	.	2	.	.	.	.	15	.	.
Mandibula	.	.	.	.	.	.	1	.	2	.	.	3	10)	.	8
Teeth mandibula	.	.	.	.	.	.	.	.	1	.	.	.	7	.	5
Atlas	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Epistropheus	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Ribs	.	.	.	.	.	.	.	.	.	.	.	.	Ø	.	.
Scapula	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Humerus	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
Radius	.	.	.	.	.	.	.	.	.	.	.	.	10)	0)	.
Metacarpus	.	.	.	.	.	.	.	.	.	.	.	.	2	0)	.
Femur	—	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Tibia	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Astragalus	.	.	.	.	.	.	.	.	.	.	1	.	1	.	.
Metatarsus	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Metacarpus/-tarsus	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.

Table 11. A survey of the distribution of the bones of Nevasa, dating not certain.

() Identification is not certain.

* cf Rhizomys sumatrensis.

** Skull fragment, mandibula, 3 teeth of 1 very young individual.

	Canis familiaris	Equus caballus	Rhinoceros*	Sus sp.	Axis axis	Cervus unicolor	Tetracerus quadricornis	Boselaphus tragocamelus	Bos sp.	Antilope cervicapra	Capra/Ovis	Reptilia indet.	Mollusca indet.
Horncore/antler	.	.	.	.	1(1)	.	2	.	8(1)	27	.		
Skull	2	.	.	.	.	.	.	.	4(2)	.	(2)		
Maxilla	.	.	.	.	.	.	.	.	5	.	2		
Teeth maxilla	.	1	.	.	.	.	.	.	7(8(1)	.	1		
Mandibula	2	.	.	.	(1)	.	.	.	2(2(8(1)	2	20		
Teeth mandibula	.	.	.	.	.	.	.	.	50	.	2		
Atlas	.	.	.	.	.	.	.	.	1	.	.		
Epistropheus	.	.	.	.	.	.	.	.	9	.	2		
Vertebrae	.	.	.	(1)	.	.	.	.	(54)	.	4		
Ribs	.	.	(1)	.	.	.	.	.	(33)	.	.		
Scapula	.	.	.	.	.	.	.	.	15(1)	.	7		
Humerus	2	.	.	.	.	1	.	.	19	.	16		
Radius	.	.	.	.	.	1	.	.	14	.	3		
Ulna	.	.	.	.	.	.	.	.	2(1)	.	1		
Metacarpus	.	.	.	.	.	.	.	1	39	.	10		
Pelvis	.	.	.	2	.	.	.	.	12(7)	.	.		
Femur	.	.	.	.	.	.	.	.	9(3)	.	5(1)		
Patella	.	.	.	.	.	.	.	.	2	.	.		
Tibia	.	.	.	.	.	.	.	.	17	.	10(3)		
Centrotarsale	.	.	.	.	.	.	.	.	5	.	.		
Calcaneum	.	.	.	.	.	.	.	.	29	.	16		
Astragalus	.	.	.	.	.	.	.	.	46	.	4		
Metatarsus	.	.	.	.	.	.	.	2	28	.	21		
O.carpi/tarsi	.	.	.	.	.	.	.	.	4	(1)	.		
Metacarpus/-tarsus	.	.	.	.	.	.	.	.	18	.	7		
Phalanx I	.	.	1	.	.	(1)	.	(1)	62	.	11		
Phalanx II	.	.	1	.	.	.	.	.	32	.	.		
Phalanx III	.	.	.	.	.	.	.	.	30	.	.		
												7 fragments of a tortoise	Bivalves, 2 species; snail, 1 species

Table 12. A survey of the distribution of the bones collected from Inamgaon.

() Identification is not certain.
Some bones of Homo sapiens.

* Fragment of heavy long bone from Rhinoceros or Elaphus.

	Ash-mounds						Dwelling-mounds																	
MAMMALIA																								
Canidae																								
Domestic Dog - *Canis familiaris* L.																								
Indian Fox - *Vulpes bengalensis* Shaw																								
Dhole - *Cuon alpinus* Pallas	3	.	.	.	.	.	.	.	.	1	.	6	3	4	.	4	.	1	.	.	1			
Wolf - *Canis lupus* L.																								
Jackal - *Canis aureus* L.																								
Felidae																								
Domestic Cat - *Felis domesticus* L.																								
Leopard Cat - *Felis bengalensis* Kerr	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1	.	1	1	.	1			
Desert Cat - *Felis libyca* Forster																								
Elephantidae																								
Indian Elephant - *Elephas maximus* L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.			
Rhinocerotidae																								
Great one horned Rhinoceros - *Rhinoceros unicornis* L.	.	.	.	.	.	.	.	.	.	.	.	.	.	(3)	.	.	.	.	.	.	.			
Equidae																								
Domestic Horse - *Equus caballus* L.	.	.	.	.	.	.	.	.	.	.	1	2	2	1	.	2	.	.	.	.	.			
Donkey - *Equus asinus* L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	2			
Asiatic Wild Ass - *Equus hemionus* Khur Lesson	.	.	.	.	.	.	.	.	.	.	4	.	1	.	.	1	.	.	.	.	.			
Suidae																								
Indian Wild Boar - *Sus scrofa cristatus* Wagner	4	.	.	.	.	.	.	.	.	1	73	3	2	1	2	2	2	6	2	2	3			
Domestic Pig - *Sus scrofa domesticus*																								
Cervidae																								
Chital - *Axis axis* Erxleben	.	.	.	.	.	.	.	.	.	.	3	.	.	8	.	.	.	.	.	.	.			
Sambar - *Cervus unicolor* Kerr	(1)	.	.	.	.	.	.	2	.	1	20	3 2	1 11	(6)	2	2	2	1 2	1	1	4	2		
Swamp Deer - *Cervus duvauceli* G. Cuvier																								
Bovidae																								
Fourhorned Antilope - *Tetracerus quadricornis* Blainville	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	.	.	.	.	.	.			
Nilgai - *Boselaphus tragocamelus* Pallas	.	.	.	.	.	.	.	.	.	.	4	1	1	3	.	.	.	.	.	.	.			
Domestic Cattle - *Bos taurus* L.	106	4	17	39	7	6	8	149	42	76	217	166	225	570	19	51	65	32	3	.	47			
Domestic Bufalo - *Bubalus bubalis domesticus* L.	.	.	.	.	.	.	.	.	.	.	4	.	1	x	.	.	.	.	.	.	.			
Blackbuck - *Antilope cervicapra* L.	.	.	.	.	.	.	.	1	.	.	5	2	11	270)	2	2	2	6	2	.	2			
Chinkara - *Gazella gazella* Pallas	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.			
Goat - *Capra hircus* L.	.	.	.	.	.	.	.	.	.	.	3	.	2	.	.	.	.	1	.	.	.			
Sheep - *Ovis aries* L.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.			
Sheep/Goat - *Ovis/Capra*	16	.	.	.	.	.	1	.	1	3	76	37	42	131	1	22	18	33	5	150)	13			

	Kodekal	Mallur	Kammekolur	Budikal	Tirth	Kupi	Kayatha I	Kayatha II	Kayatha II/III	Kayatha III	Navdatoli	Nevasa III ('55, '56)	Nevasa ('59, '61)	Inamgaon	Kayatha IV	Nevasa V	Nevasa IV	Nevasa V	Nevasa VI	Kayatha?	Nevasa?
Leporidae																					
Indian Hare - Lepus cf. nigricollis Cuvier	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.
Hystricidae																					
Indian Porcupine - Hystrix indica Kerr	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Muridae	2	.	.	.	.	.	.	.	.	.	2[x]	1	1	.	.	1[x]	.	3	7	.	1
Rat - cf. Rattus sp.	2	.	.	.	.	.	.	.	.	.	4	3	1	.	.	.	.	4	1	.	3+2[x]
Rodent indet.																					
AVES																					
Galinae																					
Domestic Fowl - Gallus gallus domesticus L.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	2	.	5	.	.
Wild Fowl - Gallus gallus L.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.
Aves																					
REPTILIA	.	.	.	.	.	.	.	.	.	.	8	.	.	8	.	.	1	4	.	.	.
PISCES																					
Piscis	4	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	1	3	.	.	.
MOLLUSCA	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.

Table 13. The species identified and the number of bones.
() Identification is not certain.

	♀	♂	mean
Banteng - Bos banteng	.	.	170
Gaur - Bos gaurus	170	195	182
Wild Buffalo - Bubalus bubalis	.	170	.
Nilgai - Boselaphus tragocamelus	.	130-140	135
Fourhorned Antilope - Tetracerus quadricornis	.	65	.
Chinkara - Gazelle gazelle	.	65	.
Blackbuck - Antilope cervicapra	.	.	80
Sambar - Cervus unicolor	.	150	140
Swamp Deer - Cervus duvauceli	.	135	.
Hog Deer - Axis porcinus	.	.	61
Muntjak - Muntiacus muntjak	.	50-75	.

Table 14. The height at the whithers of the Bovidae mentioned in this paper (after Prater, 1971) in cm.

Table 15.

Bos/Bubalus

	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Horn-cores	1096	2197	?	781	196	10967	3988	1727	10787	?	5630	3577	1723	10792	12850	?	2711
1. Circumference at the base	110.0	121.0	125.0	126.0	130.0	142.0	151.0	152.0	165.0	168.0	173.0	175.0	188.0	210.0	213.0	220.0	220.0
2. Maximum diameter	36.0	41.0	39.5	42.0	46.5	46.5	53.0	51.0	56.0	56.5	58.0	56.5	64.0	68.0	72.0	73.5	74.5
3. Minimum diameter	31.0	33.5	38.5	36.0	37.0	41.5	43.5	44.0	50.0	52.0	50.0	49.5	51.0	67.2	65.0	67.5	66.5
4. Length of the inter curve	80.0	.	.	90.0	86.0	.	.	.	⌀15.0	.	.	.	.	.	.	.	.
5. Length of the outer curve	80.0	⌀72.0	.	100.0	104.0	.	.	.	⌀20.0	90.0	⌀87.0	.	⌀27.0*	⌀26.0*	⌀20.0*	.	.
6. Index $\frac{3 \times 100}{2}$	86.1	81.8	97.5	85.7	79.5	89.3	82.0	81.3	89.3	92.0	86.2	87.6	79.6	91.5	90.3	91.7	90.0

	NVT	NVS III	NVS III	NVS III	NVS III	NVS III	INM III	INM III	INM III	NVS W	NVT	NVS III
	1398	6638	2564	3226	4395	4395	D_4 ⌀	D_1 ⌀	?	4634	3395	2872
1.	.	180.0	145.0	183.0	⌀220.0	⌀225.0	126.0	.	143.0	181.0	⌀62.0	.
2.	62.5	59.0	53.0	⌀57.5	77.0	80.0	41.5	50.5	⌀62.5	⌀60.5	56.0	49.0**
3.	⌀55.5	52.0	38.0	⌀64.0	64.0	66.0	36.5	45.5	⌀62.5	⌀60.0	38.5	29.0**
6.	.	88.2	71.6	93.9	83.2	82.5	88.0	91.0	100.0	82.6	68.8 Bb	59.3 Bb

	Bos gaurus
1.	272.0
2.	93.0
3.	71.5
4.	265.0
5.	336.0
6.	76.9

	NVS W	NVS IV	NVS IV	55/56 NVS III
Atlas	3108	6609	4268	6335
Anterior-posterior length	.	⌀90.0	⌀75.0	.
Width posterior articular surface	135.0	.	⌀84.0	98.0
Width anterior articular surface	.	.	.	110.0

* Top is missing.
** Base is missing.

	KKL	KTH III	NVS III	NVS W	INM I	INM I	INM II	INM II
Epistropheus	637	A1	4915	2953	II (6)	A2 (4)	G9 (1)	B1 (2)
1. Maximum width anterior articular process	(6.5)	.	87.0	75.0	78.5	.	91.5	.
2. Maximum height anterior articular process	.	.	42.0	48.5	35.5	34.5	.	.
3. Maximum width dens	.	43.0	57.0	33.5?	.	.	.	40.0

	INM III	INM III	INM III
	B1 (2)	C1 (3)	B1 (2)
1.	80.0	.	.
3.	42.5	39.0	41.0

	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Maxilla adult	30	4325	709	11247	445	6140	11061	1687	781	8903	6994	2438	7438	11238	1602	25
1. Length of the tooth row	115.0	(25.0)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2. Length of the molar row	72.0	78.5	68.0	(72.0)	74.0	75.0	77.0	78.5	79.0.	80.0	80.5	85.0	87.0	.	.	.
3. Length of the premolar row	43.5	46.5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4. Length M^1	20.0	21.0	17.0	.	22.0	19.0	.	.	(20.5)	.	25.5	.	23.5	24.5	25.5	.
5. Width M^1	19.0	21.5	22.0	.	18.5	21.5	.	.	.	.	.	(19.5)	23.5	19.0	21.0	20.5
6. Length M^2	24.0	25.5	20.5	23.0	24.0	25.0	29.0	24.5	(26.0)	24.0	27.5	29.0	29.5	.	28.5	27.0
7. Width M^2	20.0	22.5	23.0	21.0	19.0	24.5	20.0	24.0	.	20.5	(20.0)	21.0	26.0	.	21.5	22.0
8. Length M^3	27.0	27.5	26.0	25.0	25.0	27.0	(25.5)	28.5	27.0	29.0	(27.0)	31.0	31.5	.	.	.
9. Width M^3	20.5	23.0	22.5	20.0	18.0	23.0	20.0	23.5	19.5	22.0	20.0	22.0	26.0	.	.	.

	NVT	NVT	NVT	NVT		NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III
	781	11245	7724	8753	2510	7933	8293	8295	7683	8312	8246	5040	4823	6532	6087	4069	3163	2747	2650
1.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(33.5)	.	.	.
2.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	82.0	(7.0)	78.5	(87.0)
3.	.	.	.	.	.	50.0	52.0	55.0	.	.	.	.	.	.	.	(62.0)	.	.	.
4.	.	.	.	.	.	.	.	.	24.5	24.0	.	.	.	.	.	22.0	20.5	24.0	27.0
5.	.	.	.	.	.	.	.	.	17.0	19.5	.	.	.	.	.	25.0	22.5	19.0	19.5
6.	22.5	25.5	25.0	25.0	27.5	.	.	.	.	.	23.0	26.0	27.0	.	.	25.5	25.0	24.0	30.0

7.	22.0	18.5	23.5	20.0	.		.	.	.	.	.	21.0	23.5	20.0	.	.	25.0	22.0	20.0	18.5
8.	.	26.5	28.5	27.0	.		.	.	.	.	.	30.5	31.0	30.5	28.5	29.0	28.0	30.0	27.5	.
9.	.	20.5	24.5	20.0			.	.	.	.	.	22.5	25.0	20.0	18.0	21.0	24.0	23.0	21.0	.

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM		NVS W	NVS W	NVS W	NVS W	NVS W	NVS W		NVS IV
	4024	4390	4393	4408	4229	3493	2164	2535	2504		?		4770	3792	1185	4767	1178	2626		1771
2.	00.0	.	.	.	.	.	.	.	.		.		94.0	.	.	.	.	.		.
4.	26.5	25.0	.	.	.	.	.	.	.		.		30.5	21.5	26.0	30.0	.	.		34.0
5.	18.0	20.5	.	.	.	.	.	.	.		.		18.5	19.0	17.5	17.0	.	.		21.5
6.	00.0	00.0	24.0	24.0	25.5	26.0	30.0	30.0	.		.		33.5	.	.	28.5	26.0	.		.
7.	20.0	.	.	25.0	21.0	24.0	27.0	22.0	.		.		19.0	.	.	19.0	17.0	.		.
8.	28.5	.	27.0	31.0	29.0	30.0	32.0	30.0	30.0		30.5		32.0	.	.	.	31.0	32.0		.
9.	19.0	.	.	25.5	21.0	24.0	25.0	20.0	20.0		23.0		17.5 juv.	.	.	.	27.0	20.0		.

	NVS IV		NVS V		NVS ?
	5538		4638		3888
6.	27.0		.		25.5
7.	22.5		.		20.5
8.	24.0		27.0		.
9.	22.5		22.0		.

	KTH II	KTH II/III	KTH III	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Mandibula, juv.	B 02	A 0	A 0	1610	10790	1139	3510	2597	203	7721	324	?
1. Length of the milk-molar row	.	.	55.0	54.0	55.5	55.5	55.0	56.0	56.0	57.0	60.0	.
2. Length p_3	29.5	31.0	26.0	27.5	28.0	26.0	28.5	29.5	27.5	30.0	29.0	32.0
3. Width p_3	12.0	11.5	11.0	11.0	10.0	12.0	9.5	12.0	12.5	.	14.0	10.5

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS IV	NVS ?
	7739	5327	7731	8308	6089	4950	4953	6339	5966	767	3164	3823	763	3398	3814	3174	
1.	56.5	59.0	61.0	63.0	64.0	.	.	.	.	59.0	.	.	.	.	.	.	.
2.	30.5	31.5	30.5	25.0	25.0	25.5	25.5	28.5	33.5	32.0	28.5	30.0	32.0	32.5	36.0	32.5	23.0
3.	12.0	11.0	13.5	14.0	14.5	15.5	16.5	17.5	11.5	10.5	11.0	12.0	11.5	11.0	16.0	11.5	17.5

	INM III	INM III
	MO (4)	D2 (2)
1.	60.0	63.5
2.	30.0	34.5
3.	.	11.5

Mandibula	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II-III	KTH II-III	KTH II-III	KTH II-III	KTH II-III
	A (4)	A (4)	A (4)	B (3)	A (4)	A (4)	A (3)	A (3)	A (3)	A (3)	A (3)
1. Depth of the horizontal ramus behind the manidbular symphysis	.	.	.	.	.	.	.	.	.	.	.
2. Depth of the horizontal ramus behind P_4	.	.	.	.	.	.	.	.	.	.	.
3. Depth of the horizontal ramus behind M_3	.	.	.	.	.	.	.	.	.	.	.
4. Length of the tooth row	.	.	.	.	.	.	.	.	.	.	.
5. Length of the molar row	.	.	.	.	.	.	.	.	.	.	.
6. Length of the premolar row	.	.	.	.	.	.	.	.	.	.	.
7. Length M_1	21.0	21.7	.	.	.	.	25.5	.	.	.	.
8. Width M_1	13.0	12.5	.	.	.	.	13.0	.	.	.	.
9. Length M_2	25.0	.	25.0	.	.	.	27.5	.	.	.	.
10. Width M_2	13.0	.	13.5	.	.	.	12.0	.	.	.	.
11. Length M_3	.	.	34.5	35.5	36.5	39.0	.	34.0	35.0	35.0	35.5
12. Width M_3	.	.	14.0	13.0	12.5	14.5	.	14.0	15.0	13.5	15.5

	KTH II-III	KTH II-III	KTh II-III	KTH III	KTH III	KTH ?	NVT	NVT	NVT	NVT	NVT	NVT *	NVT	NVT	NVT	NVT	NVT
	A (3)	A (3)	A (3)	A (1)	A (1)		12415	6134	786	1606	6682	10968	9140	806	?	8465	327
1.	.	.	.	.	69.0	.	25.0	26.0	.	.	.	.	.	.	.	.	.
2.	.	.	.	.	.	.	44.0	47.0	49.5	51.5	.	.	.	.	.	.	.
3.	.	.	.	.	.	.	60.0	.	.	.	76.5	.	.	.	.	.	.
4.	.	.	.	.	.	.	133.0	130.0	.	.	.	.	.	.	.	.	.
5.	.	.	.	.	.	.	79.5	83.0	73.0	.	87.0	(84.0)	.	.	.	.	.
6.	.	.	.	.	.	.	(64.0)	47.0	.	.	.	.	53.5	.	.	.	.
7.	.	.	.	.	.	.	.	22.5	.	24.0	24.5	(17.5)	.	(21.0)	24.0	24.5	25.0
8.	.	.	.	.	.	.	.	13.5	.	14.0	12.5	(6.5)	.	(14.5)	15.5	13.5	12.0
9.	.	.	24.0	.	.	.	.	23.0	20.5	26.5	25.5	(24.0)	.	25.0	25.5	26.0	28.0
10.	.	.	15.0	.	.	.	.	14.5	14.0	13.5	13.0	(15.5)	.	14.5	15.0	12.0	12.0
11.	37.5	36.0	.	36.5	37.5	36.5	32.0	34.0	32.5	.	31.5	(37.5)	.	.	.	.	.
12.	12.5	12.0	15.0	12.5	13.0	15.5	.	14.0	14.0	.	13.0	(16.0)	.	.	.	.	.

	NVT	NVT	NVT	NVT r	NVT l	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
	?	3182	10970	6683	6683	?	18895	12017	11242	9609	1082	2087	325	10969	254	9783	1682	386	?	11063
1.	.	.	.	.	.	.	25.0	29.0	27.5	.	.	.	.	.	.	.	.	.	.	.
2.	.	.	.	.	.	.	46.0	53.0	.	55.0	.	.	.	.	.	.	.	.	.	.
3.	.	.	.	.	.	.	.	.	.	.	75.0	.	.	.	.	.	.	.	.	.
4.	.	.	.	.	.	.	.	.	.	.	.	127.5	.	.	.	.	.	.	.	.
5.	.	.	.	.	.	.	.	.	.	.	.	77.5	87.5	93.0	.	.	.	.	.	.
6.	.	.	.	.	.	.	53.0	53.0	(68.0)	50.0	.	47.5	.	.	45.5	48.5	47.0	47.0	50.5	50.0
7.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	22.0	.	17.5	.	.
8.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	13.0	.	18.5	.	.
9.	24.5	25.0	26.5	27.0	.	.	.	.	.	.	.	.	.	.	.	.	.	20.5	.	.
10.	15.0	16.5	16.5	17.0	.	.	.	.	.	.	.	.	.	.	.	.	.	13.5	.	.
11.	38.0	40.5	(60.0)	42.0	41.0	34.0	.	.	.	.	39.5	.	.	(60.0)	.	.	.	.	.	.
12.	16.0	16.0	16.5	16.0	15.5	11.5	.	.	.	.	14.0	.	.	17.0	.	.	.	.	.	.

	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
	3005	656	12127	11158	19681	152	11398	963	4412	6684	1257	11730	?	1204	11235	1305	440	11064	1083	12560
3.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	69.5	.	.	.
5.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	88.0	.	.
7.	08.0	20.0	22.5	26.0	29.0	.	.	.	.	.	.	.	.	.	.	.	.	21.0	.	.
8.	14.5	15.0	14.5	12.5	11.5	.	.	.	.	.	.	.	.	.	.	.	.	13.0	.	.
9.	24.0	22.5	25.0	28.0	25.0	25.0	26.0	27.5	24.5	24.0	.	.	.	.	.	.	.	27.0	24.0	.
10.	14.5	14.5	15.0	11.5	12.0	15.5	12.5	9.2	15.5	12.5	.	.	.	.	.	.	.	14.0	14.0	.
11.	.	.	.	.	.	39.5	35.5	40.0	37.0	32.0	34.0	35.0	36.0	37.5	38.0	39.0	.	34.0	29.0	34.5
12.		.	.	.	.	19.0	13.0	13.5	16.0	12.5	14.5	14.0	14.5	15.5	15.0	13.5	.	13.5	13.0	12.0

	NVT	NVT		NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III
	2359	2496		3790	4377	3518	5968	5445	4742	4493	3522	5102	4748	3166	766	2926	4248	3858	2906	3508
3.	.	.		.	.	.	.	.	.	.	.	75.5	.	.	.	.	.	.	.	
5.	.	.		85.5	.	.	.	.	.	.	.	.	.	90.0	91.0	105.0	115.0	.	.	.
6.	.	.		.	46.5	51.0	.	.	.	.	.	.	.	.	.	.	.	47.0	49.0	55.0
7.	.	.		.	20.0	22.0	.	.	.	.	.	.	.	.	24.0	31.0	31.0	.	.	25.0
8.	.	.		.	14.5	14.0	.	.	.	.	.	.	.	.	.	17.0	16.0	.	.	13.0
9.	.	.		.	.	25.0	26.0	.	.	.	.	.	.	23.0	25.0	34.0	32.5	.	25.5	27.0
10.	.	.		.	.	13.5	14.5	.	.	.	.	.	.	15.5	16.0	15.0	16.0	.	15.5	12.0
11.	35.0	35.5		.	.	.	37.5	34.0	34.5	34.5	37.5	37.5	38.0	36.0	40.0	.	45.0	.	.	.
12.	14.0	14.0		.	.	.	15.5	13.5	12.0	14.5	14.5	14.5	15.0	16.0	15.5	.	17.0	.	.	.
					sen.															

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM III	INM III	INM III	INM III		NVS W	NVS W	NVS W
	2426	3162	3674	4391	3907	3886	1269	2659	4192	3092	4259		D2 (4)	B3 (2)	B1 (1)	C1 (3)		2867	1169	4378
6.	.	.	.	.	.	.	.	.	.	.	.		48.5	.	.	.		66.0	.	.
7.	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.		.	28.0	.
8.	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.		.	10.5	.
9.	23.5	23.5	25.0	26.0	27.0	27.0	.	.	.	.	.		.	.	.	.		31.5	.	25.5
10.	15.5	10.0	15.0	13.5	14.0	13.0	.	.	.	.	.		.	.	.	.		15.5	.	15.0
11.	35.5	39.0	39.5	.	37.0	39.0	34.0	34.0	39.0	40.0	41.0		.	33.0*	40.0	38.0		.	.	37.5
12.	15.5	15.5	15.0	.	18.5	12.5	14.5	.	.	15.5	.		.	.	15.5	14.5		.	.	15.0
																		juv.		

* Measured along the alveole.

	NVS W	NVS W	NVS IV	NVS IV		NVS l IV r	
	3253	4268	6642	5844	Mandibula adult	4696	
.							
2.	.	.	.	.		.	35.0
4.	.	.	.	.		132.0	.
5.	.	.	.	.		(80.0)	77.0
6.	.	.	52.0	.		51.0	20.5
7.	.	.	22.5	(24.0)		21.0	20.5
8.	.	.	14.5	13.0		12.5	12.0
9.	.	(27.5)	.	27.5		26.5	26.0
10.	.	(14.5)	.	17.0		12.0	12.5
11.	33.0	(35.5)	.	.		33.0	(32.0)
12.	12.0	.	.	.		12.0	11.5

	KK 2 (♀)	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVS III	NVS III	NVS III	NVS III	NVS III	INM II	INM II-III
M_3	307	3095	481	1427	11237	?	2593	11891	4232	6530	6208	3627	8244	D1 (♂)	18 (♂)
1. Length	39.0	(40.0)	32.0	32.0	34.0	34.0	35.5	37.5	33.5	34.0	36.0	39.0	47.5	38.5	41.0
2. Width	13.0	16.0	12.5	13.5	14.5	13.0	13.0	15.5	15.5	13.0	13.0	14.0	16.5	12.5	16.0

	INM III	INM III	INM III	INM III	INM III	INM III	NVS W	NVS W	NVS W	NVS IV	NVS IV	NVS IV	NVS V	INM	INM
	B1 (♀)	B4 (♂)	D2 (♀)	A1 (♂)	C3 (♂)	I9 (♂)	5284	4388	5170	4662	2392	6628	1661	?	?
1.	34.5	36.0	37.0	36.5	37.5	39.0	36.0	37.0	39.0	36.5	(33.5)	39.0	35.0	(38.5)	30.5
2.	14.5	14.0	13.5	13.0	12.5	13.0	12.5	14.0	13.5	15.5	13.5	16.0	12.0	14.0	23.0

	Kann	Buc	[illegible]	NVS III	NVS III	NVS III	NVS III	INM 1	INM III	NVS W
Scapula	15	11	A (♂)	5168	5164	4395	1775	11 (♂)	18 (♀)	3865
1. Minimum height of the neck	(47.0)	.	46.5	.	(45.5)	58.0	.	47.5	(55.0)	.
2. Length articular surface	.	36.0	.	61.5	.	65.5	63.0	51.5	62.0	57.0
3. Width articular surface	.	45.5	.	50.0	48.5	.	53.5	44.0	.	45.5
4. Length proc. articularis	.	69.0	.	.	.	71.5	76.0	63.0	73.5	70.0

	INM ?	59/61 NVS III	55/56 NVS ?
1.	.	38.5	.
2.	.	.	53.5
3.	42.0	39.5	39.5
4.	.	.	63.2

Humerus	BHL-5	Kann	cf Bud	Malli	KTH II-III	KTH III	KTH III	NVT
	. 17	1	40	14	A (1)	A (1)	B (1)	22
1. Maximum width caput	.	.	.	.	.	.	.	.
2. Maximum distal width	.	80.5	.	.	.	65.5	.	66.5
3. Width of the trochlea (lower articular surface)	.	78.0	.	82.0	.	62.0	62.5	59.0
4. Minimum width of the diaphysis (shaft)	33.0	.	22.0 juv.	.	31.0	.	.	.

	NVT	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	INM II	INM III	INM III	INM III	INM III	INM III	INM III	NVS W
	4822	1704 (9)	2661	2606	2655	2501	?	3051	G8 (11)	D1 (3)	A4 (2)	A1 (5)	B5 (2)	G8 (1)	I8 (5)	6828
1.	.	.	.	.	.	.	56.0	61.0	.	.	.	.	.	.	.	65.0
2.	70.0	(17.5)	83.0	75.5	.	.	.	.	.	67.0	73.5	75.0	.	.	.	.
3.	63.0	106.0	76.5	73.0	74.0	74.5	.	.	68.0	66.0	73.0	71.0	66.0	66.5	69.5	.
4.	29.0	58.5	34.5	33.5	.	.	.	.	.	30.5	.	.	.	.	.	.

	NVS IV	NVS V	NVS V	NVS
	5760	5603	5906	1466 B204 (5)
2.	.	76.0	.	.
3.	.	67.0	78.0	94.0
4.	39.0	38.5	.	.

	BHL	BHL	KKL 2 (5)	KTH II	KTH II-III	KTH III	KTH III	KTH III	59/61 NVS III	NVS III
Radius	6	16	302	A (4)	A (3)	A (1)	A (2)	A (1)	1735	1725
1. Maximum proximal width	80.5	86.0	.	72.0	.	.	.	.	(86.5)	94.0
2. Width of the proximal articular surface	72.0	82.0	.	.	.	76.5	.	.	80.5	84.5
3. Maximum distal width	.	.	68.0	.	69.5	.	61.0	.	.	.
4. Width of the distal articular surface	.	.	63.0	.	.	.	56.5	.	.	.
5. Minimum width of the diaphysis (shaft)	.	.	.	46.5	.	38.5	.	43.0	.	.

	NVS III	NVS III	INM II-III	INM III	INM III	INM III	INM III	INM III	KTH IV	NVS V	NVS ?
	1729	2655	G8 (7)	I8 (4)	(2)	P8 (2)	I9 (2)	C1 (4)	B (3)	4269	?
1.	.	.	.	75.0	89.5	90.5	.	.	85.0	.	.
2.	.	.	.	68.0	78.5	82.0	(70.5)	.	78.0	.	.
3.	72.0	72.0	60.5	.	.	.	.	77.0	.	67.5	78.0
4.	63.0	62.5	48.0	.	.	.	.	68.0	.	66.5	70.0

	KKL 2 (4)
Ulna	502
Width of the articular surface	.
Minimum diameter of the olecranon process	59.0

	KKL 2 (4)	KTH III	NVS III	I-II	INM III	INM III	INM III	INM III
Pelvis	309	A (1)	4383	G8 (3)	G9 (4)	A2 (2)	?	?
Length of the acetabulum	(73.0)	51.0	.	69.5	60.0	72.0	68.5	61.0

	KKL 2 ♂	BHL	NVS III	NVS III	NVS III	NVS ♀
Femur	153	2	4049	6542	6980	1290
Length of the caput	66.0	49.0	60.0	.	.	84.5
Width of the caput	44.5	37.0	46.0	.	.	61.0
Maximum distal width	.	.	.	84.5	90.0	.

	KKL	KKL	BHL	BHL	KTH II	KTH II	KTH III	NVS III	NVS III	NVS III	INM II
Tibia	11	17	22	16	A ♂	A ♂	A ♀	3784	6337	2422	III ♀
1. Maximum proximal width	.	.	.	99.0	.	.	.	83.0	.	105.0	.
2. Maximum distal width	56.0	58.0	58.0	.	66.5	69.0	62.5	.	63.0	.	53.0

	INM II	INM II	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM ?	KTH IV
	III ♀	III ♀	I8 ♀	D2 ♂	A1 ♂	P8 ♀	B3 ♀	D2 ♀	D1 ♀	C3 ♂	G2 ♂	?	B ♀
2.	63.0	71.0	53.5	54.5	56.0	56.5	57.0	57.5	59.0	60.0	67.0	63.5	56.0

	KKL 2 ♂	KKL 2 ♂	KKL	K		BKL	BKL	KTH II	KTH II	KTH II	KTH II
Metacarpus	151/160	304	5	26	821	34	20	A ♂	B ♀♂	A ♂	A ♂
1. Maximum length	.	.	.	.	.	.	.	.	.	.	.
2. Maximum proximal width	53.0	.	.	56.0	.	65.0	60.0	56.0	57.5	58.0	60.0
3. Maximum proximal thickness	32.0	.	.	34.0	.	42.5	37.0	.	35.5	37.0	37.0
4. Maximum distal width	.	51.0	51.5	.	49.0	.	.	.	.	.	.
5. Maximum distal thickness	.	27.0	.	.	.	.	.	.	.	.	.
6. Minimum width of the diaphysis (shaft)	.	.	.	.	.	.	.	.	.	33.5	.
7. Index $\frac{2}{1} \times 100$	60.4	.	.	65.7	.	61.0	61.7	.	61.7	63.7	61.6
8. Index $\frac{3}{4} \times 100$	.	53.0	.	.	.	.	.	.	.	.	.

	KTH II A (4)	KTH II A (4)	KTH II B (2.5)	KTH II A (4)	KTH II A (4)	KTH II A (4)	KTH II-III A (3)	KTH II-III A (3)	KTH II-III A (3)	KTH III A (1)	KTH III A (1)	NVT ? 2506	NVS III 3557	NVS III 500	NVS III 2538	NVS III 76
1.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2.	61.0	.	.	.	.	.	.	.	.	57.0	.	50.0	62.0	77.0	.	.
3.	64.0	.	.	.	.	.	.	.	.	.	.	.	.	43.0	.	.
4.	.	62.0	46.5	50.0	50.5	48.5	49.5	54.0	56.0	.	43.5	.	.	.	57.0	56.0
5.	.	.	.	26.5	26.5	24.5	26.0	27.0	30.0	.	23.5	.	.	.	28.5	29.0
7.	55.7	.	.	.	.	.	.	.	.	.	.	.	.	55.7	.	.
8.	.	.	.	53.0	52.4	50.4	52.5	50.0	53.6	.	54.0	.	.	.	50.0	50.8
		juv.														

	NVS III 1736	NVS III 2413	NVS III 2600	INM I II (1)	INM I II (1)	INM I II (1)	INM I II (3)	INM I/II G8 (3)	INM I/II G8 (3)	INM II G9 (1)	INM II H9 (1)	INM II H8 (6)	INM II A2 (1)	INM II A2 (1)	INM III A2 (2)	INM III A2 (1)
1.	.	.	.	212.0	.	.	.	.	.	.	.	.	.	.	.	.
2.	.	.	.	58.0	.	.	.	55.0	56.0	55.0	.	.	.	.	54.5	.
3.	.	.	.	35.0	.	.	.	30.0	.	34.0	.	.	.	.	31.5	.
4.	61.0	61.0	63.5	54.0	46.0	50.0	57.0	.	.	.	44.5	46.5	52.0	51.0	.	44.0
5.	32.5	33.0	34.0	28.0	23.5	27.0	30.0	.	.	.	26.5	25.0	27.0	25.5	.	24.0
6.	36.0	.	.	30.0	.	.	.	.	.	.	.	.	.	.	.	.
7.	.	.	.	60.0	.	.	.	55.0	.	61.2	.	.	.	.	58.2	.
8.	53.2	54.2	53.5	51.8	49.0	54.0	52.7	.	.	.	59.5	53.7	51.8	50.0	.	52.2

	INM III G9 (4)	INM III C2 (3)	INM III C3 (1)	INM III D3 (3)	INM III B1 (2)	INM III (2)	INM III D7 (3)	INM III D1 (2)	INM III G8 (1)	KTH IV B (3)	NVS IV 6192	NVS V 2342
1.	.	.	.	.	.	.	.	.	.	.	.	218.0
2.	.	.	.	.	.	.	.	.	.	50.5	52.0	61.0
3.	.	.	.	.	.	.	.	.	.	30.0	30.0	34.0
4.	46.0	46.5	46.5	47.5	48.0	52.0	53.5	55.0	60.0	.	.	.
5.	26.0	24.5	23.5	25.5	25.5	29.0	27.0	26.0	28.5	.	.	.
6.	.	.	.	.	.	.	.	.	.	.	27.0	34.0
7.	.	.	.	.	.	.	.	.	.	59.4	67.6	55.7
8.	59.0	52.7	50.5	53.6	53.2	55.7	50.5	47.3	47.5	.	.	.

Metatarsus	EKL 2 ♂	BKL	BKL	BKL	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II
	328	28	36	39	A ♂	A ♂	A ♂	B ♀3	A ♂	A ♂	A ♂	B ♀7	A ♂
1. Maximum proximal width	.	51.0	.	.	38.5	39.0	43.0	46.5	48.0	.	.	.	.
2. Maximum proximal thickness	.	50.0	.	.	39.0	37.5	42.0	43.5	47.0	.	.	.	.
3. Maximum distal width	56.5	.	54.0	46.0	.	.	.	.	.	63.5	46.0	46.5	49.0
4. Maximum distal thickness	31.5	.	.	29.5	.	.	.	.	.	26.0	26.0	27.5	27.5
5. Minimum width of the diaphysis (shaft)	.	34.0	.	.	23.0	24.0	.	25.0	.	.	.	.	.
6. Index $\frac{3}{2}$ x 100	.	58.8	.	64.2	101.0	95.0	87.8	92.5	97.8	.	.	.	.
7. Index $\frac{2}{4}$ x 100	55.7	.	.	.	. juv.	.	.	.	.	59.7	55.6	60.4	56.2

	KTH II	KTH II	KTH II	KTH III	KTH III	NVT	NVT	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	INM II	INM II
	A ♂	B ♀3	A ♂	A ♀	A ♀	11737	?	3942	2274	5217	3789	1016	2411	3122	A2 ♂	♂
1.	.	.	.	60.5	.	69.0	.	41.5	44.0	.	.	44.0	.	.	.	.
2.	.	.	.	.	.	68.0	.	40.5	42.0	.	.	42.0	.	.	.	.
3.	53.0	55.0	55.0	.	45.5	.	50.0	.	.	45.0	53.5	.	49.5	54.5	46.0	46.5
4.	31.0	30.0	32.0	.	27.5	.	32.0*	.	.	25.0	31.0	.	28.0	31.0	26.5	28.0
5.	30.0	.	26.0	.	.	.	.	.	.	.	.	.	.	.	.	.
6.	.	.	.	.	.	77.6	.	97.6	95.5	.	.	95.4	.	.	.	.
7.	58.5	54.5	58.2	.	60.4	.	64.0	.	.	55.6	58.5	.	56.6	56.8	57.5	60.0

	INM II	INM II	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	KTH IV	NVS W
	C8 ♀1	H8 ♂	A2 ♀	B4 ♀3	C3 ♂	D2 ♂	D1 ♀	I8 ♂	D1 ♂	A2 ♂	A2 ♀	C4 ♀	B ♀3	A2 ♀	C4 ♀	D ♀	B ♀3	1365
1.	.	.	.	49.5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2.	.	.	.	44.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3.	54.0	57.0	41.0	.	43.5	45.5	45.5	46.0	47.0	47.0	49.0	49.5	50.0	53.0	52.0	57.5	45.0	48.5
4.	31.0	32.0	24.5	.	.	25.0	28.0	28.0	24.0	28.5	28.5	27.5	27.5	.	31.0	33.0	30.0	28.5
7.	57.0	56.2	59.8	89.6	.	55.0	61.5	60.8	51.0	60.7	58.2	56.2	55.0	.	59.6	57.8	66.7	58.7

* Measured over the trochlea.

	KTH ?
	?
1.	42.0
2.	38.5
6.	91.[illegible]

	KTH II-III
Patella	A-3
Maximum length	55.0

	KKL	M	M	K	T	BKL	BKL	KTH II	KTH II	KTH II	KTH II
Astragalus	13	13	10	3	10	11	9	A (6)	B (?)	A (6)	B (?)
1. Maximum lateral length	72.5	70.0	.	68.5	73.0	.	.	59.0	60.0	61.0	62.5
2. Maximum medial length	69.0	.	67.0	62.0	.	63.0	64.0	.	55.0	53.5	58.5
3. Maximum width of the trochlea	46.0	43.0	39.0	44.0	.	.	38.0	.	38.0	38.5	09.0
4. Maximum lateral thickness	40.0	38.0	34.0	36.0	.	.	39.0	.	31.5	30.5	34.5
5. Maximum medial thickness	39.0	.	.	37.0	.	36.5	.	.	32.0	31.5	04.0
6. Maximum thickness of the trochlea	.	29.5	.	29.5	.	.	31.5	.	25.0	25.5	28.5
7. Index $\frac{2}{1}$ x 100	55.5	54.2	.	52.5	.	.	.	.	52.5	50.0	55.2
8. Index $\frac{3}{1}$ x 100	.	.	.	67.0	.	.	80.2	.	65.8	66.2	70.0
9. Index $\frac{3}{2}$ x 100	63.4	51.4	.	64.2	.	.	.	.	64.4	63.2	62.4

	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II A (6)	KTH II-III B (?)	KTH III A (?)	KTH III A (?)	KTH III A (?)	NVT 78113
1.	65.0	65.5	66.0	66.0	66.5	67.5	67.0	68.0	69.0	69.0	.	65.5	60.0	50.0	66.5	62.0	59.0
2.	58.5	61.5	61.0	63.0	60.5	62.0	63.0	64.0	61.5	61.0	57.0	62.0	55.5	47.0	60.5	.	56.0
3.	40.5	44.0	42.0	43.0	39.0	41.5	43.5	46.0	63.0	45.5	38.0	42.0	37.0	31.5	38.0	.	37.0

4.	63.5	35.0	.	35.5	35.0	36.0	36.0	.	35.5	37.0	33.0	35.0		.		27.5	.	.	.
5.	62.5	37.0	.	37.5	36.0	38.5	38.5	38.5	37.0	37.0	34.0	36.0		.		27.5	.	36.5	.
6.	27.5	32.0	.	42.5	39.0	31.0	30.5	30.5	29.5	32.0	29.0	30.0		.		23.0	.	.	27.0
7.	51.6	52.2	.	54.7	52.6	53.3	53.7	.	51.4	53.6	.	53.4		.		55.0	.	.	.
8.	68.7	72.7	.	98.7	100.0	74.4	.	66.3	.	70.3	76.5	71.4		.		74.3	.	.	73.0
9.	62.3	66.7	63.7	65.2	58.6	61.4	65.0	67.7	.	65.9	.	63.6		61.7		63.0	57.2	.	62.7

	NVT	NVT	NVT	NVT	NVT		NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		KTH IV	KTH IV
	781	781	781	3003	781C		6137	3917	2541	2660	1724	2406	1724	1728	75	1776	1447		B 03	B 03
1.	63.0	63.0	65.0	73.0	70.5		66.0	71.5	64.0	65.5	69.5	70.0	70.0	71.0	72.0	78.0	85.0		77.0	69.5
2.	57.0	57.0	64.5	61.5	65.0		61.5	64.5	39.0	69.5	63.5	65.5	64.0	66.5	65.0	71.0	79.0		71.5	64.0
3.	38.5	38.5	40.0	43.0	45.0		43.5	46.5	41.0	62.0	46.0	45.0	45.0	45.0	64.0	44.0	55.0		48.0	43.0
4.	32.0	.	36.0	38.0	36.5		36.0	38.0	35.0	.	38.0	37.5	37.0	40.0	39.5	40.0	48.5		.	36.0
5.	31.5	.	34.0	.	36.5		37.5	38.0	.	.	39.0	.	38.0	40.0	41.0	41.0	50.0		43.5	37.0
6.	27.0	.	.	30.0	31.5		29.5	33.0	28.5	.	30.5	.	32.0	33.0	.	33.5	41.0		.	28.0
7.	50.7	.	54.5	52.1	52.2		54.5	53.2	54.6	.	54.6	53.6	52.8	56.4	54.9	51.3	57.0		.	51.8
8.	70.2	.	.	69.6	70.0		67.8	71.6	69.5	.	66.2	.	71.2	73.4	.	75.5	74.5		.	65.1
9.	61.0	61.0	61.7	59.0	60.2		61.0	60.0	64.0	.	66.3	64.2	64.3	63.4	.	56.5	64.7		62.4	61.7

		INM I	INM I	INM I	INM I	INM I		INM II	INM II		INM II-III		INM III	INM III	INM III	INM III	INM III	INM III	INM III
		III (3)	AI 04)	III (3)	II (1)	AI 04)		III (1)	AI (5)		G9 (7)		I8 (3)	I8 (4)	I9 (4)	AI (5)	D2 (4)	I3 (1)	I9 (6)
1.			64.0	65.5	67.0	.	.		73.5	67.0		58.5		52.0	54.5	58.0	59.0	59.5	60.0	61.5
2.			57.0	62.0	62.0	57.0	61.5		61.5	.		53.5		49.0	.	54.5	54.0	55.5	56.5	57.5
3.			40.0	38.5	42.0	37.5	46.0		49.5	40.0		37.0		34.5	33.5	39.5	35.5	38.0	36.5	36.5
4.			34.0	34.5	35.5	33.0	.		39.0	.		32.0		28.0	30.0	33.0	31.5	31.5	31.0	32.0
5.			34.5	34.5	36.5	.	37.0		41.3	.		32.5		28.5	.	33.0	32.0	33.0	32.5	32.0
6.			29.5	28.0	29.0	29.0	29.0		33.0	28.0		26.5		23.5	24.5	27.5	25.5	27.0	25.5	24.5
7.	Index $\frac{4}{2}$ x 100		53.2	52.7	53.0	.	.		53.0	.		54.7		53.8	55.2	56.9	53.4	53.0	51.7	52.0
8.	Index $\frac{6}{3}$ x 100		73.7	72.6	69.1	.	63.0		66.6	.		71.6		68.1	.	73.2	71.8	71.0	69.9	67.2
9.			62.5	58.7	62.7	.	.		67.4	59.7		63.3		63.5	61.5	67.5	60.2	63.8	60.8	59.3

	INM III D2 (4)	INM III D2 (5)	INM III DI (2)	INM III BI (1)	INM III D2 (3)	INM III D2 (5)	INM III I8 (3)	INM III A1 (5)	INM III C3 (4)	INM III (2)		INM DI (4)	INM D (4)	INM I8 (5)	INM I8 (4)	INM I8 (3)	INM D4 (3)		INM ?	INM ?
1.	62.0	63.0	63.0	63.0	65.0	69.0	69.0	70.5	71.0	73.5		.	.	.	66.0	.	.		64.0	64.5
2.	56.0	.	59.0	58.0	60.0	63.5	63.0	64.5	65.5	68.0		57.0	57.0	59.0	59.5	64.0	.		59.0	60.0
3.	.	.	39.5	38.0	40.5	.	41.5	44.5	44.0	46.0		.	.	.	.	.	42.5		38.0	40.0
4.	.	.	33.5	33.0	35.0	.	37.0	37.0	35.5	39.0		.	.	.	.	.	.		32.5	34.0
5.	34.0	.	34.0	33.0	.	.	36.0	38.5	39.0	39.0		.	.	.	.	40.0	.		.	36.0
6.	.	.	25.0	26.0	27.5	.	28.0	.	31.0	32.0		.	.	.	.	.	.		27.5	30.5
7.	.	.	53.5	52.4	53.8	.	53.6	.	50.0	53.0		.	.	.	.	.	.		50.7	53.1
8.	.	.	63.3	68.5	66.6	.	67.4	.	70.5	69.5		.	.	.	.	.	.		72.4	75.6
9.	.	.	62.7	60.4		.	60.0	63.2	62.0	62.6		.	.	.	.	.	.		.	62.0

	INM ?	NVS W 3866	NVS W 2954	NVS V 1513	NVS V 1517	NVS V 1512
1.	69.0	65.0	70.0	68.5	69.0	.
2.	65.0	61.0	.	64.5	61.5	.
3.	40.5	40.0	.	44.5	43.0	44.0
4.	35.0	33.5	.	37.5	35.5	.
5.	36.5	.	.	37.5	35.5	.
6.	27.0	.	.	31.0	28.5	32.0
7.	50.7	51.6	.	54.0	51.4	.
8.	66.6	.	.	69.6	86.3	72.6
9.	58.7	61.5	.	65.0	62.3	.

Calcaneum	KTH II A (4)	KTH II A (4)	KTH II A (4)	KTH II A (4)	KTH II A (4)	NVT 3487	NVT ?	NVT ?	NVS III 217	NVS III 1720	NVS III 2405	INM II A1 (6)	INM III I8 (6)	INM III B4 (3)
1. Maximum length	114.0	115.0	128.0	.	.	114.0	120.0	119.0	.	144.0	135.5	.	116.5	129.0
2. Maximum width	38.0	42.5	45.5	45.0	45.5	45.0	40.0	35.5	47.5	42.0	.	41.5	38.0	42.5
3. Maximum height	46.0	47.5	52.0	54.0	53.0	49.0	51.0	48.0	57.0	55.5	.	52.5	50.0	54.0

	INM III	INM ?	NVS IV	NVS IV	NVS V
	Cl ♀	?	5392	3934	1507
1.	.	.	135.0	174.5	.
2.	.	.	44.0	68.5	41.0
3.	51.0	48.0	52.5	66.0	51.5

	KTH II	NVT	NVT	NVS V	KKL 2 ♀
Centrotarsale	A ♀	?	24	1514	667
Maximum width	50.0	49.0	50.5	52.0	49.0

	KKL 2 ♀	T	BKL	BKL	BKL	KTH I	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II
Phalanx I	573	2	65	10	30	A ♀1)	B ♀3)	B ♀6)	B ♀3)	A ♀)	A ♀)	A ♀)	A ♀)
1. Maximum length	.	57.0	59.0	61.0	63.0	52.5	53.0	53.5	56.0	56.0	56.0	58.0	59.0
2. Maximum proximal width	.	34.0	29.0	28.5	28.0	25.0	28.5	28.5	26.0	27.5	29.5	32.0	31.0
3. Maximum distal width	24.5	30.0	25.5	27.0	26.0	.	25.0	24.0	25.0	25.5	25.5	28.5	29.0
4. Minimum width of the shaft	22.5	27.0	23.0	25.0	25.0	.	24.5	23.0	21.0	23.5	24.0	27.0	26.5

	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II-III	KTH II-III	KTH II-III	KTH III	KTH III	KTH III	KTH III	KTH III	KTH III
	B ♀2)	B ♀3)	B ♀3)	A ♀)	A ♀)	A ♀)	A ♀)	B ♀2)	B ♀3)	B ♀1)	B ♀1)	B ♀1)	A ♀)	A ♀)	A ♀)	A ♀)	A ♀)	A ♀)
1.	59.5	60.0	60.0	60.0	61.0	62.5	.	.	.	57.0	.	.	51.0	51.5	61.0	.	.	.
2.	♀3.5	30.5	32.0	26.5	29.5	30.5	.	.	.	25.5	.	.	24.5	27.0	27.5	.	.	.
3.	22.5	28.5	31.5	27.0	27.0	30.0	23.5	27.0	27.5	24.5	29.0	30.0	24.5	.	29.0	.	31.5	28.0
4.	21.0	24.5	26.0	23.5	23.5	26.0	21.5	24.5	.	20.5	.	27.5	22.5	23.5	23.0	24.5	30.5	25.5

	KTH ?		NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM I	INM I	INM I	INM I	INM I	INM I	INM I
	?		5216	2169	6011	126	2654	2424	492	2467	1777	2423		A (5)	A2 (5)	III (3)	III (3)	A1 (5)	A1 (4)	G1 (4)
1.	.		53.0	56.0	61.0	56.0	57.5	61.5	63.0	65.5	63.5	68.0		55.5	57.5	62.0	62.5	64.0	.	.
2.	28.5		29.5	27.5	29.5	28.0	30.0	25.0	32.5	34.0	34.0	29.5		30.5	26.5	28.0	30.0	29.0	.	28.0
3.	25.5		.	26.5	28.5	26.0	30.0	24.5	23.0	34.0	29.5	27.5		30.0	24.5	28.0	.	28.0	28.5	27.5
4.	24.0		.	.	25.5	23.0	25.0	22.0	28.0	30.5	28.0	25.0		21.5	23.0	25.0	. .	24.0	25.0	.

	INM II	INM II	INM II	INM II-III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III
	I8 (8)	P9 (10)	A2 (10)	H0 (7)	C4 (6)	I8 (6)	B1 (3)	C2 (6)	G8 (1)	C2 (6)	P9 (8)	B2 (3)	I8 (6)	D1 (1)	B3 (3)	B3 (7)	I9 (1)	P9 (8)	
1.	57.5	59.5	63.5	60.0	49.0	53.0	54.0	55.0	55.5	55.0	56.0	56.0	58.5	59.5	59.0	62.0	63.5	66.0	
2.	28.0	28.0	27.0	28.5	26.0	25.5	23.0	28.0	28.0	28.0	27.5	25.0	30.0	25.5	24.5	.	29.0	28.0	
3.	57.0	24.5	27.0	27.5	.	23.0	23.5	26.0	25.0	26.0	25.5	23.5	27.0	25.5	22.0	27.5	27.0	30.0	
4.	24.0	23.5	23.0	25.5	21.5	22.0	21.0	23.0	23.5	23.0	24.0	21.0	24.5	22.0	20.5	23.0	23.5	26.0	

	INM III	INM III	INM III	KTH IV	KTH IV	KTH IV	NVS W	NVS W	NVS W	NVS W	NVS IV
	C3 (5)	A2 (6)	C2 (3)	B (3)	B (3)	?	1190	6547	3362	2806	130
1.	.	.	.	53.5	59.5	67.0	58.5	59.0	69.0	61.0	43.0
2.	.	.	.	23.5	60.0	36.0	25.5	29.0	32.0	.	.
3.	23.0	26.5	28.0	23.5	29.0	.	24.0	25.5	33.0	.	20.5
4.	22.5	23.0	26.0	20.5	27.5	.	(22.0)	23.5	29.5	.	18.5

	KKL 2 (6)	KKL 2 (6)	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II-III	KTH II-III	KTH II-III	KTH II-III	KTH II-III	KTH II-III	KTH III	KTH III	KTH III
Phalanx II	334	674	B (23)	B (23)	B (23)	A (6)	A (6)	A (9)	A (9)	B (21)	B (21)	B (21)	B (21)	A (2)	A (2)	A (2)
1.	41.0	36.5	38.5	39.5	39.5	40.0	40.0	36.0	37.5	38.0	38.5	40.0	.	36.0	35.0	40.0
2.	29.0	26.5	28.5	28.0	28.0	26.0	26.0	24.0	27.5	27.0	26.0	28.5	24.5	24.5	25.0	33.2
3.	28.0	22.0	27.0	24.5	24.5	20.0	20.0	20.0	22.5	25.0	26.5	24.5	21.5	21.0	20.5	.
4.	25.0	21.0	25.0	23.5	23.5	20.0	20.0	18.5	.	22.0	23.0	23.0	20.5	20.5	19.5	23.5

	KTH III	KTH III		NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM I	INM I		INM I-II	INM I-II		INM II	INM II	INM II
	B (8)	A (2)		5167	4317	6207	2271	6796	6204	1712		A1 (3)	? (4)		G8 (3)	G8 (3)		G9 (6)	G8 (3)	H19 (1)
1.	41.0	42.5		32.5	36.0	40.0	44.5	.	.	45.0		42.5	.		37.0	44.0		34.0	37.0	37.5
2.	28.5	27.5		.	25.0	26.5	31.0	(29.0)	(32.0)	29.5		28.5	(28.5)		26.0	30.5		24.5	26.0	25.0
3.	25.0	22.5		.	21.5	21.5	26.0	23.5	.	25.0		22.5	26.0		21.5	28.0		20.0	21.5	21.0
4.	23.0	23.0		19.0	20.5	19.5	24.5	22.5	.	24.0		22.0	24.5		20.5	24.5		19.0	20.0	20.5

	INM II	INM II	INM II	INM II		INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III
	G9 (3)	G9 (6)	A1 (1)	G8 (3)		D1 (1)	D2 (3)	A2 (4)	D2 (4)	D2 (5)	D1 (4)	D2 (3)	D2 (2)	G8 (1)	B2 (3)	D2 (5)	D2 (4)	D1 (5)	D3 (3)	H0 (1)
1.	39.0	39.0	40.5	44.0		35.0	38.0	39.0	41.5	37.0	37.5	38.0	38.0	38.5	39.0	39.5	40.0	40.0	40.0	40.0
2.	27.0	26.0	29.5	30.5		23.5	28.5	28.0	27.5	26.0	24.0	26.5	29.5	26.0	27.0	30.0	26.0	27.0	23.0	23.0
3.	23.0	20.5	27.5	28.0		20.0	24.5	21.5	25.0	20.0	20.0	24.0	25.0	23.0	25.5	28.0	23.5	21.5	18.0	16.5
4.	21.5	21.0	23.5	24.5		19.5	22.5	22.0	23.0	20.0	19.0	21.0	22.0	20.5	22.0	24.5	21.5	21.0	17.5	16.0

	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III		NVS II		NVS W		NVS IV		NVS V
	G8 (2)	D2 (3)	I3 (4)	E2 (3)	C4 (2)	D2 (3)	D2 (4)	D2 (3)	G8 (5)		A1 (6)		4384		5390		1511
1.	40.0	40.0	41.0	41.0	43.0	.	.	.	.		42.5		38.0		58.0		33.5
2.	.	25.5	27.0	30.5	29.5	29.5	34.0	.	33.5		21.5		.		36.5		23.0
3.	18.5	22.0	23.0	25.0	27.5	.	32.0	21.0	.		17.0		24.5		30.0		20.0
4.	.	20.0	22.5	25.0	24.5	20.0	28.5	19.0	.		15.5		22.5		28.0		17.5

	KKL 2 (6)	KKL 2 (5)		KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II	KTH II		KTH II-III		KTH III	KTH III	KTH III		NVS III
Phalanx III	672	673		A (4)	B (2)	A (4)	A (4)	B (2)	A (4)	A (4)	A (4)		?		A (2)	B (6)	A (2)		311
1. Maximum length	63.0	58.0		47.0	57.5	62.5	63.0	66.5	69.0	76.0	.		.		60.0	61.0	66.5		(67.0)
2. Dorsal length	50.0	48.0		47.0	44.5	50.0	51.0	53.0	57.0	60.0	.		.		.	48.0	54.5		(47.0)
3. Width	.	.		20.0	21.5	20.0	22.5	26.0	24.5	28.0	22.0		20.0		22.0	19.5	23.5		.

	NVS III	INM II	INM II	INM II	INM II-III	INM II-III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III
	1281	D2 ♀	H8 ♂	D1 ♀	A4 ♂	A4 ♂	C3 ♂	A4 ♀	18 ♀	D3 ♂	D5 ♂	D1 ♀	H0 ♂	D3 ♀	B1 ♂	D2 ♀	H8 ♂
1.	65.0	53.5	58.5	58.5	60.0	67.0	62.5	54.0	55.5	55.0	55.5	59.0	59.5	66.0	69.0	71.0	.
2.	.	46.0	48.0	47.5	49.5	53.0	43.0	39.5	49.0	46.0	45.5	23.0	47.0	53.0	54.0	57.5	.
3.	.	16.5	21.5	21.5	22.0	22.5	18.0	21.0	19.5	23.0	20.5	21.5	22.5	21.0	24.0	23.0	20.0

	INM III	INM III	INM III	INM III	INM III
	D1 ♂	18 ♂	B4 ♂	H2 ♂	G8 ♂
3.	20.0	20.5	23.5	24.5	26.0

Canis familiaris

	NVS III	NVS ?	INM r	INM l	Canis dingo	Canis lupus poll.	Canis fam. par.d.
Maxilla	4857	8357	?		27	16	6
Length of the molar row	.	17.5	.	18.0	.	.	.
Length P^3	12.5	11.2	.	.	.	.	.
Length P^4	09.5	18.5	18.5	19.5	19.56	21.73	18.60
Width P^4	10.5*	10.5*	.	10.5*	9.20	10.91	9.62
Length M^1	00.5**	12.0	11.5**	13.0	12.74	14.32	12.45
Width M^1	06.5**	15.5	.	17.0	17.19	18.77	16.45
Length M^2	.	6.2	.	7.0	.	.	.
Width M^2	.	10.0	.	10.5	.	.	.

* Measured over the cusp.

** Measured along the alveolus.

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	Canis dingo	Canis lupus poll.	Canis fam. par.d.
Mandibula	6182	5355	7143	4227	256	1272	11	16	5
Length of the teeth row	.	.	.	7(.0	.	.	.	.	.
Length of the molar row	.	26.0	.	35.0	.	.	.	.	.
Length of the premolar row	.	.	08.0	36.0	.	.	.	.	.
Length M_1	12.2	19.0 xx	20.0	20.5	20.0	22.5	20.72	24.64	21.48
Width M_1	.	.	9.5	8.0	8.0	10.0	8.32	9.61	8.48
Length M_2	.	.	9.0	.	.	.	8.80	10.28	8.72
Width M_2	.	.	7.0	.	.	.	6.82	7.63	6.68
Height of the horizontal ramus before P_4	16.5 juv.	20.5	20.5	19.0	.	23.0	.	.	.

	NVS III
Radius	5175
Maximum proximal width	17.2
Minimum width of the diaphysis	12.0

	INM II
Humerus	D8 0 D
Maximum distal width	33.0
Minimum width of the diaphysis	12.5

	NVS III
Astragalus	5175
Maximum length	47.0

Felis sp.

	NVS V	NVS III	NVS III	NVS IV	NVS VI
Mandibula	1543	5036	2609	3254	627
Length of the teeth row with C	27.2	.	.	.	.
Length of the teeth row without C	17.8	22.5	.	22.0	22.2
Length of the diasthema	6.0	5.5	.	4.0	.
Length M_1	6.2	.	.	8.1	8.5
Length at 4	.	14.0	13.0	.	.

	NVS III r	NVS III ?	NVS III l
Humerus			
Maximum distal width	18.0		18.0
Width of the trochlea	13.0		13.5
Minimum width of the diaphysis	6.2		.
	juv.		

	NVS III
Pelvis	?
Minimum length of the acetabulum	13.0

Elephas maximum

	NVS IV
Maxilla	5541
Length teeth still preserved	69.0
Maximum width	33.0
Maximum height measured from the rim of the alveolus	60.0

Equus caballus

	NVS W		NVS III
M^3	4258	$M^{1/2}$	6129
Length	Ø6.5		Ø2.Ø
Width	Ø2.5		26.5

	NVS V
Mandibula	?
Length of the molar row	93.5
Length P_2	31.5
Width P_2	13.5
Length P_3	29.0
Width P_3	13.0
Width P_4	13.5

	NVI III
Radius	157
Maximum proximal width	80.0
Width of the articular surface	75.0
Minimum width of the epiphysis	36.0

Equus asinus

	NVI II
Mandibula	?
Maximum length M_1	24.5
Maximum width M_1	13.0
Maximum length M_2	22.0
Maximum width M_2	16.5
Maximum length M_3	22.0
Maximum width M_3	15.5

	NVT II
Radius	?
Maximum distal width	42.0
Minimum width of the diaphysis	24.0

Sus sp.	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Maxilla, juv.	2240	11734	?	722	8839	582	1484	2409	1601	9328	2651	?	4462	2086	?	3472
Length of the milk molar row	33.0	34.0	34.0	34.5	35.0	.	.	.	.	.	.	.	.	.	.	.
Length of p^3	12.5	14.0	13.5	15.0	14.0	12.5	12.5	13.0	14.0	15.0	.	.	.	.	.	.
Width of p^3	10.0	12.5	11.0	10.0	10.5	10.0	10.0	11.0	12.0	12.0	.	.	.	.	.	37.0
Length of the praemolar row	.	.	.	.	.	.	.	.	.	.	01.0	06.0	36.0	36.0	36.5	.
Length M^1M^2	.	.	.	.	.	.	.	.	.	.						

	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Mandibula juv.	?	27	?	744	2408	680	12343	?	10684	?	679	9140	?	11465	1090	?
1. Length of the milk molar row	33.0	34.5	35.0	35.5	05.0	36.0	36.0	36.5	36.0	37.0	38.0	35.0	.	.	.	.
2. Length p_3	.	08.0	16.5	17.5	16.5	18.0	.	18.0	18.0	19.5	17.0	18.0	18.0	19.0	19.0	19.5
3. Width p_3	.	8.5	7.5	8.0	8.0	8.0	.	.	8.5	9.0	9.0	8.0	8.5	19.0	.	9.5
4. Length M_1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5. Length M_2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	NVT	NVT	NVS III	NVS III	59/61 NVS III	NVS W
	3391	11735	3639	4671	2544	2460
1.	.	.	30.5	.	32.5	.
2.	19.0	18.5	16.0	.	17.5	.
3.	9.0	9.0	13.0	.	7.5	14.5
4.	.	.	15.0	.	.	18.0
5.	.	.	.	19.5	.	35.0

	S.d. NVT	S.d. NVT	S.d. NVT	S.d. NVT	S.d. NVT	S.d.	S.scr.
Mandibula adult	8750	1425	?	?	1212	?	5988
Length of the praemolar row with P	.	.	.	.	.	37.0	.
Length of the praemolar row without P_1	.	.	.	.	.	25.0	.
Length of the molar row	67.0	71.0	.	.	.	.	48.0
Length M_3	31.0	33.0	30.5	32.5	33.5	.	17.0
Width M_3	15.5	15.5	19.0	15.0	16.0	.	.
∅ C alveolus	.	.	.	.	.	12.5	.

	KKR
Humerus	22
Maximum distal width	43.0
Width of the trochlea	38.0
Minimum width of the diaphysis	20.5

	INM III
Pelvis	D2 (4)
Length of the acetabulum	29.0

	KTH III	NVS V
Femur	A (1)	5486
Maximum proximal width	56.0	58.0
Length of the caput	31.0	.
Width of the caput	23.0	.

	NVS V
Tibia	5488
Maximum length	184.0
Maximum proximal width	51.0
Maximum distal width	32.0 33.0
Minimum width of the diaphysis	32.0
	1 ind.

	INM III		INM III
Phalanx I	A2 (1)	Phalanx II	A2 (1)
Maximum length	67.0		49.0
Maximum proximal width	63.0		43.0
Maximum distal width	59.0		47.5
Minimum width of the diaphysis	58.5		44.0
Maximum thickness proximal	.		44.0
Maximum distal thickness	.		31.5

cf Axis axis

	NVT
	7424
Circumference rose	050.0

Tetracerus quadricornus

	INM II	INM III
Horn-cores	H9 (1)	I8 (2)
Circumference at the base	40.0	45.0
Maximum diameter	13.5	13.5
Minimum diameter	10.0	12.5

	NVS III	NVS III	Recent
Mandibula	4226	1781	UV87
Height behind the symphysis	.	. .	9.0
Height before M_1	14.5	16.0	16.0
Height behind M_3	.	24.0	22.0
Height before P_2	12.0	.	11.5
Length of the teeth row	65.5	63.0	65.0
Length of the molar row	37.0	41.0	38.0
Length of the praemolar row	28.5	.	27.0
Length M_2	12.5	.	13.0
Length M_1	16.0	15.0	15.0
Width M_1	6.5	7.0	7.0
Thickness pars molaris	.	13.0	11.5

Boselaphus tragocamelus	NVT	NVT	NVT	55/56 NVS III
Horn-cores	148	2887	8904	7688
Circumference at the base	128.0	140.0	152.0	125.0
Width a	38.0	43.0	43.0	37.0
Width b	34.0	40.0	36.0	36.5
Width c	43.0	51.0	55.0	45.0

cf Boselaphus tragocamelus

	NVT 6412	NVT 12849
Mandibula		
Height behind the symphysis	.	09.5
Height before M_1	.	31.5
Height behind M_3	45.0	44.0
Length of the teeth row	.	021.5
Length of the molar row	.	76.0
Length of the praemolar row	.	45.0
Length M_2	.	23.5
Width M_2	.	13.0
Length M_3	32.0	29.5
Width M_3	13.0	12.5
Thickness of the horizontal ramus	22.5	21.0

Boselaphus tragocamelus

	INM III
Metacarpus	D2 Ø
Maximum proximal width	45.0
Maximum proximal thickness	31.0
Index $\frac{2}{1}$ x 100	69.0

	INM I	INM III
Metatarsus	A2 04	D2 Ø
Maximum distal width	38.5	43.0
Maximum distal thickness	28.5	32.0
Index $\frac{2}{1}$ x 100	74.0	73.0

Boselaphus/Cervus

	INM I
Radius	D2 (5)
Maximum distal width	54.0
Maximum width distal articular surface	46.0

Antilope cervicapra

	NVT	NVT	NVT	NVS	INM I	INM II-III	INM II-III	INM III	INM III	INM III	INM III	INM III	INM III
Horn-cores	2756	1028	632	6136	II (1)	B0 (7)	B0 (7)	G9 (6)	D2 (7)	I9 (1)	G5 (9)	C3 (6)	D1 (6)
1. Circumference at the base	92.0	101.0	000.0	101.0	93.0	102.0	93.0	59.0	93.0	94.0	95.0	98.0	101.0
2. Diameter at the base	28.0	32.0	30.0	31.5	29.5	32.0	29.0	18.5 juv.	29.5	29.5	28.0	32.5	32.0

	INM III	INM III	NVS W	NVS IV	NVS V	NVS V	NVS V	NVT	NVT	NVT
	D5 (2)	18 (1)	2457	2995	3201	4287	2712	2756	1028	632
1.	101.0	002.0	110.0	97.0	98.0	82.0	96.0	92.0	101.0	000.0
2.	31.5	32.5	33.5	31.0	30.0	24.5	29.5	28.0	32.0	30.0

	NVT	NVS III
Mandibula	1023	3732
Height behind M_3	00.0	00.5
Length M_2	21.0	11.5
Width M_2	11.0	8.0
Length M_3	21.5	16.0
Width M_3	10.0	8.2
Thickness of the horizontal ramus	18.0	.

Gazella gazella

	NVT	NVT
Mandibula	255	3097
Height behind the symphysis	.	11.0
Height before M_1	15.0	18.0
Height behind M_3	25.0	.
Length of the teeth row	60.0	.
Length of the molar row	40.0	.
Length of the praemolar row	20.0	25.0
Length M_3	17.0	.
Width M_3	6.0	.

Capra hircus

	NVT	NVT	NVS III
Horn-cores	250	198	319
Circumference at the base	.	70.0	71.0
Maximum diameter	.	22.5	.
Minimum diameter	.	17.5	.
Maximum length	96.0	78.0	.
Minimum length	77.0	74.0	.

Ovis aries

	NVT r	NVT l
Horn-cores	3374	3375
Circumference at the base	107.0	110.0
Maximum diameter	42.0	41.5
Minimum diameter	26.0	27.0
Maximum length	.	.
Minimum length	.	.

Capra/Ovis

	NVT	NVT	NVT	NVT	NVT	NVT	NVS III
Maxilla	7436	2361	1098	9035	447	10680	7936
Length of the teeth row	64.0	64.0	.	.	.	.	.
Length of the molar row	42.0	42.0	46.0	47.0	.	.	47.5
Length of the praemolar row	24.0	21.5	.	.	28.5	.	.
Length M^2	.	.	.	.	.	02.0	.
Width M^2	.	.	.	.	.	12.5	.
Length M^3	05.0	16.0	16.0	.	.	17.0	.
Width M^3	9.0	11.0	11.0	.	.	12.0	.

	NVT
Maxilla juv.	9035
Length milkmolar row	28.5

	KTH II-III	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVS III
Mandibula juv.	A Ø	1659	20	466	7722	?	10592	1658	393	11229	257	?	156	7934
1. Length of the milkmolar row	28.5	26.0	27.0	28.0	29.0	.	.	.	.	.	.	.	.	29.0
2. Length p_3	15.0	.	15.0	15.0	16.5	14.0	14.5	15.5	05.5	16.5	16.5	17.0	17.5	16.0
3. Width p_3	5.5	.	6.0	6.0	6.3	6.0	6.5	6.0	.	5.5	6.5	6.0	6.0	5.0

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM III	INM III	INM III	INM III		NVS W
	4860	4741	8421	7828	6651	636	768	4514	3445	3272	2925	362		I9 Ø	D1 Ø	C3 Ø	p_3 loose		6474
1.	29.0	30.5	27.5	28.0	30.0	.	29.5	.	.	.	.	33.0		23.0	30.0	.	.		32.0
2.	.	17.5	19.5	.	17.0	17.0	16.0	15.0	16.5	03.0	14.0	19.0		13.0	16.0	17.0	18.5		16.0
3.	.	.	5.5	.	6.0	6.5	5.5	5.0	.	.	5.0	.		6.0	5.5	6.0	6.2		7.0

	NVS IV	NVS IV	NVS IV	NVS IV		NVS V	NVS V	NVS V	NVS V	NVS V	NVS V	NVS V	NVS V		?	?
	6140	5210	5210	6651		1143	1154	1143	4787	1742	2453	2453	5697		3533	6291
1.	32.0	31.0	31.0	30.1		28.0	.	29.0	.	29.0	32.0	32.0	31.0		28.0	.
2.	17.0	18.0	18.0	17.0		15.5	16.5	15.0	16.0	.	18.0	18.0	.		15.0	16.0
3.	.	7.0	7.0	6.0		6.0	6.0	.	6.0	.	7.5	7.5	.		.	6.0

	KKL 2 (4)		NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT
Mandibula adult	128		9607	3376		9461	11542	?	3001	444	2049	11337	74	9961	1721	2995
1. Height behind the symphyses	.		.	.	.	.	.	13.0	.	.	.	.	8.0	.	.	.
2. Height before M_1	.		09.0	.	19.5	.	.	.	.	20.0	21.0	.	.	21.0	18.5	.
3. Height behind M_3	.		04.0	.	.	.	30.0	.	32.5	33.0	.	36.0	.	.	.	.
4. Length of the teeth row	.		67.0	.	69.0	.	.	.	.	66.5	.	.	.	.	.	.
5. Length of the molar row	.		47.0	46.0	46.0	.	47.0	.	49.5	43.0	53.5	.	.	.	.	50.0
6. Length of the praemolar row	.		21.0	.	23.0	23.0	.	25.0	.	22.5	.	.	.	.	21.5	.
7. Length M_3	22.0		20.0	.	19.0	20.0	21.5	.	20.0	.	20.5	22.5	.	.	.	21.0
8. Width M_3	8.5		8.0	.	6.5	.	8.0	.	7.5	.	7.5	8.5	.	.	.	.

	NVT	NVT	NVT	NVT	NVT	NVT	NVT	NVT		59/61 NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III		INM III
	6093	1147	7433	982	183	3446	6093	1147		362	2870	3813	2792	3401	3821	3157	3351	2743		B1 (8)
1.	.	12.0	13.0	.	.	.	.	12.0		14.0	.	.	15.0	.	.	.	.	.		.
2.	.	21.5	22.0	.	21.5	.	.	21.5		22.5	.	25.5	.	.	.	.	.	.		.
3.	.	.	.	34.0	.	.	.	05.0		.	.	41.0	.	.	33.5	.	.	.		.
4.	.	.	.	.	.	63.0	.	69.5		02.5	.	74.5	.	.	.	.	.	64.0	$-P_2$	65.0
5.	.	49.5	.	45.0	.	.	.	.		07.0	48.0	48.5	.	.	47.0	47.5	48.0	46.5		43.0
6.	.	23.0	24.0	.	24.5	.	.	.		23.5	.	25.5	.	.	.	.	.	.		22.5
7.	23.0	.	.	20.5	.	.	23.0	.		.	.	18.5	.	18.5	19.5	.	18.5	18.0		22.0
8.	8.0	.	.	8.0	.	.	8.0	.		8.0	.	7.5	.	7.5	7.5	.	7.0	8.0		8.5
																		$-P_2$		

	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III		NVS W		NVS IV	NVS IV	NVS IV	NVS IV	NVS IV		NVS V
	P8 (1)	I8 (3)	I8 (3)	D1 (3)	I9 (1)	G9 (5)	D4 (3)	(4)	?	?		3946		5898	1360	5542	6292	2079		690
1.	12.0	.	.	13.0	.	.	12.5	13.0	.	.		.		.	.	12.5	.	13.5		12.0
2.	20.0	21.0	.	25.0	22.0	20.5	.	22.0	.	.		18.5		.	.	18.0	.	20.5		20.0
3.	.	.	.	.	.	.	.	.	.	.		.		.	.	.	.	.		32.5
4.	.	.	.	.	.	.	.	.	.	.		.		72.5	.	.	06.0	68.0		71.0
5.	.	50.0	49.5	.	.	.	.	.	.	.		.		24.0	.	.	23.0	23.0		24.0
6.	20.0	.	.	.	.	.	.	.	24.0	25.5		47.5		49.0	46.0	.	52.0	46.0		48.5
7.	.	19.5	20.0	.	.	.	.	.	.	.		18.0		.	.	.	19.0	20.0		22.5
8.	.	7.5	7.5	.	.	.	.	.	.	.		6.0		.	.	.	7.5	7.5		8.5
								$-P_2$												

	NVS V	NVS V	NVS V	NVS V	NVS V	NVS V	NVS V	NVS V	NVS
	2932	907	1199	1149	893	857	1140	2037	4194
1.	10.5	11.0	13.0	.	11.0	11.5	.	.	.
2.	20.0	17.0	20.5	.	20.0	19.0	.	.	.
3.	.	.	35.5	.	.	.	.	.	.
4.	.	.	61.0	.	.	72.0	.	.	.
5.	21.0	20.0	19.5	.	22.5	.	.	.	.
6.	.	.	42.5	.	.	.	.	.	.
7.	.	.	22.5	21.0	.	23.0	25.0	17.0	21.0
8.	.	.	9.0	8.0	.	8.0	8.0	6.0 juv.	7.0

	INM I	INM I	INM III	INM III	INM III	?	NVS V	55/56 NVS III
Scapula	II 0)	II 0)	H9 0)	D2 ⑦	D1 ⑥	?	1509	5402
Minimum length of the neck	20.0	21.0	23.5	20.5	.	.	20.0	18.5
Length of the articular surface	26.0	⑦7.5)	27.5	.	25.0	23.0	.	25.5
Width of the articular surface	24.5	23.0	24.5	24.5	23.5	21.0	.	21.0
Width over the proc. articularis	35.0	⑭4.0)	35.5	.	35.5	.	.	30.5
Height of the articular surface to the beginning of the spina scapulae	19.0	17.0	16.0	20.0	.	.	.	.
Index $\frac{2}{1} \times 100$	95.0	81.0	68.2	97.5	.	.	.	.

	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM II	INM I-II	KKL 2 ⑥
Humerus	I8 ⑤	I7 0)	I8 0)	I8 ⑦	I8 ③	02 ③	H8 0)	I8 ⑥	B1 ⑦	B1 ⑦	A1 ⑥⑦	G8 ⑨③	382
1. Maximum proximal width	.	⑥1.3	.	.	.	.	.	.	.	.	.	.	.
2. Width of the caput	28.0	33.0	.	.	.	.	.	.	.	.	.	.	.
3. Maximum distal width	.	.	30.0	31.0	33.0	30.5	32.0	30.0	31.5	28.0	26.0	24.0	27.0
4. Width over the trochlea	.	.	27.0	30.5	29.0	28.0	31.0	27.5	29.5	27.5	26.0	23.5	14.0
5. Minimum width of the diaphysis	.	.	.	.	.	.	.	.	.	.	.	cf.	26.0

	KKL 2 ⌀	NVS III	NVS IV
	314	5167	?
2.	.	32.5	.
3.	30.0	.	♀27.5
4.	13.5	.	♀26.0
5.	28.5	.	.

	INM III	INM III	INM III	INM III
Radius + Ulna	D2 ♂	I8 ⌀	I8 ♀	C4 ♂
Maximum proximal width	33.0	31.0	31.5	.
Width of the proximal articular surface	31.0	29.5	29.5	.
Minimum width of the diaphysis	20.5	19.0	.	.
Width of the articular surface	.	.	17.0	18.0
⌀ Processus olecranon	.	.	21.5	20.0

	NVT	INM III	INM III	INM III	KKL 1 ♂
Femur	9140	I8 ⌀	I8 ♀	I9 ♂	823
Maximum length	174.0	.	.	.	.
Maximum proximal width	34.5	.	.	.	.
Minimum width of the shaft	17.5	.	.	.	.
Maximum distal width	.	31.0	34.0	♂1.5	30.0

	INM I	INM I	INM II	INM III	INM III	INM III	INM III	INM III	INM III	INM III	KKL
Tibia	II ♂	A2 ♂4	D1 ♂♂	H8 ⌀	G9 ♀	I9 ♂	I9 ♂	G9 ⌀	I9 ♀	I8 ♂	x
Maximum proximal width	.	.	.	♀2.0	40.0	39.5	.	.	.	.	36.0
Maximum distal width	29.0	28.0	♀2.0	.	.	.	26.0	27.0	29.5	28.0	.
Minimum width of the diaphysis	18.0	.	.	.	.	.	16.5	.	.	17.5	.

	INM III	INM III	INM III	INM III	INM II	INM III	INM III	INM III	INM III	INM .?	NVS III	NVS III
Phalanx I	I8 ♂	D9 ♂	D1 ♂	E4 ♂	G918	I8 ♂	I9 ♂	I8 ♂	G8 ♀	?	4363	4136
1. Maximum length	40.0	42.0	44.0	47.5	.	50.0	52.0	51.0	.	53.5	44.5	49.0
2. Maximum proximal width	10.0	12.0	12.5	13.0	12.0	11.5	11.5	.	10.5	11.5	12.0	13.5
3. Maximum distal width	8.5	10.0	10.0	11.0	.	9.5	9.5	9.5	8.5	.	10.5	11.0
4. Minimum width of the diaphyses	7.5	10.0	9.5	10.0	9.5	9.0	8.5	8.0	.	9.5	9.0	10.5

	NVS III	NVS III	NVS V	NVS V		NVS IV
	4874	6238	5688	5689	**Phalanx II**	2162
1.	46.0	42.0	55.0	55.0		27.0
2.	13.5	13.0	12.5	12.0		12.5
3.	10.5	11.0	11.0	11.0		10.0
4.	10.0	13.0	10.0	10.0		8.5

	NVT	NVS III	NVS III	NVS III	NVS V	INM III	INM III	INM II
Astragalus	3092	6747	4228	312	3341	I8 ♂	A1 ♀	I8 ♂
Length lateral	26.5	30.0	31.0	31.5	32.5	31.5	31.5	31.0
Length medial	25.0	27.5	♀9.5	29.0	28.5	29.5	30.5	29.5
Width of the trochlea	17.0	18.0	19.0	18.5	17.0	18.5	20.0	18.5

	NVS III	NVS W
Epistropheus	4496	2456
Maximum width of the articular surface	40.5	36.0
Maximum width of the dens	20.5	.

	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III	NVS III
Calcaneum	I8 (?)	D2 (?)	D1 (♀)	I8 (♀)	G9 (♀)	G8 (♀)	I9 (?)	G8 (♀)	D1 (?)
Maximum length	70.0	63.5	64.5	65.0	67.0	68.0	70.0	70.0	72.5
Maximum width	.	19.5	20.0	23.5	21.0	21.5	22.0	22.5	23.5
Maximum height	24.0	24.5	24.0	26.5	27.5	28.0	27.5	28.0	29.0
Medial length	27.0	.	.	.	.	.	.	.	.
Medial width	06.5	.	.	.	.	.	.	.	.

Metacarpus	INM III	INM III	INM III	INM III	INM III	INM III	INM III	INM	KKL 2 (♀)
	19 (♀)	I8 (?)	I9 (?)	C3 (?)	D2 (?)	I8 (♀)	G9 (♀)	?	735
1. Maximum length	.	.	.	.	.	.	.	.	.
2. Maximum proximal width	29.0	.	.	.	.	.	.	.	18.5
3. Maximum distal width	.	26.0	24.0	24.0	24.0	23.5	21.5	23.0	.
4. Minimum width of the diaphysis	.	.	.	.	14.0	.	.	.	.
5. Thickness of the medial part of the distal articular surface	.	.	.	17.0	17.0	17.0	16.5	16.5	.
6. Thickness medial antero-posterior ridge of the distal articular surface	.	.	.	13.5	13.0	12.5	13.0	13.0	.
7. Index $\frac{6}{5} \times 100$	.	.	.	79.7	76.2	73.5	81.3	78.7	.

	NVS W	* III	* ?	III	* III	* ?	* ?	* II	II
Metatarsus	1038	D2 (?)	?	I9 (?)	B (♀)	P9	?	A1 (♀)	D1 (♂)
1.	113.0	.	.	.	.	.	.	.	.
2.	17.5	.	.	.	.	.	.	.	.
3.	20.5	25.0	24.0	23.0	24.0	.	.	.	.
4.	16.5	.	.	13.0	.	24.5	.	24.5	.
5.	.	17.0	18.5	05.0	14.5	.	.	.	.
6.	.	.	.	07.5	17.5	15.5	18.0	.	.
	.	.	.	12.5	13.0	18.5	.	18.0	17.0
7.	.	.	.	71.0	73.7	14.0	.	14.0	12.0
						75.6	.	77.7	70.6

	NVS IV
Phalanx III	6193
Maximum length	51.0
Dorsal length	43.0

Lepus

	NVS W
Mandibula	4382
Length of the molar row	16.5

	NVS V		NVS ?
Humerus	1141	Femur	4198
Maximum length	84.5	Length; measured of the caput	100.0
Minimum proximal width	14.5		-
Maximum distal width	11.0		16.5
Minimum width of the diaphysis	5.0		8.0

Cervus/Boselaphus

	INM I	INM III	INM III	INM III	INM III	INM III
Phalanx I	A1 (4)	D2 (3)	D4 (3)	18 (6)	D4 (3)	18 (5)
Maximum length	69.5	(62.0)	62.5	62.5	-	-
Maximum proximal width	21.0	18.5	20.5	21.5	20.0	19.0
Maximum distal width	20.5	18.0	18.5	19.5	-	-
Minimum width of the diaphysis	18.5	16.0	16.5	16.5	-	17.0

Table 15. Measurements in mm. The measurements are mainly taken after Duerst.

() The measurement is not accurate.

cf Cervus unicolor

	NVS III	INM
Radius	1718	D2 ♂
Maximum distal width	52.0	♂4.0
Length pur.vl.	♂9.5	46.0

	NVS III
Mandibula adult	4796
Height behind the symphysis	20.5
Length of the premolar row	50.0

cf Axis axis

	INM III
Mandibula juv.	D1 ♂
Length milk molar row	26.5
Length p_3	16.0
Width p_3	6.5

Small deer

	Kann	INM
Humerus	22	II ♂
Maximum distal width	.	43.5
Width of the trochlea	35.0	37.0
Minimum width of the diaphysis	20.5	.
Minimum width of the epiphysis	.	18.0

	NVS V
Astragalus	591
Maximum lateral length	40.5
Maximum medial length	38.0
Width trochlea	26.0

Gallus gallus

	NVS IV
Humerus	2552
1 2	20.0
1 3	05.9
12 13	9.0
10 11	17.0

	NVS III
Femur	6360
Maximum length	67.0
Maximum proximal width	13.0
Maximum distal width	11.0
Minimum width of the diaphysis	6.0

	NVS III
Tibiotarsus	629
3 4	19.5
7 8	7.5

Gallus gallus dom.

	NVS VI
Tibiotarsus	306
12 13	160.0
3 4	(02.0)
7 8	14.5
5 6	10.5
9 10	17.5

Tarsometatarsus

Maximum length	120.0	
Maximum proximal width	20.0	
Maximum distal width	21.0	
Length of the spur	.	37.0
Height of the spur	14.0	14.0
	1 ind.	

Tibiotarsus

12 13	160.0
3 4	(02.0)
7 8	14.5
5 6	10.5
9 10	17.5

Avis sp.

	KKL
Carpo metacarpus	
1 2	68.0
3 4	19.0
5 6	13.0
7 9	5.0

Site	Navdatoli	59/61 Nevasa			Nevasa 55/56									Kayatha												Inamgaon	
Period					III	W	IV	V	VI	?	III	W	IV	V	VI	I	II	II/III	III	?	I	II	II/III	III	?		
					Mandibula						Maxilla				Mandibula					Maxilla						Mand.	Max.
Sus sp.	Mand.	Max.	Mand.	Max.																							
p1p2p3	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3(M1)	3	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3M1	14	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3M1(M2)	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3M1M2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4/M1M2	13 1	.	.	.	2y, 2y	1y, 2y	.	.	.	1?, 1 2y	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2	.	.	.	.	.	.	.	.	.	. 2 2y	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2(M3)	3	4	.	.	.	.	.	.	.	.	1y, 2y	1y, 2y	1y, 2y	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2M3	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Capra/Ovis																											
p1p2p3	.	.	.	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
p1p2p3(M1)	3	.	3	.	2	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
p1p2p3M1	2	.	.	.	1	2	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3M1(M2)	.	1	1	.	.	1	1	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
p1p2p3M1M2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(P2P3P4)M1M2(M3)	2	1 1	.	.	1	.	.	.	.	.	1y, 2y	1y, 2y	1y, 2y	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2(M3)	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2M3	37	6	10	1	4	12	5	12	3	.	6	.	2	2	.	.	.	.	.	.	.	.	.	.	.	15	1
Bos sp.																											
p1p2p3	2	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
p1p2p3(M1)	.	1	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
p1p2p3M1	.	.	1	1	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
p1p2p3M1(M2)	1	1	.	3	.	.	.	.	.	.	.	.	.	.	.	2y, 3y	.	1y, 3y	.	1y, 3y	.	.	.	.	.	.	.
p1p2p3M1M2	2	.	.	ca.10y, 3 y	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(P2P3)p3M1M2(M3)	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3(P4)M1M2M3	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
P2P3P4M1M2M3	71	16	36	21	13	6	5	1	.	1	10	6	2	1	.	1	7	9	4	.	.	2	1	1	1	14	1

Table 16. The age at which pig (Sus sp.), sheep/goat (Ovis/Capra), and cattle (Bos sp.) were slaughtered, according to the eruption of the teeth in maxilla and mandibula.

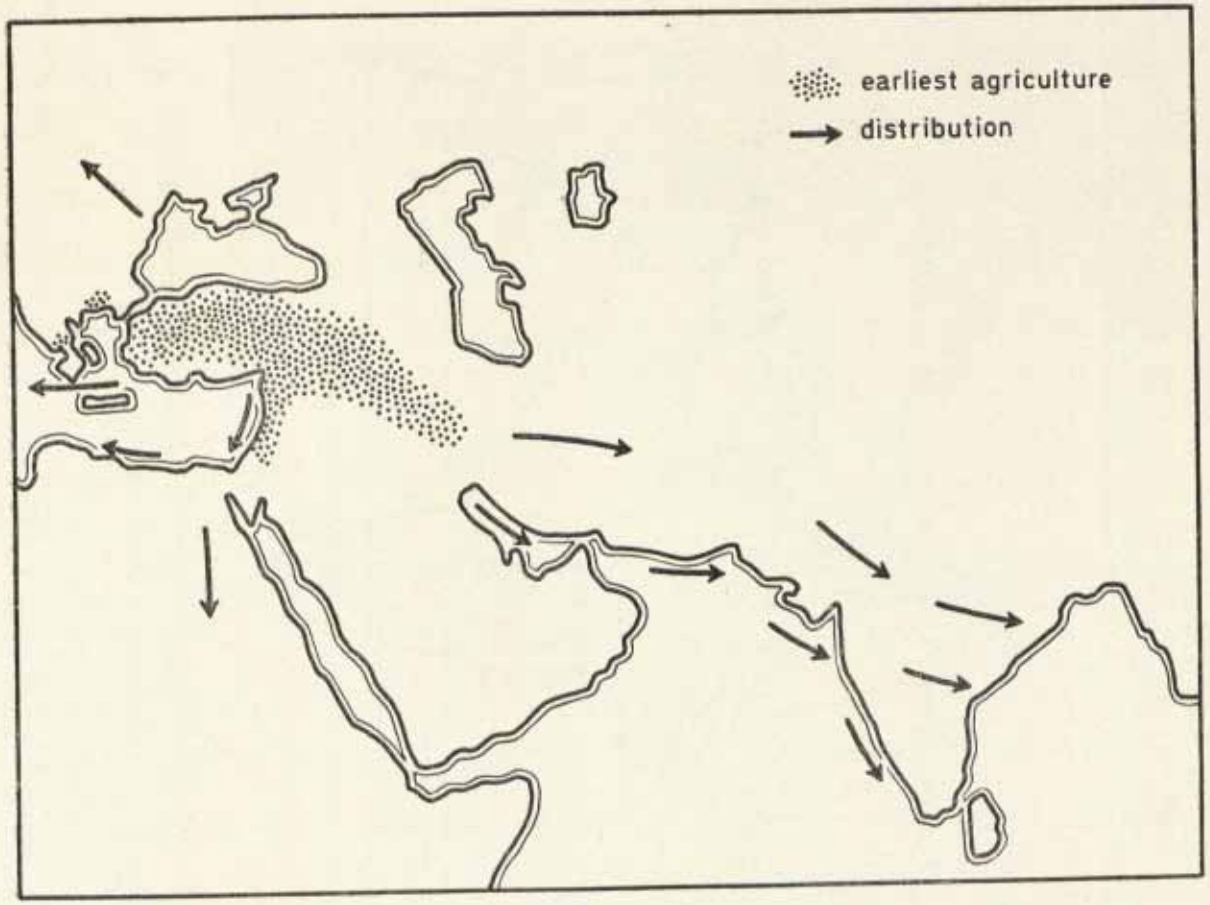

Fig. 1 Dispersion of the domesticated animals from the Near East and other areas.

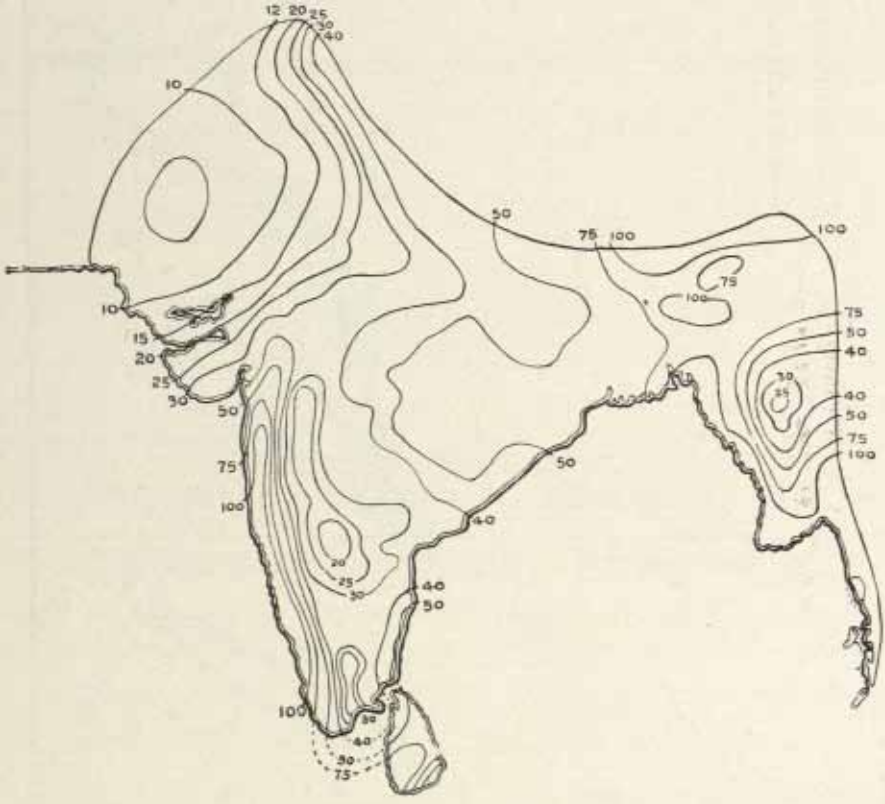

Fig. 2 Mean annual rainfall in inches (after Salim Ali 1949).

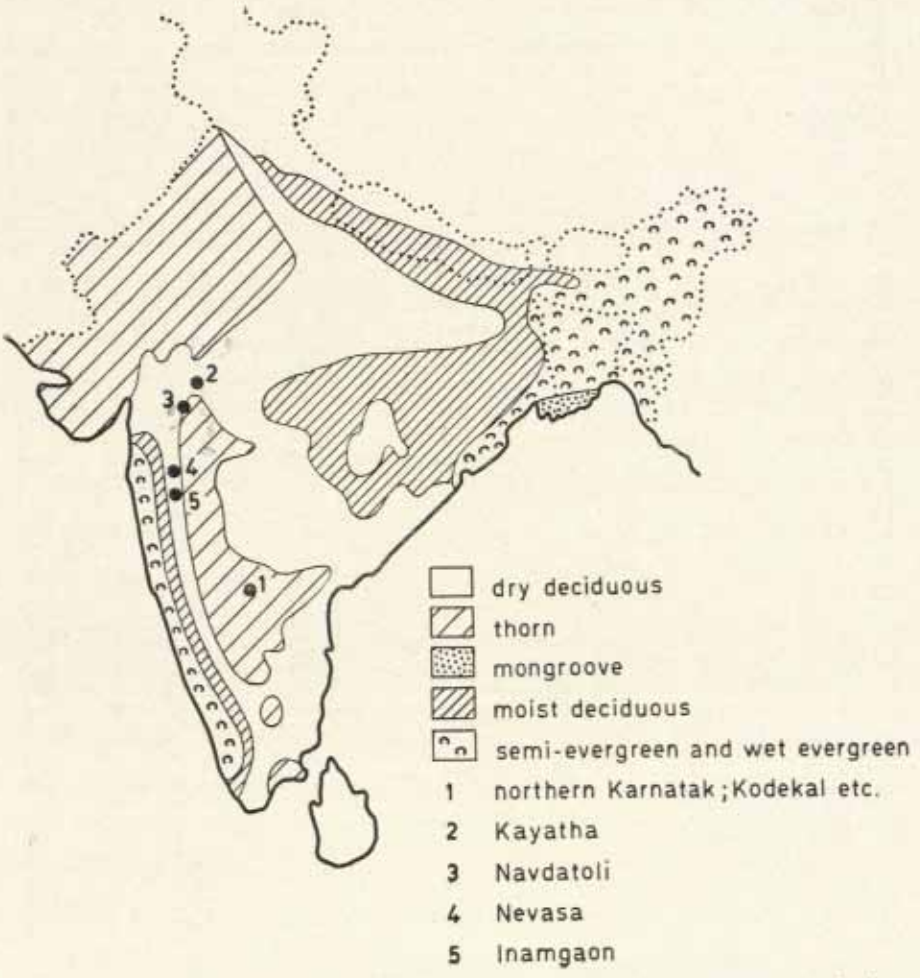

Fig. 3 The major vegetation areas (after Schaller 1967), and the location of the sites (Roelink, B. A. I., Groningen).

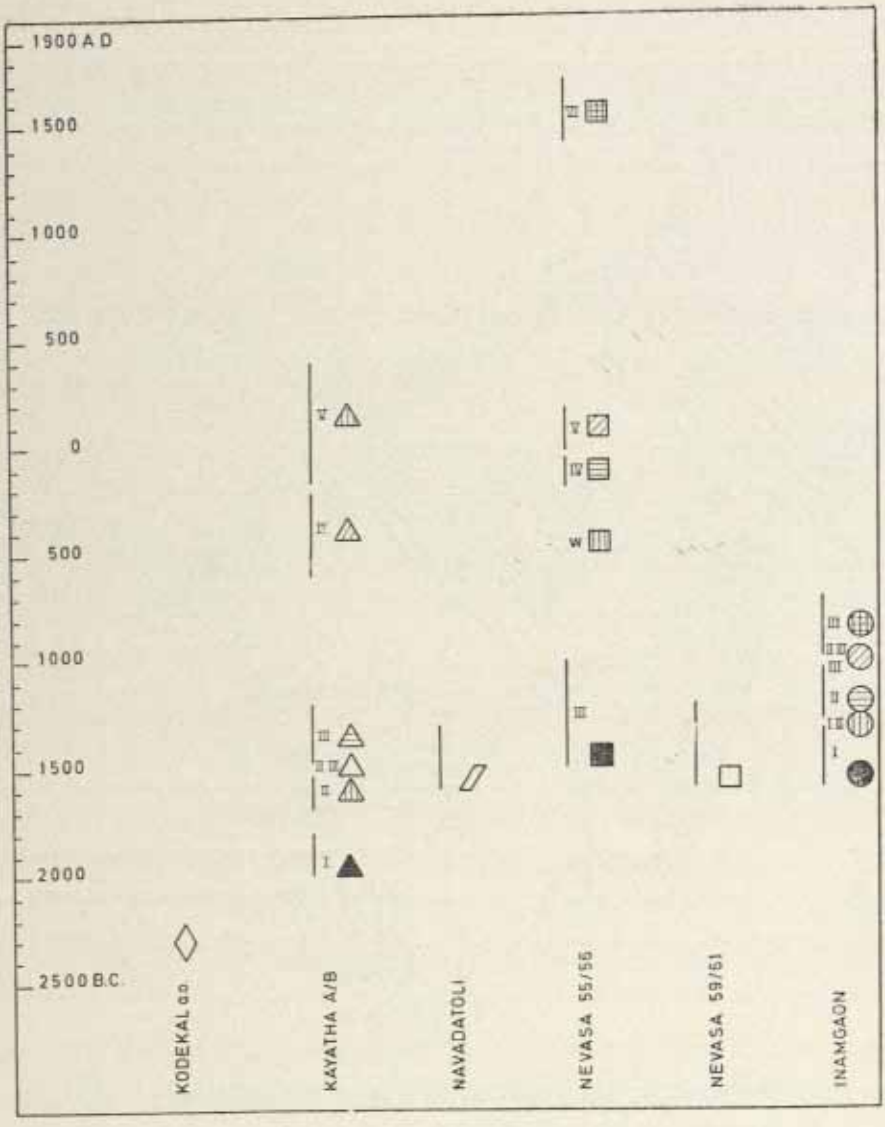

Fig. 4 The occupation phases of the ash-mounds, Kayatha, Navdatoli, Nevasa (1955–1961) and Navdatoli. The symbol refers to the diagrams (fig. 26, 33, 35, 39).

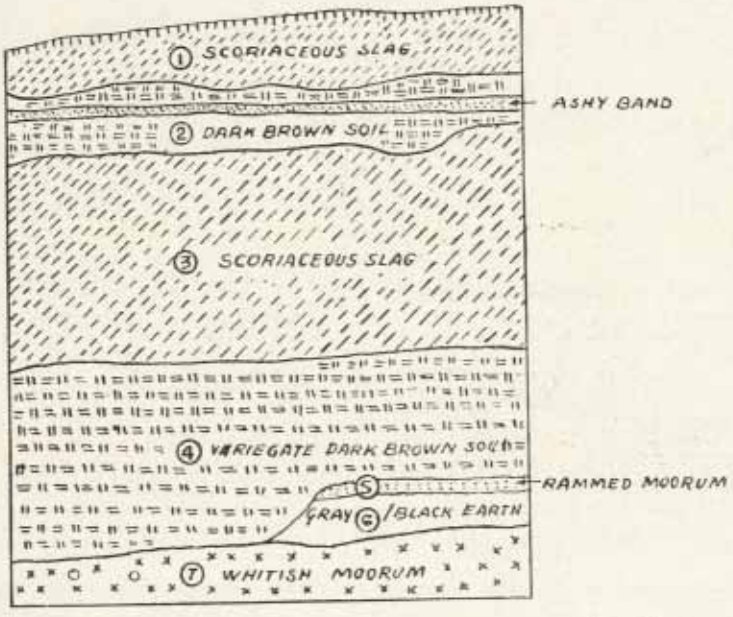

Fig. 5 Kodekal, trench I, section facing north (after Paddayya 1971).

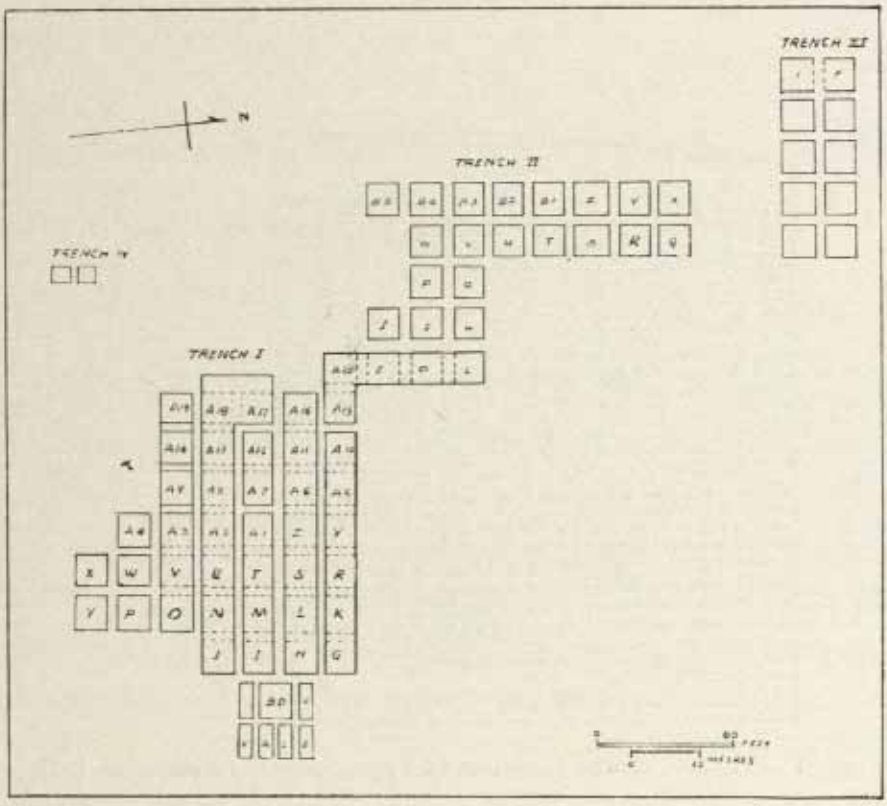

Fig. 6 The excavated trenches (I–IV) in Navdatoli. The faunal material was mainly collected in trenches I and II.

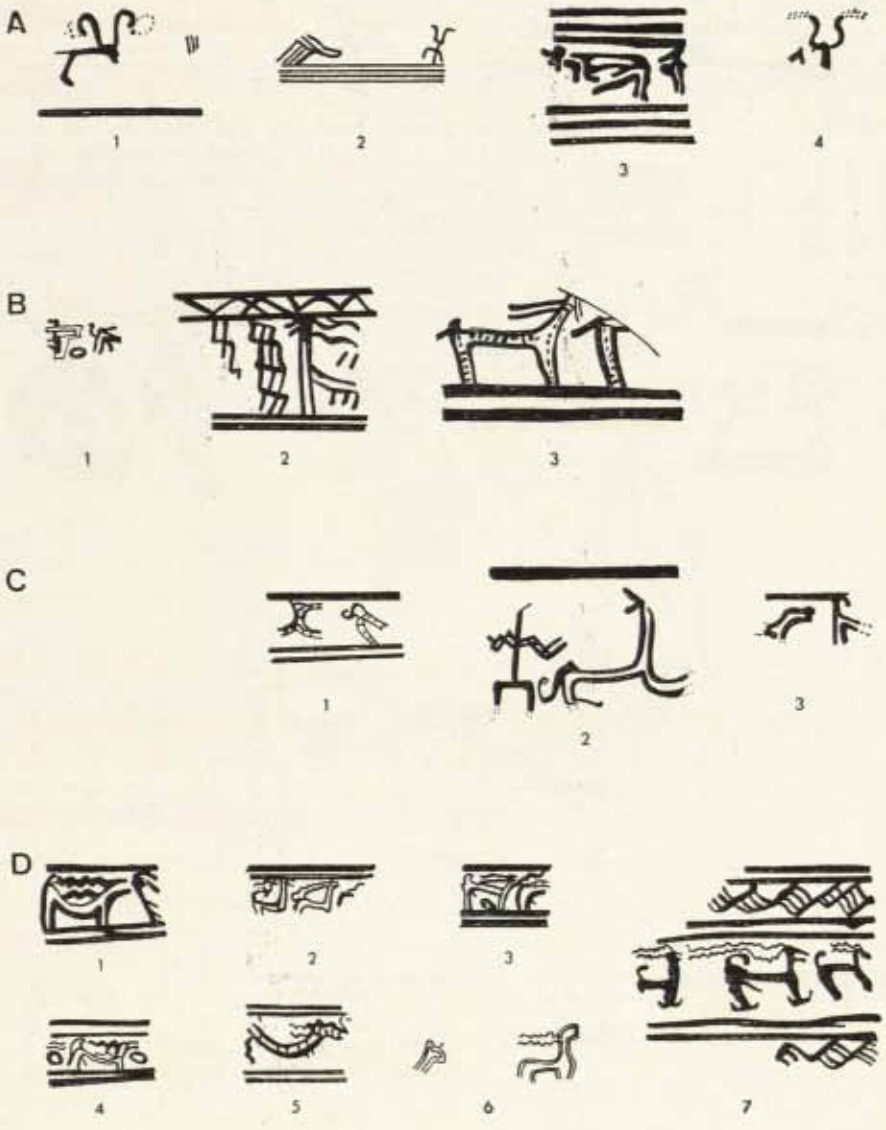

Fig. 7 Animals depicted on Navdatoli pottery.

A : 1, 2, 3, 4—cattle.

B : 1, 2, 3—goat.

C : 1, 2, 3—dog.

D : 1, 2, 3, 4, 5, 6—blackbuck; 7—♂ blackbucks pursuing ♀ (Warke, Deccan College, Poona).

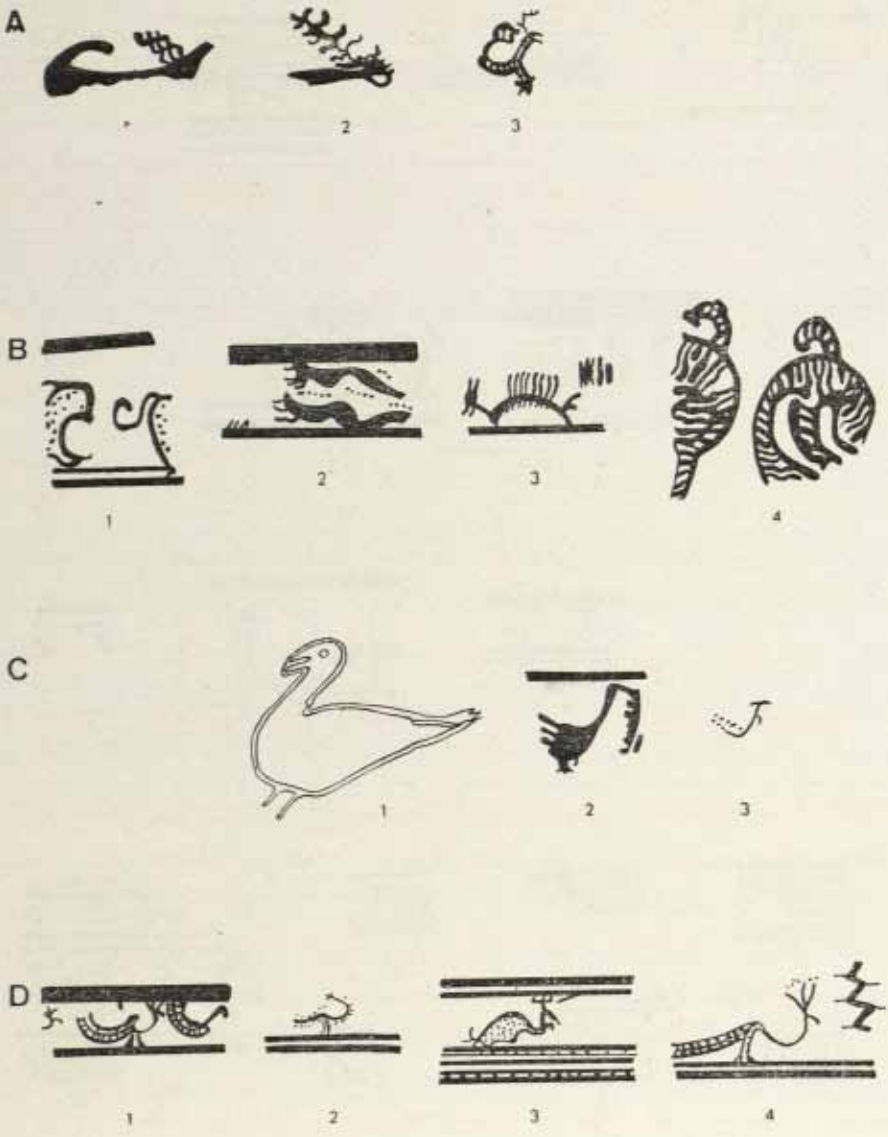

Fig. 8 A : 1, 2, 3, deer.
B : 1, panther; 2 ?; 3, porcupine; 4, tiger.
C : 1, pigeon; 2, goose; 3, domestic cock.
D : 1, 2, 3, 4, peacoks (Warke, Deccan College, Poona).

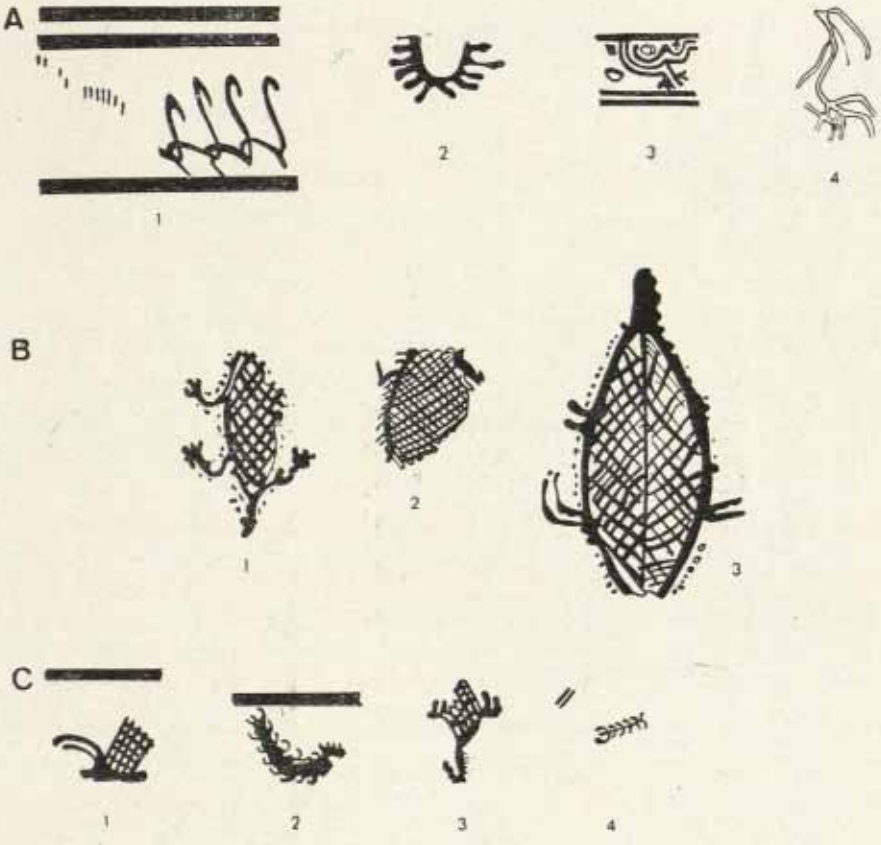

Fig. 9 A : 1, flamingo; 2, bird of prey or vulture; 3, little egret.
B : 1, 2, 3, crocodiles.
C : 1, butterfly; 2, centipede; 3, scorpion; 4, centipede (Warke, Deccan College, Poona).

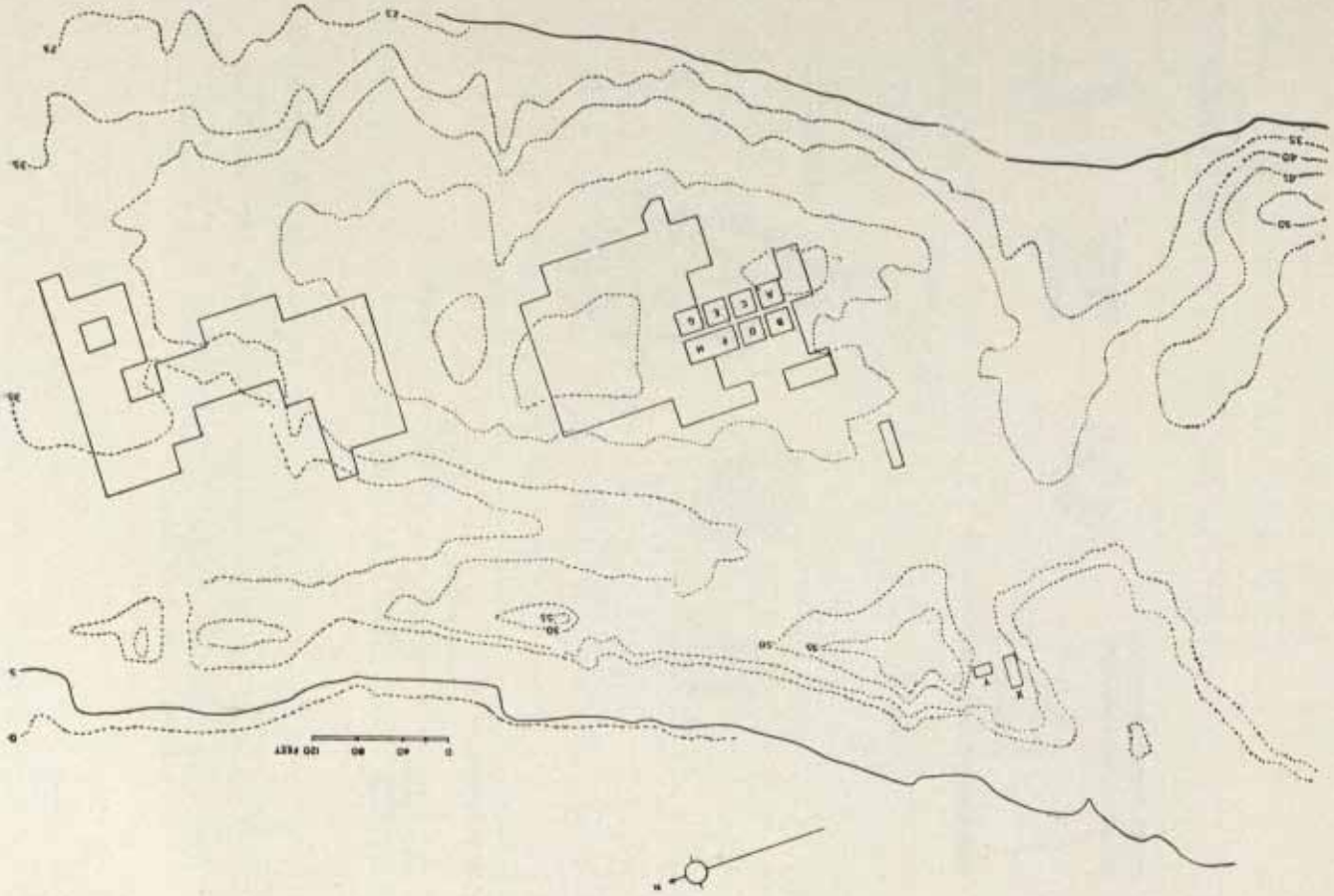

Fig. 10 The dwelling mound of Nevasa and the excavated areas (after Sankalia et al. 1960).

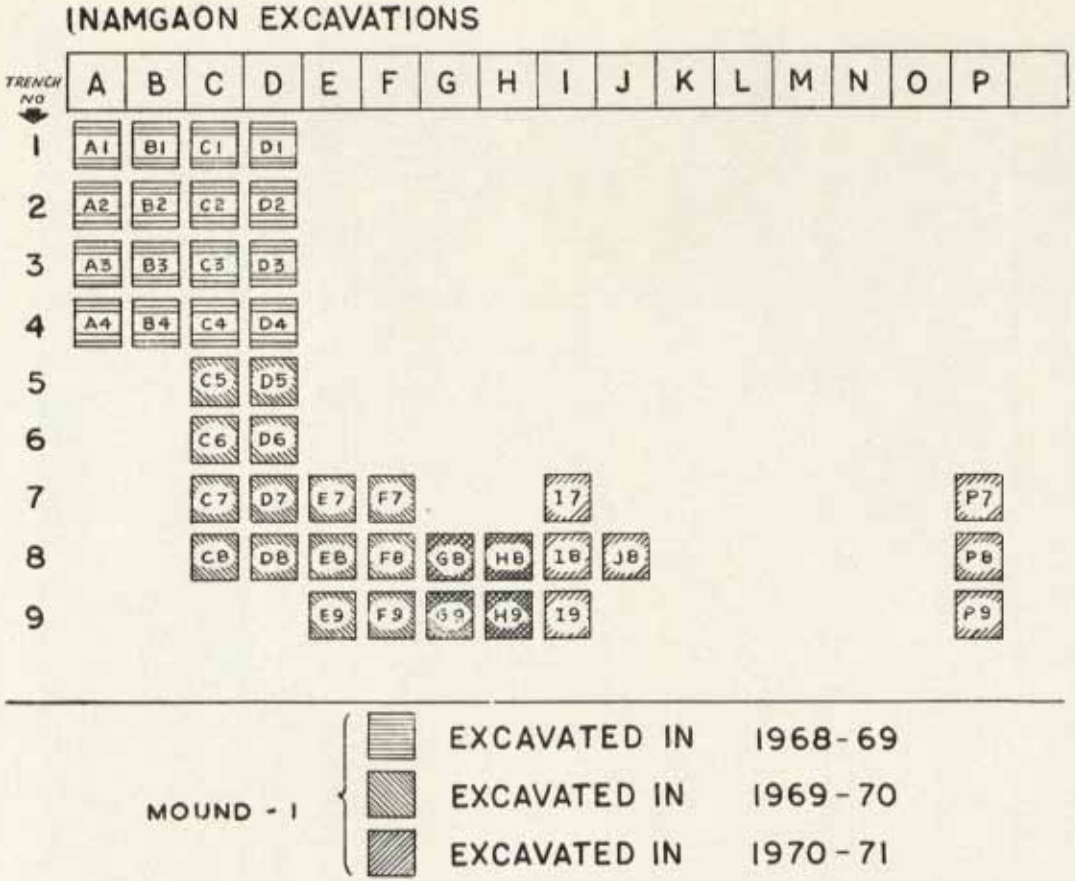

Fig. 11 The excavated trenches of Inamgaon (after Ansari 1975).

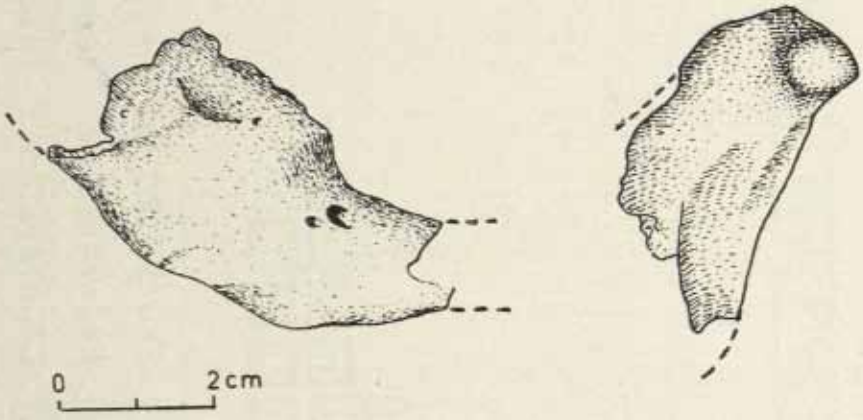

Fig. 12 The two pieces of the mandibula of an Indian porcupine (*Hystrix-indica*) found at Nevasa.

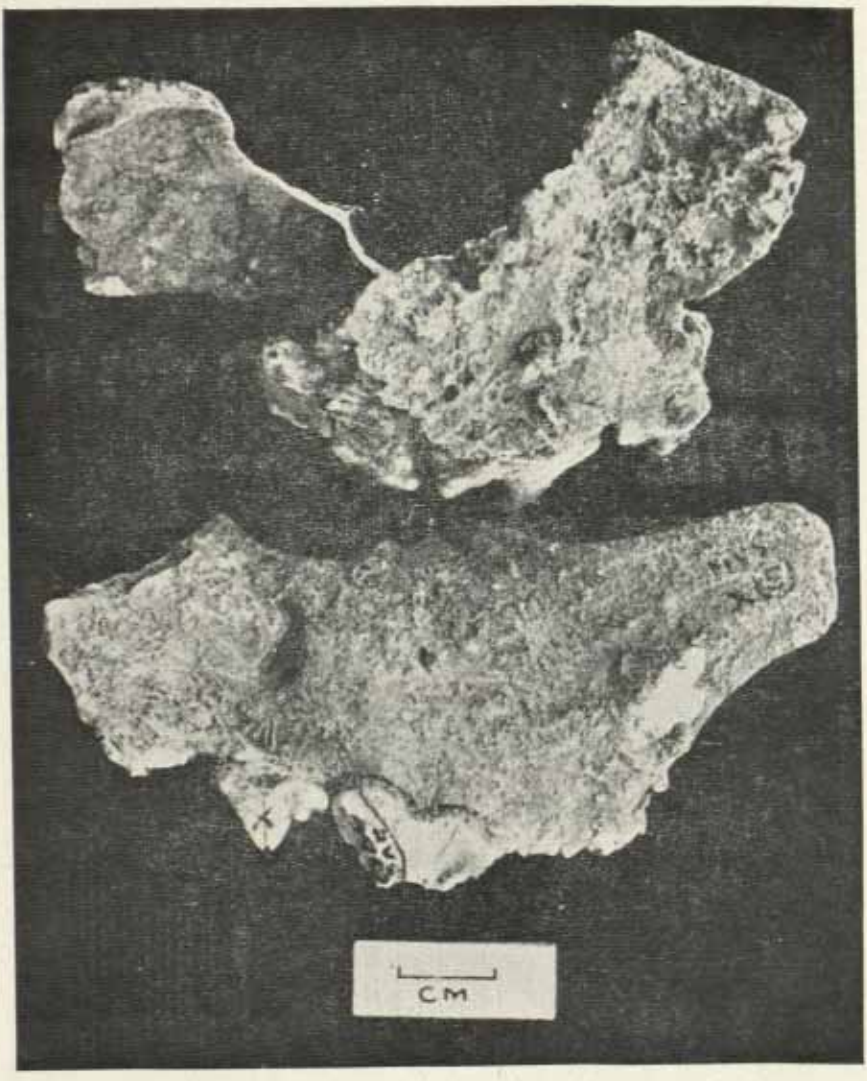

Fig. 13 Two l. maxillae of a dog, Nevasa III (1955–1956).

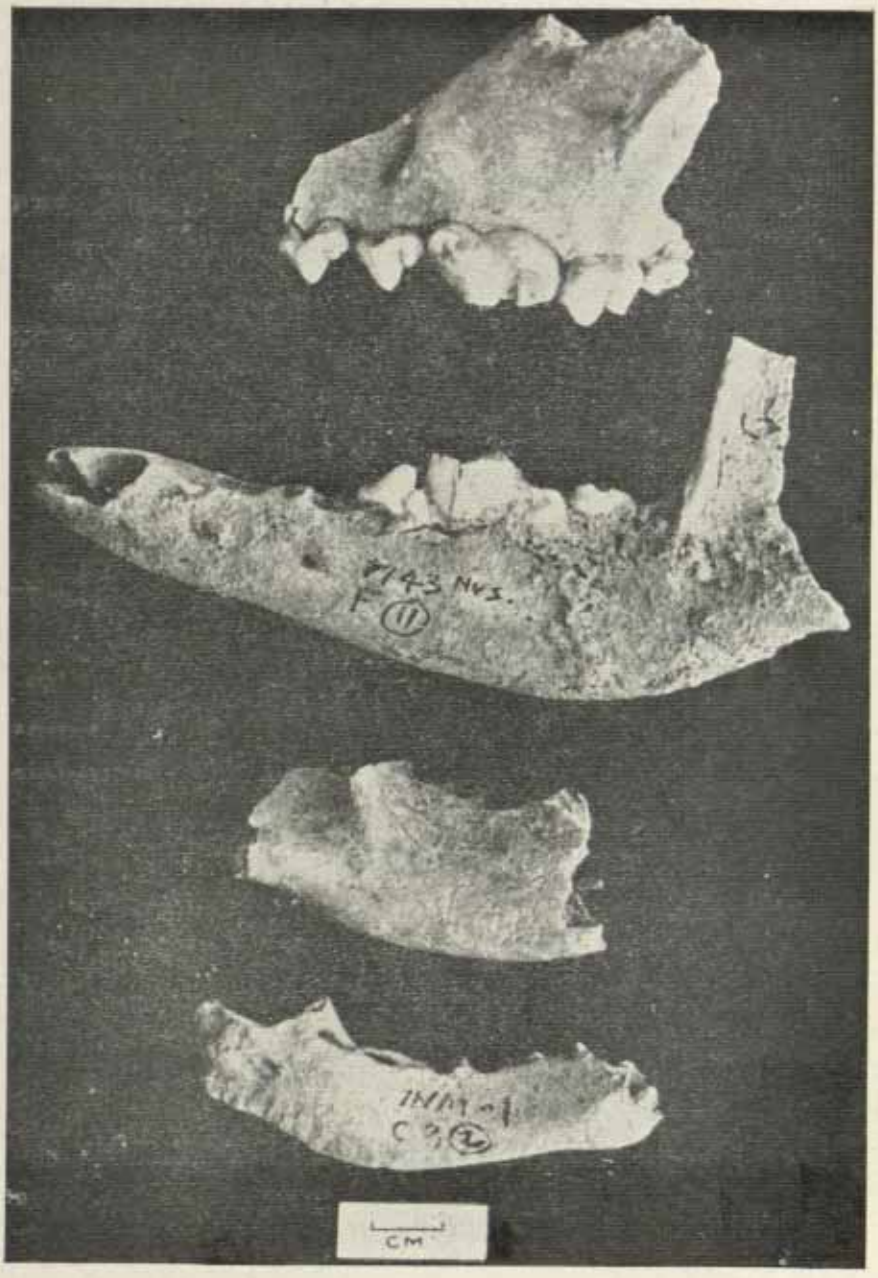

Fig. 14a Canidae, from bottom to top : mandibula (Inamgaon C3 *2*, Inamgaon A2 *6*, Nevasa 7143 F *11*) and maxilla (Inamgaon).

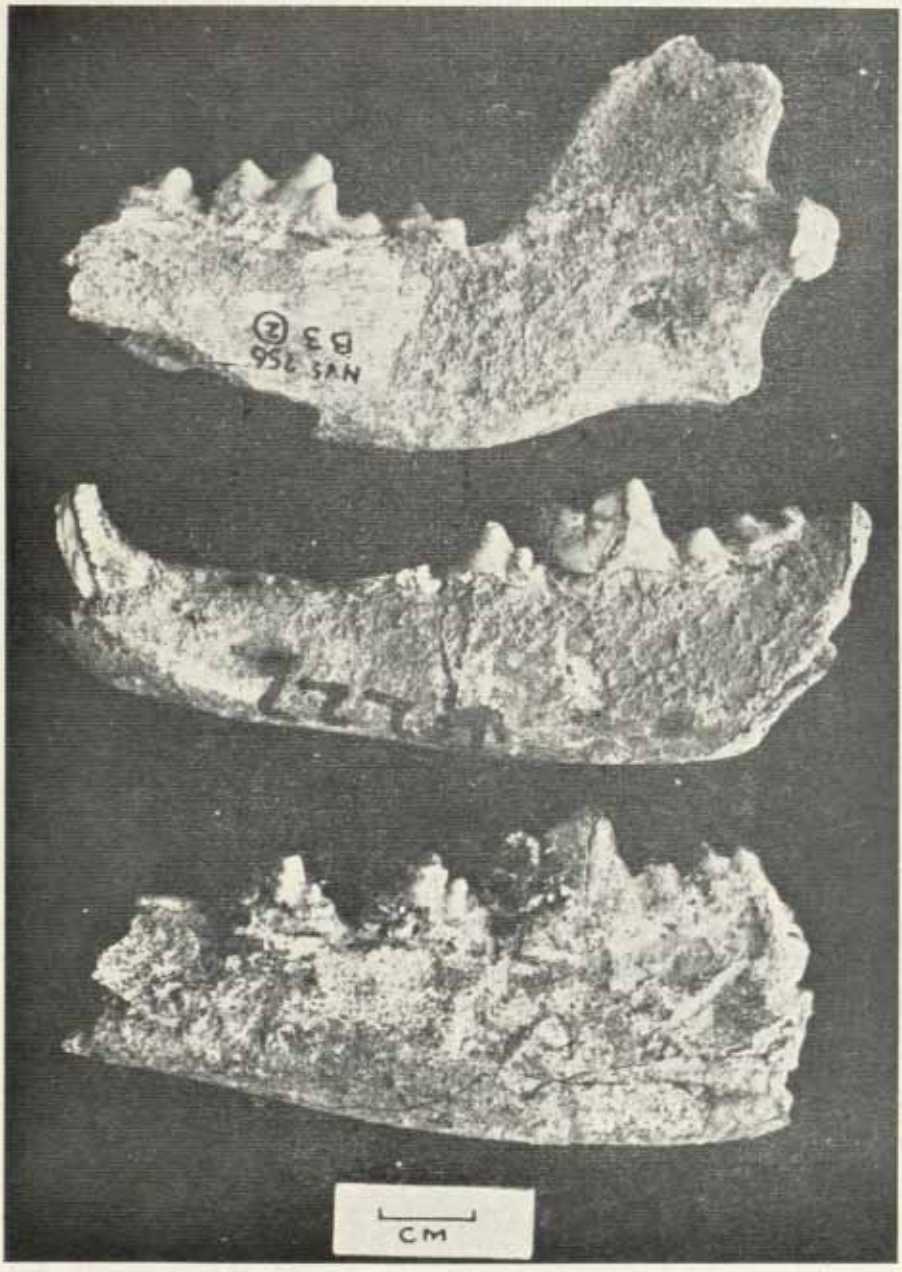

Fig. 14b Mandibulae of a canid, from bottom to top : Nevasa 1272, NVS 4222 *4*, Nevasa 356 B3 *2* (without P3).

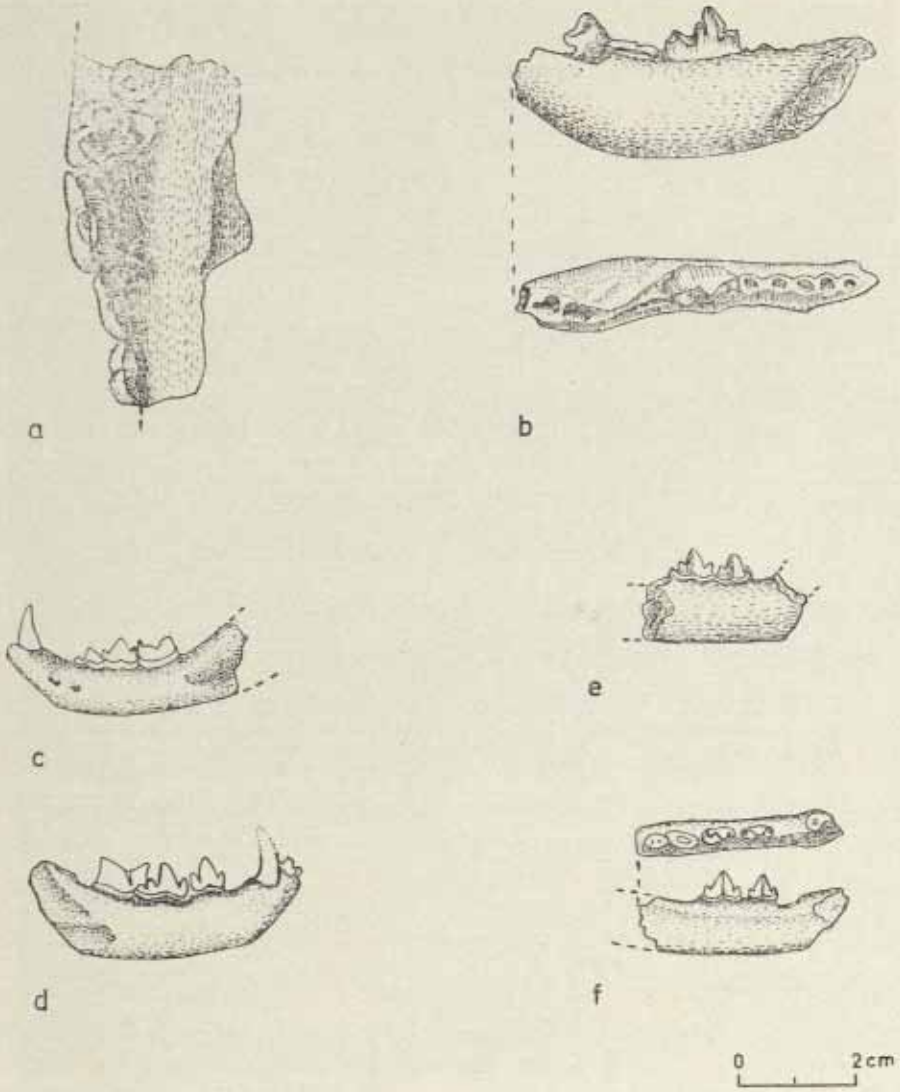

Fig. 15 A : Mandibula of a young canid (Nevasa 3107 x *4*; c, d, e, f : Mandibulae of catlike animals found at Nevasa.

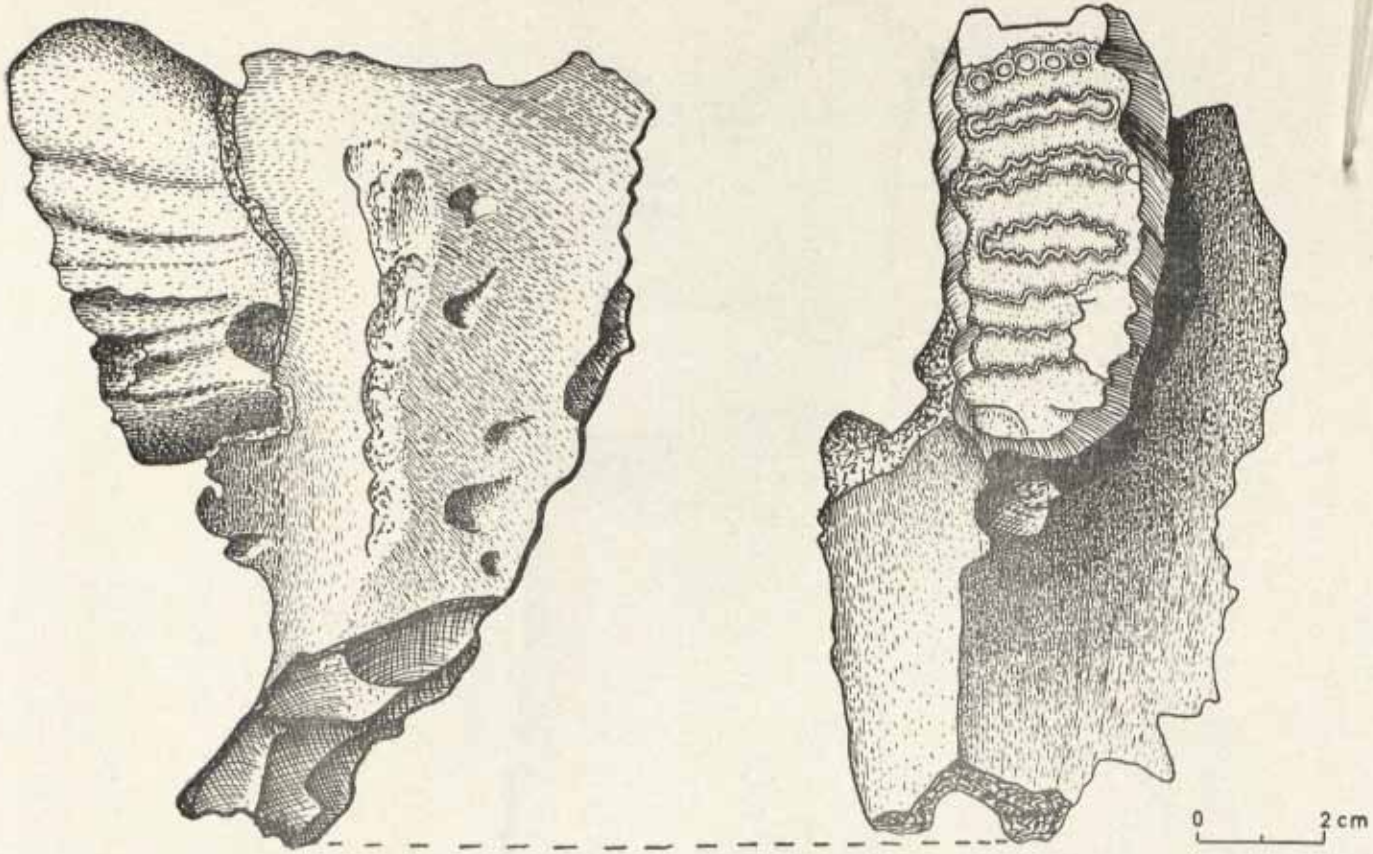

Fig. 16 The maxilla of a young elephant found in Nevasa—V NVS 5541 I 4.

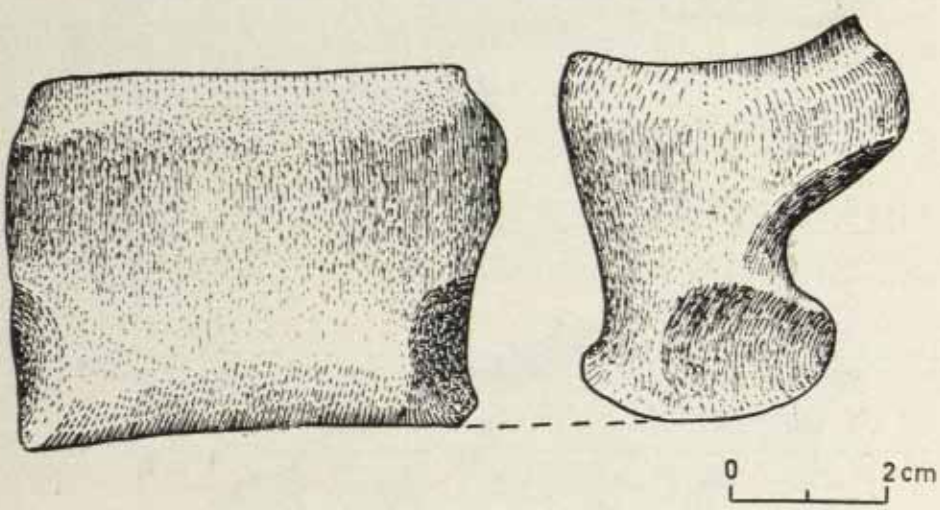

Fig. 17 The second phalanx of an elephant found in Inamgaon (H2 *4*).

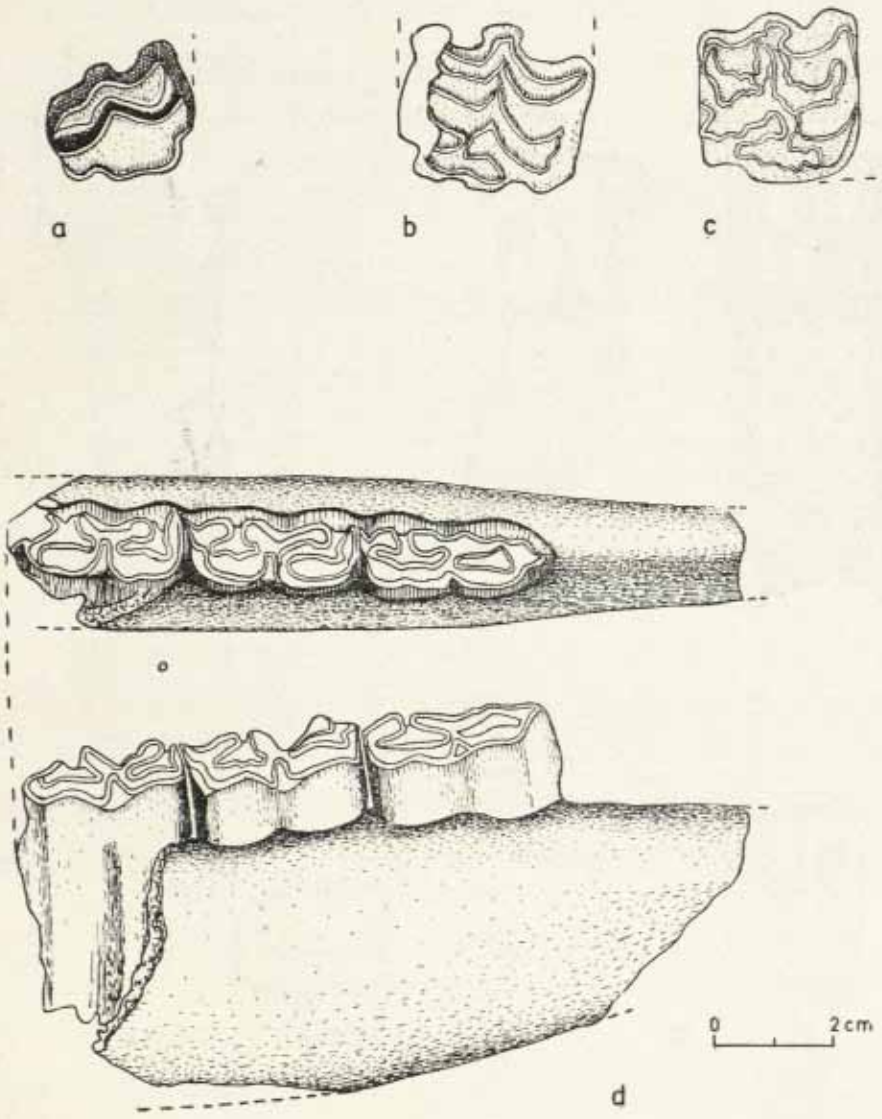

Fig. 18 Equid. a : P2 Nevasa 4758 x *5*; b : 1. P^4/M^1 Nevasa G 129 Fv Ib; c : 1. M^2 Inamgaon: d, r. mandibula, Nevasa NVS E *2*.

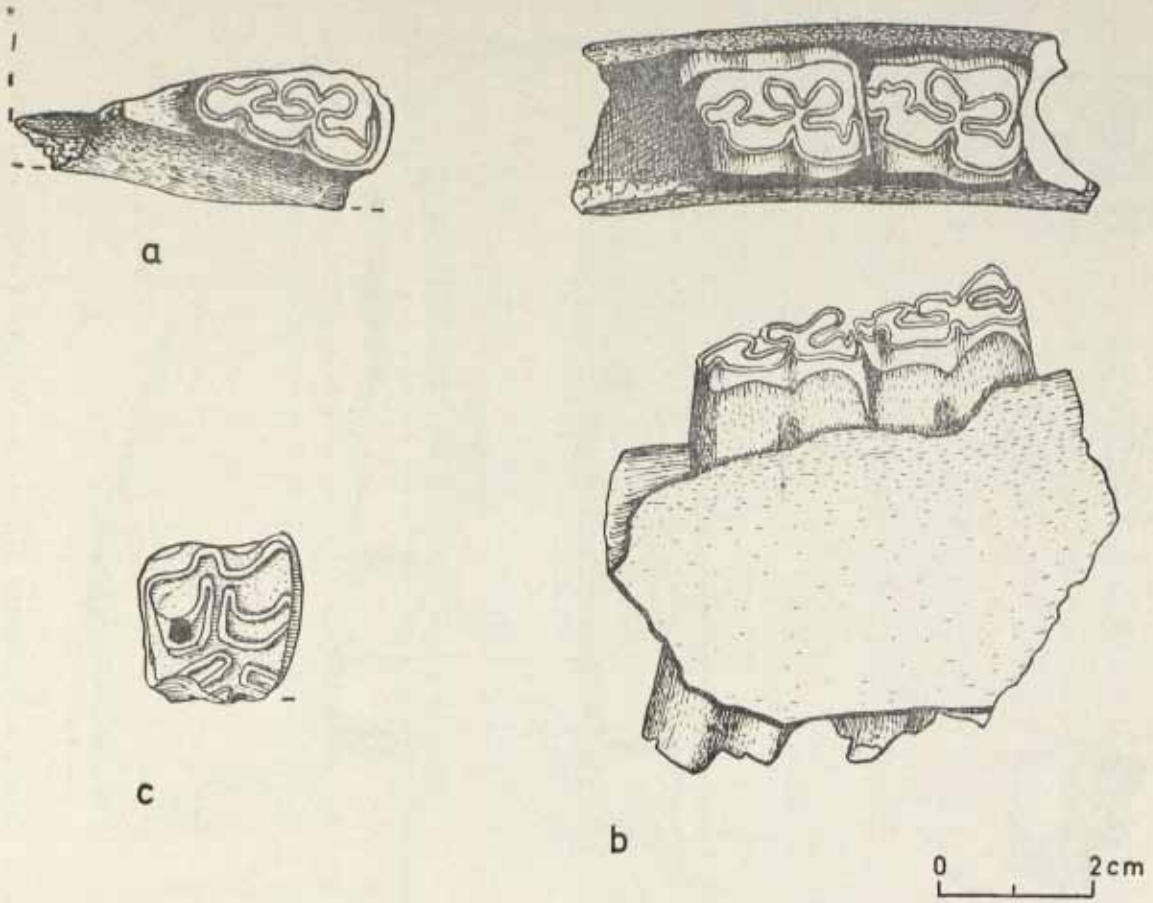

Fig. 19 Equid remains. a, r. M_3 Navdatoli IV; b, r. mandibula with M_2 M_1, Navdatoli IK *3* (same piece); c, premolar or molar from the upper jaw, Nevasa 2759 238 *2*.

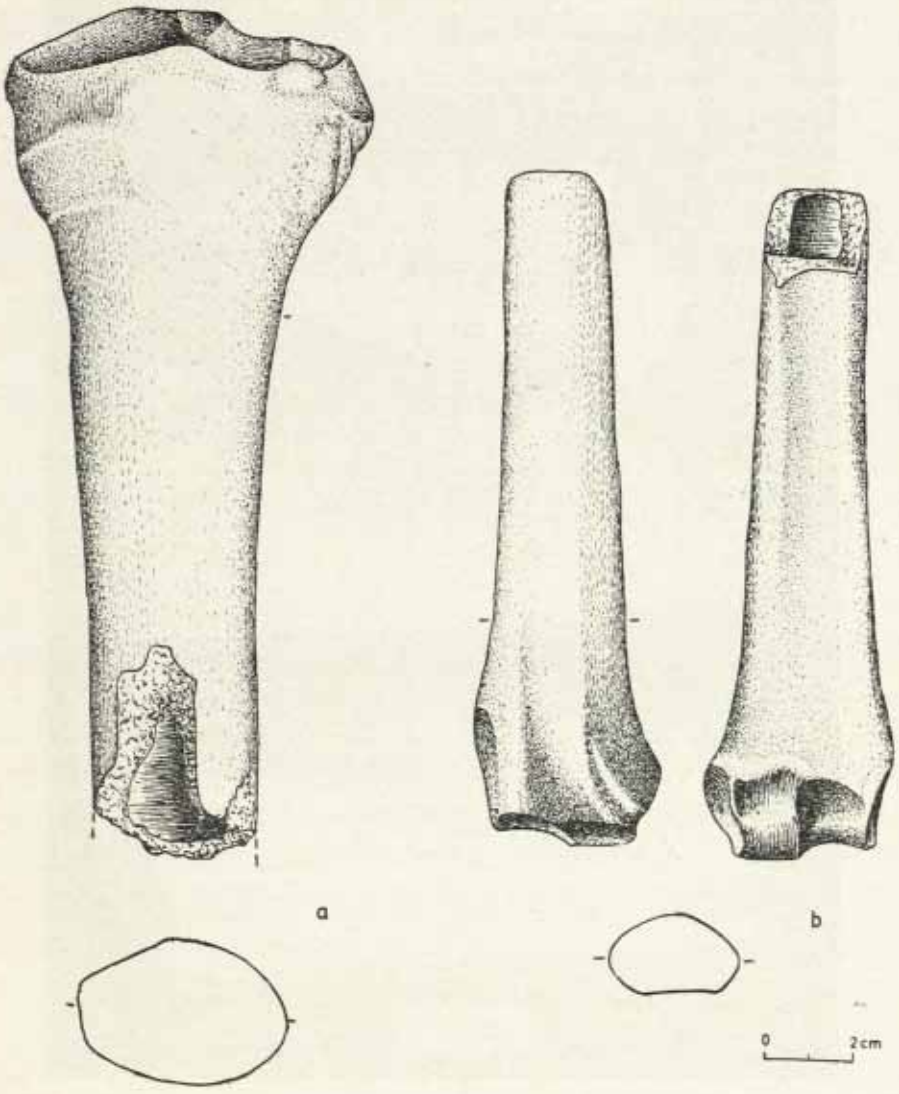

Fig. 20 Equid remains. Large and small radius from Navdatoli (NVS IV 157 III 19 2; IV 98 I).

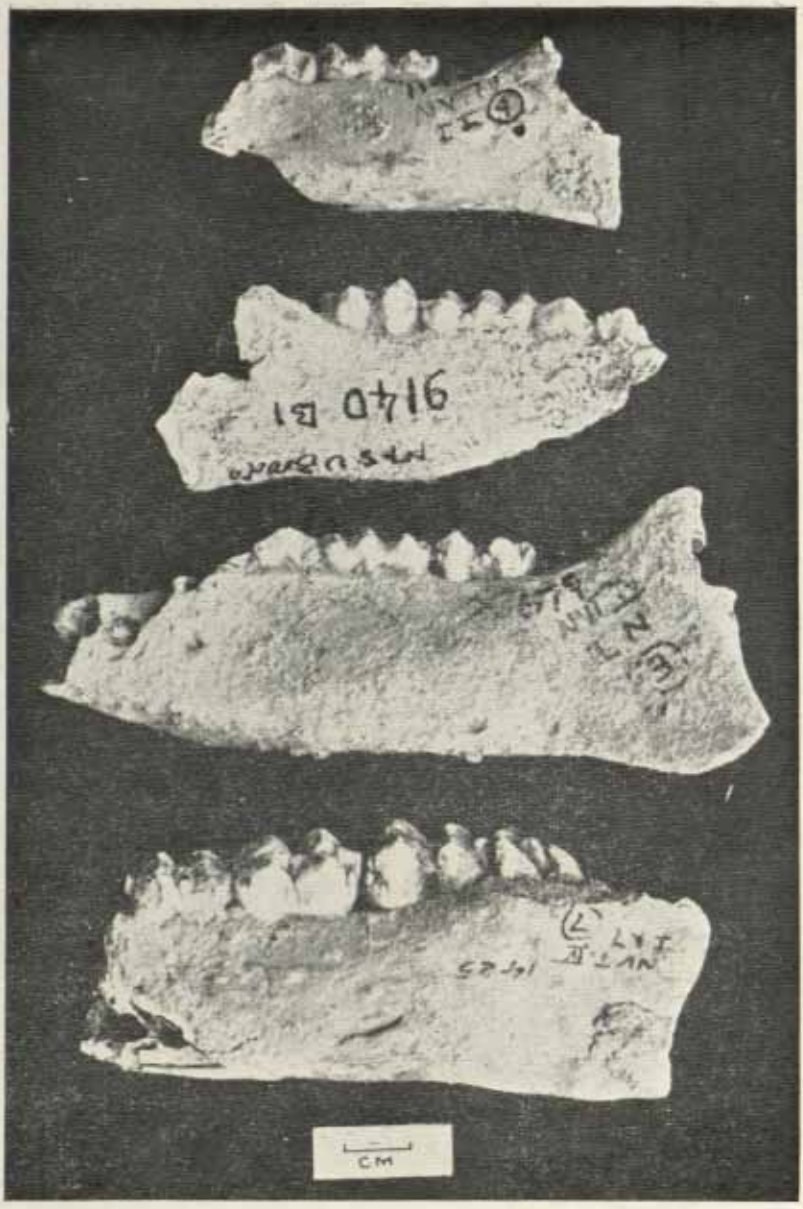

Fig. 21 Suid remains. Navdatoli. From top to bottom.
l. mandibula, $-P_2\ P_3$ (M_1 not yet erupted) (11465 I *2*)
r. mandibula, $-P_1\ P_2\ P_3\ M_1$ (M_2 not yet erupted) (9140 Bl)
l. mandibula, $-P_2\ P_3\ M_1$? (679 I N *3*)
l. mandibula, $- - -M_1\ M_2\ M_3$ (2/3 used) (1425)

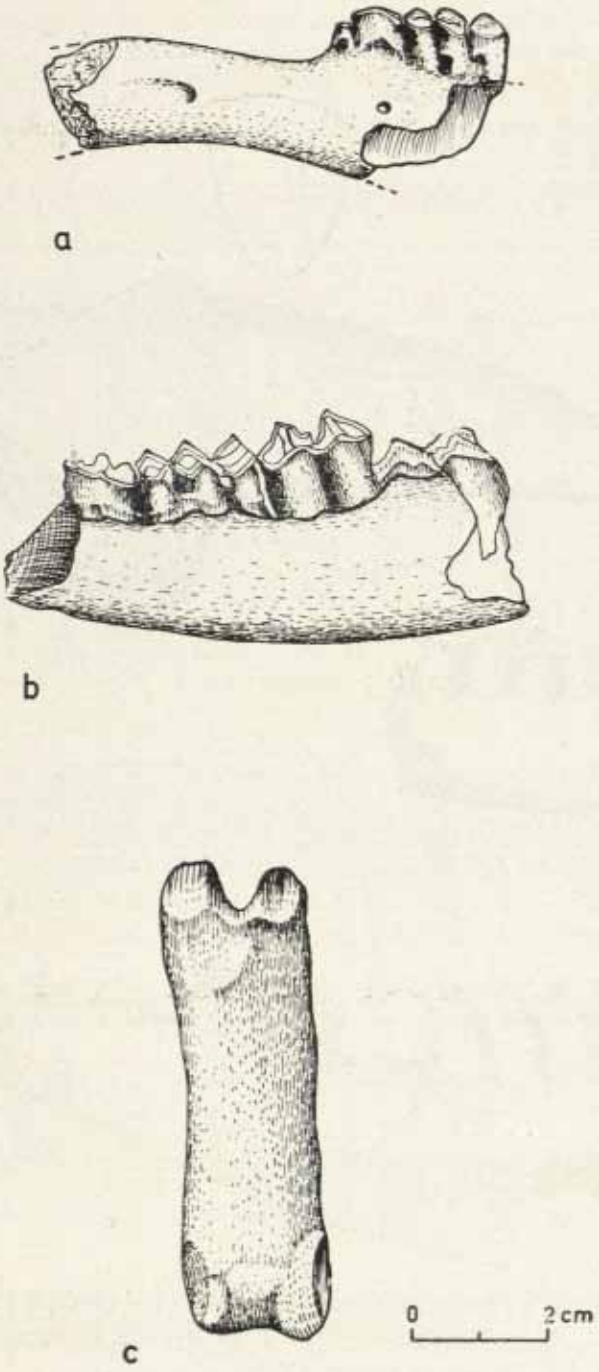

Fig. 22 Cervidae remains. a : l. mandibula (P_1 P_2 P_3), Inamgaon (D, *2*); b : l. mandibula ($P_2P_3M_1M_2$ erupting), Nevasa (4229 180 *4*); c : phalanx II either of sambar or nilgai, (1A1 *14*).

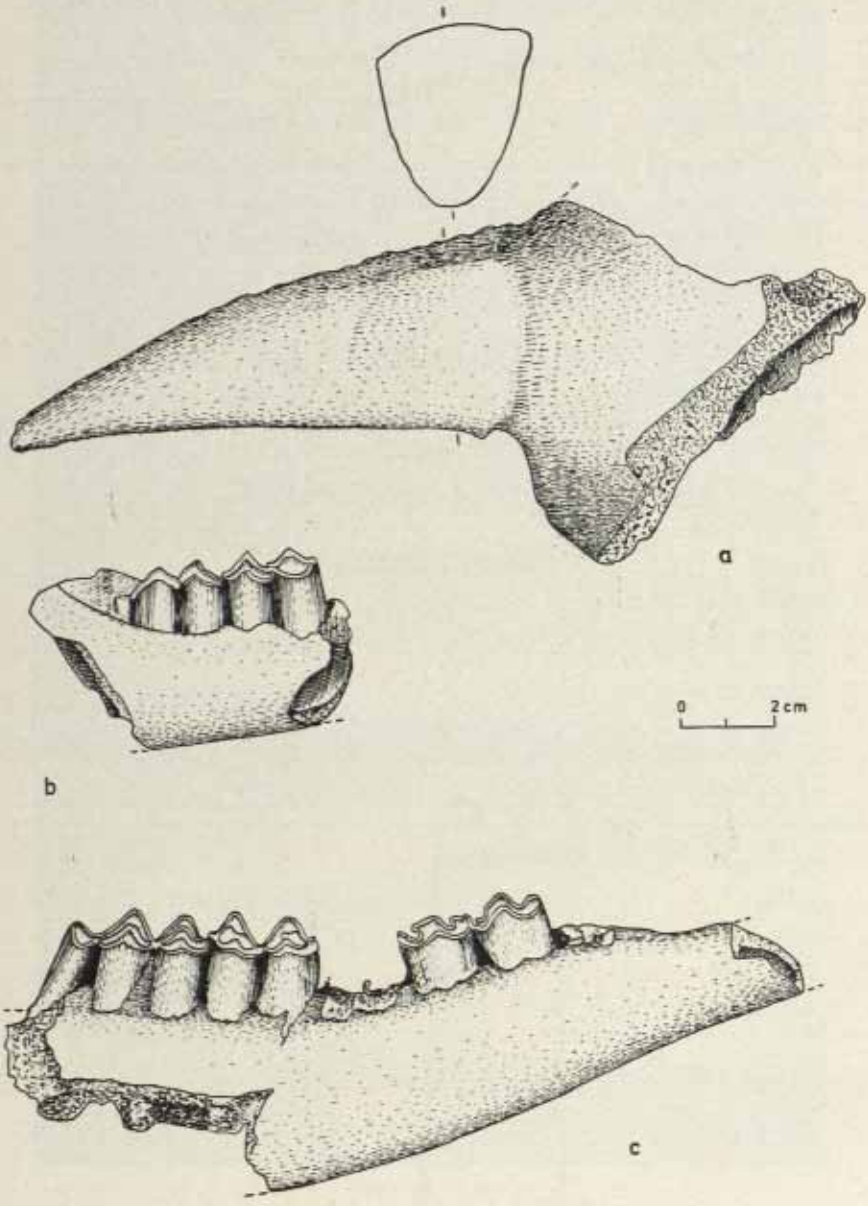

Fig. 23 Nilgai. a : horncore from Navdatoli III (148–*2*); b : r. mandibula (M_2 M_3), Navdatoli (1023 I IV *4*); c : r. mandibula P_2 P_4–M_2 M_3, Navdatoli (12849 IV *8*).

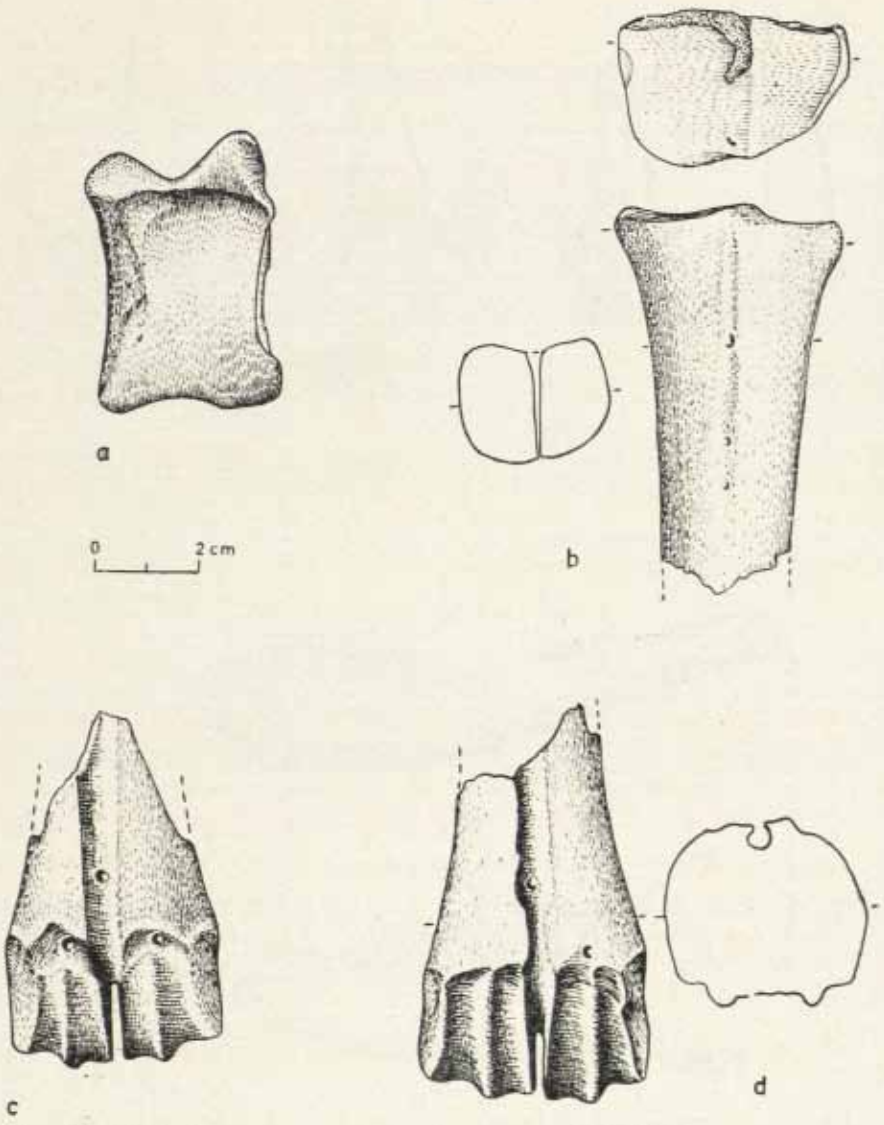

Fig. 24 Nilgai. a : astragalus, Inamgaon (I 8 *3*); b : metacarpus, Inamgaon (D 2 *2*); c : metacarpus, Inamgaon (INM—1); d : metatarsus ? Inamgaon (INM—1 I2 *2*).

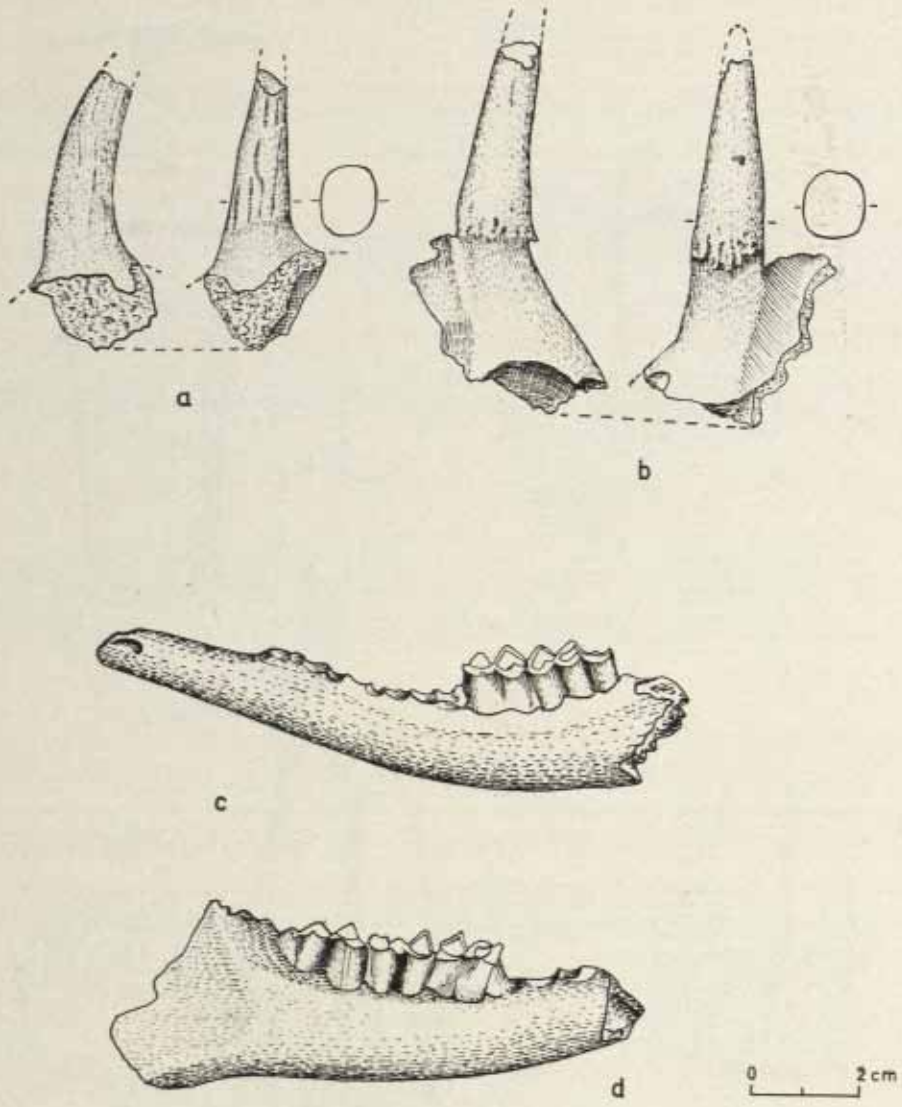

Fig. 25 Four-horned antelopes (chowsingha). a : horncore, Inamgaon (INM—1 H9 *11*); b : horncore, Inamgaon (INM—1 I 8 *2*); c : l. mandibula (M_2 M_3), Nevasa (4226 Tr 163 B *4*); d : r. mandibula (M_1 M_2 M_3), Nevasa (1781 Tr 27 *2*).

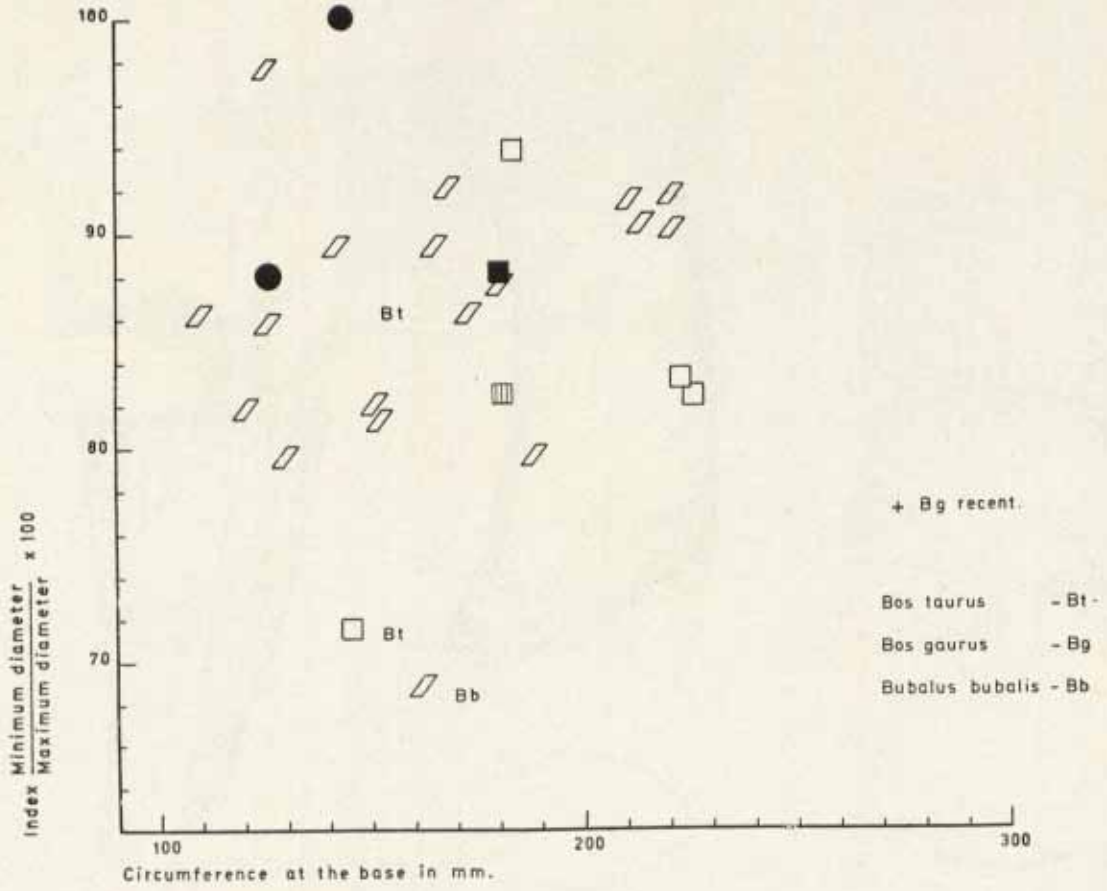

Fig. 26 Bovids. Circumference at the base of the horncore (horizontal, plotted against the Index Minimum diameter/Maximum diameter × 100 (see table 4 for site and period).

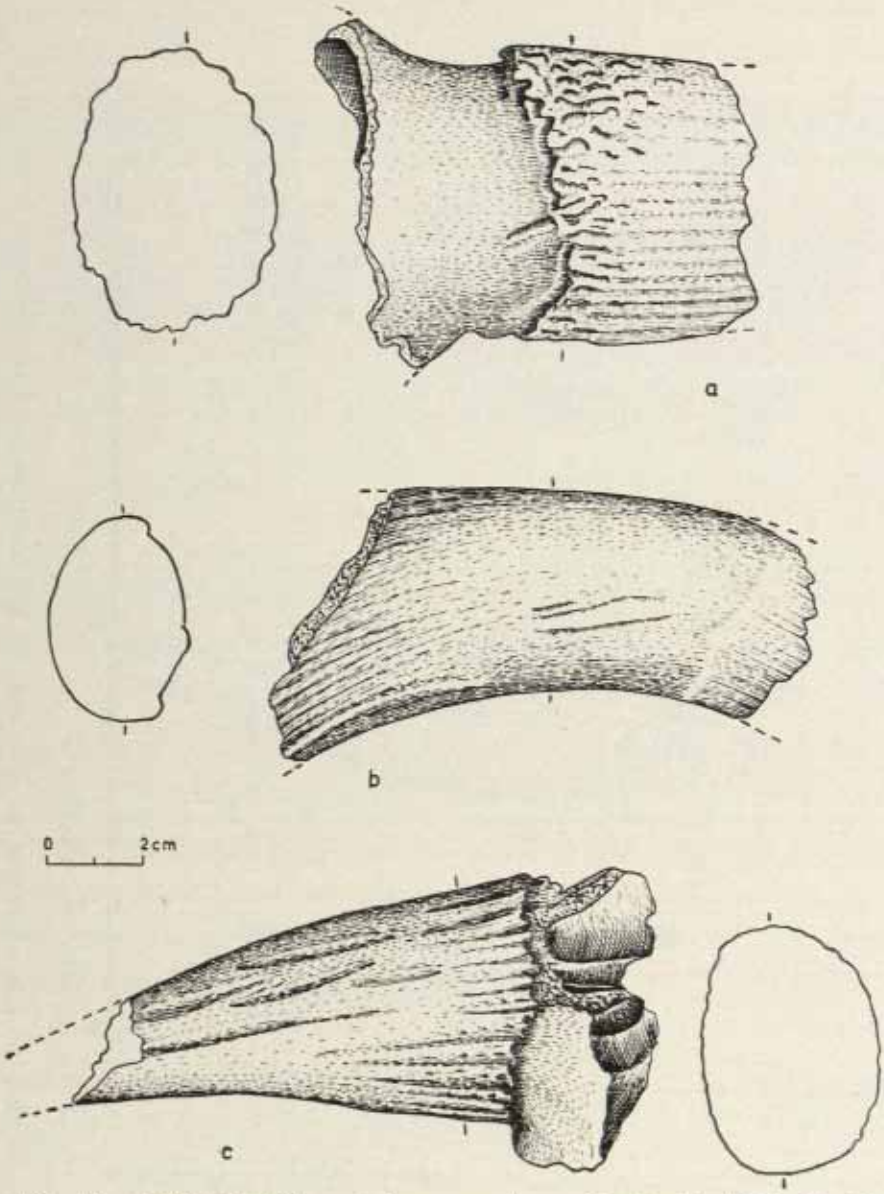

Fig. 27 *Bubalus bubalis.* a : horncore from Navdatoli (3395 Tr. 1); b : horncore from Nevasa (2872 Tr. 43 *2*).
Bos taurus (indicus); c : horncore from Nevasa (2569 Tr. 14 *2*).

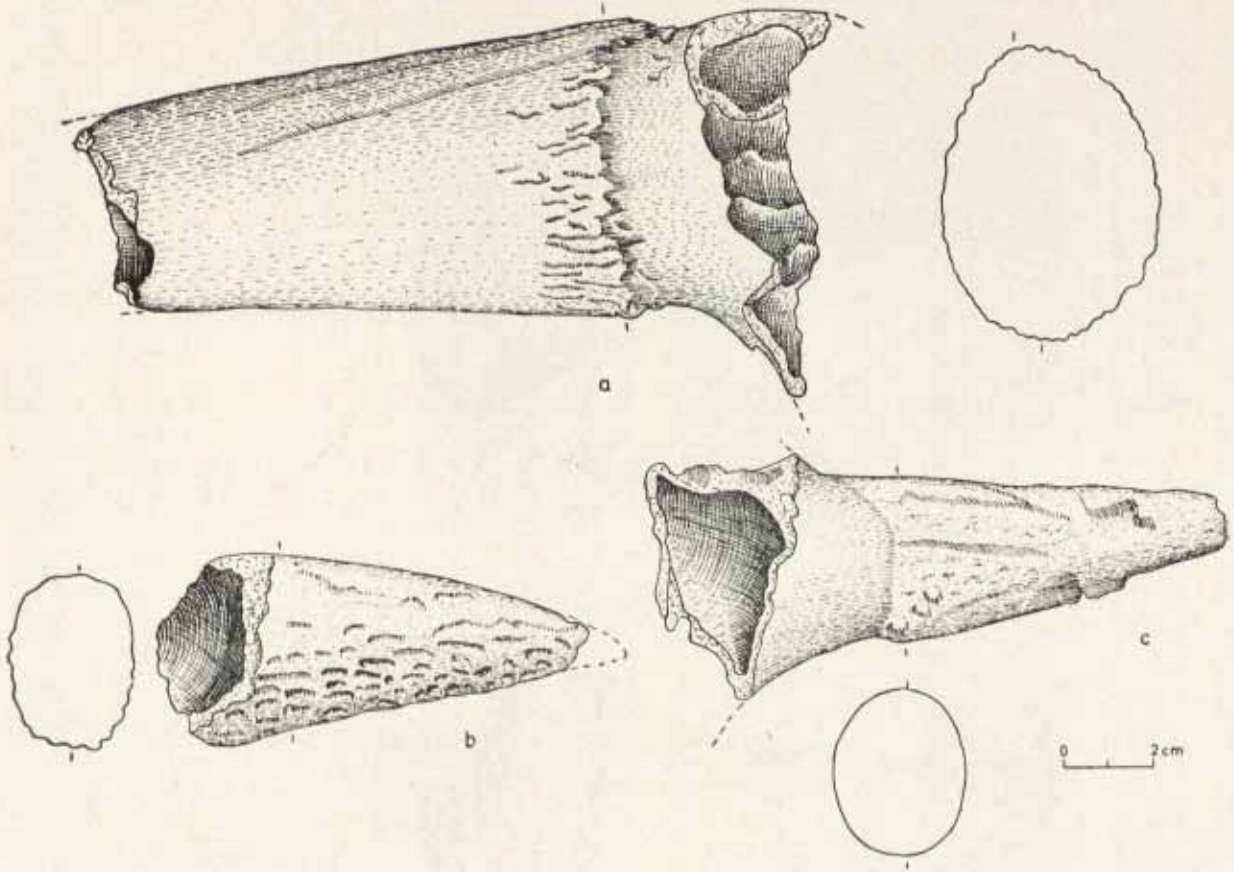

Fig. 28 *Bos tauras* (indicus). a : r. horncore, Navdatoli (V II Tr. *6*); b : horncore, Navdatoli (IV Tr. I *10*; c : horncore, Navdatoli (1096 I F *2*).

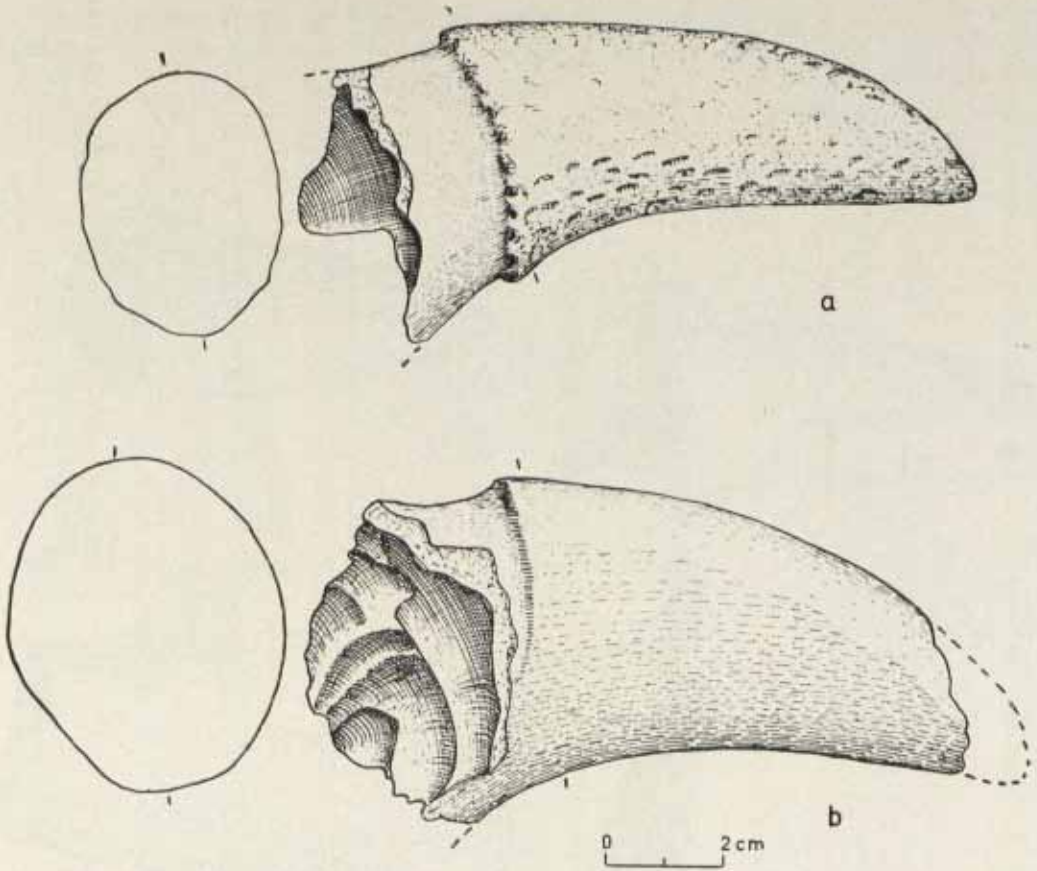

Fig. 29 *Bos taurus* (indicus). a : 1. horncore Navdatoli (196, Tr. III *2*);
b : Navdatoli (5630, Tr. II *3*).

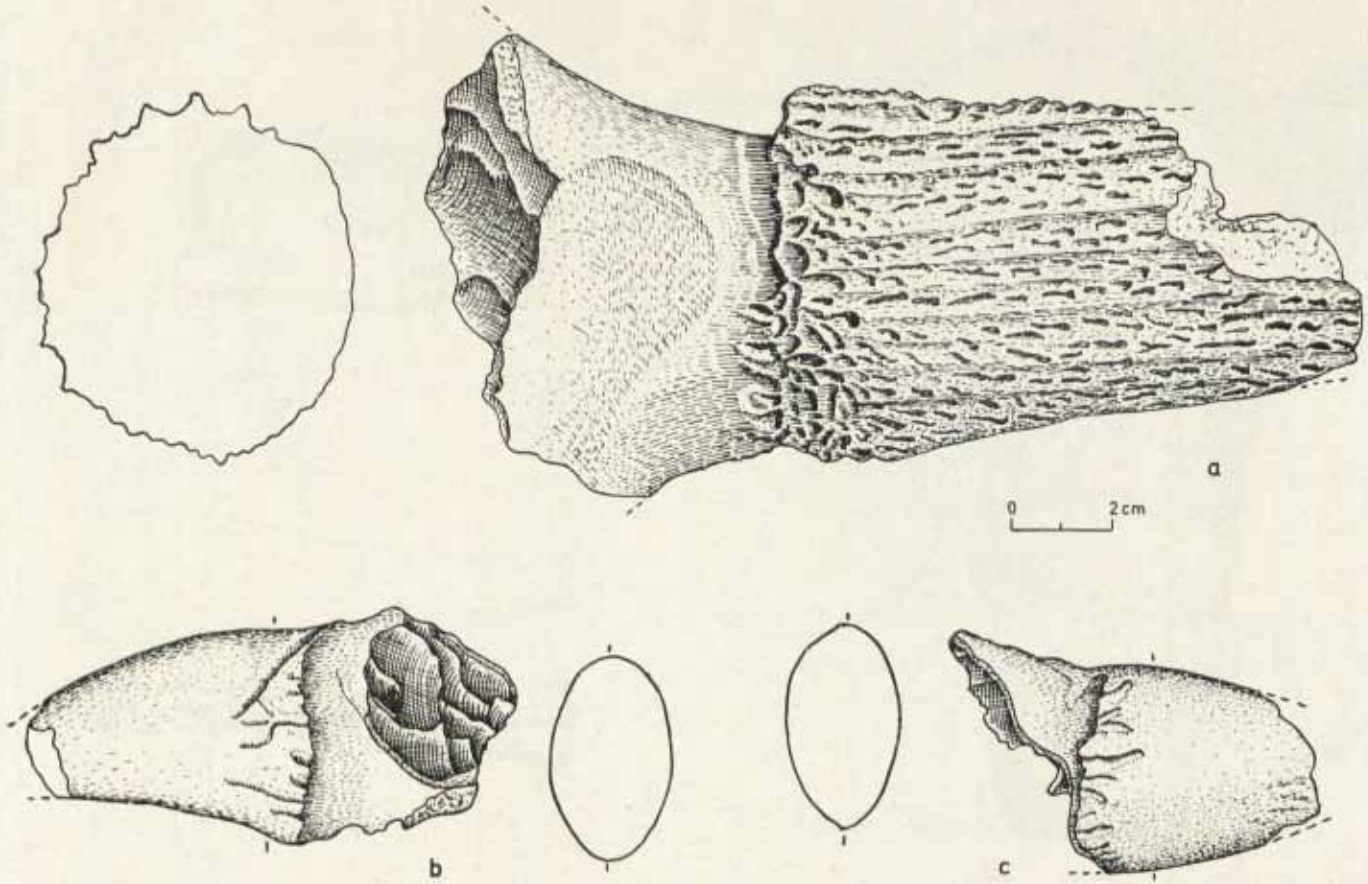

Fig. 30 *Bos taurus* (indicus). a : 1. horncore, Navdatoli (12850 1A6 7); b : Navdatoli (3374 I u 9), 3375IU 9.

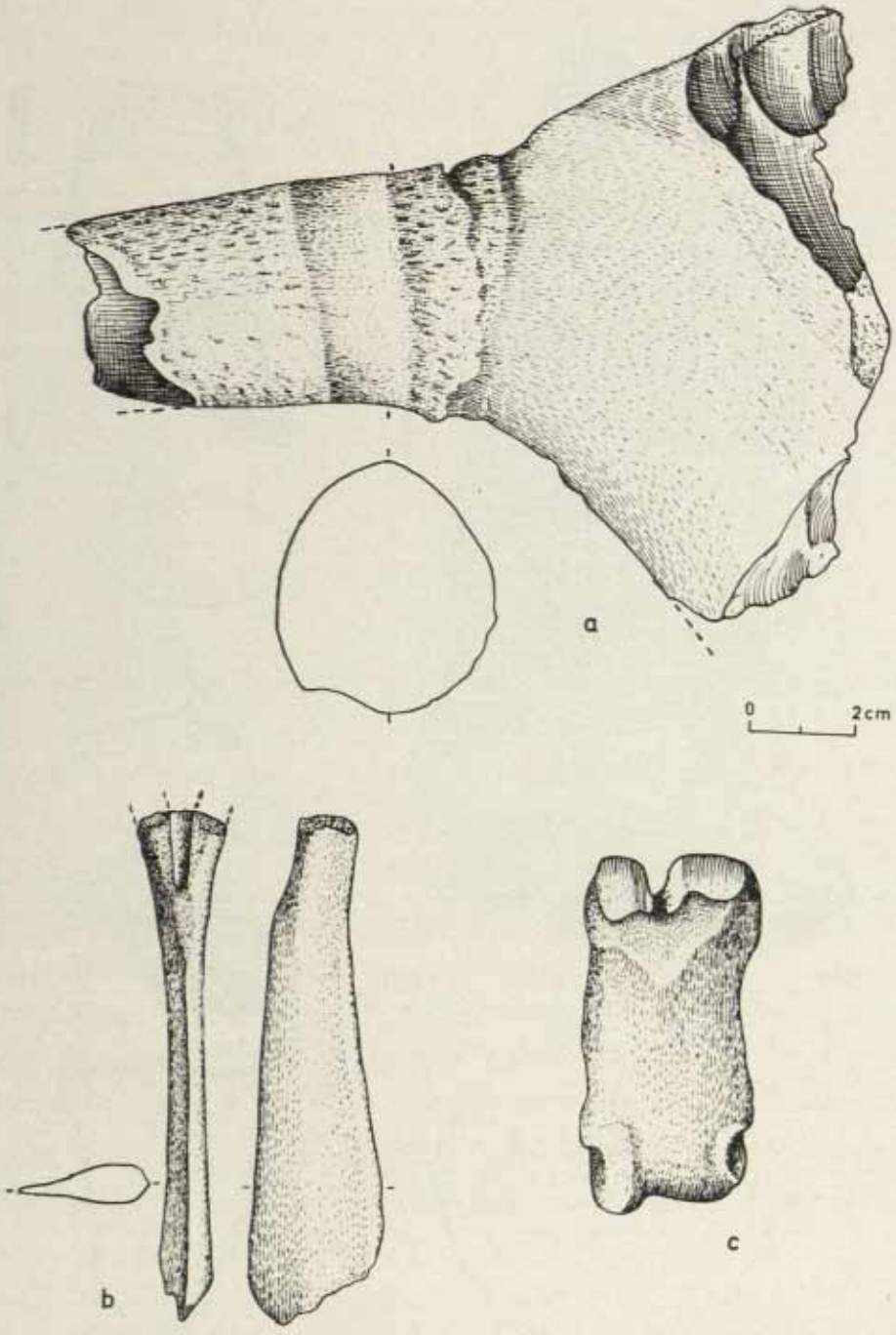

Fig. 31 *Bos taurus* (indicus) a : 1 horncore (caudal), Navdatoli (Tr. 1 *6* 1722); b : spina dorsalis, Inamgaon (1 I 9 *2*); c : phalanx I, Inamgaon (—1 B 1 *2*).

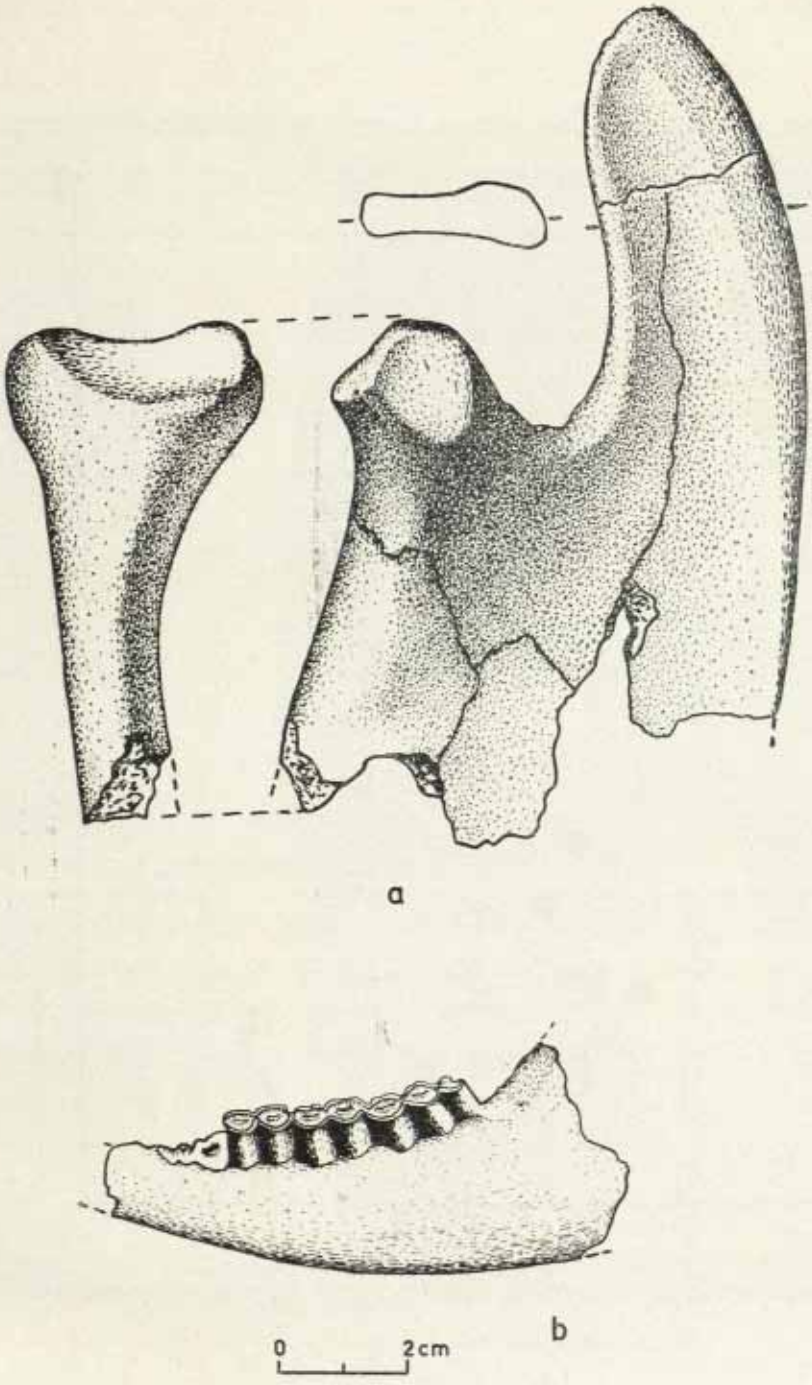

Fig. 32 *Bos taurus* (indicus). a : 1. mandibula, Kayatha (A9—I); *Gazella gazella*; b : 1 mandibula (M_1 M_2 M_3), Navdatoli (255 IV. III. II *2*).

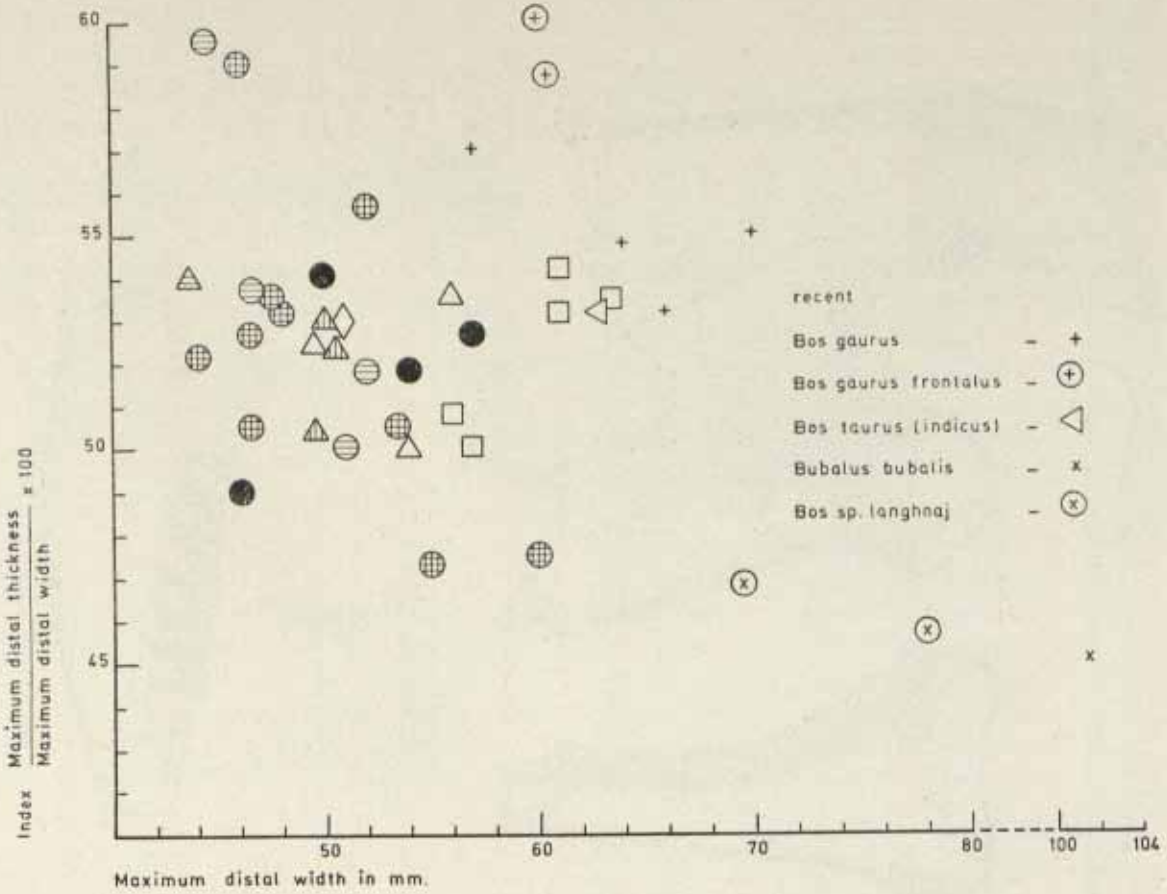

Fig. 33 Bovid. Metacarpus. Maximum distal width (horizontal) plotted against the index Minimum distal width/Maximum distal width × 100 (horizontal).

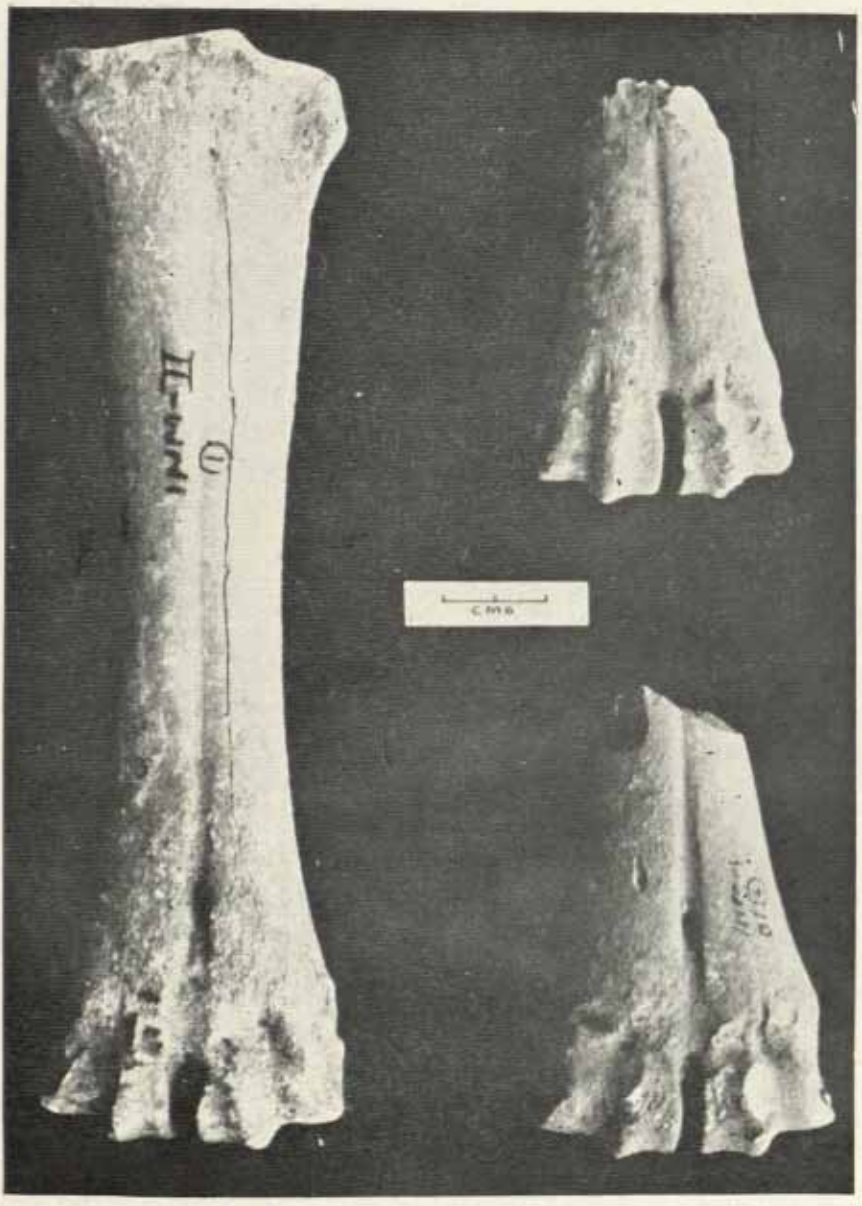

Fig. 34 *Bos* sp. Metacarpus from Inamgaon.

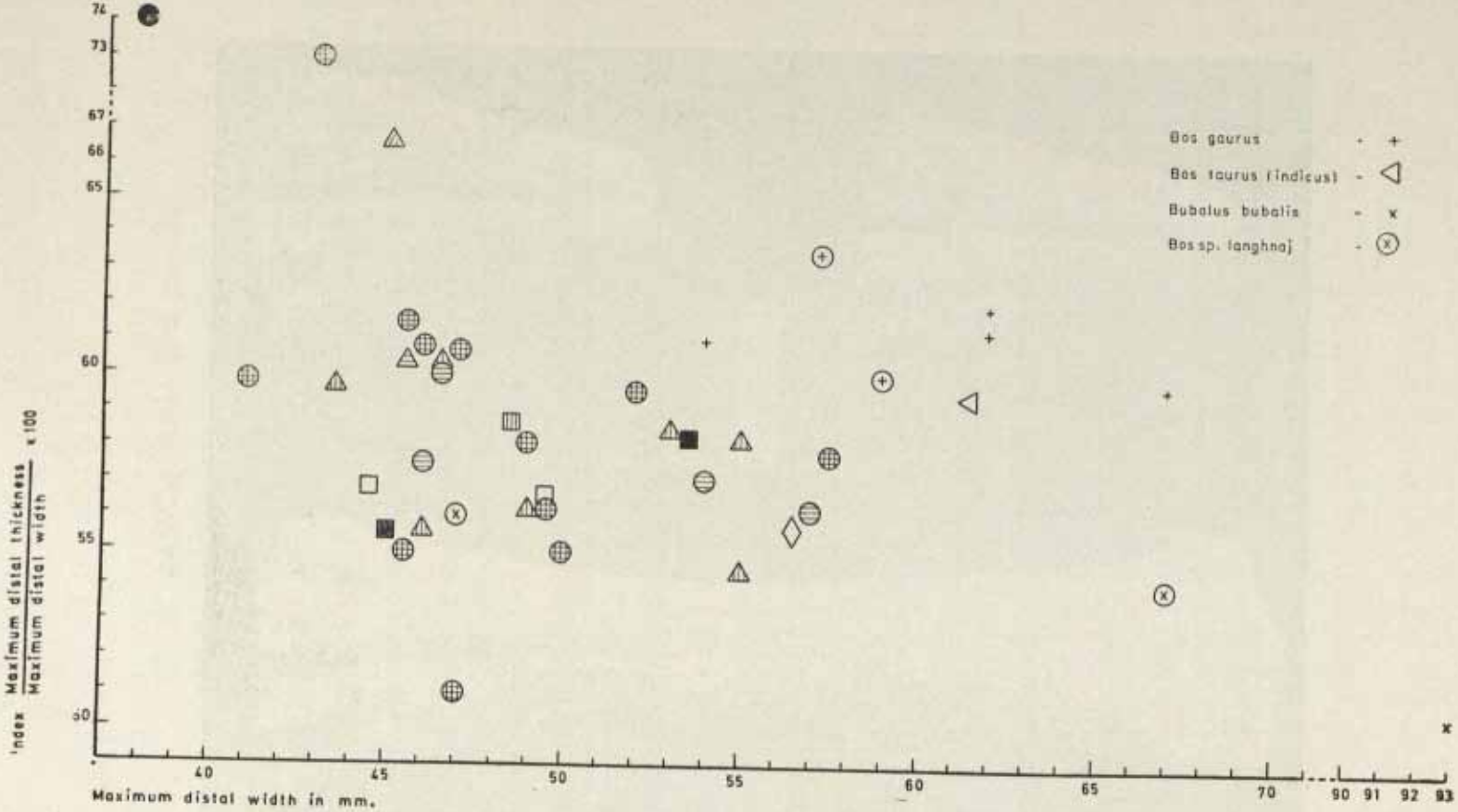

Fig. 35 Bovid. Metatarsus. The maximum distal width (horizontal) plotted against the Index Maximum distal thickness/Maximum distal width × 100 (vertical).

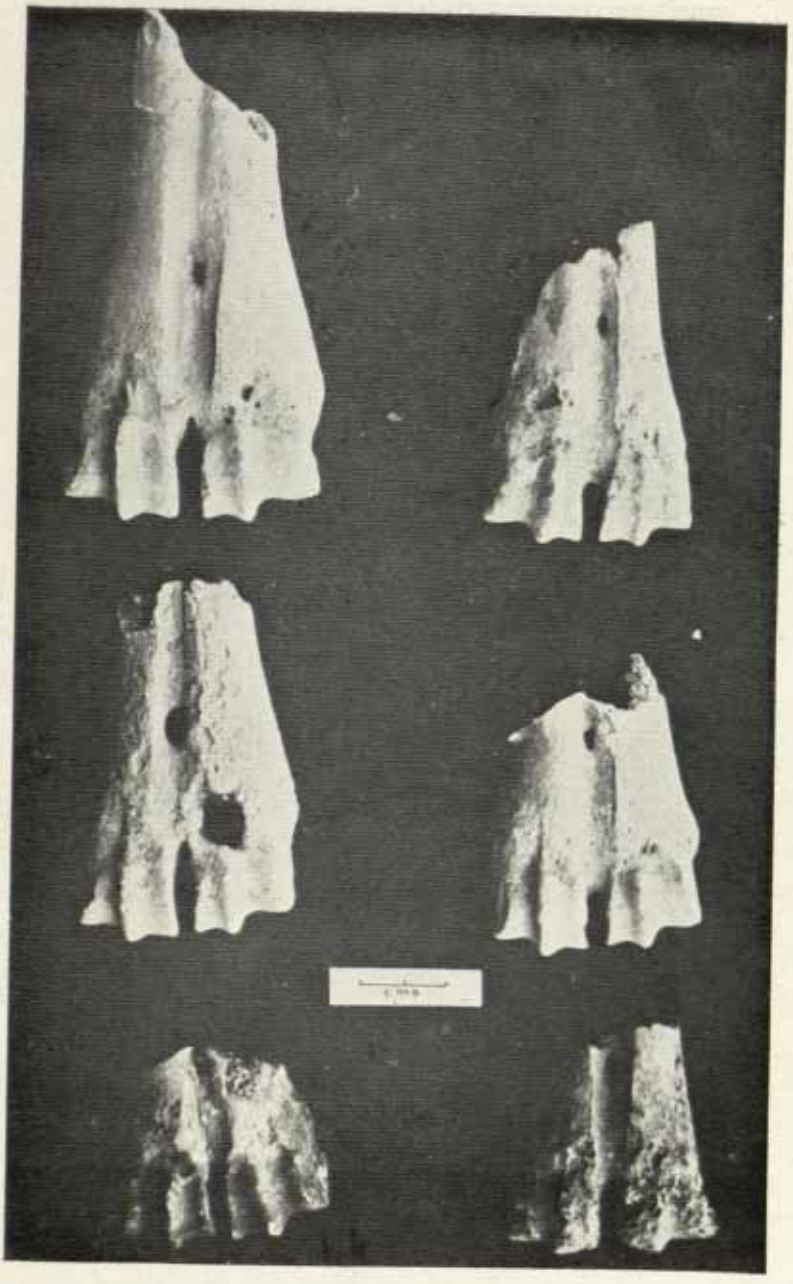

Fig. 36 Bovid. Distal epiphysis of metatarsus found at Inamgaon (from r. to l.) D *1*, I 8 *4*; 04 *1*, A2 *2*; D1 *4*, C3 *4*.

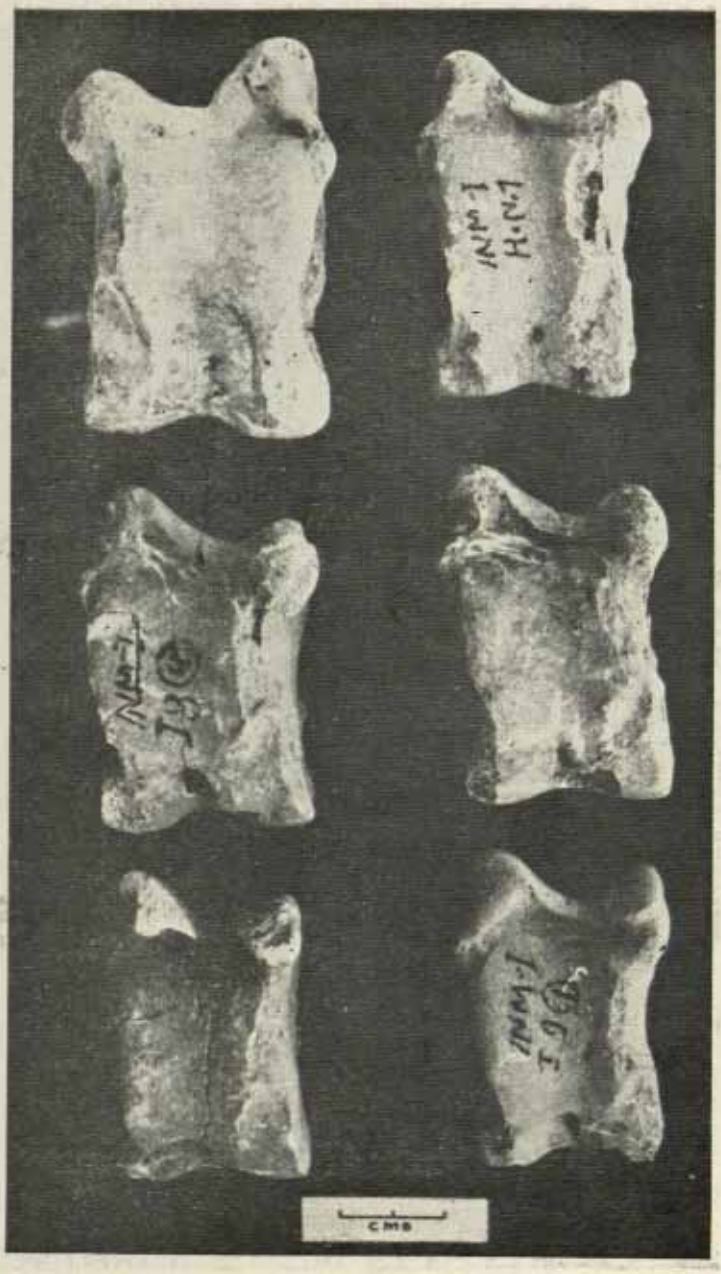

Fig. 37 Bovid. Astragali found at Inamgaon (from r. to l.; ?, HN 1 I 8 *4*, II *1*; D4, 19 *1*).

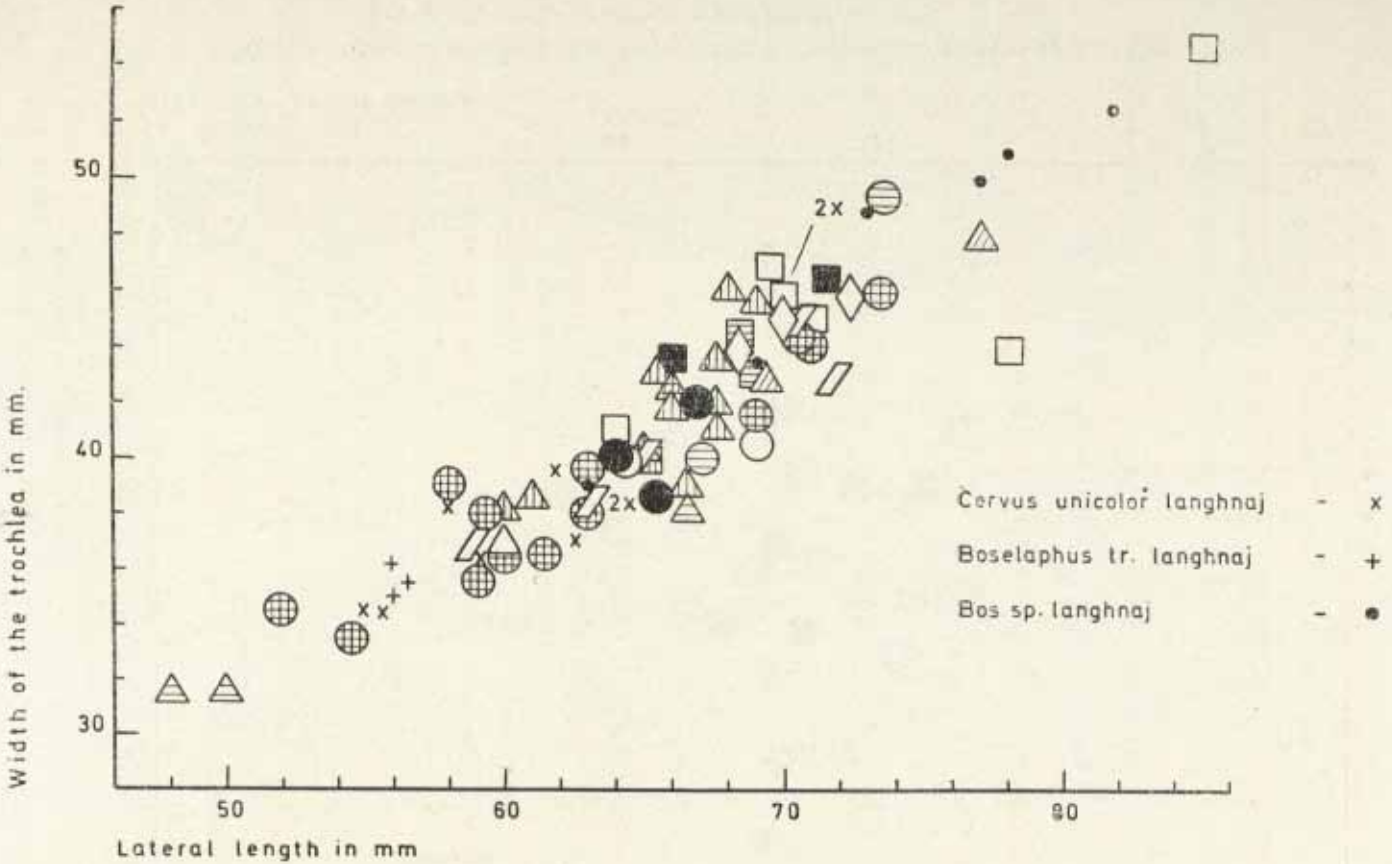

Fig. 38 Bovid. Astragalus. The lateral length (horizontal) plotted against the width of the trochlea (vertical).

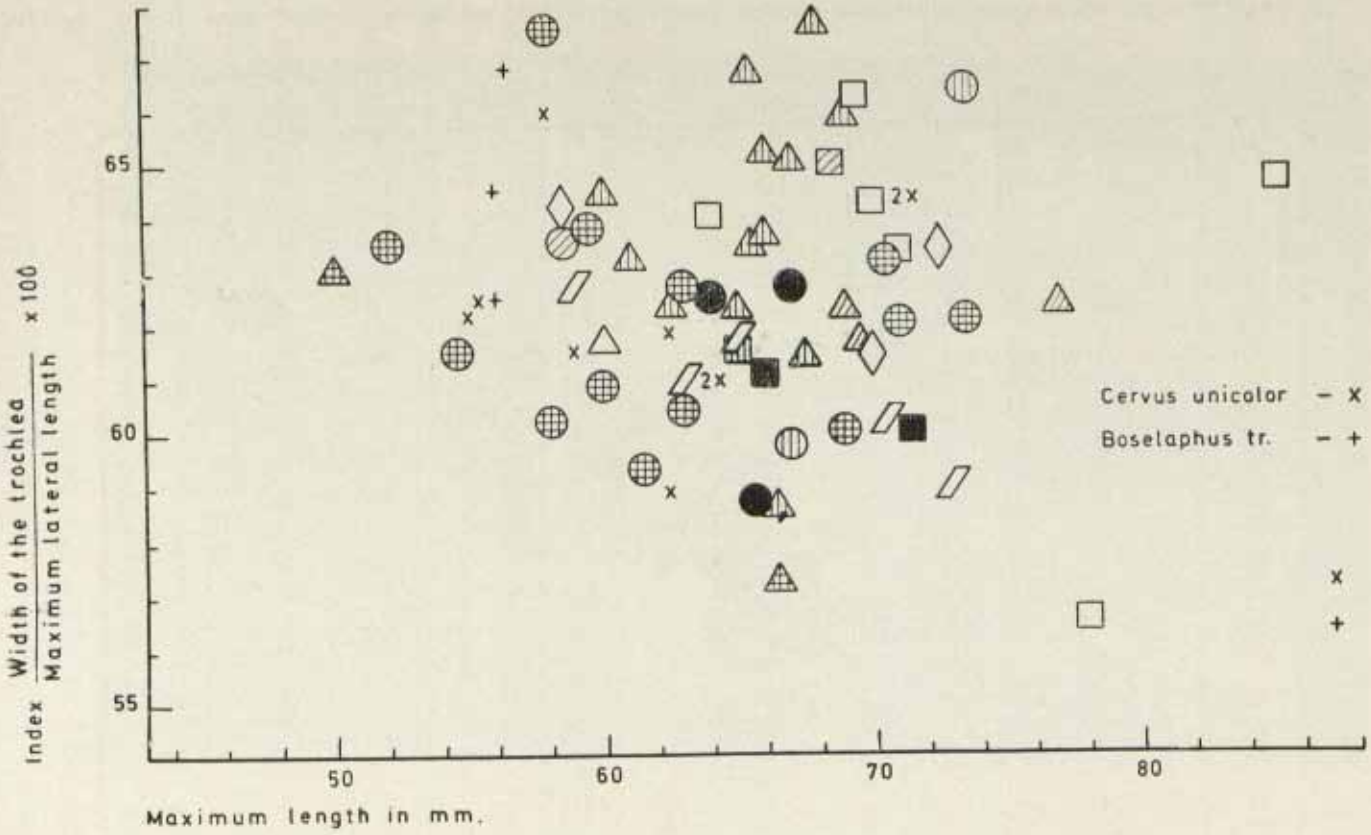

Fig. 39 Bovid. Astragalus. The lateral length (horizontal) plotted against the index width of the trochlea/lateral length × 100.

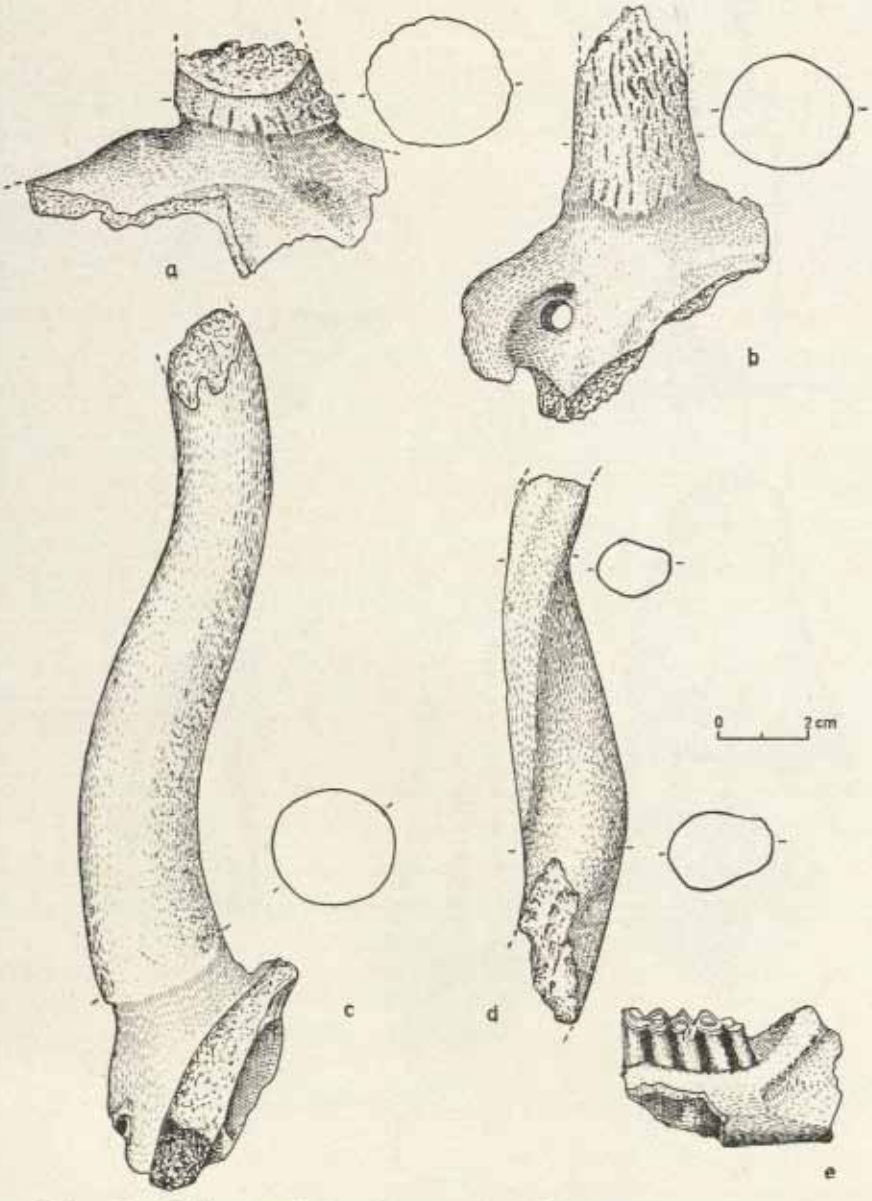

Fig. 40 *Antilope cervicapra,* horncores. a : Inamgaon (—1 J 8 *3*); b: Inamgaon (—1 J 9 *1*); c : Navdatoli (2756 I V *9*); d : l. mandibula (M_2 M_3), Nevasa (3732 Tr. 200 *8*).

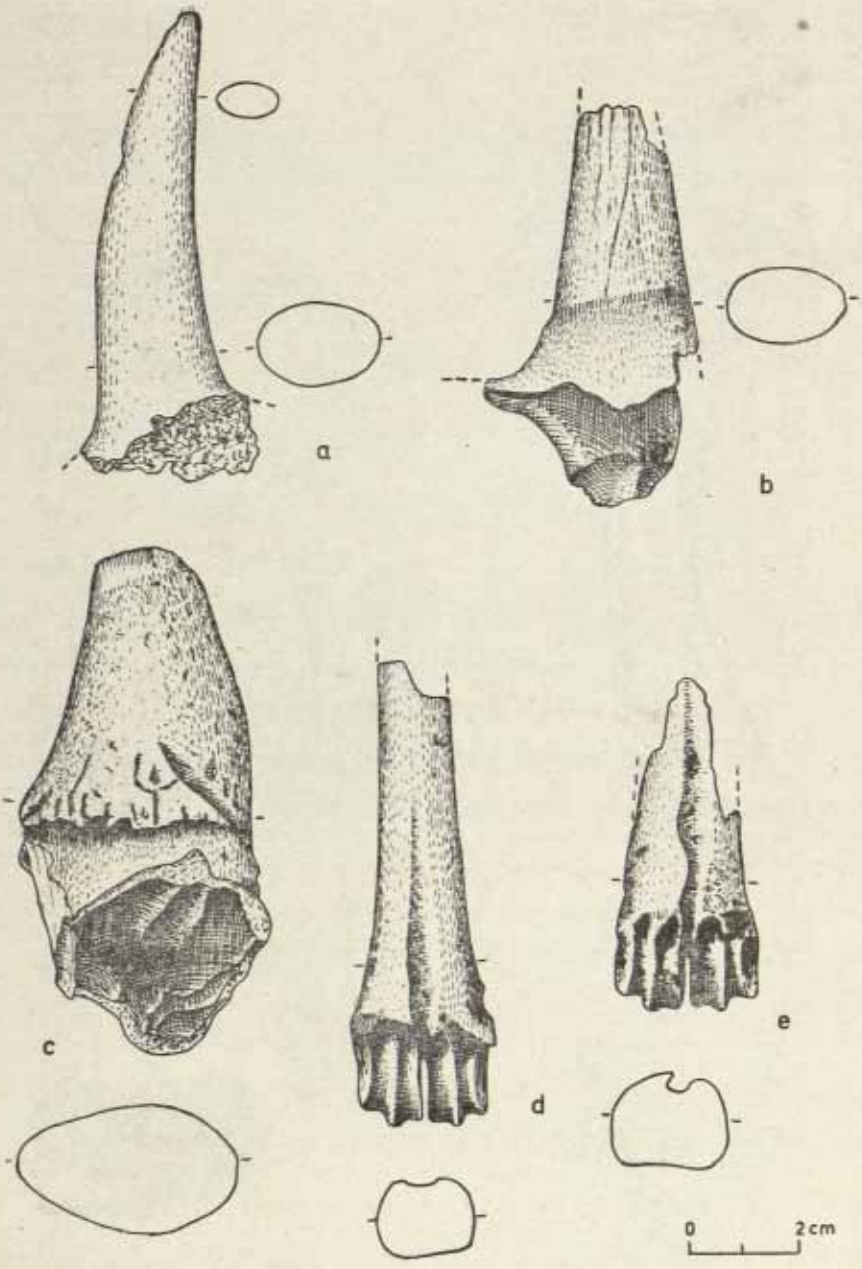

Fig. 41 *Capra hircus*, horncores. a : Navdatoli (III 198 I *2*); b : Nevasa (319 Tr. A 5 *1*); Ovis aries, horncore; c : Navdatoli (IV, I U *9* 3374); Capra/Ovis metatarsus; d : Inamgaon (D2 *2*); e : Inamgaon (D *2 3* I).

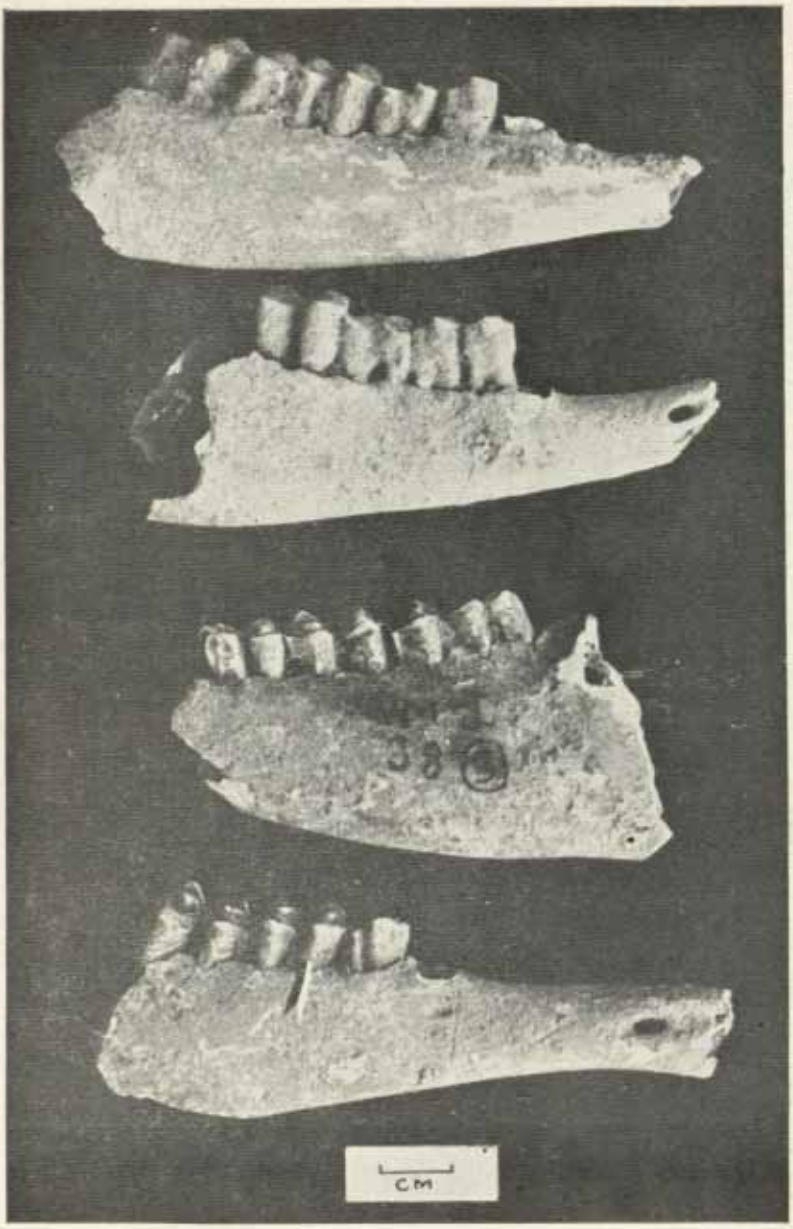

Fig. 42 Capra/Ovis, mandibulae. from above to r. mandibula (P_4 M_1 M_2 M_3); Inamgaon (—I B, *3*); r. mandibula (P_3 P_4 M_1 M_2), Inamgaon (P 8 *1*); l. mandibula (M_1 M_2 M_3); Inamgaon (I 8 *3*); l. mandibula (P_4 M_1 M_2), Inamgaon, this mandibula probably belongs to another species. The pattern of the enamel is not the same as that of the other three pieces.

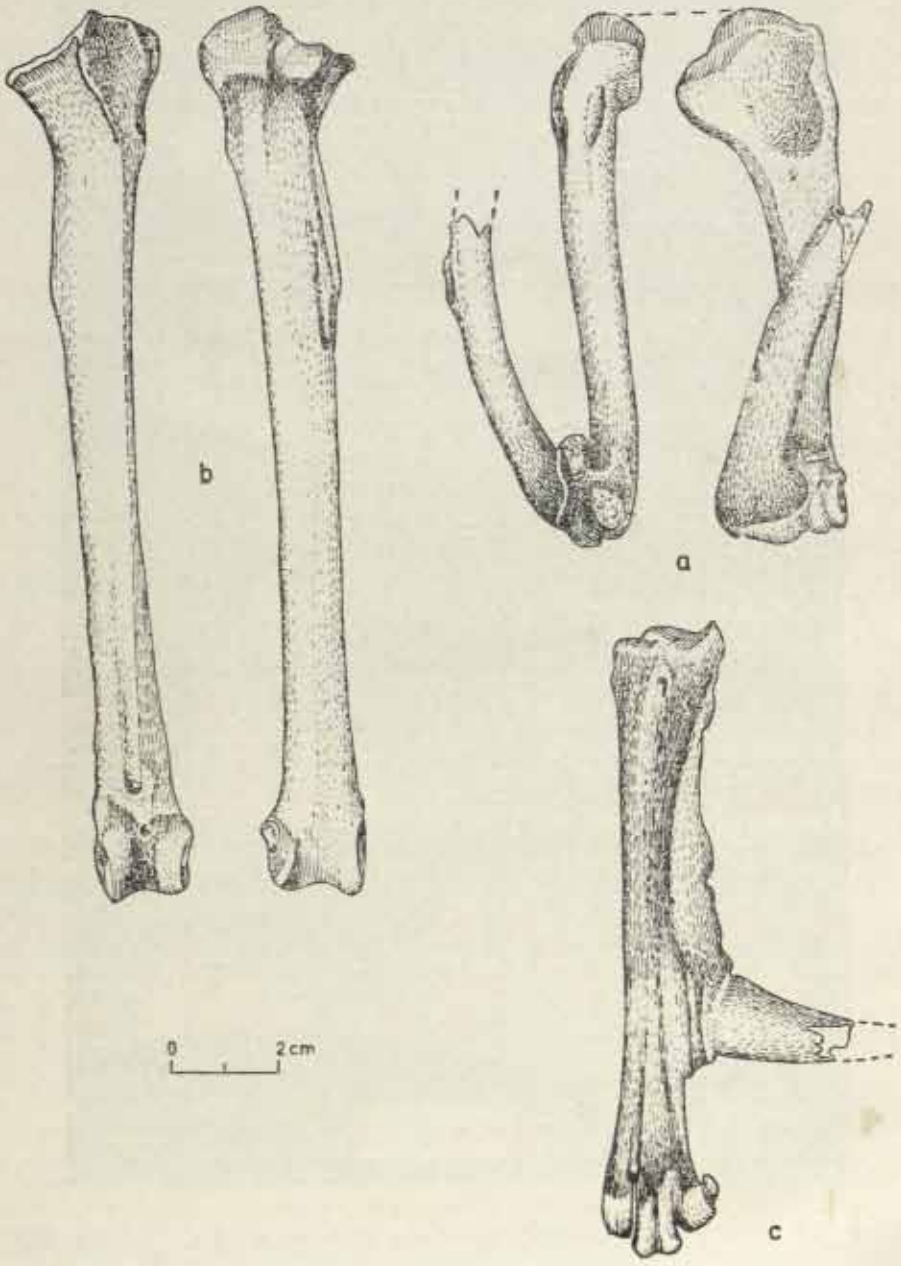

Fig. 43 *Gallus gallus domesticus.* Nevasa. a, humerus; b, tibio-tarsus; c, tarso metatarsus ♂.

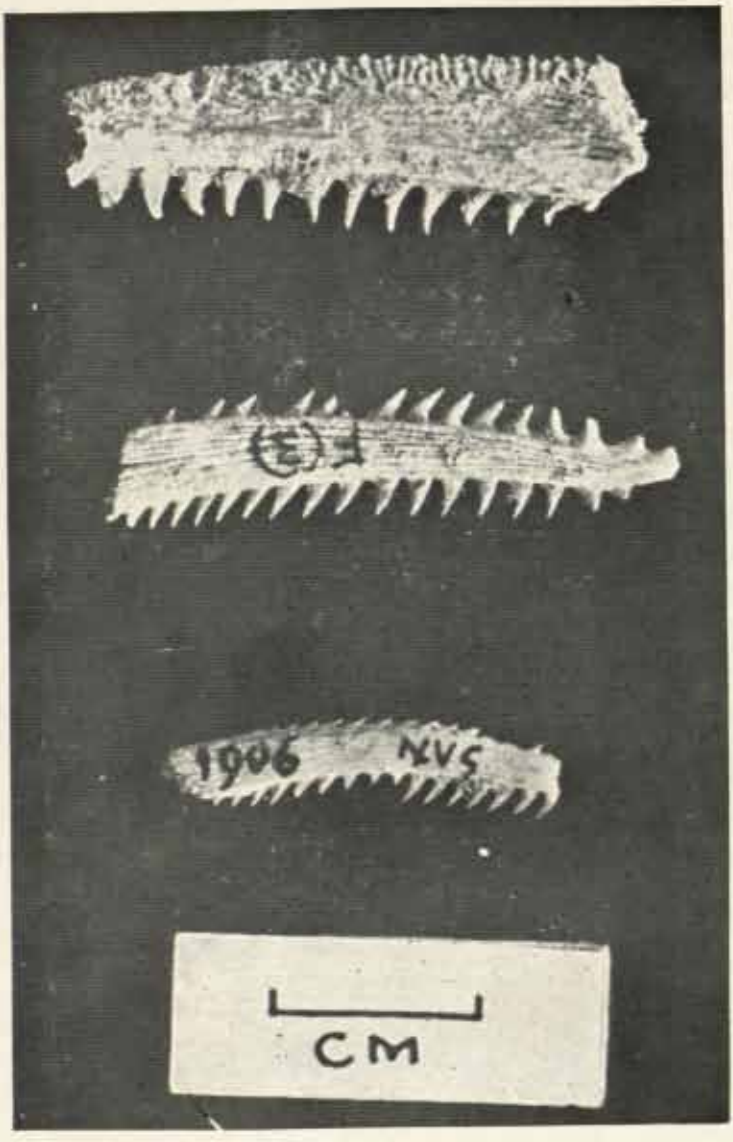

Fig. 44 The rays of the dorsal fins of ciprinide fish found in Nevasa (at least 2 species).

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