

## SKELETON OF A MEDIEVAL DWARF FROM LUDOŠ-CSURGÓ (YUGOSLAVIA)

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In 1964, at the findspot of Ludoš-Csurgó, near Subotica, a skeleton was brought to light originating from an archeological age not determined more exactly but, according to the verbal information of the Archeologist László Szekeres, probably back to the 15th century.

The find consist of a well-preserved cranium and skeletal bones. It is primarily according to the determination made with the morphological method on the basis of the characteristics of the skull that the average age of death can be put at 67, and its sex, on the basis of the + 1,5 sexualization coefficient (Farkas—Lengyel—Marcsik, 1972) be determined as male.

### THE SKULL

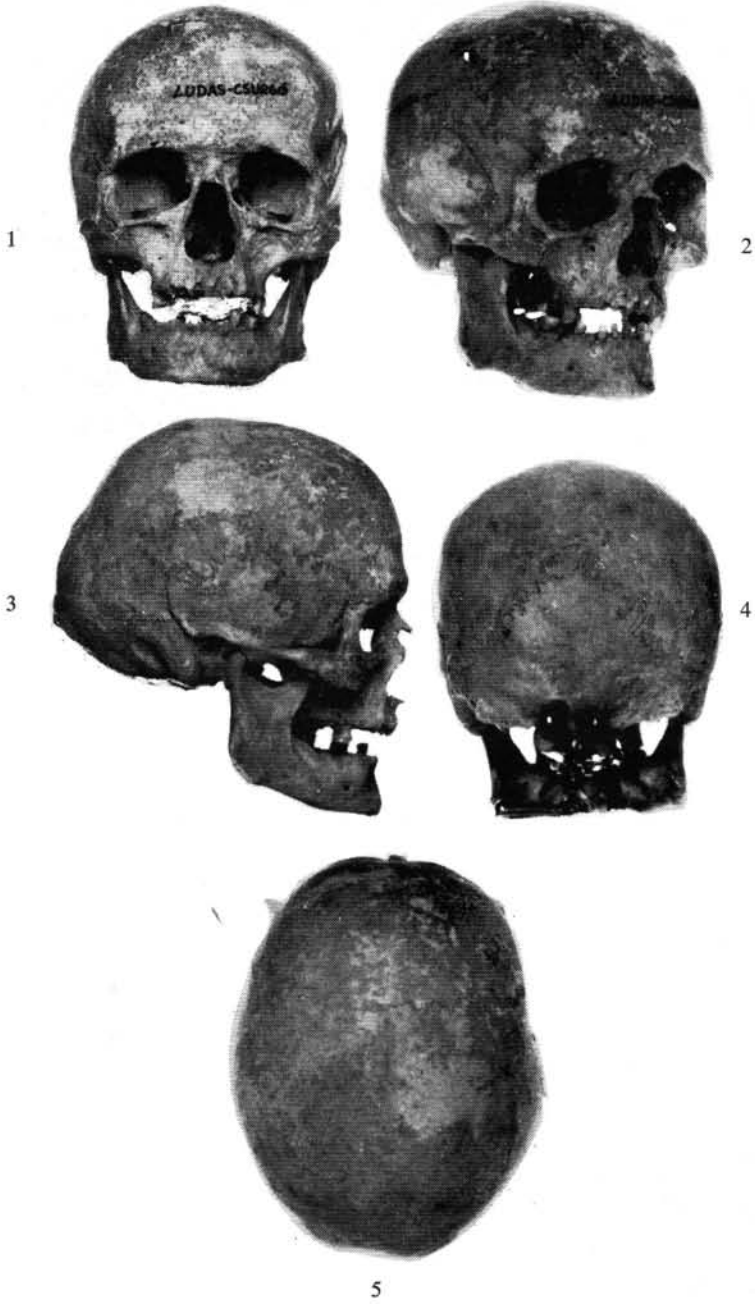
The skull was measured with the aid of classic anthropological methods (Martin—Saller, 1957), and then the absolute measurements were assessed on the basis of the Hug classification. As a result of this the measurements of major importance of the find are the following:

<i>No of measurements</i>	<i>Measurement</i>	<i>No of measurements</i>	<i>Measurement</i>	<i>No of measurements</i>	<i>Measurement</i>	<i>Indices</i>
1.	181	40.	98	62.	46	17:1 74,0
1c.	45	45.	136	63.	36	9:8 68,0
5.	102	46.	94	65.	121	47:45 78,7
8.	147	47.	107	66.	104	48:45 50,0
9.	100	48.	68	69.	31	52:51 80,0
17.	134	51.	40	70.	67	54:55 52,0
20.	117	52.	32	71.	34	63:62 78,3
32. 1a.	51°	54.	26	72.	83°	8:1 81,2
38.	1485	55.	50			

Among the morphological characteristics the circular line of the skull is in norma verticalis pentagonal, the glabella of the 3rd degree, the spina nasalis anterior of the fifth degree, the protuberantia occipitalis externa of the 4th degree, the alveolar prognathism of the first degree (vertical alveolar part), the fossa canina of fifth degree (very deep).

The skull, on the basis of its absolute, measurements, according to Hug, is of medium length, width and height, aristenkephalic, the forehead is of medium width,

Table I.



Pictures 1—5.

the zygomatic arch of medium width, and the entire face and upper face low and mesognath.

On the basis of its indices it is brachycraneous, orthocraneous, tapeinocraneous, metriometopous, hypereuryprosopic, mesenous, mesoconch, chamaerrhinous, leptostaphylinous.

From the taxonomical point of view the find (Pictures 1—5) can be fully identified with the cromagnoid-B race characteristics (Lipták, 1972).

On the lateral radiograms of the skull (Picture 6) the corticalis of the fornix is of normal thickness showing a sharp outline. In the temporal and perietal regions well-pronounced deep arterial sulci can be seen (sulci arteriosi ramorum arteriae meningae mediae). The base of the skull, measured along the largest skull length, is disproportionately short (Keith, 1913). The sella turcica is shallow, its opening wide, its size normal. The ridge of the nose is deeply withdrawn, above it the arcus superciliaris is bulding out. The form of the face skull is regular, without any essential pathological deformations.



Picture 6.

The top plan radiogram of the lower jaw-bone indicates a formally regular mandibula, without pathological deformations.

Among the anatomical variations on the skull, in the sutura lambdoidea ossa Wormiana, and in its mandibula torus mandibularis can be observed.

It is the phenomena noticeable on the other parts of the skeleton, without the skull, that make the find examined interesting.

#### THE BONES OF THE TRUNK

Among the bones of the trunk there have remainde one cervcial, one thoracal and 4 lumbar *vertebrae*. The vertical surface of the body of the lumbar *vertebrae* is convex, its basal surface concave. The edges are rounded off, and the sides of the corpus lateralis are strongly drawn in a medial direction. Consequently the vertical side part of the vertebral body is concave alls round.

The top plan radiogram made of the II. and V. lumbar *vertebrae*, according to which vertebral bodies of regular form and size are concerned, shows symmetrical apophysis and dorsal canal.

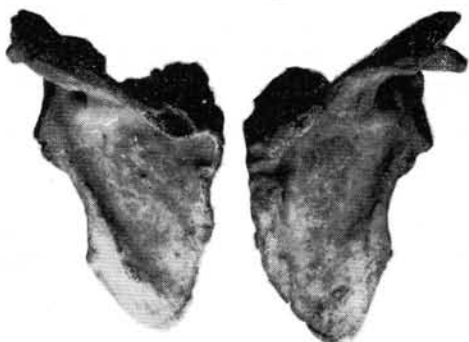
From the size of the 5 *ribs* belonging to the find it is possible to conclude that it must have been an individual with a powerful chest.



Picture 7.

The two *clavicles* show a comparatively normal development. The graetest length of both is 137 mm each, the medium perimeter is 38 (right=r) and 40 (left=l) mm. The sturdiness index is 27,7 (r) and 29,2 (l), in both cases in indicates a robust clavicle. On the basis of the top plan radiogram (Picture 7) the radius of their medial curvature, concave towards the front, is short, without any essential pathological deformations.

Table II.



8



9

Pictures 8—9.

The *scapula* is small. Measurements: height 128 (r), 133 (l), width 83 (r), 81 (l). The length and width indicator is 64,8 (r) — mesomorphous — and 60,9 (l) — dolichomorphous. On the ventral side of both scapulae strong exostoses can be observed (Picture 8). Consequently the *margines axillarum*, in particular their first third extending towards the *angulus inferior* show a considerable thickening.

The length of the *sacrum* is 139, its width 110 mm, and its length and width indicator points at a narrow sacrum. On its sagittal radiogram (Picture 9) the cartilaginous border lines dividing the several sacral segments are still recognizable, but their ossification has already started. In the segments I., IV. and V. the *arci* are not closed, they are open the *canalis vertebralis* in a dorsal direction (*spina bifida multiplex*).

At the sacral segment surface of the *ilium*, at the *foramen obturatorium* exostoses of different development and size can be found beside the *crista iliaca* (Picture 10). In the thickened part the bone substance has become thinner, the bone appears to be light. Measurements of the pelvis: *conjugata vera* 90, transversal diameter 105 mm, *angulus pubis* 67°, indicator of the pelvic inlet 85,7 that is a platypellic pelvis is concerned. The radiograms of the right and left side of the *os coxae* (Picture 9) indicates, from the formal point of view a normal bone showing no essential pathological deformations.

#### THE BONES OF THE EXTREMITIES

##### a) *Ossa extremitatis superioris*

Both *humeri* are extremely short. The greatest length 243 (r) and 251 (l) mm, smallest perimeter 70 (r) and 69 (l), entire length 243 (r) and 249 (l), height of *caput humeri* 49 (r, l), width of *caput humeri* 44 (r) and 41 (l). Sturdiness indicator 28,8 (r) and 27,7 (l), corresponds to a greatly robust humerus in both cases.

The sagittal radiogram of the *humeri* (Picture 11) also reveals conspicuously short (Bateman, 1954) and massive largely deformed *humeri* (Brailsford, 1953). In the proximal third of both the medullar cavity is of an enlarged, cystic nature (Ders, 1964; Smith—Graham—Smith, 1955; Codman, 1931), the *corticalis* shows attenuation particularly along the medial contours, while it can easily be followed laterally, the trabecular structure is irregular. The distal third of the *humeri* is formally normal, showing no essential pathological deformations (Picture 12). On the left humerus, at the border of the upper and medium thirds of the *diaphysis*, on the lateral contour a 7 mm long thorn-like exostosis pointing into a distal direction can be seen.

The clavicular humerus indicator value is 56,4 (r) and 55,0 (l), that is in both cases the *clavicula* is comparatively long.

The greatest length of the right *radius* is 164, its parallel length 161 mm, the brachyal indicator is 67,5 that is it indicates a comparatively short forearm. On the basis of its radiogram in a dorsovolaris direction (Picture 7), too, the *radius* is short and highly deformed. The morphological formations of its proximal epiphysis are recognizable, its *diaphysis* is short, straight, its distal epiphysis strongly deformed; on its interosseal surface it is uneven, the surface of the radio-ulnar diathrosis is uneven, its area is disproportionately enlarged.

The *ulna* is also in both cases short. Greatest length 171 (r) and 160 (l) mm, functional length 135 (r) and 116 (l) mm. On the radiogram in a dorso-volaris direction (Picture 7) the short *ulnae* seem to be considerably deformed. The *diaphysis* of the right *ulna* is volarly arched. The characteristic morphological formations of the proximal epiphysis are recognizable, while in the distal epiphyses only the shape

Table III.



Pictures 10—11.

Table IV.



Pictures 12—14.

of the processus styloideus can be observed. The surfaces of the radio-ulnar diarthroses are enlarged and deformed. From the region of the collum of the left ulna, from the interosseal surface, a 5 mm long thorn-like exostosis extends in a proximal direction.

b) *Ossa extremitatis inferioris*

Greatest length of the *femur* is 355 (r) and 341 (l), the sagittal diameter of the centre of the diaphysis is 30 (r) and 28 (l), its transversal diameter 26 (r) and 27 (l) mm. The cross-sectional indicator of the diaphysis is 115,4 (r) and 103,7 (l) which corresponds to a medium (r) and weak (l) pilaster. The length of the femur in a normal position is 355 (r) and 336 (l) mm. On the basis of the sagittal radiogram (Picture 12) the femurs are short, conspicuously massive and highly deformed. The collum

femoris is short and is in a valga position. In the area of the trochanter minor and the tertia exostoses of irregular form and spongy cavernous structure (Rose—Doolan, 1949; Timonen, 1964) can be seen. Their diaphysis is short, their cortical thick, their contours normal. Their distal epiphysis is „inflated” and greatly deformed. Above their medial condylus exostoses of irregular shape can be seen (Picture 13), and in the same place also their cortical contours are interrupted in several spots. On the left femur, above the lateral condylus, too, a crest-like exostosis can be seen.



Picture 15

The left *tibia* and *fibula* are conspicuously short, massive, and considerably deformed. The sagittal diameter of the tibia in the height of the foramen nutritium is 34, its transversal diameter 30 mm, cnemical indicator is 88,2 which largely corresponds to a euryknem (round) tibia. (Picture 15.)

In this case, however, this determination does not bear a literal interpretation as the cross-section of the tibia resembles an isosceles triangle because of the pronounced development of the crista interossea. On the radiogram (Picture 14) it can be seen that on the proximal epiphysis of the tibia and fibula the condyles and the articular facets of the capitulum have become destroyed as a results of influences after death. The diaphysis of both bones is short, massive, their corticals are massive, their contours normal. Their distal epiphysis, corresponding to the syndesmosis tibifibularis, is completely ossified and, consequently, their trabecular structure has become rearranged. The shape of the talocrural joint is deformed.

Finally there may be ranked to the find 11 *metacarpal* and *metatarsal bonse* and *knuckle bones*. With these deformations can be found mainly on the dorsal surface as well as with the proximal epiphyses.

On the *histological sections* made from the bone sample of the spongy substance specific deformations could not be recognized.

#### BODY HEIGHT

On the basis of the characteristics and measurements described above there can be no doubt that we are faced with a case of microsomia.

On the basis of the data available and on that of Manouvier's method we have obtained the following values concerning body height:

right numerus	126,6 cm	left ulna	105,9 cm
left humerus	130,8 cm	right femur	137,9 cm
right radius	116,0 cm	left femur	129,7 cm
right ulna	113,2 cm		



The average of the calculated body height is 122,8 cm, which is 7 cm less than the upper limit of the group of „dwarfs” according to the classification of physique given by Martin.

#### DIAGNOSIS

To sum it up (Hellner—Poppe, 1956; Pugh, 1954) the radiograms give evidence of the bone remains of a dwarfish male who had reached the senile age and had suffered from *chondrodystrophia hyperplastica* (McLean, 1968; Jarcho, 1966; Bateman, 1954; Ake Wilton, 1933; Donuniok—Knock, 1971; Kaufman, 1892). The point of interest of the paleopathological diagnosis that can be regarded probable on the basis of the deformations described lies, on the one hand, in the rarity of pathological deformation (Nemeskéri—Harsányi, 1959), and, on the other hand, in the fact, interesting in itself, that the individual examined, in spite of the anomalies of osteogenesis, had lived up to a senile age.

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