

*Human Skeletal Remains
from the Cemetery of Timargarha*

Part VII

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HUMAN SKELETAL REMAINS FROM THE CEMETERY OF TIMARGARHA

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SECTION — 1

1. INTRODUCTION

The following report deals with the skeletal remains exhumed during the excavation of the protohistoric cemetery at Timargarha (Dir-State, North-West Pakistan) conducted by the Department of Archaeology, University of Peshawar, in collaboration with the Department of Archaeology Government of Pakistan (Karachi) in 1965. At the kind invitation of the above mentioned Departments and the financial support by the Deutsche Forschungsgemeinschaft the author was able to participate in the excavation and was responsible for the analysis of the anthropological material. In 1964 excavation at Timargarha were mostly revealed *well preserved human remains*, but in 1965 the bone material was in a very bad condition. Only with greatest care it was possible to get useful material for anthropological study.

Archaeological Background: The cemetery of Timargarha belongs to a cultural complex wide-spread in the mountain region of Northwest Pakistan. It could be traced till today from the border of Afghanistan to the Indus i.e. the region of old Gandhara. Dani (1966) has proposed the nomenclature "Gandhara Grave Complex". Yet the term does not imply that the graves are typical of Gandhara. It simply means that in the present state of exploration we are likely to find them also in Afghanistan and the areas east of the Indus River (compare DANI 1966). Based on the sequence study of that region, DANI could distinguish, for the first time, three main cultural periods one following the other, which according to his tentative dating extend from the middle of the second millennium B.C. right into the historic period (approximately 8th-7th centuries B.C.). Meanwhile the date for the early period could be confirmed by radiocarbon dating, performed on bone material at the University of Heidelberg, W. Germany. The inflexed burial of grave 101, which according to Dani belongs to cultural period 1, yielded an absolute age of at least 3380 ± 60 years, indicating that the earliest period began latest in 15th century B.C. (see also below). According to DANI the three cultural periods differ from one another not only in pottery but also in funerary rites and the introduction of iron in period III. Therefore it may be inferred that we are dealing with people or peoples who are passing from Bronze to Iron Age (see Section 10 on Discussion and Conclusion).

Similarly three periods had been differentiated by STACUL (1966) in his recently published report on the pre-Buddhist necropolises in Swat, which belongs to the same cultural complex. However, it is difficult to compare at present the three periods of Stacul with those of Dani.

Concerning the cultural relationships to other pre- and proto-historic sites of Asia, a question which is also important to a certain degree for the anthropological analysis, we mostly refer to the above mentioned work of Stacul. As earlier mentioned by ANTONINI (1963) in her preliminary notes on the excavation of the necropolises found in Swat, STACUL also considers most of the cultural associations with West Asia and Asia Minor. Regarding the typology of the pottery he points out many features in common with analogous pottery discovered in Palestine (4th Millennium B.C.), Khurab, Bampur and Katakan in Persian Makran, Tepe Hissar phases IIB, IIIA and II1B. Shah Tepe phase II A. the deepest level at Charsada, (Bala Hisar) the tombs of cemetery R 37 at Harappa, the most recent strata of Gawra, Hasanlu V Giyan I, Turang Tepe, Sialk, Mundigak IV, and Chanhudaro II.

According to STACUL the metal objects, especially the different types of copper hair pins, are related to similar types found in the Veri cemeteries (Soviet Caucasus) in tombs dating from the late Bronze Age, finds at Coban in late Bronze Age tombs, at Anau, Giyan, Sialk, and other sites already mentioned in connection with the pottery.

As critique of ANTONINI, which is however also true of STACUL, DANI (1966) is of the opinion, that many of these cultural associations are questionable on ground of long time gap.

Contrary to ANTONINI and STACUL, Prof. JETTMAR, ethnologist at the University of Heidelberg and an expert of Asian prehistory, suggests relationships to the North i.e. Middle Asia, especially the steppe region, as will be discussed in a later section.

From an anthropological point of view, especially from the aspect of the racial history of the Pak-Indian sub-continent, the bone material from Timargarha is of prime importance both geographically and chronologically. Besides the anthropological finds, excavated by the Italian Archaeological mission in the neighbouring Swat, which however has not been published yet², the skeletal remains from Timargarha are the only pre- and proto-historic anthropological material found in the extreme north-western corner of the sub-continent. This region is generally considered

as one of the most important gateways for immigration of foreign people from West and Central Asia to India. To emphasise the chronological importance DANI points out that "it is at this time that we learn from literature about the historic play of the enigmatic people, well known as Aryans, in this region. If in these graves we are not in the track of the Aryans, we are close upon their heels". (DANI 1966).

SECTION — 2

MATERIAL

The collection comprises unburnt and burnt skeletal remains of 137 individuals found in 82 graves of site No. 1 and 2. The material varies from complete skeletons to only a few but characteristic bone pieces representing one individual. Especially the children graves revealed only tiny bone fragments. Their discovery was possible as most of these graves had a stone lining, and were covered with big stone slabs. Yet the collection does not include the bones of all graves opened during 1965 season. Owing to different reasons the bones of some graves could not be collected. The maximum number of these graves were opened earlier than the author's arrival at Timargarha. Due to heavy rainfall these graves were filled in with mud or collapsed, so that the scanty bone pieces found in them were destroyed and could not be salvaged.

Owing to the bad state of preservation of the bone material only 25 skulls were in a good state or could be restored so that they were useful for osteological or material study and report. In this number some skulls are included, which were exhumed during 1964 season (numbered as skulls 01-06). Unfortunately the postcranial skeletons belonging to these skulls were not salvaged. The material was transported to the Anthropological Institute University of Mainz, West Germany, for final analysis.

SECTION — 3

METHODS AND TECHNIQUES

A) Estimation of age at death.

The eruption of the deciduous and permanent teeth as well as the epiphyseal union of various parts of the skeleton were the criteria for age determination of non-adults.

The age of death of grown up individuals was based — as far as preserved — on the whole skeleton. NEMESKERI et al. (1960) have developed a combined method of age determination based on skeletal material of known age, which in 80% of the cases determines the actual age at death within an error limit of 2 to 5 years. This method is based on the combination of four morphological features, which during lifetime show characteristic age variations: The closure of the endocranial sutures, the age change of the spongy structure of the proximale epiphyses of humerus and femur and the developmental stages of the pubic symphysis. The age determination by this method is far more exact than the usual method based on the closure of the external sutures of the skull and hence of great value for palaeodemographic analysis of prehistoric population. Unfortunately, owing to the bad state of preservation this method could be applied only in a few cases of this material. In many skeletons the pubic symphysis and the upper portions of humerus and femur were missing or so badly damaged that exact judgement regarding their structure was not possible. The determination of the closure of the endocranial sutures was also very difficult, especially in the case of the well preserved crania as the inside space of these skulls was filled up with well-backed earth, the removal of which was not possible without damaging the cranium.

For this reason the age had to be determined on the usual method of outer suture closure, according to the scheme of VALLOIS (1937) (see HEBERER et al p. 335). The other features were taken into consideration when the sutural arrangement could not be assessed. The attrition of the teeth was also very helpful in those cases where the other skeletal parts for age determination were missing. According to BROTHWELL's (1963) suggestion the wear pattern of the teeth of the individuals of unknown age were compared with the attrition of those individuals whose age could be determined relatively exactly by other age criteria. The sexual differences in attrition were also accounted for. The age determination of cremated material is completed basically on the same principles as valid for age assessment of unburnt skeletons. The changes due to the burning, however, made the analysis more difficult, so that in most cases only a broad classification of age was possible (adult, mature, senile). This is also true of those skeletons, where main features for age determination were missing.

B) Determination of sex

The determination of sex was based on usual sex characters of skull, pelvis and remaining skeleton (compare MARTIN-SALLER 1959, MONTAGU 1960, KROGMAN 1962, BROTHWELL 1963). In some cases, how-

ever, the sex could be assessed only by a few features, as the significant skull and pelvic region were mostly decomposed or so badly damaged that an exact estimation of the sex characters was not possible. In some other cases the sex determination was totally impossible, owing to the bad state of preservation of the material. Sexing of non-adults, which is very difficult owing to the less marked sex characters, could be established only in a few cases. The difficulty was all the more increased as most of the bones of children and juveniles were in a very bad condition.

C) Measurements and photographs

Most of the measurements were taken according to MARTIN's method with the instruments recommended by him (MARTIN-SALLER 1957). Only the measurements of facial flatness, which are not described by MARTIN were taken according to WOO and MORANT (1934) or according to the Russian metrical scheme. For linear measurements of facial flatness (e.g. the dakryal breadth and height and simotic breadth and height) a co-ordinate calliper was employed. Angular measurements were taken directly on the skull after proper orientation on the craniophore. The measurements were selected, keeping in mind the metrical comparison with neighbouring anthropological series from Pakistan, India and West and Middle Asia. Most of the basic measurements and indices are furnished in the collective tables at the end of the report. Linear and curvilinear measurements are given in millimeters.

The photographic material consists of photos of the well preserved skulls, which were utilised for anthropological and metrical report. The skulls are shown in norma frontalis, lateralis, occipitalis and verticalis. Regarding norma lateralis the better preserved side is given.

D). Estimation of cranial capacity and stature

The cranial capacity could not be determined with a direct method i.e. by filling of the inside space of the cranium by mustard-seed or other substances (compare MARTIN-SALLER Vol. 1, p. 470). All skulls were either fragmentary or the inside was filled with hard clay, the removal of which was not possible without damaging the skull. For that reason it was necessary to apply one of the various formulae for estimation of cranial capacity. GUPTA, DUTTA and BASU (1962) found for the Harappa bone material that estimation of cranial capacity by Lee-Pearsons Naqada formula was closest to the results direct measurements. As Timargarha

material comes from the same geographical area and as it has been shown later on that no great metrical differences could be observed between the two series, therefore, it can be assumed that this formula, applied to our material, also gives satisfactory results. Lee-Pearsons Naqada formula is as follows:

$$\text{Capacity for Males} = 0.000352. (L \times B \times H) + 372,39$$

$$\text{" " Females} = 0.000416. (L \times B \times H) + 189,81$$

(L denotes maximum cranial length, B maximum cranial breadth, H vertical porion height).

Out of the various formulae for estimation of the stature, Pearson's "regression formula", DUPERTIUS and HADDONS "general formula" and the Tables of MANOUVRIER as well as those of TROTTER and GLESER are mostly used. The values estimated according to PEARSON and MANOUVRIER are relatively low whereas those according to DUPERTIUS and HADDON and TROTTER and GLESER are relatively high, as it is known from literature (compare also EHRHARDT 1964). In case of our material the methods of MANOUVRIER and TROTTER and GLESER were employed. The latter method was also used by EHRHARDT (1964), who estimated the stature of 32 protohistoric skeletons from India.

E). Type diagnosis

The typological classification of the skulls was performed on the basis of metrical and morphognostic characteristics using the nomenclature common to prehistoric anthropology of South, West and Middle Asia (Mediterranean, Proto-Mediterranean, Australoid, Proto-Australoid, Vedoid, Nordic, Proto or Palae-Europid, Cromagnid etc.). The concept of type means to us a combination of certain morphological features. The problem, how far these types are identical with races or racial types in a strict genetical sense, should not be decided here.

During an "International Symposium on the Anthropology of Neolithic" in autumn 1966 in Mainz, SCHWIDETZKY suggested to replace the traditional typological classificatory concepts as Mediterranean, Nordic, Cromagnid etc. by more neutral terms, which at the same time present a brief morphological characteristic of the skull. The first part of such nomenclature explains the main features of the face and the second one those of the brain-case of the skull. For example, according to the new terminology the Mediterraneans and the Nordics, which are difficult to dis-

tinguish on the basis of the skull, can be termed as Lepto-dolichomorphs and the Cromagnid skulls as Eury-dolichomorphs. In the same manner the other types can also be characterized. There are further possibilities of differentiation with the help of additions like gracile, robust, aquiline etc. (i.e. gracile Lepto-dolichomorphs). Above all, the new nomenclature has the advantage that it helps in avoiding misleading associations regarding the geographical origin of the types, which are implied in most of the traditional terms. In the present work the attempt is made to use the new nomenclature along with the old terminology.

SECTION — 4

DESCRIPTION OF THE SKELETAL REMAINS OF THE GRAVES

The following is a short description of the bone material found in each grave, relating the burial position (orientation, facing etc.) of the skeletons in situ, the state of preservation of the bone material, the age and sex of each individual (as far as possible) including the detail of the main characters on which the age and sex determination was based. The establishment of age and sex of well preserved skulls is relegated to another section, where they will be thoroughly analysed. Here however, it is not intended to give a catalogue-like specification of all bones found in each grave.

The description is given in serial numbers. The position of each grave at the site can be seen from the site plan (Figs. 12, 17 and 18) in the archaeological report. The graves with the Nos. 101-199 belong to site No. 1, the graves with the numbers over 200 to site No. 2. The graves which did not contain any bone material or the bones of which could not be collected (see section 2) are omitted here. This section is not only interesting from an anthropological point of view but also from an archaeological aspect. The careful study of the skeletons, especially in situ, has revealed plenty of details concerning the varied burial customs, which are one of the characteristic features of the proto-historic population of Timargarha.

A. Site No. 1

Grave No. 101

In this grave skeletal remains of three individuals were found. One of them was a burial in flexed position facing north and that of an old woman of more than 60 years of age (101 a). Like other burials of the same type the body was placed on one side with legs inflexed and the head turned to one side. The arms were bent and the hands placed together in

front of the face. Orientation of the grave and the body was from west to east (i.e. the skull in the west, post-cranial skeleton in the east)³. The remains of the other two individuals were found in a disordered position close to the northern wall of the grave chamber. One of them belongs to a young woman of approximately 20 to 25 years of age at the time of death (101 b). The left partial bone of the skull of this individual was found fractured. From the close observation of this fracture it can be safely determined that it was caused by the blow of an edged tool and perhaps the death occurred due to this blow, as no signs of regeneration can be seen. The fracture was covered with earth and was discovered during the cleaning of the skull in the laboratory. Therefore the possibility can be eliminated that the fracture was caused by the implements of labourers during excavation.

The remains of the third individual present a male of about 35 years of age (101 c). All skulls were well preserved or could be restored and were useful for anthropological analysis (see section 7).

Grave 103

This grave contained the remains of one individual buried in regular inflexed posture facing south. The bones, specially the skull, were at a high degree of decomposition. Yet the massiveness of the cranial and post-cranial bones, the strongly developed muscular ridges and a fragment of a very massive lower jaw clearly indicate that the remains are those of a male. The molars show only a little sign of attrition which corresponds to an age of 20 to 30 years.

Grave 104

This grave revealed skeletal remains of two individuals. One of them was lying in regular inflexed position facing south. The skull was badly broken. Most of the calvarium and the facial skeleton were missing. The frontal bone which could be partially restored shows a strongly projecting superciliary and glabellar region and a rounded upper margin of the orbits. A fragment of the lower jaw and the long bones are rather robust. There is no doubt that the remains belong to a male individual of 40 to 50 years age group, as is proved by the wear pattern of the heavily worn off teeth.

The skeletal remains of the second individual were found scattered near the southern wall of the grave chamber. The skull was broken too, but it was possible to restore it partially. It exhibits typical female sex

characters and belongs to an individual of about 20-25 years of age, as all sutures are still visible and show no signs of ossification. From the post-cranial skeleton only fraction of the upper extremities were found, whereas the bones of the lower part of the body were missing.

Grave 105

In this grave was found nothing but few teeth without roots, which probably belong to an infant who died at an approximate age of less than one year. Nothing can be said concerning the sex and the burial position of this individual.

Grave 107

This grave revealed the burial of a child in flexed position facing south. The bones were extremely fragile and in a very bad condition. Only a few bone-pieces of the skull and some teeth were preserved. Besides some milk teeth, one incisor of the permanent dentition was found indicating an approximate age of 5 to 7 years, which is also in accordance with the measurements of the long bones in situ.

Near the facial part of the child's skull were lying some more tiny pieces of bones and a few deciduous teeth without roots. Petrous portions of two right temporals, which were distinctly smaller than those of the above mentioned individual, indicate that in this grave two more individuals were buried, who were probably less than one year old. Owing to the scantiness of the remains of these two infants nothing can be said about the burial position.

Grave 108

From this grave skeletal remains of a child lying in inflexed posture facing north were found. The bones were in a very fragile condition and could not be preserved. A fragment of the upper jaw clearly indicates that the permanent incisors are still inside the jaw but shortly before eruption. The determined age of about 6-7 years accords with the approximate measurement of the long bones and the sitting height. As usual in the case of non-adults it is very difficult to say anything about the sex of the individual.

Grave 109

In the south-western part of the grave chamber was found a frag-

mentary skull, including the mandible and bones of the post-cranial skeleton of an animal. The bones were determined by a zoologist as belonging to a young female goat about 6 to 8 months of age (see section "Zoological remains"). The only human remains found in this grave were a radius and some teeth. The comparison of the wear pattern of these teeth with those of known age suggests, that they belong to an individual of about 20-30 years of age. Sex was not determinable. It is evident that no complete burial took place.

Grave 111-B

In this grave the excavation exposed skeletal remains of a complete lower part of a human body lying in natural semi-contracted position. thus the skull would have faced south. The remains included pelvis, femura, tibiae, fibulae, tarsals, metatarsals, phalanges, and three lumbar vertebrae. All these bones were lying in natural position in the eastern part of the grave. The western part did not contain a single bone of the upper part of the body. As the bones of the lower part of the body are extremely well preserved, it is impossible that the upper part of the skeleton has totally decomposed. It seems that the body was cut into two pieces between the second and third lumbar vertebrae and only the lower part of the body was buried in this grave⁴.

The massiveness of the bones, the deep and narrow sciatic notch (and other characteristics of the pelvis), the large diameter of the caput femoris (49 mm) and the well developed muscle markings clearly indicate a male individual. The pubic symphysis shows stage 1 according to Nemeskeri (1960) which corresponds to a mean age of 31 years.

When removing the bones the writer found in the south-eastern corner of the grave chamber a small heap of bones consisting of fragments of a skull including some teeth, fragments of humerus and ulna and some small burnt pieces of skull, ribs and long bones. The author was informed by the site supervisor, that these bones belong to another, overlapping grave and not to the individual buried in grave 111-B. This could also be confirmed by the anthropological analysis and differences in colour and structure of the surface of the bones.

Grave 114

This grave contained skeletal remains of an individual lying in flexed

position facing north. Although the skull was badly crushed by earth pressure, it was still possible to determine the age and sex of the individual. The remains belong to a female more than 60 years of age (see section 7). The sex determination on the basis of the skull is in accordance with the gracility of the post-cranial skeleton and the ill-marked muscular ridges. Near the bones of the upper limbs were found burnt remains of another individual, especially two cervical vertebrae and an incisor of the permanent teeth.

The urn in the north-western corner of the grave chamber did not contain any (burnt or unburnt) human remains. But another pot of the grave furniture revealed small pieces of burnt human bones. Two small fragments of the calvarium with sutures, a piece of the zygomatic arch, a fragment of a humerus (14 inches in length), and some other bone pieces which could not be identified. It was not possible to determine the age and sex and to decide whether the burnt remains found at different places of the grave belong to one individual.

Grave 117

Among the pottery of the grave furniture some long bones and small skull pieces of one individual were scattered all over the floor of the grave chamber. The lower part of a femur shaft broken in several pieces was found in a bigger pot. The well marked linea aspera is the only sign that the individual may be of male sex. The age was not determinable. Nevertheless it can be stated that the individual was at least adult.

Grave 119

Close to the north-western wall of the grave chamber were found slightly burnt pieces of skull and fragments of long bones of two individuals. Portions of the frontal bones and the orbits clearly show opposite sex characters, thus leading to the conclusion that a male and a female were buried here. The teeth of a relatively well preserved lower jaw, not heavily worn off, indicate an age of about 25-30 years. As the mandible is comparatively massive in structure it is highly probable that it belongs to the male. The age of the female could not be determined exactly, but the individual was at least adult because all epiphyseal lines as far as preserved seem to have already fused.

In the south-eastern corner of the grave chamber were found many

pieces of pottery including one urn, which contained slightly burnt bones mainly of the post-cranial skeleton belonging to the above described individuals.

Grave 122

Cremated remains of several individuals were found in different urns. One urn contained equally burnt and heavily calcined bones of two individuals. The number of individuals buried in this urn could be determined by two petrous portions of the temporals of the right and left side and other remains.

Corresponding bone pieces of both individuals show remarkable differences in thickness (though equally burnt) and suggest that the remains are those of a male and a female. All epiphyseal lines seem to be fused. The alveoli of a fragment of the mandible show that the 3rd molar had erupted. Therefore it can be concluded that both individuals were at least adult. A second urn revealed further burnt remains. Contrary to urn no. 1 the bones were not equally burnt. Some bones were calcined, others only slightly charred, indicating the lesser amount of heat of the funeral pyre. Analytical study of these remains showed that this urn contained the bones of only one individual. The massiveness of the bones, the well developed superciliary ridges, the rounded upper margin of the orbits, the presence of the third molar and the fused epiphyseal lines indicate that the remains are those of a male adult.

In another urn were found cremated remains of a 4th individual. Concerning the stage of cremation, they show similarities to the remains of urn no. 2 as they were also unequally burnt. The bones are comparatively gracile; a fragment of the slightly cremated frontal bone shows an extraordinarily sharp upper margin of the orbits, thus belonging probably to a female. The epiphyses of a slightly burnt fragment of a humerus had already united, nevertheless the epiphyseal line was partially still visible. Therefore it may be deduced that the individual was about 20 years of age.

Grave 123

Most of the bones of the two individuals buried in this grave were found in a very disturbed order. Only the lower legs of one individual were lying in natural position suggesting originally a burial in flexed position probably facing south. Only tiny pieces were preserved from the skulls. As

the bones of the post-cranial skeleton, especially the pelvic bones, were very fragmentary too, the age and sex are very difficult to determine. Yet the bones of the lower extremities found lying in natural position are massive with well developed muscle markings, whereas the corresponding bones of the other individual are comparatively gracile. This is the only sign that in the grave were buried a male and a female individual. From the fact, that all epiphyses are already fused, it can be concluded that both individuals were at least adult.

Grave 124

This grave exposed the skeletal remains of one individual. The burial position was not quite clear. At least parts of the post-cranial skeleton were probably disturbed. However the bones of the lower extremities, the lower jaw and the broken skull were lying in natural position facing north. Although most of the characteristic parts of the skeleton for sex determination are missing the thin cranial bones, the gracile lower jaw and the gracile long bones suggest a female. As the teeth are not very much worn off and only one third molar of the lower jaw had erupted, an age of approximately 21 years can be assessed.

Grave 125

Near the western wall of the grave chamber were found a few pieces of human skull and two teeth accompanied with bone fragments of the post-cranial skeleton (humerus, ulna and femur). It is evident that no burial in natural flexed position took place. Owing to the scantiness of the remains the age and sex diagnosis is very difficult. Nevertheless, the massiveness of the bones and the attrition of the teeth suggest a male of a higher age group. The opposite (eastern) corner of the grave was occupied by animal bones, belonging to a horse, a stag, and a smaller ruminant, possibly a goat or sheep (see Section "Zoological remains"). More than half of one of the long animal bones was found inserted between the stone courses of the southern wall of the grave chamber.

Grave 132

In this grave skeletal remains of a child were found in a very fragile condition. The body was placed in flexed position facing north. A fragment of the mandible clearly shows that the child died at an age of changing the deciduous teeth. A permanent canine and the second pre-molar had already erupted, indicating an age of about 11 years. This age determina-

tion accords well with the approximate length of the long bones and the sitting height measured in situ.

Grave 133

In this grave were found only tiny pieces of skull and a fragment of humerus together with some deciduous teeth without roots. It seems that they had not erupted yet and thus belong to an infant less than one year of age. Owing to the scantiness of the find it is impossible to tell exactly the burial position. Nevertheless the way the small bone pieces were found suggests that the body was placed in flexed position facing north. Sex was indeterminable.

Grave 134

Skeletal remains of two individuals were found in a heaped position together with pottery in the eastern half of the grave chamber, whereas the western part was practically empty. The fashion in which the bones were lying shows that no standard inhumation took place. The calvarium of one skull was relatively well preserved, whereas the facial skeleton and the mandible were missing. It belongs to a female of about 25-30 years of age (see section 7). The sex determination based on characters of the skull is in agreement with the gracility of the post-cranial skeleton belonging to this skull.

On the left parietal of the skull a slight deepening can be seen (see Fig. 42, Pl. LXVIII) caused by an injury which was totally healed when the death occurred. Only fragments were found from the second skull. As the characteristic parts are missing, sex and age determination is very difficult. Only the well marked muscular attachment areas and the massiveness of a fragment of the mandible suggest a male. As the alveoli of the molars are closed due to the loss of these teeth during life time, a higher age group (senile) can be assessed.

Grave 136

According to the nature of inhumation, this was the unique burial⁵ of the entire cemetery because the skeleton was found lying in an extended position. The burial showed no signs of ritual inhumation, as the skeleton was not found placed in the prevailing style of grave chambers and also devoid of any kind of pottery. The bones were at an advanced stage of

fragility. From the skull bones only the mandible was relatively well preserved. Its massiveness suggests a male individual of approximately 25-30 years of age based on the attrition of the teeth.

Grave 137

Skeletal remains of two individuals mixed with some animal bones were scattered all over the grave chamber punctuated by pottery. There are no signs that one of the individuals was lying in a standard burial position. From the striking differences of size and massiveness of the fragmentary skulls, the teeth, the post-cranial skeleton and the development of the muscle markings one can conclude that in the grave were buried a male and a female. The teeth of the male individual are heavily worn off. The attrition corresponds to an age of 50-60 years, whereas the teeth belonging to the female show only little signs of attrition indicating an age of about 20 years.

The animal bones belong to probably a male sheep, a hare and a young ruminant, not yet specifically determined of the size between a sheep and a stag (see section "Zoological remains").

Grave 138

Skeletal remains of two individuals were found in this grave. The way the bones were lying more or less corresponds to the manner seen in the previously described grave no. 123. In the western part of the grave chamber the bones were found highly disturbed whereas in the eastern half the lower extremity bones of one individual were lying in natural position suggesting the regular burial in a flexed position facing south. Only a few pieces were preserved from the skull including fragments of both lower jaws with postmortal loss of the teeth. As the characteristic parts of the skulls are missing sex determination was very difficult. The only criteria that the individual whose legs were found in natural position, was of male sex are the massiveness of the long bones and the large and well developed attachment areas of the muscles. Assessment of age of both individuals was not possible. Nevertheless it can be stated that they were grown up i.e. at least adults.

Grave 139

This grave revealed the post-cranial skeletons of two individuals but

only one skull of a male of about 30 to 35 years of age which was relatively well preserved (see section 7). The bones of the upper and lower extremities including the bones of the hands and the feet of one individual were found in natural position. From the direction in which the bones were lying one can deduce that the body originally must have been placed in flexed position facing north. The other bones of this individual were disturbed and lying in a jumbled manner mixed up with the bones of the second individual. It was, however, not possible to decide which of the post-cranial skeletons belongs to the skull and to determine the sex and the exact age of the second individual. Nevertheless it can be stated that it was at least an adult.

Grave 140

The grave exposed skeletal remains of a child in a very advanced stage of decomposition lying in flexed position. Only small pieces of the skull, some fragments of ribs, vertebrae and humerus were preserved. As the upper and lower jaw and all teeth are missing exact age determination was not possible. Yet the size and the thickness of the bones correspond to those of a child of about 7 years of age. It is interesting to note the variation in the orientation of the child's body. In all graves with burials in flexed position, described earlier, the orientation of the body was from west to east (i.e. the skull was lying in the western part of the grave chamber, and the post-cranial skeleton in the eastern half). In this case the orientation was from east to west (skull in the east facing north).

Grave 142

In this grave three individuals were buried. The nearly complete and relatively well preserved skeletons including the skulls of two of these individuals were lying in highly jumbled manner in the north-western part of the grave chamber, whereas the opposite corner was practically empty. The skulls which were useful for anthropological analysis belong to a male (142 a) of about 30 to 40 years of age and a female (142 b) of approximately the same age group (see section 7). Most of the bones of the third individual were found at a deeper level of about 1 foot. Only some bones including the fragmentary skull which could not be restored were mixed up with the bones of the other two individuals in the superficial level. Except the upper extremities, the skull, and the pelvic region, which were slightly disturbed, all other bones of the skeleton, especially the total vertebral column, the ribs and the lower extremities were found lying in natu-

ral position and leave no doubt, that originally a burial in flexed posture facing south took place. The massiveness of the long bones, typical male sex characters of the pelvis and a relatively large diameter of the caput femoris suggest that the individual was probably of male sex. The age at death was about 20-25 years, assessed by the fact that all epiphyseal lines of the long bones have fused and the teeth show only a little sign of attrition.

Grave 144

This grave revealed skeletal remains of one individual lying highly disturbed. The skull was found in the western part of the grave together with one femur, while the fragmentary lower jaw was lying in the opposite corner of the grave chamber near the second femur. The only sign, that originally a natural burial took place, can be seen from the position of tibia and fibula of both legs, lying parallel side by side according to their anatomical position. Except the facial skeleton the skull was relatively well preserved and useful for anthropological analysis (see section 7). It belongs to a female of approximately 20-25 years of age. The age diagnosis based on the skull accords with the extreme gracility of the long bones.

Tiny fragments of skull, mandible and long bones suggest, that in the grave a second individual was buried. A fragment of the lower jaw shows a milk molar without root, which seems to have not erupted yet. Its developmental stage corresponds to an age of approximately 6 months to a year, which accords with the general size and thickness of the bone fragments.

Grave 146

The western part of this grave without stone lining was occupied by a few pieces of skull, some fragments of ribs and humerus of a child. The bones were at a high degree of decay. From the position of these scanty remains it can be deduced that the body was lying in flexed position facing north. As far as from the fragments of the upper and lower jaw can be judged, all deciduous teeth had erupted. A second incisor of the permanent dentition, visible at a fracture of the mandible, shows a crown and neck but no root. Its developmental stage corresponds to an age of 5-6 years.

Grave 148

Skeletal remains of one individual lying in usual flexed position

facing north were found from this grave. The skull was fragmentary and broken, the facial skeleton missing. The skull bones are moderately thick, a fragment of the frontal bone shows a sharp upper margin of the orbit; the glabella and the superciliary arches are not very much developed, the bones of the post-cranial skeleton are gracile with weak muscle markings, thus belonging to a female individual. Age at death was about 30-35 years assessed by the arrangement of preserved sagittal suture and the wear pattern of the teeth.

Grave 149

Human skeletal remains and animal bones were found in this grave in an extremely disturbed order. Skull fragments of two individuals could be distinguished by corresponding parts of the occipital bones and two fragmentary mandibles. One of the lower jaws was lying with the rami close to the western wall of the grave chamber resting on a small piece of long bone. It is highly probable that it was placed there deliberately and intentionally. Close to it was found the mandible of an animal. The second lower jaw was discovered together with pieces of ribs in a pot (Reg. No. 94). The fragments of one of these skulls are very massive, the mastoid process large, the external occipital protuberance, the glabellar and superciliary region well developed thus belonging to a male. The sex of the second skull is questionable, as all characteristic parts for sex determination are missing or insignificant. In both cases the arrangement of the sutures could not be exactly judged. Yet the closed alveoli of the molars and premolars of both lower jaws suggest a higher age group of more than 60 years (senile). Contrary to the two skulls, only the fragmentary post-cranial skeleton of one individual was found in the grave. It probably belongs to the male skull. The developmental stage of the pubic symphysis confirms the age determination based on the lower jaw. It shows stage 5 according to Nemeskeri, which corresponds to a mean age of 69 years.

In a pot (Reg. No. 89) were found burnt and semi-burnt remains of a third individual whose age and sex was not exactly determinable. Nevertheless it can be stated that the individual was at least adult. The possibility, that the urn contained the burnt post-cranial skeleton of the second individual may be excluded, as also burnt remains of a skull were found. The animal bones belong to an old female sheep, approximately 10 years of age (see Section "Zoological remains").