

THE ANTHROPOLOGICAL ASSESSMENT OF THE LATE ROMAN CEMETERY AT SOMOGYSZIL-DÖGKÚTI DŰLŐ

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Abstract: The results of a general anthropological examination of 140 individuals from a late Roman period cemetery at Somogyszil-Döggút site are presented in this paper. The population had a more or less balanced sex ratio, lived a fundamentally peaceful life suggested by the low frequency of bone injuries, and according to their morphoscopic traits, they all belonged to the Caucasoid group. Based on the biological distances calculated from selected linear measurements of male crania, the population of Somogyszil-Döggút proved to be quite similar to several other late Roman period cemeteries in Transdanubia, as well as to some local Avar period series. This raises the possibility of a significant local continuity between the late Roman and late Avar period on this territory, however other potential explanations cannot be ruled out. Some anthropological characteristics of the human skeletal material unearthed from graves oriented differently than the cemetery's norm suggest the presence of immigrants in the community. Their biological background cannot be traced from the present data, however a few skeletal evidence proposes the probability of a Sarmatian origin.

Keywords: Somogyszil, late Roman period, anthropology, biological distance

INTRODUCTION

The first finds of a late Roman period cemetery at Somogyszil-Döggút was found in 1964, and until the end of 1968 altogether 148 graves had been excavated by the archaeologist Balázs Draveczy.¹ A full archaeological publication of the cemetery was given first by Alice Sz. Burger² with some basic anthropological information about the human skeletal remains provided by Tibor Tóth. However, recently both the archaeological and anthropological material was put to a re-assessment.³ In this paper a more detailed version of the results of the anthropological examination is presented.

MATERIAL AND METHODS

The human skeletal material of Somogyszil-Döggúti dűlő site is housed in the Department of Anthropology of the Hungarian Natural History Museum under the inventory numbers 68.126.1. – 68.126.124. and 68.150.1. – 68.150.17. The general preservation of the bones are quite mediocre on average with many of them being strongly incomplete and/or badly preserved.

For scoring morphological sex, altogether 21 anatomical characteristics indicating sexual dimorphism were used.⁴

¹ DRAVECZY 1965; DRAVECZY 1966; DRAVECZY 1967.

² BURGER 1979.

³ HORVÁTH *et al.* 2018.

⁴ ÉRY *et al.* 1963; ÉRY 1992.

The biological age estimation of children was based on tooth eruption⁵ and on the maximum length of long-bones.⁶ In the case of juveniles, the union of certain ossification centres was checked.⁷ The biological age of adults was estimated on the basis of the surface alterations of the pubic symphysis,⁸ the ossification of cranial sutures,⁹ the alterations of the sternal rib ends,¹⁰ the wear of permanent dentition¹¹ and on the root transparency of teeth.¹²

Cranial and longbone measurements and indices were taken according to the work of R. Martin and K. Saller.¹³ Cranial indices were categorized into classes based on the recommendations of V. P. Alekseyev and G. F. Debetz.¹⁴ Cranial capacity was calculated with the method of A. Lee and K. Pearson.¹⁵ Using the mean standard deviations of cranial measurements and indices given by V. P. Alekseyev and G. F. Debetz sigma ratios (S.R.)¹⁶ were calculated which offer basic information about the relative measure of variance of these traits. This way, they tell whether the examined population was more heterogeneous or homogeneous than a theoretical natural population based on their selected measurements and indices.

Stature was calculated using the formula proposed by T. Sjøvold¹⁷ that controls for all geographic areas and for both sexes using the femur. If the femur was not measurable, the tibia was used instead.

Mortality tables for the demographic analysis were created based on the works of D. H. Ubelaker¹⁸ and K. Éry,¹⁹ using the Excel software package created by Zs. Bernert.²⁰ For the „lack of newborns” (a common problem with excavated ancient populations) no correction was applied.

A systematic pathological examination was not performed on the skeletal material; only the observed traumatic lesions were described based on D. J. Ortner²¹ and V. L. Wedel and A. Galloway.²²

The estimation of the biological distance between the late Roman period population of Somogyszil-Döggúti dűlő and other ancient populations was performed using the method elaborated by Penrose,²³ based on the means of ten selected measurements (M1, M8, M9, M17, M45, M48, M51, M52, M54, M55) of the male skulls. For scale adjustment, the raw data were transformed with the standardised mean deviations of A. Thoma.²⁴ According to the recommendation of I. Schwidetzky,²⁵ only those series should be drawn into the PENROSE biodistance calculation where the mean of every selected measurement is made up of at least seven data. We followed this recommendation in the case of the comparative materials, thus from the territory of the Carpathian Basin and from between the second to eighth centuries only those series were selected that conform to this criterion. This resulted in a total of 55 series for comparison. However, the Somogyszil-Döggúti dűlő male cranial material itself fails to satisfy the above-mentioned criterion, as one of the selected cranial measurements (M17) is made up of only six individuals. Nonetheless, we chose to perform the biodistance calculations in order to determine how the Somogyszil-Döggúti population fits into the “framework” of other populations representing the territory and time interval chosen for the analysis. (Naturally, using an insufficient sample size may weaken the conclusions drawn from the analysis.) The relations of the Somogyszil-Döggúti dűlő (male) population and its close analogies (below the 1% and 2% error bands) were visualized with the help of a dendrogram that was created with the UPGMA (Unweighted Pair Group Method with Arithmetic Mean) hierarchical clustering method.²⁶

⁵ SCHOUR–MASSLER 1941; UBELAKER 1989.

⁶ STLOUKAL–HANÁKOVA 1978.

⁷ SCHINZ *et al.* 1952; FEREMBACH *et al.* 1979.

⁸ TODD 1920.

⁹ NEMESKÉRI *et al.* 1960; MEINDL–LOVEJOY 1985.

¹⁰ ISCAN *et al.* 1984.

¹¹ HUSZÁR–SCHRANZ 1952; PERIZONIUS *cit.* ÉRY 1992.

¹² LAMENDIN *et al.* 1992.

¹³ MARTIN–SALLER 1957.

¹⁴ ALEKSEYEV–DEBETZ 1964.

¹⁵ LEE–PEARSON, *cit.* ÉRY 1992.

¹⁶ ALEKSEYEV–DEBETZ 1964.

¹⁷ SJØVOLD 1990.

¹⁸ UBELAKER 1989.

¹⁹ ÉRY 1992.

²⁰ BERNERT 2005.

²¹ ORTNER 2003.

²² WEDEL–GALLOWAY 2014.

²³ PENROSE 1952.

²⁴ THOMA 1978.

²⁵ SCHWIDETZKY 1967.

²⁶ SOKAL–MITCHENER, *cit.* PODANI 1997.

RESULTS

Demographic results

The remains of 140 individuals were brought to light. The basic summary data of their sex and age distribution are presented in *Table 1*. The male/female sex ratio is more or less balanced (49 males, 56 females and 3 indeterminate individuals). The proportion of children as compared to adults is low, which can most likely be explained by the poor preservation of the anthropological material (*Table 2*). The mortality peak falls at the beginning of the *maturus* age in the case of males (40–44 years) and in the middle of the *adultus* age in the case of females

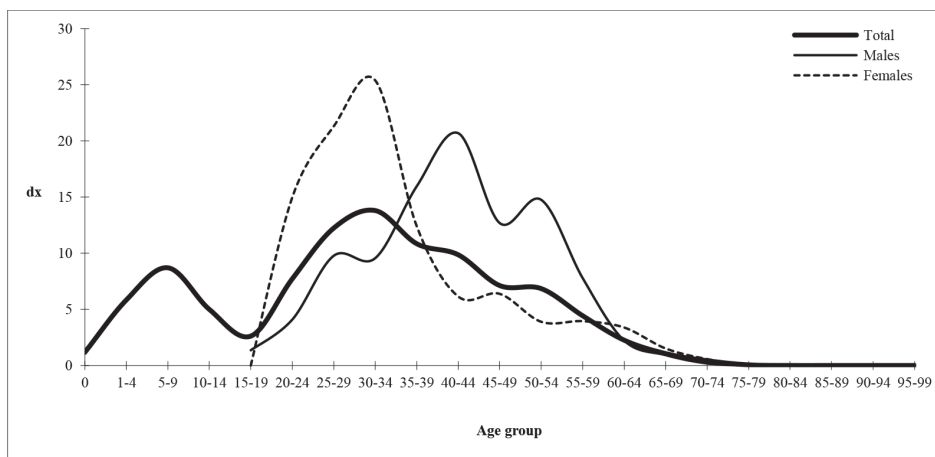


Fig. 1. The mortality curve of the Somogyszil-Döggúti dűlő population

Table 1.

Sex and age distribution of the Somogyszil-Döggúti dűlő population

| Sex \ Age group | Males | Females | Unknown | Total |
|-----------------|-----------|-----------|-----------|------------|
| 1–6 | | | 12 | 12 |
| 7–14 | | | 17 | 17 |
| 15–19 | 1 | | 3 | 4 |
| 20–39 | 20 | 40 | 1 | 61 |
| 20–59 | 1 | 4 | | 5 |
| 40–59 | 26 | 8 | | 34 |
| 60– | 1 | 2 | | 3 |
| Unknown | | 2 | 2 | 4 |
| Total | 49 | 56 | 35 | 140 |

(30–34 year; *Figure 1* and *Table 3*). This sexual difference in the mortality peak is generally observed among historical populations, and it is most likely an effect of the risks of childbearing (the possible complications of pregnancy and giving birth).

Metric and morphological characteristics of the skulls

In terms of morphological attributes (*Table 4*), the following traits are quite common in the population: the skull is ovoid in superior view, the occipital is curved, and the spina nasalis anterior is small or moderately developed. Rounded and rectangular-shaped orbits are equally frequent, and the morphology of the canine fossa is also

Table 2.
Some basic data of the human skeletal material of Somogyzil-Döggút

| Inventory number | Grave | Sex | Age | | Skull | Mandible | Postcranial skeleton |
|------------------|-------|--------|-----|------|----------------|----------------|----------------------|
| 68.126.1. | 1 | female | 20 | – 25 | incomplete | missing | incomplete |
| 68.126.2. | 2 | female | 60 | – 65 | incomplete | incomplete | missing |
| 68.126.3. | 3 | male | 50 | – 60 | incomplete | incomplete | incomplete |
| 68.126.4. | 4 | ? | 3 | – 5 | incomplete | incomplete | incomplete |
| 68.126.5. | 5a | male | 30 | – 40 | well preserved | well preserved | incomplete |
| 68.126.6. | 5b | male | 40 | – 50 | incomplete | well preserved | incomplete |
| 68.126.7. | 6 | ? | 7 | – 8 | incomplete | missing | incomplete |
| 68.126.8. | 7 | male | 50 | – 60 | incomplete | incomplete | incomplete |
| 68.126.9. | 8 | female | 40 | – 75 | incomplete | incomplete | missing |
| 68.126.10. | 12 | male | 20 | – 40 | missing | missing | incomplete |
| 68.126.11. | 13 | ? | 8 | – 10 | missing | missing | incomplete |
| 68.126.12. | 14 | male | 20 | – 60 | incomplete | incomplete | missing |
| 68.126.13. | 15 | male | 30 | – 40 | incomplete | incomplete | incomplete |
| 68.126.14. | 16 | female | 25 | – 35 | incomplete | incomplete | incomplete |
| 68.126.15. | 17 | male | 40 | – 55 | incomplete | well preserved | well preserved |
| 68.126.16. | 18 | male | 25 | – 30 | incomplete | incomplete | incomplete |
| 68.126.17. | 19 | female | 60 | – 70 | incomplete | incomplete | incomplete |
| 68.126.18. | 20 | female | 25 | – 35 | incomplete | well preserved | incomplete |
| 68.126.19. | 21 | female | 30 | – 40 | incomplete | well preserved | incomplete |
| 68.126.20. | 23 | male | 30 | – 40 | incomplete | incomplete | incomplete |
| 68.126.21. | 24 | female | 30 | – 35 | incomplete | incomplete | incomplete |
| 68.126.22. | 25 | ? | 15 | – 18 | incomplete | incomplete | incomplete |
| 68.126.23. | 26 | female | 20 | – 23 | incomplete | incomplete | incomplete |
| 68.126.24. | 27 | male | 25 | – 30 | missing | missing | well preserved |
| 68.126.25. | 29 | male | 40 | – 45 | incomplete | incomplete | incomplete |
| 68.126.26. | 30 | ? | 15 | – 18 | incomplete | incomplete | incomplete |
| 68.126.27. | 31 | female | 25 | – 30 | incomplete | incomplete | incomplete |
| 68.126.28. | 32 | female | 20 | – 40 | incomplete | missing | missing |
| 68.126.29. | 33 | male | 50 | – 55 | incomplete | well preserved | incomplete |
| 68.126.30. | 34 | ? | 9 | – 11 | incomplete | well preserved | incomplete |
| 68.126.31. | 35 | female | 55 | – 60 | incomplete | incomplete | incomplete |
| 68.126.32. | 36 | female | 25 | – 35 | incomplete | incomplete | incomplete |
| 68.126.33. | 37 | female | 20 | – 25 | incomplete | incomplete | incomplete |
| 68.126.34. | 38 | female | 35 | – 40 | well preserved | well preserved | well preserved |
| 68.126.35. | 39 | male | 40 | – 45 | incomplete | well preserved | incomplete |
| 68.126.36. | 40 | female | 20 | – 25 | incomplete | well preserved | incomplete |
| 68.126.37. | 41 | male | 50 | – 60 | incomplete | well preserved | incomplete |
| 68.126.38. | 42 | ? | 6 | – 7 | incomplete | missing | incomplete |
| 68.126.39. | 43 | female | 50 | – 60 | incomplete | incomplete | incomplete |
| 68.126.40. | 44 | female | 35 | – 45 | incomplete | incomplete | incomplete |
| 68.126.41. | 45 | male | 35 | – 40 | incomplete | incomplete | incomplete |
| 68.126.42. | 46 | male | 40 | – 50 | incomplete | incomplete | incomplete |
| 68.126.43. | 48 | male | 40 | – 45 | incomplete | well preserved | incomplete |
| 68.126.44. | 49 | male | 60 | – 70 | incomplete | incomplete | incomplete |
| 68.126.45. | 50 | male | 50 | – 55 | incomplete | incomplete | incomplete |
| 68.126.46. | 51 | male | 35 | – 40 | incomplete | incomplete | incomplete |
| 68.126.47. | 52 | female | 25 | – 35 | incomplete | incomplete | incomplete |

Table 2.
Some basic data of the human skeletal material of Somogyszil-Döggút (cont'd)

| Inventory number | Grave | Sex | Age | Skull | Mandible | Postcranial skeleton |
|------------------|-------|--------|---------|----------------|----------------|----------------------|
| 68.126.48. | 53 | male | 35 – 40 | well preserved | incomplete | incomplete |
| 68.126.49. | 54 | ? | 7 – 9 | incomplete | incomplete | incomplete |
| 68.126.50. | 55 | female | 25 – 35 | incomplete | incomplete | incomplete |
| 68.126.51. | 56 | female | 20 – 40 | incomplete | missing | incomplete |
| 68.126.52. | 57 | male | 40 – 50 | incomplete | incomplete | incomplete |
| 68.126.53. | 58 | male | 20 – 40 | missing | missing | incomplete |
| 68.126.54. | 59 | male | 40 – 50 | incomplete | incomplete | incomplete |
| 68.126.55. | 60 | male | 50 – 55 | incomplete | incomplete | incomplete |
| 68.126.56. | 61 | female | 30 – 35 | well preserved | well preserved | incomplete |
| 68.126.57. | 62 | female | 25 – 35 | incomplete | incomplete | incomplete |
| 68.126.58. | 63 | ? | 7 – 8 | incomplete | incomplete | incomplete |
| 68.126.59. | 64–65 | ? | 4 – 5 | incomplete | incomplete | incomplete |
| 68.126.60. | 66 | ? | 0 – 1 | incomplete | incomplete | incomplete |
| 68.126.61. | 67 | female | 25 – 30 | incomplete | incomplete | incomplete |
| 68.126.62. | 68 | female | 30 – 35 | incomplete | incomplete | incomplete |
| 68.126.63. | 69 | ? | 9 – 10 | incomplete | incomplete | incomplete |
| 68.126.64. | 70 | female | 30 – 40 | incomplete | incomplete | incomplete |
| 68.126.65. | 71 | female | 45 – 55 | incomplete | incomplete | incomplete |
| 68.126.66. | 72 | male | 50 – 60 | incomplete | incomplete | incomplete |
| 68.126.67. | 73 | ? | 10 – 14 | missing | missing | incomplete |
| 68.126.68. | 75 | female | 20 – 25 | incomplete | incomplete | incomplete |
| 68.126.69. | 75a | male | 45 – 60 | incomplete | missing | incomplete |
| 68.126.70. | 76 | ? | 20 – 40 | incomplete | missing | incomplete |
| 68.126.71. | 77 | female | 25 – 30 | incomplete | incomplete | incomplete |
| 68.126.72. | 78 | female | 20 – 75 | missing | missing | incomplete |
| 68.126.73. | 79 | male | 50 – 60 | incomplete | incomplete | incomplete |
| 68.126.74. | 80 | female | 25 – 30 | incomplete | incomplete | incomplete |
| 68.126.75. | 81 | ? | 15 – 18 | incomplete | incomplete | incomplete |
| 68.126.76. | 82 | female | 30 – 40 | incomplete | incomplete | incomplete |
| 68.126.77. | 84 | male | 30 – 40 | incomplete | incomplete | incomplete |
| 68.126.78. | 86 | male | 20 – 25 | well preserved | well preserved | incomplete |
| 68.126.79. | 87 | ? | 7 – 9 | incomplete | incomplete | incomplete |
| 68.126.80. | 88 | male | 20 – 40 | incomplete | incomplete | incomplete |
| 68.126.81. | 89 | female | 25 – 30 | incomplete | incomplete | incomplete |
| 68.126.82. | 90 | ? | 0 – 1 | incomplete | missing | missing |
| 68.126.83. | 91 | ? | 3 – 4 | incomplete | missing | incomplete |
| 68.126.84. | 92 | female | 20 – 25 | incomplete | incomplete | incomplete |
| 68.126.85. | 93 | female | 30 – 35 | incomplete | incomplete | incomplete |
| 68.126.86. | 94 | male | 30 – 40 | incomplete | missing | incomplete |
| 68.126.87. | 95 | female | 20 – 30 | incomplete | incomplete | incomplete |
| 68.126.88. | 96 | ? | 6 – 7 | incomplete | incomplete | incomplete |
| 68.126.89. | 97 | female | 40 – 60 | incomplete | incomplete | incomplete |
| 68.126.90. | 98 | ? | 20 – 75 | missing | missing | incomplete |
| 68.126.91. | 99 | ? | 2 – 6 | incomplete | incomplete | incomplete |
| 68.126.92. | 100 | female | 20 – 60 | incomplete | incomplete | incomplete |
| 68.126.93. | 101 | ? | 3 – 4 | incomplete | incomplete | incomplete |
| 68.126.94. | 102 | ? | 7 – 8 | incomplete | incomplete | incomplete |
| 68.126.95. | 103 | male | 45 – 50 | incomplete | incomplete | incomplete |
| 68.126.96. | 104 | male | 40 – 50 | incomplete | incomplete | incomplete |
| 68.126.97. | 107 | ? | 12 – 14 | incomplete | incomplete | incomplete |
| 68.126.98. | 108 | female | 30 – 35 | incomplete | well preserved | incomplete |
| 68.126.99. | 109 | female | 25 – 35 | well preserved | incomplete | incomplete |

Table 2.
Some basic data of the human skeletal material of Somogyiszil-Dölgút (cont'd)

| Inventory number | Grave | Sex | Age | | Skull | Mandible | Postcranial skeleton |
|------------------|----------|--------|-----|------|----------------|----------------|----------------------|
| 68.126.100. | 110 | ? | 9 | – 10 | incomplete | incomplete | incomplete |
| 68.126.101. | 112 | male | 18 | – 20 | well preserved | well preserved | incomplete |
| 68.126.102. | 113/a | male | 40 | – 50 | incomplete | incomplete | incomplete |
| 68.126.103. | 113/b | male | 25 | – 30 | well preserved | well preserved | missing |
| 68.126.104. | 114 | male | 40 | – 45 | incomplete | incomplete | incomplete |
| 68.126.105. | 115 | female | 30 | – 35 | incomplete | incomplete | incomplete |
| 68.126.106. | 116 | male | 45 | – 55 | incomplete | incomplete | incomplete |
| 68.126.107. | 117 | male | 40 | – 45 | incomplete | incomplete | incomplete |
| 68.126.108. | 118 | female | 25 | – 35 | incomplete | incomplete | incomplete |
| 68.126.109. | 120 | female | 20 | – 60 | missing | missing | incomplete |
| 68.126.110. | 121 | female | 20 | – 60 | missing | missing | incomplete |
| 68.126.111. | 122 | ? | 0 | – 1 | missing | missing | incomplete |
| 68.126.112. | 123 | female | 40 | – 50 | incomplete | incomplete | incomplete |
| 68.126.113. | 124 | male | 35 | – 40 | incomplete | incomplete | incomplete |
| 68.126.114. | 125 | ? | 11 | – 13 | incomplete | incomplete | incomplete |
| 68.126.115. | 126 | ? | 0 | – 6 | incomplete | missing | incomplete |
| 68.126.116. | 127 | female | 35 | – 40 | incomplete | incomplete | incomplete |
| 68.126.117. | 129 | female | 25 | – 35 | incomplete | incomplete | incomplete |
| 68.126.118. | 130 | male | 30 | – 40 | well preserved | well preserved | incomplete |
| 68.126.119. | 131 | female | 25 | – 35 | incomplete | incomplete | incomplete |
| 68.126.120. | sporadic | female | 45 | – 50 | well preserved | well preserved | incomplete |
| 68.126.121. | sporadic | male | 40 | – 45 | incomplete | incomplete | missing |
| 68.126.122. | sporadic | ? | 11 | – 13 | incomplete | incomplete | incomplete |
| 68.126.123. | sporadic | ? | 20 | – 75 | missing | missing | incomplete |
| 68.150.1. | 132 | female | 40 | – 50 | incomplete | incomplete | incomplete |
| 68.150.2. | 133 | female | 30 | – 35 | incomplete | incomplete | incomplete |
| 68.150.3. | 134 | ? | 12 | – 14 | well preserved | well preserved | incomplete |
| 68.150.4. | 136 | ? | 1 | – 2 | incomplete | missing | incomplete |
| 68.150.5. | 137 | female | 20 | – 25 | well preserved | incomplete | incomplete |
| 68.150.6. | 138 | male | 50 | – 60 | well preserved | incomplete | incomplete |
| 68.150.7. | 139 | ? | 4 | – 6 | incomplete | incomplete | incomplete |
| 68.150.8. | 140 | male | 35 | – 40 | incomplete | missing | incomplete |
| 68.150.9. | 141 | female | 40 | – 50 | incomplete | incomplete | incomplete |
| 68.150.10. | 142a | ? | 6 | – 7 | incomplete | missing | incomplete |
| 68.150.11. | 142b | ? | 1 | – 2 | incomplete | missing | incomplete |
| 68.150.12. | 143 | female | 30 | – 40 | incomplete | incomplete | incomplete |
| 68.126.13. | 144 | male | 40 | – 50 | incomplete | well preserved | incomplete |
| 68.150.14. | 145 | female | 25 | – 30 | incomplete | well preserved | incomplete |
| 68.150.15. | 146 | male | 25 | – 30 | incomplete | well preserved | well preserved |
| 68.150.16. | 147 | male | 25 | – 35 | incomplete | well preserved | incomplete |
| 68.150.17. | 148 | female | 20 | – 22 | well preserved | well preserved | well preserved |

Table 3.
Mortality table of the Somogyszil-Dölgút population

| Age | Dead | | Survivals entering (lx) | Life expectancy (ex) |
|-------------------------|-------------|-----------------|-------------------------|----------------------|
| | Number (Dx) | Percentage (dx) | | |
| Whole population | | | | |
| 0 | 1.6 | 1.17 | 100.00 | 31.77 |
| 1–4 | 8.2 | 5.84 | 98.83 | 31.14 |
| 5–9 | 12.2 | 8.70 | 92.99 | 28.97 |
| 10–14 | 7.0 | 5.00 | 84.29 | 26.70 |
| 15–19 | 3.7 | 2.62 | 79.29 | 23.22 |
| 20–24 | 10.8 | 7.72 | 76.67 | 18.93 |
| 25–29 | 17.1 | 12.24 | 68.95 | 15.77 |
| 30–34 | 19.3 | 13.80 | 56.71 | 13.64 |
| 35–39 | 15.2 | 10.85 | 42.91 | 12.22 |
| 40–44 | 13.8 | 9.86 | 32.06 | 10.51 |
| 45–49 | 10.0 | 7.12 | 22.20 | 9.06 |
| 50–54 | 9.6 | 6.85 | 15.08 | 7.16 |
| 55–59 | 6.2 | 4.43 | 8.23 | 6.05 |
| 60–64 | 3.2 | 2.26 | 3.79 | 5.19 |
| 65–69 | 1.5 | 1.06 | 1.54 | 4.15 |
| 70–74 | 0.6 | 0.42 | 0.48 | 2.80 |
| 75–79 | 0.1 | 0.06 | 0.06 | 2.50 |
| Total | 140.0 | 100.00 | | |
| Males | | | | |
| 15–19 | 0.7 | 1.36 | 100 | 27.13 |
| 20–24 | 2.0 | 4.09 | 98.64 | 22.47 |
| 25–29 | 4.8 | 9.78 | 94.55 | 18.33 |
| 30–34 | 4.7 | 9.56 | 84.77 | 15.16 |
| 35–39 | 7.8 | 15.96 | 75.21 | 11.77 |
| 40–44 | 10.1 | 20.69 | 59.25 | 9.27 |
| 45–49 | 6.2 | 12.69 | 38.56 | 7.90 |
| 50–54 | 7.2 | 14.76 | 25.88 | 5.54 |
| 55–59 | 3.8 | 7.79 | 11.12 | 4.58 |
| 60–64 | 1.1 | 2.22 | 3.33 | 4.45 |
| 65–69 | 0.5 | 0.93 | 1.11 | 3.33 |
| 70–74 | 0.1 | 0.19 | 0.19 | 2.50 |
| 75–79 | 0.0 | 0.00 | 0.00 | 0.00 |
| Total | 49.0 | 100.00 | | |
| Females | | | | |
| 15–19 | 0.0 | 0.00 | 100 | 20.71 |
| 20–24 | 8.4 | 14.97 | 100.00 | 15.71 |
| 25–29 | 11.9 | 21.31 | 85.03 | 13.03 |
| 30–34 | 14.2 | 25.39 | 63.72 | 11.55 |
| 35–39 | 6.9 | 12.40 | 38.33 | 12.55 |
| 40–44 | 3.4 | 6.15 | 25.92 | 12.36 |
| 45–49 | 3.6 | 6.38 | 19.78 | 10.42 |
| 50–54 | 2.2 | 3.89 | 13.39 | 9.20 |
| 55–59 | 2.2 | 3.95 | 9.50 | 6.95 |

Table 3.
Mortality table of the Somogyszil-Dölgút population (cont'd)

| Age | Dead | | Survivals entering (Ix) | Life expectancy (ex) |
|-------|-------------|-----------------|-------------------------|----------------------|
| | Number (Dx) | Percentage (dx) | | |
| 60–64 | 1.9 | 3.38 | 5.55 | 5.11 |
| 65–69 | 0.8 | 1.52 | 2.17 | 4.19 |
| 70–74 | 0.3 | 0.57 | 0.65 | 3.13 |
| 75–79 | 0.0 | 0.08 | 0.08 | 2.50 |
| Total | 56.0 | 100.00 | | |

varied. The presence of maxillary torus is quite rare, whereas no shovel-shaped incisors occurs in the studied material. There are differences in the frequencies of palatinus torus and fossa praenasalis as well as in the occurrence of the curved and straight foreheads between the two sexes.

The metric data and indices of the skulls are presented in *Tables 5–6*, while *Table 7* shows the summary statistics of the skulls.

On the basis of the cranial indices, the majority of the late Roman community of Somogyszil-Dölgút can be characterized by a medium long/long (length–width index), low/moderately high (length–height index), and moderately high/high (height–width index) skull. Male foreheads are most often moderately wide or wide (transversal–frontoparietal index), whereas this index shows greater variability among females. Cranial capacity falls into the moderately large/large categories in both sexes. The face and upper face are medium wide/medium high in around half of the cases. Male orbits are usually low, whereas female orbits are low/moderately high. Nasal width varies in both sexes (*Table 8*).

For the calculation of the mean sigma ratio only the sigma ratios of those cranial measurements and indices were used that were composed of at least seven individual data. The mean sigma ratio of the cranial measurements is 103.53 for male skulls, and 102.08 for female skulls. The value for the cranial indices is 112.18 for males, and 137.21 for females respectively. Thus, the variability of the linear measurements (bearing information mainly about cranial size) indicates a natural population (the theoretical value for an average level of heterogeneity is 100.00), however the sigma ratios of the indices (bearing information about cranial shape) show a more mixed population, particularly for females, with a greater level of heterogeneity than that is typical for a natural population. This may suggest that the community was composed not just by local people, but some extralocal gene flow (immigrants that differed from the locals in their cranial shapes) were also present in it.

It is important to point out that due to the combined effect of the relatively small sample size and the poor preservation of the skeletal material the number of recorded cranial measurements and morphological attributes are rather small. Thus, every above mentioned result, and the conclusions drawn from it should be handled with caution as the small sample size goes along with an increased possibility of random effects that may influence the results.

Based on morphoscopic traits, every examinable skull belongs to the Caucasoid group. With respect to the traditional (and quite subjective, thus, in our opinion, “semi-scientific”) racial typology, it can be stated that Nordoid/Mediterranoid, Cromagnoid and archaic chamaecran types occurred in the population (*Figs 2–6*).

Mention must be made of the characteristics of the skulls recovered from burials whose S–N/N–S orientation differed from the period’s norm. Due to their poor preservation (which was among the worst in the excavated skeletal material) only a few measurements of a single female skull could be taken (Grave no. 70, *Fig. 7*), although the form and major proportions of the braincase of two further male skulls (Graves no. 41 and no. 50) could also be estimated, despite their fragmentation. A shared trait of these three skulls is that the length/width index of every one of them falls into the short (brachycran or hyperbrachycran) class category. The frequency of brachycran skulls is rather low in the cemetery: disregarding the female interred in Grave no. 70, from the altogether 32 skulls suitable to calculate the length/width index, only four fall into the brachycran/hyperbrachycran category. This marked difference suggests that these S–N/N–S oriented graves contained the burials of a (smaller) immigrant group whose anthropological characteristics differed in certain aspects from the local population. This possibility is indirectly further strengthened with the stature data presented below. In the lack of measurable/examinable skulls, we cannot use any traditional anthropological approach to identify the origin of this possibly immigrant group, but – to make

Table 4.
Distribution of the morphological characteristics of the skull in the population of Somogyszil-Dölgút

| Characteristics | | Males | | Females | | Together | |
|---|--------------------|-----------|--------|-----------|--------|-----------|--------|
| | | N | % | N | % | N | % |
| Cranium (norma verticalis) | Ellipsoid | 4 | 16.67 | 3 | 12.00 | 7 | 14.29 |
| | Ovoid | 15 | 62.50 | 21 | 84.00 | 36 | 73.47 |
| | Pentagonoid | 3 | 12.50 | 1 | 4.00 | 4 | 8.16 |
| | Sphenoid | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Spheroid | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Rhomboid | 2 | 8.33 | 0 | 0.00 | 2 | 4.08 |
| | Σ | 24 | | 25 | | 49 | |
| Forehead | Straight | 5 | 16.67 | 18 | 62.07 | 23 | 38.98 |
| | Curved | 24 | 80.00 | 10 | 34.48 | 34 | 57.63 |
| | Sloped | 1 | 3.33 | 1 | 3.45 | 2 | 3.39 |
| | Σ | 30 | | 29 | | 59 | |
| Occipital | Bathrocran | 4 | 14.81 | 4 | 16.00 | 8 | 15.39 |
| | Curvoccipital | 23 | 85.19 | 20 | 80.00 | 43 | 82.69 |
| | Planoccipital | 0 | 0.00 | 1 | 4.00 | 1 | 1.92 |
| | Σ | 27 | | 25 | | 52 | |
| Orbits | Rounded | 6 | 50.00 | 11 | 57.89 | 17 | 54.84 |
| | Rectangular | 6 | 50.00 | 8 | 42.11 | 14 | 45.16 |
| | Σ | 12 | | 19 | | 31 | |
| Lower margin of the apertura piriformis | Anthropin | 10 | 55.56 | 13 | 81.25 | 23 | 67.65 |
| | Fossa praenasalis | 8 | 44.44 | 3 | 18.75 | 11 | 32.35 |
| | Sulcus praenasalis | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Σ | 18 | | 16 | | 34 | |
| Spina nasalis anterior | Broca 1 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Broca 2 | 5 | 50.00 | 6 | 66.67 | 11 | 57.89 |
| | Broca 3 | 2 | 20.00 | 3 | 33.33 | 5 | 26.32 |
| | Broca 4 | 2 | 20.00 | 0 | 0.00 | 2 | 10.53 |
| | Broca 5 | 1 | 10.00 | 0 | 0.00 | 1 | 5.26 |
| | Σ | 10 | | 9 | | 19 | |
| Alveolar prognathism | Not present | 5 | 38.46 | 9 | 69.23 | 14 | 53.85 |
| | Moderate | 8 | 61.54 | 4 | 30.77 | 12 | 46.15 |
| | Strong | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Σ | 13 | | 13 | | 26 | |
| Torus palatinus | Not present | 4 | 57.14 | 4 | 100.00 | 8 | 72.73 |
| | Moderate | 3 | 42.86 | 0 | 0.00 | 3 | 27.27 |
| | Strong | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Σ | 7 | | 4 | | 11 | |
| Torus maxillaris | Not present | 15 | 93.75 | 10 | 100.00 | 25 | 96.15 |
| | Moderate | 1 | 6.25 | 0 | 0.00 | 1 | 3.85 |
| | Strong | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Σ | 16 | | 10 | | 26 | |
| Shovel-shaped incisor | Not present | 3 | 100.00 | 3 | 100.00 | 6 | 100.00 |
| | Present | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| | Σ | 3 | | 3 | | 6 | |
| Canine fossa | Shallow | 9 | 45.00 | 5 | 26.32 | 14 | 35.90 |
| | Moderately deep | 5 | 25.00 | 11 | 57.89 | 16 | 41.02 |
| | Deep | 6 | 30.00 | 3 | 15.79 | 9 | 23.08 |
| | Σ | 20 | | 19 | | 39 | |

Table 5.
Male cranial measurements and indices in the population of Somogyzil-Döngkút

| Martin No. | Grave No. | | | | | | | | | | | |
|---------------|-----------|--------|-------|-----|-------|-----|-----|-------|-------|----|-----|-------|
| | 3 | 5/a | 5/b | 7 | 17 | 23 | 29 | 33 | 39 | 41 | 45 | 48 |
| 1 | 180 | 197 | 183 | – | 188 | – | 170 | 183 | – | – | – | 181 |
| 5 | – | 104 | 102 | – | – | – | – | 102 | – | – | – | – |
| 8 | 138 | 136 | 141 | – | 133 | – | – | 137 | – | – | – | 134 |
| 9 | – | 99 | 96 | – | 95 | – | 100 | 96 | – | – | – | – |
| 10 | – | 121 | 120 | – | 116 | – | – | 115 | – | – | – | – |
| 11 | – | 124 | 130 | – | 118 | – | – | 125 | – | – | – | – |
| 12 | 103 | 110 | 112 | 111 | 108 | – | – | 112 | – | – | – | – |
| 17 | – | 139 | 133 | – | – | – | – | 136 | – | – | – | – |
| 20 | – | 116 | 108 | – | 110 | – | – | 113 | – | – | – | 114 |
| 38 | – | 1494 | 1376 | – | 1363 | – | – | 1393 | – | – | – | 1369 |
| 40 | – | 103 | – | – | – | – | – | – | – | – | – | – |
| 43 | – | 107 | 106 | – | 105 | 106 | 105 | 103 | – | – | – | 109 |
| 45 | – | 133 | 140 | – | – | – | – | 136 | – | – | – | 131 |
| 46 | – | 100 | – | – | – | – | – | – | – | – | – | 97 |
| 47 | – | 115 | – | – | – | – | – | – | – | – | – | 121 |
| 48 | – | 72 | – | – | – | – | – | – | – | – | – | 71 |
| 51 | – | 43 | 42 | – | – | – | – | 42 | 42 | – | – | 45 |
| 52 | – | 33 | 35 | – | – | – | – | 30 | – | – | – | 30 |
| 54 | – | – | – | – | – | – | – | – | 27 | – | – | 26 |
| 55 | – | – | – | – | – | – | – | – | 48 | – | – | 51 |
| 62 | – | 51 | – | – | – | – | – | – | 47 | – | – | 47 |
| 63 | – | – | – | – | – | – | – | – | – | – | – | 42 |
| 65 | – | 126 | – | – | 120 | – | – | 129 | 137 | – | 125 | – |
| 66 | – | – | 111 | – | 102 | – | – | 115 | 105 | 98 | 105 | – |
| 69 | – | 33 | – | – | 31 | – | – | 36 | 37 | 31 | 35 | 38 |
| 70 | – | 68 | 69 | – | 58 | – | – | 62 | 70 | 62 | 62 | 62 |
| 71 | – | 39 | 30 | 28 | 29 | – | 31 | 33 | 34 | 31 | 32 | 36 |
| | | | | | | | | | | | | |
| 8:1 | 76.67 | 69.04 | 77.05 | – | 70.74 | – | – | 74.86 | – | – | – | 74.03 |
| 17:1 | – | 70.56 | 72.68 | – | – | – | – | 74.32 | – | – | – | – |
| 17:8 | – | 102.21 | 94.33 | – | – | – | – | 99.27 | – | – | – | – |
| 20:1 | – | 58.88 | 59.02 | – | 58.51 | – | – | 61.75 | – | – | – | 62.98 |
| 20:8 | – | 85.29 | 76.60 | – | 82.71 | – | – | 82.48 | – | – | – | 85.07 |
| 9:8 | – | 72.79 | 68.09 | – | 71.43 | – | – | 70.07 | – | – | – | – |
| 47:45 | – | 86.47 | – | – | – | – | – | – | – | – | – | 92.37 |
| 48:45 | – | 54.14 | – | – | – | – | – | – | – | – | – | 54.20 |
| 52:51 | – | 76.74 | 83.33 | – | – | – | – | 71.43 | – | – | – | 66.67 |
| 54:55 | – | – | – | – | – | – | – | – | 56.25 | – | – | 50.98 |
| 63:62 | – | – | – | – | – | – | – | – | – | – | – | 89.36 |

Table 5.
Male cranial measurements and indices in the population of Somogyszil-Dölgút (cont'd)

| Martin | Grave No. | | | | | | | | | | | |
|--------|-----------|-----|-----|-------|----|----|-----|-------|-------|--------|-----|-------|
| No. | 49 | 50 | 51 | 53 | 57 | 59 | 60 | 79 | 84 | 86 | 103 | 113/a |
| 1 | 192 | 176 | 192 | 186 | – | – | – | 190 | 197 | 175 | – | 193 |
| 5 | – | – | – | 101 | – | – | – | – | 106 | 96 | – | – |
| 8 | 136 | – | – | 135 | – | – | – | 150 | 144 | 135 | – | 149 |
| 9 | 91 | 98 | – | 89 | – | – | 101 | 101 | 103 | 90 | – | 101 |
| 10 | – | 120 | – | 114 | – | – | 121 | – | 123 | 109 | – | 133 |
| 11 | – | – | – | 115 | – | – | – | 135 | 127 | 118 | – | 123 |
| 12 | – | – | – | 110 | – | – | – | 118 | 122 | 106 | – | 113 |
| 17 | – | – | – | 128 | – | – | – | – | 140 | 135 | – | – |
| 20 | – | – | – | 106 | – | – | – | 114 | 116 | 114 | – | – |
| 38 | 192 | 176 | 192 | 186 | – | – | – | 190 | 197 | 175 | – | 193 |
| 40 | – | – | – | 1331 | – | – | – | 1545 | 1560 | 1342 | – | – |
| 43 | – | – | – | 92 | – | – | – | – | – | 91 | – | – |
| 45 | 98 | 107 | – | 101 | – | – | 107 | 115 | 113 | 99 | – | 109 |
| 46 | – | – | – | 126 | – | – | – | – | 134 | 127 | – | – |
| 47 | – | – | – | 91 | – | – | – | – | – | 93 | – | – |
| 48 | – | – | – | 114 | – | – | – | – | – | 116 | – | – |
| 51 | – | – | – | 71 | – | – | – | – | – | 67 | – | – |
| 52 | – | – | – | 40 | – | – | – | – | – | 41 | – | – |
| 54 | – | – | – | 34 | – | – | – | – | – | 29 | – | – |
| 55 | – | – | – | 25 | – | – | – | – | – | 23 | – | – |
| 62 | – | – | – | 44 | – | – | – | – | – | – | – | – |
| 63 | – | – | – | – | – | – | – | – | – | 43 | – | – |
| 65 | – | – | – | – | – | – | – | – | – | 123 | – | – |
| 66 | – | – | – | 109 | – | – | – | – | – | 100 | – | – |
| 69 | – | – | 33 | 33 | – | – | 34 | – | – | 34 | 34 | 31 |
| 70 | – | – | – | 67 | 66 | 71 | 61 | 73 | 63 | 58 | 62 | 58 |
| 71 | – | – | 34 | 30 | 31 | 33 | 35 | 33 | 33 | 32 | 33 | 35 |
| 8:1 | 70.83 | – | – | 72.58 | – | – | – | 78.95 | 73.10 | 77.14 | – | 77.20 |
| 17:1 | – | – | – | 68.82 | – | – | – | – | 71.07 | 77.14 | – | – |
| 17:8 | – | – | – | 94.81 | – | – | – | – | 97.22 | 100.00 | – | – |
| 20:1 | – | – | – | 56.99 | – | – | – | 60.00 | 58.88 | 65.14 | – | – |
| 20:8 | – | – | – | 78.52 | – | – | – | 76.00 | 80.56 | 84.44 | – | – |
| 9:8 | 66.91 | – | – | 65.93 | – | – | – | 67.33 | 71.53 | 66.67 | – | 67.79 |
| 47:45 | – | – | – | 90.48 | – | – | – | – | – | 91.34 | – | – |
| 48:45 | – | – | – | 56.35 | – | – | – | – | – | 52.76 | – | – |
| 52:51 | – | – | – | 85.00 | – | – | – | – | – | 70.73 | – | – |
| 54:55 | – | – | – | 47.17 | – | – | – | – | – | 46.00 | – | – |
| 63:62 | – | – | – | – | – | – | – | – | – | – | – | – |

Table 5.
Male cranial measurements and indices in the population of Somogyzil-Dölgút (cont'd)

| Martin | Grave No. | | | | | | | | | | |
|--------|-----------|-----|-----|-----|-------|-------|-------|-------|-----|-------|-------|
| | 113/b | 114 | 116 | 117 | 124 | 130 | 138 | 140 | 144 | 146 | 147 |
| 1 | 184 | – | – | – | 187 | 181 | 183 | – | – | 194 | 182 |
| 5 | 95 | – | – | – | – | – | – | – | – | – | – |
| 8 | 149 | – | – | – | 138 | 152 | 135 | – | 145 | 146 | 138 |
| 9 | 97 | 99 | – | 100 | 97 | 89 | 96 | 93 | – | 105 | 94 |
| 10 | 119 | – | – | – | 119 | – | 116 | 120 | – | 125 | 117 |
| 11 | 130 | – | – | – | 123 | 126 | 123 | – | – | 128 | 122 |
| 12 | 118 | – | – | – | 106 | 118 | 114 | – | 117 | – | 107 |
| 17 | – | – | – | – | – | – | – | – | – | – | – |
| 20 | 115 | – | – | – | – | 111 | 118 | – | – | 122 | – |
| 38 | 1510 | – | – | – | – | 1474 | 1423 | – | – | 1621 | – |
| 40 | – | – | – | – | – | – | – | – | – | – | – |
| 43 | 108 | – | – | 108 | 107 | 98 | 105 | 103 | – | 111 | 102 |
| 45 | 133 | – | – | – | – | – | 135 | – | – | 144 | – |
| 46 | 97 | – | – | – | 95 | – | – | – | – | 103 | – |
| 47 | 106 | – | – | – | 125 | 126 | – | – | – | 118 | – |
| 48 | 66 | – | – | – | 79 | 74 | 63 | 69 | – | 74 | – |
| 51 | 44 | – | – | – | 41 | 40 | 42 | 43 | – | 45 | – |
| 52 | 34 | – | – | – | – | 31 | 30 | 36 | – | 33 | – |
| 54 | 24 | – | – | – | – | 26 | 25 | 26 | – | 23 | – |
| 55 | 48 | – | – | – | – | 53 | 44 | 56 | – | 52 | – |
| 62 | 43 | – | – | – | – | – | 48 | – | – | 46 | – |
| 63 | 45 | – | – | – | – | – | – | – | – | 43 | – |
| 65 | 123 | – | – | – | 120 | 127 | – | – | – | 122 | – |
| 66 | 108 | – | – | – | 107 | 105 | – | – | – | 103 | 105 |
| 69 | 26 | 30 | – | – | 29 | 34 | 36 | – | – | 34 | 29 |
| 70 | – | 55 | 74 | 55 | 52 | 66 | 64 | – | 66 | 70 | 60 |
| 71 | 29 | 30 | 30 | 32 | 32 | 31 | 40 | – | 31 | 36 | 27 |
| | | | | | | | | | | | |
| 8:1 | 80.98 | – | – | – | 73.80 | 83.98 | 73.77 | – | – | 75.26 | 75.82 |
| 17:1 | – | – | – | – | – | – | – | – | – | – | – |
| 17:8 | – | – | – | – | – | – | – | – | – | – | – |
| 20:1 | 62.50 | – | – | – | – | 61.33 | 64.48 | – | – | 62.89 | – |
| 20:8 | 77.18 | – | – | – | – | 73.03 | 87.41 | – | – | 83.56 | – |
| 9:8 | 65.10 | – | – | – | 70.29 | 58.55 | 71.11 | – | – | 71.92 | 68.12 |
| 47:45 | 79.70 | – | – | – | – | – | – | – | – | 81.94 | – |
| 48:45 | 49.62 | – | – | – | – | – | 46.67 | – | – | 51.39 | – |
| 52:51 | 77.27 | – | – | – | – | 77.50 | 71.43 | 83.72 | – | 73.33 | – |
| 54:55 | 50.00 | – | – | – | – | 49.06 | 56.82 | 46.43 | – | 44.23 | – |
| 63:62 | 104.65 | – | – | – | – | – | – | – | – | 93.48 | – |

Table 6.
Female cranial measurements and indices in the population of Somogyszil-Dölgút

| Martin | Grave No. | | | | | | | | | | | |
|--------|-----------|-----|-----|-------|-----|-------|-------|-------|-------|-----|-------|-------|
| | No. | 2 | 19 | 20 | 21 | 24 | 35 | 38 | 40 | 43 | 44 | 55 |
| 1 | 186 | – | – | 174 | – | 181 | 191 | – | 185 | 186 | – | 182 |
| 5 | – | – | – | – | – | – | 102 | – | – | – | – | 93 |
| 8 | 125 | – | – | 141 | – | – | 138 | – | 141 | – | – | 143 |
| 9 | 93 | 95 | 90 | 89 | 96 | 88 | 95 | 92 | 93 | 99 | 90 | 94 |
| 10 | 112 | 123 | – | 117 | – | – | 116 | – | 117 | – | 117 | 123 |
| 11 | – | – | – | 118 | – | – | 125 | – | – | – | – | 126 |
| 12 | – | – | – | 107 | – | 107 | 116 | – | 110 | – | – | 108 |
| 17 | – | – | – | – | – | – | 136 | – | – | – | – | 115 |
| 20 | – | – | – | 104 | – | 108 | 112 | – | – | – | – | 100 |
| 38 | – | – | – | 1253 | – | – | 1403 | – | – | – | – | 1272 |
| 40 | – | – | – | – | – | – | 94 | – | – | – | – | 86 |
| 43 | 102 | 100 | – | 97 | 101 | 101 | 104 | 100 | – | – | 97 | 99 |
| 45 | – | – | – | – | – | – | 129 | – | – | – | – | 133 |
| 46 | – | – | – | – | – | – | 99 | 91 | – | – | 92 | 88 |
| 47 | – | – | – | – | – | – | 116 | 105 | – | – | – | 93 |
| 48 | – | – | – | – | – | – | 70 | 63 | – | – | 60 | 58 |
| 51 | 42 | – | – | 40 | – | – | 42 | 40 | – | – | 39 | 39 |
| 52 | 35 | – | – | 36 | – | – | 33 | 34 | – | – | 30 | 33 |
| 54 | – | – | – | – | – | – | 24 | 24 | – | – | 23 | 23 |
| 55 | – | – | – | – | – | – | 51 | 48 | – | – | 44 | 48 |
| 62 | – | – | – | – | – | – | 42 | – | – | – | – | – |
| 63 | – | – | – | – | – | – | – | – | – | – | – | – |
| 65 | – | – | 118 | 116 | – | – | 125 | – | – | – | – | 123 |
| 66 | 100 | – | 94 | 86 | 95 | – | 99 | 96 | – | 91 | – | 86 |
| 69 | 34 | – | 26 | – | 34 | – | 33 | 26 | – | 29 | 28 | – |
| 70 | – | 49 | 52 | 59 | 55 | – | 61 | 56 | 56 | 54 | – | 54 |
| 71 | 30 | 27 | 30 | 27 | 28 | – | 34 | 33 | 31 | 29 | – | 29 |
| | | | | | | | | | | | | |
| 8:1 | 67.20 | – | – | 81.03 | – | – | 72.25 | – | 76.22 | – | – | 78.57 |
| 17:1 | – | – | – | – | – | – | 71.20 | – | – | – | – | 63.19 |
| 17:8 | – | – | – | – | – | – | 98.55 | – | – | – | – | 80.42 |
| 20:1 | – | – | – | 59.77 | – | 59.67 | 58.64 | – | – | – | – | 54.95 |
| 20:8 | – | – | – | 73.76 | – | – | 81.16 | – | – | – | – | 69.93 |
| 9:8 | 74.40 | – | – | 63.12 | – | – | 68.84 | – | 65.96 | – | – | 65.73 |
| 47:45 | – | – | – | – | – | – | 89.92 | – | – | – | – | 69.92 |
| 48:45 | – | – | – | – | – | – | 54.26 | – | – | – | – | 43.61 |
| 52:51 | 83.33 | – | – | 90.00 | – | – | 78.57 | 85.00 | – | – | 76.92 | 84.62 |
| 54:55 | – | – | – | – | – | – | 47.06 | 50.00 | – | – | 52.27 | 47.92 |
| 63:62 | – | – | – | – | – | – | – | – | – | – | – | – |

Table 6.
Female cranial measurements and indices in the population of Somogyszil-Dögkút (cont'd)

| Martin No. | Grave No. | | | | | | | | | | | |
|---------------|-----------|-------|-------|-------|-----|----|-----|-------|--------|-----|-------|-------|
| | 67 | 68 | 70 | 71 | 75 | 92 | 93 | 108 | 109 | 115 | 118 | 123 |
| 1 | 163 | 186 | 168 | – | 167 | – | 168 | 168 | 179 | – | – | 180 |
| 5 | – | – | – | – | – | – | – | – | 105 | – | – | – |
| 8 | – | 142 | 150 | 141 | – | – | – | 143 | 134 | – | – | 138 |
| 9 | 88 | 98 | 96 | 100 | – | – | 95 | 95 | 98 | 85 | – | 95 |
| 10 | – | – | 129 | – | – | – | – | 122 | – | 112 | – | 117 |
| 11 | – | 128 | 126 | – | – | – | – | 121 | 118 | – | – | – |
| 12 | – | 116 | 107 | – | – | – | 107 | 112 | 104 | – | – | 106 |
| 17 | – | – | – | – | – | – | – | – | 134 | – | – | – |
| 20 | – | 110 | 120 | – | – | – | – | 115 | 116 | – | – | – |
| 38 | – | 1386 | 1430 | – | – | – | – | 1332 | 1340 | – | – | – |
| 40 | – | – | – | – | – | – | – | – | 101 | – | – | – |
| 43 | 93 | 105 | 105 | 105 | – | – | 99 | 105 | – | 95 | – | – |
| 45 | – | – | – | – | – | – | – | – | 129 | – | – | – |
| 46 | – | – | – | – | – | – | – | – | – | – | – | – |
| 47 | – | – | – | – | – | – | – | – | 118 | – | – | – |
| 48 | 64 | – | – | – | – | – | – | – | 74 | – | – | – |
| 51 | 39 | 41 | 43 | 42 | – | – | – | – | 42 | – | 41 | – |
| 52 | 32 | 35 | 33 | 33 | – | – | – | – | 34 | – | 35 | – |
| 54 | – | – | – | – | – | – | – | – | 25 | – | – | – |
| 55 | 46 | – | – | – | – | – | – | – | 52 | – | – | – |
| 62 | – | – | – | – | – | – | – | – | 43 | – | – | – |
| 63 | – | – | – | – | – | – | – | – | 40 | – | – | – |
| 65 | – | 122 | – | – | – | – | 121 | 122 | – | – | – | – |
| 66 | – | 99 | 95 | – | – | – | 96 | 88 | – | – | – | – |
| 69 | 26 | 33 | – | 30 | – | 29 | 32 | 32 | 32 | 26 | 25 | – |
| 70 | 55 | 62 | 61 | – | – | – | 59 | 54 | 55 | – | 52 | 53 |
| 71 | 30 | 33 | 33 | 32 | – | 31 | 34 | 31 | 34 | – | 29 | 33 |
| 8:1 | – | 76.34 | 89.29 | – | – | – | – | 85.12 | 74.86 | – | – | 76.67 |
| 17:1 | – | – | – | – | – | – | – | – | 74.86 | – | – | – |
| 17:8 | – | – | – | – | – | – | – | – | 100.00 | – | – | – |
| 20:1 | – | 59.14 | 71.43 | – | – | – | – | 68.45 | 64.80 | – | – | – |
| 20:8 | – | 77.46 | 80.00 | – | – | – | – | 80.42 | 86.57 | – | – | – |
| 9:8 | – | 69.01 | 64.00 | 70.92 | – | – | – | 66.43 | 73.13 | – | – | 68.84 |
| 47:45 | – | – | – | – | – | – | – | – | 91.47 | – | – | – |
| 48:45 | – | – | – | – | – | – | – | – | 57.36 | – | – | – |
| 52:51 | 82.05 | 85.37 | 76.74 | 78.57 | – | – | – | – | 80.95 | – | 85.37 | – |
| 54:55 | – | – | – | – | – | – | – | – | 48.08 | – | – | – |
| 63:62 | – | – | – | – | – | – | – | – | 93.02 | – | – | – |

Table 6.
Female cranial measurements and indices in the population of Somogyszil-Döngkút (cont'd)

| Martin | Grave No. | | | | | | | | | |
|--------|-----------|-----|-------------|-----|-----|-------|-------|-----|-------|-------|
| | 127 | 131 | stray finds | 132 | 133 | 137 | 141 | 143 | 145 | 148 |
| 1 | – | 184 | 177 | – | 178 | 181 | 179 | – | 169 | 184 |
| 5 | – | – | 93 | – | – | – | – | – | – | 103 |
| 8 | – | – | 128 | – | – | 140 | 134 | – | 136 | 134 |
| 9 | 95 | 96 | 92 | 98 | 95 | 88 | 96 | – | 91 | 87 |
| 10 | – | – | 108 | – | – | – | 119 | – | 109 | 113 |
| 11 | – | – | 114 | – | – | 121 | 123 | – | 125 | 118 |
| 12 | – | – | 103 | – | – | 109 | 109 | – | – | 102 |
| 17 | – | – | 128 | – | – | – | – | – | – | 127 |
| 20 | – | – | 112 | – | – | 113 | 104 | – | 111 | 110 |
| 38 | – | – | 1248 | – | – | 1370 | 1232 | – | 1253 | 1313 |
| 40 | – | – | – | – | – | – | – | – | – | 98 |
| 43 | – | 105 | 100 | – | 106 | 94 | 103 | – | 97 | 98 |
| 45 | – | – | 125 | – | – | 124 | – | – | 131 | 122 |
| 46 | – | – | 92 | – | 88 | 82 | – | – | 93 | 90 |
| 47 | – | – | 110 | – | – | 108 | – | – | 99 | 107 |
| 48 | – | – | 66 | – | – | 63 | – | – | 62 | 66 |
| 51 | – | – | 41 | – | – | 39 | – | – | 41 | 40 |
| 52 | – | – | 35 | – | – | 32 | – | – | 30 | 31 |
| 54 | – | – | 23 | – | 25 | 23 | – | – | 25 | 26 |
| 55 | – | – | 53 | – | – | 47 | – | – | 45 | 47 |
| 62 | – | – | 42 | – | – | – | – | – | – | 44 |
| 63 | – | – | – | – | 35 | 37 | – | – | 46 | 43 |
| 65 | – | – | 111 | – | – | – | – | – | 117 | 113 |
| 66 | – | 98 | 97 | – | – | 90 | 90 | 103 | 99 | 99 |
| 69 | – | – | 30 | – | 29 | 31 | – | 31 | 26 | 29 |
| 70 | 56 | 62 | 63 | 55 | 67 | 59 | 54 | 58 | 58 | 52 |
| 71 | 29 | 36 | 30 | 29 | 33 | 30 | 35 | 27 | 29 | 33 |
| | | | | | | | | | | |
| 8:1 | – | – | 72.32 | – | – | 77.35 | 74.86 | – | 80.47 | 72.83 |
| 17:1 | – | – | 72.32 | – | – | – | – | – | – | 69.02 |
| 17:8 | – | – | 100.00 | – | – | – | – | – | – | 94.78 |
| 20:1 | – | – | 63.28 | – | – | 62.43 | 58.10 | – | 65.68 | 59.78 |
| 20:8 | – | – | 87.50 | – | – | 80.71 | 77.61 | – | 81.62 | 82.09 |
| 9:8 | – | – | 71.88 | – | – | 62.86 | 71.64 | – | 66.91 | 64.93 |
| 47:45 | – | – | 88.00 | – | – | 87.10 | – | – | 75.57 | 87.70 |
| 48:45 | – | – | 52.80 | – | – | 50.81 | – | – | 47.33 | 54.10 |
| 52:51 | – | – | 85.37 | – | – | 82.05 | – | – | 73.17 | 77.50 |
| 54:55 | – | – | 43.40 | – | – | 48.94 | – | – | 55.56 | 55.32 |
| 63:62 | – | – | – | – | – | – | – | – | – | 97.73 |

Table 7.
Summary statistics of cranial measurements and indices in the population of Somogyzil-Dölgút

| Martin No. | Males | | | | | | Females | | | | | |
|------------|-------|---------|---------|---------|-------|--------|---------|---------|---------|---------|-------|--------|
| | N | Vmax | Vmin | M | SD | S.R. | N | Vmax | Vmin | M | SD | S.R. |
| 1 | 21 | 197 | 170 | 185.43 | 7.25 | 118.85 | 22 | 191 | 163 | 178.00 | 7.76 | 133.79 |
| 5 | 7 | 106 | 95 | 100.86 | 4.02 | 98.05 | 5 | 105 | 93 | 99.20 | 5.76 | 147.69 |
| 8 | 19 | 152 | 133 | 140.58 | 6.19 | 123.8 | 16 | 150 | 125 | 138.00 | 6.12 | 127.50 |
| 9 | 22 | 105 | 89 | 96.82 | 4.47 | 101.59 | 30 | 100 | 85 | 93.40 | 3.87 | 90.00 |
| 10 | 16 | 133 | 109 | 119.25 | 5.30 | 110.42 | 15 | 129 | 108 | 116.93 | 5.71 | 124.13 |
| 11 | 15 | 135 | 115 | 124.47 | 5.21 | 108.54 | 12 | 128 | 114 | 121.92 | 4.27 | 92.83 |
| 12 | 17 | 122 | 103 | 112.06 | 5.25 | 116.67 | 15 | 116 | 102 | 108.20 | 4.09 | 95.12 |
| 17 | 6 | 140 | 128 | 135.17 | 4.36 | 88.98 | 5 | 136 | 115 | 128.00 | 8.22 | 174.89 |
| 20 | 14 | 122 | 106 | 113.21 | 4.32 | 108.00 | 12 | 120 | 100 | 110.58 | 5.62 | 147.89 |
| 38 | 13 | 1620.61 | 1330.85 | 1446.34 | 93.79 | 83.74 | 12 | 1430.40 | 1231.85 | 1319.51 | 67.93 | 67.59 |
| 40 | 3 | 103 | 91 | 95.33 | 6.66 | 135.92 | 4 | 101 | 86 | 94.75 | 6.50 | 138.30 |
| 43 | 23 | 115 | 98 | 105.74 | 4.38 | 113.77 | 23 | 106 | 93 | 100.48 | 3.87 | 106.03 |
| 45 | 10 | 144 | 126 | 133.90 | 5.43 | 106.47 | 7 | 133 | 122 | 127.57 | 3.99 | 83.13 |
| 46 | 7 | 103 | 91 | 96.57 | 4.08 | 86.81 | 9 | 99 | 82 | 90.56 | 4.59 | 103.15 |
| 47 | 8 | 126 | 106 | 117.63 | 6.48 | 92.57 | 8 | 118 | 93 | 107.00 | 8.25 | 126.92 |
| 48 | 10 | 79 | 63 | 70.60 | 4.60 | 112.20 | 10 | 74 | 58 | 64.60 | 4.70 | 123.68 |
| 51 | 13 | 45 | 40 | 42.31 | 1.65 | 91.67 | 16 | 43 | 39 | 40.69 | 1.30 | 76.47 |
| 52 | 11 | 36 | 29 | 32.27 | 2.37 | 124.74 | 16 | 36 | 30 | 33.19 | 1.83 | 96.32 |
| 54 | 9 | 27 | 23 | 25.00 | 1.41 | 78.33 | 10 | 26 | 23 | 24.10 | 1.10 | 64.71 |
| 55 | 9 | 56 | 44 | 50.56 | 3.54 | 122.07 | 10 | 53 | 44 | 48.10 | 3.00 | 111.11 |
| 62 | 7 | 51 | 43 | 46.57 | 2.64 | 94.29 | 4 | 44 | 42 | 42.75 | 0.96 | 36.23 |
| 63 | 4 | 45 | 42 | 43.25 | 1.26 | 47.55 | 5 | 46 | 35 | 40.20 | 4.44 | 174.12 |
| 65 | 10 | 137 | 120 | 125.20 | 5.07 | 88.95 | 10 | 125 | 111 | 118.80 | 4.57 | 84.63 |
| 66 | 13 | 115 | 98 | 105.62 | 4.54 | 72.06 | 19 | 103 | 86 | 94.79 | 4.97 | 85.69 |
| 69 | 20 | 38 | 26 | 32.90 | 2.99 | 104.91 | 22 | 34 | 25 | 29.59 | 2.87 | 112.55 |
| 70 | 26 | 74 | 52 | 63.62 | 5.73 | 116.94 | 27 | 67 | 49 | 56.70 | 4.11 | 93.41 |
| 71 | 30 | 40 | 27 | 32.33 | 2.95 | 109.26 | 30 | 36 | 27 | 30.97 | 2.48 | 99.20 |
| | | | | | | | | | | | | |
| 8:1 | 18 | 83.98 | 69.04 | 75.32 | 3.69 | 115.31 | 15 | 89.29 | 67.20 | 77.03 | 5.45 | 170.31 |
| 17:1 | 6 | 77.14 | 68.82 | 72.43 | 2.97 | 95.81 | 5 | 74.86 | 63.19 | 70.12 | 4.41 | 142.26 |
| 17:8 | 6 | 102.21 | 94.33 | 97.97 | 3.08 | 70.00 | 5 | 100.00 | 80.42 | 94.75 | 8.29 | 188.41 |
| 20:1 | 13 | 65.14 | 56.99 | 61.03 | 2.51 | 100.4 | 13 | 71.43 | 54.95 | 62.01 | 4.60 | 184.00 |
| 20:8 | 13 | 87.41 | 73.03 | 80.99 | 4.36 | 132.12 | 12 | 87.50 | 69.93 | 79.90 | 4.87 | 147.58 |
| 9:8 | 16 | 72.79 | 58.55 | 68.35 | 3.51 | 106.36 | 16 | 74.40 | 62.86 | 68.04 | 3.61 | 109.39 |
| 47:45 | 6 | 92.37 | 79.70 | 87.05 | 5.27 | 99.43 | 7 | 91.47 | 69.92 | 84.24 | 8.15 | 153.77 |
| 48:45 | 7 | 56.35 | 46.67 | 52.16 | 3.24 | 102.86 | 7 | 57.36 | 43.61 | 51.47 | 4.67 | 148.25 |
| 52:51 | 11 | 85.00 | 66.67 | 76.11 | 6.02 | 120.40 | 16 | 90.00 | 73.17 | 81.60 | 4.39 | 87.80 |
| 54:55 | 9 | 56.82 | 44.23 | 49.66 | 4.42 | 107.80 | 9 | 55.56 | 43.40 | 49.84 | 3.96 | 96.59 |
| 63:62 | 3 | 104.65 | 89.36 | 95.83 | 7.91 | 113.00 | 2 | 97.73 | 93.02 | 95.38 | 3.33 | 47.57 |



Fig. 2. Grave no. 5a; adult male; skull – anterior (A), semi-profile (B) and lateral view (C)



Fig. 3. Grave no. 38; adult female; skull – anterior (A), semi-profile (B) and lateral view (C)



Fig. 4. Grave no. 53; adult male; skull – anterior (A), semi-profile (B) and lateral view (C)



Fig. 5. Grave no. 61; adult female; skull – anterior (A), semi-profile (B) and lateral view (C)



Fig. 6. Grave no. 146; adult male; skull – anterior (A), semi-profile (B) and lateral view (C)



Fig. 7. Grave no. 70; adult female; skull – lateral view

Table 8.

Distribution of cranial indices of the population of Somogyszil-Dölgút in the class categories of ALEKSEYEV-DEBETZ 1964

| Martin No. | Class category | Males | | | Females | | | Together | |
|------------|-------------------------|------------|----|-------|------------|----|-------|----------|-------|
| | | | N | % | | N | % | N | % |
| | <i>Hyperdolichokran</i> | -73.2 | 5 | 27.78 | -74.1 | 4 | 26.67 | 9 | 27.27 |
| 8:1 | <i>Dolichokran</i> | 73.3-76.4 | 6 | 33.33 | 74.2-77.3 | 6 | 40.00 | 12 | 36.36 |
| | <i>Mesokran</i> | 76.5-79.9 | 5 | 27.78 | 77.4-80.8 | 2 | 13.33 | 7 | 21.21 |
| | <i>Brachykran</i> | 80.0-83.1 | 1 | 5.56 | 80.9-84.0 | 1 | 6.67 | 2 | 6.06 |
| | <i>Hyperbrachykran</i> | 83.2- | 1 | 5.56 | 84.1- | 2 | 13.33 | 3 | 9.09 |
| | | Σ | 18 | | | 15 | | 33 | |
| | | | | | | | | | |
| 17:1 | <i>Hyperchamaekran</i> | -69.2 | 1 | 16.67 | -69.4 | 2 | 40.00 | 3 | 27.27 |
| | <i>Chamaekran</i> | 69.3-72.3 | 2 | 33.33 | 69.5-72.5 | 2 | 40.00 | 4 | 36.36 |
| | <i>Orthokran</i> | 72.4-75.6 | 2 | 33.33 | 72.6-75.8 | 1 | 20.00 | 3 | 27.27 |
| | <i>Hypsikran</i> | 75.7-78.7 | 1 | 16.67 | 75.9-78.9 | 0 | 0.00 | 1 | 9.09 |
| | <i>Hyperhypsikran</i> | 78.8- | 0 | 0.00 | 79.0- | 0 | 0.00 | 0 | 0.00 |
| | | Σ | 6 | | | 5 | | 11 | |
| | | | | | | | | | |
| | <i>Hyperchamaekran</i> | -59.4 | 5 | 38.46 | -59.6 | 4 | 30.77 | 9 | 34.62 |
| 20:1 | <i>Chamaekran</i> | 59.5-61.8 | 3 | 23.08 | 59.7-62.0 | 3 | 23.08 | 6 | 23.08 |
| | <i>Orthokran</i> | 61.9-64.7 | 4 | 30.77 | 62.1-64.9 | 3 | 23.08 | 7 | 26.92 |
| | <i>Hypsikran</i> | 64.8-67.1 | 1 | 7.69 | 65.0-67.3 | 1 | 7.69 | 2 | 7.69 |
| | <i>Hyperhypsikran</i> | 67.2- | 0 | 0.00 | 67.4- | 2 | 15.38 | 2 | 7.69 |
| | | Σ | 13 | | | 13 | | 26 | |
| | | | | | | | | | |
| | <i>Hypertapeinokran</i> | -87.9 | 0 | 0.00 | -87.1 | 1 | 20.00 | 1 | 9.09 |
| 17:8 | <i>Tapeinokran</i> | 88.0-92.3 | 0 | 0.00 | 87.2-91.4 | 0 | 0.00 | 0 | 0.00 |
| | <i>Metriokran</i> | 92.4-97.0 | 2 | 33.33 | 91.5-96.1 | 1 | 20.00 | 3 | 27.27 |
| | <i>Akrokran</i> | 97.1-101.4 | 3 | 50.00 | 96.2-100.4 | 3 | 60.00 | 6 | 54.55 |
| | <i>Hyperakrokran</i> | 101.5- | 1 | 16.67 | 100.4- | 0 | 0.00 | 1 | 9.09 |
| | | Σ | 6 | | | 5 | | 11 | |
| | | | | | | | | | |
| | <i>Hypertapeinokran</i> | -75.8 | 1 | 7.69 | -75.1 | 2 | 16.67 | 3 | 12.00 |
| 20:8 | <i>Tapeinokran</i> | 75.9-78.9 | 4 | 30.77 | 75.2-78.2 | 2 | 16.67 | 6 | 24.00 |
| | <i>Metriokran</i> | 79.0-82.8 | 3 | 23.08 | 78.3-82.1 | 6 | 50.00 | 9 | 36.00 |
| | <i>Akrokran</i> | 82.9-85.9 | 4 | 30.77 | 82.2-85.2 | 0 | 0.00 | 4 | 16.00 |
| | <i>Hyperakrokran</i> | 86.0-91.8 | 1 | 7.69 | 85.3-91.0 | 2 | 16.67 | 3 | 12.00 |
| | | Σ | 13 | | | 12 | | 25 | |
| | | | | | | | | | |
| | <i>Hyperstenometop</i> | -62.7 | 1 | 6.25 | -63 | 1 | 6.25 | 2 | 6.25 |
| 9:8 | <i>Stenometop</i> | 62.8-66.0 | 2 | 12.50 | 63.1-66.3 | 5 | 31.25 | 7 | 21.88 |
| | <i>Metriometop</i> | 66.1-69.6 | 6 | 37.50 | 66.4-69.9 | 5 | 31.25 | 11 | 34.38 |
| | <i>Eurymetop</i> | 69.7-72.9 | 7 | 43.75 | 70.0-73.2 | 4 | 25.00 | 11 | 34.38 |
| | <i>Hypereurymetop</i> | 73.0- | 0 | 0.00 | 73.3- | 1 | 6.25 | 1 | 3.13 |
| | | Σ | 16 | | | 16 | | 32 | |

Table 8.

Distribution of cranial indices of the population of Somogyuszil-Dölgút in the class categories of ALEKSEYEV–DEBETZ 1964 (cont'd)

| Martin No. | Class category | Males | | | Females | | | Together | |
|------------|-----------------------------|-----------|----|-------|-----------|----|-------|----------|-------|
| | | | N | % | | N | % | N | % |
| | <i>Hyperoligenkephal</i> | –1227 | 0 | 0.00 | –1096 | 0 | 0.00 | 0 | 0.00 |
| | <i>Oligenkephal</i> | 1228–1337 | 1 | 7.69 | 1097–1195 | 0 | 0.00 | 1 | 4.00 |
| 38 | <i>Euenkephal</i> | 1338–1462 | 6 | 46.15 | 1196–1307 | 5 | 41.67 | 11 | 44.00 |
| | <i>Aristenkephal</i> | 1463–1572 | 5 | 38.46 | 1308–1406 | 6 | 50.00 | 11 | 44.00 |
| | <i>Hyperaristenkephal</i> | 1573– | 1 | 7.69 | 1407–1582 | 1 | 8.33 | 2 | 8.00 |
| | | Σ | 13 | | | 12 | | 25 | |
| | <i>Hyperuryprosop</i> | –80.5 | 1 | 16.67 | –80.1 | 2 | 33.33 | 3 | 25.00 |
| 47:45 | <i>Euryprosop</i> | 80.6–85.8 | 1 | 16.67 | 80.2–85.4 | 0 | 0.00 | 1 | 8.33 |
| | <i>Mesoprosop</i> | 85.9–91.6 | 3 | 50.00 | 85.5–91.1 | 4 | 66.67 | 7 | 58.33 |
| | <i>Leptoprosop</i> | 91.7–96.9 | 1 | 16.67 | 91.2–96.4 | 0 | 0.00 | 1 | 8.33 |
| | <i>Hyperleptoprosop</i> | 97.0– | 0 | 0.00 | 96.5– | 0 | 0.00 | 0 | 0.00 |
| | | Σ | 6 | | | 6 | | 12 | |
| | <i>Hyperuryen</i> | –48.3 | 1 | 14.29 | –48.1 | 2 | 28.57 | 3 | 21.43 |
| 48:45 | <i>Euryen</i> | 48.4–51.4 | 2 | 28.57 | 48.2–51.2 | 1 | 14.29 | 3 | 21.43 |
| | <i>Mesen</i> | 51.5–54.9 | 3 | 42.86 | 51.3–54.7 | 3 | 42.86 | 6 | 42.86 |
| | <i>Lepten</i> | 55.0–58.0 | 1 | 14.29 | 54.8–57.8 | 1 | 14.29 | 2 | 14.29 |
| | <i>Hyperlepten</i> | 58.1– | 0 | 0.00 | 57.9– | 0 | 0.00 | 0 | 0.00 |
| | | Σ | 7 | | | 7 | | 14 | |
| | <i>Hyperchamaekonch</i> | –73.8 | 5 | 45.45 | –76.4 | 1 | 6.25 | 6 | 22.22 |
| 52:51 | <i>Chamaekonch</i> | 73.9–78.7 | 3 | 27.27 | 76.5–81.5 | 6 | 37.50 | 9 | 33.33 |
| | <i>Mesokonch</i> | 78.8–84.3 | 2 | 18.18 | 81.6–87.3 | 8 | 50.00 | 10 | 37.04 |
| | <i>Hypikonch</i> | 84.4–89.2 | 1 | 9.09 | 87.4–92.4 | 1 | 6.25 | 2 | 7.41 |
| | <i>Hyperhypikonch</i> | 89.3– | 0 | 0.00 | 92.5– | 0 | 0.00 | 0 | 0.00 |
| | | Σ | 11 | | | 16 | | 27 | |
| | <i>Hyperleptorrhin</i> | –42.5 | 0 | 0.00 | –43.3 | 0 | 0.00 | 0 | 0.00 |
| 54:55 | <i>Leptorrhin</i> | 42.6–46.6 | 3 | 33.33 | 43.4–47.5 | 2 | 22.22 | 5 | 27.78 |
| | <i>Mesorrhin</i> | 46.7–51.1 | 4 | 44.44 | 47.6–52.1 | 4 | 44.44 | 8 | 44.44 |
| | <i>Chamaerrhin</i> | 51.2–55.2 | 0 | 0.00 | 52.2–56.3 | 3 | 33.33 | 3 | 16.67 |
| | <i>Hyperchamaerrhin</i> | 55.3– | 2 | 22.22 | 56.4– | 0 | 0.00 | 2 | 11.11 |
| | | Σ | 9 | | | 9 | | 18 | |
| | <i>Hyperleptostaphylin</i> | –75.7 | 0 | 0.00 | –75.8 | 0 | 0.00 | 0 | 0.00 |
| 63:62 | <i>Leptostaphylin</i> | 75.8–82.6 | 0 | 0.00 | 75.9–82.7 | 0 | 0.00 | 0 | 0.00 |
| | <i>Mesostaphylin</i> | 82.7–90.3 | 1 | 33.33 | 82.8–90.5 | 0 | 0.00 | 1 | 20.00 |
| | <i>Brachystaphylin</i> | 90.4–97.2 | 1 | 33.33 | 90.6–97.4 | 1 | 50.00 | 2 | 40.00 |
| | <i>Hyperbrachystaphylin</i> | 97.3– | 1 | 33.33 | 97.5– | 1 | 50.00 | 2 | 40.00 |
| | | Σ | 3 | | | 2 | | 5 | |

a merely hypothetical proposal – it should here be recalled that during this period brachycranic skulls were frequent among populations of presumably Sarmatian origin and/or populations with a significant Sarmatian component.

Metric characteristics of the postcranial skeleton, estimated stature

The individual postcranial measurements and the estimated stature are presented in *Tables 9–10*. The mean height of males is 165.94 cm, while it is 156.86 cm for females. Taking a look at the N–S/S–N oriented burials, it can be seen that three males from those graves were suitable for stature calculation (Grave no. 18: 171.33 cm; Grave no. 41: 166.05 cm; Grave no. 50: 174.33 cm). If they are excluded from the stature mean calculation, the average height of males lowers to 165.31 cm. Two of these three males (Grave no. 18 and Grave no. 50) had a stature significantly exceeding this mean value. Although far-reaching conclusions can hardly be drawn owing to the extremely low number of cases, if this record is viewed together with the data on skulls, it indirectly underpins the assumption that the N–S/S–N oriented graves contained the burials of an immigrant group that in terms of certain anthropological traits differed substantially from the overwhelming majority of the community using the cemetery.

The average stature (calculated from the lower limb bones) of the population of the Carpathian Basin during the Roman Age was 166.09 cm for males, and 156.91 cm for females.²⁷ The average height of the Somogyszil-Döggúti dűlő population fits nicely into this picture.

Traumas and injuries

The frequency of fractures and other injuries caused by accidents or interpersonal violence is fairly low in the Somogyszil-Döggúti dűlő population. Fracture of the lower limb was identified in one case: a healed fracture was found in the proximal third of the right fibula of an adult woman interred in Grave no. 16. Healed fractures of the upper limb was noted in three cases: a woman buried in Grave no. 20 had broken her right ulna near the distal end, a mid diaphyseal fracture healed with an angulation was observed on the left radius of the man interred in Grave no. 23 (*Fig. 8*), and a mature man in Grave no. 41 had broken his left radius in the distal third. In addition, one other bone trauma was found: an ~ 11 mm long healed depressed fracture probably caused by a moderately sharp implement was identified on the left parietal bone of an elderly woman from Grave no. 19 (*Fig. 9*).

Biological distance between Somogyszil-Döggúti dűlő and other archaeological populations

The pairwise Penrose distances (C_R^2 : “size” and “shape” combined) between the Somogyszil-Döggúti dűlő and other male cranial series are presented in *Table 11*.

From the comparative male cranial series below the 1% error band ($C_R^2 \leq 0.196$) are the late Roman period sites of Esztergom-Bánomi dűlő ($C_R^2 = 0.096$), Keszthely-Dobogó ($C_R^2 = 0.183$) and Tác-Margittelep ($C_R^2 = 0.188$), the Avar period series of Kaposvár-Road 61, Site 26 ($C_R^2 = 0.054$), Toponár-40-es őrház [Toponár watchman’s house No. 40] ($C_R^2 = 0.075$), Zalakomár-Lesvári dűlő II ($C_R^2 = 0.076$), Kereki-Homokbánya ($C_R^2 = 0.100$), Keszthely-Város ($C_R^2 = 0.121$), Kaposvár-Fészerlakpuszta ($C_R^2 = 0.148$), Zelovce (Zsély) ($C_R^2 = 0.154$) and Virt ($C_R^2 = 0.194$). Cranial series below the 2% error band ($C_R^2 < 0.235$) are the Keszthely burial ground uncovered by Vilmos Lipp and assigned to the Keszthely culture ($C_R^2 = 0.200$), and the Late Avar period cemeteries of Tiszaderzs ($C_R^2 = 0.213$) and Nové Zámky (Érsekújvár) ($C_R^2 = 0.229$).

The biological distance-based relations of the close analogies of Somogyszil-Döggúti dűlő male cranial series is visualized by a dendrogram (*Fig. 10*). Accordingly, Somogyszil-Döggúti dűlő clusters together with the Avar period populations of Kaposvár-Road 61, Site 26, Toponár 40-es őrház [Toponár watchman’s house No. 40] and Kereki-Homokbánya. This joins together still within the 1% error band threshold value (0.196) with an other cluster composed of the Avar period series of Kaposvár-Fészerlakpuszta and Zalakomár-Lesvári dűlő II, and the

²⁷ ÉRY 1998.



Fig. 8. Grave no. 23; adult male; fracture of the left radius healed with an angulation (A, B)



Fig. 9. Grave no. 19; senile female; healed depressed fracture on the left parietal bone

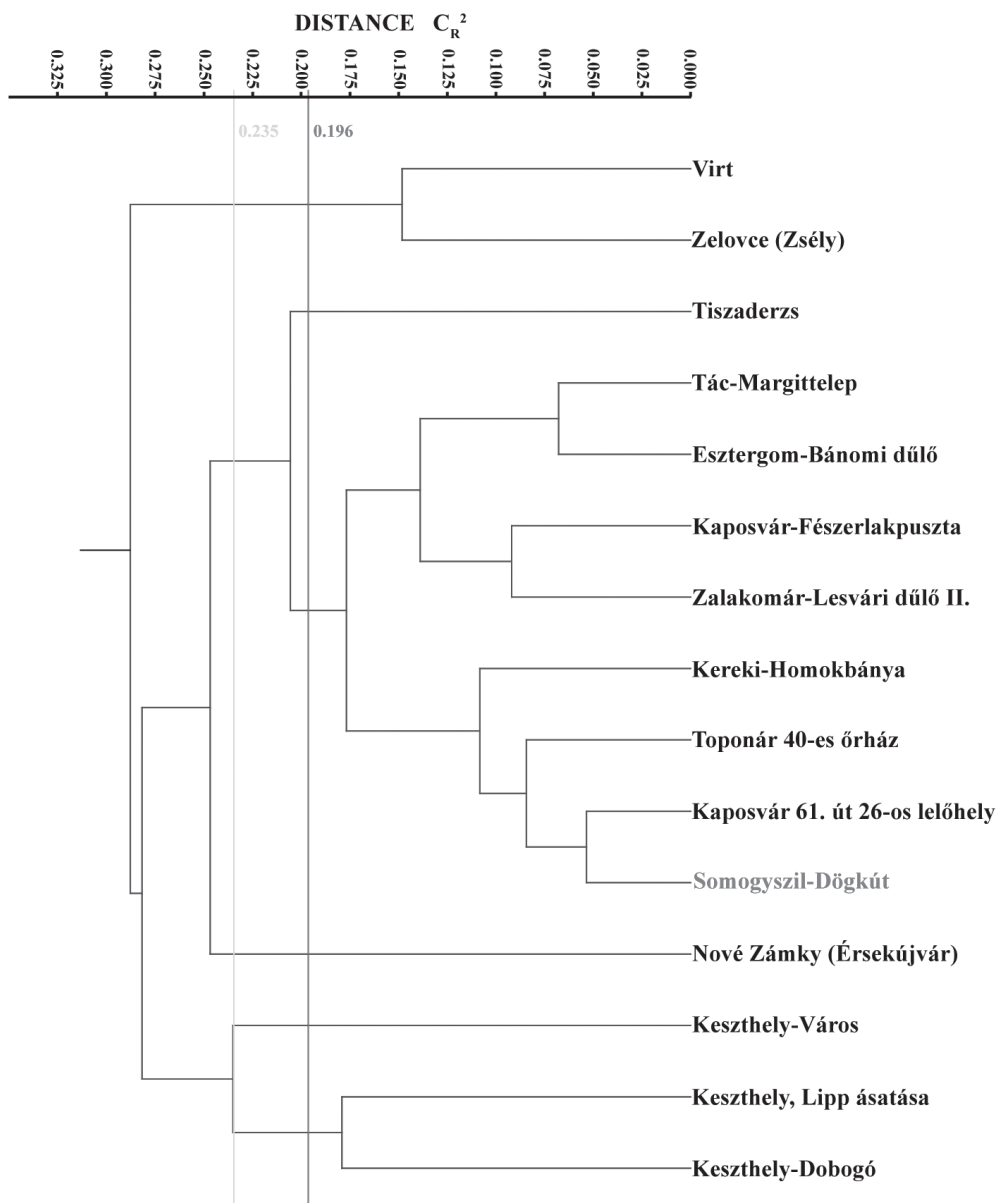


Fig. 10. Dendrogram showing the relations among the male cranial series of Somogyszil-Döggút and its close (below the 2% or 1% error band) analogies – Penrose distance, UPGMA hierarchical clustering method

Table 9.

The M1 measurement of long bones, and the calculated statures of the males of Somogyszil-Dölgút

| Grave No. | Humerus | | Ulna | | Radius | | Femur | | Tibia | | Fibula | | Calculated stature (cm) |
|-----------|---------|-------|------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------------------------|
| | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | |
| 17 | | | | | | | 447 | 446 | 367 | | | | 166.86 |
| 18 | 319 | | | | | | 463 | 463 | | 365 | | | 171.33 |
| 27 | 316 | 305 | 259 | 258 | | | 424 | 426 | | 342 | | | 161.04 |
| 29 | | | 272 | | | | 432 | 438 | | | | | 163.75 |
| 33 | 309 | 303 | | | 233 | 232 | 421 | 422 | | 346 | | | 160.09 |
| 39 | 300 | 295 | | | | | | | 343 | | | | 160.19 |
| 41 | 315 | | | | | | 441 | 446 | 350 | | | | 166.05 |
| 45 | 324 | | | | 241 | | | | 362 | | | | 166.44 |
| 46 | 324 | | 260 | | 243 | | 433 | 423 | 349 | 339 | | | 161.85 |
| 48 | | | | | 243 | 238 | 444 | | | | | | 166.18 |
| 50 | 326 | | | | | | | | 386 | | | | 174.33 |
| 51 | 324 | | 254 | 250 | 236 | 231 | 427 | | 345 | 346 | | | 161.58 |
| 53 | 329 | 323 | 277 | 273 | 253 | 253 | 432 | | | | | | 162.93 |
| 59 | | | | | 240 | | | | | | | | |
| 60 | | | | | | | 456 | | | 376 | | | 169.44 |
| 79 | | 315 | | | | | | 458 | | | | | 169.98 |
| 84 | 339 | | | | 253 | | | | | | | | |
| 86 | | | | | 234 | | | 432 | 353 | | | | 162.93 |
| 103 | | | | | | | 452 | | | | | | 168.35 |
| 113a | | | | | 282 | | 440 | | | | | | 165.10 |
| 116 | | 324 | | | | | | | | | | | |
| 124 | | | | | | | 408 | 411 | | | | | 156.83 |
| 130 | 334 | 323 | | 271 | | 247 | 452 | 450 | 379 | 382 | | | 168.08 |
| 138 | | | | | | | | 469 | | | | | 172.96 |
| 140 | | | | | | | 468 | 454 | | | | | 170.79 |
| 144 | | | | | | | 452 | | | | | | 168.35 |
| 146 | 323 | 317 | 277 | 279 | 249 | | 468 | 463 | 391 | 385 | | | 172.01 |
| 147 | | 304 | | | | 225 | 425 | | | | | | 161.04 |

Table 10.

The M1 measurement of long bones, and the calculated statures of the females of Somogyszil-Döggút

| Grave No. | Humerus | | Ulna | | Radius | | Femur | | Tibia | | Fibula | | Calculated stature (cm) |
|-----------|---------|-------|------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------------------------|
| | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | |
| 16 | 314 | 311 | | | | 225 | 421 | 423 | | | | | 160.22 |
| 19 | | | | | | | | 393 | | | | | 152.36 |
| 20 | | 288 | 243 | | | | 400 | 398 | | | | | 153.99 |
| 21 | | | 244 | | | | 408 | | 340 | 338 | | | 156.43 |
| 24 | | | | | | | 409 | | 325 | | | | 156.70 |
| 26 | | | | | | | | | | | 325 | | |
| 36 | | | 251 | | 228 | | | | | | | | |
| 38 | 303 | 300 | | 225 | | | 437 | 439 | 356 | 356 | | | 163.61 |
| 40 | 281 | | | | | | 405 | 404 | 323 | 323 | | | 155.48 |
| 43 | 303 | 300 | | | | | 410 | 407 | 351 | 344 | | | 156.56 |
| 44 | | 281 | | | | 203 | 398 | 392 | 310 | 306 | | | 152.91 |
| 55 | | | | | | | 412 | 421 | | | | | 158.46 |
| 61 | | | | 229 | 216 | 212 | | 415 | 333 | 331 | | | 158.33 |
| 89 | | | | | 203 | | 393 | | | 319 | | | 152.36 |
| 92 | | | | 266 | | | | | | | | | |
| 97 | | 286 | | | | | | | | | | | |
| 108 | | | | | | | 409 | 410 | 340 | 337 | | | 156.83 |
| 109 | 296 | | | | | 219 | | | | | | | |
| 115 | 266 | | | | | | | 378 | | | | | 148.30 |
| 127 | | | | | | | 419 | | | 327 | | | 159.41 |
| 131 | 322 | | | | | | | | | | | | |
| 133 | | | | | | | 431 | | | | | | 162.66 |
| 143 | | | | | | | | 428 | | | | | 161.85 |
| 145 | 301 | 297 | | | 219 | | 421 | 422 | 342 | | | | 160.09 |
| 148 | 283 | 275 | 242 | 239 | 215 | 216 | 400 | 399 | 321 | 319 | 318 | 308 | 153.72 |

Table 11.
Penrose distance between the male cranial series of Somogyiszil-Dölgút and other comparative series

| Male cranial series | PENROSE distance (size and shape) C ^{R2} |
|---|---|
| * = below the 2% error band; *** = below the 1% error band | |
| Carpathian Basin, ~2nd–5th centuries | |
| Budapest, III. kerület, Kaszás dűlő, Raktárrét (FRÁTER 1993) | 0.453 |
| Esztergom-Bánomi dűlő (MERCZI 2008) | 0.089*** |
| Keszthely-Dobogó (VARGA <i>et al.</i> 2005) | 0.183*** |
| Pécs (Geisler Eta utca 8. and 14., István tér 12.) (ÉRY 1973) | 0.240 |
| Tác-Margittelep (ÉRY 2000) | 0.188*** |
| Tokod (ÉRY 1981) | 0.348 |
| Visegrád-Dió (MERCZI 2001) | 0.236 |
| Carpathian Basin, 5th–8th centuries | |
| Adorján-Ország (BARTUCZ–FARKAS 1957) | 0.449 |
| Alattyan-Tulát (WENGER 1957) | 0.754 |
| Ártánd-Kapitány (ÉRY 1966) | 0.308 |
| Bačko Petrovo Selo (Péterréve) (ÉRY 1990) | 0.430 |
| Bácska-Topolya (FARKAS–MARCSIK 1984) | 2.418 |
| Bágyogszóvát-Gyűrhegy (DEZSŐ 1968) | 0.534 |
| Csákberény-Orondpuszta (ÉRY 2001a) | 0.443 |
| Előszállás-Bajcsihegy (WENGER 1966) | 1.377 |
| Gyenesdiás (T. RENDES–TÓTH 2000) | 0.611 |
| Holiare (Gellér) (MALA <i>cit.</i> RÖSING–SCHWIDETZKY 1977) | 0.373 |
| Jánoshida-Tótképuszta (WENGER 1953) | 1.021 |
| Kassa-Zsebes (THURZO 1984) | 0.251 |
| Kaposvár 61-es út 26. lelőhely [Kaposvár, Road 61, Site 26] (based on the unpublished remeasurement data of ÉVINGER) ²⁸ | 0.054*** |
| Kaposvár-Fészerlakpuszta (based on the unpublished remeasurement data of ÉVINGER) ²⁹ | 0.148*** |
| Kecel I. (LIPTÁK 1954) | 0.715 |
| Kereki-Homokbánya (based on the unpublished remeasurement data of ÉVINGER) ³⁰ | 0.100*** |
| Keszthely, Lipp féle feltárás [V. Lipp's excavation] (VARGA <i>et al.</i> 2003) | 0.200* |
| Keszthely-Város (based on the unpublished remeasurement data of ÉVINGER) ³¹ | 0.121*** |
| Kékesd (WENGER 1968) | 0.700 |
| Kiskőrös-Város (LIPTÁK 1983) | 0.526 |
| Kiszombor (BARTUCZ 1936) | 0.680 |
| Langobards – merged series (Hungary and Austria, 5 th –7 th centuries) (<i>cit.</i> RÖSING–SCHWIDETZKY 1977) | 0.242 |
| Lesencetomaj (BIRÓ 1999) | 0.355 |
| Loebersdorf (GREFEN–PETERS 1987) | 3.201 |
| Madaras-Téglavető (LIPTÁK–MARCSIK 1976) | 1.289 |
| Moravica (Bácskossuthfalva) (CZÉKUS 1985) | 1.046 |
| Nové Zámky (Érsekújvár) (VLADAROVA <i>et al.</i> , <i>cit.</i> RÖSING–SCHWIDETZKY 1977) | 0.229* |
| Pókaszepetk (based on the unpublished remeasurement data of ÉVINGER) ³² | 0.604 |
| Siófok-Kiliti (SUSKOVICS 1993) | 0.599 |
| Solymár (FERENCZ 1983) | 0.344 |

²⁸ The original metric data providing publication: ÉVINGER–BERNERT 2005.

²⁹ The original metric data providing publications: WENGER 1975, FÓTHI 1988.

³⁰ The original metric data providing publication: BERNERT 2003.

³¹ The original metric data providing publication: WENGER 1977.

³² The original metric data providing publication: BOTTYÁN 1975.

Table 11.

Penrose distance between the male cranial series of Somogyszil-Döggút and other comparative series (cont'd)

| Male cranial series | PENROSE distance (size and shape) C ^{R2} |
|---|--|
| * = below the 2% error band; *** = below the 1% error band | |
| Sükkösd-Ságod (KÓHEGYI–MARCSIK 1971) | 0.542 |
| Szebény (TÓTH 1961) | 0.336 |
| Szeged-Fehértó (LIPTÁK–VAMOS 1969) | 0.738 |
| Szeged-Kundomb (LIPTÁK–MARCSIK 1966) | 0.463 |
| Szeged-Makkoserdő (VAMOS 1973) | 0.678 |
| Szekszárd-Palánk (LIPTÁK 1974) | 0.382 |
| Szentes-Kaján (WENGER 1955) | 0.925 |
| Tiszaderzs (based on the unpublished remeasurement data of ÉVINGER) ³³ | 0.213* |
| Tiszavárkony (LIPTÁK 1955a) | 0.727 |
| Toponár 40-es őrház [Toponár, watchman's house No. 40] (based on the unpublished remeasurement data of ÉVINGER) ³⁴ | 0.075*** |
| Üllő I. (LIPTÁK 1955b) | 0.625 |
| Üllő II. (LIPTÁK 1955b) | 0.710 |
| Vác-Kavicsbánya (FERENCZ 1981) | 0.334 |
| Virt (HANÁKOVÁ <i>et al</i> 1970) | 0.194*** |
| Zalakomár-Lesvári dűlő II. (ÉRY 2001b) | 0.076*** |
| Želovce (Zsély) (HANÁKOVÁ–STLOUKAL 1974) | 0.154*** |
| Zwölfaxing (SZILVÁSSY 1980) | 0.256 |

Roman period cemeteries of Esztergom-Bánomi dűlő and Tác-Margittelep. The other series fall outside of this threshold, and thus, connect to Somogyszil-Döggúti dűlő more loosely.

With regard to the geographical distribution, the close analogies of the late Roman period population of Somogyszil-Döggúti dűlő are all from Transdanubia, with a single exception (Tiszaderzs). With respect to the dating of these series, parallels can be found both in the Roman and in the Avar period. Viewed in a broader perspective, this indicates a continuity in the selected cranial measurements from the Roman into the Avar period on the territory of Transdanubia. On a theoretical level, this result may suggest a significant continuity of the local populations, or it may indicate that a large part of those groups that probably immigrated and settled down in the territory during the 5th–8th centuries possessed similar craniometric features as the locals had, or the combination of the two. However, with the present analysis, this question cannot be answered.

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³³ The original metric data providing publication: LEBZELTER 1957.

³⁴ The original metric data providing publication: WENGER 1974.

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