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SCYTHIAN DESCENDANTS ON THE LOWER DNIEPER RIVER ACCORDING TO THE ANTHROPOLOGICAL MATERIAL FROM THE NIKOLAEVKA—KAZATSKOE CEMETERY.

(First part)

The fate of the Scythian tribes after the invasion of Ukraine by the Sarmatians at the beginning of our era has been concentrating at least as much attention as the questions of the origin of these tribes and of their specific skeletal characters. Both the written reports and archaeological finds indicate that the Scythians had been driven to the Crimea, where they founded a new state with Scythian Neaples as capital city. The anthropologists and many other experts try to answer the following questions: What happened to the Scythians who remained in Ukraine? Were they absorbed by the Sarmatian invaders? What is their share in the formation of the populations inhabiting later this region and the adjoining areas? Have they been amalgamated with the Slavic tribes?

The morphological type of the Sarmatians could be reconstructed according to the skeletal remains found in numerous Sarmatian barrows in Ukraine (Konduktorova, 1956). The archaeologists consider that many barrows of this period belong to the descendants of the Scyths, but the skeletal remains from these barrows are not known. It is presumed that the barrows were used for the burial of some of the richest people of the late-Scythian population. The popular masses were buried in burial sites without barrows. One of these burial sites at the village Zolotaya Balka in the Cherson Region was explored in the recent years (Symonowich, 1960, Vyazmitina, 1972, Konduktorova, 1971, 1972). The anthropological finds from this site, however, permitted us to draw only preliminary conclusions. It was necessary to find also some new material. For this purpose we realized further excavations in the Berislav District of the same Region. We explored a burial place with no barrows, approximately from the same period (Symonowich, 1960). The site is situated between the villages Nikolaevka and Kazatskoe not far from a fortified settlement from the same period *(Fig. 1)*. The site attracted considerable attention as early as in 1912. It was explored by M. Ebert, a German archaeologist (Ebert, 1913, 1921, 1929). He opened 16 graves in which altogether 12 skulls have been preserved. The burial site was dubbed Nikolaevskoe. Perhaps it would be more suitable to call it Nikolaevka—Kazatskoe. It would better reflect the actual geographical position of the site and it would also eliminate a lot of confusion caused by the fact that numerous other finds are called also Nikolaevskoe since this is a very frequent Russian place name.

The excavations of the Nikolaevka—Kazatskoe burial site were realized by a joint expedition of the Academy of Sciences of the USSR and of the Anthropological Institute of the Moscow State University *(Fig. 2, 3)*. The expedition was headed by the archaeologist E. A. Symonovich. There were also anthropologists in the expedition: I. N. Chernyakhovskaya, V. S. Ter-Oganez and the authoress of this study. The excavations took six years, in 1966—1967 and mainly in 1969—1972. An area of

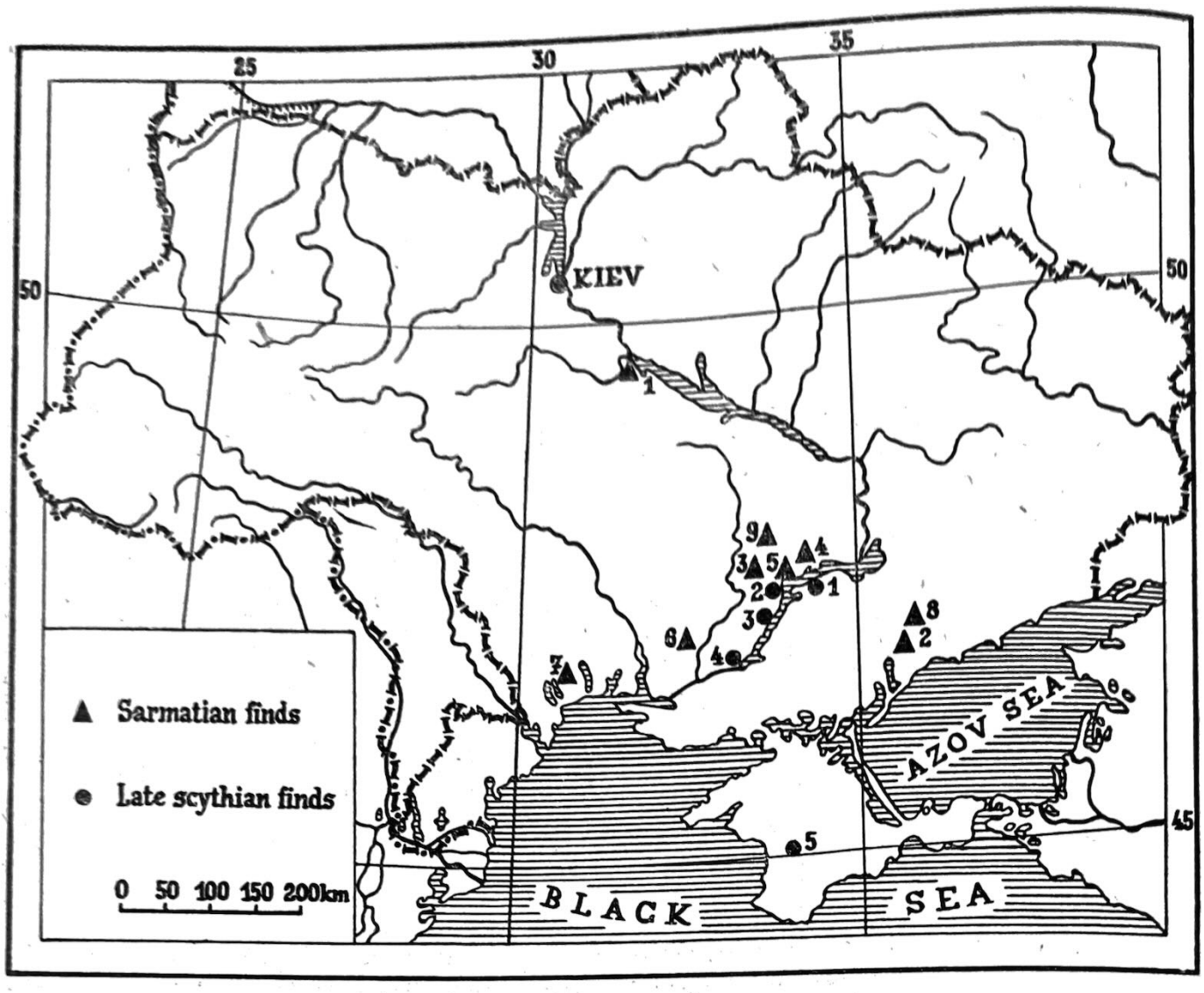


FIG. 1. *Archaelogical localities, IIIrd century B.C. — IIIrd century A.D. with skeletal remains. Sarmatian localities: 1 — Nyetyerepka; 2 — Novo-Filipovka; 3 — Ustj-Kamyonka; 4 — Khmelnyitskyi (kutor); 5 — Ushkalka; 6 — Afanasyevka; 7 — Ranzhevoe; 8 — Akkrmenj (sovkhoz); 9 — Maryanskoe. Late Scythian localities: 1 — Kamjonka-Dnjeprovskoe (Znamenskoe gorodishtsche); 2 — Zolotaya Balka; 3 — Gavrilovka (gorodishtsche); 4 — Nikolaevka—Kazatskoe, 5 — Simferopol, Scythian Neaples.*

6,043 sq. m. containing 206 graves and 310 burials was explored. Among the skeletal remains of adults 81 males and 78 females have been recognized. The skulls have been preserved in 134 cases (68 males and 66 females) and in 104 cases also the long bones could be used for our study. The skeletal remains of 13 adolecents and 37 children have also been unearthed. We have thus obtained the skeletal remains of 209 people for our anthropological study.

The state of preservation of the skeletal material was not bad, nevertheless almost all the skeletal remains required restauration of various degree. This work has been realized by the skilled and experienced collaborator of the Anthropological Institute of the Moscow State University M. N. Yelistratova.

The data on the sex and age of each buried individual as well as the data on other finds and on the burial situation are indicated in a summary table in Appendix 1. The archaeological data used in the table have been taken from the digging reports of E. A. Symonovich. On the basis of the complex archaelogocial observations E. A. Symonovich is inclined to date the burial site somewhere between the 1st century B.C. and 3rd century A.D. (Symonovich, 1969, 1970, 1971, 1973). *Figs. 4—9.*

In most skeletons it was quite easy to establish the sex without any doubt. The sex of the skeletal remains was established according to the character of skull morphology, pelvic and long bones and the degree of muscular relief has also been taken into consideration. In some questionable cases we took into consideration also the implements found in the burials. Unfortunately we were not able to work always with all these facts. In some burials the pelvic bones have not been preserved, in others the skulls were missing. In some cases there were no accompanying burial goods, or they were not characteristic enough. Nevertheless there were only few dubious cases. We are not sure whether e.g. the sex of skeletons No 88/15 (grave 29, burial 3), 93/18

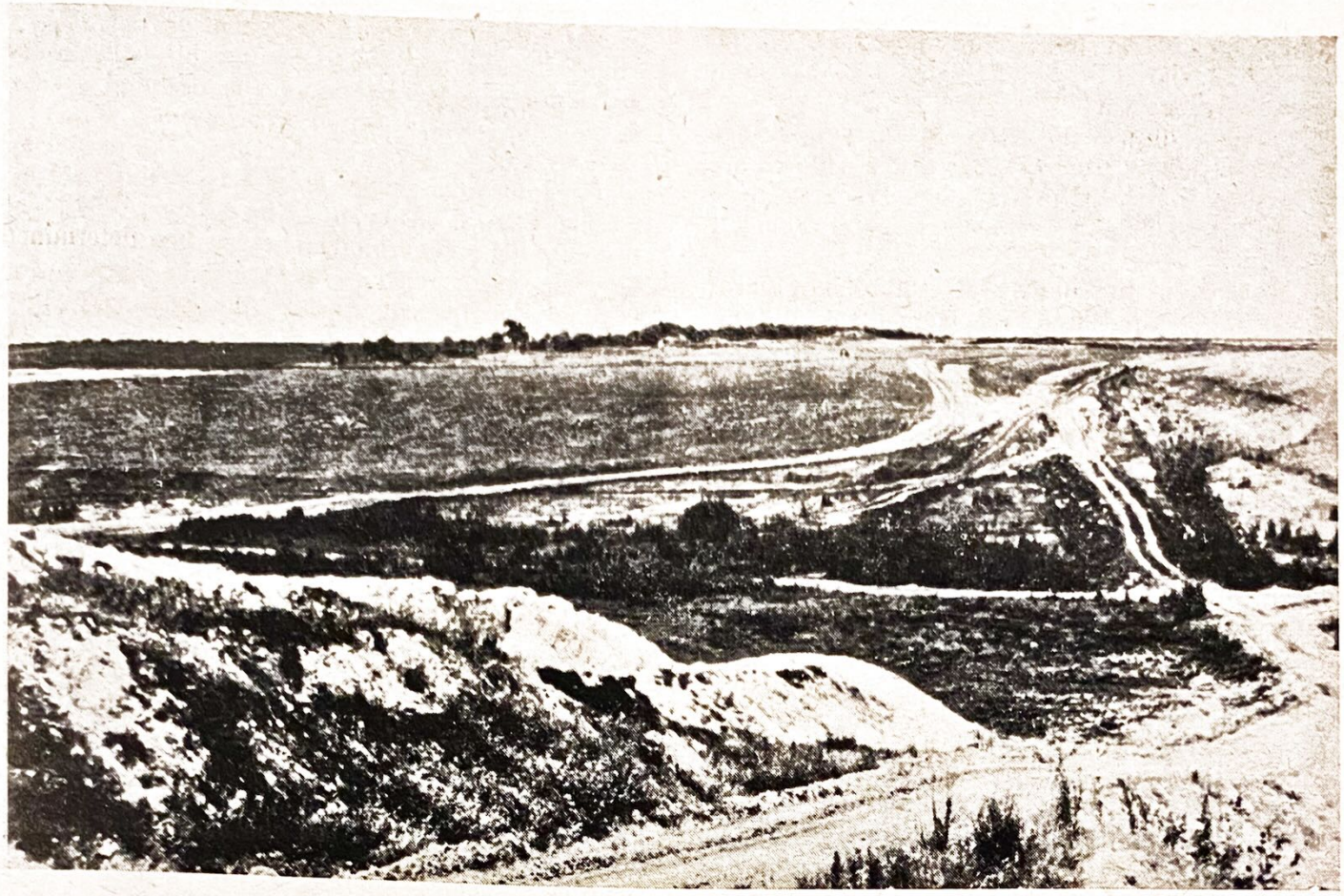


FIG. 2. *General view on the Nikolaevka—Kazatskoe burial place.*

FIG. 3. *Excavations of the Nikolaevka—Kazatskoe burial place.*

(grave 60), 267/14 (grave 117, burial 1), 267/20 (grave 122, burial 3), 289/9 (grave 176) has been correctly recognized.

It is quite difficult to determine the average age of the individuals. The skeletons of the children are in very poor state of preservation. We have been able to determine only the average age of the adult population.

The age of the adults was established according to the disappearance of cranial sutures and according to dental attrition and we have come to the conclusion that the average age of the adults is 45 years. Similar or a bit lower age values are known also for many other prehistoric groups in the territory of the USSR. They vary about the age of 40 years (Alexeyev, 1972).

The number of males and females was roughly the same: 50.9 per cent of the skeletal finds belonged to men and 49.1 per cent to women. The average age of men was 48 years and that of women 41 years. Lower life expectance of women was a rule in all prehistoric periods and in the Middle Ages (Alexeyev, 1972). This relation has been retroverted only at the present population, where opposite tendencies prevail.

More than two-thirds of the men died between the age of 25 and 55 years. In fact none of the male finds was below 25 years. In the group of women abouth one-fourth of the finds were below 25 years and above 55 years. The basic difference in the death-rate of males and females is within the 18—25 years age bracket. Unfortunately in this age the students are prone to commit most errors as to the determination of sex since the bone reliefs of men are relatively slightly expressed. Anyway, we did our best to reduce possible errors to the minimum by using all the available anthropological and archaeological data. Perhaps the most important causes of the different death-rate of males and females in the 18—25 year age bracket is the high death toll of women during the childbirth.

The share of deceased adults and adolescents (below 14 years is 64 per cent, and of children 36 per cent. We have very scarce data as to the death-rate of the children in the prehistoric populations of Ukraine. We can mention the materials from the Zhuravka burial places in the Cherkassy Region belonging to the Chernyakhov Culture, where 25 per cent of the burials belonged to children. We have also some palaeodemographic data from an earlier site in Moldavia, from the Vykhvatintsi burial site belonging to the Late Tripolie Culture (Velikanova, 1961). There the death-rate of children had reached 61.5 per cent. Compared with these data the death-rate of children at Nikolaevka—Kazatkoe does not seem to be too high.

Before analysing our materials let us make a few methodological observations: In this study, similarly as in other papers of Soviet authors, the measuring of the skulls and long bones was realized according to R. Martin (Martin, 1928), with special regards to some of the observations of V. P. Alexeyev and C. F. Debets (1964). G. Morant's method was used for measuring the simotic height and simotic chord, dacryal height and dacryal chord (Morant, 1923). The height of the frontal bone arc and the height of the occipital sagittal curve have been measured according o V. P. Alexeyev and G. F. Debets (1964). The nasomalar and zygomaxillar angles have been determined according to N. A. Abinder (Abinder, 1960). The degree of the supraorbital arches has ben determined according to R. Martin. This value was taken on the edge of the internal third of the orbit. We have measured also the length of arches. The extreme ends of the supraorbital arches were determined in facial view, then they were checked by close inspeciton of the orbital margins (from below). The measurements are not quite accurate, but quantitative data are always more objective than mere descriptions.

In order to make the use of tables in the supplement more comfortable *tables II* a and b contain the Latin names of the craniological points as well as the names of the characters and their conventional significance accepted both by the German and English biometrical schools. All the dimensions indicated in the tables are in mm. The angles are in degrees and the volume of the skull is in cm^3.

The parameters of the characters are marked in the following way:

n	= number of cases,
$\bar{x}$	= mean arithmetic value,
$S\bar{x}$	= error in the mean arithmetic value,
S	= mean square deviation,
Ss	= error in the mean square deviation,
V	= variation coefficient.

The coefficient of correlation between various characters is marked η, and the error in the correlation coefficient as $S\eta$.

The authoress used the following symbols in all her earlier papers: n; M; m (M); σ; m (σ); V; η; m (η).

On evaluating the measured characters we used in this study the tables compiled by G. F. Debets, containing the limits of the mean character values (Alexeyev, Debets, 1964). G. F. Debets had based his calculations on 88 craniological series. He used these series of various human populations and determined their basic parameters presupposing the normal conditions of these groups.

The skulls from Nikolaevska—Kazatskoe are characterized by slight dolichocrany (the cranial index in males is 75.4, in females 77.2). The capacity of the braincase is of medium size (♂ = 1,440.2 cm^3, ♀ = 1,282.0 cm^3). The greatest cranial breadth are ♂ = 139.8 mm, ♀ = 136.1 mm and the mean cranial height — from the basion ♂ 133.9 mm and ♀ = 127.8 mm; both of medium size; measured from the porion in ♂ = 114.1; ♀ = 109.3 mm. The greatest lenght is somewhat above the average (♂ = 185.7 mm, ♀ = 176.3 mm). The frontal angle is of medium value (from the nasion in ♂ = 83.6°, in ♀ = 85.4°). The degree of the muscular relief can be considered as of medium or slightly above medium-size; the glabella in ♂ = 3.43; in ♀ = 1.83;

the occipital protuberance in ♂ = 2.86; in ♀ = 1.61; mastoid process in ♂ = 2.67; in ♀ = 1.56. *Table 1, tables in supplement III—IV.*

The face is orthognathic (the facial profile angle in ♂ = 85.6°; ♀ = 85.5°; the gnathic index is 95.8 and 95.2) and mesoprosop (upper facial index is ♂ = 53.7; ♀ = 54.3; total facial index 87.6 and 88.2) with absolute dimensions of medium size (the facial breadth ♂ = 133.1 mm and ♀ = 124.8 mm; upper facial height ♂ = 71.6 mm; ♀ = 67.7 mm). The horizontal profile is well expressed (the nasomalar angle ♂ = 137.3° and ♀ = 138.0°; the zygomaxillar angle ♂ = 125.5° and ♀ = 126.8°).

The orbits were comparatively low as indicated by their absolute dimensions (orbital height ♂ = 32.9 and ♀ = 32.9 mm), and thus the relation of the orbital height and orbital breadth measured from the dacrion can be expressed by the index of ♂ = 82.5 and ♀ = 85.0. The height breadth orbital indexes measured from the maxillofrontale show mesoconchous orbits (♂ = 80.2 and ♀ = 82.0).

The nose is medium wide (the index is 48.9 and 49.5 respectively), and is strongly protruding (♂ = 32.4° and ♀ = 29.5°). The nasal root is high (the dacrial index in ♂ = 57.3 and in ♀ = 55.4). The nasal bones strongly protrude (the simotic index in ♂ = 56.1 in ♀ = 48.6). The canine fossae are deep (5.23 mm and 4.88 mm). The photographs of the skulls are attached (see Supplement. *figs. 1 to 126*).

We can learn about the looks of the people from Nikolaevka—Kazatskoe thanks to G. B. Lebedinskaya. She made several drawings on the basis of the outlines and measurements of the skulls *(figs. 10—16)*. The skulls for the reconstruction of the looks of the Nikolaevka—Kazatskoe people were selected according to their state of preservation, not according to their morphological peculiarities.

Besides the skulls we measured also the long bones. Let us mention some of the basic dimensions. The mean length of the right femur in males is 446.1 mm, in females 405.0 mm, and the length of the right tibia is 366.9 and 332.1 mm respectively. The length of the right humerus is 320.6 mm and 296.2 mm. The robustness indexes of the femur are 20,7 and 19.3, of the tibia 21.2 and 19.9, of the humerus 20.4 and 19.0 *(Table 2 and tables in Appendix V—VII)*.

The absolute dimension of the long bones can be considered — with some reservation — as medium-sized. At present the anthropologists do not have tables of long bones based on a sufficiently large number of ethnic series, in other words we do not dispose of tables for long bones similar to the skull tables put together by G. F. Debets.

After the description of the studied material we shall study the inter-group relationship based on craniological analyses. We have enough comparative material. The situation with the long bones is a bit more complicated. The population groups that can be used for this purpose comprise a very small number of cases and thus the possibility of intergroup analysis based on osteological materials is limited. We shall deal here with the final results right away, since they are not complexe.

From the Ukrainian material we can use for the analysis some series of the Scytho-Sarmatian period and of the Chernyakhov Culture (K o n d u k t o r o v a, 1972). The dimensions of the long bones and their relations show that the Scytho-Sarmatian groups were very similar to our series. This applies for the specifically Scythian groups, as well as for the groups of their descendants and also for the Sarmatian groups *(Table 3)*. In the groups of the Chernyakhov Culture the length of the bones is somewhat bigger, but the relation of the smallest circumference to the greatest length is lower, i.e. the bones are less massive *(Table 4)*.

Here we must limit the whole assessment to these general data. We cannot speak about detailed features in our groups or in the groups used for comparison, since the above-mentioned slight differences are not based on a sufficiently high number of observations and they often differ in males and females. The body length of the people buried at the Nikolaevka—Kazatskoe burial place was established with the help of formulas suggested by G. F. D e b e t s and Y. A. D u r n i y (1971). The advantage of this method lies in the fact that it can be used also in groups with different relative body dimensions. This way of calculation is based on the data of M. Trotter and G. Glaeser on the skeletons of five American soldiers, and on the skeletons of Negritos from Luzon (Aeta), of Andamanese, Khanty and Lapps. Our calculations were based on the mean values of the dimensions of long bones *(Table 2)*.

Formulas used:

$$\text{The male stature} = \frac{(FL + TL)}{UDN} \times 100;$$

where UDN =

$0.144\ (FL + TL) + 27.6\ (FL : TL) + 14{,}57$;

where FL =

the greatest femoral length (in cm; No. 1);

TL =

total femoral length (in cm; No. 1).

$$\text{The female stature} = \frac{(FL + TL)}{UDN} \times 100;$$

$$UDN = 0.148\ (FL + TL) + 22.0\ (FL: TL) + 19.41.$$

The mean height of the body calculated with the help of these formulas is 166.0 cm in men and 152.4 cm in women. These values can be considered as mean values for both sex groups. The Scytho-Sarmatian groups have similar values. The groups of the Chernyakhov Culture were of higher stature.

The stature was determined also with the help of V. V. Bunak's formulas for the mean relations of the long bone dimensions (B u n a k, 1961).

$$\text{Stature (men} = 68.8 + 1.2 \times (FL + TL).$$
$$\text{Stature (women)} = 66.0 + 1.2 \times (FL + TL).$$

The stature of men was 166.3 cm, of women 154.4 cm. In other words these values are very

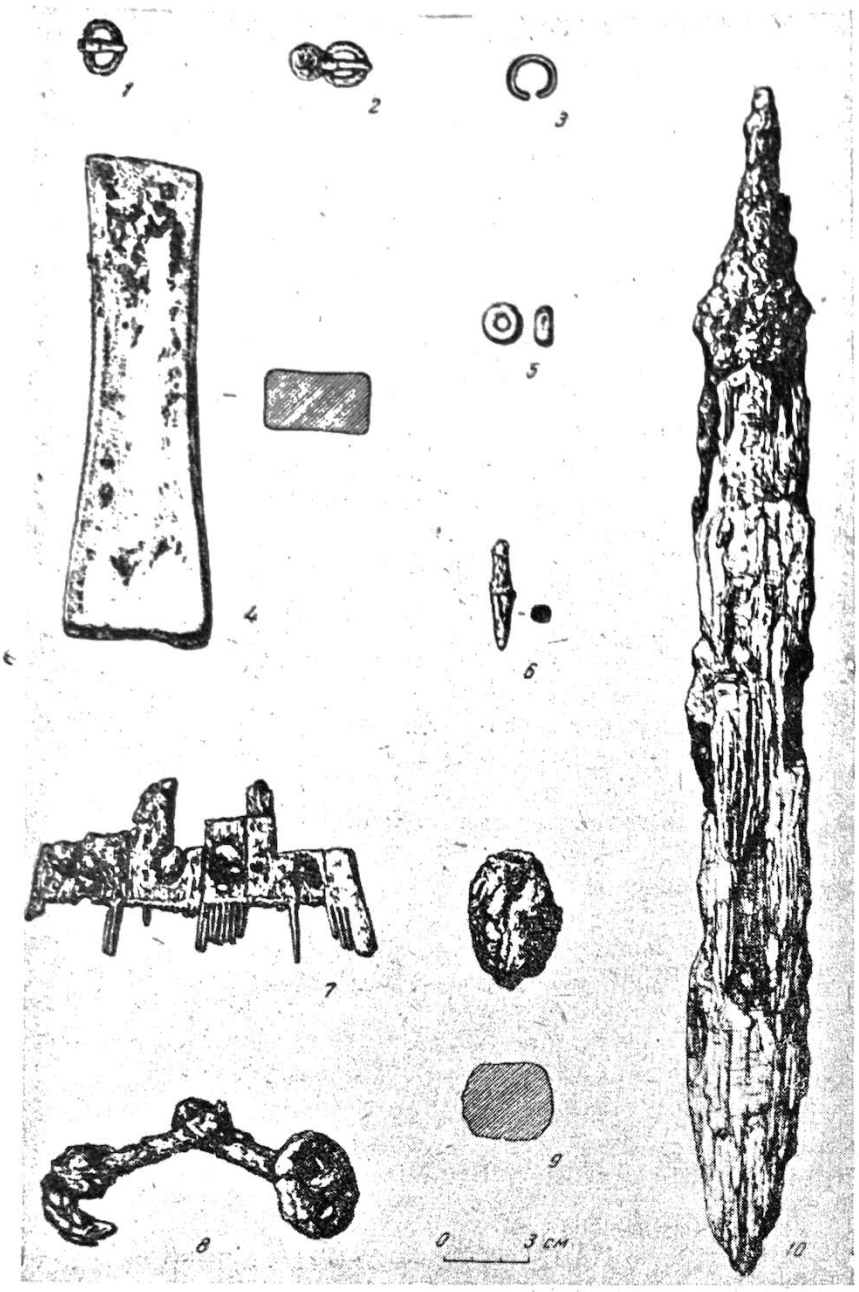


FIG. 4. *Archaelogical finds from the grave 20 (Nikolaevka—Kazatskoe). 1, 2 — bronze buckles; 3 — golden ring; 4 — circular grinding stone; 5 — glass bead; 6 — iron awl; 7 — bone made comb; 8 — iron bit of bridle; 9 — iron end of the hand whip (nagayka); 10 — short iron sword (Symonowitch 1969).*

FIG. 6. *Pottery from the Nikolaevka—Kazatskoe burial place 1, 2, 5, 7 — hand made pottery, 3, 4, 6, 8 — wheel made pottery (Symonovitch 1969).*

FIG. 7. *Some finds from the Nikolaevka—Kazatskoe burial place. 1 — Silver, bucket-like pendant; 2 — Copper coin pendant; 3 — golden ornament; 4, 5, 6 — golden ornaments of a costume.*

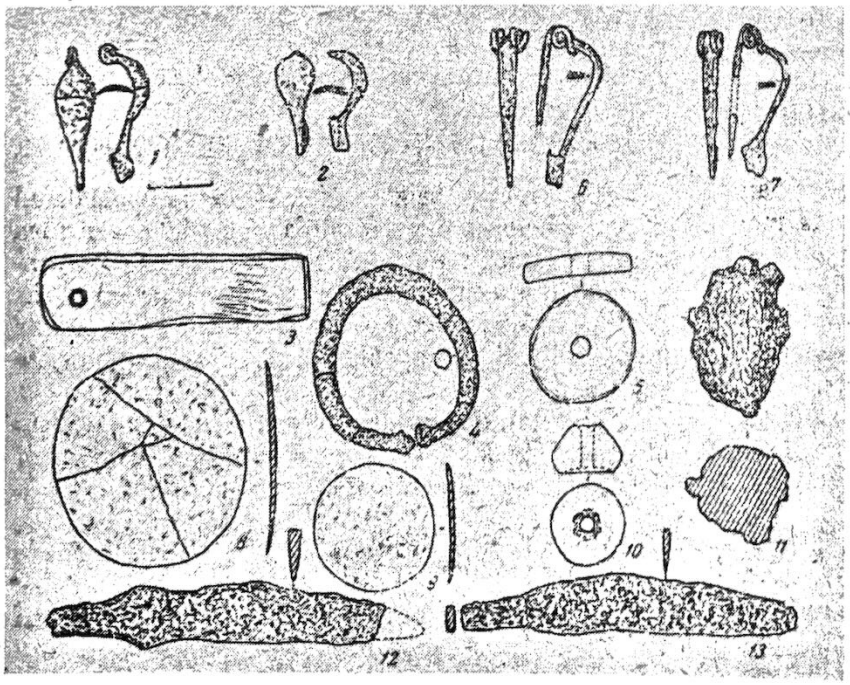
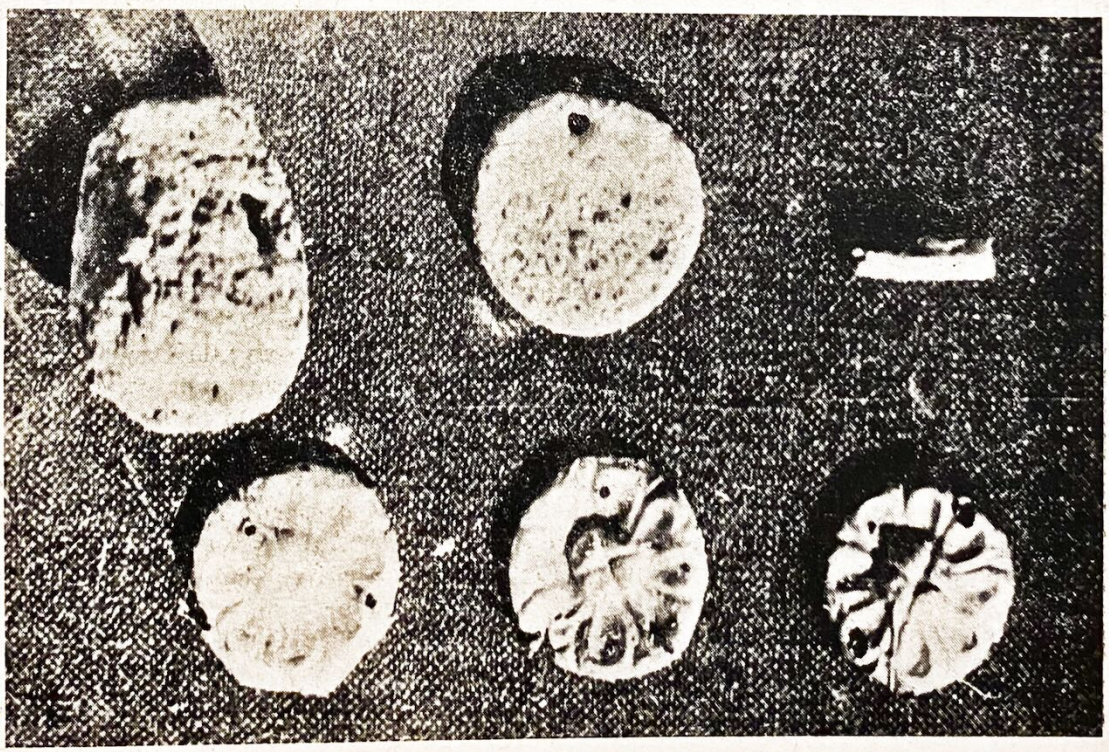


FIG. 5. *Archaeological finds discovered in Nikolaevka—Kazatskoe burial place. 1, 2, 6—9 — Bronze fibulae and mirrors; 3 — circular grinding stone; 4, 11—13 — iron bracelet, knives and the iron end of the hand whip (nagayka); 5, 10 — clay whorls (Symonovitch 1969).*

FIG. 6.

FIG. 7.



close to the values acquired with the help of the formulas of G. F. Debets and Y. A. Durnyi. The calculations according to the formulas of T. Trotter and G. Glaeser have resulted in higher values (169.8 in males and 160.0 cm in females).

The body weight was determined with formulas found by G. F. Debets and Y. A. Durniy (1971). In these calculations we used the mean dimensions of the long bones.

Formulas:

$$\text{Weight of men} = 7.41 \times \text{UPOS} + 64.21 - 1.07 \times \text{UDN};$$

$$\text{Weight of women} = 7.41 \times \text{UPOS} + 68.50 - 1.07 \times \text{UDN};$$

$$\text{where UPOS} = (FR^2 \times FL) + (TR^2 \times TL) + (NR^2 \times NL),$$

UPOS = or in other words index of skeletal volume equal to the sum of the circumference of the femur, tibia and humerus and of their length.

UDN = index of leg length (its formula has been mentioned above).

According to above-mentioned formulas the weight of men was 64.5 kg and of women 52.5 kg. The mean weight of women differed from that of men by 0.814 kg showing that there was a pronounced sexual dimorphism. The collection of the comparable data on this character is one of the primary tasks of the future ethnic studies.

As far as cranial anomalies are concerned the metopic suture, Inca bone and wormian bones in the lambda suture were followed. Metopic suture has been found in 5 male and 2 female skulls. Their inventory numbers are: males — 93/13, 257/47, 267/11, 289/14, 289/27; females — 88/18, 289/6.

Inca bones appear in two skulls: in male skull No. 267/19 and female skull 88/14. A large wormian bone was found on the left side in the lambda suture in male skull No. 267/19. Medium-size and small wormian bones were found in 6 male and 9 female skulls of the following numbers: males — 93/4, 93/8, 257/47, 289/4, 289/13, 289/24; females — 88/15. 257/13, 257/48, 257/65, 267/26, 277/10, 277/16, 289/2, 289/3. In male skull No. 277/9 in the upper jaw there is a supernumerary tooht in the area of medial incisors — it is a so-called mesiodens. It is not between the medial incissors, as usual, but is shifted somewhat to the left and to the rear. The mesiodens does not reach the cutting edge of the incisors. Perforated fossae olecrani appeared in one male skeleton (No. 289/13 — right), and in 9 female skeletons of the following numbers: 257/21 (both the right and left bone), 257/26 (right), 267/13 (right), 267/14 (left), 267/42 (left), 277/11 (right), 277/19 (left), 289/2 (left), 289/7 (left).

We have found in our material pathological changes of the cranial and postcranial skeleton. In one case there are apparent traces of an operative treatment, namely of skull trephination. Let us mention the most important observations:

Inventory No. 88/ , female of 45—55 years. Changes in the nasal bones due to affection by syphilis. We can see the destructive changes in bone, connected with a drop of the nasal ridge. The value of the nasal angle equalling 16° was not included into the table and into calculations of the mean values (see appendix *fig. No 128*). On the preserved part of the hard palate we can see alveolar rims.

Inventory No. 88/8, female of 17—25 years. The squama of the frontal bone between the frontal bosses reveal that it had been damaged during the life of the individual, in the form of an impression caused by knock inflicted with a dull and heavy implement (see appendix *129*).

Inventory No. 93/4, male of 45—55 years. In the area of the right frontal boss we can see that the bone tissue had been slightly damaged — it had been caused by a knock during the life of the individual.

Inventory No. 257/23, a male of 25—35 years. In the area of the right frontal boss there is a pathological change with a number of orifices. The bone had been changed due to internal pressure caused by an intracranial tumor (see Appendix, *fig. 130*). Inventory No. 267/39. A male of over 55 years. On the left parietal bone in the area of pterion there is a circular formation of 1.2 cm in diametre, with quite conspicuous outlines — presumably the result of resectional trephination with the help of trepan, which is the oldest method of this operation Appendix, *fig. 131*).

Inventory No. 88/3. A male of 55—65 years. The lumbar vertebrae have sharp osseous rims both on their processes and bodies in consequence of the deforming arthrosis. The cranial and caudal surfaces of the vertebral bodies are porous and rough in some places. These changes are evidently due to the disappearance of the intervertebral discs. Two vertebrae had grown together — it is a heavy deforming spondylitis (see Appendix, *fig. 132, 133*).

Inventory No. 88/3. Male of 55—65 years. Ankylosis of joint and tissue between tibia and fibula (see Appendix, *fig. 134*).

Inventory No. 88/14. A female of 40—50 years. Heavy growth of bone tissue in the articular edge of the ulnar olecranon and in a slighter form around the circumference of the head of the left radius. This growth is apparently the result of deforming arthrosis (see Appendix, *fig. 135*).

Inventory No. 88/18. A male of 50—60 years. Heavily thickened distal part of the body of the left tibia in consequence of a fracture combined with osteomyelitis (see Appendix, *fig. 136*).

Inventory No. 93/13. A male of 35—45 years. Conspicuously thickened bone in both tibia and fibula in their distal two-thirds. The distal epiphyses are united and the bones have rough surface. There are growths and hollows on the surface with well visible vestiges of sequestral channels. All these damages had been caused by heavy osteomyelities (see Appendix, *fig. 137, a, b*).

Inventory No. 257/2. A male of 30—35 years. In the front of the distal part of the right radius there is a well perceptible callus, and in the rear there is a small 1.5 cm wide groove. The bone is distinctly curved. These changes evidently arose in consequence of an accident (bone fracture) with

FIG. 8. *Glass gemma with a negroid head. Nikolaevka—Kazatskoe burial place (Arkheologia 1971).*

FIG. 9. *Beads from the Nikolaevka—Kazatskoe burial place.*

subsequent complete healing (see Appendix, *fig. 138*).

Inventory No. 277/18. A female. The dilated distal part of the right tibia due to periostal layers caused by osteomyelitis.

Inventory No. 289/2. A female of 25—35 years. The right humerus and radius have visibly smaller circumference than the corresponding bones on the left side. In the 282 mm long humerus the smallest circumference was 36 mm (the corresponding dimensions of the left-side bones are: humerus 297 mm and 52 mm, radius 234 mm and 34 mm). The atrophy of the humerus and radius had been caused presumably by a disease the right ulna and bones of the hand and wrist have, unfortunately — not been preserved (see Appendix, *fig. 139, 140*).

Inventory No. 289/19. A male of 40—50 years. The smooth round left humeral head of the humerus has been considerably deformed, with ground surface and circumference. The bony rim of the right humerus (is approximately one-third shorter than the left one). In the proximal part of the diaphysis on the lateral side there is a bony growth. All these changes may had occurred due to intrajoint fracture of the humerus head combined with a deforming arthrosis (see Appendix, *fig. 141, a, b, c*).

Inventory No. 289/19. A male of 40—50 years. The growth of the bone rim at the edge of the olecranon of the left ulna had been caused by deforming arthrosis (see Appendix, *fig. 142*).

Inventory No. 289/21. A male of 55—65 years. The growth of the rim at the edge of the olecranon of the right ulna had been caused by deforming arthrosis (see Appendix, *fig. 143*).

Inventory No. 289/23. A male of 50—65 years. Changes in the form of sabre-shaped growth of the front crest of the tibia caused by tertiary syphilis (see Appendix, *fig. 144*).

All the above-described malfarmotions, as well as the skull trephination were known — according to published materials — also in earlier prehistoric periods, both on the territory of the USSR and also abroad (R o k h l i n, 1965). It has not been the purpose of this paper to deal with them in detail. We just wanted to draw the attention of the specialists to our series and to hope that they will study our finds in detail with the help of X-ray equipment. For the assessment of our observations we used the results of D. G. R o k h l i n (1965) and of A. V. R u s a k o v (1959), and we were advised also by E. I. Danilova, an anthropologist and pathological anatomist.

33 skulls (14 male and 19 female ones) show considerable traces of dental caries. Our group comprises altogether 131 skulls (63 male and 68 female ones), i.e. 25 per cent of the buried individuals had dental caries. Inventory numbers of these burials: males — 88/13, 88/18, 88/20, 257/57, 257/62, 262/2, 267/5, 267/8, 267/11, 267/18, 267/36, 289/4, 289/14, 289/19; females: 88/1, 88/4, 88/5, 88/14, 93/2, 93/3, 93/18, 257/20, 257/43, 267/14, 267/21, 267/24, 267/40, 267/42, 277/1, 277/6, 277/16, 289/3, 289/17.

Dental caries appeared, as it is generally known, in the Mesolithic Period and its percentage has been since then on the increase. In the current population it is frequent and multiple caries have reached 40—50 per cent. With regards to these facts the caries frequency in the Nikolaevka—Kazatskoe group can be considered as mild. These conclusions are quite in keeping with the views of the contemporary specialists (R o k h l i n, 1965).

The visual check-up to the craniological series did not reveal variants contrasting the usual combinations of characters in the series in normal conditions. But the conclusions on the homogeneity of the group as well as the division of the group into its components require besides visual impressions also other reliable methods.

The homogeneity of the group can be judged through various methods. Each of these methods has however, its specific shortcomings, but used in a complex way they can help us a great deal. We can use such homogeneity criteria as variability parameters, mean quadratic deviations and variation coefficients, as well as the variation curves of characters.

The best results we can obtain if we are able to distinquish the components of the population, clearly different in the character values. In our case the groups participating in the formation of the Nikolaevka—Kazatskoe population have no specific morphological differences. It is therefore imperative to use the various methods in a complex way.

In the Nikolaevka—Kazatskoe group we have calculated the parameters of character variability, especially the mean quadratic deviations and variation coefficients (R o m a n o v s k i y, 1947). We have realized several comparisons with the values obtained by G. F. Debets through the use of the data about the known craniological series (A l e x e y e v, D e b e t s, 1964).

We can see high mean quadratic value deviations in such characters as mandibular length, nasal bone angles, frontal angles and depth of the fossa canina *(Table 5)*. We can put here also the greatest cranial length in males and also the cranial breadth and height in females. High is also the nasal index, while the absolute dimensions of the nose are of medium category. As to the other characters we can say that their mean quadratic value is either inside the limits of the middle category or is of smaller span than is characteristic for most craniological groups.

The variation coefficients, representing the relation of the mean quadratic values of the characters to their mean arithmetic values, show analogous results *(Table 6)*. In males the greatest cranial length and the mandibular length are of high values — in females high is the value of the mean cranial breadth and skull height. Very deep is in his group also the fossa canina. The facial height and breadth are within the medium bracket. The tables of G. F. Debets (A l e x e y e v, D e b e t s, 1964), unfortunately do not contain comparable data on the dimensions of the frontal angle, facial and nasal angle. The characters showing increased variability parameter values require special attention during intergroup analysis. Part of the variability

increase of the characters might have been caused by a slight admixture of groups, whose mean arithmetic values differ from our series.

In this study we have analysed the correlation coefficients between the individual characters of the skulls of the studied groups.

A. I. Yarkho (1934) put forward the so-called method disturbance of the psychological correlation for the determination of group variabillity. The method is based on the fact that in mixed groups the correlation coefficient values between individual characters, which are in functional relation, can considerably decrease or have negative relation compared with homogenous groups. Unfortunately we do not possess sufficient data on the relations of correlations between various cranial characters in various groups especially in the homogenous ones. This lack of comparable data does not allow us to use currently many of our coefficients. We use only the basic ones. The gathering of data on correlation coefficients of other groups will enable us later to make a more thorough analysis of our data. This is the reason why we publish all the calculated correlation coefficients of the studied series (*Tables 7—8,* tables in Appendix *9—18*). The comparable data on the correlation coefficients have been taken according to the Norwegian series and Egyptian series from K. Schreiner (1939), and further data of Khanty and Armenians from Y. Y. Roginskiy (1954). The group of Norwegian skulls has been dated between the 14th and 16th centuries. The Egyptian skulls come from the 6th—2th centuries B.C. (the 26th—30th Dynasties). The Armenian group studied by V. V. Bunak (1927) comes from the 20th century of our era. The finds of the Khanty skulls come from the 18th—19th centuries, from burial grounds located on the lower Ob River. The specialists consider all these groups as homogenous. M. G. Levin does not exclude that the last of them can comprise also several Nenets (Samoyed) skulls (Levin, 1941).

Most characters of the Nikolaevka—Kazatskoe series are only slightly interrelated. Important relations exist only between characters of great functional dependence. As an example we can mention the correlation between the greatest cranial length and basicranial length, the greatest breadth and zygomatic breadth, facial height and nasal height. In the series used as comparative materials we can see values very close to some of the values in our series. There is a slightly higher value in the studied group only in three cases. There is weaker relation between the greatest length and breadth, as well as between the cranial length greatest breadth and nasal breadth. A bit more stressed is the relation between the greatest breadth and zygomatic breadth. On comparing our series with other series, special attention should be paid to the above-mentioned characters.

There were several types of grave structures in the Nikolaevka—Kazatskoe burial place, including grave-chambers, graves in the earth and underground graves. Similar grave constructions had been found earlier in the nearby burial sites, such as Zolotaya Balka and Scythian Neaples.

In order to acquire a correct idea on the morphological features of the people from Nikolaevka—Kazatskoe buried in various graves we analysed the craniological materials according to the individual groups. So e.g. the group of people buried in graves dug out to one side in the ground included 12 skulls — 8 belonging to males (No. 93/11, 267/3, 267/44, 277/4, 289/9, 289/18, 289/25, 289/27) and 4 females (No. 257/39, 267/28, 267/29, 267/42).

The group of graves comprised 5 male skulls (No. 88/3, 88/18, 93/7, 267/20, 289/13) and 7 female skulls (No. 88/12, 257/1, 257/26, 277/1, 277/16, 289/6, 289/12). The group of people buried in burial chambers was the largest — it consists of 56 male and 49 female skulls *(tables 9—10).*

There were no considerable differences between the various burial groups. The dimensions of male skulls differed from the skulls of females in all groups, otherwise there were no important differences. Most interesting are the special features found in individuals buried in underground graves. In the men of this group the basic skull dimensions were somewhat smaller, the face a bit higher and narrower, their horizontal profile had stronger features, the alveolar prognathism is more pronounced and the relief less developed than in the other groups. In women, on the contrary, the basic skull dimensions are larger than in the other groups. Less conspicuous is the horizontal facial profile. Besides other characters they have also higher cranial index values. We can say that the relation of characters in males reminds of the Greek series, and only slightly do they remind us of the series of the Chernyakhov Culture. We have not mentioned Goths here, since the connection of dolichocrany with relatively small braincase is not typical of them — neither is alveolar proghnathism. In connection with the female skulls we must mention the Sarmatians. The hitherto finds show that the Sarmatians frequently used underground graves. But Y. I. Kozub writes that an analogous burial rite was wide-spread as early as in the 5th century B.C., in quite a characteristic way in Olvia, with assumably prevalently Greek colonization (Kozub, 1974). The differences in the complex of morphological characters in male and female underground burials can reflect the various origin of these graves. It gives us also a closer look at the contacts of the local population both with Sarmatians and Greeks. Naturally all these observations are of preliminary character only, due to their limited number.

In the view of E. A. Symonovich the latest group of Scythian burials could be dated to the 3rd century A.D. His views are based both on grave construction and on the orientation and position of the skeletons and on the accompanying burial goods. It holds especially for burials No. 20, 119, 195 and 202. The later burials were studied separately and the main values of their skull dimensions have been calculated. The group comprises male burials No. 88/3, 88/18, 93/7, 93/11, 277/3, 267/20, 267/2 and 4, 277/14, 289/9, 289/14, 289/16, 289/18, 289/27 and

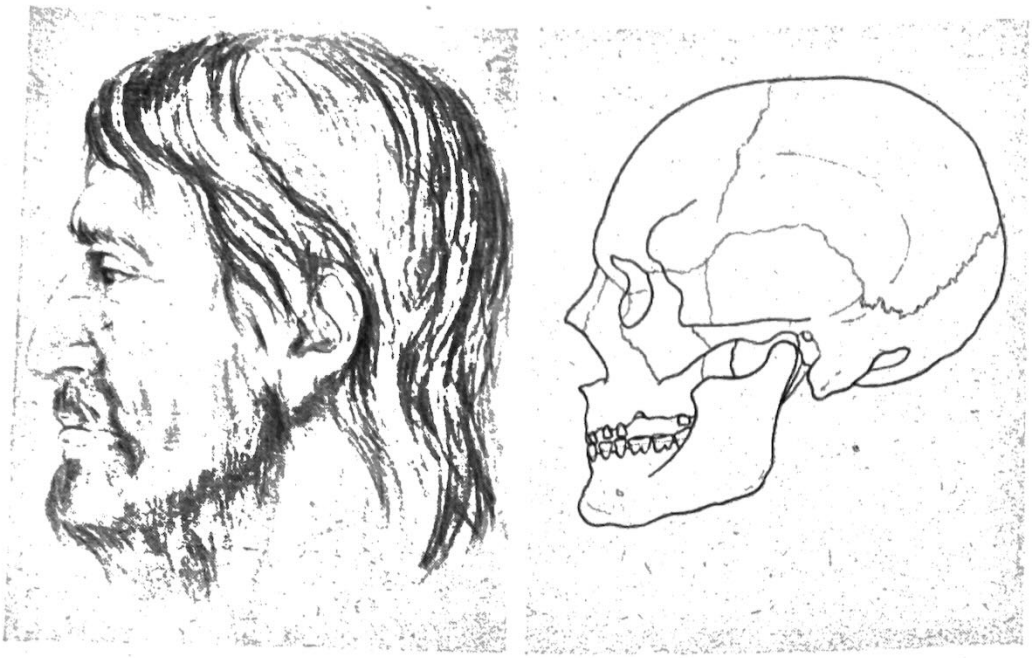


FIG. 10 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 29, burial 1. Inventory number 88/13.*

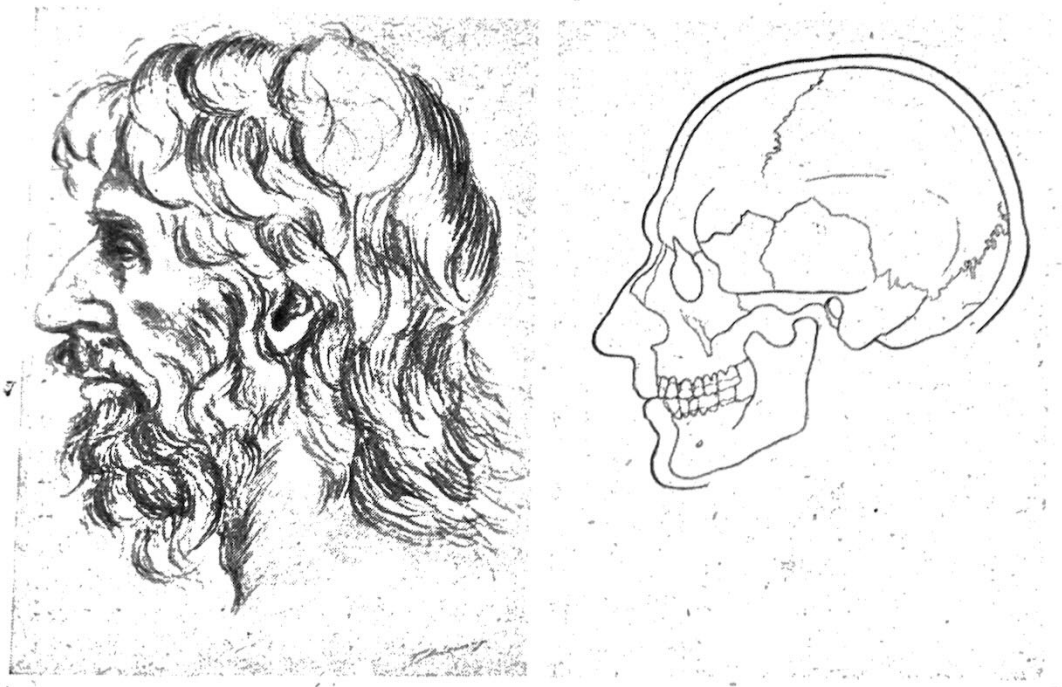


FIG. 11 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 36, burial 2. Inventory number 93/4.*

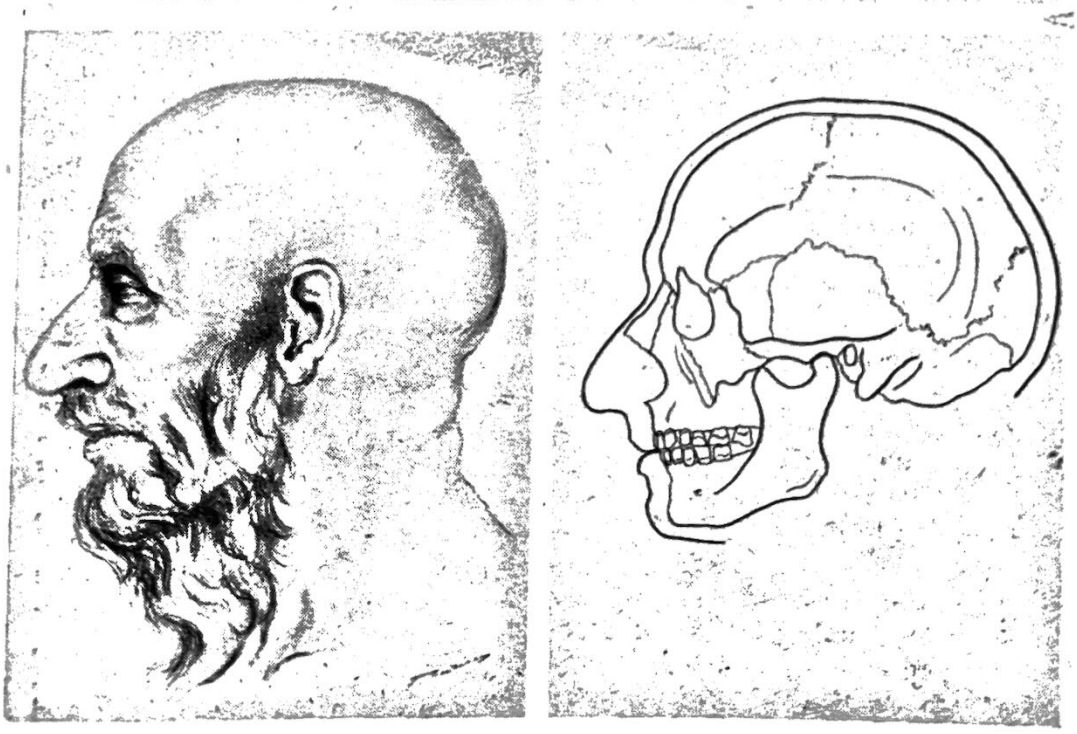


FIG. 12 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 49, burial 1. Inventory number 93/11.*

FIG. 13 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 73, burial 1. Inventory number 257/12.*

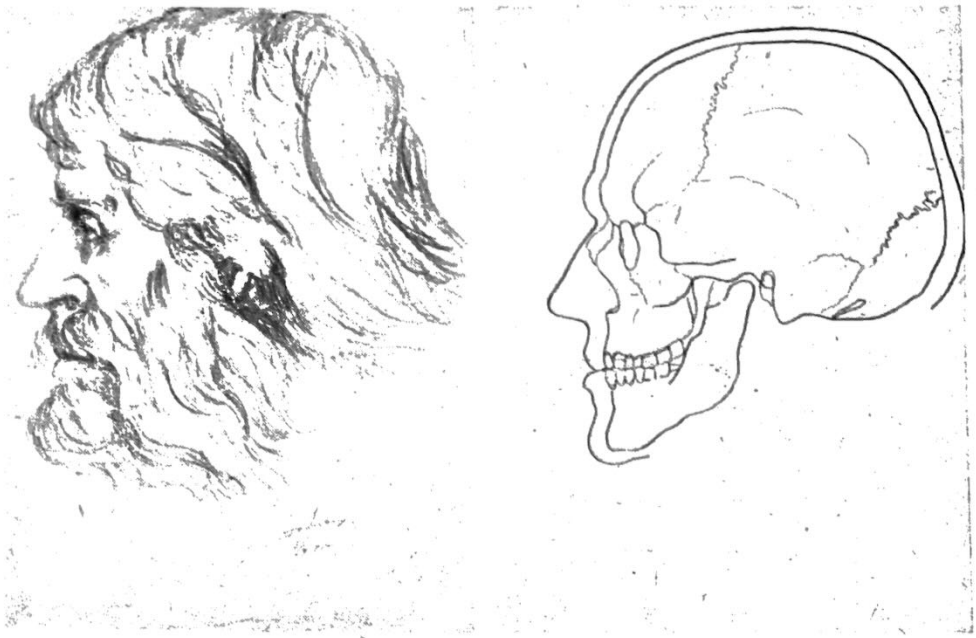


FIG. 14 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 89, burial 2. Inventory number 257/41.*

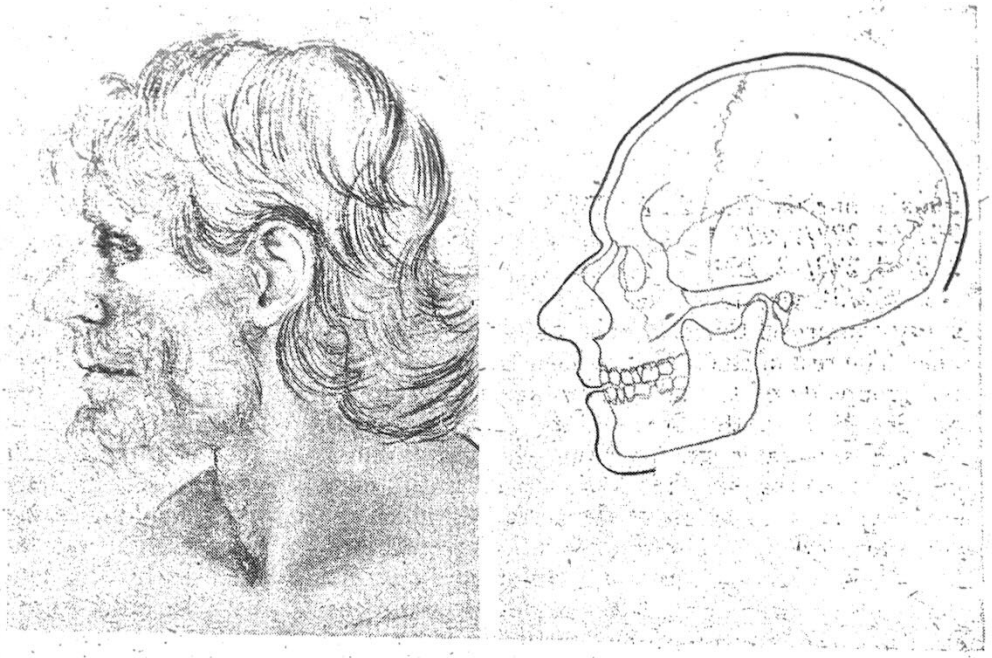
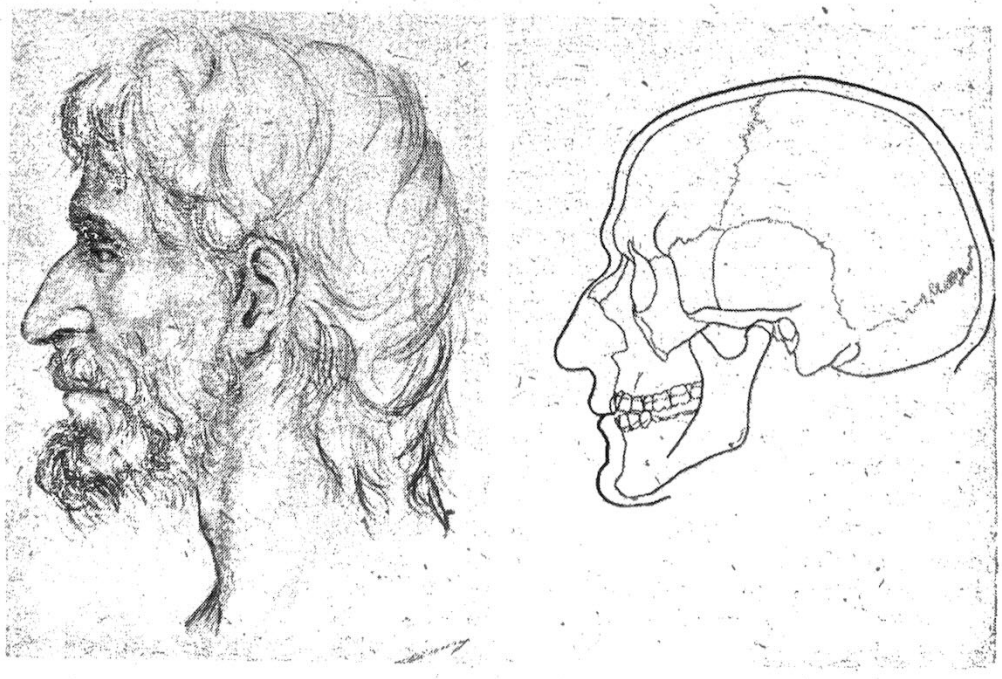


FIG. 15 *a, b. Male head. Reconstructed by G. V. Lebedinskaya. Grave 89, burial 3. Inventory number 257/42.*



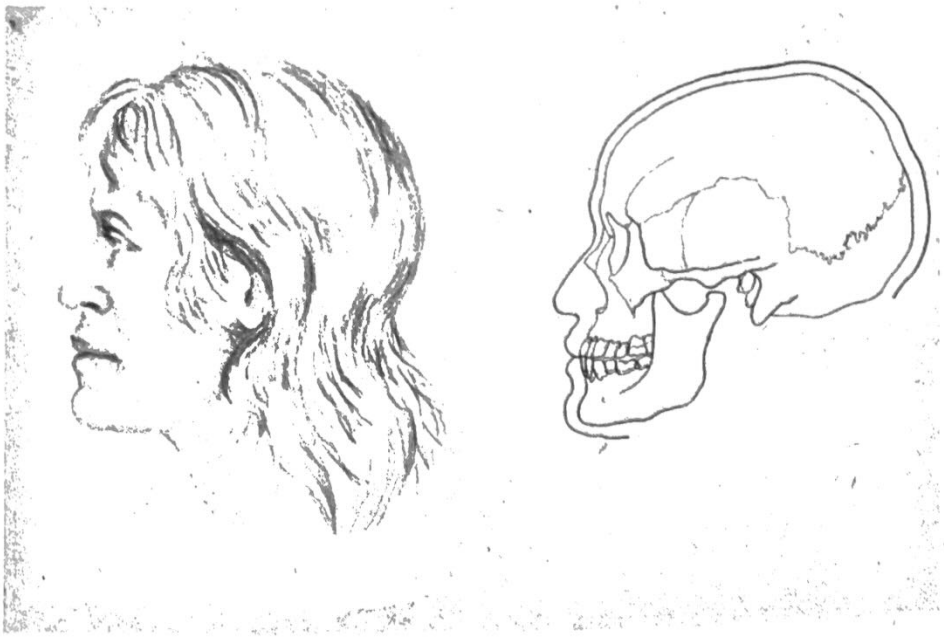


FIG. 16 *a, b. Female head. Reconstructed by G. V. Lebedinskaya. Grave 144, burial 1. Inventory number 277/5.*

female burials No. 93/2, 257/1, 267/13, 267/41, 267/42, 277/1, 277/14, 277/16, 277/19, 289/6, 289/7, 289/10, 289/12, 289/17. The burial of adolescent boy No. 257/61 was not taken into consideration. The study comprised thirteen male skulls and ten female ones. The rest of the finds has been included into burial groups dated to the period ranging from the 1st century B.C. to the 2nd century A.D. *(table 11).* Though this later group comprises only a small group of skulls all the data are of great value enabling us to learn about the period in which the given territory was re-settled by various populations.

There were no important differences between the chronological groups. We could mention perhaps that the later group had relatively low cranial vault and low orbits. There were also slight differences in other characters but they usually demonstrated different trends according to sex. The men have somewhat larger upper facial height and the women larger facial breadth. In the values of the upper facial index these differences are more clear. There are no analogous tendencies in the values of the total facial height. In the males of the later group the greatest breadth is lower and is therefore characterized by a lower cranial index. There were slight differences in the nasal index — especially in the males of the later group is its value lower — due mostly to greater nose height.

We can conclude that there is a lack of clear-cut differences between the chronological groups. The later group of skulls tends to have lower cranial vault and lower orbits. In male skulls there is a conspicuous trend towards dolichocrany, caused by a decrease of the greatest cranial breadth. There is also a trend towards narrow faces and noses in men, while women tend to have relatively wide faces. The combination of characters in the later group of females is perhaps due to Sarmatian influence. It is very difficult to say anything in this respect about the late group of male skulls. Perhaps we could mention here — with caution and with certain reservations — the Chernyakhov culture series. The stronger alveolar proghnathism typical of males in the graves dug out to one side has not been observed in this case. It means that the chances of finding analogies with the complex of morphological characters of the Greeks are even lesser. We should not forget that there is little historic evidence on the contacts of the local populations with Greeks for this late period.

In order to avoid any misunderstanding let us turn our attention to such terms as narrow face, facial breadth, etc. On describing the two chronological groups we tried to underline the distinctive features of the groups to be compared. We did not want to assess the values of every character, as we did it on characterizing the group as a whole.

In 3 skulls we can speak of artificial deformations. In female skull No. 88/4 (grave No. 21, burial 1) the central part of the parietal bones has been flattened to such a degree, as if it had been pressed by some flat object. Female skull No. 88/14 (grave 29, burial 2) — the anterior part of the parietal bones is slightly flattened 2 cm from the sagital suture and 4 cm from the coronal and lambdoidal sutures. The shape of the flatttening reminds of the above skull.

On male skull No. 257/44 (grave 90, burial 2) we can see a slight depression on the frontal part of the parietal bones. The depression looks as if caused by a rope. Both types of deformation appear with Sarmatians — the first type is more frequent. These artificial deformations, appearing here in a very slight form, must be considered as probable

Sarmatian influence. The morphological character of the skulls does not show any Sarmatian features (*tables III—IV* in the Appendix). Some of the buried skeletons had crossed legs. This burial custom is often attributed in the archaeological literature to the Sarmatians. It is therefore necessary to clarify the morphological features of these burials The skulls have been preserved in 13 such cases. All the skulls belonged to males (No. 88/13, 88/18, 93/7, 93/11, 257/8, 257/12, 257/57, 267/5, 267/14, 267/20, 267/45, 289/18, 289/27).

The skeletons buried with crossed legs are characterized by dolichocrany, medium-high and medium-broad face, weak alveolar proghnatism, high nasal bones *(table 9)*. This complex of charactes can in no case be attributed to Sarmatians. Let us remind you that the skulls of Sarmatians are mostly meso — to-brachycranial and their faces are relatively wide (K o n d u k t o r o v a, 1956, 1972). In this case there is no relation between the burial rites and anthropological characters.

(Continued in the next issue)

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TABLE I.–XI, FIGS. 1–42

OF T.S. KONDUKTOROVA:

SCYTHIAN DESCENDANTS ON THE LOVER DNIEPER RIVER ACCORDING TO THE ANTHROPOLOGICAL MATERIAL FROM THE NIKOLAEVKA – KAZATSKOE CEMENTERY

Mean dimensions and indexes of the Nikolaevka — Kazatskoe skulls TABLE Ia

Characters	Men						Women					
	n	$\bar{x}$	$S_{\bar{x}}$	S	Ss	V	n	$\bar{x}$	$S_{\bar{x}}$	s	Ss	V
1. Greatest cranial length (from glabella)	66	185.7	0.84	6.79	0.59	3.66	57	176.3	0.76	5.73	0.54	3.25
1b. Cranial length (from ophryon)	64	183.5	0.78	6.26	0.55	3.41	54	175.7	0.78	5.72	0.55	3.26
8. Greatest breadth	66	139.8	0.64	5.18	0.45	3.70	57	136.1	0.70	5.25	0.50	3.86
17. Basion-bregma heigth	62	133.9	0.61	4.77	0.43	3.56	56	127.8	0.77	5.79	0.54	4.53
5. Basicranial lenght	59	101.0	0.61	4.71	0.43	4.66	54	94.6	0.57	4.20	0.40	4.44
20. Auricular height	66	114.1	0.51	4.12	0.72	3.61	57	109.3	0.60	4.55	0.42	4.16
9. Minimal frontal breadth	69	96.6	0.55	4.60	0.78	4.76	60	93.8	0.49	3.83	0.35	4.08
10. Maximal frontal breadth	67	120.6	0.69	5.64	0.97	4.68	56	115.6	0.72	5.43	0.51	4.70
11. Biauricular breadth	64	125.2	0.69	5.54	0.97	4.42	58	119.9	0.63	4.78	0.45	3.99
12. Occipital breadth	56	110.6	0.64	4.80	0.45	4.34	55	107.5	0.53	3.95	0.37	3.67
7. Foramen magnum length	57	36.6	0.34	2.55	0.24	6.96	52	35.9	0.25	1.82	0.18	5.07
16. Foramen magnum breadth	55	30.8	0.29	2.15	0.21	6.98	51	29.5	0.26	1.87	0.18	6.34
29. Frontal chord	63	112.4	0.60	4.74	0.42	4.72	53	108.0	0.61	4.44	0.43	4.11
31. Occipital chord	56	97.6	0.52	3.89	0.37	3.99	49	93.7	0.71	4.98	0.50	5.31
FS. Frontal vault height	64	26.9	0.31	2.51	0.22	9.33	53	27.2	0.32	2.36	0.22	8.68
OS. Occipital vault height	56	30.4	0.40	2.98	0.28	9.80	49	28.3	0.39	2.72	0.28	9.61
AS. Supraorbital arcs length	67	68.3	0.66	5.36	0.47	7.85	57	61.4	0.53	4.01	0.37	6.53
— Cranial volume (Lee—Pearson)	66	1440.2	11.90	96.59	8.41	6.71	55	1282.0	10.92	81.02	7.72	6.32
45. Bizygomatic breadth	65	133.1	0.67	5.42	0.47	4.07	56	124.8	0.61	4.58	0.43	3.67
40. Basifacial length	58	96.6	0.58	4.43	0.41	4.58	47	89.7	0.59	4.08	0.42	4.55
48. Upper facial height	68	71.6	0.51	4.19	0.36	5.85	57	67.7	0.51	3.84	0.36	5.67
47. Total facial height	60	117.0	0.17	6.13	0.12	5.24	47	110.5	0.75	5.16	0.53	4.67
43. Upper facial breadth	67	104.7	0.48	3.95	0.34	3.77	55	100.8	0.45	3.37	0.32	3.34
43$_1$. Bimalar chord	66	96.8	0.45	3.65	0.32	3.77	55	93.7	0.45	3.37	0.32	3.60
46. Middle facial breadth	62	97.2	0.55	4.36	0.39	4.48	52	92.5	0.54	3.92	0.38	4.24
60. Alveolar arc length	59	54.9	0.38	2.91	0.27	5.30	38	52.1	0.42	2.60	0.30	4.99
61. Alveolar arc breadth	55	64.0	0.40	2.95	0.28	4.61	36	60.6	0.61	3.67	0.43	6.06
62. Palatal length	51	47.04	0.40	2.83	0.28	6.02	30	45.0	0.42	2.28	0.30	5.07
63. Palatal breadth	49	41.71	0.35	2.43	0.25	5.82	32	39.59	0.52	2.97	0.37	7.50
55. Nasal height	67	51.53	0.35	2.85	0.25	5.53	56	48.88	0.38	2.81	0.27	5.75
54. Nasal breadth	68	24.76	0.22	1.82	0.16	7.43	53	24.15	0.24	1.71	0.17	7.08
51. Orbital breadth (from maxillofrontale)	68	41.25	0.21	1.70	0.15	4.12	55	40.10	0.34	2.54	0.24	6.33
51a. Orbital breadth (from dacryon)	49	39.70	0.23	1.60	0.16	4.03	31	38.66	0.31	1.71	0.22	4.42
52. Orbital height	68	32.93	0.23	1.90	0.16	5.77	55	32.92	0.24	1.82	0.17	5.53
— Canine fossa depth (in mm)	66	5.23	0.21	1.69	0.15	32.31	54	4.88	0.21	1.54	0.15	31.55
50. Maxillofrontal breadth	60	21.02	0.25	1.95	0.18	9.27	50	20.35	0.22	1.52	0.16	7.47
MS. Maxillofrontal height	60	9.96	0.13	1.02	0.09	10.24	45	9.29	0.18	1.18	0.13	12.70
DC. Dacryal breadth	37	22.51	0.29	1.78	0.21	7.91	28	21.59	0.29	1.54	0.21	7.13
DS. Dacryal height	38	12.94	0.19	1.16	0.13	8.96	28	11.92	0.26	1.37	0.18	11.49
SC (57) Simotic chord	60	8.52	0.25	1.91	0.18	22.41	47	8.25	0.20	1.34	0.14	16.24
SS. Simotic height	60	4.65	0.12	0.94	0.08	20.21	47	3.94	0.12	0.85	0.08	21.57
65. Bicondylar mandibular breadth	50	123.5	0.84	5.96	0.59	4.82	48	116.9	0.87	6.05	0.62	5.17
66. Bigonial breadth	54	104.5	0.84	6.21	0.59	5.94	50	94.3	0.85	6.02	0.60	6.38
67. Frontal (bimentale) mandibular breadth	58	46.5	0.32	2.47	0.22	5.31	50	44.8	0.29	2.03	0.21	4.53

Characters	Men						Women					
	n	$\bar{X}$	$S_{\bar{x}}$	S	Ss	V	n	$\bar{x}$	$S_{\bar{x}}$	s	Ss	V
68. Mandibular length (from gonion)	56	77.5	0.63	4.74	0.45	6.11	49	72.8	0.54	3.82	0.38	5.24
68_1. Mandibular bicondylar length	55	107.4	0.66	4.92	0.47	4.58	50	101.2	0.61	4.30	0.43	4.25
69. Mental height	57	34.9	0.38	2.91	0.27	8.34	52	32.1	0.37	2.64	0.26	8.22
70. Ascending branch height	56	63.4	0.62	4.65	0.44	7.33	49	56.1	0.60	4.19	0.42	7.47
71a. Minimal breadth of the ascending mandibular branch	61	32.6	0.33	2.59	0.23	7.94	56	30.5	0.35	2.61	0.25	8.56
32. Frontal angle (n—m: horizontal plane)	63	83.6	0.59	4.68	0.42	5.60	49	85.4	0.60	4.24	0.42	4.96
— Frontal angle (g—m: horizontal plane)	63	76.5	0.69	5.44	0.49	7.11	49	80.5	0.66	4.63	0.47	5.75
33_1. Upper occipital angle (l—i: horizontal plane)	58	94.6	0.55	4.22	0.39	4.46	41	96.2	0.76	4.86	0.54	5.05
33_2. Lower occipital angle (i—o: horizontal plane)	58	22.6	0.51	3.90	0.36	17.25	39	23.8	0.89	5.57	0.63	23.40
33. Inclination angle of the occipital bone	58	122.5	0.32	2.46	0.22	2.01	43	122.6	0.48	3.16	0.34	2.58
34. Foramen magnum angle	53	9.1	0.56	4.09	0.40	44.94	41	10.7	0.67	4.27	0.47	39.90
72. Total facial angle	61	85.6	0.48	3.78	0.34	4.41	46	85.5	0.40	2.68	0.28	3.13
73. Middle facial profile angle	57	86.2	0.54	4.04	0.38	4.69	44	86.4	0.42	2.77	0.30	3.21
74. Alveolar profile angle	55	83.2	0.59	4.41	0.42	5.30	42	82.4	0.62	4.03	0.44	4.89
75_1. Nasal bones prominence angle (with n—pr line)	50	32.4	0.74	5.23	0.52	16.14	32	29.5	0.90	5.11	0.64	17.32
77. Nasomalar angle	64	137.2	0.50	4.04	0.35	2.94	50	138.0	0.47	3.35	0.33	2.42
— Zygomaxillar angle	64	125.5	0.66	4.59	0.47	3.66	48	126.8	0.60	4.15	0.42	3.27
79. Mandibular branch inclination angle	55	122.2	0.87	6.03	0.62	4.93	48	124.6	0.84	5.85	0.59	4.70
— Mental angle (id—pog line with basal plane)	52	68.7	0.87	6.65	0.62	9.68	44	68.0	0.95	6.32	0.67	9.29
Glabella (Martin 1—6)	69	3.43	—	—	—	—	60	1.83	—	—	—	—
Supraorbital arcs prominence (Martin 1—6)	68	3.98	—	—	—	—	60	2.05	—	—	—	—
Canine fossa depth (0—4)	69	2.67	—	—	—	—	56	2.57	—	—	—	—
Percentage of the anthropoid forms of the lower nasal line	69	92,7	—	—	—	—	51	100,0	—	—	—	—
Anterior nasal spine (Broca 1—5)	58	3,53	—	—	—	—	41	3,05	—	—	—	—
Occipital protuberance (Broca 0—5)	67	2,86	—	—	—	—	60	1.61	—	—	—	—
mastoid size (1—3)	69	2,67	—	—	—	—	61	1,56	—	—	—	—
8:1. Cranial index	66	75.4	0.42	3.40	0.30	4.51	57	77.2	0.46	3.46	0.38	4.48
17:1. Cranial height-length index	61	72.2	0.41	3.21	0.29	4.44	54	72.6	0.50	3.66	0.35	5.04
20:1. Auricular height-cranial length index	65	61.6	0.35	2.79	0.25	4.53	55	62.2	0.45	3.33	0.32	5.35
17:8. Height-breadth index	62	95.6	0.57	4.48	0.40	4.69	54	93.9	0.73	5.36	0.52	5.71
20:8. Auricular height-breadth index	66	81.7	0.44	3.54	0.31	4.33	55	80.5	0.49	3.61	0.35	4.48

TABLE Ic

Character	Men						Women					
	n	$\bar{x}$	$S_{\bar{x}}$	S	Ss	V	n	$\bar{x}$	$S_{\bar{x}}$	s	Ss	V
9:8. Transversal Frontoparietal index	67	69.3	0.40	3.30	0.29	4.76	57	69.0	0.32	2.41	0.22	3.49
AS:43. Supraorbital arcs index	67	65.3	0.49	3.98	0.35	6.09	54	60.7	0.51	3.77	0.36	6.21
48:17. Height index (craniofacial)	61	53.5	0.42	3.25	0.29	6.07	53	53.0	0.52	3.77	0.37	7.11
45:8. Breadth index (craniofacial)	65	95.3	0.35	2.79	0.25	2.93	52	91.7	0.54	3.86	0.38	4.21
FS:29. Frontal vault index	63	23.9	0.26	2.06	0.18	8.62	54	25.2	0.25	1.86	0.18	7.38
OS:31. Occipital vault index	56	30.8	0.40	3.02	0.28	9.80	50	30.2	0.33	2.33	0.28	7.72
40:5. Facial prominence index	57	95.8	0.54	4.03	0.38	4.21	47	95.2	0.51	3.48	0.36	3.66
48:45. Upper facial index	64	53.7	0.38	3.06	0.27	5.70	54	54.3	0.43	3.14	0.30	5.78
47:45. Total facial index	56	87.6	0.66	4.93	0.47	5.63	46	88.2	0.58	3.96	0.41	4.49
54:55. Nasal index	67	48.9	0.62	5.11	0.44	10.44	53	49.5	0.60	4.40	0.42	8.88
52:51. Orbital index	68	80.2	0.61	5.04	0.43	6.28	55	82.0	0.64	4.75	0.45	5.79
52:51a. Orbital index (dacryon)	49	82.5	0.67	4.68	0.47	5.67	31	85.0	0.82	4.56	0.58	5.36
63:62. Upper palatal index	46	88.4	0.86	5.85	0.61	6.62	28	87.0	1.19	6.29	0.84	7.16
61:60. Maxilloalveolar index	54	116.4	0.96	7.03	0.68	6.04	35	117.0	1.09	6.48	0.77	5.54
MS:50. Maxillofrontal index	61	47.8	1.02	7.97	0.72	16.67	45	45.7	0.91	6.08	0.64	13.30
DS:DC. Nasal root prominence index (dacryal)	38	57.3	1.07	6.58	0.76	11.48	28	55.4	1.33	7.05	0.94	12.72
SS:SC. Nasal prominence index (simotic)	60	56.1	1.61	12.46	1.25	22.21	47	48.6	1.69	11.57	1.19	23.80
71a:70. Mandibular branch index	55	51.6	0.66	4.94	0.47	9.57	49	54.2	0.72	5.03	0.52	9.28
68:66. Mandibular length-gonial breadth index	53	74.0	0.90	6.53	0.64	8.82	47	77.5	0.96	6.55	0.68	8.45

NOTE: *In the table No. 1 are used following symbols: n — number of measurements, $\bar{x}$ — mean arithmetic value, $S\bar{x}$ — mean arithmetic value error, s — mean quadratic deviation, Ss — mean quadratic deviation error, V — variation coefficient.*

Mean dimensions and indexes of long bones from Nikolaevka—Kazatskce burial place TABLE II

Characters	Men			Women		
	n	$\bar{x}$	s	n	$\bar{x}$	s
FEMUR						
1. Maximal length	51	446.1	23.03	37	405.4	21.09
	39	450.7	25.71	34	405.4	21.30
2. Length in natural position	51	443.6	22.69	37	401.2	18.45
	40	447.2	25.39	34	402.8	21.06
8. Circumference of the middle of the shaft	51	91.8	6.69	37	77.3	2.98
	40	92.1	6.20	37	78.3	4.13
TIBIA						
1. Maximal length	42	365.5	21.81	31	330.6	16.84
	36	370.4	21.68	33	332.7	15.65
10b. Minimal circumference	42	77.6	5.40	31	65.6	3.38
	35	77.8	5.22	33	65.6	3.86
FIBULA						
1. maximal length	28	358.8	30.82	18	321.8	16.82
	19	361.0	25.10	18	325.9	21.50
4a. Minimal circumference	28	39.6	4.37	18	32.5	3.29
	19	38.6	4.18	18	33.4	3.27
HUMERUS						
1. maximal length	51	320.4	23.58	33	292.2	10.83
	44	318.1	18.03	37	295.5	14.23
7. Minimal circumference	51	65.7	5.03	33	55.4	2.75
	43	63.7	4.56	37	55.2	3.71
RADIUS						
1. maximal length	34	247.3	15.47	31	220.0	11.42
	41	247.2	13.29	31	221.1	14.90
3. Minimal cirumference	34	43.9	3.83	31	36.1	2.43
	41	42.8	3.16	32	36.3	3.61
ULNA						
1. Maximal length	39	262.7	15.54	26	240.5	13.02
	42	267.4	13.90	18	238.6	13.25
3. Minimal circumference	39	38.7	3.23	26	32.0	2.62
	42	37.2	3.43	20	32.2	2.08
RELATIONS:						
Intermembral index $(H_1 + R_1) : (T_1 + F_2)$	24	70.4	2.11	16	70.3	2.05
	23	69.2	1.53	16	70.4	2.73
Tibiofemoral index $(T_1 : F_2)$	40	82.3	2.38	26	82.4	1.52
	29	82.6	2.24	23	82.6	2.11
Radiofemoral index $(R_1 : H_1)$	32	76.8	2.24	27	75.2	2.24
	36	78.2	2.08	25	75.7	2.93
Humerofemoral index $(H_1 : F_2)$	41	72.8	2.17	25	73.1	2.13
	31	71.2	2.16	26	72.5	2.36
Radiotibial index (R1 : H1)	27	67.5	2.77	23	66.7	2.03
	30	67.3	2.01	22	66.6	2.54

Continued TABLE II

Characters	Men			Women		
	n	$\bar{x}$	s	n	$\bar{x}$	s
ROBUSTICITY INDEXES: FEMUR (8 : 2)	51	20.7	1.20	37	19.3	1.08
	40	20.7	1.05	34	19.5	1.15
TIBIA (10b : 1)	42	21.2	1.20	31	19.9	1.18
	35	21.0	1.15	31	19.7	1.19
FIBULA (4a : 1)	27	11.1	1.54	17	10.1	1.10
	19	10.8	1.67	18	10.3	1.05
HUMERUS (7 : 1)	49	20.4	1 33	33	19.0	1.05
	41	20.1	1.21	37	18.7	1.02
RADIUS (3 : 1)	36	17.6	1.06	33	16.5	0.95
	42	17.9	1.23	29	16.4	1.37
ULNA (3 : 1)	39	14.4	1.17	26	13.3	1.20
	43	14.0	1.36	20	13.5	0.90

NOTE: *1. All dimensions are in mm*
2. In first line there are right bone dimensions, in the second line left ones'.

Mean dimensions of the right bones of the Scythian-Sarmatian period skeletal finds in Ukraine

Characters	Men				
	Nikolaevka Kazatskoe	Scythian period Kondukto-rova 1972 Zinevitch 1967	Zolotaya Balka Kondukto-rova 1972	Scythian Neaples Kondukto-rova 1964	Sarmatians Kondukto-rova 1972
FEMUR					
1. Maximal length	446.1 (57)	449.2 (17)	449.3 (15)	444.0 (10)	449.4 (16)
2. Length in natural position	443.5 (57)	447.1 (17)	447.9 (18)	441.0 (10)	447.5 (17)
8. Circumference in the middle of the shaft	91.4 (57)	89.9 (10)	89.5 (18)	90.2 (10)	91.9 (17)
TIBIA					
1. Maximal length	366.9 (52)	362.9 (12)	363.8 (12)	358.6 (5)	362.7 (10)
10b. Minimal circumference	77.3 (52)	78.7 (3)	73.3 (11)	76.8 (4)	76.5 (11)
FIBULA					
1. Maximal length	359 9 (35)	364.0 (1)	—	—	345.5 (6)
4a. Minimal circumference	39.2 (35)	36.0 (1)	—	—	42.0 (5)
HUMERUS					
1. Maximal length	320.6 (59)	325.1 (15)	324.5 (12)	308.5 (2)	328.1 (11)
7. Minimal circumference	65.9 (59)	65.2 (6)	65.2 (12)	66.5 (2)	66.2 (11)
RADIUS					
1. Maximal length	249.2 (53)	244.6 (12)	252.0 (8)	238.0 (1)	248.6 (10)
3. Minimal circumference	43.9 (53)	44.8 (6)	42.0 (8)	43.0 (1)	45.8 (10)
ULNA					
1. Maximal length	265.9 (56)	265.5 (11)	276.0 (6)	259.0 (1)	248.6 (10)
8. Minimal circumference	38.2 (54)	39.6 (5)	37.8 (6)	39.0 (1)	40.3 (7)

NOTE:

1. *Mean dimensions (mean arithmetic values — $\bar{x}$) are in mm, the numbers of measurements are in brackets (n).*
2. *Left bones (when the right ones were missing) are used as right ones with the help of the assymetry coefficients (Debec G. F., Ju. A. Durnovo 1971).*

TABLE III

Characters	Women				
	Nikolaevka Kazackoe	Scythian period Kondukto-rova 1972 Zinevitch 1967	Zolotaya Balka Kondukto-rova 1972	Scythian Neaples Kondukto-rova 1964	Sarmatians Kondukto-rova 1972
FEMUR:					
1. Maximal length	405.0 (48)	412.1 (16)	400.8 (22)	406.9 (11)	413.0 (6)
2. Length in natural position	401.1 (48)	409.9 (16)	398.7 (21)	395.1 (11)	410.0 (6)
8. Circumference in the middle of the shaft	77.8 (48)	76.3 (7)	77.8 (22)	77.4 (11)	79.5 (6)
TIBIA					
1. Maximal length	332.1 (43)	331.3 (14)	328.6 (13)	353.0 (1)	336.9 (9)
10b. Minimal circumference	66.0 (43)	66.8 (6)	66.2 (13)	66.0 (1)	69.6 (10)
FIBULA					
1. Maximal length	324.7 (25)	32..5 (4)	317.5 (2)	—	323.6 (5)
4a. Minimal circumference	32.8 (26)	32.5 (4)	32.0 (2)	—	31.0 (4)
HUMERUS					
1. Maximal length	296.2 (49)	302.0 (14)	295.1 (14)	300.3 (3)	302.0 (8)
7. Minimal circumference	55.6 (49)	55.3 (7)	55.4 (14)	54.0 (3)	61.1 (9)
RADIUS					
1. Maximal length	222.3 (42)	229.0 (9)	227.0 (8)	209.5 (2)	223.8 (8)
3. Minimal circumference	36.8 (44)	34.8 (4)	36.3 (8)	36.0 (2)	40.8 (9)
ULNA					
1. Maximal length	241.4 (34)	245.7 (11)	239.0 (7)	242.0 (1)	246.1 (6)
8. Minimal circumference	32.4 (34)	32.6 (7)	31.1 (7)	32.0 (1)	36.6 (8)

3. *In the group "Scythian period" are both the authors materials, the Zinevitch data (1967) and the Debec finds (Kondukorova 1964).*

Mean dimensions of the right bones of the Chernyakhov culture and Nikolaevka—Kazatskoe burial places

Characters	Men			
	Nikolaevka Kazatskoe	Lower Dnieper Konduktorova 1958	Middle Dnieper Debec 1948 Konduktorova 1972	Northern Black Sea region Konduktorova 1972
FEMUR				
1. Maximal length	446.1 (57)	452.2 (7)	456.2 (33)	464.7 (13)
2. Length in natural position	443.5 (57)	449.1 (7)	452.7 (32)	462.9 (13)
8. Circumference of the middle of the shaft	91.4 (57)	87.9 (7)	88.6 (40)	89.1 (13)
TIBIA				
1. Maximal length	366.9 (52)	353.0 (3)	376.9 (27)	375.2 (10)
10b. Minimal circumference	77.3 (52)	74.0 (3)	75.9 (27)	77.4 (10)
FIBULA				
1. Maximal length	350.9 (35)	—	357.0 (11)	366.7 (3)
4a. Minimal circumference	33.2 (35)	—	35.0 (11)	33.7 (3)
HUMERUS				
1. Maximal length	320.6 (59)	316.0 (2)	330.1 (31)	337.1 (12)
7. Minimal circumference	65.9 (59)	62.5 (2)	64.1 (30)	65.1 (12)
RADIUS				
1. Maximal length	249.2 (53)	232.0 (1)	254.1 (28)	251.3 (6)
3. Minimal circumference	43.9 (53)	39.0 (1)	42.8 (24)	42.2 (6)
ULNA				
1. Maximal length	265.9 (56)	—	274.7 (22)	277.6 (7)
3. Minimal circumference	38.2 (54)	—	38.0 (19)	39.7 (7)

NOTE: [1]) *Mean diameters (mean arithmetic values — $\bar{x}$) are in mm., the number of measurements are in brackets (n)*

TABLE IV

Characters	Women			
	Nikolaevka Kazatskoe	Lower Dnieper Konduktorova 1958	Middle Dnieper Debec 1948 Konduktorova 1972	Northern Black Sea region Konduktorova 1972
FEMUR				
1. Maximal length	405.0 (48)	414.9 (9)	414.4 (36)	414.0 (11)
2. Length in natural position	401.1 (48)	412.4 (9)	411.5 (31)	411.1 (11)
8. Circumference of the middle of the shaft	77.9 (48)	77.7 (9)	81.2 (36)	81.2 (11)
TIBIA				
1. Maximal length	332.1 (43)	334.8 (5)	340.0 (27)	347.3 (12)
10b. Minimal circumference	66.0 (43)	68.4 (5)	67.8 (27)	66.9 (12)
FIBULA				
1. Maximal length	324 7.(25)	—	337.1 (7)	318.0 (3)
4a. Minimal circumference	32.8 (26)	—	31.3 (7)	33.3 (3)
HUMERUS				
1. Maximal length	296.2 (49)	303.5 (2)	300.1 (31)	296.7 (10)
7. Minimal circumference	55.6 (49)	54.5 (2)	50.4 (31)	57.1 (10)
RADIUS				
1. Maximal length	241.4 (34)	231.0 (2)	227.5 (27)	225.0 (7)
3. Mininal circumference	32.4 (34)	36.5 (2)	36,3 (21)	30.4 (7)
ULNA				
1. Maximal length	222.3 (42)	250.5 (2)	246.7 (18)	248.0 (8)
3. Minimal circumference	36.8 (44)	31.5 (2)	31.7 (12)	32.4 (8)

[2]) *Left bones (when the right ones are missing) are used as the right ones with the help of the assymetry coefficient (G. F. Debetz, Ju. A. Durnovo 1971).*

TABLE V

Quadratic deviation values in the skulls from Nikolaevka—Kazatskoe compared with the general (mean) coefficient)*

Characters	Men			Women		
	Nikolaevka Kazatskoe	mean values	limits of mean values	Nikolaevka Kazatskoe	mean values	limits of mean values
1. Cranial length	6.79	6.1	5.8—6.4	5.73	5.8	5.5—6.1
8. Cranial breadth	5.18	5.0	4.7—5.3	5.25	4.8	4.5—5.1
17. Basion-bregma height	4.77	4.9	4.6—5.2	5.79	4.7	4.4—5.0
5. Basicranial length	4.71	4.1	3.9—4.3	4.20	4.1	3.9—4.3
20. Auricular height	4.12	4.0	3.8—4.2	4.55	3.8	3.6—4.0
9. Minimal frontal diameter	4.60	4.4	4.2—4.6	3.83	4.3	4.1—4.5
45. Bizygomatical breadth	5.42	5.1	4.7—5.5	4.58	4.8	4.4—5.2
40. Basifacial length	4.43	4.9	4.6—5.2	4.08	4.7	4.4—5.0
48. Upper facial height	4.19	4.1	3.9—4.3	3.84	3.8	3.6—4.0
47. Total facial height	6.13	7.0	6.6—7.4	5.16	6.5	6.1—6.9
62. Upper palatal length	2.83	2.8	2.5—5.1	2.28	2.65	2.4—2.9
63. Upper palatal breadth	2.43	2.65	2.5—2.8	2.97	2.55	2.4—2.7
55. Nasal length	2.85	2.9	2.7—3.1	2.81	2.7	2.5—2.9
54. Nasal breadth	1.82	1.8	1.7—1.9	1.71	1.7	1.6—1.8
51. Orbital breadth (from maxillofrontale)	1.70	1.8	1.7—1.9	2.54	1.8	1.7—1.9
51a. Orbital breadth (from dacryon)	1.60	1.7	1.6—1.8	1.74	1.6	1.5—1.7
52. Orbital height	1.90	1.9	1.8—2.0	1.82	1.9	1.8—2.0
— Canine fossa depth	1.69	1.1	0.9—1.3	1.54	1.0	0.8—1.2
DC. (49a) Dacryal breadth	1.78	2.2	2.1—2.3	1.54	2.1	2.0—2.2
DS. Dacryal height	1.16	1.5	1.4—1.6	1.37	1.3	1.2—1.4
SC (57) Simotic breadth	1.91	1.8	1.7—1.9	1.34	1.8	1.7—1.9
SS. Simotic height	0.94	0.9	0.8—1.0	0.85	0.7	0.6—0.8
65. Mandibular breadth (bicondylar)	5.96	5.7	5.4—6.0	6.05	5.4	5.1—5.7
66. Mandibular breadth (bigonial)	6.21	6.3	5.9—6.7	6.02	5.8	5.4—6.2
68. Mandibular length (from gonion)	4.74	4.1	3.8—4.4	3.82	3.9	3.6—4.0
71a. Minimal breadth of the ascending branch	2.59	2.7	2.6—2.8	2.61	2.5	2.4—2.6
32. Frontal angle (n-m to the horizontal plane)	4.68	3.7	3.5—3.9	4.24	3.7	3.5—3.9
72. Total facial angle	3.78	2.9	2.7—8.1	2.68	2.9	2.7—3.1
74. Alveolar profil angle	4.41	6.1	5.8—6.4	4.03	6.1	5.8—6.4
75_1 Nasal bones prominence angle (with n-pr line)	5.23	4.6	4.3—4.9	5.11	4.6	4.3—4.9
77. Nasomalar angle	4.04	4.4	4.2—4.6	3.35	4.4	4.3—4.6
— Zygomaxillar angle	4.59	5.4	5.1—5.7	4.15	5.4	5.1—5.7
8:1 Cranial index	3.40	3.2	3.0—3.4	3.46	3.2	3.0—3.4
17:1 Cranial height-length index	3.21	3.1	2.9—3.3	3.66	3.1	2.9—3.3
20:1 Auricular height-cranial length index	2.79	2.5	2.3—2.7	3.38	2.5	2.3—2.7
17:8 Height-breadth index	4.48	4.4	4.2—4.6	5.36	4.4	4.2—4.6
20:8 Auricular height-breadth index	3.54	3.3	3.1—3.5	3.61	3.3	3.1—3.5
9:8 Transversal frontoparietal index	3.30	3.3	3.1—3.5	2.41	3,3	3.1—3.5
48:17 Height index (craniofacial)	3.25	3.3	3.1—3.5	3.77	3 3	3.1—3.5
45:8 Breadth index (craniofacial)	2.79	3.8	3.6—4.0	3.86	3.8	3.6—4.0
40:5 Facial prominence index	4.03	4.0	3.8—4.2	3.48	4.0	3.8—4.2
48:45 Upper facial index	3.06	3.15	3.0—3.3	3.14	3.15	3.0—3.3
47:45 Total facial index	4.93	5.3	5.0—5.6	3.96	5.8	5.0—5.6
54:55 Nasal index	5.11	4.1	3.9—4.3	4.40	4.1	3.9—4.3
52:51 Orbital index	5.04	5.0	4.8—5.2	4.75	5.0	4.8—5.2
52:51a Orbital index (dacryon)	4.68	5.25	5.0—5.5	4.56	5.25	5.0—5.5
63:62 Upper palatal index	5.85	7.0	6.5—7.5	6.29	7.0	6.5—7.5
61:60 Maxilloalveolar index	7.08	7.1	6.7—7.5	6.48	7.1	6.7—7.5
DS:DC Nasal root prominence index (dacryon)	6.58	8.45	8.1—8.8	7.05	8.45	8.1—8 8
SS:SC Nasal prominence index (simotic)	12.46	11.7	10.6—12.8	11.57	11.7	10.6—12.8
71a:70 Mandibular branch index	4.94	5.4	5.3—5.6	5,03	5.4	5.2—5.6

NOTE: *) *General (mean) quadratic deviations were presented by G. F. Debetz (Alekseev, Debetz 1964). For this reason he surveyed 88 craniological groups.*

Coefficients of the correlation of female skull dimensions in some craniological groups TABLE VIII

Characters	1. Cranial length			8. Cranial breadth			17. Cranial height		
	Nikolaevka Kazatskoe	Norvegians	Egypt	Nikolaevka Kazatskoe	Norvegians	Egypt	Nikolaevka Kazatskoe	Norvegians	Egypt
1. Cranial length	—	—	—	0.211	0.35	0.38	0.193	0.22	0.19
8. Cranial breadth	0.211	0.35	0.38	—	—	—	0.069	0.13	0.34
17. Basion bregma height	0.193	0.22	0.19	0.069	0.13	0.34	—	—	—
5. Basicranial length	0.445	0.40	0.46	—0.261	0.06	0.11	0.450	—	—
20. Auricular height	0.193	0.33	0.32	0.393	0.34	0.41	0.722	0.68	0.73
9. Minimal frontal breadth	0.432	—	—	0.581	0.43	0.29	0.143	—	—
45. Bizygomatical breadth	0.338	0.20	0.31	0.455	0.42	0.34	0.191	0.12	0.28
48. Upper facial height	0.233	0.23	0.29	0.043	0.20	0.19	0.135	0.12	0.19
55. Nasal height	0.298	0.21	—	0.216	0.18	0.16	0.085	0.06	0.14
54. Nasal breadth	0.020	0.13	—	0.211	0.04	0.07	—0.010	—0.27	—0.08
51. Orbital breadth (from maxillofrontale)	0.331	—	—	0.154	0.16	—	—0.023	—	—
72. Total facial angle	0.155	0.15	—	—0.250	0.21	0.15	—0.061	0.02	0.10

Variation coefficients and coefficients of the sexual dimorphism in the Nikolaevka—Kazatskoe finds when compared with general (mean) coefficients)*

Characters	Variation Coefficient			
	Nyikolayevka Kazatskoye		mean values	Limits of mean values
	men	women		
1. Cranial length	3.66	3.20	3.35	3.2—3.5
8. Cranial breadth	3.70	3.86	3.5	3.3—3.7
17. Basion bregma height	3.56	4.53	3.65	3.4—3.9
5. Basicranial length	4.66	4.44	4.1	3.9—4.3
20. Auricular height	3.61	4.16	3.5	3.3—3.7
9. Minimal frontal diameter	4.76	4.08	4.6	4.4—4.8
45. Bizygomatic breadth	4.07	3.67	3.8	3.5—4.1
40. Basifacial length	4.58	5.55	5.0	4.7—5.3
48. Upper facial height	5.85	5.67	5.8	5.5—6.1
47. Total facial height	5.24	4.67	5.9	5.6—6.2
62. Upper palatal length	6.02	5.07	6.1	5.5—6.7
63. Upper palatal breadth	5.82	7.50	6.7	6.3—7.1
55. Nasal height	5.53	5.75	5.6	5.2—6.0
54. Nasal breadth	7.43	7.08	7.1	6.7—7.5
51. Orbital breadth (from maxillofrontale)	4.12	6.38	4.3	4.0—4.6
51a. Orbital breadth (from dacryon)	4.03	4.42	4.3	4.0—4.6
52. Orbital height	5.77	5.53	5.6	5.3—5.9
— Canine fossa depth	32.31	31.55	21.6	17.9—25.3
DC Dacryal breadth	7.91	7.13	10.1	9.6—10.6
DS Dacryal height	8.96	11.49	13.9	13.0—14.8
SC (57) Simotic breadth	22.41	16.24	21.0	19.8—22.2
SS Simotic height	20.21	21.57	24.9	21.6—28.2
65. Mandibular breadth (bicondylar)	4.82	5.21	4.8	4.5—5.1
66. Mandibular breadth (bigonial)	5.94	6.38	6.25	5.8—6.7
68. Mandibular length from gonion)	6.11	5.24	5.4	5.0—5.8

NOTE: *) *General (mean) coefficients were presented by G. F. Debetz (Alekseev, Debetz 1964). For this reason he studied 88 craniological groups.*

TABLE VI

Characters	Variations of the sexual dimorphism		
	Nikolaevka Kazatskoe	mean values	limits of mean values
1. Cranial length	1.053	1.049	1.044—1.054
8. Cranial breadth	1.027	1.037	1.032—1.042
17. Basion bregma height	1.048	1.047	1.043—1.051
5. Basicranial length	1.068	1.054	1.049—1.059
20. Auricular height	1.044	1.046	1.042—1.050
9. Minimal frontal diameter	1.030	1.032	1.026—1.038
45. Bizygomatic breadth	1.067	1.072	1.067—1.077
40. Basifacial length	1.077	1.042	1.037—1.047
48. Upper facial height	1.058	1.076	1.069—1.083
47. Total facial height	1.059	1.077	1.070—1.084
62. Upper palatal length	1.045	1.051	1.044—1.058
63. Upper palatal breadth	1.054	1.050	1.044—1.056
55. Nasal height	1.055	1.061	1.054—1.068
54. Nasal breadth	1.025	1.041	1.032—1.050
51. Orbital breadth (from maxillofrontale)	1.029	1.041	1.034—1.048
51a. Orbital breadth (from dacryon)	1.026	1.040	1.033—1.047
52. Orbital height	1.000	1.005	0.999—1.011
— Canine fossa depth	1.072	1.100	1.086—1.114
DC Dacryal breadth	1.043	1.056	1.049—1.063
DS Dacryal height	1.086	1.113	1.105—1,121
SC (57) Simotic breadth	1.033	1.000	0.994—1.006
SS Simotic height	1.183	1.207	1.199—1.215
65. Mandibular breadth (bicondylar)	1.056	1.062	1.056—1.068
66. Mandibular breadth (bigonial)	1.108	1.085	1.079—1.091
68. Mandibular length (from gonion)	1.065	1.056	1.051—1.061

Coefficients of the dimensions correlation in male skulls in some craniological groups

TABLE VIIa

Characters	1. Cranial length				8. Cranial breadth			
	Nikolaevka Kazatskoe	Armenians	Khantts	Norvegians	Nikolaevka Kazatskoe	Armenians	Khantts	Norvegians
1. Cranial length	—	—	—	—	0.194	0.283	0.204	0.370
8. Cranial breadth	0.194	0.283	0.204	0.370	—	—	—	—
17. Basion bregma height	0.254	0.138	0.357	0.340	0.142	0.083	0.161	0.260
5. Basicranial length	0.500	0.489	0.598	0.460	—0.071	0.231	0.298	0.090
9. Minimal frontal breadth	0.365	0.218	0.403	—	0.335	0.280	0.420	0.420
45. Bizygomatical breadth	0.276	0.256	0.513	0.350	0.693	0.369	0.555	0.520
40. Basifacial length	0.300	0.368	0.402	—	—0.184	0.090	0.296	—
48. Upper facial height	0.223	0.368	0.367	0.330	0.253	0.224	0.338	0.330
55. Nasal height	0.274	0.328	0.414	0.300	0.299	0.145	0.357	0.290
54. Nasal breadth	—0.024	0.327	0.237	0.120	0.091	0.140	0.208	0.050
51. Orbital breadth (from maxillofrontale)	0.441	—	0.383	—	0.119	—	0.058	0.250
52. Orbital height	0.181	0.094	0.181	—	0.223	0.105	0.056	—
32. Frontal angle (n—m to the horizontal plane)	—0.187	—0.216	—0.017	0.100	0.048	0.009	—	0.140
72. Total facial angle	0.320	—0.035	0.154	—	0.066	0.080	0.103	0.190
75. Nasal bone prominence (to the profile line)	0.159	0.036	—0.094	—	0.084	0.081	0.016	—

TABLE VIIb

Characters	17 Cranial height				45 Bizygomatic breadth		
	Nikolaevka Kazatskoe	Armenians	Khantts	Norvegians	Nikolaevka Kazatskoe	Armenians	Khantts
1. Cranial length	0.254	0.138	0.357	0.340	0.276	0.256	0.513
8. Cranial breadth	0.142	0.083	0.161	0.260	0.693	0.369	0.555
17. Basion bregma height	—	—	—	—	0.246	0.195	0.377
5. Basicranial length	0.352	0.471	0.566	—	0.316	0.460	0.621
9. Minimal frontal breadth	0.202	0.149	0.275	—	0.491	0.286	0.505
45. Bizygomatical breadth	0.246	0.195	0.377	0.310	—	—	—
40. Basifacial length	—0.077	0.123	0.224	—	0.102	0.346	0.456
48. Upper facial height	0.169	0.132	0.242	0.150	0.410	0.410	0.536
55. Nasal height	0.001	0.143	0.150	0.110	0.494	0.365	0.544
54. Nasal breadth	0.142	0.151	—0.026	0.030	0.214	0.265	0.240
51. Orbital breadth (from maxillofrontale)	0.022	—	0.235	—	0.470	—	0.555
52. Orbital height	—0.044	0.127	—0.024	—	0.377	0.112	0.242
32. Frontal angle (n—m to the horizontal plane)	0.212	0.078	0.247	—	—0.260	—0.104	—0.234
72. Total facial angle	0.225	—0.120	0.040	0.000	0.026	0.120	0.060
75. Nasal bone prominence (to the profile line)	0.048	0.370	—0.060	—	0.092	0.128	0.103

TABLE VIIc

Characters	48. Upper facial height			54. Naral breadth		
	Nikolaevka Kazatskoe	Armenians	Khantts	Nikolaevka Kazatskoe	Armenians	Khantts
1. Cranial length	0.223	0.368	0.367	—0.024	0.327	0.237
8. Cranial breadth	0.253	0.224	0.338	0.091	0.140	0.208
17. Basion bregma height	0.169	0.132	0.242	0.142	0.151	—0.026
5. Bascranial length	0.246	0.490	0.523	0.176	0.275	0.139
9. Minimal frontal breadth	0.240	0.261	0.242	0.304	0.229	0.194
45. Bizygomatical breadth	0.410	0.410	0.536	0.214	0.265	0.240
40. Basifacial length	0.058	0.381	0.438	0.219	0.254	0.236
48. Upper facial height	—	—	—	0.042	0.010	0.116
55. Nasal height	0.763	0.710	0.831	0.167	0.018	0.238
54. Nasal breadth	0.042	0.010	0.116	—	—	—
51a. Orbital breadth (from maxillo-frontale)	0.287	—	0.199	0.160	0.084	0.224
52. Orbital height	0.473	0.304	0.414	0.075	—0.153	0.030
32. Frontal angle (n—m to the horizontal plane)	—0.140	0.025	—0.291	—0.079	0.071	—0.043
72. Total facial angle	0.235	0.049	0.152	—0.086	—0.177	—0.134
75. Nasal bone prominence (to the profile line)	0.067	—0.152	—0.032	0.172	0.243	—0.047

Mean dimensions of male skulls in burrials with crossed legs and in various burrial constructions from Nikolaevka—Kazatskoe

TABLE IX

Characters	Grave type			Burrials with crossed legs
	Burrial chambers	grave dug out to one side	Graves	
1. Cranial length	186.3 (53)	180.8 (8)	187.6 (5)	187.9 (13)
8. Cranial breadth	140.4 (53)	136.2 (8)	139.0 (5)	137.4 (13)
17. Basion bregma height	134.7 (49)	130.6 (8)	131.6 (5)	133.3 (13)
5. Basicranial length	101.0 (48)	99.4 (7)	104.2 (4)	102.1 (12)
20. Auricular height	114.5 (53)	111.8 (8)	113.2 (5)	113.6 (13)
9. Minimal frontal diameter	96.9 (56)	94.4 (8)	97.2 (5)	97.1 (13)
45. Bizygomatic breadth	133.3 (53)	130.6 (8)	135.2 (4)	133.0 (13)
40. Basifacial length	96.4 (47)	96.7 (7)	98.8 (4)	98.8 (11)
48. Upper facial height	71.3 (55)	73.5 (8)	72.0 (5)	71.6 (13)
47. Total facial height	117.1 (48)	118.1 (7)	114.8 (5)	117.5 (12)
55. Nasal height	51.2 (54)	52.4 (8)	53.6 (5)	51.7 (13)
54. Nasal breadth	24.8 (55)	25.1 (8)	24.2 (5)	25.3 (13)
51. Orbital breadth (from maxillofrontale)	41.2 (55)	41.0 (8)	42.2 (5)	41.8 (13)
51a. Orbital breadth (from dacryon)	39.7 (37)	39.2 (7)	40.7 (5)	40.7 (11)
52. Orbital height	32.9 (55)	32.9 (8)	33.0 (5)	33.0 (13)
50. Maxillofrontal breadth	21.2 (49)	20.5 (6)	20.2 (5)	21.2 (12)
MS. Maxillofrontal height	9.9 (49)	10.2 (6)	10.4 (5)	10.1 (12)
— Canine fossa depth	5.3 (54)	4.7 (7)	5.5 (5)	5.0 (11)
— Zygomaxillar angle	125.7 (51)	123.0 (8)	127.4 (5)	123.6 (11)
DS. Dacryal height	13.0 (29)	12.6 (5)	13.0 (4)	11.6 (7)
SC (57) Simotic chord	8.4 (50)	9.0 (6)	9.6 (4)	9.3 (11)
SS. Simotic height	4.6 (50)	5.0 (6)	4.9 (4)	5.1 (11)
32. Frontal angle (n—m: horizontal plane)	84.0 (50)	81.9 (8)	82.2 (5)	82.9 (13)
— Frontal angle (g—m: horizontal plane)	76.9 (50)	75.8 (8)	74.0 (5)	75.2 (13)
72. Total facial angle	85,6 (48)	84.2 (8)	87.6 (5)	85.5 (11)
74. Alveolar profile angle	83.8 (44)	79.6 (8)	83.7 (3)	83.1 (10)
75_1. Nasal bones prominence angle (with n—pr line)	33.2 (40)	29.5 (6)	29.2 (4)	31.3 (7)
— Glabella (Martin 1—6)	3.5 (56)	2.8 (8)	3.6 (5)	3.5 (13)
8:1 Cranial index	75.6 (53)	74.7 (8)	74.1 (5)	73.1 (13)
17:1 Cranial height length index	72.5 (48)	71.6 (8)	70.2 (5)	70.9 (13)
20:1 Auricular height-cranial length index	61.7 (52)	61.5 (8)	60.2 (5)	60.4 (13)
17:8 Height-breadth index	96.4 (48)	96.4 (8)	94.8 (6)	97.1 (13)
20:8 Auricular height-cranial breadth index	69.3 (54)	69.2 (8)	70.0 (5)	70.7 (13)
AS:43 Supraorbital arcs length index	65.4 (54)	64.7 (8)	65.1 (5)	65.4 (13)
48:17 Craniofacial height index	53.0 (48)	55.8 (8)	54.9 (5)	53.9 (13)
45:8 Craniofacial breadth index	95.1 (53)	95.9 (8)	96.8 (4)	96.8 (13)
40:5 Facial prominence index	95.6 (45)	97.4 (7)	94.8 (4)	96.2 (11)
48:45 Upper facial index	53.3 (52)	56.3 (8)	53.1 (4)	53.7 (12)
47:45 Total facial index	88.2 (45)	90.3 (7)	85.3 (4)	87.8 (11)
54:55 Nasal index	49.2 (54)	49.5 (8)	45.2 (5)	49.4 (12)
52:51 Orbital index	80.3 (55)	80.7 (8)	78.1 (5)	77.6 (12)
52:51a Orbital index (dacryon)	82.4 (37)	83.6 (7)	81.2 (5)	80.2 (10)
MS:50 Maxillofrontal index	46.9 (50)	52.3 (6)	51.1 (5)	49.5 (11)
SS:SC SS:SC Nasal prominence index (simotic)	56.4 (50)	57.2 (6)	51.0 (4)	56.3 (10)

NOTE: *Linear dimensions are in mm, angles in degrees (number of measurements "n" is in brackets).*

Mean values of female skulls from burrials with varicus burrial constructions from Nikolaevka—Kazatskoe TABLE X

Characters	Grave type		
	Burial chambres	grave dug out to one side	Graves
1. Cranial length	176.2 (46)	178.5 (4)	175.4 (7)
8. Cranial breadth	136.0 (46)	140.0 (4)	134.3 (7)
17. Basion bregma height	127.8 (47)	131.2 (4)	124.6 (5)
5. Basicranial length	94.6 (45)	94.8 (4)	94.2 (5)
20. Auricular height	109.3 (47)	113.8 (4)	106.2 (6)
9. Minimal frontal diameter	94.0 (49)	92.5 (4)	93.1 (7)
45. Bizygomatical breadth	124.6 (47)	125.8 (4)	126.2 (5)
40. Basifacial length	89.6 (39)	88.0 (3)	91.4 (5)
48. Upper facial height	67.9 (46)	65.2 (4)	67.7 (7)
47. Total facial height	110.5 (37)	109.2 (4)	111.2 (6)
55. Nasal height	49.1 (46)	47.7 (3)	47.7 (7)
54. Nasal breadth	24.3 (43)	23.8 (3)	23.2 (7)
51. Orbital breadth (from maxillofrontale)	40.1 (46)	39.0 (3)	40.5 (6)
51a. Orbital breadth (from dacryon)	38.6 (26)	37.0 (1)	39.4 (4)
52. Orbital height	33.2 (46)	30.7 (3)	31.7 (6)
50. Maxillofrontal breadth	20.3 (42)	20.4 (3)	20.9 (5)
MS. Maxillofrontal height	9.4 (39)	9.6 (2)	8.5 (4)
— Canine fossa depth	4.8 (46)	5.5 (3)	5.2 (5)
— Zygomaxillar angle	126.6 (41)	120.3 (3)	127.0 (4)
DS Dacryal height	12.0 (24)	12.5 (1)	11.3 (3)
SC (57) Simotic chord	8.4 (42)	6.0 (1)	7.5 (4)
SS Simotic height	4.0 (42)	2.9 (1)	3.5 (4)
32. Frontal angle (n—m: horizontal plane)	85.1 (41)	83.7 (3)	85.0 (5)
— Frontal angle (g—m: horizontal plane)	81.0 (41)	75.7 (3)	79.4 (5)
72. Total facial angle	85.6 (39)	86.3 (3)	83.5 (4)
74. Alveolar profile angle	82.4 (36)	84.7 (3)	79.7 (3)
75_1 Nasal bones prominence angle (with n—pr line)	29.7 (29)	20.0 (1)	31.0 (2)
— Glabella (Martin 1—6)	1.8 (49)	2.0 (4)	2.0 (7)
8:1 Cranial index	77.2 (47)	78.4 (4)	76.4 (6)
17:1 Cranial height length index	72.5 (44)	73.5 (4)	72.5 (6)
20:1 Auricular height–cranial length index	63.2 (45)	63.7 (4)	60.5 (6)
17:8 Height breadth index	94.2 (45)	93.8 (4)	91.6 (5)
20:8 Auricular height–cranial breadth index	80.6 (45)	81.2 (4)	79.2 (6)
AS:43 Supraorbital arcs length index	60.5 (44)	64.1 (4)	59.7 (6)
48:17 Craniofacial height index	53.5 (44)	49.7 (4)	54.5 (5)
45:8 Craniofacial breadth index	91.8 (43)	89.9 (4)	92.7 (5)
40:5 Facial prominence index	95.2 (39)	92.3 (3)	97.1 (5)
48:45 Upper facial index	54.6 (45)	51.9 (4)	53.8 (5)
47:45 Total facial index	88.3 (37)	86.8 (4)	88.4 (5)
54:55 Nasal index	49.5 (44)	49.8 (3)	49.3 (6)
52:51 Orbital index	82.4 (47)	78.9 (3)	79.8 (5)
52:51a Orbital index (dacryon)	85.6 (26)	81.1 (1)	82.3 (4)
MS:50 Maxillofrontal index	46.1 (39)	48.8 (2)	39.9 (4)
SS:Sc Nasal prominence index (simotic)	48.5 (43)	48.3 (1)	49.6 (3)

NOTE: *Linear dimensions are in mm, angle in degrees (number of measurements "n" in brackets).*

Mean diameters of skulls from different chronological groups of the Nikolaevka — Kazatskoe burial place TABLE XI

Characters	Men		Women	
	Ist century B.C—IInd century A.D.	IIIrd century A.D.	Ist century B.C.—IInd century A.D.	IIIrd century A.D.
1. Cranial length	185.8 (55)	185.4 (11)	176.3 (49)	176.1 (8)
8. Cranial breadth	140.3 (55)	137.6 (11)	136.1 (49)	136.0 (8)
17. Basion bregma height	134.4 (51)	131.6 (11)	128.1 (50)	125.5 (6)
5. Basicranial length	100.6 (49)	102.8 (10)	94.8 (47)	93.6 (7)
20. Auricular height	114.6 (55)	111.8 (11)	109.7 (50)	106.3 (7)
9. Minimal frontal diameter	96.5 (58)	97.1 (11)	93.9 (52)	93.0 (8)
45. Bizygomatical breadth	133.1 (54)	132.9 (11)	124.6 (50)	126.2 (6)
40. Basifacial length	96.0 (48)	99.4 (10)	89.7 (42)	90.0 (5)
48. Upper facial height	71.3 (57)	73.0 (11)	67.8 (49)	67.0 (8)
47. Total facial height	116.7 (49)	118.2 (11)	110.4 (41)	111.3 (6)
55. Nasal height	51.2 (56)	53.2 (11)	49.0 (48)	48.2 (8)
54. Nasal breadth	24.8 (57)	24.7 (11)	24.3 (46)	23.1 (7)
51. Orbital breadth (from maxillofrontale)	41.2 (57)	41.7 (11)	40.2 (48)	39.6 (7)
51a. Orbital breadth (from dacryon)	39.6 (38)	40.2 (11)	38.7 (31)	—
52. Orbital height	33 (57)	32.6 (11)	33.2 (48)	31.4 (7)
— Canine fossa depth	5.2 (56)	5.1 (10)	4.8 (48)	5.2 (5)
50. Maxillofrontal breadth	20.9 (50)	21.4 (10	20.4 (44)	20.1 (6)
MS Maxillofrontal height	9.9 (50)	10.1 (10)	9.3 (39)	9.5 (6)
DS Dacryal height	12.9 (29)	13.0 (10)	11.9 (25)	11.8 (8)
SC (57) Simotic chord	8.3 (50)	9.4 (10)	8.4 (41)	7.2 (6)
SS Simotic height chord	4.6 (50)	5.0 (10)	4.0 (41)	3.7 (6)
32. Frontal angle (n—m: horizontal plane)	83.9 (52)	82.4 (11)	85.1 (44)	84.2 (5)
72. Total facial angle	85.7 (50)	85.0 (11)	85.6 (42)	84.8 (4)
74. Alveolar profil angle	83.4 (45)	82.1 (10)	82.4 (38)	82.0 (4)
77. Nasomalar angle	137.3 (53)	136.6 (11)	137.9 (43)	138.7 (7)
— zygomaxillar angle	125.6 (53)	124.8 (11)	126.7 (44)	128.2 (4)
75_1 Nasal bones prominence angle (with n—pr line)	33.3 (40)	28.8 (10)	29.5 (29)	29.7 (3)
— Glabella (Martin 1—6)	3.5 (58)	3.2 (11)	1.8 (52)	2.0 (8)
8:1 Cranial index	75.7 (55)	73.7 (11)	77.2 (49)	77.2 (8)
17:1 Cranial height-length index	72.6 (50)	70.5 (11)	72.7 (48)	71.4 (6)
20:1 Auricular height-cranial length index	61.9 (54)	60.0 (11)	62.5 (48)	60.2 (7)
17:8 Height breadth index	95.5 (51)	95.9 (11)	94.3 (48)	90.9 (6)
20:8 Auricular height-cranial breadth index	81.7 (55)	81.7 (11)	80.9 (48)	78.0 (7)
9:8 Transversal frontal index	69.0 (56)	70.6 (11)	69.1 (49)	68.4 (8)
AS:43 Supraorbital arcs length index	65.1 (56)	66.2 (11)	60.8 (47)	60.3 (7)
48:17 Craniofacial height index	53.1 (50)	55.2 (11)	53.3 (47)	53.4 (6)
45:8 Craniofacial breadth index	95.0 (54)	96.6 (11)	91.6 (46)	92.3 (6)
40:5 Facial prominence index	95.7 (46)	96.2 (10)	95.4 (43)	93.5 (4)
48:45 Upper facial index	53.4 (53)	55.0 (11)	54.5 (49)	52.7 (5)
47:45 Total facial index	87.7 (48)	87.0 (8)	88.3 (42)	87.6 (4)
54:55 Nasal index	49.4 (56)	46.4 (11)	49.5 (48)	49.1 (5)
52:51a Orbital index (dacryon)	82.8 (38)	81.3 (11)	85.3 (27)	83.0 (4)
52:51 Orbital index	80.5 (57)	78.4 (11)	82.2 (49)	80.4 (6)
MS:50 Maxillofrontal index	47.9 (51)	47.1 (10)	45.5 (39)	47.0 (6)
DS:DC Nasal root prominence index	57.0 (25)	58.2 (10)	55.5 (25)	54.8 (3)
SS:SC Nasal prominence index (simotic)	56.4 (50)	54.6 (10)	48.1 (41)	51.7 (6)

FIG. 1 a, b, c.

Woman, 45—55 years.
Grave 19, burial 1.
Inventory number 88/1.

FIG. 2 a, b, c.

Man, 55—65 years.
Grave 20, burial 1.
Inventory number 88/3.

FIG. 3 a, b, c.

Woman, older than 60 years.
Grave 21, burial 1.
Inventory number 88/4.

4

5

6

FIG. 4 a, b, c.

Woman, older than 60 years.
Grave 21, burial 2.
Inventory number 88/5.

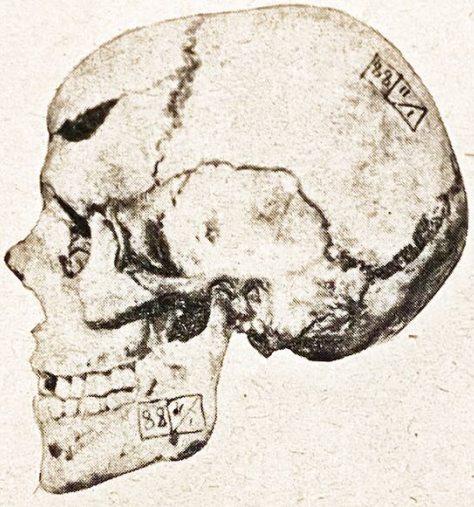
FIG. 5 a, b, c.

Man, 45—55 years.
Grave 22, burial 1.
Inventory number 88/6.

FIG. 6 a, b, c.

Woman, 17—25 years.
Grave 24, burial 3.
Inventory number 88/8.

7



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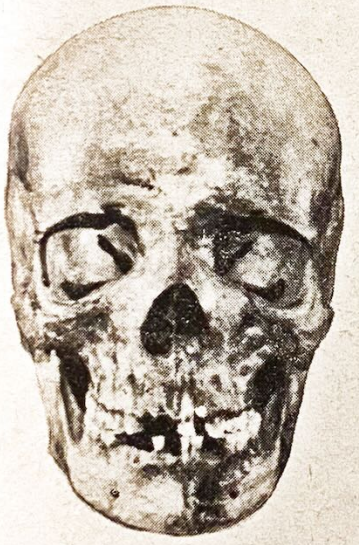
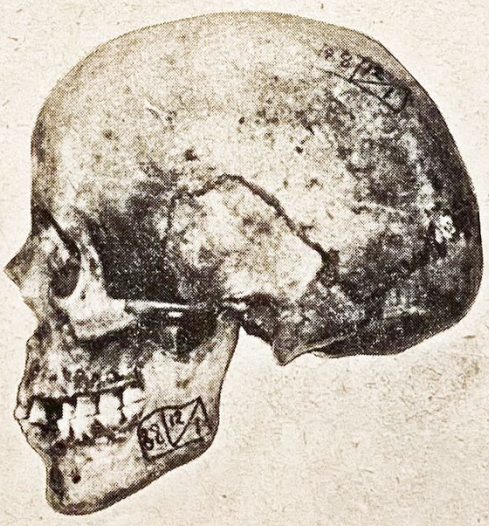




9

FIG. 7 a, b, c.

Woman, 50—60 years.
Grave 24, burial 6.
Inventory number 88/10.

FIG. 8 a, b, c.

Woman, 25—35 years.
Grave 26, burial 2.
Inventory number 11a.

FIG. 9 a, b, c.

Woman, 50—55 years.
Grave 28, burial 1.
Inventory number 88/12.

10

11

12

FIG. 10 a, b, c.

Man, 50–60 years.
Grave 29, burial 1.
Inventory number 88/13.

FIG. 11 a, b, c.

Woman, 40–50 years.
Grave 29, burial 2.
Inventory number 88/14.

FIG. 12 a, b, c.

Man, 50–60 years.
Grave 29, burial 3.
Inventory number 88/15.

FIG. 13 a, b, c.

Woman, 45—55 years.
Grave 29, burial 4.
Inventory number 88/16.

FIG. 14 a, b, c.

Man, 50—60 years.
Grave 30, burial 1.
Inventory number 88/18.

FIG. 15 a, b, c.

Man, 45—55 years.
Grave 31, burial 1.
Inventory number 88/19.

16

17

18

FIG. 16 a, b, c.

Man 55—60 years.
Grave 31, burial 2.
Inventory number 88/20.

FIG. 17 a, b, c.

Woman 55—65 years.
Grave 34, burial 1.
Inventory number 83/2.

FIG. 18 a, b, c.

Woman 55—60 years.
Grave 36, burial 1.
Inventory number 93/3.

FIG. 19 a, b, c.

Man 45—55 years.
Grave 36, burial 2.
Inventory number 93/4.

FIG. 20 a, b, c.

Man 45—55 years.
Grave 39, burial 1.
Inventory number 93/5.

FIG. 21 a, b, c.

Woman, 50—50 years.
Grave 40, burial 1.
Inventory number 93/6.

22

23

24

FIG. 22 a, b, c.

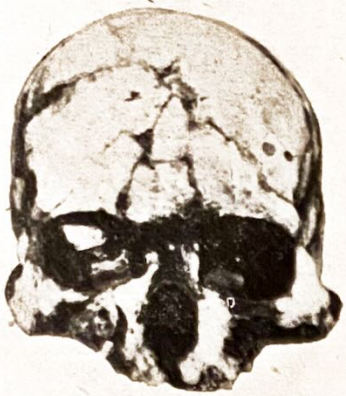
Man, 30—40 years.
Grave 41, burial 1.
Inventory number 93/7.

FIG. 23 a, b, c.

Man, 50—60 years.
Grave 42, burial 1.
Inventory number 93/8.

FIG. 24 a, b, c.

Man, older than 60 years.
Grave 49, burial 1.
Inventory number 93/11.



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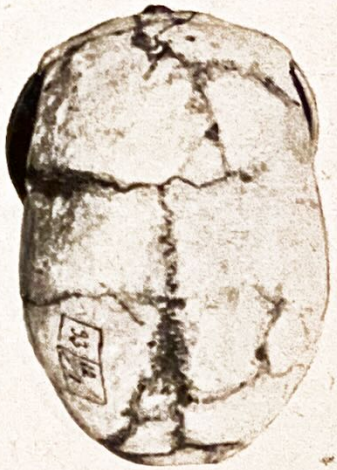


26

27

FIG. 25 a, b, c.

Woman, 45—55 years.
Grave 50, burial 1.
Inventory number 93/12.

FIG. 26 a, b, c.

Man, 35—45 years.
Grave 52, burial 1.
Inventory number 93/13.

FIG. 27 a, b, c.

Man, 50—60 years.
Grave 52A, burial 1.
Inventory number 93/14.

28

29

30

FIG. 28 a, b, c.

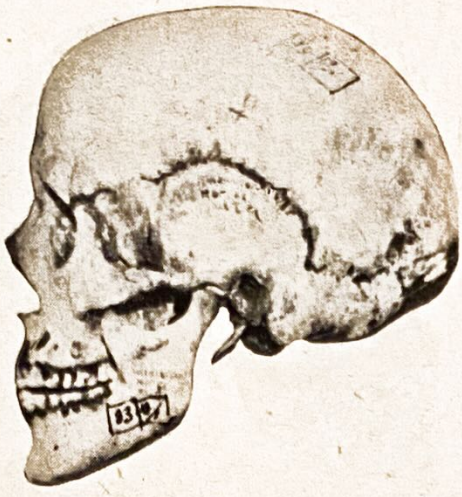
Man, 50—60 years.
Grave 54, burial 1.
Inventory number 93/15.

FIG. 29 a, b, c.

Woman, 25—30 years.
Grave 55, burial 1.
Inventory number 93/16.

FIG. 30 a, b, c.

Man, 45—55 years.
Grave 60, burial 1.
Inventory number 93/18.



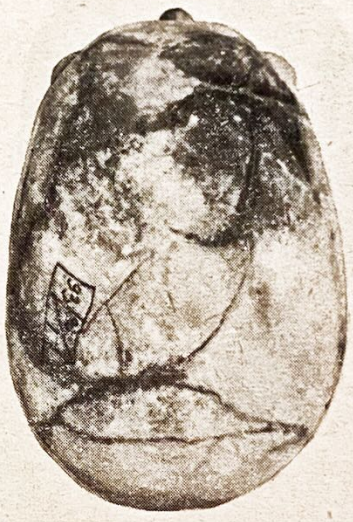


FIG. 31 a, b, c.

Female skull 35—45 years.
Grave 61, burial 2 (2a).
Inventory Nr. 93/19.

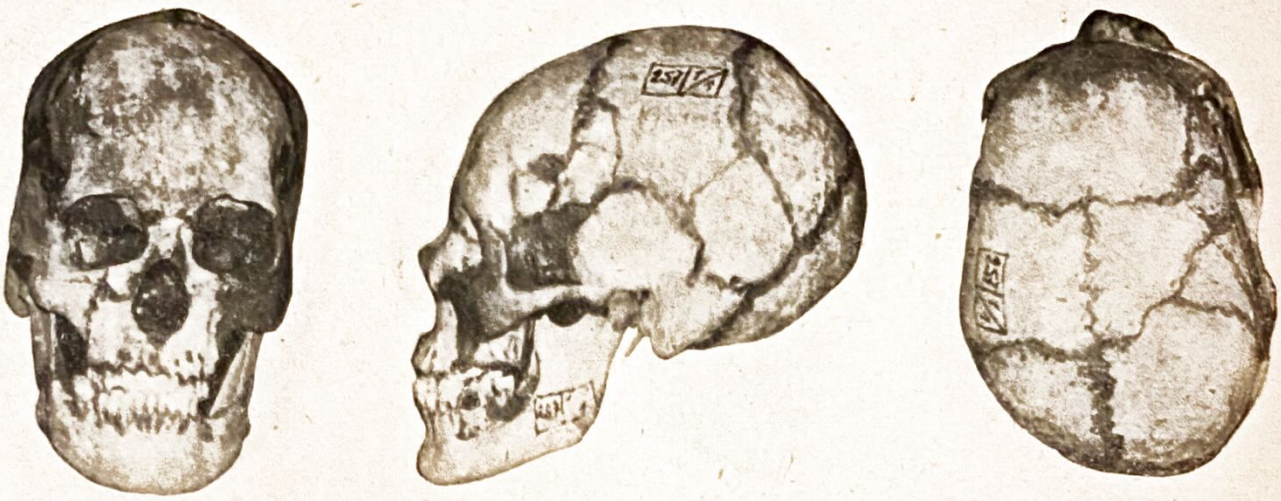
FIG. 32 a, b, c.

Male skull 50—60 years.
Grave 61, burial 3 (2b).
Inventory Nr. 93/20.

FIG. 33 a, b, c.

Female skull 18—22 years.
Grave 61, burial 4.
Inventory Nr. 93/21.

34



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36

FIG. 34 a, b, c.

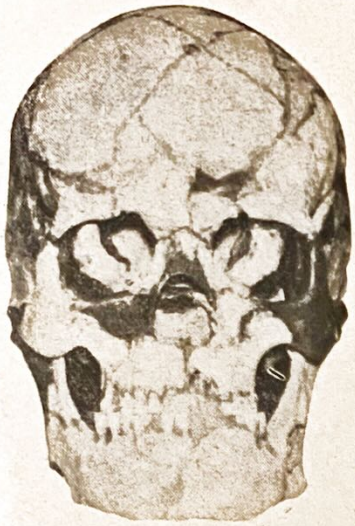
Female skull 40—50 years.
Grave 62, burial 1.
Inventory Nr. 257/1.

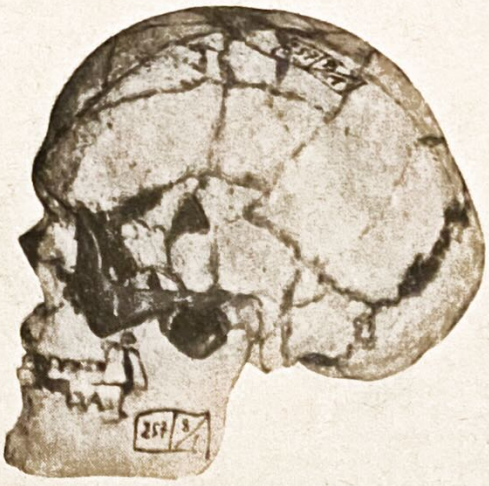
FIG. 35 a, b, c.

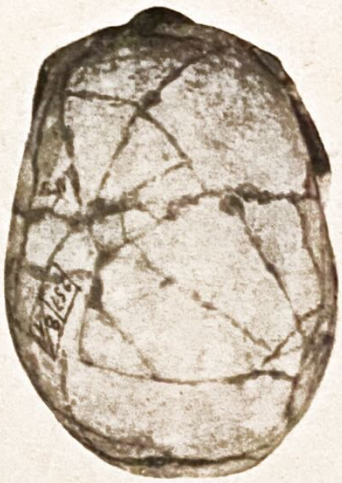
Male skull 30—35 years.
Grave 64, burial 1.
Inventory Nr. 257/2.

FIG. 36 a, b, c.

Male skull 35—45 years.
Grave 68, burial 1.
Inventory Nr. 257/7.







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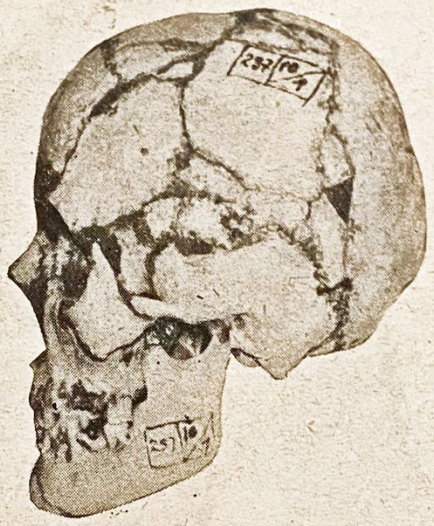

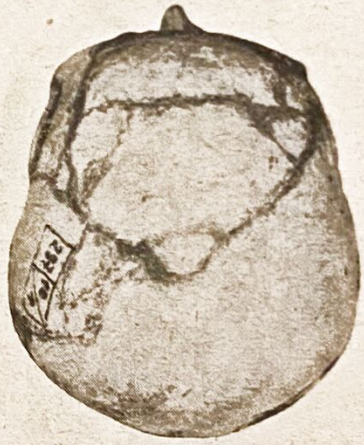

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39

FIG. 37 a, b, c.

Male skull 55—65 years.
Grave 68, burial 2.
Inventory Nr. 257/8.

FIG. 38 a, b, c.

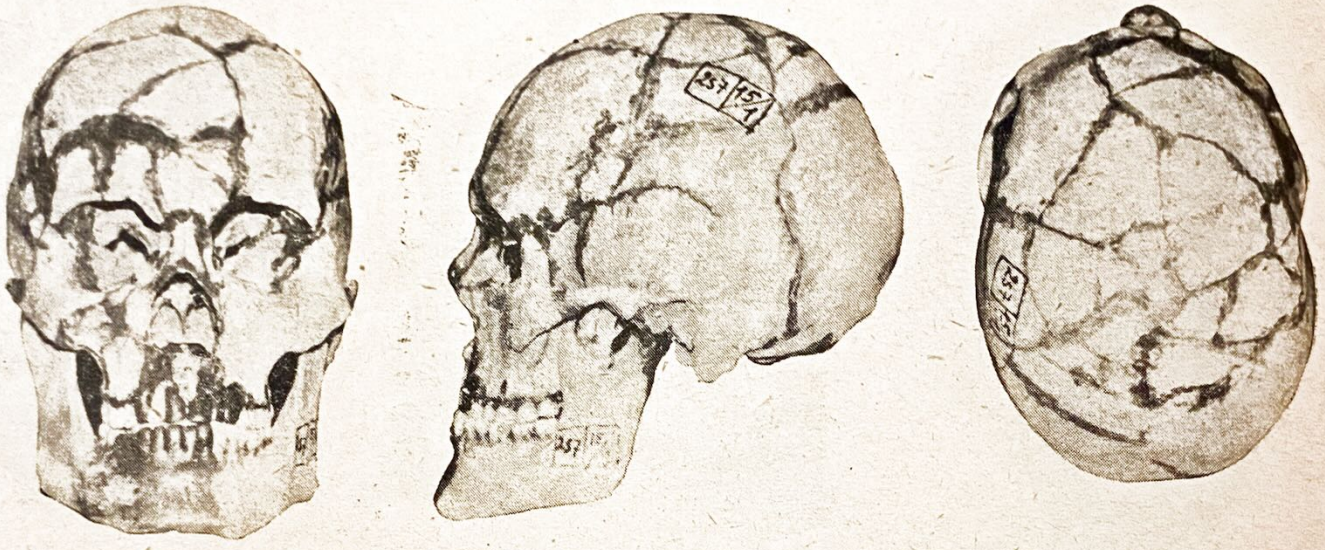
Female skull, more than 60 years.
Grave 71, burial 1.
Inventory Nr. 257/10.

FIG. 39 a, b, c.

Male skull 45—55 years.
Grave 73, burial 1.
Inventory Nr. 257/12.

40

41



42

FIG. 40 a, b, c.

Female skull, more than 60 years.
Grave 73, burial 2.
Inventory Nr. 257/13.

FIG. 41 a, b, c.

Male skull 40—50 years.
Grave 75, burial 1.
Inventory Nr. 257/15.

FIG. 42 a, b, c.

Female skull 18—25 years.
Grave 75, burial 3.
Inventory Nr. 257/17.