

## Pottery from cemeteries of the 9th-10th centuries in the territory of Slovakia

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Since pottery of the studied period is often the sole archaeological material in the settlements as well as in the cemeteries, it is necessary to pay adequate attention to its study and to obtain most information from and on the basis of it. There are, of course, some differences between the information possibilities of ceramics from settlements and from graves. The pottery from settlements is saved only in sherds and so it is not possible to study the shape of vessels, their decoration and marks, but on the other hand this pottery was used in everyday life. Ceramics from graves is presented especially by the whole vessels and so it is possible to study relations among technology, shape and decoration, but, on the other hand, those vessels were put to the graves in connection with the ritual.

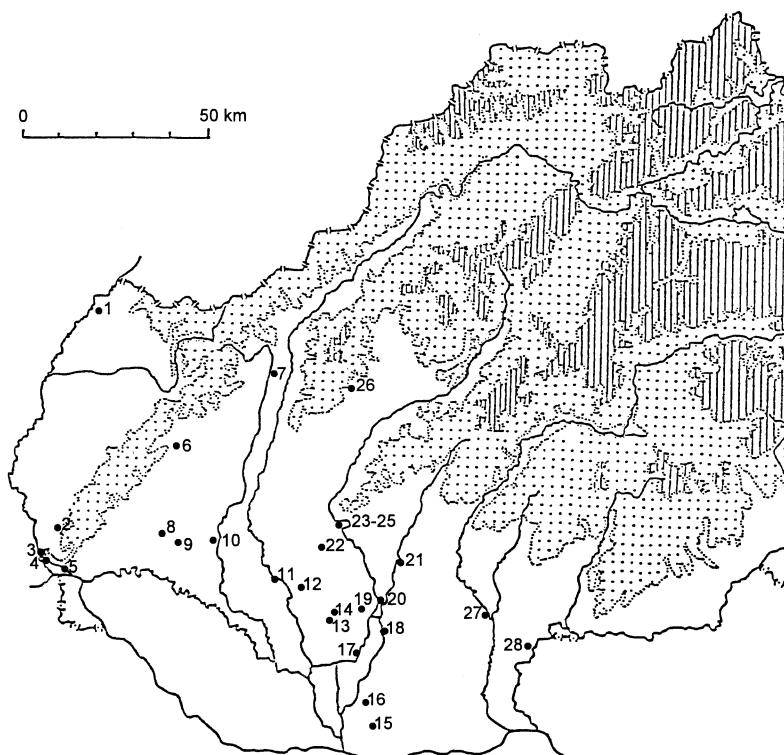


Fig. 1. The cemeteries of the 9th-11th centuries in Slovakia:

1 Kopčany, 2 Stupava-Mást, 3 Devín-Staré vinohrady, 4 Devín-Za kostolom 5 Bratislava-Karlova Ves, 6 Smolenice, 7 Pobeďim, 8 Blatné, 9 Veľký Grob, 10 Abrahám, 11 Šafa-Veča, 12 Trnovec-Horný Jatov, 13 Tvrdošovce-Kerektó, 14 Tvrdošovce-Halomidomb, 15 Dolný Peter IV., 16 Hurbanovo, 17 Nové Zámky, 18 Bešeňov, 19 Lipová-Ondrochov, 20 Šurany-Úľany nad Žitavou, 21 Michal nad Žitavou, 22 Cabaj-Čápor, 23 Nitra-Lupka, 24 Nitra pod Zoborom I., 25 Nitra pod Zoborom II., 26 Závada, 27 Šarovce, 28 Ipeľský Sokolec.

The Slavic pottery is different from the prehistorical ceramics, because the Slavic vessels have a relative uniformity in the shape and decoration features, although the actual materialisation of vessels differs from piece to piece.

According to this situation it was necessary to search for such criteria and methods for description of ceramics, as would be able to give more objective information. In this part we do not deal with the application of natural methods for analyses of the material of vessels, but we concentrated our attention on the study of shape and decoration. We combined archaeological methods with the mathematical characterisation of the basic features of vessels.

The whole number from the studied cemeteries was 440 vessels, but only 397 of them were complete (SW Slovakia - Fig. 1 - the map).

At first we characterize the material of vessels (only on the basis of visual study): only 10 % of them were produced of coarse-grained material (e.g. in Veľký Grob, Tvrdosovce, Úľany nad Žitavou, Nitra pod Zoborom II.). There is a similar situation with fine-grained pottery - it presents only about 15 % - especially in Nitra-Lupka, Dolný Peter IV., Hurbanovo, Nitra pod Zoborom I., Lipová-Ondrochov. Graphite was very rare.

As for the producing technology of the vessels, hand-made vessels were found rarely - their shapes were often deformed. Their material was especially low quality clay and they were primitively fired - they were presented by 1 or 2 pieces (e.g. in Veľký Grob, Devín-Staré vinohrady, Blatné, Dolný Peter IV., Michal a Úľany nad Žitavou). A different situation is in the youngest cemetery Nitra pod Zoborom II., where no less than 6 such vessels were found - some of them of special forms, and so we think that especially this ceramics was made for the funeral purposes. There were also found vessels produced on the wheel in this cemetery.

The pottery produced with the help of a wheel is situated on the other end of the production scale and create about 35-40 % of the studied set - especially in Nitra-Lupka, Dolný Peter IV., some pieces were found also in Hurbanovo, Devín, Blatné, Lipová-Ondrochov, Trnovec, Tvrdosovce, Ipeľský Sokolec - mainly on the localities at the end of the 2nd third of 9th century and in the 9th/10th centuries.

In the effort to obtain more objective criteria for the description of shape-ceramics we applied especially methods of works of *I. P. Rusanova*, *H. Zoll-Adamikowa*, *M. Parczewski*, *A. Buko* and *G. Fusek*.

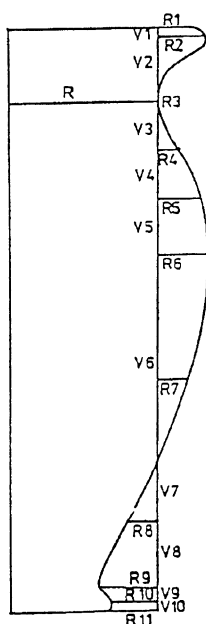


Fig. 2. Dimensions of the Slavice vessel.

For the characterisation of the whole shape of the vessels quantitative characteristics were used, especially 4 indices (Fig. 2 and Fig. 3, 4 diagrams 1, 2):

- the index of the diameter of maximal bulge to the height of the vessel,
- the index of the height of maximal bulge to the whole height of the vessel,
- the index of the diameter of the neck to the diameter of the maximum bulge,
- the index of the diameter of the bottom to the diameter of the neck.

The values of this 1st index were in the interval from 0.55 to 1.50. The vessels with values smaller than 1 belong to the pots and greater than 1 to the bowls. The vessels on this turned (between 0.95-1.05) are called bowled pots or potted bowls. The majority of them had the values between 0.90-1.20.

The values of the second index were in the interval from 0.46-0.91. Those with high values have the maximum bulge situated in the 2nd or 3rd sixth of the height (the majority of them).

The values of the 3rd index are in the interval from 0.40 to 0.95. The smaller indices symbolized narrow necks. The majority of vessels have those values concentrated between 0.65 to 0.85 - the necks created 3 - 4/5 (fifths) of the diameter of maximum bulge.

The values of the 4th index were from 0.45 to 0.99. The smaller values present smaller bottoms. The majority of vessels have this index in the interval from 0.60 to 0.85.

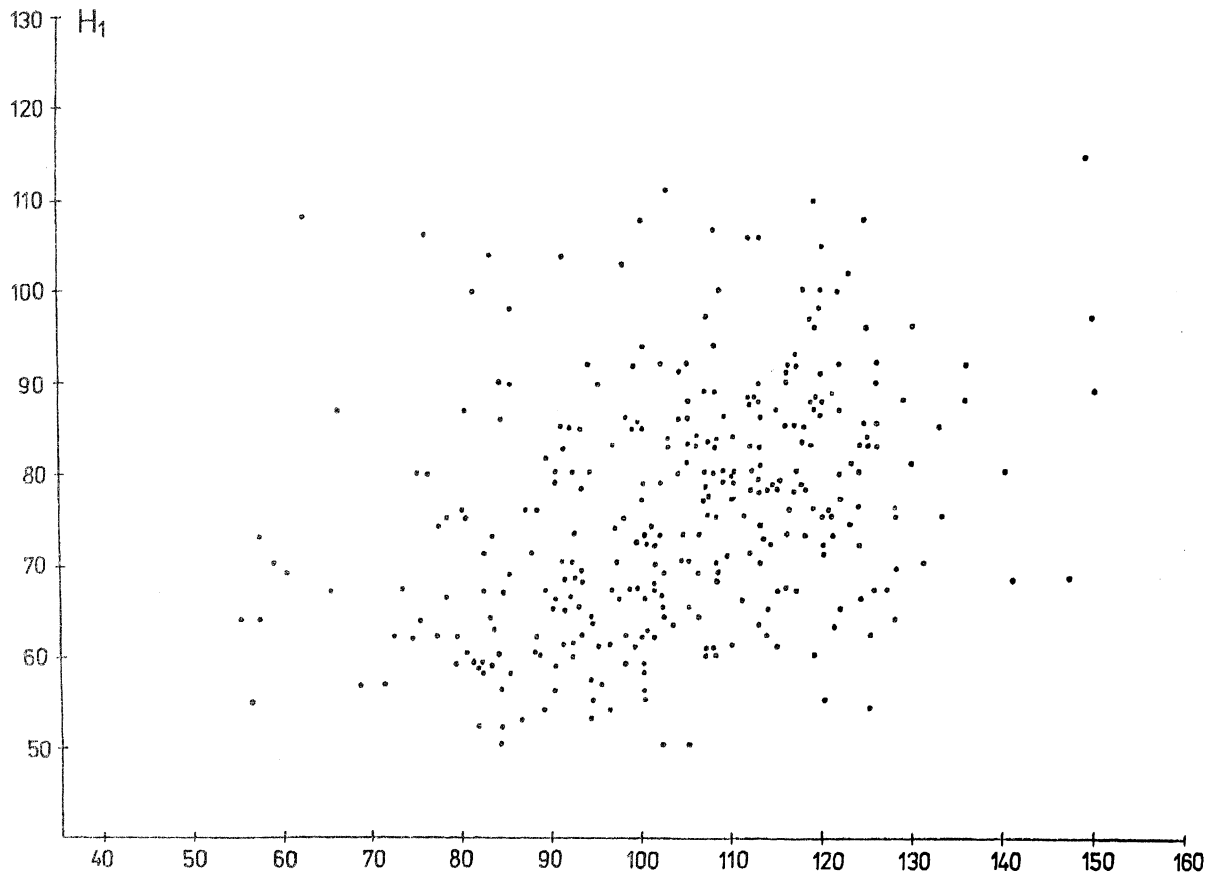


Fig. 3. Diagram 1 -  $H_1 / H_2$ .

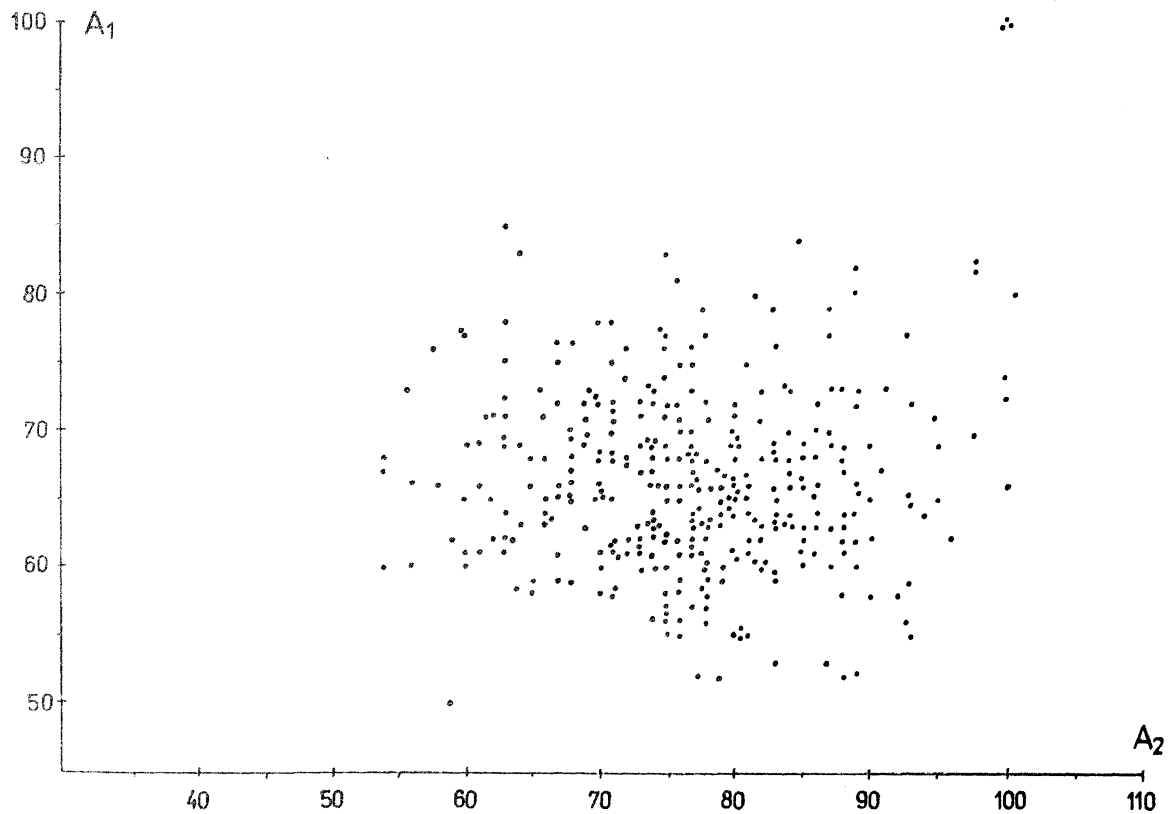


Fig. 4. Diagram 2 -  $A_1 / A_2$ .

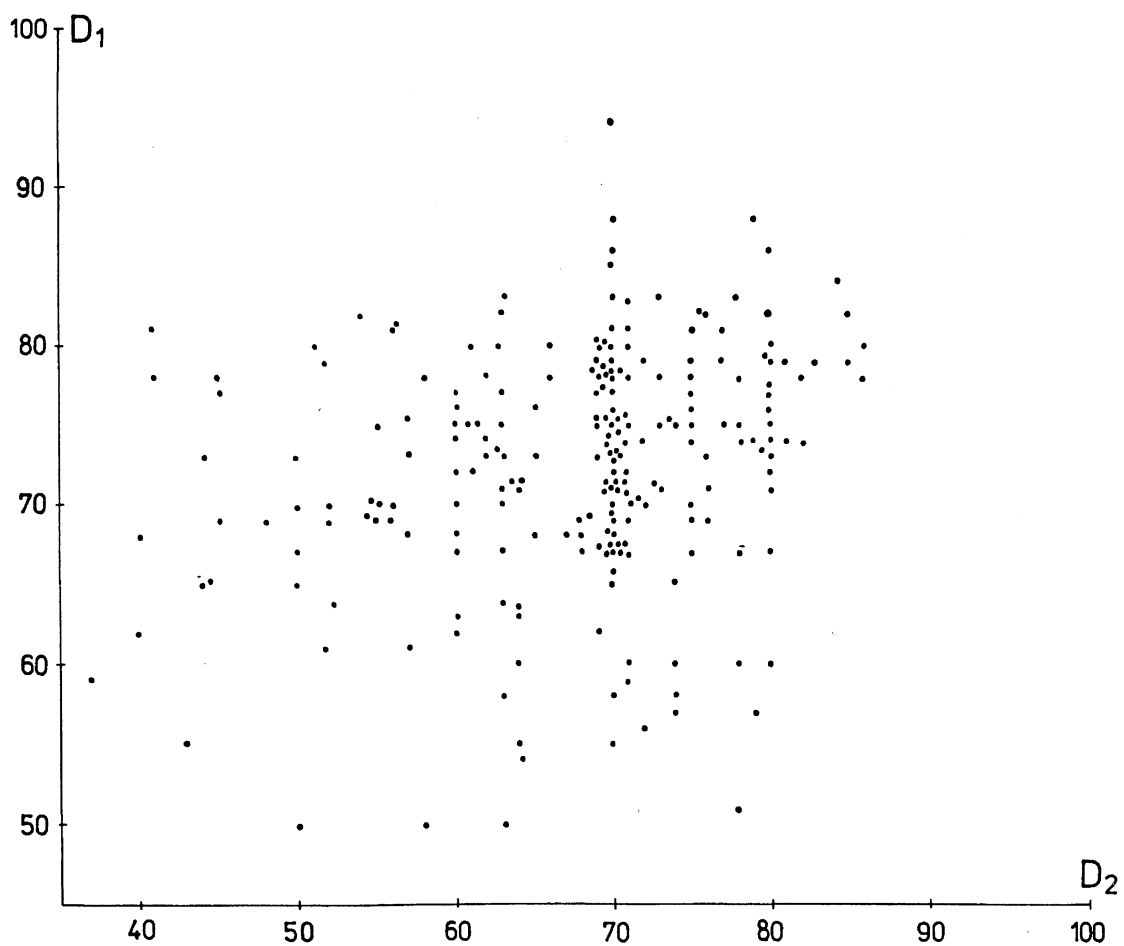


Fig. 5. Diagram 3 - /D1/ : /D2/.

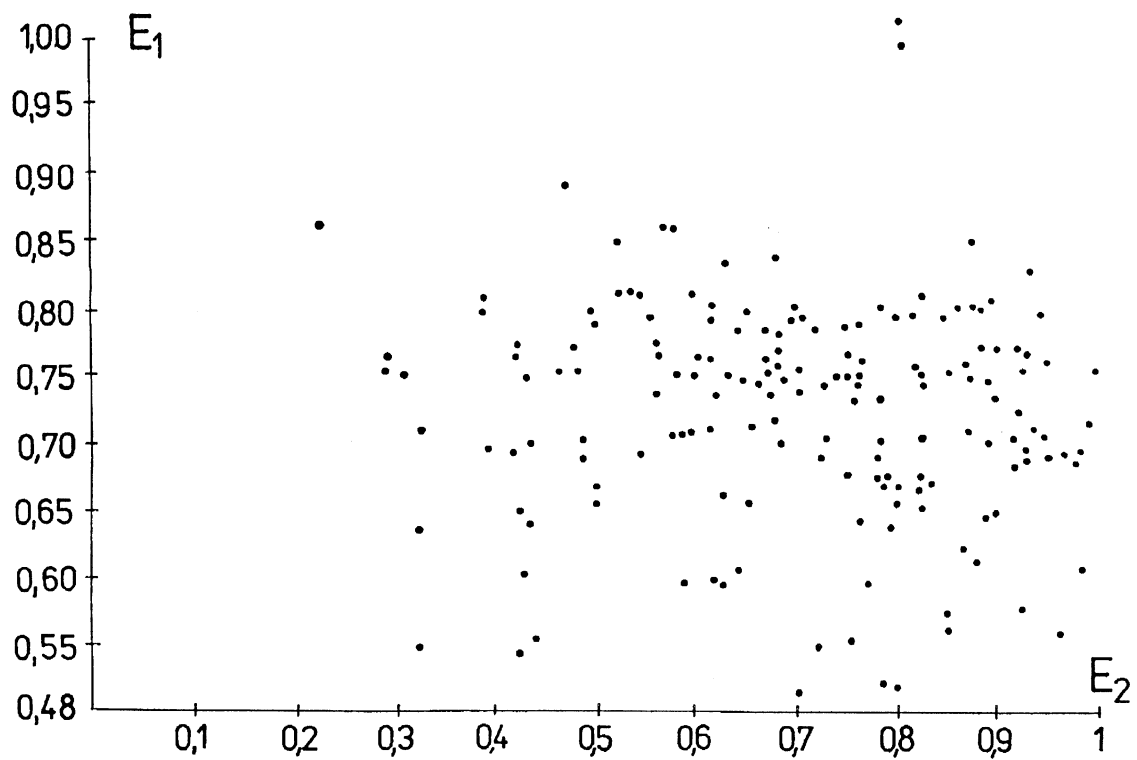


Fig. 6. Diagram 4 - /E1/ : /E2/.

The formula on the basis of these indices:

$$A = \sqrt{(V6+V7+V8+V9+V10):(V1+V2+V3+V4+V5+V6+V7+V8+V9+V10)} / \sqrt{(2R:2(R+R6))}$$

$$H = \sqrt{2(R+R10):2R} / \sqrt{(V1+V2+V3+V4+V5+V6+V7+V8+V9+V10) : 2(R+R6)},$$

$$A = /A1/ : /A2/$$

$$H = /H1/ : /H2/.$$

It is very important that these results are very similar to those achieved on the basis of the ceramics from the Old Slavic Age.

Then we tried to characterize the upper parts of vessels and so we used the following indices (Fig. 2 and Fig. 5, 6 diagrams 3, 4):

- the index for the characterisation of the angle of the rim  $(R^2 : \sqrt{R^2 + V^2})$ ,

- the index of the relative height of the rim

$$(V3 + V4 + V5) : (V2 + V3 + V4 + V5) = D1 = E1,$$

- the index for the characterisation of the profilation of the upper part of vessels

$$(R6 : (V3 + V4 + V5)) = E2.$$

The values of this 1st index were: 65-85 degrees, of the 2nd were 0.48-0.88 and of the 3rd were 0.28-0.99. The vessels with a smaller 2nd index have higher rims and those with a smaller 3rd index show smaller profilation of the upper part.

For our set of vessels it is typical that there is gradually an increasing number of vessels, the maximum bulge of which is greater than their height - especially in the younger cemeteries. A similar situation is with the increasing width of necks in relation to maximal bulge.

After a general characterization of vessel forms in our set we want to say some words about one special type of vessels, which is very rare not only in Slovakia, but also in other Slavic territories. They are pots with a profilated upper part. We know them from western Slovakia - 4 localities, 1 locality - the tumulus - in the central part and 2 in settlements in eastern Slovakia. The oldest of them are dated to the middle of the 9th century, but the majority of them are from the end of the 9th and the beginning of the 10th century.

Now we shall deal with the decoration of studied vessels (Fig. 7). Only a small number of them have no decoration: in the cemeteries Závada, Veľký Grob, Pobedim, Michal nad Žitavou as well as Šarovce and Nitra pod Zoborom II. - usually one piece in one locality.

Here are the 8 main types of decoration of the whole vessels.

Very special decoration is the I. type in the form of geometric signs (marks) - only on two vessels: in Tvrdošovce and Michal nad Žitavou, which are dated to the beginning of the 2nd half of the 9th century.

Many variants of the prick decoration (II. type) were applied especially on the ceramics from older cemeteries or from older periods of the localities, concretely in Veľký Grob, Závada, Tvrdošovce-Kerektó, Blatné, Hurbanovo. The majority of them was discovered in the localities Veľký Grob and partially in Hurbanovo, too - in other localities there were only 1-3 pieces. A very special variant of this decoration is presented by a wavy band of pricks, which were discovered only at Veľký Grob and Blatné (the beginning of the 2nd half of the 9th century). Together with them there appeared pieces of variant II5a (Závada and Veľký Grob), in Závada the pricked decoration was also applied on the inner part of the rim. The first variants 3, 7-9 of the II type appeared already at the beginning of the 2nd half of the 9th c. (Veľký Grob, Závada, Tvrdošovce). An exceptional decoration is that of a vessel from grave 12 from Hurbanovo (v. II4), which is without analogies: the whole surface covered by thick pricks including the rim (the 2nd half of the 9th century).

In the last third of the mentioned century we more often met variant III1, which has its beginning at Veľký Grob (2 pieces), but the centre of gravity is in younger cemeteries: Dolný Peter IV., Nitra-Lupka, Devín-Za kostolom, Bešňov (9th/10th century). At that time there appeared variant II6, especially in Nitra-Lupka and Devín-Za kostolom, where it was applied also on the rim, together with variant II9.

The types of multiple wavy bands and line bands were used more often in older localities than in younger cemeteries. Later there were more preferred motifs of a single wavy line and especially its

I	II <sub>1</sub>	II <sub>2</sub>	II <sub>3a</sub>	II <sub>3b</sub>	II <sub>4</sub>	II <sub>5a</sub>	II <sub>5b</sub>
II <sub>5c</sub>	II <sub>6a</sub>	II <sub>6b</sub>	II <sub>6c</sub>	II <sub>7a</sub>	II <sub>7b</sub>	II <sub>7c</sub>	II <sub>8</sub>
II <sub>9a</sub>	II <sub>9b</sub>	II <sub>10</sub>	II <sub>11a</sub>	II <sub>11b</sub>	II <sub>11c</sub>	II <sub>11d</sub>	II <sub>11e</sub>
III <sub>1</sub>	III <sub>2</sub>	III <sub>3</sub>	III <sub>4</sub>	IV <sub>1</sub>	IV <sub>2</sub>	IV <sub>3</sub>	IV <sub>4</sub>
IV <sub>5</sub>	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>
V <sub>8</sub>	V <sub>9</sub>	V <sub>10</sub>	V <sub>11</sub>	V <sub>12</sub>	V <sub>13</sub>	V <sub>14</sub>	V <sub>15</sub>
V <sub>16</sub>	V <sub>17</sub>	V <sub>18</sub>	V <sub>19</sub>	VI <sub>1</sub>	VI <sub>2</sub>	VI <sub>3</sub>	VI <sub>4</sub>
VI <sub>5</sub>	VII <sub>1</sub>	VII <sub>2</sub>	VIII <sub>3</sub>	VII <sub>4</sub>	VII <sub>5</sub>	VII <sub>6</sub>	VII <sub>7</sub>
VII <sub>8</sub>	VII <sub>9</sub>	VII <sub>10</sub>	VII <sub>11</sub>	VIII <sub>1</sub>	VIII <sub>2</sub>	VIII <sub>3</sub>	VIII <sub>4</sub>
VIII <sub>5</sub>							

Fig. 7. The types of decoration.

combination with grooves. We can see that the motifs of sole single waves are rare (similar as the sole wavy bands). The combination of single waves on the neck and the grooves on the body have many representatives and they are very typical at Nitra-Lupka and partially Dolný Peter IV (9th/10th century).

Here we must emphasize that a very important indicator for chronology is not only the presence (or absence) of the decoration type, but also the percentual representation of decoration in the individual cemeteries or in their phases.

A special type of decoration as for its situation is the decoration of the rims of vessels - it could be made from inside and outside or sometimes from both sides. The preferred motifs are wavy bands, but in some localities pricks on the rims (in the bands and columns) were used, too.

These rims were discovered especially in settlements, but also in some cemeteries: from the middle of the 9th as well as from the 9th/10th c. It is remarkable that in these cemeteries with many vessels there are always only 1 or 2 with decorated rims. We did not find a cemetery with such concentration of decorated rims as there were in Prša and Želovce in the 7th-8th centuries. Smaller concentrations were found only in some settlements (concretely around Pobedim and Komjatice). The concentration of them in one settlement was observed only at Slovenské Ďarmoty and partially at Sliach. The highest number of decorated rims is from eastern Slovakia - usually only one piece in 1 settlement.

The vessels with plastic decoration were more rare than the pottery with decorated rims. In the studied period it was the plastic border situated above the maximum bulge of vessels. They have various forms, sometimes they were decorated with wavy bands, pricks and crosses, but other times they were without decoration. They were applied especially on the pots with middle dimensions, but in rare cases also on great storage vessels which could be usually made of clay with graphite. In our country only 1 piece originates from a grave (Veľký Grob), the others are from settlements including the central fortified ones. Some concentration of them were found in Bratislava-castle and around the centre of Pobedim (in the Váh-basin). In the opened settlements there were several borders only in the region of Komjatice, some of them were obtained from the territory of the present Nitra (in the Nitra-basin). From the chronological point of view the oldest border is dated to the half of the 9th century - Veľký Grob. Then there are some from the end of this century: Jur pri Bratislave, Sliach, Pobedim. The finds from 9th/10th c., or from the beginning of the 10th century, belong to the youngest borders in our country (Komjatice, Mužla, Bíňa). A similar situation with plastic borders is in Moravia, but there are some shifts in the dating of their centre (of gravity).

Some of these vessels from studied cemeteries had technical and real marks on the bottoms. We had at our disposal almost 100 pieces of marks from graves and about 50 from settlements. A small part of them were not legible. We divided them into 13 main types with variants (Fig. 8). The commonest were the motifs of cross and its combinations. This motif continues from the 7th-8th centuries, but some variants of it are most typical in our studied period. There are, for example, variants IIb, d and e, which had the centre of gravity in 9th/10th century (mainly Dolný Peter IV., partially Nitra-Lupka and Trnovec). We often met the marks of the III and IV types, too. The svastiks belonged to the rarer forms - only on 5 cemeteries, similarly type VII. The marks of type from IX to XIII are usually presented only by 1 piece. The number of marks on various cemeteries were different. Somewhere there were localities without them. It was possible that in one region on one cemetery marks were applied and on the neighbouring locality they were not found (e.g. Nitra-Lupka and Nitra pod Zoborom I.). Usually we discovered 1-4 pieces, but we know also exceptions, the cemeteries: Nitra-Lupka with 22 exemplars, Dolný Peter IV. with 19 and Trnovec with 11 pieces. The variability of types of marks is major, also in the 3 last mentioned localities; only two marks from Dolný Peter IV. are identical.

From the chronological point of view, the oldest representatives of marks were the finds from Závada (the IVa type), Veľký Grob (2 pieces of the III type) and Tvrdošovce-Kerektó (2 marks - the VII type) - all dated to the beginning of the 2nd half of the 9th century. It is possible to date the majority of marks to the last third and 9th/10th century - including the more complicated marks of VIII-XIII types, which were found exceptionally only on the cemeteries. We want to emphasize that some marks appeared on the youngest cemeteries of our set, too - the cemetery in Šarovce and Nitra pod Zoborom II. (10th/11th c.). In Šarovce there was a store-shaped motif of VI type - on the bottom of a bottle. The marks with the motifs of cross were discovered in the second cemetery - especially on the bottoms of bowls.

When we compare the presence of marks according to the types in the studied material with the situation in the 7th-8th centuries, there are some differences, both in the appearance of different forms and in the various number of marks.

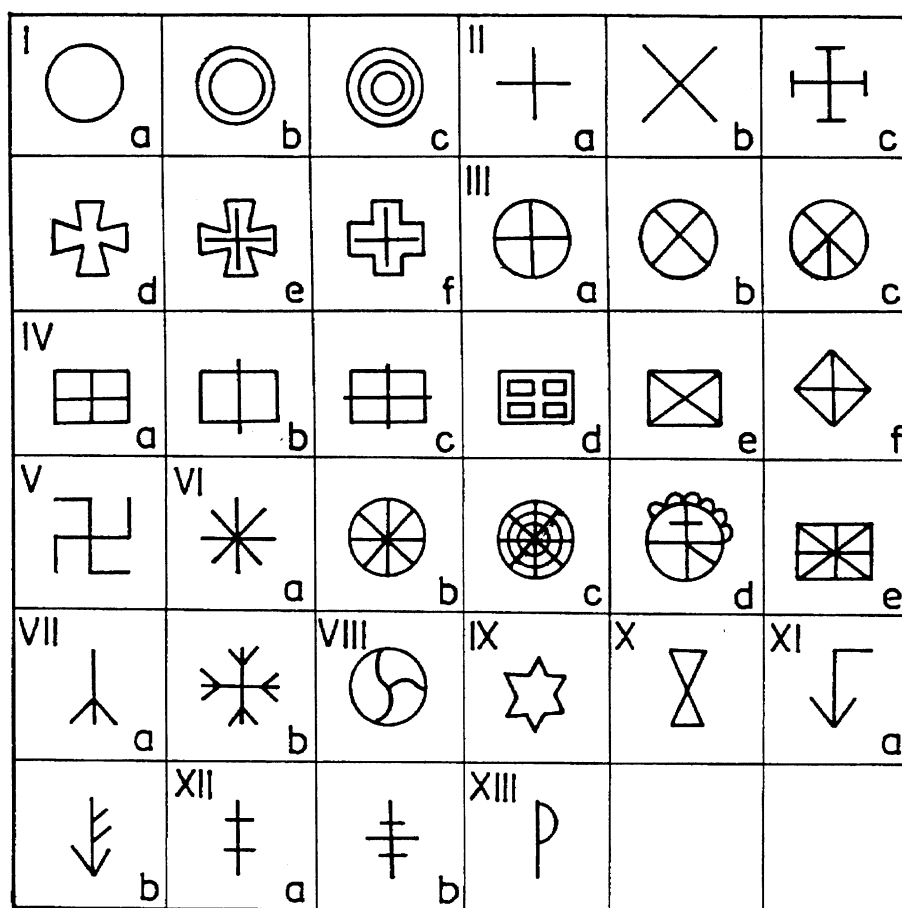


Fig. 8. The types of marks.

In the 9th-10th centuries a mark with the motif of VII type was more rare and, on the contrary, the svastikas become a more frequent find. The marks which were not brought to the studied period from the older phase are represented especially by the cross in a rectangular, a circle cutted into two parts and some more complicated variants: a quadrangle with squares in corners or squares divided into smaller parts. As at the end of the 10th and at the beginning of the 11th centuries the vessels dissappeared from the graves, we cannot study their presence on the whole shapes (forms). We can do it on sherds from settlements which are very fragmentary. There were mainly marks in the forms of the single crosses, crosses in circles or in rectangulars, or the single star-shaped marks. Especially the marks of the simple geometric motifs, the more complicated forms have not been found any more.

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