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THE DEMOGRAPHIC STRUCTURE OF THE BALTIC SLAVS IN THE EARLY MIDDLE-AGES FROM THE ANTHROPOLOGICAL POINT OF VIEW

The information of demographic structure is based mainly on osteological material from ancient and even from historic cemeteries. Written sources are helpful in general orientation, but if we want to know about the detailed demographic structure of given groups such sources are rather problematic. For example we know that in the beginning of our era there were about 30 million people, that the number of Germanic tribes was about 3 million and the number of Slavonic tribes was about 10 million. We also know that in Europe in the IXth century there were 50 - 60 million people, in XIVth c. 80 mil. and so on. From historic sources we know that in Poland in the IX - Xth c. the number of people was about 600 - 700 thousand. The area of Polish territory was 250 thousand square km and the density per 1 sq. km was 4 - 5 persons. We also know from the historic sources that the two North Slavonic tribes Obodrzyci and Wieleci compressed 350 thousand people; 5 persons per 1 sq. km; since Xth c. Wolin had 5.000 of inhabitants and since XIth c. Szczecin also had 5.000 inhabitants whereas such towns as Kołobrzeg, Wologoszcz, Kamień or Stargard had about 1000 people. So in the XIIIth and XIVth century the West Pomeranian territory was one of the most populated. About the detail biostructure of the Baltic-Slavonic groups we are able to conclude only on the basis of the anthropological analysis of osteological material.

A condition for obtaining correct information about the biostructure of ancient even historic populations is: well preserved osteological materials, correct chronology and proper anthropologic analysis including data about number, sex and age of the individuals.

The osteological material we have from Baltic-Slavonic cemeteries is rather poor. There are six series: five series of skeleton from Wolin, Cedynia, Góra Chełmska, Kołobrzeg and from Gustavel and one serie of cremated bones from Świelubie.

The cemetery in Świelubie, Kołobrzeg district, is dated in IXth c. There

were 100 barrows. Only 41 barrows and the space between them were excavated. There were bones of 48 persons.

The cemetery in Wolin is one of the greatest cemeteries of Baltic-Slavonic people. Its area was about 2.500 - 2.700 sq. m. 258 skeletal and cremated graves on 1000 sq. m were explored. Theoretically it is possible that about 6.500 persons were buried in this cemetery during three hundred years (IX - XII th c.). From 168 excavated skeletons only 118 individuals are included in this work.

The cemetery in Cedynia, Myślibórz district was adjacent to a church. It is dated from X - XIIIth century. Of 419 excavated individuals 403 are included here.

The cemetery in Chełmska Góra near Koszalin was also adjacent to a church. It is dated for the second half of the XIIIth c. and to the end of the XVth c. or the XVIth c. Of 561 skeletons 327 are included in our elaboration.

The cemetery in Kołobrzeg adjacent to a church is from the XIV - XVIth c. All explored 634 skeletons were included in this work.

From the cemetery in Gustavel, Sternberg district, from the Middle-Ages there are only 22 skeletons. As we see the chronology is not precise.

The osteological material from these cemeteries was analysed by various authors so the main problem is that the basic data are not always univocal. Thus was one of the reason that we could not include all the excavated individuals in our investigation.

The following demographic features were studied: 1) number of persons, 2) established frequency of childrens' death to age 14 (d_{0-14}), 3) expected life span of newborn (e_0), 4) expected life span of adults (e_{20}), 5) expected life span of men, 6) expected life span of women, 7) potential reproduction rate (R_{pot}) which tells what number of possible progeny the parents achieved, 8) net reproduction rate (R_0) which informs us about the ability of given population to natural increase, 9) index of biological condition (I_{bs}), it informs us what part of parents progeny participated in creating the new progeny, 10) index of adult mortality (I_{am}).

The frequency of childrens' death up to 14 years is very low, it fluctuates from 6.5 to 28.8%. The expected life span of newborn is 29.0 to 36.9 year, for adults it fluctuates from 11.7 to 28.8 years, for men from 12.5 to 20.6 years and for women — from 10 to 21 years. The worst of all are the results of the population from Świelubie where other biological indices also show that this people had some difficulties in realizing their potential possibilities. For example the potential reproduction rate (R_{pot}) shows that only half of the possible progeny was born, because only 1/3 of adults took part in reproduction (I_{bs} 0.33). Although the net reproduction rate (R_0) which informs about the ability of the population to the natural increase is not lower than in other groups: for Świelubie $R_0=1.67$, and for others it fluctuated from 1.47 to 1.97. As we see the index of biological condition (I_{bs}) is also not the worst of all = 0.33, for others groups it fluctuated from 0.12 to 0.54. The size of the family for

Świelubie is 3.7 persons and in other groups it is 4.1 - 4.9 persons so children per family in Świelubie is 1.7, in other groups 2.1 - 2.3. The number of old people per family in Świelubie is 0 and in other groups — from 0.06 to 0.2.

We can tell that the biological structure of the six Baltic-Slavonic groups is in general similar. Only the people from Świelubie lacked the possibility of bearing more children than about 50%. What was the cause? One of them may be the fact that the material we have at our disposal leaves much to be desired.

We compared the biostructure of the Baltic-Slavonic groups with the group from Młodzikowo, Środa district dated for X - XIIIth c. from Great Poland territory. The differences are not significant. The people from Młodzikowo had better conditions to realize their potential reproduction ($R_{pot} = 0.68$) but only 22% of adult persons took part in reproduction ($R_0 = 2.2$) so the family structure of this group is better only from the group of Świelubie and worse than that of the rest.

We are not sure if comparing the demographic structure of Baltic-Slavonic people with the populations of earlier periods is a good idea, but it is interesting.

The comparison with East Pomerania people from VI - Ith c. B. C. shows that the expectation of life span of newborn and of adults was about 10 years shorter for the East Pomeranian people. The potential reproduction rate was a little higher (0.65) for East Pomeranian populations but index of biological condition (I_{bs}) and net reproduction rate (R_0) were lower. The family structure was better, its size was from 5.6 to 8.1 persons, the number of children per family was 3 - 4, and the number of old people per family was 0.1 - 1.7.

The comparison with the Wielbark Culture populations who lived in the Ith c.B.C. and IVth c.A.D. shows that the expectation of life span of newborn and adults and other biological indices (R_{pot} , R_0 , I_{bs}) are better than for the East Pomeranian population and somewhat worse than for the Baltic-Slavonic people, and the family structure is on the same level as for the Baltic-Slavs.

Sumarizing we can say that:

1. The six groups of Baltic-Slavonic populations in general have a similar demographic structure. Only the biostructure of the group from Świelubie is the worst of all.
2. The comparison with the group from Great Poland shows that it had a better potential reproduction rate but a worse family structure.
3. The comparison with the East Pomerania population shows that its expectation of life span was shorter, but other measures of the biological state (R_{pot} , R_0 , I_{bs}) were in general better and so was its family structure.
4. The comparison with Wielbark culture people shows that its biological indices such as expectation of life span, potential reproduction rate, net reproduction rate and index of biological condition are better than for East Pomeranian population and worse than for Baltic-Slavonic groups and the family structure was on the same level as for the Slavonic groups.

Conclusions:

1. The results of paleodemographic investigations depend on the state of preservation of the osteological material and on the anthropological analysis.
2. Some papers dealing with the bone material of the Baltic-Slavs have not enough basic data to give full and certain information about the demographic structure.
3. Even if the basic information is not complete our results give us a general picture of the biological structure of the investigated groups. The results inform us of the tendency of the biostructure processes. So it would seem certain that:
 1. The expectation of life span increased (in comparison with the earlier groups).
 2. The differences between the demographic structure of the given groups are connected with other conditions of their life, or with the varying state of basic anthropological information.
 3. We suppose that more specific information also from archeologists will help us to get such a demographic picture of given groups which will be closer to the real one.

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