

Eglė Kumpikaitė,
Inga Nėnienė

Lithuanian Folk Skirts. Part II: Analysis of Fabric Weaves

Kaunas University of Technology,
Faculty of Design and Technologies,
Department of Textile Technology
Studentu Str. 56, LT-3031 Kaunas, Lithuania
E-mail: Egle.Kumpikaite@ktu.lt

Abstract

In the second part of the article, Lithuanian folk skirt fabrics are researched according to weave. 7 fabric groups, from which the group of plain weave is the most widespread, were selected. The second most common are twill weaves. In this article twill weaves are discussed wider by presenting their classification and plans of weave. Moreover, the prevalence of weaves were researched chronologically. The results show the predomination of plain and twill weaves in skirts of the XIX century, and various derived, combined weaves became more popular from the middle of the XIX century. These weaves started to be used gradually for geometrical patterns and fabric decoration. Comparison of the weaving tradition of skirts with respect to territory shows some similarities between the pattern and weave of Lithuanian fabric and those of neighboring countries.

Key words: folk skirt, fabric weave, plan of weave, twill weaves.

■ Introduction

Characteristics of the fabric are determined not only by such parameters as the raw material of threads, thread settings, linear density and others, but also by fabric weave [1]. These fabric parameters are especially important today as the fashion world is coming back to authentic fabrics, which are designed with different checks, stripes, and other patterns, and ornaments of various complexity, obtained using various thread colours and weave of woven fabric.

In the first part of article "Lithuanian Folk Skirts Part I: Analysis of Fabric Pattern", the authors reviewed trends in Lithuanian folk textile designs. However, the prevalence and adaptation of weaves in folk textile have not been extensively researched. In 1961 Balčikonis wrote that it is expedient to group patterns of fabrics according to weave because they decide the character of the pattern. We generally reviewed the main weaves (plain, twill, sateen, damask, overshot, pick-up, overlaid) used in Lithuanian folk textile, picked out characteristic weaves for some goods and discussed methods of pattern composition [2]. Nėnienė [3] examined shawl weaves of folk Lithuanian peasants as well as the chronological and territorial tendencies of their diffusion. In the historical-ethnographical atlas of Baltic countries [4], there was a description of weaves of skirts fabrics and major changes in the weaving techniques, patterns and silhouette of village skirts from the end of the XIX century to the beginning of the XX century, when plain texture fabrics with colour patterns were replaced by fancy weave of uneven tex-

ture. The authors of this article focused on the technique of weaving skirts from beginning of the XIX century to the first half of the XX century. They reviewed a collection from one museum and analysed variants of diamond twill, prepared plans of weave [5], and analysed compound weaves, which are widespread in skirts [6].

Milašius, Neverauskienė, Katunskis, Kazlauskienė [7] presented an adaptation of Woods-Hann classification and system of ornament creation for patterned woven fabrics. They established that 12 out of 17 possible symmetry groups are used in Lithuanian woven fabrics. Zdanavičiūtė, Milašius, Katunskis [8] created software to preserve and analyse pick-up sashes and overshot fabric ornaments, which enabled to analyze peculiarities of ornament symmetry as well as to look for a relationship between the culture's mentality and technologies.

Ethnologist Alsupe [9] widely researched weaving techniques and patterns commonly found in Latvian folk textile. She disclosed the interrelation between the weaving techniques of craftsmen and peasants, and gave details of the weaving character and patterns of skirts. She noted that skirts of fancy pattern were mostly woven by craftsmen in Vidžemė.

Therefore, the aim of this part of the article is to highlight peculiarities of weaving from the beginning of the XIX century to the first half of the XX century, establishing types of weaves and their prevalence, as well as describe tendencies of territorial and chronological distribution. This work also has a practical element – recommendations for setting a weaving loom are given.

■ Experimental results and discussions

The objects of the investigation were Lithuanian folk skirts from all regions of the country from the textile collection of the department of Folk Art at the M. K. Čiurlionis National Art Museum. The skirts originate from the beginning of the XIX century to the beginning of the XX century. The weaves of the woven fabrics were determined by analysing the fabric with a textile magnifying glass. The weaves of 258 skirts were examined. Fabric plans of weave were obtained by APS software "Audimas" (by authors V. Milašius, J. Katunskis), which was implemented in the Department of Textile Technology at Kaunas University of Technology for educational purposes.

The skirt fabrics are divided into groups according to their weave: 1) plain weave, 2) various twill weaves, 3) sateen, 4) rib weave, 5) combined with different weaves, 6) combined, 7) compound weaves. **Figure 1** (see page 80) shows the distribution of skirts according to weave. It can be seen from **Figure 1** that plain weave fabrics comprise the biggest part (56%), whereas twill weave fabrics make up 22%. More extensive analysis of this group will be presented later. Combined weaves with different weave combinations is the third category (11%). From all of these, combinations of plain and overshot weave are the most common, whereas combined plain with overlaid weave, pick-up with rib weave, sateen with Bedford cord or twill weaves are the least common.

Other weaves are less widespread. Combined weaves – mock leno and Bedford cord – make up 3%. Compound weaves

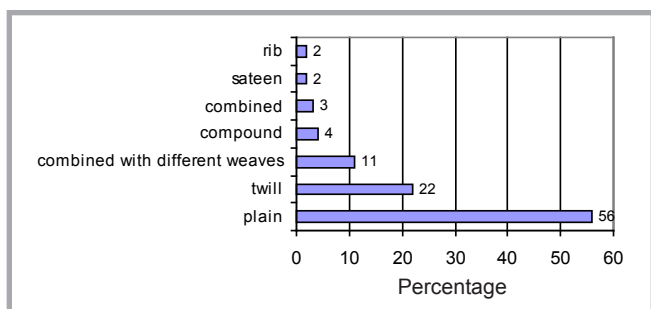


Figure 1. Distribution of skirt fabrics according to weave.

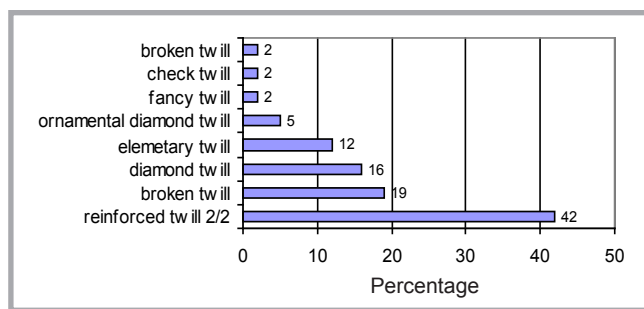


Figure 2. Distribution of twill weaves.

– backed weaves with one warp system and two weft systems, also known as ‘overshot’, backed sateen and backed sateen with satin weaves – comprise a similar percentage (4%).

Rib weave fabrics (4.5%) and combined plain with compound weave fabrics (4%) are least widespread. Fabrics woven in other combined weaves make up 2%. Compound weaves make up about 1.5%, jacquard weaves about 0.5%, and sateen and rib weaves both comprise 2%.

Twill weave fabrics vary greatly; their distribution is shown in Figure 2. Reinforced twill weave 2/2 fabrics (42%) are encountered the most. Various broken twills make up a smaller part (19%) of twill weaves. Diamond twills of various complexities, ornamental diamond twill weaves and simpler diamond twills are the third most common (16%). Elementary twills 3/1 and 2/1 make up 12%. Compound diamond twills, similar to small repeat crape weave, are in fifth place (5%). Combined positive and negative twills (checked) make up 2%, fancy twills – 2% and broken twill – 2%.

Therefore, the fabrics woven with 2/2 twill weave make up the largest part of all twill weaves. For this weave it is recommended to draw-in warp into 4 heald shafts in a straight draft.

Various broken twills make up a big part (19%) of twill weaves. A fragment of twill broken in the direction of warp is shown in Figure 3. An image of fabric weave and a fabric weave plan are also presented. It is recommended to draw-in warp in fancy draft by looking for evenly interlaced threads in the weave repeat.

Diamond twills of various complexities make up about 16%. One of these weaves is presented in Figure 4, also showing its weave plan. It is one of the more complex ornamental diamond twill

weaves. The Figure shows an image of the weave and weave plan. This weave is also drawn-in in a fancy draft by looking for evenly interlaced threads. The construction of these weaves was investigated more extensively by the authors of this article [5].

Checked patterns, also known as ‘servetiniai’, are woven with combined twill weaves. One of them is shown in Figure 5. It presents a real view of the fabric and motif that was used in constructing this combined weave and a simplified fabric weave plan, because a full weave plan would take up too much space. 8 heald shafts are needed to weave this fabric completely; straight draft is according to fabric pattern.

Quite complex weaves make up a small part of twill weaves, similar to small repeat crape weaves, made on a twill basis. One of these weaves is shown in Figure 6. It is made using a straight draft.

According to the plans of weave and weave cards shown, similar fabrics can be woven using both industrial and hand weaving looms.

Analysis of the territorial spread of weaves (Figure 7) shows that plain weave skirts are the most popular in all regions of Lithuania (35 - 65%), twill weaves dominate in Žemaitija more than in other regions, a small amount of twill weaves are found in Aukštaitija, but no twill weaves are found in the Klaipėda

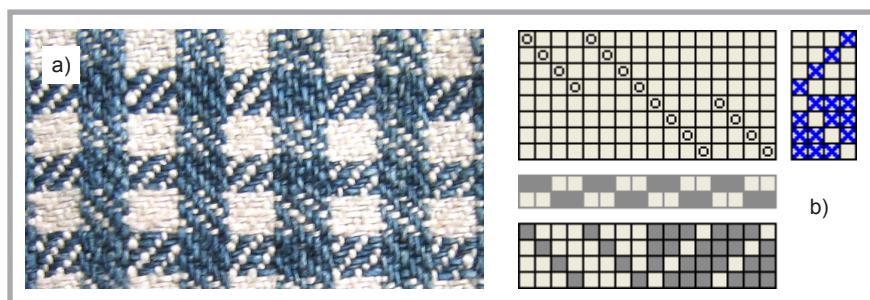


Figure 3. The fabric of a herringbone twill weave broken in the warp direction NČDM E3414 (Dzūkija): a – picture of weave, b – plan of weave.

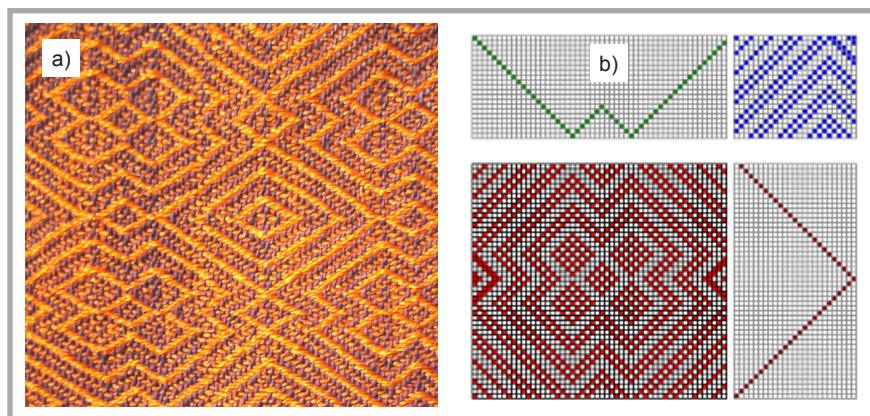


Figure 4. The fabric of diamond twill NČDM E3934 (Dzūkija): a – picture of weave, b – plan of weave.

district. Rib weaves are found only in the Dzūkija and Klaipėda districts, and sateen weaves – only in Žemaitija and Sūduva. Combined weaves in skirts are spread in very small amounts in almost all regions, except the Klaipėda district.

The summary of the chronological distribution of weaves (**Figure 8** see page 82) shows the predomination of plain weave in the XIX century and the prevalence of twill weave. Plain and twill weaves also have old traditions, for example, they were used in the Iron Age [10], during which twills – reinforced, diamond, broken – appeared were derived. Thin fabrics were woven with plain weave, and twill fabrics were used for coats, shawls as well as other heavier cloths. The fabrics of plain weave have high rigidity, strength and other positive mechanical properties. These practical features could have influenced the popularity and widespread end-use of this weave. This weave has high possibilities in the development of coloured stripe ornament as well. Seven pieces (70 - 80 cm in width) of fabric were used for a traditional skirt in the XIX century. Women wore several skirts, so it was important to use practical and simple plain weave fabric. Fabric was chosen according to the purpose of the skirt: for daily use – fabric of lower quality, and for holiday use – fabric of better quality, more rigid, with a higher weight and better drape. Women wore warm woollen and union wool skirts in wintertime, and flax skirts in summer time.

Usage of various fancy patterns rose at the beginning of the XX century when colouring became darker. These facts have a direct relation with European fashion trends, which actively influenced the clothing of folk people at the end of the XIX century. During the period around the end of the XIX century to the beginning of the XX century, the circumstances were favourable for the development of weaving technology and the extension of innovations. Country weavers and craftsmen brought ornamental diamond twill patterns from Latvia and used them for shawls, skirts and other cloth fabrics [3]. Overshot patterns, which were used earlier in interior fabrics, combined mock leno, Bedford cord, combined with a few different weaves, plain with overshot or pick-up appeared in skirts during this period. Skirts with different combined weaves became more popular in skirt fabrics from the second decade of the XX century.

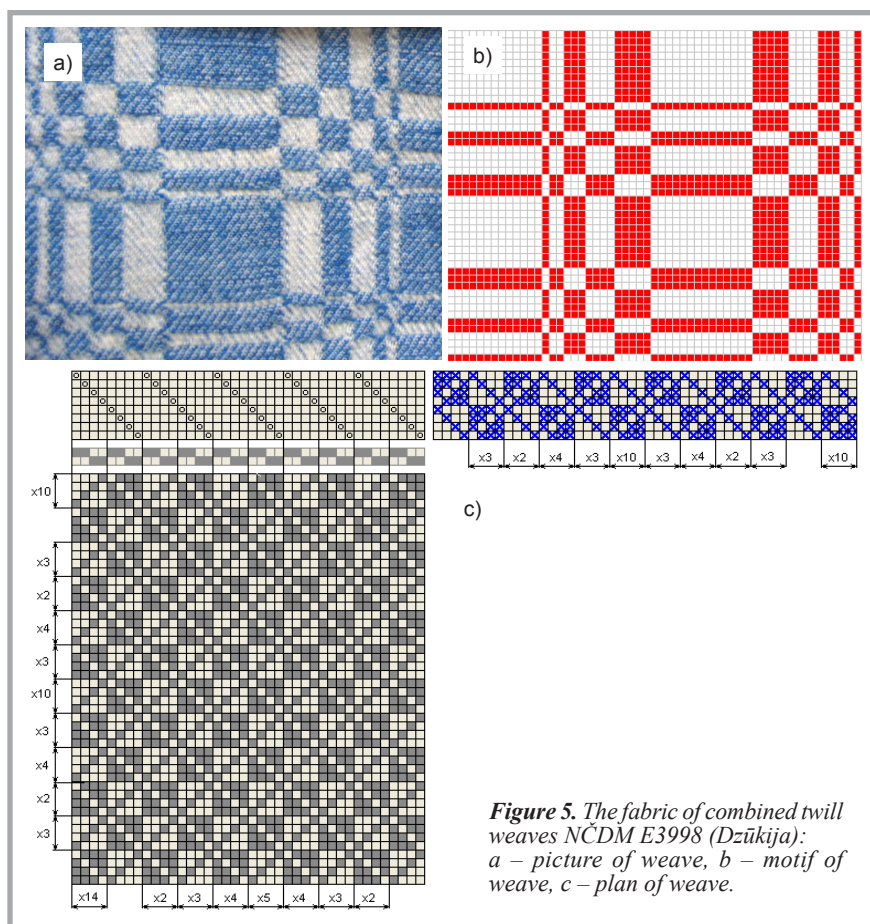


Figure 5. The fabric of combined twill weaves NČDM E3998 (Dzūkija): a – picture of weave, b – motif of weave, c – plan of weave.

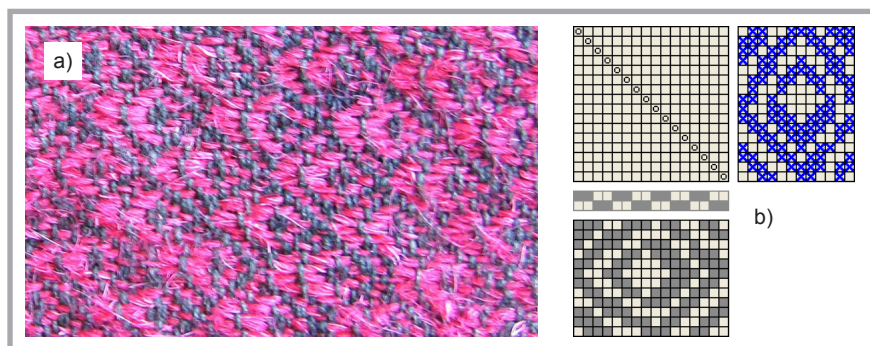


Figure 6. The fabric of a compound diamond twill weave NČDM E5352 (Dzūkija): a – picture of weave, b – plan of weave.

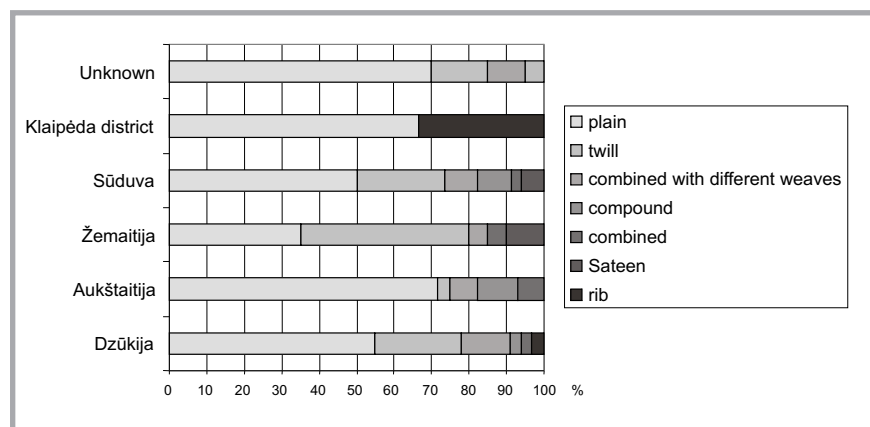


Figure 7. Distribution of skirt weaves according to ethnographical region (XIX century – 1st half of the XX century).

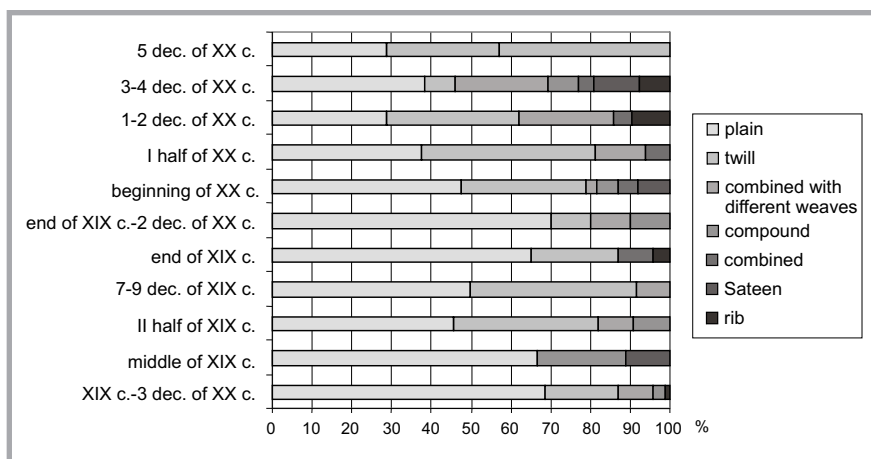


Figure 8. Chronological distribution of weaves (XIX century – Ist half of the XX century).

In some ways the weaving traditions of Lithuanian skirts are similar to those of neighbouring countries. As in Lithuania plain weave predominated, in Poland twill and rib weave were rarely used, and checked fabrics were even less popular; they were mostly used in districts which border Lithuania [11]. Byelorussian women wore checked and striped skirts [12]. Vertically striped patterns were used in Estonia and some regions of Latvia – Vidžemē and Kuržemē, and checked patterns – in North Eastern and Eastern Latvia – in regions which border Northern Lithuania [4]. Skirts of fancy patterns were widespread in Central and Western Latvia in the middle of the XIX century [9], and these patterns were common everywhere in Lithuania around the end of the XIX century and the beginning of the XX century, which the results of this research show.

Summary

Analyses of 258 Lithuanian folk skirt fabrics from the M. K. Čiurlionis National Art Museum, and their weaves can be summarized by these conclusions:

1. Fabrics were classified into 7 groups according to their weave. It was established that plain weave fabrics (56%) are the most widespread, various twill weaves (22%), less – combined with different weaves (11%), compound weaves (4%), combined (3%), sateen weave (2%) and rib weave (2%).
2. Twill weaves were separated into 8 groups. Reinforced twill 2/2 fabrics (42%) are the most widespread, broken twills (19%), various diamond twill (16%), elementary twills (12%), less – ornamental diamond twill (5%),

fancy twill (2%), check twill (2%) and broken twill fabrics (2%).

3. Plain weave is the most widespread in all regions of Lithuania (35 - 65 %). Twill weaves are more popular in Žemaitija, and they are found at least in Aukštaitija; but no twill weaves are found in the Klaipėda district. Rib weaves are only used in skirts of the Dzūkija and Klaipėda districts, and sateen weaves – only in Žemaitija and Sūduva. Combined weaves are common only in skirts of the Klaipėda district.
4. Results of chronological research show that skirts of the XIX century were woven in plain and twill weaves. Various derived, combined weaves, which gradually came into use around the beginning of the XX century for geometric patterns, and were adapted for the decoration of skirt fabrics.
5. According to the pattern and weave, Lithuanian skirt fabrics have some similarities with skirt fabrics of neighboring countries. Plain weaves and the rarer twill and rib weaves were prevalent in Poland as well. Checked fabrics were used in districts which border Lithuania. As in Lithuania, checked and striped skirts were worn in Byelorussia. Vertically striped patterns were widespread in Estonia as well as in the Vidžemē and Kuržemē regions of Latvia, and checked patterns – in North Eastern and Eastern Latvia, which border Northern Lithuania. Skirts of fancy patterns were prevalent in Central and Western Latvia in the middle of the XIX century, and they came into use in Lithuania from around the end of the XIX century and the beginning of the XX century.

Acknowledgments

The authors would like to thank the Lithuanian State Science and Studies Foundation for supporting this investigation.

References

1. Kumpikaitė E., Milašius V.; "Influence of Fabric Structure on Its Weavability", *Materials Science (Medžiagotyra)*, 2003, Part 9, No. 4, pp. 395-400.
2. Balčikonis J.; *Audinių raštai*. Vilnius, 1961.
3. Nėnienė I.; *Didžiosios skaros Lietuvoje: kaimo ir miesto kultūrų sąveika [Warps in Lithuania within the context of the Interaction between Rural and Urban Cultures]*. Vilnius, 2006.
4. Voolmaa A. A., Miljuvė M. K., Slava M. K. et al., *Judki, sarafany, Istoriko – etnografičeskij atlas Pribaltiku. Odežda*. Riga, 1986, pp. 38-46, fig. 14-15.
5. Kumpikaitė E., Nėnienė I.; *The Diamond Twills in Lithuanian Folk-skirts*, *Materials Science (Medžiagotyra)*. 2007. Vol. 13, No. 1, pp. 79-82.
6. Kumpikaitė E., Nėnienė I. *The Lithuanian National Skirts: Compounds Weave, Advanced Materials and technologies. Book of Abstracts of the 8-th International Summer School-Conference*. Kaunas: *Technologija*, 2006. P. 95.
7. Milašius V., Neverauskienė D., Katunskis J., Kazlauskienė I.; „The Mathematical Basis of Ornamentation of Patterned Woven Fabrics”, *Fibers & Textiles in Eastern Europe*, Vol. 10, No. 4 (39), 2002, pp. 34-39.
8. Zdanavičiūtė I., Milašius V., Katunskis J.; „The Peculiarities of the Ornamentation of Lithuanian Traditional Woven Textiles”, *Fibers & Textiles in Eastern Europe*, Vol. 14, No. 2 (56), 2006, pp. 37-40.
9. Alsupe A., *Audēji Vidžemē. 19. gs. otrajā pusē un 20. gs. sākumā*. Rīga, 1982, p. 169.
10. Pečeliūnaitė E.; *Audinių liekanos senojo geležies amžiaus laidojimo paminkluose Lietuvoje=Survival of Woven Fabrics in Burial Monuments of Old Iron Age in Lithuania*. *Lituanistica*. 1998. Nr. 4(36), pp. 63-82.
11. Piskorz-Branekova E., *Polskie stroje ludowe. Część 1-3*. Warszawa: *Sport i Turystyka – MUZA SA*, 2005-2007.
12. Bazielič B.; *Stroje ludowe narodów europejskich. Część II. Stroje ludowe Europy Środkowej i Wschodniej*. Wrocław: *Wydawnictwo Uniwersytetu Wrocławskiego*, 1997.



Received 17.12.2007 Reviewed 06.01.2008