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Traditions and Inovations of Yarns in Lithuanian Folk Fabrics (19th Century)

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It is actually for history of textile technologies and Lithuanian culture heritage to investigate deeply peculiarities of manufacturing and appearance of folk textile, to establish local and global tendencies of their distribution. This investigation seeks to discover alternation of home weaving traditions establishing raw material of yarns, types of yarn structure and features of threads colours in authentic folk fabrics used in Lithuanian villages in the 19th century in peasants clothing and showing yarns types territorial distribution in Lithuanian regions Žemaitija and Aukštaitija. It was investigated 468 pieces of clothing of this period from the album saved in National M. K. Čiurlionis Museum of Art. It is unexpected that cotton yarns are very common in warp of hand made clothing fabrics at the end of the 19th century. Cotton yarns replaced flax and wool in warp. It was established that plied yarns dominate in warp and plain yarns – in weft. Fancy dyed, mouline, melange and yarns with multiplex winding were identificated in the fabrics. Also it was innovative to found the metallic thread in weft of two examples of the fabrics. Frequency of colours distribution was established analyzing colours of yarns. The analysis of territorial distribution of fancy yarns types showed the tendency to spread the novelties of yarns and threads in traditional textile from the West part of the country.

Keywords: folk fabric, history of technologies, raw material, type of yarn, colour.

INTRODUCTION

The manufacturing of home textile in the 19th century – the beginning of the 20th century was important activity of Lithuanian peasants. From the ancient times to the middle of the 20th century peasant women spun a lot. The traditional local raw materials (flax and wool) were used for spinning from everlasting. In Southeast Lithuania hemp was used for spinning when flax harvest was bad. Purchased industrial raw materials spread for home weaving already in the second half of the 19th century. Country weavers began to buy strong, evenly spun cotton yarns and used them mostly for warp of clothing, home textile and decorative fabrics.

Cotton started to grow up and to be made into yarns in Asia, India. In the 16th century printed cotton yarns and fabrics were arrived in Central, North and North West Europe from there [1]. By data of ethnologist M. Glemžaitė country weavers started to buy cotton yarns for warp about 1870 and began to use chemical dyestuffs instead of natural ones, sometimes a colourful wool was bought for weft [2].

In earliest researches the most attention was paid to colour blends and regional peculiarities in Lithuanian folk costume (Miliuvienė, Bernotienė, Jurkuvienė) [3], the others deepen into ornament structure, colour and significance in folk fabrics, evolution of Lithuanian fabric geometrical ornament form, to the laws of ornamental structure, peculiarities of colours in pick-up sashes and overshot fabrics (Katunskis, Milašius, Taylor, Zdanavičiūtė) [4, 5], types of ornamentation, weaves, and yarns in folk shawls and skirts (Nėnienė, Kumpikaitė) [6 – 8], also fancy yarns structure, geometrical, mechanical and end-use properties (Ragaišienė) [9]. Fancy yarns can produce soft, friability, relief, good exportation features.

There is still really lack of investigations about usage of innovative, new structure yarns in Lithuanian folk fabrics.

Colour is one of the most important factor which influences a view, use and some properties of textile garment. It was popular to dye with decoction of birch leaf, ach lichen, pastel, waythorn, oak cortex. In the 15th – 16th centuries coloured materials were imported from abroad. In the middle of the 19th century synthetic dyestuffs (aniline, alizarin) attained Lithuania from West Europe. These dyestuffs changed vegetable pigments. Other novelty of this period was the fact that in the last quarter of the 19th century the colourists were taking a walk from village to village and dyed yarns with chemical dyestuffs in house [10].

The aim of this study is to discover alternation of home weaving traditions establishing raw material of yarns, types of yarn structure and features of threads colours in authentic folk fabrics used in Lithuanian villages in the 19th century in peasants clothing and showing yarns types territorial distribution in Lithuanian regions Žemaitija and Aukštaitija.

OBJECT AND METHODS

Album "Soft Wares of Peasants of Kaunas Government" of home made woven fabrics completed by M. L. Gukovska in the 9th decade of the 19th century belongs to National M. K. Čiurlionis Museum of Art (ČDM E4730). Object of this research is the album in which there are 31 pages with 468 pieces of clothing (skirts, dresses, vests, coats, shawls, shirts, overcoats etc.) and a few interior woven fabrics. Small pieces of fabrics were assembled from different villages of Žemaitija and Aukštaitija ethnographical regions, the authors of these fabrics are country weavers. The kinds of yarns and patterns of these fabrics show the realia of rural textile of the II half of the 19th century which are a little known,

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when ethnographical costume of peasant started to modernize by taking novelties and fashion from cities.

This ethnographical source is investigated by historical-comparative, ethnological and technological methods using interdisciplinary analysis. This type of investigation is actual for discovery of peculiarities of object origin, history and appearance. Large part of folk clothes and woven fabrics in the museums does not have exact date of weaving, and they need some data of technological analysis. Thus, the results of this investigation can become important supporting comparative source for works of identification. The data of textile garments of the same period in Lithuanian (LNM, LDM, ŠAM, ŽAM, BKMS, RKM) and Polish (CMW and MAEŁ) museums are analyzed and compared seeking to establish the distribution of some type of structure by functional, territorial and chronological aspect.

Raw material and structure of yarns of album fabrics was analyzed by analytical and empirical methods. Raw material was established by hand touch and burning test of the yarn pulled-out from the fabric analyzed according to the smell and formed residual (ash or porous ball). Yarns structure was established destroying complex yarn structure into the separate parts, using counting glass or SMZ 800 Nicon stereoscopic microscope and Coolpix 4500 digital camera.

In some fabrics, where a few types of complex structure yarns were used, all types of yarns were counted separately.

The establishing of yarns colours is provisory because of few reasons. At first the fabrics were already used in humans' life and their colour was changed. Also the fabrics are not new (over 100 years) and their colours can changed in the course of time. So, the numbers of colour pontoon are not given.

In this investigation textile yarns made from one part are entitled as plain yarns. Yarns made (by winding process) from two parts are entitled as plied yarns. Fancy dyed yarns are called plied (only from cotton raw material) yarns. They are dyed rhythmically or fitful with section of different colours. Melange yarns – yarns from fibers of different colours. Yarns made (by winding process) from two parts of different colours and/or different raw material is entitled as mouline yarns. Yarns with structure effects (one or more colours) are called as fancy yarns with multiplex winding.

RESULTS AND DISCUSSIONS

The investigation of raw material was done in warp and weft directions separately researching yarns of these directions. Distribution of warp and weft raw materials is presented in Fig. 1, and the distribution of yarns structure is shown in Fig. 2. In Fig. 1 it can be seen that cotton yarns of different structure are most widespread in warp (77 %) and plain wool yarns – in weft (66 %). In warp direction flax yarns were used 5 times less (15 %), wool yarns – 8.5 times less. Thus, cotton yarns replaced flax and wool yarns in warp in Lithuanian folk fabrics already in the 19th century. In weft direction flax yarns were used in 19 % of investigated fabrics, cotton yarns – in 14 %. This value is unexpected because it shows that cotton yarns were actually used for 72 pieces of album fabrics.

It is evident from Fig. 2 that plied yarns were the most popular (60 %) in warp direction. Plain and fancy dyed yarns (both kind 4.2 times less) were used in this direction in about 17 %. These tendencies confirm previous data presented in Figure 1, i. e. cotton yarns often are plied or fancy dyed. Plain yarns are most widespread in weft (62 %). They are often flax or wool yarns. In this direction melange yarns (22 %) only from wool fibre and mouline yarns (2.43 %) were usually used in fabrics. Also three pieces of fabrics with multiplex winding effect yarns in this direction were found (Fig. 3). Similar classification of yarns was found in [11]. In earlier investigations were established that in skirts fabrics fancy structure yarns were used more often than fancy yarns with colour effects [8]. Mouline yarns are most often twisted from wool fiber, and they were used for skirts, vests, jackets, large shawls, trousers, linings fabrics. Their samples are found in Žemaitija and Aukštaitija [LDM, RKM, ŽAM], also they were used in folk costume skirts fabrics of neighbouring Latvia [12]. Yarns with multiplex winding were used in Lithuania for skirts and shawls [ČDM, LNM].

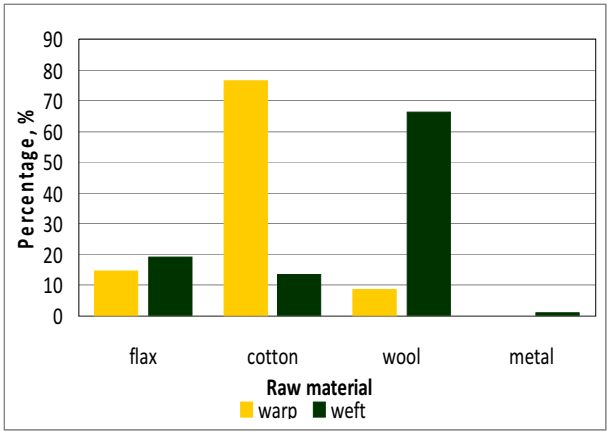

Fig. 1. Percentile distribution of warp and weft raw material

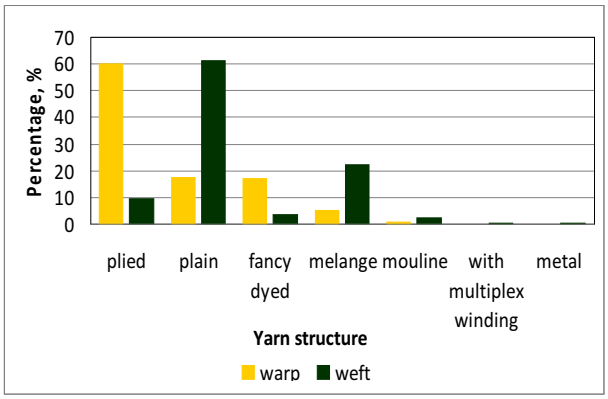

Fig. 2. Percentile distribution of warp and weft yarn structure

In modern production of fancy yarns multiplex winding effect is fixed by binder component. This component was not visible in investigated fabrics. Thus, it was hypothesized that Lithuanian spinner can made fancy yarns of this structure at home with spinning wheel. Structure of these yarns is sufficiently stable and multiplex winding in weaving process is not disassembled.

Two fabrics with metallic yarns in weft direction were found (Fig. 4) in this research. Any information about use

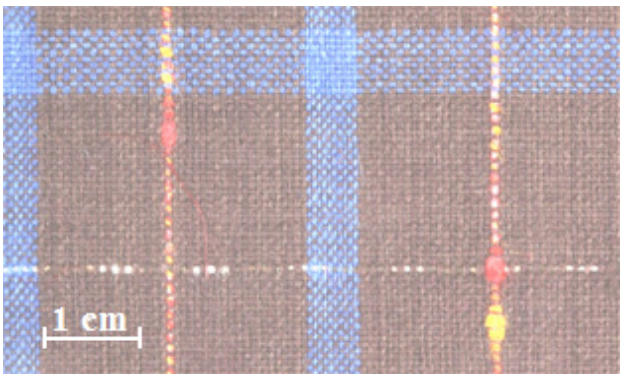

Fig. 3. Fabric with multiplex winding effect yarns in weft direction

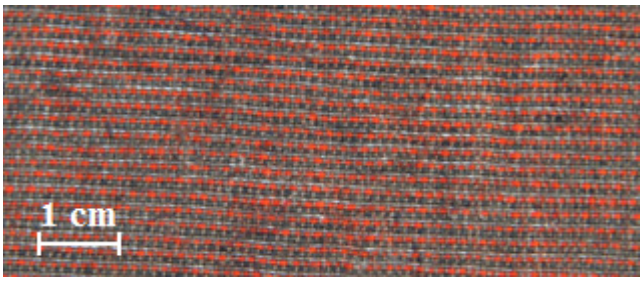

Fig. 4. Fabric with metallic yarns in weft direction

of these yarns in folk fabrics still is not met in literature.

It was established that 10 % of cotton fancy dyed yarns was used in warp direction, and in weft direction – 3.7 % of fabrics investigated. In this research they are separated into 4 groups:

1. Short fancy dyed – distance between different colours 2 mm – 4 mm (Fig. 5);
2. Medium fancy dyed – distance between different colours 5 mm – 8 mm (Fig. 6);
3. Long fancy dyed – distance between different colours 11 mm – 15 mm (Fig. 7);
4. Fitful fancy dyed (Fig. 8).

Fig. 5. Short fancy dyed yarns

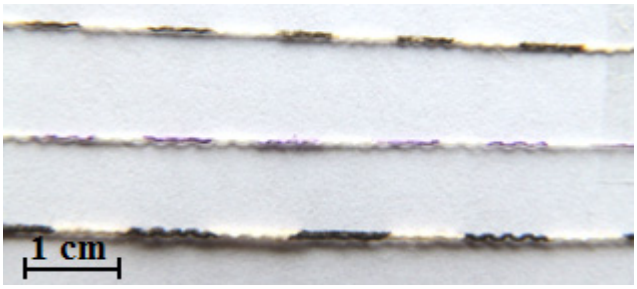

Fig. 6. Medium fancy dyed yarns

Fig. 7. Long fancy dyed yarns

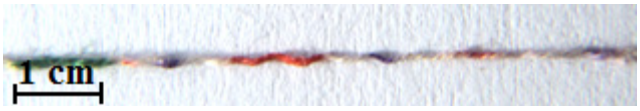

Fig. 8. Fitful fancy dyed yarns

Fancy dyed yarns are differently distributed in colours as well. They can create some variation in the aesthetic appearance, to décor woven fabrics (Fig. 9). In the 19th century similar yarns structure was used in home made and manufacturing fabrics in North America, Asia [13, 14], in neighbouring Poland [MAEŁ, CMW]. As it can be seen from the comparative data from Lithuanian museums, fancy dyed yarns were used for rural clothes fabrics and its decoration in the second part of the 19th century – the first half of the 20th century. The most often women skirts fabrics, sometimes shawls, aprons and men trousers were decorated with fancy dyed yarns [BKM, ČDM, LNM, ŠAM, ŽAM], they were found also in fringes [BKMS]. The earliest samples are dated about 1860, and it is piece of skirt from Rokiškis district and skirt from Utena district [ČDM E4725/19 and E2720].

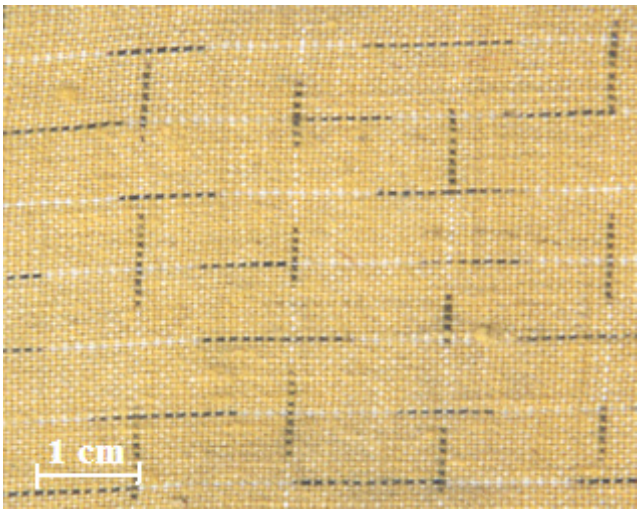

Fig. 9. Fabrics with fancy dyed yarns

It was found during investigation that in some fabrics a few yarns of particular structure in both directions of fabrics pieces were used. Thus, it was decided to investigate the innovative, simplex structure yarns separately by evaluating their number in the same fabric (Fig. 10). In Fig. 11 and Fig. 12 examples of these fabrics are showed.

It can be seen from Fig. 10 that fancy dyed yarns were used more than one yarns of the same structure in warp direction (10 %), and mélange yarns – in weft direction (8.4 %). The other kinds of yarns are less popular in the fabrics of the album investigated.

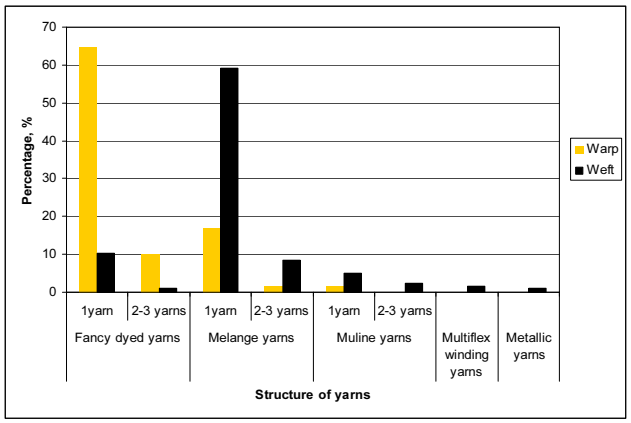

Fig. 10. Percentile distribution of the same structure yarns in warp and weft direction

Fig. 11. Fabric with 2 different fancy dyed yarns in warp

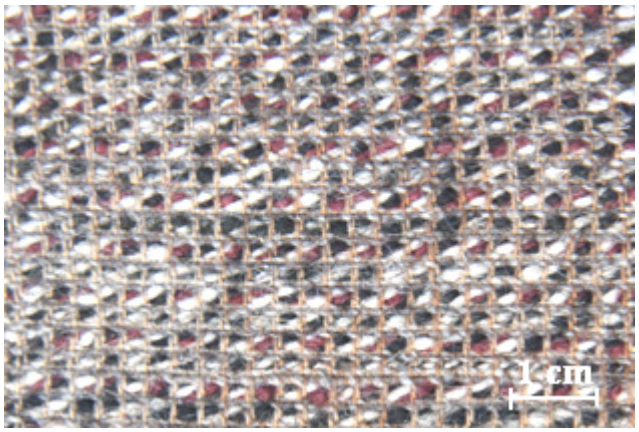

Fig. 12. Fabric with 2 different muliné and mélange yarns in weft

In the next stage of investigation it was calculated frequency of warp and weft colours in yarns of fabrics (Table 1). It is important to note that colour of flax fabrics in both directions is white. Authors of this investigation decided as follow because it is difficult to name a colour of flax. In fact, natural flax colour varies between brown and tobacco. It is known that flax of natural colour occasionally is used in production of yarns. A colour of flax fibre depends on dew retting, temperature, humidity of air, sun shine, action of microorganisms and bacterium. At the spinning process flax fibre is more or less bleached. Also fabrics investigated have been used in human life as clothes and some textile goods. So, these fabrics changed their colours. In summary, it was decided to attribute colour of flax fabrics to white colour because of these reasons. The second important note is that many white colours fibers are in melange yarns and they are calculated in aggregate. Example of that fabric is in Figure 13.

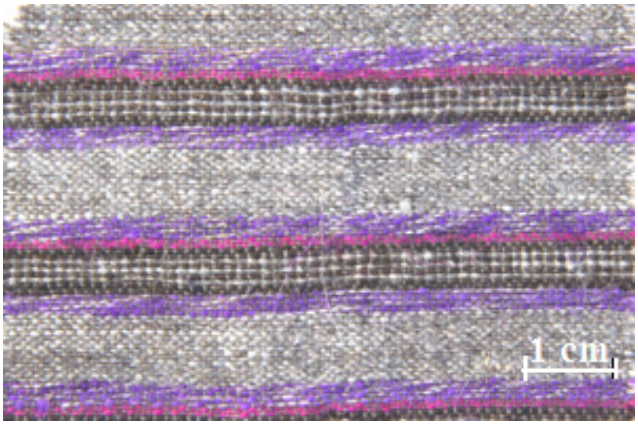

Fig. 13. Fabric with melange yarns in weft

It is evident from Table 1, that white colour is the most frequent in both directions, including the fibers of this colour in melange yarns and yarns from flax.

In warp direction tobacco (13 %) and brown (12 %) colours are popular. These colours are used in plied and fancy dyed yarns. In weft direction the second popular colour is black (19 %), then is red (9 %) and grey colours. It was estimated that in this direction the most popular yarns are of bright colour. Violet colour is detected in 56 investigated samples (6 %), cyclamen – in 34 samples (3 %). Also, there are samples with yarns of khaki, lettuce, brick-red colours.

Similar tendencies of colours frequency are estimated in fancy dyed yarns, i. e. white is the most popular colour in both directions. In warp white colour is combined with other, often with contrast colour. One of the mostly popular combinations is white/tobacco fancy dyed yarns (35 pieces or 16.4 %), white/black colours (27 pieces or 12.6 %).

In melange yarns most popular colour is black in both directions. In these yarns grey, brown, white, cyclamen colours are used too.

Analyzing the territorial distribution and comparing it with territorial distribution of fabrics with compound structure yarns (Fig. 14) it can be seen that distribution of fancy yarn types is not accident and rare phenomenon. Fancy dyed cotton yarns were used in all districts of former Kaunas government, most in Šiauliai, Telšiai, Raseiniai, Kaunas, less in Panevėžys, Ukmergė and Zarasai districts. Mouline, multiplex winding and metal yarns were found just in West part. The results confirmed thesis of earlier investigators that novelties in traditional costume of peasants spread at first in West part of Lithuania, later – in East part. Melange yarns which were spun from mixed wool fibre are spread quite evenly in all territory investigated. These data confirm that wool and half-wool fabrics were manufactured mostly from local homemade wool yarns.

Table 1. Frequency of warp and weft colours in different structure yarns of fabrics

Colour	Frequency in all yarns structure, %		Frequency in fancy dyed yarns, %		Frequency in melange yarns, %		Frequency in muline yarns, %		Frequency in multiplex winding effect yarns, %
	Warp	Weft	Warp	Weft	Warp	Weft	Warp	Weft	Weft
White	29.00	25.95	36.90	38.30	9.72	18.24	25.00	23.68	
Tobacco	12.79	2.40	16.40	12.80		2.28	12.50	2.63	
Brown	11.78	5.09	8.40	14.90	16.67	7.49	12.50	2.63	
Red	6.34	8.78	3.70	2.10				2.63	20.00
Black	5.64	19.16	12.60	14.90	34.72	35.18	25.00	28.95	
Sky-blue	4.33	1.20				0.33			
Blue	3.93	5.29	0.90	2.10		0.98			
Grey	3.73	6.19	2.30		27.78	17.59	12.50	10.53	
Orange	3.32	2.89	6.50	4.30	1.39	1.39		10.53	
Brownish	2.42	1.80	2.30	2.10	2.78	1.30			20.00
Green	2.72	4.49	2.30	2.10		2.28			
Violet	2.32	5.59	1.90		1.39	1.30		5.23	
Lilac	1.71	0.60	1.40			0.33			
Greenish	1.71	0.30				0.65			
Dark brown	1.31	0.60				0.33			
Yellow	1.31	1.70	0.90			0.65			40.00
Raspberry	0.91	0.20	0.50		1.39	0.98			
Mossy	0.70	0.10							
Yellowish	0.70	0.10	1.40	2.10					
Light brown	0.70		0.50		2.78	1.35			
Beetroot	0.70	1.70			1.39	2.61		7.89	
Light grey	0.60	0.60				0.33			
Dark grey	0.50	0.30	0.50			0.65			
Bluish	0.50	0.20	0.50	2.10		0.65			20.00
Brick-red	0.20	0.40							
Cyclamen	0.10	3.39		2.0		1.95	12.50	5.26	
Khaki		0.30				0.65			
Lettuce		0.50				0.33			
Silver		0.20							

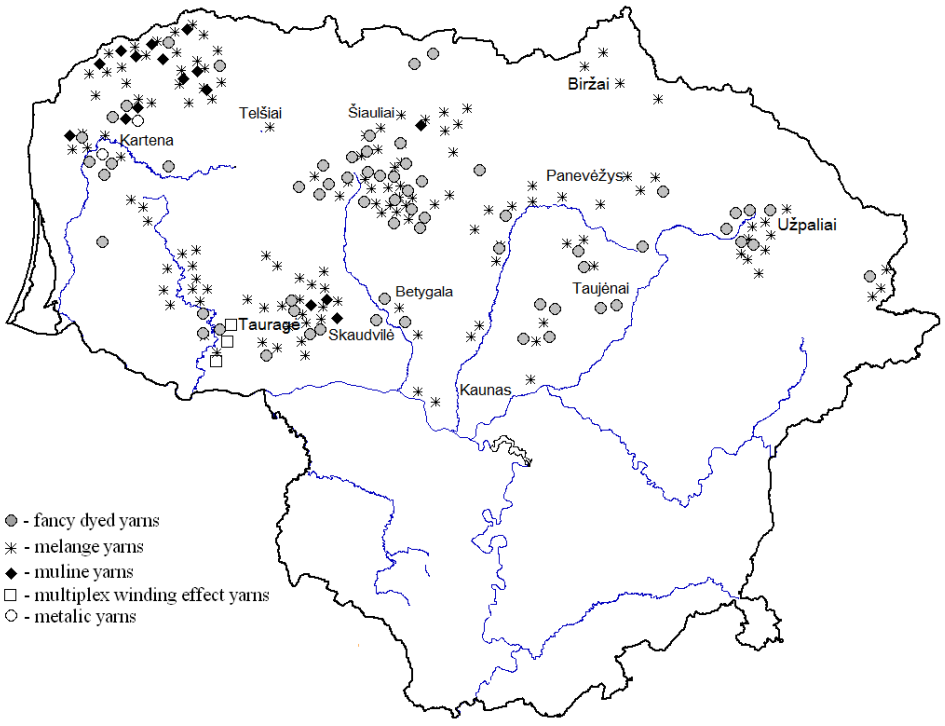

Fig. 14. The distribution of different type yarns in regions of Lithuania

Generally results of investigation show interesting and new data about less known, investigated and not typical weaving pattern created by using yarns of compound structure and these yarns were characteristic for fast changeable costume of peasants of the end of the 19th century. Such fabrics show reach variety in evolution of textile techniques and patterns, influenced by local traditions and novelties and fashion of World textile technique.

CONCLUSIONS

It was determined that cotton yarns of different structure are the most widespread in warp (77 %) already in the 19th century. Plain wool yarns (66 %) traditionally are the most widespread in weft direction.

Plied yarns were the most popular in warp direction, plain yarns – in weft direction (both about 60 %). Plain and fancy dyed yarns were used in warp direction about 17 % (both kind 4.2 times less). Melange yarns (only of wool fibre) were used a lot in weft direction (22 %). Also it was found three pieces of fabrics with multiplex winding effect yarns and two pieces with metallic yarns in this direction.

It was established that 10 % of cotton fancy dyed yarns were used in warp direction, and 3.7 % of investigated fabrics in weft direction. Four groups according to the rhythm of dying interval were separated.

It was estimated that white colour is the most frequent in both directions, including the fibers of this colour in melange yarns and yarns from flax. Tobacco (13 %) and brown (12 %) colours are popular in warp direction. Black colour is the second popular colour (19 %) in weft direction, red (9 %) – the third, grey colour – the fourth. The most popular yarns of bright colour are in this direction.

Territorial distribution shows that novelties in home textile of Lithuanian villages were spread in West part of Lithuania Žemaitija.

Acknowledgments

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SOURCES

BKMS – Biržai Area Museum "Sėla"
CMW – Central Museum of Textile (Poland)
ČDM – National M. K. Čiurlionis Museum of Art
LDM – Lithuanian Art Museum
LNM – National Museum of Lithuania
MAEŁ – Museum of Archeology and Ethnography (Poland)
RKM – Rokiškis Area Museum
ŠAM – Šiauliai "Aušra" Museum
ŽAM – Žemaičiai Museum "Alka"

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