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## ANTHROPOLOGICAL ANALYSIS OF SKELETAL REMAINS FROM QERTASSI IN EGYPTIAN NUBIA

In the course of the second expedition to Nubia, performed in 1962 by the Czechoslovak Institute of Egyptology, Charles University, there were examined two Roman rock tombs besides the northwest and southeast corners of the Roman fort at Qertassi (Žába, 1967). Skeletal remains were handed over to the present author for investigation.

### THE NUMBER OF PERSONS AND THE IDENTIFICATION OF THEIR BONES

Only few bones of the postcranial skeleton were preserved, in a particularly fragmented condition. According to the preserved bones, it was found that three individuals were involved. Gracile bones, with traces of the ossification lines, evidently belonging to a young adult female (No. 3), could be clearly distinguished from the remains of the other two persons, whose bones were more robust, and without traces of the epiphyseal union. Strikingly robust and also large bones characterize individual No. 1, an unquestionably adult male; the smaller, less robust bones of individual No. 2 seem to indicate also a man. This judgement was confirmed by skull remains. From numerous skull fragments it was possible to reconstruct two calvae, morphologically corresponding to the postcranial skeletons of individuals Nos. 1 and 2, and the calvaria of individual No. 3.

#### INDIVIDUAL NO. 1

##### Skull

There was reconstructed from the fragments the incomplete brain case, both maxillae, of which the left is connected to its zygomatic bone, and the mandible, without the right ramus ascendens (Fig. 1).

### Descriptive characters

The bones are on the whole robust and of greater size.

#### *Norma frontalis*

The face was probably high and wide (the height of the upper face estimated as 73 mm). The forehead is of medium height and width, without metopism, with medium prominent unfused tubera frontalia, and with a light carina. The left orbit is of a rounded-off square shape, with slightly slanting axis, having a medium thick, rounded upper edge. The left zygomatic bone is relatively small, medium prominent. The upper jaw includes a deep fossa canina. The processus marginalis is not preserved. The piriform aperture was probably high (about 53 mm) and narrow (about 23 mm), leptorrhin. The lower edge of the anthropin form of aperture is bordered by a low crest.

#### *Norma lateralis*

The glabella is bulky (Broca 4 in Martin, 1928), also the supraorbital arches (Eickstedt 4-5). The nasal bones have not been preserved, the nasal spine was according to the remains of its edge probably large. There is no nasal prognathism, the alveolar prognathism being probably of a medium degree (c. 70°). The forehead rises slightly obliquely, from the boundary of the first and second thirds it curves more sharply, and it continues in a smooth, low arch, which rises gently to the vertex, lying up to 50 mm beyond the bregma. Then follows a sharper curving, followed by a less bent, regular arch across the lambda up to the protruding inion (protuberantia occipitalis, externa).

Broca 3 in Martin, 1928). Both the lambda flattening and the protruding occiput are not formed. The pterion has not been preserved. The temporal relief is slight. The supramastoideal crest is medium, the left mastoid process is long, voluminous, slightly pointed and strongly flattened by deep incisura mastoidea.

#### *Norma verticalis*

The skull is long, rather broad, mesocranic, of ovoid outline (Sergi in Martin, 1928). The tubera parietalia are of medium size on the left, somewhat greater on the right; the skull is cryptozygous. All sutures are open.

#### *Norma occipitalis*

The outline is house-shaped and the side walls gently converge in downward direction. The skull vault is medium high and shows a sagittal crest. The occipital relief is very strong particularly the large rounded lineae nuchales terminales joined to the protuberance.

#### *Norma basalis*

The maxilla is long (c. 54 mm) and broad (c. 63 mm), brachyuranic. The dental arch forms an ellipse, the upper palate is medium arched. In the asterions are small wormian bones. The synchondrosis sphenooipitalis has not been preserved.

#### *Mandible*

It is robust and has medium marked inner and outer muscular relief with slightly inverted angles. The symphyseal height is high (35 mm). Though the chin has been broken out, it is possible to say, that it was well-developed in the protuberance as well as in the rounded mental tubercles. Dental arch forms a medium broad parabola. The alveolar prognathism is medium. The ascending branch of the mandible is high and rather narrow.

#### *Dentition*

Both jaws have all permanent teeth present but the crowns were secondarily broken off in such a way that it has not been possible to determine the degree of abrasion. The alveolar rim displays no pathological changes.

#### Metric characters

maximum length of the skull	185 mm
maximum breadth of the skull	141 mm
cranial index	76,2
horizontal circumference	528 mm
thickness of the tuber frontale dx.	7 mm
thickness of the tuber frontale sin.	7 mm
thickness of the tuber parietale dx.	8 mm
thickness of the tuber parietale sin.	9 mm
maxillar height (pr-ns)	21 mm
bigonial breadth	97 mm

height of the mandibular body at the level of the left foramen mentale	35 mm
thickness of the mandibular body ibidem	13 mm
index of the mandibular body thickness	37,2 mm
height of the ascending ramus	58 mm
minimum breadth of the ascending ramus	33 mm
ascending ramus index	56,9
mandibular (gonial) angle	122°

#### Postcranial skeleton

There have been preserved fragments of both humeri, the ulna, the left femur, small fragments of the tibia and fibula, the atlas and the epistropheus. All bones are exceptionally robust and have strong muscular relief. There are no remains of epiphyseal closure lines.

#### Descriptive characters

Out of the descriptive characters, we can see that the humerus has not the perforated fossa olecrani, its diaphysis and especially distal epiphysis are very voluminous; the tuberositas deltoidea is, however, of only medium size. The linea interossea of the ulna is elongated into a wide bone ridge (max. 8 mm). The femora have very large heads (circumference 160 to 170 mm) and massy condyles. The linea poplitea of the tibia forms a high crest, the fibula is channelled with shallow grooves.

#### Metric characters

Humerus: minimum circumference of the diaphysis—	
— left	69 mm
— right	70 mm
Atlas: maximum transversal diameter	85 mm

#### Evaluation of finds

##### Sex

All diagnostically important characters point to male sex.

##### Age

On the postcranial skeleton there are no signs of epiphyseal closure; at the same time all sutures on the brain case are open. The dentition is complete, but secondary breaking off of the crowns makes it impossible to determine the degree of abrasion. We can assume that we are concerned with an adult individual of 25 to 35 years (adultus).

#### Physical type

The thickness of the cranial bones is nearly on the upper limit of the range given by Olivier (1960: 123). The circumference of the humerus shaft and the greatest transversal diameter of the atlas are greater than the range  $\bar{x} + 2s$  of the male series from the X-Group burials in Wadi Qitna, 25 km south of Qertassi (Strouhal, 1966, 1971). The



FIG. 1A



FIG. 1B



FIG. 1C



FIG. 1D

FIG. 1

Skull and lower jaw of the individual No. 1, man, 25–35 years (photo Zemina);

A) Norma frontalis, B) Norma lateralis sinistra, C) Norma verticalis, D) Lower jaw.



FIG. 2A

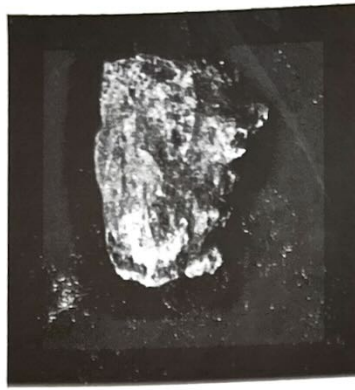


FIG. 2B



FIG. 2B

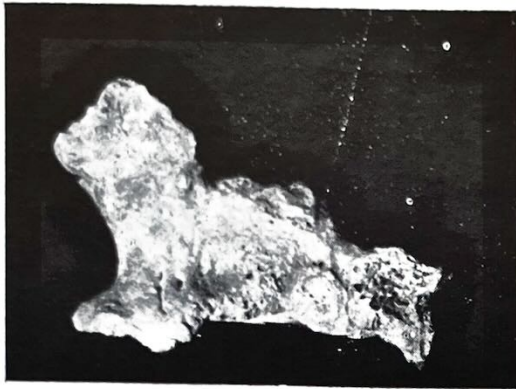


FIG. 2C

FIG. 2 *Individual No. 2, man, 25-25 years; A) Skull in norma frontalis (photo Zemina), B) Body of the two upper thoracic vertebrae, connected in a block by an osteophytic bridge, in norma frontalis and lateralis dextra (photo Strouhal), C) Body of one of the lower thoracic vertebrae with massive osteophytic excrescences, in norma frontalis and lateralis dextra (photo Strouhal).*



FIG. 2C

FIG. 3A



FIG. 3B



FIG. 3 *The skull and lower jaw of the individual No. 3, woman, 18-20 years (photo Zemina); A) Norma frontalis, B) Norma lateralis sinistra.*

horizontal circumference of the skull lies between  $\bar{x} + s$  and  $\bar{x} + 2s$  of that series. Most of the other absolute measurements are high. All bones are exceptionally robust with strong muscular attachments. From this it can be judged, that this individual had a rather high stature with robust skeleton and very strong muscles, i.e. he was of an obviously athletic type.

### Anthropological type

The brain case is rather broad, the cranial index mesocranic. The index of the mandibular branch is, with the regard to its great height and small breadth, low; in comparison with the male series from Wadi Qitna, it approaches the values of  $\bar{x} - 2s$ . Most of the descriptive morphological characters (massive glabella, forehead shape, development of the chin, the deep fossa canina, the high, narrow nose, the shape of the lower edge of the piriform aperture, the shape of ascending branch of the mandible) point to an Europoid (Caucasoid) type. Only the medium large alveolar prognathism could suggest a slight influence of the Negroid component which appeared in Nubia with various intensity starting from the C-group period, provided we are not concerned simply with extreme values of the normal variation of the Europoid type.

INDIVIDUAL NO. 2

### Skull

There was reconstructed from the fragments an incomplete calva, of which two thirds of the left parietal bone, the rear edge of the right parietal bone, and the whole occipital bone were missing.

### Descriptive characters

As a whole, the calva is medium robust.

#### *Norma frontalis* (Fig. 2 A)

The forehead is low and very broad, obviously as the result of the open metopic suture. The tubera frontalia are slightly developed and do not mutually coalesce. The orbital edge is medium strong, rounded on the right, slightly sharp on the left side.

#### *Norma lateralis*

The glabella is weak (Broca 2), also the supra-orbital arches (Eickstedt 2). The forehead is shortly vertical, from the boundary of the first and second quarters it curves sharply, then runs in a flatter curve to the bregma, from where it has an almost horizontal course up to the obelion. The next part is missing. The temporal relief is weak.

### *Norma verticalis*

The outline was probably elipsoid, the tubera parietalia are slight. The preserved sutures (coronal and sagittal) are open.

### Metric characters

minimum frontal breadth . . . . .	104 mm
maximum frontal breadth . . . . .	133 mm
transversal frontal index . . . . .	78,2
thickness of the tuber frontale dx. . . . .	6 mm
thickness of the tuber frontale sin. . . . .	6 mm
thickness of the tuber parietale dx. . . . .	7 mm
thickness of the tuber parietale sin. . . . .	7 mm

### Postcranial skeleton

There were preserved fragments of the left humerus, left radius, right ulna, both tibiae and left fibula, further the atlas and three thoracic vertebrae.

### Descriptive characters

All bones are very robust and have strong muscular relief. Nowhere were preserved traces of epiphyseal union. The linea interossea radii is rather enlarged, the fibula is channelled with deep grooves.

### Pathological findings

On the right ulna there is present, distally from the articular surface for the head of the radius, a prominent exostosis, running radially, with a length of 7 mm.

On the left tibia there is a grooved linea poplitea, bordered by osteophytic excrescences.

Bodies of two upper thoracic vertebrae were grown together on the right anterolateral side (fig. 2B).

On another thoracic vertebra from the lower part of the thoracic spine, there project from both the upper and the lower anterior edge of the right half of the body, massive osteophytic bridges, which apparently originally joined the adjacent vertebrae. The upper bridge runs obliquely anterolaterally to a distance of 12 mm (then it is broken) and it has a transversal breadth of 25 mm. The lower bridge points obliquely downwards to a distance of 14 mm, it is 22 mm wide and maximally 11 mm thick. Both bridges are joined together on the anterolateral side of the vertebral body by a bone mass, having thickness of 5 mm. The overall shape of two bone bridges together with the connecting mass is that of a bobbin. Their surface is smooth (fig. 2C).

### Metric characters

Radius: minimum circumference of the left diaphysis . . . . .	41 mm
Fibula: minimum circumference of the left diaphysis . . . . .	32 mm
Atlas: maximum transversal diameter . . . . .	77 mm

## Evaluation of finds

### Sex

Preserved diagnostic characters on the skull are few only and not typical. The great robusticity of the postcranial skeleton and the development of the muscular relief point to male sex.

### Age

We can judge only from the absence of epiphyseal closure on the postcranial skeleton and from the preserved sutures on the cranial vault which are open. They point to an adult individual of 25–35 years.

### Physical type

The thickness of the skull bones is somewhat above the average given by Olivier (1960: 123). The minimum circumference of the radius shaft and the maximum transversal diameter of the atlas lie between  $\bar{x}$  and  $\bar{x} + s$  of the male series from Wadi Qitna (Strouhal, 1966, 1971); the minimum circumference of the fibula shaft lies between  $\bar{x}$  and  $\bar{x} - s$  of that series. We may assume a person of medium to large height with rather strong bones and muscles.

### Anthropological type

The transversal frontal index is low expressing thus the rounded shape of forehead. Out of the characters distinguishing Europoid and Negroid component only the forehead was preserved, where, however, the situation was complicated by the persistence of the metopic suture. The resulting forehead shape none the less corresponds rather to a variation of the Europoid than of a Negroid type.

### Pathology

The individual was afflicted by serious spondyloitic disease, with the production of massive osteophytes.

INDIVIDUAL NO. 3

### Skull

The incomplete calvaria was reconstructed from fragments, from which were missing the anterior two thirds of the body of the sphenoid bone, the right ala magna sphenoidis, the dorsal edge of the foramen occipitale magnum, and the lower third of the occipital squama. The body of the occipital bone, together with the anterior edge of the foramen occipitale magnum, and the rear third of the sphenoid bone, have been preserved without anatomical connection with the remaining calvaria. Both maxillae joined with the left zygomatic bone and

the mandible, from which was broken off a wedge-shaped piece of the process between the right second and the left first incisors (fig. 3).

### Descriptive characters

The calvaria and the mandible are gracile and small.

#### *Norma frontalis*

The face was generally small, low (upper facial height approx. 66 mm), and narrow. The low, narrow forehead, without metopism, has weak tubera frontalia, which do not merge, and a slight carina. The upper edge of the orbits is medium thick, slightly rounded. The cheekbone is small, gracile, non-prominent. The maxilla has a deep fossa canina. The apertura piriformis was probably high (c. 53 mm), and narrow (23 mm), leptorrhine. Its lower edge of the anthropine form has a slight crest.

#### *Norma lateralis*

The glabella and the nasofrontal bridge have not been preserved. The superciliar arches are weak (Eickstedt 1). The nasal spine is small (Broca in Martin, 1928). The nasal prognathism was not present, the alveolar is of a lesser degree (about 75–80°). The forehead rises slightly obliquely, to the limit of the first and second thirds, than it slopes more back, continues in a flat curve to the bregma where its course is almost horizontal. About 4 cm beyond the bregma begins a regular arch across the lambda to the inion, so that the lambda flattening as well as the prominence of the occipital squama are not formed. The protuberantia occipitalis externa is not present (Broca 0). The temporal relief is slight, the pterion (on the right) has the form of a narrow H (type b according to Eickstedt). The processus mastoideus, well preserved on the left side is short, pointed, slightly flattened by a medium deep incisura. The supra-mastoid crest is almost invisible. The processus marginalis Sömmeringi is slightly indicated.

#### *Norma verticalis*

The skull is short, narrow, mesoeranic, cryptozygous. The tubera parietalia are clearly visible. All sutures of the cranial vault are open.

#### *Norma occipitalis*

The outline is house-shaped, with a low, regularly curved roof. The occipital relief is slightly marked. In the lambdoid suture there is a large number of wormian bones.

#### *Norma basalis*

The maxilla is short and medium large brachyuranic. The upper dental row forms a romanesque

arch. The palate is medium deep. The synchondrosis sphenoccipitalis is closed.

### Mandible

The lower jaw is gracile with weak interior and exterior muscle relief. The symphyseal height is small. The chin, which is strongly prominent, forms a single round pointed protuberance without mental tubercles. The dental row has the shape of a small parabolic arch. The alveolar prognathism is slight.

### Dentition

The teeth were completely erupted (including  $M_3$ ). There have been preserved in situ only the two lower  $M_2$  and  $M_3$ , the lower right  $P_2$  and the upper left  $M_1$ . There is strikingly little abrasion of all teeth being only of the first degree (Martin, 1928), i.e. touching only the dental enamel. Neither the alveolar process nor the remaining dental crowns display any pathological changes.

### Metric characters

maximum length of the skull . . . . .	170 mm
maximum breadth of the skull . . . . .	134 mm
cranial index . . . . .	78,8
minimum frontal breadth . . . . .	95 mm
maximum frontal breadth . . . . .	112 mm
transverse frontal index . . . . .	84,8
frontoparietal index . . . . .	70,9
biauricular breadth . . . . .	118 mm
auriculoparietal index $\left( = \frac{\text{bigonial breadth}}{\text{bicondylar breadth}} \times 100 \right)$	88,1
horizontal circumference . . . . .	490 mm
transverse curve . . . . .	297 mm
thickness of the tuber frontale dx. . . . .	6 mm
thickness of the tuber frontale sin. . . . .	6 mm
thickness of the tuber parietale dx. . . . .	6 mm
thickness of the tuber parietale sin. . . . .	6 mm
maxillar height (pr-n) . . . . .	13 mm
nasal breadth . . . . .	23 mm
maxilloalveolar length . . . . .	48 mm
maxilloalveolar breadth . . . . .	59 mm
maxilloalveolar index . . . . .	122,9
mandibular length . . . . .	100 mm
bicondylar breadth . . . . .	104 mm
mandibular index . . . . .	96,2
bigonial breadth . . . . .	86 mm
bigoniobicondylar index $\left( = \frac{\text{bigonial breadth}}{\text{bicondylar breadth}} \times 100 \right)$	82,7
symphyseal height . . . . .	29 mm
height of the mandibular body at the level of the right foramen mentale . . . . .	27 mm
thickness of the mandibular body ibidem . . . . .	11 mm
index of the mandibular body thickness . . . . .	40,7
height of the ascending ramus . . . . .	50 mm
minimum breadth of the ascending ramus . . . . .	28 mm
ascending ramus index . . . . .	56,0
mandibular (gonial) angle . . . . .	126°

### Postcranial skeleton

There have been preserved remains of the right scapula, the right clavicle, both humeri, the left ulna, both femora, the left fibula, the sacrum ( $S_1$ ), the right hip-bone, further the epistropheus, one thoracic and one lumbar vertebrae, both tali and the right calcaneus.

### Descriptive characters

All bones are gracile, and have weakly to medium developed muscular relief. There are on the lower limbs clear signs of the epiphyseal slits (on the anterior side of both femoral heads, over the distal anterior surface of the fibula, in front of the tuber of the calcaneus). The crista ilica, which is medially smoothly fused with the ala of the hip-bone, is still separated on the lateral side by a deep slit. The apophyses of the vertebral bodies still have marked sutures. Among the morphological characteristics, the short, gracile processus coracoides is interesting, as also the deep arteria subclavia channel on the right clavicle, the absence of perforation of both humeri, the homobasic shape of the sacrum, the small and open ala osis ilii with exceptionally thin crista ilica, small facies auricularis and small acetabulum.

### Metric characters

Clavícula: circumference of the right diaphysis in the middle . . . . .	30 mm
Humerus: circumference of the left caput . . . . .	129 mm
Radius: minimum circumference of the left diaphysis . . . . .	33 mm
Femur: circumference of the right caput . . . . .	126 mm
Epistropheus: anterior body height . . . . .	38 mm
Vertebra $L_2$ : anterior body height . . . . .	24 mm
Talus: length, left . . . . .	53 mm
length, right . . . . .	53 mm
breadth, right . . . . .	42 mm
height, right . . . . .	27 mm
Calcaneus: maximum length, right . . . . .	72 mm
minimum breadth, right . . . . .	28 mm
minimum height, right . . . . .	31 mm

### Evaluation of finds

#### Sex

All diagnostically significant indications unequivocally establish female sex.

#### Age

The synchondrosis sphenoccipitalis was completely closed, and all the permanent teeth were erupted. All cranial sutures are open. The preserved teeth display negligible wear. On the postcranial skeleton, traces of epiphyseal closure and of the fusion of the secondary apophyses have not completely disappeared. We are dealing therefore with a young adult of 18–20 years.

### Physical type

The thickness of the skull bones approaches the average values of Olivier (1960: 123). The circumference of the cranium and of the shaft of both clavícula and radius lie below the average for the female series from Wadi Qitna (Strouhal 1966, 1970), the circumference of the humeral head is a little greater than  $\bar{x} + s$ , and that of the femoral head smaller than  $\bar{x}$  of the same series. The abso-

lute dimensions of the epistropheus and talus are conspicuously greater than the Wadi Qitna series mean, against which the calcaneus has (with the exception of the smallest breadth) smaller values. The absolute length of the cranium and the maxilloalveolar length are smaller than  $\bar{x} - 2s$  of the Wadi Qitna female series. All bones are gracile and the muscle relief is marked weakly (on the cranium) or weakly to medium (on the postcranial skeleton). This was, therefore, no doubt a person of smaller stature, with exceptionally weak bones and musculature.

### Anthropological type

The brain-case is, in view of its shortness, relatively broad, with a mesocranic index. The forehead is medium broad, (according to the transversal frontal index), in relation to the breadth of the calva, however, it is eurytopic (Martin 1928: 652) or even megasemic (Schwalbe *ibid.*). The auriculoparietal index of the cranium is negligibly greater than the mean of the female series from Wadi Qitna. The maxilloalveolar index with its brachyuranic value exceeds  $\bar{x} + 3s$  of that series. The mandibular index shows, on the other hand, a relatively longer lower jaw. The index of the mandibular ascending branch has a low value, lying between  $\bar{x} - 2s$  and  $\bar{x} - 3s$  of the Wadi Qitna series.

For distinguishing pertinence to Europoid or Negroid component of the Nubian population, the maxilloalveolar index and the mandibular ascending ramus index are important; they clearly show Europoid range. It is also possible to add to this the high, narrow nasal opening, the shape of the lower edge of the piriform aperture, the shape of the forehead, the morphology of the cheekbone, and the development of the chin. The slight alveolar prognathism is completely consistent with the variation of the Europoid Mediterranean type, where it is especially frequent in women.

It is necessary to remark upon the interesting conformity of morphological features of our individuals 1 and 3, the same in metric characters (mesocrany, leptorrhiny, mandibular ascending ramus index), as in some descriptive characters (the similar profile line of the lateral norm). In view of the incompleteness of the material, it is possible to express only a hypothesis regarding the relationship of these two individuals.

### DISCUSSION

Three individuals were buried in the two Roman age tombs at Qertassi, of whom two were undoubtedly, the third probably, of an Europoid type. Qertassi is situated in the northern part of Lower Nubia, which was known in Ptolemaic and Roman

times as Dodecaschoinos, extending as far as the border of present-day Maharraqa. This was a border buffer-region, protecting Egypt from the south. There remained in Qertassi until the flood by the Nasser lake a fortress, forming part of the defensive system of this region. It is possible to assume that until the transfer of the Roman frontier into the surroundings of Aswan in 297 A.D., this area was more or less closed against a massive influx of inhabitants from the more southern regions of Nubia, whence it was possible to expect the penetration of wave upon wave of Negroids, as has been shown by the course of the previous development of the Nubian population.

The anthropological picture of the Roman Dodecaschoinos has so far been confined to the outlines of the results of the first archeological research in this area in 1907–1911 (Derry, 1909). On some burial grounds were found persons of Egyptian, i.e. Europoid type, whose bodies were usually mummified. Other burial grounds contained predominantly individuals of the so-called Nubian i.e. slightly Negroid type, known from the time of the C-Group. To a small extent there appeared in some localities distinctly Negroid individuals, the majority men, which Smith (1910) considered merchants from the Upper Nile area. Recent Austrian excavations in Sayala have brought further material, on which the preliminary data of W. Ehgartner (1965) are available. According to this there was "a distinct Negro influence", along with this "there were, however, also found gracile Mediterranean individuals", and others reminiscent of Smith's Europoid Giza type. From all this data it follows that the degree of Negroidisation of Dodecaschois in Roman times had nowhere reached the intensity achieved after the removal of the border at Maharraqa. Its result was, starting from the IVth century, an influx of inhabitants with a preponderance of Negroid elements, as was made clear by the results of the study of X-Group material from Wadi Qitna (Strouhal 1966, 1971) and from Kalabsha. Our minor contribution from Qertassi is then completely in line with this conclusion.

### SUMMARY

In two tombs beside the Roman fort at Qertassi, there were found scattered and considerably fragmented bone remains. There were three individuals concerned, two men and one woman. Both men died in the age between 25 and 35, the woman at the age of 18–20. Male 1 and female 3 show some conformity of morphological features. Both also belong to the Europoid race. Male 2, whose remains are less well preserved, was probably also Europoid. This find is discussed in relation to other data concerning the anthropological character of the population of Roman Dodecaschoinos.



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