MINISTRY OF EDUCATION, RESEARCH AND INNOVATION

"LUCIAN BLAGA" UNIVERSITY FROM SIBIU

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PAINTED FURNITURE
FROM SOUTHERN TRANSYLVANIA
15th-18th CENTURIES

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A B S T R A C T

INTRODUCTION

The overall knowledge of the factors that have determined the evolution of the Transylvanian society between 15^{th}-18^{th} centuries offers us the possibility of understanding the level of civilization that developed in this part of the country in the context of the European intercultural influences.

The present study refers to the field of the creative crafts during the period of the guilds. Although the topic of this work is relatively reduced to the evolution of the crafts creation in the field of painted furniture, the study aims a larger look on the historic context that has determined the apparition and spread of this specialization in the South of Transylvania. The variety of the painted furniture creation from this area of the country is explained through the affirmation of some decorative styles specific to each production centre.

The rural environment has kept for centuries in row rudimentary technologies in the field of processing wood and decorating the furniture, while in the urban environment the technical evolution has allowed the development of a production destined for a large scale trade. The organization of the guilds has determined the conservation of the crafts traditions and the affirmation of some production centres, renowned at a regional level and even internationally, having also influenced the folk creation of the craftsmen from the rural environment as an alternative for the urban production. The neighbourhood organization in the rural communities, similar to the guilds organization in the urban area played an important role in preserving the local traditions and the development of the community spirit, leading to standardization in the interior peasant household organization.

The conservation and restoration of these goods is part of an important step for the preservation and scientific harnessing of these heritage goods.

The work is structured in five main chapters and is illustrated with 592 images, for demonstration purposes only. In order to emphasize the most important recorded ideas and the vast material that was collected, we considered useful drawing some conclusions which would provide clarification about the chosen topic.

CHAPTER I
RESEARCH HISTORY OF THE PAINTED FURNITURE IN TRANSYLVANIA

The research of the painted furniture stands as a difficult topic because of the reduced volume of documentary sources and the small number of local researchers who have treated this chapter of the decorative art.

In Transylvania, the wood represented the base material used both for the construction and for making household items. Starting the 14th century, together with the introduction and development of the hydraulic installations, the resinous wood was mostly used for making home supplies and furnishings.

The Saxon communities colonized in the southern Transylvania have embedded the entire area a specific architectural landscape: the compact lining of the houses frontons on the street line, the lining of the barns behind the courtyards and the elongated parcelling of the gardens[1].

In Transylvanian towns, the craftsmen are reunited in guilds since the beginning of the 14th century and are specialized in different subfields. In the rural environment the joiners were the craftsmen making mostly furniture. The decoration of the furniture carved by the joiners was schematized and was based on the symbols of the solar cult specific to the agriculture communities.

In Western Europe, craftsmen reunited in guilds had already a well established methodology for learning the art crafts; for instance in Florence painters were grouped in the same guild as the pharmacists and doctors[2]. In as far as the Transylvanian craftsmen are concerned, the documents record the Saxon carpenters from the 14th-16th centuries as part of the same guild as the joiners and table-makers.

In the statuses of the crafts guilds, one important condition was the one forcing the journeymen from Transylvania to study and travel all the way to Austria, Bavaria, Tyrol or Italy[3], from where they would bring new techniques of processing the materials and graphic concepts for the decoration of the furniture items.

After the separation of the painters from the common guild, the carpenters were constrained to decorate by themselves the furniture they were making, the other painting genres being a privilege reserved exclusively to painters.

Ever since the Antiquity, ancient techniques have been known for processing wood, pigments and binders. The first specialty books dealing exclusively on art are: manuscript 490 from Lucca dated between the years 787-816, manuscript Mappae Clavicula (dated between 821-822), or Heraclius' manuscript, from the nineteenth century. The rigorous iconography and the used techniques in medieval Byzantium have been reported in the book of Dionysius of Furna[4] from the eighteenth century. In 18th century Transylvania the book of samples or models of the carpenters' guild and used by the painters

[1] Irmgard Sedler, *Mobilier pictat transilvănean*, Sibiu, "Emil Sigerus" Saxon Museum of Ethnography and Folk Art, "ASTRA Museum" Publishing House, 2007, p. 7.

[2] *Ibidem*, *apud* Ernszt Andras – PhD Thesis, Pecs, 2009, p. 21.

[3] Valer Butură, *Străvechi mărturii de civilizație românească*, Bucharest, Ştiințifică şi Enciclopedică Publishing House, 1989, p. 333.

[4] See Dyonissos of Furna, *Erminia picturii Bizantine*, Bucharest, Sofia Publishing House, 2000.

from Cluj[5] was widely known. After the Reformation the number of painters increased as they were now associated with carpenters in making altars, painting panels and painting furniture[6].

Most of the materials used for painting needed laborious preparation. We find references on this line both in the medieval books about painting and in the ethnographic collections[7]. The most important decorative motives have been materialized in signs or symbols of some legendary beliefs and ancient myths of mankind. The solar symbols, the tree of life the image of man and the one of the horse are the most ancient graphic expression[8]. The evolution of the ornamental symbolism, circumscribed to the folk creation benefited from Byzantine influence and the European cultural currents expressed during the late Middle Ages, Renaissance, Baroque and Rococo having as a result an important number of famous motives: the tree of life, the umbrella character, the Great Northern Goddess, the siren, the bird. They all add to the local themes: variants of the tree of life, solar signs, the snake and the dragon, the horse, anthropomorphic images"[9].

Nicolae Dunăre[10] analyses the shape of the traditional arts creation and achieves a meaningful classification of the ornaments according to five more important criteria: the morphological, structural, semantic, historical and geographical criterion. He reveals the relationships of the folk art with the primitive art, and with the cult art, identifying the roots of the ancient creation in cultivating the taste for what is beautiful.

Lucian Blaga establishes some ethnical differences within the decorative geometrics expressing the idea that amongst the Romanian stands more simple figurative invention geometrics, predominantly linear.

Olga Horşia and Paul Petrescu analyse in the book *Meşteşuguri artistice în România* (Craft Arts in Romania) the development of the art creation in relation to the economical development through the diversification of the production, the increase of demand and the development of the technologies.

Ioan Godea in his work *Meşteşugul lădarilor din Valea Teuzului*, Aurelia Tița in *Contribuții la studiul meşteşugurilor în lemn de la Budureasa*, Taucred Bănățeanu in *Meşteşugul şi arta lădarilor*, Kos Karoly in *Mobile cioplite din zona Lăpuş* as well as Nicolae Dunăre in *Răspândirea satelor specializate în meşteşugurile populare pe teritoriul României* bring an important contribution to the knowledge of the historical phenomenon of the creation of carved furniture made by joiners.

The study of the interior of the household is broadly addressed by Georgeta Stoica in her work: *Interiorul locuinței țărăneşti*[11]. About the development of the dwelling planimetry, Georgeta Stoica reminds about the particular importance of the rooms' functions because the functions determine the content and the way of organization both for the functional objects and for the decorative ones. G. Stoica shows that the simple benches made out of a wooden board were the oldest pieces of furniture. "The bed as a piece of furniture with a special shape appears rather late in the peasant dwelling deriving from the bench".

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[5] Nagy Margit, *Renaşterea şi barocul ardelenesc*, Bucharest, Kriterion Publishing House, 1970.

[6] Andrei Kertesz-Badrus, *Aspecte privind tematica picturii transilvănene din sec. al XVI-lea în lumina documentelor de epocă*, in: „Studii şi cercetări de istoria artei", series for Art, tom. 28, Bucharest, Academiei Române Publishing House, 1981, p. 136.

[7] Cennino Cennini, *Tratatul de pictură*, Bucharest, Meridiane Publishing House, 1977, p. 56.

[8] Paul Petrescu, *op. cit*., p. 7.

[9] *Ibidem*, p. 9-22.

[10] Nicolae Dunăre, *Ornamentica tradițională comparată*, Bucharest, Meridiane Publishing House, 1979.

[11] Georgeta Stoica, *Interiorul locuinței țărăneşti*, Bucharest, Meridiane Publishing House, 1973.

The table is a mainstay piece of furniture within the peasant interior. The shapes of the table vary from one region and era to another. "The German type table, with strong lateral soles and a drawer underneath has flourished in Central Europe and is typical for the Middle Ages"[12].

Authors Cornel Irimie and Marcela Necula present in the volume *Arta țărănească a lemnului* (1983), a comprising analysis of the use of wood. They advance the hypothesis of knowing the lifestyle from the territory where this material has been used, the monuments and wood items representing real historical documents.[13] Conel Irimie and Marcela Necula conceive a division into two categories of the processing and wood decorating techniques „the ones in which there is no intervention into the wood mass, obtaining shapes and even decorations by bending, weaving or winding and the ones characterized by direct intervention into the wood mass".

Iulius Bielz gives a presentation of the historic conditions that have led to the establishment, organization and evolution of the Saxon communities in Transylvania. The author establishes the most important production centres for the painted furniture, having characteristics specific to the following regions:

- Sighişoara-Rupea Region with several ramifications; Țara Bârsei; Sibiu Region; Năsăud Region.

Author Aurelia Pomponiu does a compared analysis of the painted furniture from Transylvania and the painted furniture from Germany, Austria and Switzerland of the 17th-18th centuries. In this context the author shows that "the German painted furniture has represented a source of inspiration for many geographic areas, penetrating also on the territory of our country"[14]. According to the author, the furniture painters were organized in guilds and were working on paper templates that they would keep that they would preserve sacredly[15]. The most important fairs where painted furniture could be purchased were the ones from: Braşov, Sighişoara, Odorheiul Secuiesc, Târgul Secuiesc and Rupea.

Nicolae Iorga in his work *Negoțul şi meşteşugurile în trecutul românesc* does an analysis concerning the origin of the religious and secular art, the influences of the craftsmen and the circulation of the artists during the 15th-17th centuries in the Romanian Principalities with direct reference to Central Europe and Transylvania. In the historic documents from the beginning of the 15th century, alongside other craftsmen from Central Europe, Saxons from Sibiu and Braşov also mentioned working for Wallachian and Moldavian princes. The influence of the Occident in Moldavia and Wallachia can be observed until the sixteenth century. Nicolae Iorga establishes the etymology of the word craft as a word of Hungarian origin. The spreading of this term is due to the fact that since the 13th century the inhabitants of the most ancient towns from Wallachia and Moldavia were Hungarians and Germans arrived beside the Armenians. Craft means occupation. The German term "maister" comes from the Latin word "maister".

Theo Zelgy published *Pictura Mobilierului săsesc transilvănean.* The work is an analysis concerning the apparition and development of the painted furniture made by the Saxons. After their settlement, The Saxons from Transylvania have raised the localities at the level of towns, and the craftsmen have organized themselves in guilds. The town of Sighişoara played an important role, since 1638 in superior "schooling" for the carpenters, sculptors and furniture painters[16]. Theo Zelgy describes

[12] Georgeta Stoica, *op. cit. 23.*
[13] *Ibidem.*
[14] *Ibidem*, p. 15.
[15] *Ibidem*, p. 17.
[16] *Ibidem.*

the types of furniture made by the Saxons from Transylvania, the materials and working techniques used by making a comparison with the furniture made in 14th century Germany. The author underlines the fact that the first pieces of furniture have been made under the influence of the late Gothic style, and starting the 16th century the first Renaissance shapes and decors appeared. The most ancient chests from Transylvania have the décor characteristic to the old German furniture: the solar wheel, the spiral, the tree of life, the S shape, the coiled serpent, the fantastic animals. The trade with Orient made items has brought the exotic decors together alongside the expensive brocade fabrics with vegetal motives. They have strongly influenced the local ornamental thematic. The rose appears later and is associated with bluebells and carnations. The Rococo style imposes itself in the decoration at the end of the 18th century with its specified motives – the rosette, the spiral and the horn of flowers[17], and during the Baroque period some furniture items contain elements of architecture, landscapes or even anthropomorphic representations.

Author Werner Förderrenther, in his work Farbiges Holz emphasizes the painted furniture from the Rupea region, the space between Braşov and Sighişoara. The development of the painted furniture starts with the decoration of the Saxon churches, where we still find colourful objects of a remarkable age: Gothic triptychs from the beginning of the 16th century, coffered ceilings with decorative fields, doors, chairs, galleries, pulpits with special ceilings for proper acoustic, candles and wooden candlesticks, chests etc. A special research group is represented by the furniture destined to storage. The author notices the existence of the *Stollen* type chests outside the territory of Transylvania (for example in Krenzstein near Vienna), and its origin is considered as being in Transylvania too. Along the collection kept in Brădeni the author proves that this type of furniture has had a larger spread in the Southern Transylvania. The frontal *Stollen* type chests are a phenomenon that has been kept for a long time, in several places with relics of furniture from Europe. There are images dating from the 12th century that attest the use of the Stollen type chests for the storage of cereals. The bas-relief corresponding to September, on the tympanum of the St. Madeleine monastery, is dedicated to bringing the harvest and depicts emptying a bag of cereals into a Stollen chest[18].

The most important study regarding the carpentry and painted furniture from Transylvania has been made by Roswith Capesius in his work *Mobilier şi tâmplărie pictate de saşii din Transylvania.* The work includes the analysis of the stylistic development of the painting on wood and the beginning of the painted carpentry, the 13th and 19th century furniture, the evolution of the peasant furniture and the compared analysis of the peasant furniture and church furniture. The author reaches the conclusion that an important impetus in developing the painting on furniture came from the King Matei Corvin. He has promotes the Italian and German Enlightenment ideas influencing the spread of the Renaissance current in Transylvania[19]. With the installation of Protestantism, the structure of the church ornamentation changes following the penetration of the Renaissance decoration[20]. According to the historical and stylistic analysis that Roswith Capesius does, the craft of the painting on wood can be dated after the year 1526, and the first truly significant productions of painted furniture appear after 1550 together with the Reformation. Related to the beginnings of painted carpentry, the author states that this activity was already well known during the Middle Ages, before it was practiced in the guild organization from

[17] *Ibidem.*
[18] *Ibidem*, p. 20.
[19] *Ibidem*, p. 7.
[20] *Ibidem*, p. 12.

Transylvania. For example, the sarcophagus type chests with pillar feet from the 15th-16th centuries from Brădeni, Sibiu County, are presented. The symbolism of these decorative representations prove the age of the artistic conception practiced during the Gothic inspired period specific to Western Europe. The author proves the evolution of the painted carpentry during the first part of the 16th century by passing from the sculpted and encrusted decoration to the painted one through a common intermediary phase, in which the two techniques have coexisted. The examples come from the applied decoration in the Evangelical churches from Biertan, 1514-1523, Prejmer and Bistrița. Here we find acanthus leaves, ancient decorative motive taken from the region of the Mediterranean Sea following the brocade trade coming from the Orient[21].

The 18th and 19th centuries have represented the period of the Baroque influence in Transylvania, this being the period where Baron Samuel von Brukenthal lived. Under the influence of the Austrian inlaid furniture spread in the urban area appears the painting that imitates the inlay.

Another important study to illustrate the performances of the painter carpenters refers to the creation of the Umling family from Saschiz (1740-1800). For the churches from the Middle Ages which have lost their ceilings it was found the solution to replace them with coffered ceilings called "boards with super-ornamental paintings"[22]. The ceiling of these churches is made out of wood divided into square panels, decorated with floral motives (tulip, carnation, rose). The most important painter from the Călata region in the 18th century was Umling Lörincz from Cluj. The painting and drawing of the Umling family take their inspiration in 17th and 18th centuries Sighişoara. The carpenters of Sighişoara have supplied with their creations almost half of the centres of Transylvania including through the creation of furniture that was sold in several fairs.

In the work *Influențele şi împrumuturile reciproce în arta populară românească şi săsească*, authors Cornel Irimie and Marcela Necula have been preoccupied in emphasizing which were the principles and mechanisms that have determined influences and mutual lending in the context common coexistence between Saxons and Romanian in Transylvania. The process of influencing and exchanges was an act of creation and creative interpretation[23].

Concluding on the history of the painted furniture research in Southern Transylvania we can emphasize both the common European background that was at the origin of the furniture, as well as the influences specific to the various cultural currents that have stimulated the traditional culture, leading to creating adaptation specific for Transylvania. The presented works have emphasized the European contribution that the Saxons have brought in and maintained along the centuries through the guilds.

From correlating the data presented the cited studies emerges the ides of the long history in wood decoration on the territory of Transylvania. The Brădeni case deepens with at least one century the dating of the decoration phenomenon through painting of the wooden furniture. This case demonstrates the fact that before using the fir tree wood and the urban carpentry techniques, the furniture from the Middle Ages used to be painted. The dating done through scientific research of the painted items from the Brădeni fund testifies with certainty the beginnings of furniture painting at the middle of the 15th century. The joiners have painted the objects by also using the priming technique signalled much later according to the cited authors (in the 17th century).

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[21] *Ibidem.*

[22] ***, *Familia Umling*. *Exhibition Catalogue*, Budapest, 2009, p. 5.

[23] Cornel Irimie, Marcela Necula, *Influențe şi împrumuturi reciproce în arta populară românească şi săsească*, in: "Biharea", vol. V, p.134.

CHAPTER II
CRAFTS GUILDS

II. 1. THE COLONIZATION OF THE SAXONS IN TRANSYLVANIA

The settlement of the Saxons in Transylvania constitutes an important chapter of the German colonization in Eastern Europe[24]. The colonization is documented by written sources, issued by the Hungarian Royal Chancery, by the Price of Transylvania, Roman Curia and Diocese of Transylvania.

In 11th century Germany, new techniques have been developed in agriculture; crafts, trade and mining exploitation have developed. Following the technical evolution of the means of production, the human labour force has been replaced with the animal force, hydraulic and wind power. The development of agriculture has had as effect the demographic growth stimulated by larger agrarian and animal productions. This phenomenon has determined the peaceful colonization from the most developed regions of the country. According to the German historians from the 11-13th centuries he critical conditions have been met for the migration of three layers of the population: the layer of the poor peasants, the low and middle nobility and urban population from the Episcopal towns. In the colonized areas have been applied two types of organization of the agrarian rural household specific to the Western Europe: Sesia-Franconian and Flemish Sesia. From the legal forms applied it appears that in Transylvania Flemish Sesia has spread. The oldest piece of news about the presence of the German colonists in Transylvania dates from 1103 and the next is from 1148[25]. The word "Saxon" defined in the documents of the period a legal status and was not linked to the origin of the settlers as the immigrants from Transylvania were peasants and gentry from today's Rhineland, France, Luxembourg and Belgium.

According to the archaeological testimonies, Southern Transylvania was colonized by settlers coming from Western Germany, from the Duchies of Lorraine and the regions at West from them. During the colonization were found mostly villages with houses strung along the two sides of a road or street. Most of the villages have a central market where there are the centrally located public buildings (church, town hall, Parish House, school and so on). From the point of view of dialectology, Saxons' origin is Luxembourg and its surroundings. The dialects spoken by the Saxons of Transylvania are the result of an evolution of over eight centuries with local developments and interactions with the Romanian and Hungarian dialects. The largest area of Saxon colonization in Transylvania was the province of Sibiu. The territory between Orăştie and Baraolt (Drăuşeni) can be considered as having a German population evenly spread only after it was comprised in the year 1224 in the administrative unit of the province of Sibiu[26]. The heads of county have played an important part during the 13th century in the colonization of the Saxons.

At the end of the 14th century, the Turks have become a menace for the territories of Transylvania too. This has determined the construction of fortified systems which have protected the churches and the population.

[24] *Ibidem*, p. 50.
[25] *Ibidem*, p. 74.
[26] Thomas Nägler, *op. cit*., p. 136.

II.1.1. ECONOMIC DEVELOPMENT AND APPARITION OF THE TOWNS

In the eighth century Europe a new type of town if born: the burg. In the ninth and tenth centuries appear independent burgs and even rural burgs appear, created in the middle of a field, away from the old consumption centres.[27] Ever since the 13th century, in Transylvania there is a separation between the craftsmen and the farmers once towns are created. The colonization of Transylvania was not just a simple rural settlement. The diplomas and the privileges given to the settlers allowed them the right to pursue crafts and organize fairs which shows the advanced stage of the settlers' social organization and the division of labour between agriculture and crafts. Transylvanian Saxons' trade has flourished during the 14th-15th centuries because of the privileges they had and the intensive exchange of goods with Romanian Principalities, Vienna, Prague, Venice and the Black Sea. Of all the centres inhabited by Saxons, Sibiu soon became (1224) an administrative centre.

Within the organization of the Sibiu County there were 7 chairs: Orăştie, Sebeş, Miercurea, Sibiu, Nocrich, Cincu, Rupea. At the end of the thirteenth century to the 7 chairs is added Sighişoara. In 1486 the Saxon University ("Universitas Saxonum") was formed, an administrative, political and legal body exercising jurisdiction over all the inhabitants of the royal land inhabited by Saxons.

The economic growth was determined by the development of the crafts, trade and apparition of the towns.

II.2. DATA REGARDING THE HISTORIC CONDITIONS OF THE APPARITION AND ORGANIZATION OF THE GUILDS

In Ireland the Celtic craftsmen were grouped in archaic professional associations, each with its protective god. In Roman Dacia crafts were developed as a result of the province's economic boom. The link between the ancient science and medieval one perpetuated by means of the Eastern Roman Empire or Byzantium. Here, the organization and life of the ancient Rome was preserved for another millennium.

Christianity, Buddhism, Hinduism, Mohammedanism have contributed to the birth of monastic centres. In these areas of influence, besides dogmatism, scientific and technical creations were also cultivated.

The humanistic thinking has received three major impulses: Travels to Africa, America and Asia; Development of the European University centres; Achieving progress in crafts.

Reformist ideology has focused the attention of society on the aspects of the material world. Thus scholarly societies appeared in the 17th century: 1657 the Italian Academy, 1660 The Royal Academy of Paris and the Royal Society of London.

The crafts have marked on the plan of the working means the first **Technical Revolution** and **the second social division of work**. In this context appears **the social category of the craftsmen** owners of a professional experience.

II.2.1. ORGANIZATION OF CRAFTS GUILDS

The handicraft is the first form of industry which separates itself from the patriarchal agriculture and **the craft is destined to an anonymous consumer.** In this situation, the craftsman no longer depends on farming activity.

[27] *Ibidem*, p. 460-461.

Individual craftsmen were organized in associations in order to better master the market of raw materials, labor force and quality of the products, thus eliminating competition. The guild organization in Transylvania is attested as early as the fourteenth century (1376). Privileges awarded to guilds were private laws acquired with exception to the common law. The guild organization in Transylvania was based on a dual hierarchy, a professional one consisting in forming a body of artisans and one moral authority where the guild leader was to be an example for the guild and the community. Preparing craftsmen started from the status of **apprentice or young apprentice**. The apprentices were usually selected from the "towns or fairs" and especially among the sons of craftsmen. The duration of the apprenticeship was variable between three to four years. The sons of craftsmen had a shorter period of apprenticeship, with a derogation of half of the normal time. **Journeymen** were skilled workers who had completed their apprenticeship. The journeyman stage was of two years, according to the edict of 1741, later reduced to one year after the edict of 1795 as the year of "remec". Travelling for improving one's training had the purpose of knowing more new things, acquiring technical perfection in the trade and establishing collaborative relationships. The journeymen always wore on them a document entitled Wanderbuch or journeyman document.

Since the fifteenth century, in Transylvania was grounded the habit of demonstrating the knowledge accumulated by journeymen. The exam was called "remec", a word of Hungarian origin. After the examination, the status of craftsman entitled the candidate to have their own workshop and be received in the guild organization. The guild had a perfect administrative hierarchy. Dignitaries of the guilds were: **the old leader**, **proto-master or chief master,** elected by free vote, **large master** being the second important function within the guild.

Junior large master was chosen for one year and dealt with internal problems of the guild. The **Registrar** had to know how to read and write, know the laws and have beautiful hand writing. Within the guilds there were also **cash desks** (a sort of fiscal agents). The **funeral deans** were taking care of the sick masters as well as the necessary for funerals of the guild members. The supreme forum of the guilds was **masters' general assembly**. The calls were made with **tables of the guilds**. The table of the guild accompanied the communications that had to be certified. The first evidence of the functioning of the calling system is mentioned in 1450 and belongs to the guild of the joiners. Besides the tables of the guild there were also the **callers**. They served to call the members of the guild to the quarterly general assemblies.

The apparition of the **guild chests** is connected to a more rigorous organization of the guilds in Transylvania.

In the chest was kept the contribution of each member of the guild to the common fund and the evidence was kept by the secretary of the guild. The guild chests were ornamented by inlay or painted. The ornamentation of the guild chests depicts the emblem of the guild to which it belonged and the name of the Starosta possessing this function at the moment when the chest was made[28].

II.2.2. GUILDS ASSEMBLY AND GUILD COUNCIL

The assemblies of the masters were mandatory. The reunions were declared open after the opening of the chest and reading the privileges. The general assemblies of the guilds had wide competences: the right to set up guilds, receive new members, choosing the dignitaries and the elders in the Guild Council, setting up ordinances, functioning as court of appeal when judging some cases, giving help, creating journeymen societies and others.

[28] *Ibidem.*

II.2.3. JOINERS AND CARPENTERS GUILD

The documents from the 14-17th centuries from Transylvania record the Saxon carpenters as being part of the same guild as the joiners and table-makers. In 1589 the carpenter craftsmen have set the ground for an interurban guild union, which would include all the masters of the 7+2 Saxon chairs.[29]

After 1600, an increase in the number of carpenters was recorded. In 1631, on the occasion of a new attestation of the statuses, the joiners are recorded as having their own guild.

II.2.4. IMPERIAL EDICTS

These legal acts establish organizational provisions of administrative nature concerning the rules for the establishment and operation of the professional organizations. The Imperial Edict of 1741 legislates in detail through its 36 articles the constitution and functioning of the guilds in Transylvania.

II.3. CRAFTSMEN AND TECHNOLOGY

During the first centuries of the Middle Ages, the crafts were practiced in rural areas, without a specialization, without complicated tools and without any capital[30]. The remuneration of the craftsman was not established, it was up to the owner to decide. On an imperial domain, craftsmen were grouped in workshops.

II.3.1. PROFESSIONAL CRAFTSMEN

Prominently among the top craftsmen were the blacksmiths. Craftsmen were mostly itinerant craftsmen. Those in rural areas were subservient to the nobleman who ruled the forests, lands, waters and mining.

The merchants were released sooner from the nobles' control and servitude.

II.3.2. USE OF THE ENERGY AND NATURAL RESOURCES

The water mill was the first technical means which transformed natural energy. With the invention in the tenth century of the camshaft, the mill has gained an extended and craft use.

Towards the end of the eleventh century, a large part of rural craftsmen transferred to cities, where they organized themselves into associations. The apparition of these **corporate associations** will remain a phenomenon characteristic of the urban life until the late nineteenth century. Autonomist tendencies of the professional associations have always manifested especially in regions where the towns have experienced the fastest development (north of France, Italy, the Netherlands and the Rhine Valley).

The use of the horizontal hydraulic wheel taken and later perfected in the Roman world by replacing it with vertical hydraulic wheel has revolutionized the entire hydraulic industry starting with the 11th-14th centuries, throughout the entire Europe. During the Middle Ages were perfected some mechanisms such as: the bolt, the wheel, the gear tooth, the pulley and the crank was invented, perfected later in the crank system (14th century). The first documentary source attesting the construction of a water mill in Transylvania is dated 1169[31].

II.3.3. LOCAL AND CRAFTS TECHNIQUES

In Transylvania, between the 4-7th centuries AD, there was a consolidation phase at a cultural level specific to the entire Europe. The medieval period, up to the fifteenth century, represents a stage of

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[29] Olga Beşliu, Raluca Frâncu, *Din istoria breslelor sibiene*, Alba Iulia, Altip Publishing House, 2007, p. 42.

[30] Ovidiu Drimba, *op. cit*., p. 500.

[31] ***, *Documente istorice privind istoria României. C. Transilvania*, vol. I (1075-1250), Academiei R.P.R. Publishing House, Bucharest, 1951, p. VIII and p. 5.

mainly spreading the working tools, a time when the tool prevails on the machine. In our medieval documents from the fifteenth and sixteenth centuries are mentioned builders of mills, bridges, ships, as well as furniture craftsmen working on furniture from churches and people's houses.

II.3.4. TECHNICAL CREATION AND FOLK CIVILIZATION

The folk civilization represents a synthesis of numerous political, socio-economic and ethno-cultural factors; it is crystallized through a lengthy process of adding new ethnic contacts to the ancient local fund. The pre-industrial technical heritage has evolved over tens and hundreds of generations by quantitative accumulations and qualitative improvements. The development in Transylvania of two organization systems for the urban and rural communities resulted in social, economic and technological progress on one hand in the urban environment and preservation of the traditions on the other hand in the rural environment.

II.3.5. TECHNICAL PROGRESS, WORKING TIME AND CAPITAL

During the second half of the 18th century the first manufactories are recorded bearing the name of "factories". The average work of a worker was of about 14 hours per day. The apparition of the **capital** in the economy was due to the overproduction. Thus this type of **capitals' associations** appears and it does not belong to the merchants. Under these economic circumstances originated the Chambers of Commerce.

II.3.6. TRADE, MERCHANDISE AND TRANSPORTATION

With the development of towns, the circulation of goods has caused the breaking of the individual and local barriers of the direct exchange of goods. The products of the guilds from Transylvania were designed primarily for the local consumption.

The most important commercial activities were conducted within the annual fairs. The guilds craftsmen were grouped in fairs according to the branch of activity. The guilds' first concern was to eliminate the competition. The first commodity exchanges appeared when guilds still existed precisely to establish some accurate pricing benchmarks that functioned as a standard.

Transportation was very much spread because of the need to distribute the goods produced within the guilds.

II.3.7. SALARIES

During the 16th-19th centuries, remuneration was made per worked time or per produced item. The payment was made one a week since 1622. The advances were paid back with work.

II.3.8. INDUSTRIAL DEVELOPMENT

The Industrial Revolution having taken place at European level during 1774-1805 was the result of a chain of inventions and discoveries. The year 1848 brings important changes to Transylvania. It is the year when Transylvania was occupied by the imperial armies. The new guidelines for trade and industry regulation from 1851 overthrew the existing state of affairs, and economic freedom was declared as fundamental principle. Under such competitive conditions, guilds were abolished in 1872.

II.4. ABOLISHING THE GUILDS

The abolishment of the guilds in Transylvania was not an isolated phenomenon. Only in 1872 can one speak of the dissolution of the old guilds, maintaining **professional associations** of civil nature.

The newly created conditions have stimulated the organization of the associations of all types including the organization in 1869 of an **Association for the training of Romanian craftsmen**.

CHAPTER III
TYPOLOGICAL CLASSIFICATION OF THE PAINTED FURNITURE FROM THE 15TH-18TH CENTURIES SOUTHERN TRANSYLVANIA

III.1. CONDITIONS AND DETERMINATIONS REGARDING THE APPEARANCE OF FURNITURE

Furniture made and used in Transylvania between the fifteenth and the eighteenth century falls into the typology of furniture categories made on the territory of Romania. What distinguishes it as an individual type in the general context of furniture-making are the construction techniques and the artistic variety of the decoration.

The creation of furniture was based on the need satisfy some essential functions of living. The functions of the furniture items have determined their morphological structure, the materiality and the construction techniques.

III.2. HISTORIC DEVELOPMENT OF FURNITURE

The furniture has gone through several stages of development marking the cultural style of the era. In Europe, since the twelfth century, trends of urbanizing the settlements appeared, religious constructions are being developed, inventions in architecture appear, and in the field of furniture the frame with headboard and the décor specific for buildings starts spreading. In the ornamentation of the pieces of furniture are used: the acanthus leaf, the ivy, the vines, etc. The first evidence of painting on furniture comes from the German environment. The Saxon colonization on the Southern borders of Transylvania has marked a change in the society due to cultural influences that colonists have brought from Central Europe[32].

III.3. URBAN AND RURAL FURNITURE, MANUFACTURE AND ORNAMENTATION TECHNIQUES

The furniture from the Southern Transylvania falls in the category of furniture groups made following traditional methods and techniques: the joiner technique and the carpenter technique. The joiner technique is characterized by combining the parts of the components in the "tongue and groove", the most common wood working system during the Middle Ages. This technique has been preserved until today on the territory of Romania. Joinery furniture was made out of cracked boards, cut with a saw, carved with an ax and hatchet and closed on groove and shingles fixed with wooden nails.

In the case of carpentry techniques, a more representative one for the towns, the furniture items are predominantly worked out of softwood – resinous wood. The carpentry technique implies the existence of a workshop and the use of an inventory of more elaborated tools, made up of strained saws, planers, carpenter bench, hammer, presses, drills, adhesives and a meter. As resinous wood is a wood with knots, of an inferior quality, it was necessary to cover it with paint or varnish for protection and beauty.

[32] Thomas Hägler – 1969, p. 183.

III.4. THE EVOLUTION OF THE TRADITIONAL FURNITURE TYPES

The elaborated studies show that the **bench** represents the oldest piece of furniture. The **fixed bench** was kept until the 20th century in the wood sheds from the alpine region.

The bench has evolved historically from the fixed shape embedded into the wall to the **mobile bench** supported on rafters.

The mobile bench receives legs and it becomes **bench without backrest**.

Later on we add the chest to the bench which is the seat of the **chest-bench**. In the following stage the **bench also becomes a bed** so it is multifunctional and can be a place to sleep in[33].

Through the used technique and materials the evolution of the bench illustrates the general evolution of the furniture from Southern Transylvania.

Direct descendent of the fixed bench, the **bed** evolves too from the **fixed bed** made up of a boards platform, fixed on the walls, to the **mobile bed** with feet made out of wooden rafters, then the **chest bed** assembled out of 4 boards joined at the ends and fixed on 4 feet. As an influence of the urban environment we have the **chest bed with short panels** and equal panels, followed by the **bed with high, unequal or equal panels** from the point of view of the height. The evolution of the bed knows complex shapes such as the **canopy bed** (of oriental influence), **high bed with low chest** and long, unequal laterals, of Central-European influence etc.

Another piece derived directly from the **old bench** is the **modern bench**. A backrest is added and it becomes **bench with backrest**.

The table has known an evolution with even greater variations of shapes and dimensions, from the **archaic 4 legged rectangular table,** to the **high rectangular table**, specific for the Northern Romania, to the **low round table,** with 3 angled legs, to the **closet table** and the **high table with chest** with **4 legs or 2 solid legs and wedge slippers, sliding panel and drawers**, specific to the Centre and Southern Transylvania.

Chairs have always had a spectacular evolution. The first **chairs are taken from nature**, then there are the **chairs or the chairs carved by joiners with legs fixed with dowels, four-legged chairs and fretted backs, chairs with chest and back, chairs with handles and back** have an urban specificity.

Under the platform type furniture fall the **shelves, hangers and plates' cabinets**. Out of these simple pieces, shelves have evolved towards individual pieces of furniture set on the walls of the rooms in the especially designed niches **("armăroaie") or corner closets.**

Subsequently these pieces of furniture get complicated by forming the **plates' cabinets, cupboards** or even **closets**.

The **hanger** for dishes or clothes can be fitted at the beginning in the group of the furniture that comes from nature. The hanger has then evolved towards the mobile hanger.

In their evolved shape, hangers receive a cornice and frontons out of sculpted elements.

Within the peasant household a special part was played by the **chests**.

Granaries for storing the cereals are placed in the porch.

Clothing chests or **dowry chests** are the most important items from the peasant furniture inventory:

[33] *Ibidem.*

- **the joinery dowry chests** are made by joiner craftsmen. They are decorated by incision and are rarely painted;
- **the carpentry dowry chests,** of urban influence, have their component part made out of resinous wood. The components of the chest are soaked and glued with organic adhesive and on the outside the chests are decorated by painting.

While the dowry chest made by the joiners has kept along the centuries its morphological characteristics and the execution technique, the dowry chest made by the carpenters faces a spectacular development following the influences exercised by the evolution of the urban furniture fashion. The carpentry dowry chests receive a large drawer on the lower part the chest becoming **chest with drawer** which transforms later in **commode** or **three-drawer commode**.

A category of the peasant furniture is made by **swings** for children. We can differentiate the **wattle swing** and the **wooden swing** made with a joiner's or carpenter's technique and decorated with fretwork, turners or painted décor.

III.5. MATERIALS AND TECHNIQUES FOR MANUFACTURING THE FURNITURE

The peasant furniture is divided into two main categories:

- furniture made out of hardwood with the joiner's technique;
- furniture made out of softwood with the carpenter's technique.

The decoration specific to the joinery's furniture comprises a reduced number of ornaments. The décor is based on simple geometrical motives.

Starting the 14th century, putting into operation the hydraulic sawmills in Transylvania has had as effect the increase of productivity in the field of the standardized timber. The resinous wood, cut in a standardized manner in the sawmills has generated another technique or processing, finishing and joining of the items' structure, as well as a special protection of the pieces of furniture against the external degradation factors.

III.6. ARGUMENTS REGARDING THE BACKDATING OF THE CRAFT OF PAINTED FURNITURE DECORATION IN TRANSYLVANIA

In the process of apparition and development of the painted furniture from Transylvania we note the fact that both **the furniture made by joiners and the one made by carpenters have ever since the 15th century painted decorative elements.** This aspect proves **the common origin of the craft of making and decorating by painting the wooden furniture of various species.**

The joiners, the most important category of craftsmen for wood in the medieval period have been the first painters of the first pieces of furniture. Proof for this affirmation is the known collection of chests from the attic of the Brădeni church, Sibiu County, massive pieces made out of wood with certainty before the 15th century[34].

The chests close with massive symmetrical and asymmetrical covers. The most ancient ones are decorated with strips of medallions depicting fantastic animals. The ones from the 17-18th centuries have a decor painted with stems and flowers of Renaissance influence.

[34] Gerdi Maierbacher-Legl, Miria Harms, Franciska Franke, Peter Klein, *Der Henndorfer Truhenfund*, Siegl München, 2012.

The dendrochronological analysis has proven the period in which have been made all 127 chests from Brădeni (15-18 centuries)[35].

[35] Gerdi Maierbacher-Legl, Der Henndorfer Truhenfund, Siegl, 2012. The locality of Brădeni has been attacked and overrun by Turks, on several occasions during the 16th-17th centuries. In order to safely keep their most precious goods but also in order to survive a while inside the church, each family from the village owned at least one chest that was in the difficult access attic of the fortified church. As a source of water they had a fountain as there still is one today in the nave of the church. We can easily imagine that the oldest chests containing a niche for the valuable objects have been taken from the most beautiful room in the house to the newly built and fortified church at the beginning of the 16th century after which, during the 15th century (1420) the village has been plundered and suffered many human losses. The last inhabitants of the Brădeni village call „these chests closets and they remember that these used to be kept in the attic of the church" since forever, their number being much larger. The current fund of Brădeni chests comprises 127 full chests. Erhard Andree (1911-1972), former manager of the Hârtibaciu Valley Museum from Agnita writes about Brădeni that it was a renowned centre for peasant furniture: „For this communality the local tradition in painting furniture goes back to the early Middle Ages (fantastic animals, ornaments of runes on the joinery chests), it is recorded that there were another 16 carpenters in the 19th century who had households and at the same time, during the winter months, they used to receive orders from the most remote places". Unlike the craftsmen from the neighbouring localities, the craftsmen working the wood in Brădeni are not mentioned in the ancient sources of the guilds, which determine Erhard Andree to support the idea that the activity of the craftsmen from Brădeni was not organized in guilds. Roswith Caperius states that the simplification of the construction and ornaments of the chests is owed to the village craft practiced by the joiners which could not be accepted in the guild of carpenters „because their work does not correspond in any way to the demands of the master pieces. Their merchandise was supposed to be sold at a low price in the market and it was not allowed to compete with the carpenters' chests". From the analysis of the structure of the painting layers we can state that we are talking about professional painting, on several layers. The researches from 2008-2009 have shown that for the priming of the asymmetrical chests they used diatomite. In the case of the diatomite it is about unicellular algae living in water and whose double shell is out of amorphous silicon. In almost all chests from Brădeni the repertoire of colours is limited to: red, orange/yellow, white and black. For the white from the painting they used gypsum, respectively diatomite. The black pigment consists in vegetal coal. Yellow was identified as being orpiment (arsenic-thiosulphate) mixed with yellow ochre. Red can be a mixture red ochre, hematite, and mixed with yellow ochre. Red can also be obtained by mixing red ochre, hematite and quartz. The protection layer of the painting is a varnish – resin oil very close to varnish. Until 2006, in the case of the chests from Transylvania, several attempts of dating took place through the dendrochronological method. On the occasion of the 2006 works we could make for the first time a relative framing in time for the chests by forming a median curve of tree and three single curves of annual rings in eight different chests out of the 13 classified as belonging to the asymmetrical type. The time elapsed between the oldest and newest chest out of the 13 classified is of 116 years, time in which the manufacturing of the chests has remained the same over a period of approximately four generations of craftsmen. However during this period the configuration and proportions of the chests have modified. The classification has confirmed the fact that heavier chests, with a pronounced archaic aspect, with very wide feet are also the oldest. With the increase of age the asymmetrical chests become more narrow and taller, the width of the feet being also reduced. The painting of the older chests is relatively naturalist and the newer the chests, the more graphical and abstract their representations. The beech wood used for manufacturing the Saxon chests in Transylvania certainly comes from the region where they have been manufactured: Transylvania and surrounding Carpathians. The chests are built from boards with vertical annual rings, resulted following a radial splitting of the beech trunks. For all the studied chests successions of the annual rings have been measured in at least two boards because regularly the chests are made out of boards coming from the same tree trunk. This way, along the years 185 successions of annual rings in 159 different boards have been measured for the 72 studied chests. The dendrochronological determination of the age of the wood was made through the Röngen method so that the intervention is un-destructive. The measured successions of the annual rings have been digitalized through special computer software. In this way the median curve could be made. Based on the strong concordances between the successions of the annual rings it could be noted that for making a chest they often used boards from the same tree trunk. In 2009 a number of 60 chests from the Brădeni fund could be dated. Among these, the asymmetrical chests are the most ancient, dating from 1466-1596. The symmetrical chests date from 1616-1645. Then follows a period of 80 years in which no chest has been dated. The smaller and more delicate chests date from 1726-1782.

This collection of chests can prove the evolution of the craft and the morphology of the pieces made for several centuries. The used pigments, chemically analyzed, have been obtained from organic and mineral materials within reach for the craftsman: ox blood, coloured earth, pine soot, charcoal mixed with organic binders.[36]

In conclusion, the chance of preserving a unique collection in Europe, as the one in Brădeni is, facilitates a great deal our arguments on the age and evolution of painted furniture craft in the villages from Southern Transylvania. We can say that in the field of painted furniture from Southern Transylvania, the continuity phenomenon of the manufacturing and furniture decorating techniques took place through the specialization of the joiners. During the second half of the eighteenth century, the décor of the painted furniture becomes exuberant by representing more and more local vegetation: the rose, the lily of the valley, tulips, the lily, grapes and vine tendrils.

[36] *Ibidem*, p. 19-20.

CHAPTER IV
METHODS, MATERIALS AND TECHNIQUES OF PRESERVATION AND RESTORATION OF THE PAINTED FURNITURE

IV.1. WOOD AND ITS USE FROM THE MOST ANCIENT TIMES

The experience of using the wood was passed and has been perfected from one generation to the other. The accumulation of knowledge concerning the properties of the wood essences has determined the specialization of the crafts in the field of the optimum use of wood.

IV.2. STRUCTURE AND CLASSIFICATION

The wood is a complex material made up of a multitude of vegetal cells called anatomical elements. The microscopic structure of the wood emphasizes the longitudinal vegetal cells and the transversal vegetal cells. The most used wooden materials have been the leaved and resinous species. We remind from the leaved family: the oak, the beech, the walnut, the poplar and the cherry tree, and from the resinous family: the fir tree, the spruce and the pine. These materials are the most often used in manufacturing furniture.

Oak – Quercus robur:

- *colur* – white yellowish to yellowish, light brown;
- *usage* – manufacturing of furniture and windows for constructions;

Walnut – Juglans regia:

- *colour* – white grey or white, light brown,
- *usage* – manufacturing of furniture and veneers.

Beech - Fagus Sylvatica

- *colour* – reddish white
- *usage:* manufacturing of solid wood furniture and veneers.

Poplar – Populus

- *colour*: aspen – glossy grey white, black poplar – white to grey-brown wood
- *usage*: veneers, plywood.

Cherry tree – prunus avium

- *colour*: dull reddish-brown with green-pink or purplish stripes, glossy on the radial section.
- *usage*: art furniture and parquetry;

Fir tree – Abies alba

- *colour*: white yellowish, with bluish-grey hues, with matt gloss;
- *usage*: manufacturing furniture, music instruments, manufacturing windows, mining

Spruce – Picea abis

- *colour*: white yellowish, weakly striped with silky lustre;
- *usages*: manufacturing furniture, manufacturing music instruments, manufacturing windows, mining poles.

Scotch Pine – Pinus sylvestris
- *colour*: intensely coloured heartwood, pink-reddish, with wide sapwood yellowish or slightly reddish, slightly glossy
- *usages*: manufacturing furniture, veneers, plywood, mining poles, packaging, bridges constructions, turnery.

IV.3. TECHNIQUES FOR PROCESSING WOOD

Out of the hardwood, which is best worked in the archaic joiner's technique, solid, resistant objects have been made and their structural components have been obtained by splitting the wood with an ax and finishing with a hatchet, and then closed with "tongue and groove" and wooden nails. Unlike this archaic technique, carpenters worked mainly with softwood which has knots. In order to improve the quality of the products made out of softwood and in order to protect them, the method of colouring and decorating the objects by painting has been used.

IV.4. TECHNIQUES FOR THE DECORATION OF THE WOODEN ITEMS

The decor represents a valuable way of communicating the cultural level of the society. The wood coating has a protective role, while increasing its dimensional stability. The pigments have a leading role towards protecting the wood against light for a long time.

IV.4.1. STRUCTURE OF PAINTING ON WOOD AND CANVAS

Each layer from the structure of the painting has its place in the appearance and composition of the painted decoration. Over the primer is applied the colour layer made up of a binder in which the pigments are to be incorporated. Above the painting a varnish is applied in order to protect against atmospheric agents and to create favourable optical effects to the object. Binders are viscous and colourless liquids, with adhesive properties for drying and curing. The first binders used were fat, blood, resins or juices from plants.

Known since the Antiquity, the oils used in painting have different drying and adhesive properties. The varnish is known since Ancient Egypt. This forms a protective film after drying.

The tempera painting technique is of several types:
- weak tempera with glue binder; tempera with egg yolk; whole egg tempera; fat tempera oil emulsion.

Oil painting technique is recorded from the 9^{th}-10^{th} centuries. It can be of several kinds: with blanks (reminding the tempera technique), first layer painting, second layer painting and the working methods can be glazing, alla prima method and the watercolour method.

Painting with wax is known since the Antiquity (cerography) with beeswax as binder. Painting with molten wax is called wax polish.

Varnishing was intended to secure or protect the colours against external agents. Different varhishes were used according to the kind of painting needed to be protected.

IV.5. DEGRADATION OF WOOD AND POLYCHROME WOOD OBJECTS

The mains sources of biological degradation of wood are: wood fungi, xylophage insects, bacteria and rodents[37]. Climatic factors contribute to the aging of the wood. They also cause a number of physical processes and play an important role in the emergence and development of the biological degradation factors.

We can divide the influence of the mechanisms producing degradation in chemical mechanisms of degradation and physical mechanisms of degradation[38]. The specific properties of each material determine different responses to the environmental factors.

The chemical reactions that occur at the cellular level are strongly influenced by the temperature. The most frequent chemical processes are the oxidation reactions. The physical processes determine important degradations of the cultural goods. The main cause is the dimensional change of the objects due to their hygroscopic properties and by heating the surface due to direct or ambient light radiation.

IV.5.1. FACTORS OF DEGRADATION OF WOOD (INTERNAL AND EXTERNAL)

a) Photochemical degradation is due to the ultraviolet radiations. The least the wavelength the higher the energy level. Light contributes to the deterioration of materials by ensuring activation energy of the chemical reactions or processes. The most harmful radiation has low wavelengths. Following the absorption of energy, the molecules move from a lower energy state to a higher one. Photochemical deterioration is irreversible damage. Organic materials are the most vulnerable. The UV radiation causes changes at the molecular level. IR radiation (infrared) can be harmful through the mechanical effect or through the acceleration of the chemical reactions they produce. The speed of the chemical reactions of the cellulose increases 2.5 times when the material is heated with 5^0C[39].

b) Thermal degradation of the wood can occur slowly. Symptoms of slow thermal degradation are materialized in the amount of water loss from the wood. The effects of this degradation are: dimensional changes, increased internal tensions, change in the values of relative humidity, increasing the speed of the chemical processes by thermal activation, conditioning the development of the biological pests.

c) Physical and mechanical degradation manifests through structural changes and modifications of the mechanical parameters. Dimensional changes are different depending on the main directions of the wood: longitudinal, tangential and radial. During the drying process, within the wood deformations, warp, arching, twisting, cracks and crevices are produced.

Humidity. Cause of wood degradation. The wood is **"**works" after the manufacturing of the objects[40]. Changes are more emphasized if the wood was painted only on one side. In contact with moist atmosphere, objects fix on their surface water molecules. The condensation manifests through the

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[37] Bogdan Ungurean, *Degradarea biologică a obiectelor de patrimoniu confecționate din lemn*, în *Interdisciplinaritate în conservare-restaurare şi arte aplicate*, vol. III, Artes Publishing House, Iaşi, 2007, p. 87.

[38] *Ibidem*, p. 9.

[39] Aurel Moldoveanu, *Conservarea preventivă a bunurilor culturale*, Bucharest, 1999, p.103-112.

[40] Mihail Mihalcu, *Conservarea obiectelor de artă şi a monumentelor istorice*, Bucharest, Ştiințifică Publishing House, 1970, p. 29; see also Maria Cristina Timar, *op. cit*, pp. 15-17; Nicoleta Vornicu, Cristina Bibire, *op. cit.*, pp. 9-10 and Doina Maria Creangă, *op. cit*., pp. 24-26 .

appearance of water droplets on the surfaces that are cooler than the ambient temperature. It was established that for the organic materials, the relative humidity values comprised between 50% and 65% are recommended. High humidity in the presence of polluted air can cause acid build-up. The corrosion of the metals is intensified because of the increase in ambient humidity. Oxygen is harmful to the iron with which it forms iron oxides on its surface.

Higher humidity softens natural adhesives when it exceeds 70% RH. The low humidity produces breaking of the adhesives in the structure of the objects, apparition of cracks, deformations, and for the painting on wood, the joining panels move and the painting layer is detached from the wooden support.

d) Biochemical degradation

Wooden materials are degraded by: agents of vegetal origin (fungi and bacteria)[41] and agents of animal origin (insects and animals)[42]. The fungi live within the wooden mass of the attacked trees and spread with the help of spores. The development of the fungi attacking the wood is conditioned by the temperature, humidity and air. The favourable temperature for the development of the fungi is situated between 15^0 and 30^0C.

Wood decay (Anobidae) comprises a family of bugs whose larvae destroy the wood transforming it into fine powder. *Anobium punctatum*, called the furniture decay is the most known. The larvae of this furniture decay develop under conditions of relative humidity in the air of 55-60% and wood humidity exceeding 10-12%. The optimum temperature for the larvae to develop is 22-23^0C.

Xestobium rufovillosum is popularly called "death time". Xestobium rufovillosum attacks especially old humid wood in an unheated environment. The air is polluted with dust, smoke, reactive gas, ammonia and other products resulted from the industrial process as well as from natural and biological sources. The pollutants affect the conservation state of the cultural goods through the chemical components.

IV.5.2. DEGRADATION OF THE PAINTING LAYER

The painting techniques and the combinations of materials can be sources favouring the degradation of the polychrome wood goods. Many of the forms of degradation of the paint layer are due to the wood support. Due to the fluctuating humidity of the environment, the wood support records permanent dimensional oscillations. These successive dimensional changes produce degradation in the color layer: fissures, cracks, separation or loss of the colour film. The combined effects of the environmental factors are manifested by: fading and aging of the materials, surface and depth cracks, browning of the varnishes, pulverulency of the colour layer or loss of painted surfaces.

Functional wear is translates into losses of the painting layer on the surfaces exposed to the mechanical effects.

The chemicals cause staining on the wooden support. Smoke and sirt favour the creation of adhering dirt deposits.

Biological degradation agents: bacteria, fungi, molds, fungi, xylophage insects and rodents produce severe damage both on the wood support and on the painted decorative layer.

Inappropriate interventions produce severe consequences on the integrity of the objects by diminishing their artistic and cultural value.

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[41] Nicoleta Vornicu, Cristina Bibire, *Metode chimice şi bio-chimice aplicate în conservarea patrimoniului cultural*, Trinitas Publishing House, Iaşi, 2005, pp. 14-21.

[42] Doina Maria Creangă, *Bazele conservării ştiinţifice*, Suceava, 2005, pp. 79-80.

In conclusion, the painted décor of the wooden furniture accumulates a multitude of degradation having various causes and forms of manifestation.

Principle of renewing the works of art has marked the conception of restoration until the 19th century. Following the apparition of some fundamental works starting the 20th century the interest for the conservation and the restoration of the cultural heritage has increased considerably.

In the first stage: 1957-1977 preventive conservation was limited to the microclimate control.

In the second stage: 1975-1990 is characterized by the introduction of the prevention concept in the museum conservation activity.

In the third stage: 1990-2003 was defined by raising awareness among the specialists regarding the preventive conservation.

The forth stage 2000-2007 is defined by the acknowledgement of the preventive conservation.

In Romania the conservation and restoration concepts are defined by an ensemble of laws (Law no. 182/2000, republished in 2008 concerning the mobile national cultural heritage and Law no. 422/2000 republished in 2006, regarding the fixed national heritage.

In the field of conservation and restoration, a set of principles have been drafted to govern the activity of conservation-restoration.

The most important principles that are today at the sole of the Code of Ethics for the restoration activity are:

- The principle of the respect for the original creation;
- The principle of the minimum intervention;
- The principle of the compatibility of the working materials and techniques;
- The principle of the reversibility of the restorer's intervention;
- The principle of the readability of the intervention;
- The principle based on which the reconstruction of a cultural good stops when there is uncertainty.

IV.7. WOOD CONSERVATION AND RESTORATION

Preventive conservation represents a set of measures designed to delay or prevent the degradation of cultural goods. Research is one of the most important phases in the case of heritage objects. It includes all composing materials and techniques used to merge the parts of the objects.

Researching the paint layer has a paramount importance for the identification of the materials and techniques for decorating the object. In order to determine the chemical components sampling of original materials is necessary.

IV.7.1. CONSERVATION AND STORAGE OF THE CULTURAL GOODS

R.H. 55% represents the average value of the interval between the 40% RH in which organic materials become more rigid and 70% RH above which the conditions are met for mold development. There are three fundamental aspects of the climate control in museum collections:

- determining the effects of the microclimate on objects and materials;
- establishing the requirements by considering the type of the collections, the building, the climate, the location and the economic aspects of the measures to be taken;
- maintaining the microclimate parameters and their monitoring based on the results of the measures taken.

A rational storage of the objects requires solving the following problems:
- providing appropriate quality for the storage space;
- choosing basic criteria for grouping objects in the storage area;
- establishing appropriate furniture for proper storage;
- drafting a project for the location of objects in the storage area by designing the most efficient storage systems;
- developing topographic catalogues needed for fast retrieval of objects in the storage area.

IV.7.2. HANDLING, MOVING, PACKAGING AND TRANSPORT OF OBJECTS

Handling is a frequent operation. During handling the components of the pieces of furniture they must be tied and secured.

The furniture is always placed in its functional position.

For travelling purposes several mandatory conditions must be respected:
- objects must be properly packed
- objects having a poor state of conservation shall not be packed
- each object shall be accompanied by a conservation sheet
- the people having packed the objects will participate at their unpacking.

IV.7.3. THE RESTORATION PROJECT

Scientific restoration implies respecting some standardized procedures:
- reception of the object
- drafting the technical and scientific documentation
- drafting the restoration project.

The restoration project for the polychrome wood objects comprises the following steps for the practical works:
- the prophylactic consolidation of the unstable paint layer;
- disinfecting and pest control;
- mechanical or chemical consolidation of the wooden structure;
- mechanical cleaning and chemical cleaning;
- structural consolidation of the colour layer;
- filling in the gaps in the painting layer;
- chemical cleaning of the painting layer;
- chromatic integration of the gaps;
- protection of the painting layer and the unpainted surfaces;
- drafting the indications for keeping the objects.

IV.7.4. LABORATORY OF RESTORATION FOR POLYCHROME WOOD

The laboratory must fulfil a certain professional standard. The technological and operational flow must be fair. The equipment of the restoration laboratory must have running water, stable and monitored microclimate, offer good storage temporary conditions for the objects.

The working places must be easily adapted to a technological flow specific to the restoration of various objects.

IV.7.5. TECHNIQUES AND METHODS OF ANALYSIS AND INVESTIGATION OF THE WOODEN OBJECTS

a) Visual analysis:

The visual analysis aims at acquiring all the information regarding the structure of the working materials and techniques used for the manufacture of the objects, as well as the degradations that the researched objects contain. Photographing in direct and grazing light emphasizes the degradations.

b) Laboratory Investigations:

The chemical analysis determines the knowledge of the trace elements from the structure of the object. This way we can appreciate correctly how to slow down the destructive evolution of the materials through passive and active conservation measures.

c) Investigation techniques for the painting based on obtaining and interpreting the images:

- optical microscopy;
- polarized light microscopy;
- confocal microscopy;
- electron microscopy;
- scanning electron microscopy.

X-ray fluorescence spectrometry.

X-ray Radiography. The digitization of the radiographic technique has the following advantages:

- the radiography image can be seen in real time;
- the radiography time is much reduced;
- the dosage of radiation is lower;
- the power of emphasizing the details is greater;
- the image can be easily archived;
- there is the possibility to process the radiography image.

The computer scanner offers information about the space distribution of the density and chemical composition of the scanned materials.

Multidisciplinary research of the painted wooden objects is mandatory and precedes the practical restoration activity by giving a foundation to the scientific process of drafting the restoration project for the polychrome wooden objects.

d) Materials and substances used in the restoration activity:

In the field of restoration the solvents are applied for three purposes:

- to remove impurities;
- to remove some superficial layer of polymeric type;
- to apply some polymeric materials.

The macromolecular compounds are substances with adhesive, cohesive or film-forming properties.

The macromolecular compounds used in the restoration must fulfil the following conditions:

- the used material must not modify in time;
- the material must be reversible;
- the application and removal of the material must be done easily[43].

[43] *Ibidem*, p. 82.

Among the macromolecular compounds used in the restoration we remind: *Paraloid B 72, Paraloid B82, Paraloid B44, Paraloid B 67, Paraloid B 66, Polyethylene Glycols (PEG*), *Epoxy resins, natural resins, Venice Turpentine, Elemi, rosin, damar, mastic, sandarac, copal, amber, shellac*.

The egg has found its applicability as a binder of the colors for panel painting since the Antiquity.

Animal glues are protein materials extracted from cartilage, tendons, bones, skin, stomach or fish scales etc. Collagen-based glues swell in cold water and dissolve in hot water.

Surfactants are agents active on the surface.

Soaps are salts of the fatty agents.

e) Materials used for cleaning, restoration and conservation activities from the restoration laboratories:

Detergents increase the capacity of the cleaning solution. They are classified according to their ionic activity in anionic compounds, active compounds, non-ionogen compounds.

Non-ionic detergents are the best agents for the dissolution and emulsification of fats and oils.

f) Fillers:

Fillers are added to glues in order to prepare surfaces for painting.

Among the fillers we remind: chalk, gypsum (plaster), kaolin, talc, feldspar and sawdust.

g) Colouring materials:

The colour is the result of an optical sensation produced by the light radiations reflected by a material.

Classification of colours:

By their origin or provenance, the colours are natural or chemically produced.

The preparation of the natural colours comprises: crushing, washing, drying and rubbing.

h) Consolidation of the degraded wood.

The consolidation of the embrittled wood can be made through three procedures: *consolidation by resin impregnation* (polymers) in the solution; *consolidation by reactive resin impregnation*; strengthening through chemical process of *polyaddition or polycondensation.*

Cleaning of the unpainted surfaces is done with the help of the solvents combinations.

Structural consolidation of the colour layer is done by ironing (pressing) with electrocautery.

Removing the Japanese leaf is done with moistened cotton swabs.

For filling in the painting gaps it is necessary to *degrease the gap areas*.

Chemical cleaning of the painted surfaces is done with the help of solvent mixtures. *Chromatic balancing or chromatic integration* is done with legible techniques. *Varnishing of the painting or the protection of the cleaned and the retouched surfaces* is made with varnishes based on natural resins (damar).

i) Protection through film layer:

In the case of painting on wood layers of Damar varnish are applied and are efficient after a careful cleaning of the surfaces. The unpainted surfaces are protected or are varnished with a varnish based on natural beeswax.

CHAPTER V

CASE STUDIES

- **RESTORATION OF THE DOWRY CHEST (18TH CENTURY) COLLECTION OF THE ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU** [*]
- **RESTORATION OF THE BENCH "WOTH DRAWER" FROM THE REGION OF SIGHIŞOARA COLLECTION OF THE ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU 20TH CENTURY** [*]
- **RESTORATION OF THE DOWRY CHEST FROM TILIŞCA, SIBIU COUNTY COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU** [*]
- **RESTORATION OF THE DOWRY CHEST FROM THE VALEA HÂRTIBACIULUI COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU** [*]
- **RESTORATION OF THE CLOSED DOWRY CHEST FROM THE REGION OF BRAŞOV 19TH CENTURY COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU**[*]
- **RESTORATION OF THE CORNER FURNITURE DATED 1774 COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU**[*]
- **RESTORATION OF THE DOWRY CHEST "MICHAEL GORES" DATED 1799 COLLECTION: MUSEUM OF THE VALEA HÂRTIBACIULUI AGNITA, SIBIU**[*]
- **RESTORATION OF THE DOWRY CHEST DATED 1777 PRIVATE COLLECTION** [*]
- **RESTORATION OF THE JOINER'S CHEST FROM BRĂDENI 16TH CENTURY** [*]
- **RESTORATION OF THE FOOD CHEST FROM BRĂDENI 17TH CENTURY (1642)**[*]

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[*] Object restored within the dissertation, graduate Romocian Celestina, "Lucian Blaga" University from Sibiu, 2011, coordinators: Valeriu I. Olaru and Abrihan Gavril.

[*] Object restored within the dissertation, graduate Romocian Celestina, "Lucian Blaga" University from Sibiu, coordinator: Valeriu I. Olaru.

[*] Object restored within the diploma paper, graduate Canache Cătalina, "Lucian Blaga" University from Sibiu, 2002, coordinators: Valeriu I. Olaru, Bucşă Livia.

[*] Object restored within the dissertation, graduate Pripon Anca, "Lucian Blaga" University from Sibiu, 2010, coordinators: Valeriu I. Olaru, Bucşa Livia.

[*] Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex, restorer: Pripon Anca, coordinator: Valeriu I. Olaru.

[*] Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex; dissertation; restorer: Negoescu Gabriela, coordinator: Valeriu I. Olaru.

[*] Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex, restorer: Negoescu Gabriela, coordinator: Valeriu I. Olaru.

[*] Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex, restorer: Negoescu Gabriela.

[*] Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex, restored within the practical works with the students of the Art University from Cluj; coordinator: Olaru Ion Valeriu.

- **RESTORATION OF THE DOWRY CHEST; 18TH CENTURY; AREA OF DRĂUŞENI COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU***
- **RESTORATION OF THE DOWRY CHEST DATED 1804; CAȚA COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU***
- **RESTORATION OF THE DOWRY CHEST FROM SIGHIŞOARA, DATED 1644 COLLECTION: ASTRA MUSEUM OF THE TRADITIONAL FOLK CIVILIZATION SIBIU***

* Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex, restored within the practical works with the students from the Art University from Cluj; coordinator: Olaru Ion Valeriu.

* Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex; restorer: Dăneasă Cristina.

* Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex; restorer: Andrea Landa; coordinator Olaru Ion Valeriu.

* Object restored in the Laboratory for the Restoration of the polychrome wood of the ASTRA National Museum Complex; restorer: Negoescu Gabriela.

KEYS WORDS:

Painted furniture, Southern Transylvania, crafts guilds, 15th fifteenth – 18th eighteenth century, carpenters, joiners/woodworkers, Saxon colonization, typological classification, manufacture and ornamentation techniques, preservation/ conservation and restoration, degradation factors, storage, packaging, transport, scientific investigations, restoration techniques, polychrome wood, case studies

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