

COMPARATIVE ANTHROPOLOGICAL CHARACTERISTICS BETWEEN TWO CHRISTIAN NECROPOLISES (16TH – 19TH CENTURY) FROM BULGARIA

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Rezumat: Dovezile științifice pentru așezările bulgare din perioada domniei otomane sunt insuficiente pentru o reconstituire completă a modului de viață al locuitorilor. Analizele antropologice ale necropolelor ne permit să obținem un plus de informație. Studiile asupra resturilor osoase umane ne oferă date despre nutriție, dezvoltare fizică, speranță de viață, rata relativă a mortalității, etc. Prezentul material include rezultatele analizelor antropologice din două necropole din Bulgaria – una din orașul Pernik, iar cealălaltă din comuna Bratya Daskalovi, regiunea Chirpan. Scopul acestui text este să facă o analiză comparativă a caracteristicilor oamenilor care au trăit în regiunea celor două orașe contemporane Chirpan și Pernik în timpul dominației otomane asupra Bulgariei (sec. 16-19). Analizele antropologice au stabilit întâietatea relativă a masei corporale și a staturii celor înmormântați în localitatea St. Spas, Pernik, comparativ cu cei din necropola de pe măgura Selska, Bratya Daskalovi, unde indivizii erau mai gracili.

Abstract: The scientific evidence for Bulgarian settlements from the period of Ottoman rule is insufficient to make a complete reconstruction of the inhibitors' lifestyle. The anthropological investigations of necropolises enable us to obtain an additional piece of information. Studies of human bone remains provide data on nutrition, physical development, life expectancy, relative rate of mortality etc. The current paper includes the results from anthropological analyses about two necropolises in Bulgaria - one in the town of Pernik and the second in the village of Bratya Daskalovi, Chirpan region. The aim of this report is to make a comparative characteristic of people who occupied the region of contemporary towns of Chirpan and Pernik during the period of Ottoman rule in Bulgaria (16th – 19th c.). The anthropological analysis established relative priority of body mass and stature of buried in the locality of St. Spas, Pernik, as compared to those in the necropolis of Selska barrow, Bratya Daskalovi, where the individuals were more gracile.

Cuvinte-cheie: necropole creștine în Bulgaria (sec. 16-19), analiză antropologică comparativă, resturi osoase umane, paleodemografie, masă corporală și statură.

Key-words: Christian necropolises in Bulgaria (16th – 19th c.), comparative anthropological analysis, human bone remains, paleodemography, body mass and stature.

This paper includes data about two necropolises in Bulgaria – the first one in locality of St. Spas, Varosh neighborhood, town of Pernik, Southwest Bulgaria and the second one in the village of Bratya Daskalovi, district of Stara Zagora, South Bulgaria (**Fig. 1**).

The first necropolis is situated in the foothill of Mount Krakra, immediately below the Pernik fortress. Necropolis is located in Pernik valley along the Struma River at 756 meters altitude. The important trade route from Sofia to Thessaloniki passes near it. Research on the site began in 2003 when rescue archeological excavations were carried out around and in the dismantled of a chapel which finally collapsed in the seventies of the twentieth century. In 2004 the researcher established that during the 6th century a dome basilica was built on an artificially shaped horizontal site around the highest rocks in the valley below the Krakra hill. It collapsed during an earthquake in the 1980s. The necropolis of the medieval village of town of Pernik was located in the 11th – 12th centuries in a mound-like embankment on the destruction of the basilica. At the end of the 14th or the first half of the 15th century on the ridge of the mound, a small graveyard temple was built on the ruins of the Early Christian Church¹. During 2014 field season, have been excavated fifty one burial pits with inhumation, dated in

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¹ Плунова, 2014, cc. 120-122.

the 17th – 19th centuries. Most of them are used repeatedly or overlapped each other. People have been buried directly in the ground, as in some cases stones of various sizes were placed along the bottom periphery of gravel pit. Small finds have been discovered in all graves. All buried were placed in supine position (lying on the back). Many different positions can be observed for upper limbs: they can lie both along the sides, or one along the side (equally left or right) and one on the chest or on the pelvis; hands also can be crossed on the chest or on the pelvis. The lower limbs are usually outstretched. The majority of the skeletons are placed in northwest-southeast orientation².

The second necropolis is located in the Gornotrakiiska valley, in the region of Chirpan hills at 208 meters altitude. It is far away to the north of the Maritsa River, making it relatively distant from the diagonal road connecting Sofia with Istanbul. The Selska barrow is situated on the right bank of the Omurtag River in the southeastern end of the village of Bratya Daskalovi. In the upper layers of the mound have been excavated a large Christian necropolis with 166 graves dated between the 16th and 19th centuries. Part of the burial pits overlapped in depth. In some of them have been documented wooden cover. Skeletons laid on the back with stretched lower limbs, the upper limbs are crossed in the pelvic area, and the skulls were to the west. There were single cases of double funerals. Reburied has been often documented³. The embankment of the mound is saturated with large amount of artifacts present in the vicinity of the final settlement of the late Neolithic (6000 BC) and Hellenic period. At the time of mound accumulation entirely preserved ceramic vessels from the Roman period have been discovered⁴.

❖ **Necropolis in St. Spas locality, Varosh neighborhood, town of Pernik**

Dated: 17th – 19th c.

Burial practice: Christian inhumations

Location: Southwest Bulgaria

Relief: foothill

Altitude: 756 m

Communications: nearby to the main road from Sofia to Thessaloniki;

Graves: 51

Buried: 87

❖ **Necropolis of Selska barrow, village of Bratya Daskalovi, Chirpan region**

Dated: 16th – 19th c.

Burial practice: Christian inhumations

Location: Central South Bulgaria

Relief: plain

Altitude: 208 m

Communications: away from *Via diagonalis* – main road from Sofia to Constantinople

Graves: 166

Buried: 177

The aim of the research is to make a comparative anthropological characteristic of two Christian populations which inhabited the region of contemporary towns of Chirpan and Pernik during the 16th -19th c. because of clarify the impact of living conditions on physical development of the inhabitants on Bulgarian lands in the period of Ottoman rule.

² Паянова, 2015, с. 742.

³ Тонкова, Иванов, 2011, с. 60; Тонкова, Иванов, 2011, cc. 236-237.

⁴ Тонкова, 2011, с. 7.

For the implementation of this purpose, the following tasks have been performed:

1. Detailed investigation (by different anthropological methods⁵) of inhumated human bone remains from both necropolises;
2. Determination of age⁶ and sex⁷ of the buried and the reconstruction of stature⁸, depending on the status of the presented bones;
3. Estimation of body mass⁹ in adult individuals;
4. Paleodemographic analysis¹⁰ of population from the surveyed necropolis by making a comparison with other already studied necropolises from the same period;

Results and discussion

It could be mentioned some interesting cases of burials revealed in both necropolises:

- **Grave 244**, St. Spas locality, town of Pernik - a double burial of a child with young woman (20-25 years) who was pregnant when she died. The skeletal remains of the *fetus* were found in pelvic area of the female individual (**Fig. 2**);
- **Grave 35**, Selska barrow, village of Bratya Daskalovi - a grave of pregnant female adolescent (14-15 years of age) (**Fig. 3**). The gestational age of the baby is 9.5 lunar-month-old (established by the methods of Fazekas-Kosa¹¹). Most probably it is a case of “Coffin birth”¹², known by the term postmortem fetal extrusion - the expulsion of a nonviable fetus through the vaginal opening of the decomposing body of a deceased pregnant woman as a result of the increasing pressure of intra-abdominal gases. Similar cases have been recorded by medical authorities since the 16th century, though some archaeological cases provide evidence for its occurrence in many periods of human history (for example at a medieval necropolis in Kings Worthy, England¹³; at a Neolithic site in Germany¹⁴, at a medieval site in Denmark¹⁵).
- **Grave 262**, St. Spas locality, town of Pernik – a grave of more than one individual (three children) (**Fig. 4**).

Age and sex distribution of buried (Fig. 5-6)

In summary it could be said that in the necropolis in town of Pernik, the percentage distribution between adults and subadults is almost equal (48.28% : 51.72%) but prevail children in infancy. Unlike necropolis in Pernik, in the Selska barrow dominated grown individuals (75.14%). It should be noted that skeletons between birth and 1 year are not identified. It could be assumed that babies were buried outside the necropolis. For both necropolises the mortality in adolescence is lower and rise sharply in the age group of *Adultus* with a predominance of females, while in the

⁵ Алексеев, Дебец, 1964, сс. 1-128; Алексеев, 1966, сс. 1-249; Зубов, 1968, сс. 1-200; Bass, 2005, pp. 1-327; White, Folkens, 2005, pp. 1-464.

⁶ Зубов, Халдеева, 1989, сс. 1-232; Brothwell, 1989, pp. 303-316; Facchini, Veschi, 2004, pp. 89-98; Ferembach *et al.*, 1980, pp. 517-549; Meindl, Lovejoy, 1985, pp. 57-66; Stull, James, 2010, pp. 134-146; Tood, 1920, pp. 285-334.; Valois, 1932, pp. 3-153.

⁷ Bass, 2005, pp. 1-327; Ferembach *et al.*, 1980, pp. 517-549; Gualdi-Russo, 2007, pp. 151-156; Kühl, 1985, S. 113-137; Silva, 1995, pp. 107-119.

⁸ Pearson, 1899, pp. 169– 244; Trotter, Gleser, 1952, pp. 463-514.

⁹ Ruff *et al.*, 1991, pp. 397-413.

¹⁰ Hoppe, Vaupel, 2002, pp. 1-259.

¹¹ Fazekas, Kosa, 1978, p. 263.

¹² Атанасова-Тимева, Гъльбова, 2011, с. 75.

¹³ Hawkes; Wells, 1975, pp. 47-51.

¹⁴ Kaiser, 1978, pp. 197-201.

¹⁵ Møller-Christensen, 1982.

interval 40-60 years (age group *Maturus*) have been identified a large number of male skeletons. In both skeletal series is extremely small number of survivors to the elderly (over 60 years), a trend established during the period of Ottoman rule in Bulgarian lands¹⁶. In the necropolis in town of Pernik the sex is determined at 46 out of 87 individuals: twenty-five males and fifteen females. In six skeletons sexual characteristics are not clearly expressed and/or diagnostic bone fragments for the determination of sex are not preserved, so their sex is determined probably as males (five individuals) and probably as female. In the Selska barrow the sex was identified in 109 buried: 62 male skeletons, 4 probably male individuals, 35 females, 8 more probably females and 26 adults with undetermined sex. In both necropolises the male buried prevailed.

Paleodemographic analysis

Paleodemography is a scientific field that identifies the demographic characteristics of the past populations, usually based on skeletal series with archaeological context, then makes clarifications regarding the health and wellbeing of these people¹⁷.

In this article graphics for mortality and survival rate of buried in both series are composed based on sex and age distribution.

Paleodemographic indicators for the series from St. Spas locality, town of Pernik (Fig. 7):

The relative frequency of mortality in the series of Pernik is highest in the first age group (0-4 years) and in the second age group (5-9 years) decreased sharply as experiencing the healthy children, which are base of the future population. This demographic indicator again increased, especially in males, in the age range 45-49 years and tends to **zero** after the age of 70.

The risk of death started to increase after age 40 for both sexes.

The relative number of survivors is naturally greatest in the first age group (0-4 years) and closer to **zero** in age over 70 years. This indicator is greater in males between the ages of 20 and 50 years and then became greater the relative number of surviving women.

The peak of the average duration of expected life, despite high infant mortality, is in the period 10-14 years.

Paleodemographic indicators for the series from Selska barrow, village of Bratya Daskalovi (Fig. 8):

The relative frequency of mortality for the series of Selska barrow is the highest in age interval 30-34 years for females and in the range 45-49 years for males.

The risk of death increases sharply in the age range 30-34 years, especially as regards the women, then decreases and again increased in the interval 55-59 years for both sexes.

The relative number of survivors is naturally greatest in the first age interval (0-4 years) and it is closer to **zero** in the age over 70 years. This indicator is higher for males in all ages.

The peak of the average duration of expected life in bone series of Selska barrow is in the first age interval (0-4 years). Women are characterized by higher average of expected life than men with the exception of the intervals between 20/24 and 35/39 years when is the active childbearing age and mortality among women is higher.

Most of skeletal series from the period of Ottoman rule in Bulgaria show high infant mortality in the first age interval (0-4 years) and a strong decrease of mortality in the second age interval (5-9 years). This fact is probably attributed to poor hygiene and lack of medical care, with the result that occurred multiple infectious epidemics¹⁸. During the first year died 25% of newborns. Another 25% of the surviving children died until their third year. Some stabilization in the lives of children occurs around their 10th year¹⁹.

¹⁶ Руслева, 2003, с. 51-56.

¹⁷ Hoppe, Vaupel, 2002, p. 9.

¹⁸ Руслева, 2003, с. 51-52; Георгиева, 1997, с. 59-60.

¹⁹ Георгиева, 1997, с. 59.

Reconstruction of stature (Fig. 9)

Absolute and percentage distribution by Martin-Saller's categories of the male skeletons from Pernik shows prevalence of tall individuals. In females, however prevail cases with "middle" stature.

Absolute and percentage distribution by category of the male skeletons from the Selska barrow by the formula of Pearson-Lee²⁰ showed prevalence of individuals with stature "above the middle" - 30.00%. Sixty percent fall into the category "tall stature" by the formula of Trotter-Gleser²¹. In females, however prevail cases of "middle" stature by the formula of Pearson-Lee, while by the formula of Trotter-Gleser again is the highest percentage of buried with tall stature.

The two series are characterized by the lack of "very short" individuals in both sexes by both formulas. These results are an indicator for good physical development of individuals in lifetime.

Body mass estimation (Fig. 10)

Evaluation of body mass of human skeletal remains plays an important role in anthropological and archaeological studies²².

Evaluation of body mass in the skeletal series from St. Spas locality, town of Pernik:

Body mass was estimated at 69.05% of adult individuals because of the lack of whole preserved femoral heads. The mean body mass in men was 72.15 kg and 59.75 kg in women. Statistical differences between mean values in both sexes are significant and again, like the stature, the prevalence is for the males in the series.

Evaluation of body mass in the skeletal series from Selska barrow, village of Bratya Daskalovi:

Despite the large number of identified adult individuals in the Selska mound, preserved whole femoral heads have been found in only 52 of them. The mean body mass in males was 65.30 kg and 58.20 kg in women.

Differences between mean values in both sexes are significant and values of ISD (Index of intersexual differences) for both sites shows, as well as in the stature, relative priority for male series.

Index of intergroup differences between the average body mass for both skeletal series showed relative priority for those buried in St. Spas locality, town of Pernik, wherein the value of this index is higher in male skeletons.

Conclusions

The comparative anthropological analysis of two skeletal series showed some similarities and differences. The percentage distribution between adults and subadults is almost equal in necropolis at St. Spas locality, while in the Selska barrow the adults dominated. In both necropolises male individuals prevail. Prevalence of "tall" male individuals and females with "middle" stature in both populations. Body mass estimation shows priority for males in both necropolises.

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²⁰ Pearson, 1899, pp. 169–244.

²¹ Trotter, Gleser, 1952, pp. 463-514.

²² Ruff *et al.*, 1991, pp. 397–413.

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ABBREVIATIONS

- Am J Phys Anthropol – American Journal of Physical Anthropology.
Antrop.Port. – Antropologia portuguesa.
J Hum. Evol. – Journal of Human Evolution, Amsterdam.
NAIM-BAS – National Archaeological Institute with Museum, Bulgarian Academy of Sciences, Sofia.
RHM-Pernik – Regional Historical Museum, Pernik.

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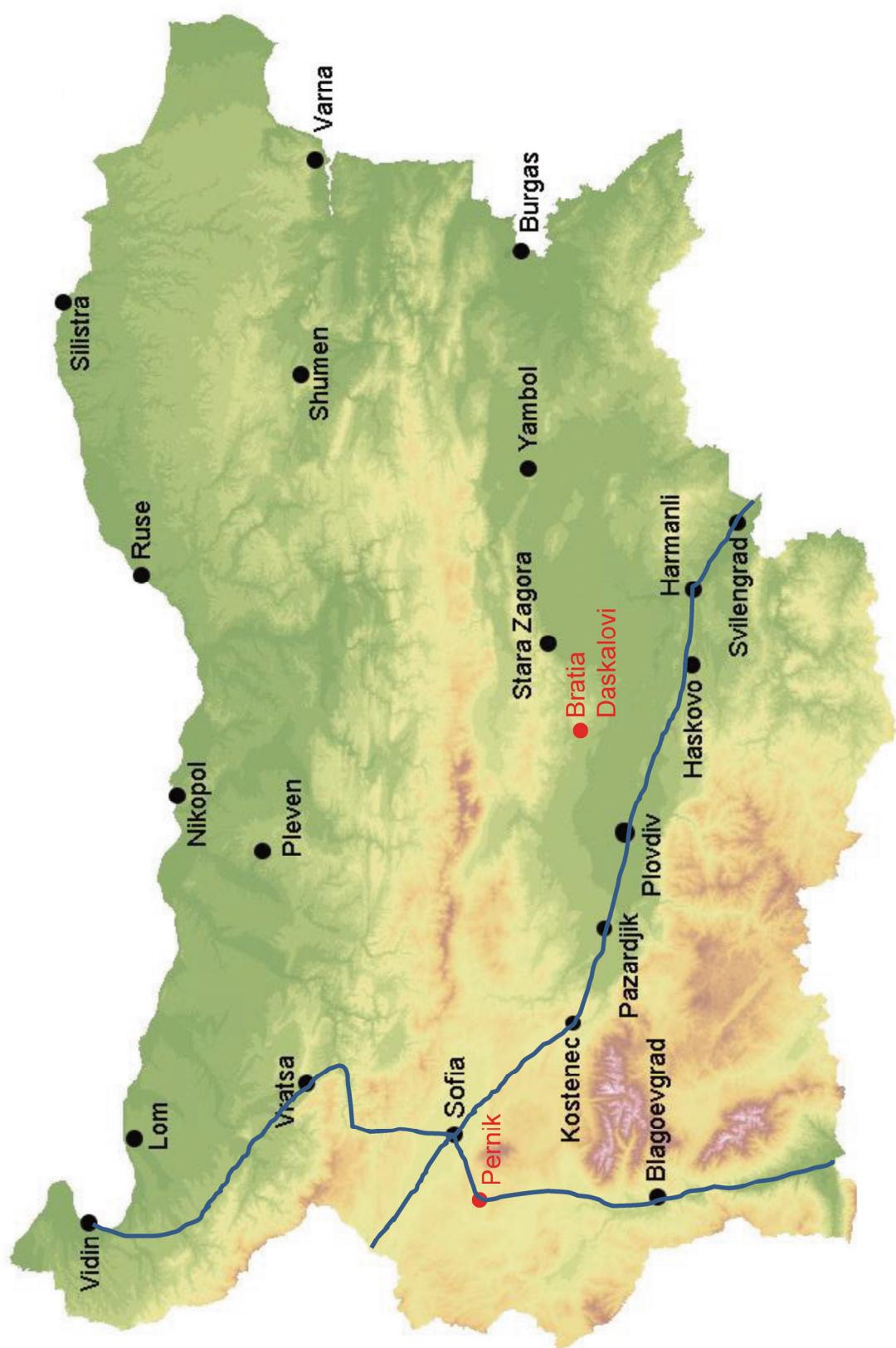


Fig. 1.



Fig. 2.



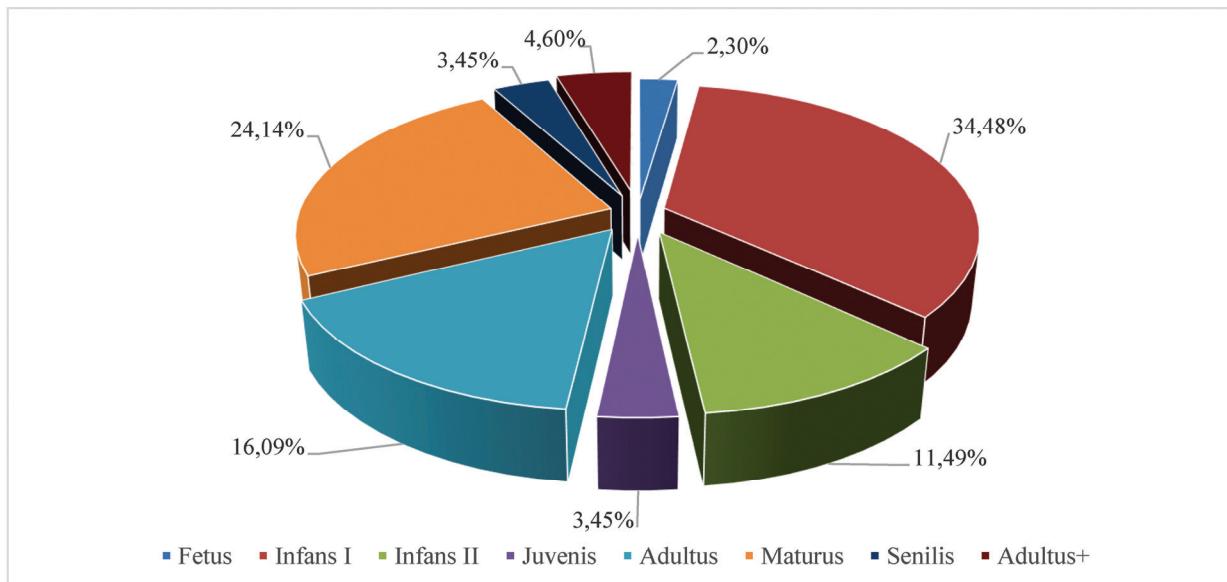
Author: Yavor Ivanov

Fig. 3.



Fig. 4.

Percentage distribution of age groups from the necropolis in St. Spas locality, town of Pernik



Percentage distribution of age groups from the necropolis in Selska barrow,
village of Bratya Daskalovi

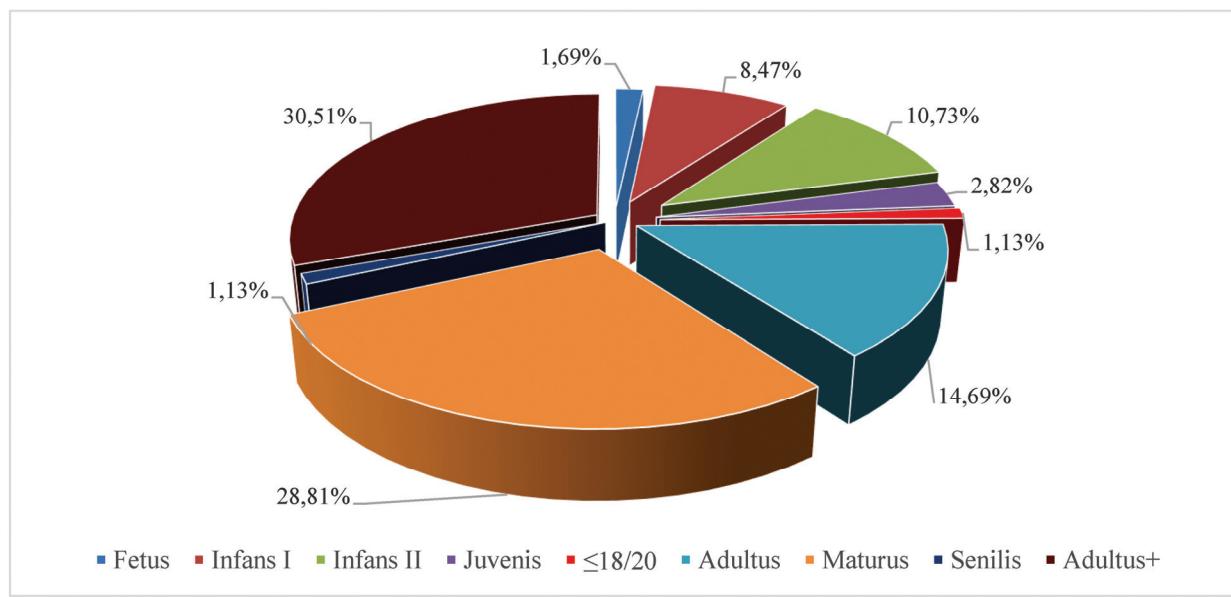
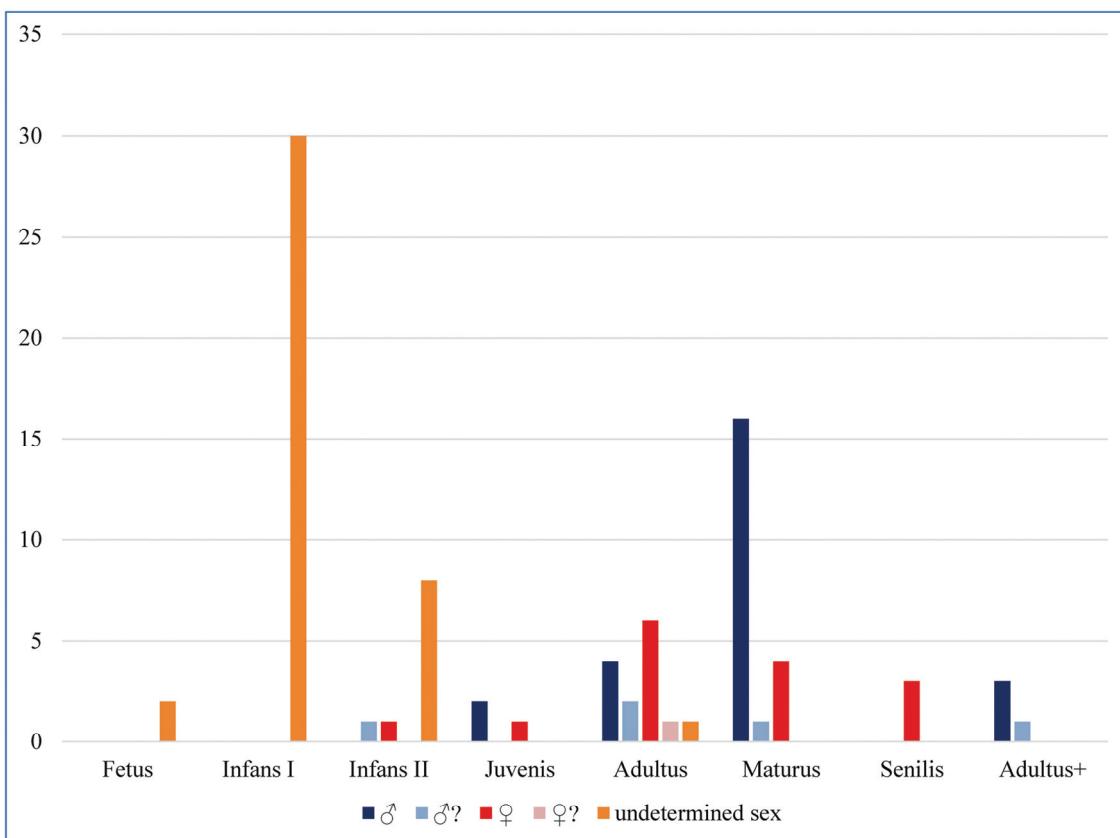


Fig. 5.

Age and sex distribution of buried from the necropolis in St. Spas locality, town of Pernik



Age and sex distribution of buried from the necropolis in Selska barrow, village of Bratya Daskalovi

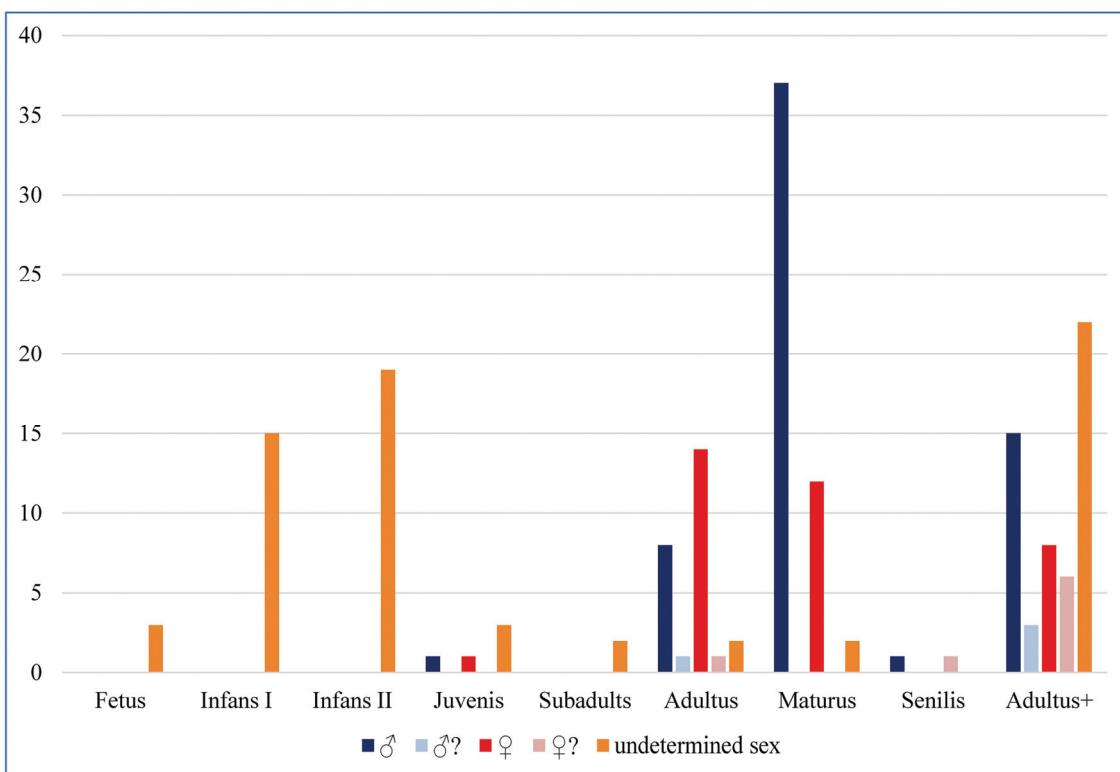


Fig. 6.

The necropolis in St. Spas locality, town of Pernik

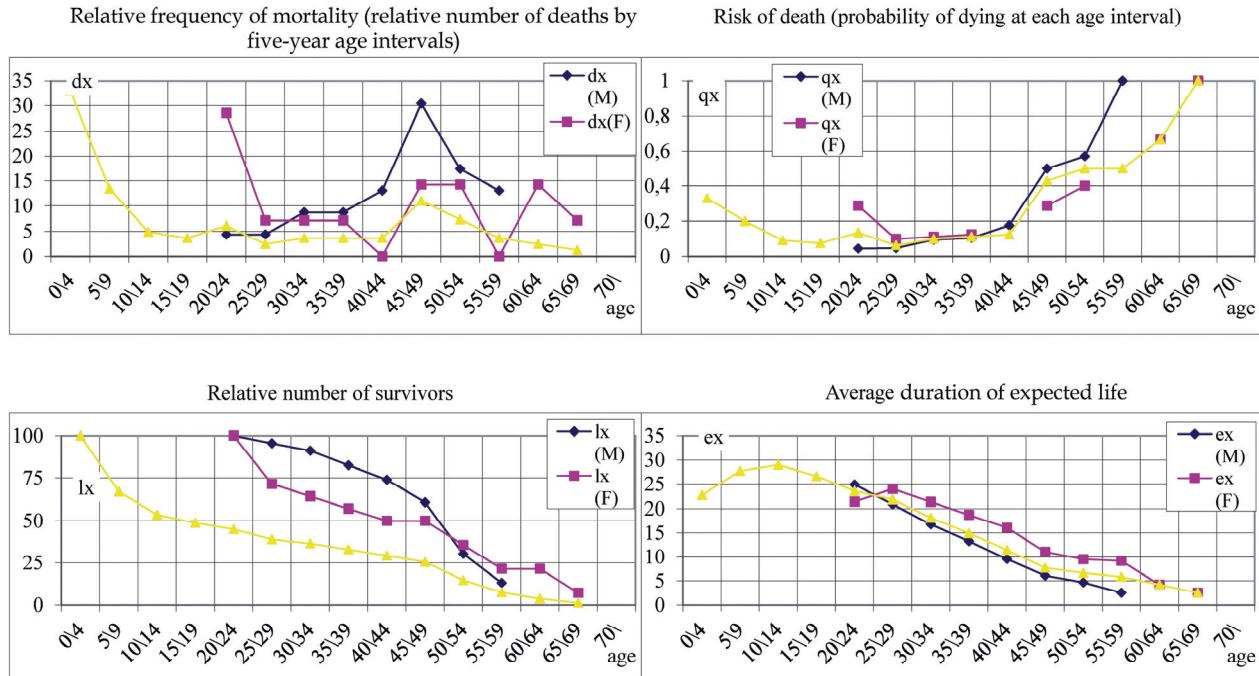


Fig. 7.

Selska barrow, village of Bratya Daskalovi, Chirpan Region

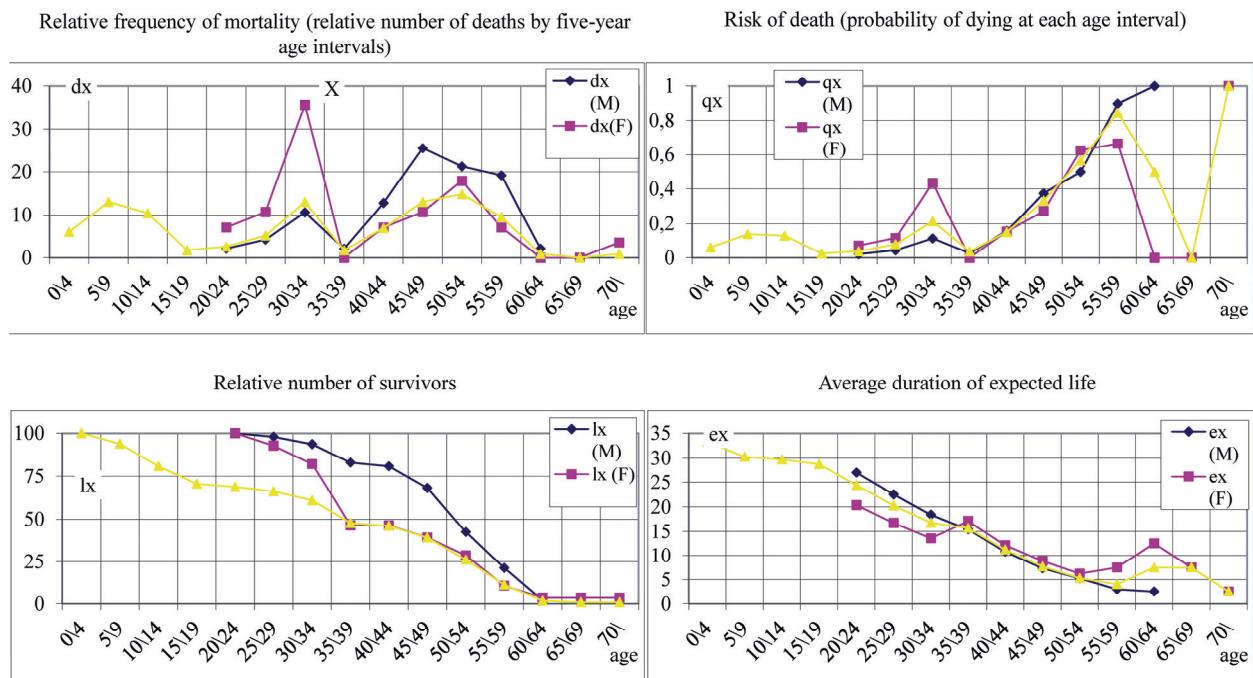


Fig. 8.

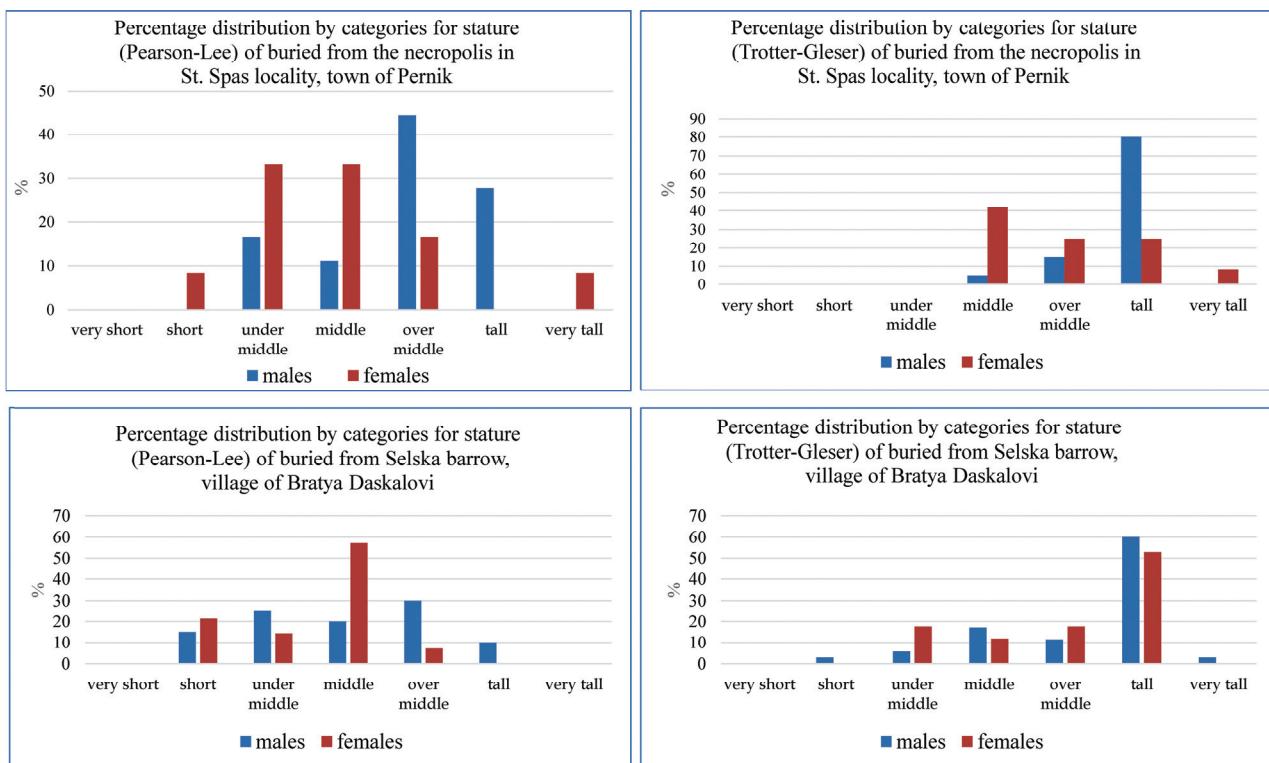


Fig. 9.

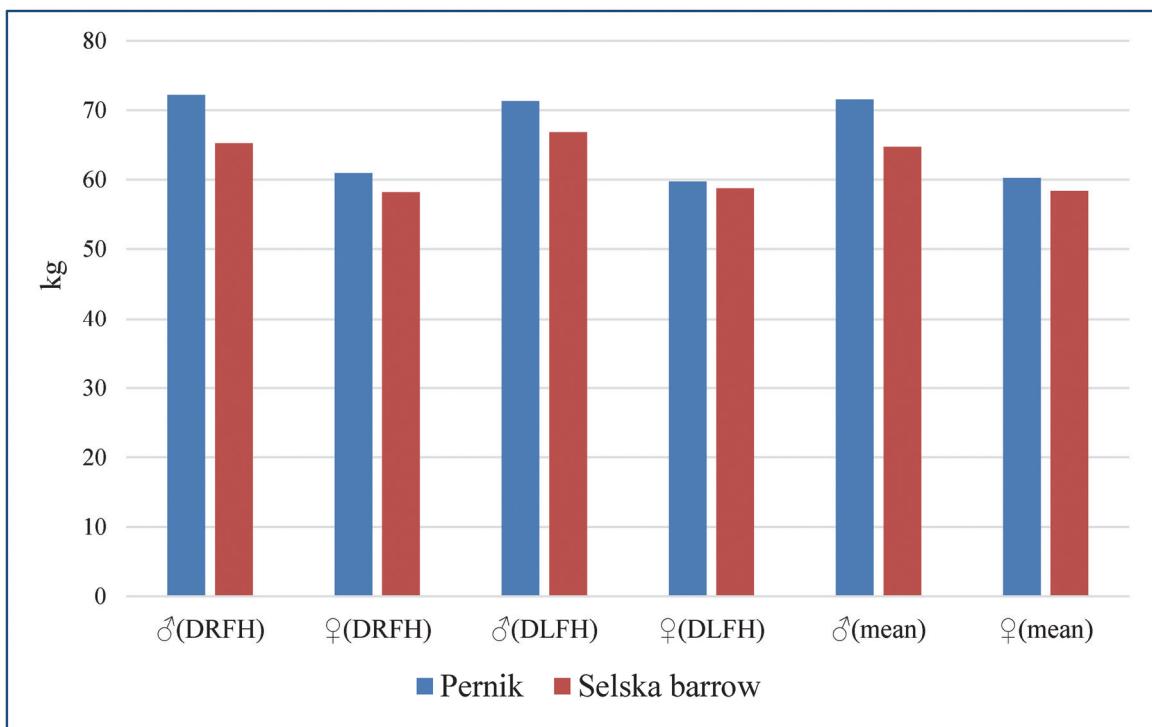


Fig. 10.