

BINDING STRUCTURE AS AN IMPORTANT ASPECT OF THE BOOK

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ABSTRACT

Mediaeval manuscript codices are important historical documents. If not rebound in later centuries, they represent a very important source for the understanding the structures and the functioning of mediaeval as well as later books.

Knowledge on the book binding structure is one of the basic requests for successful description of the book as a cultural heritage object. Normal library or archival descriptions include data on the contents but rarely give information about materials, structural elements and the state of preservation of the book.

The paper presents the methodology of work used in the research of mediaeval stiff-board bindings on Slovenian mediaeval manuscripts. The paper closes with observations and conclusions drawn from the analysis of the Slovenian collection of codices with stiff-board bindings.

KEYWORDS

Mediaeval manuscripts; bindings; stiff-board, structures; Slovenia

Introduction

The primary purpose of any library or archival description is to make library or archival material more accessible to users. Normal library or archival descriptions include data on the contents but almost never give any information about materials, structural elements and state of preservation. Conservators of the Archives of the Republic of Slovenia (ARS) have been making an effort for such information to be included in library and archival description as well, since such information is of crucial importance for preservation and usage of library and archival material.

The decision to research the development of binding structures of mediaeval manuscripts in Slovenian archives and libraries was reached primarily because the field was completely untouched in Slovenia and furthermore, because the knowledge of the structure and historical development of structures and materials of early books is one of the basic conditions for understanding the functioning of the book as an object whether it is old or new, kept in archival or library collection.

Medieval book, if not rebound, represents a very important source for understanding of the functioning of mediaeval as well as later books. This was the reason to start examining mediaeval stiff-board binding structures and techniques in Slovenian mediaeval manuscript codices.

The basis of the present paper is a census of extant mediaeval bookbinding documents, which includes all obtainable data, sketches, pencil rubbings and photographs; in addition, this research includes a glossary of specific professional terms referring to bookbinding, which is a segment of the research on mediaeval stiff-board codices.¹ In continuation, a model of description of the book structure and a summary of the results obtained from the research are presented.

Experimental

The majority of Slovenian mediaeval manuscripts are codices belonging to Western European, that is, Latin culture, which either originated in Slovenian territory or were part of Slovenian mediaeval library and archive holdings. There are 361 codices registered, of which 179 are stiff-board bound, and 182 limp bound. In addition, our collection includes 5 Glagolitic and 8 Cyrillic codices which were transferred to Slovenia as a part of Kopitar's and Zois's legacy at the end of the 18th century. Most mediaeval codices in Slovenia are housed in the National and University Library in Ljubljana (NUK), the Maribor Diocesan Archive (SAM), the Koper Regional Archive - Piran Branch (PAK), and the Ljubljana Archdiocesan Archive (NSAL). In addition to these institutions, some codices are kept in the Ljubljana and Novo mesto Friars Minor Monastery, the Archive of the Republic of Slovenia (ARS), the Koper Cathedral Archive (SAK), the Ljubljana Seminary Library (SKL), the Maribor Regional Archive (PAM), and the Maribor Univer-

1 Vodopivec, Jedert. *Vezave srednjeveških rokopisov : strukturne prvne in njihov razvoj = Medieval Bindings in Slovenia : Biding Structures on Stiff-Board Bindings*. Ljubljana : Arhiv Republike Slovenije, 2000. Also available at: http://www.arhiv.gov.si/si/delovna_podrocja/zalozba_arhiva_rs/publikacije_pdf/ [cited: 2011-11-21].

sity Library (UKM). The majority of stiff-board bound codices (159) are included in the Kos-Stele census.² This census does not include archival bound manuscripts (e.g. vicedom and notarial books, terriers and statutes) or library and archival holdings of the Slovenian Littoral, at that time (1931) under Italian occupation.

Registered mediaeval codices include 96 examples of preserved mediaeval bindings, which is slightly more than a half (53%) of all extant stiff-board bound codices in our public collections. After first examination it has been decided to limit the research to mediaeval volumes with extant stiff-board bindings. The Cyrillic and Glagolitic manuscripts were omitted because they are not part of the mediaeval holdings historically and culturally connected with Slovenian territory. All partial or complete re-bindings originating from the beginning of the 16th century onwards were also omitted.

Methodology

The research is based on the original material and described according to a uniform system comprising all basic and variant elements in the structure of stiff-board mediaeval bindings. The description scheme was prepared considering the available descriptions and censuses published by codicologists and conservators. The principles of description are similar, but each of the methods is specific and adjusted to particular research.

The authors who concentrated on mediaeval binding structures have influenced our choice of questions in the census. At the very beginning, we found the Italian mediaeval manuscript census by Federici and his collaborators a great help. Their scheme, however, is not suitable for the census of Slovenian codices, because it is too extensive and comprises numerous elements not found in our bindings. Moreover, the Italian research did not treat the bookbinding elements with regard to provenance and date. From this research we adopted primarily the basic principle of grouping structural elements, whereby we added descriptions of structural elements published by Vezin,³ Clarkson,⁴

2 Kos, Milko; France Stele. *Srednjeveški rokopisi v Sloveniji = Codices aetatis mediae manuscripti qui in Slovenia reperiuntur*. V Ljubljani : Umetnostno-zgodovinsko društvo, 1931.

3 Vezin, Jean. *A réalisation matérielle des manuscrits latins pendant le haut Moyen Âge*. // *Codicologica* 2(1978), pp. 15-51.

4 Clarkson, Christopher. *Further studies in Anglo-Saxon and Norman bookbinding*. // Roger Powell : *the complete binder* / edited by J. L. Sharpe. Turnhout : Brepols, 1996. Pp. 154-214, and personal communication.

Houlis,⁵ Federici/Pascalichio,⁶ Minicaci/Muzerelle,⁷ Szirmai,⁸ and Gnirrep/Gumbert/Szirmai.⁹

Even at first glance, the 96 codices proved to be a comparatively heterogeneous group, which probably accidentally avoided destruction or alienation. As a result, the arrangement into groups was rather difficult. First, the codices were arranged according to institutions in the order adopted by the Kos-Stele census. When the census was finished and the data completed, the codices were arranged according to the writing support, palaeographic or codicological date determination and similarity of particular structures in the groups presented in Table 1.

No.	New groups	No. of volumes
1	0 - manuscripts from Stična - Sitticum ¹⁰ monastery (late 12 th century)	3
2	1 - other early Gothic codices	8
3	2 - parchment codices from the late 14 th and early 15 th centuries	15
4	3 - parchment codices from the second half of the 15 th century	12
5	4 - large parchment volumes and those with leather or pasteboards	9
6	5 - paper codices from the late 14 th and early 15 th centuries	12
7	6 - paper codices until the mid-15 th century	8
8	7 - the mid-15 th century paper codices	7
9	8 - paper codices from the second half of the 15 th century with sewing peculiarities	8
10	9 - remaining paper codices from the second half of the 15 th century	9

TABLE 1.

Groups formed according to the writing support, palaeographic or codicological date determination and similarity of particular bookbinding structures

- 5 Houlis, Konstantin. A research on structural elements of Byzantine bookbindings. // *Ancient and medieval book materials and techniques* / edited by Marilena Maniaci and Paola F. Munafo. Città del Vaticano : Biblioteca apostolica Vaticana, 1993. Pp. 239-268.
- 6 Federici, Carlo; Francesca Pascalichio. A census of medieval bookbindings : early examples. // *Ancient and medieval book materials and techniques* / edited by Marilena Maniaci and Paola F. Munafo. Citta del Vaticano : Biblioteca apostolica Vaticana, 1993. Pp. 201-237.
- 7 Maniaci, Mirella; Denis Muzerelle. *Terminologia del libro manoscritto*. Roma ; Milano : Istituto centrale per la patologia del libro, 1996.
- 8 Szirmai, János Alexander. *The archaeology of medieval bookbinding*. Aldershot, Hants. ; Brookfield, Vt. : Ashgate, 1999, and personal communication.
- 9 Gnirrep, W. K.; J. P. Gumbert; J. A. Szirmai. *Kneep en binding*. Den Haag : Koninklijke Bibliotheek, 1997.

Description form

On the basis of the documentation scheme which had been previously drawn up for the preparation of conservation documentation, and which is currently in use in the conservation workshop of the Archive of the Republic of Slovenia, a form suitable for beginning the census was prepared. After carrying out one third of the census, the final form was adopted with minor changes. The form is conceived as a tool for the description of mediaeval bindings and designed in such a way that with an analysis of structural elements it can also be used to improve conservation description. It is divided into two parts.

Basic description:

- number in the census
- institution number
- title
- number in the Kos-Stele census
- text-block dating & provenance
- binding dating
- schematic description of the binding structure
- peculiarities
- condition description: good,¹¹ moderate,¹² bad,¹³ serious,¹⁴ regarding the damage on the vital parts of the book, non aesthetic damage as stains or similar.

Detailed description:

- text-block
- endleaves
- bands
- sewing system
- endbands
- band lacing paths
- boards
- covering
- spine
- fastenings and
- bosses

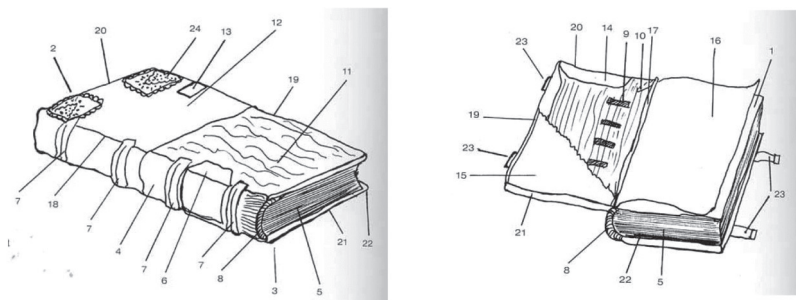
10 Stična – Sitticum, Cistercian monastery in Slovenia

11 No damage on the vital parts of the book

12 Small damage on the vital parts of the book

13 Great damage on the vital parts of the book

14 Extended damage on the vital parts of the book



FIGURES 1A & 1B.

Basic structural elements of the late mediaeval stiff-board binding system¹⁵:

1. text-block, 2. head of the book, 3. tail of the book, 4. spine / back, 5. edge, 6. spine lining strip, 7. band, 8. headband, 9. band groove / channel, 10. head band groove / canal, 11. wooden board - front outer / exterior face, 12. cover, 13. fastening groove, 14. turn in, 15. board leaf / paste down endleaf, 16. free endleaf, 17. spine shoulder, 18. spine edge, 19. fore edge, 20. head edge, 21. tail edge, 22. square, 23. fastening, 24. corner metal fitting

The detailed descriptions of particular elements include measuring, sketches, pencil rubbings and photographs. The quoted measurements are more estimations than meticulous measurements, especially in the cases of the well-preserved volumes. The exact descriptions and measurements are, as a rule, feasible only during conservation treatment. Such measurements and descriptions are, for instance, the thickness of boards and thread, covering, spine lining, boards, the width and shape of back cornering and parchment stays, and the depth of sewing stations. The measurements of all such cases are therefore, though taken with a micrometer and square calliper, not exact enough, and should be regarded actually as approximations. The sketches were made freehand and serve as a supplement to the description or photograph. Whenever it was possible to provide an image (e.g. a pencil rubbing), such information was enclosed.

In the census, the codices are marked with a succession number of the census of bindings (e.g. 1/1), the acronym of the institution (e.g. NUK), the number of the codex as used in a particular institution (e.g. MS. 33), the succession number as used in the Kos-Stele census (e.g. 35), the title and palaeographic date. The date of the binding is stated

15 Vodopivec, J. *Op. cit.*, p. 528.

only if it deviates from that established by palaeographers, or if it was possible to establish it (e.g. 1/1, NUK MS. 33, 35 Kos-Stele, Summa de Iure Canonico, 1300-1330, binding in the 15th century). For the sake of clarity the codices in the text are marked only with the acronym of the institution, manuscript number and succession number in the census of bindings (e.g. in the text NUK 33(1/1), in tables 1/1 NUK 33).

Example of description SUMMA DE IURE CANONICO 1/1 NUK

Basic data

- number in the census: 1/1 NUK
- institution number: MS 33
- title: SUMMA DE IURE CANONICO
- number in the Kos-Stele census: 35 KOS-STELE
- text-block dating & provenance: 1300-1330, Maastricht¹⁶
- binding dating: 15th century

Schematic description of the binding structure

- dimensions: 200 x 144 mm, parchment, 324 folios, 27 sexternions
- text-block material: parchment (sheepskin, thin, uniformly treated),
- relation boards to text-block: boards equal to the text-block
- type of endleaves: independent bifolia
- bands: 5 slit, alum-tawed
- sewing system: A1¹⁷
- headbands: alum-tawed, pack sewn, alum-tawed leather, white braided
- band lacing path pattern: G1¹⁸, from corners - outer grooves - tunnels - inner grooves
- headband lacing path pattern: G1, from corners - outer grooves - tunnels - inner grooves
- boards: beech, cushioned
- covering: alum-tawed, probably sheepskin
- fastenings: 2, upper board fore-edge
- spine: slightly rounded
- opening: concave (arch in the spine)

16 Golob, Nataša. Manuscripta : medieval illumination in manuscripts from the National and University Library, Ljubljana : [catalogue] : National Gallery of Slovenia, 7 September - 7 November 2010. Ljubljana : National Gallery of Slovenia ; Faculty of Arts, 2010. P. 177.

17 Vodopivec, J. Op. cit., p. 32.

18 Ibid., p. 43.

Peculiarities

- excellent bookbinding work

Condition

- good, no damage on the vital parts of the book

Condition description

The codex is well-preserved and outstanding in terms of parchment quality, writing, and the binding technique. The trimmed parchment text-block consists of 27 sexternions sewn on 5 alum-tawed bands, carried into the board via outer channels and tunnels into inner channels. The main damage is that the upper joint has broken at bands 4 and 5, the headbands core and covering is cracked.

The compound endbands are braided with white alum-tawed leather. The endleaves are independent bifolia sewn onto the text-block before the first and behind the last quire respectively. The boards are sound, of beech wood, cushioned, and covered in alum-tawed leather, which is cracked at the front joint. The codex is clasped with two fastenings at the fore-edge upper board. The upper fastening strap is missing. The spine is slightly rounded; the bands are not blind tooled. It opens to the spine fold, the spine becomes concave, but slight force is required for flat opening.

The text-block is in excellent condition, and the binding could be a masterpiece if the choice of covering material were different. The quality of the covering alum tawed skin is probably the main reason for the broken upper joint and the partly broken bands.

Detailed description

Text-block (Figure 1, no. 1)

The parchment text-block (200 x 144 mm) consists of 324 folios combined into 27 sexternions. The folios are of thin uniformly treated sheepskin parchment; the hair and flesh sides are almost equal. The sewing stations were made with an awl. Back cornering is 2 mm wide and hardly discernible (Figure 2).



FIGURE 2.
Parchment text-block and end leaves – detail

Endleaves (Figure 1, nos. 15 & 16)

The endleaves are not conjoint with the first and the last quire. They consist of a board-leaf and flyleaf, forming a bifolium, which is sewn before the first and behind the last quire respectively. The endleaves are made of thicker goatskin parchment. The flesh side adheres to the cover (Figure 2).

Sewing system

The text-block is sewn on 5 slit, alum-tawed bands, 9 mm wide x 2 mm thick with medium weight (0.9 mm) flax thread finished with a Z twist (Figure 3).

The thread is carried along the centrefold between the sewing stations at the following spacing:

0	13	25	60	97	132	167	185	200
H	c	1.B	2.B	3.B	4.B	5.B	c	T

H - head, C - change-over station, B - band, T - tail



FIGURE 3.
Text-block is sewn on 5 slit, alum-tawed bands

Headbands (Figure 1, no. 8)

The headbands are braided with white alum-tawed leather. (Figures 2 and 5)

The core is of alum-tawed leather of similar thickness to the bands; the first¹⁹ sewing of headbands is worked, and sewn onto the text-block with equal weight to that of the primary sewing. The headband cores are broken at the front joint. The first sewing and braiding are undamaged.

Spine liners (Figure 1, no. 6)

The spine liners consist of parchment strips, the overlays of which were adhered to the inner face of the board. The strips are rather long (70-105 mm), reaching over half the width of the board and discernible in oblique lighting.

Board attachment (Figure 1, nos. 7, 8, 9 & 10)

The alum-tawed slit bands are carried in a channel cut in the exterior face of the board & spine-edge, through tunnels to the inner face and then in channels.

19 C. Clarkson when describing endbands is using the term “first” instead of the term “primary” for the first sewing of a compound endband.

The alum-tawed core of the headbands is carried from each spine corner at an angle in a similar way to the bands except in grooves, not channels.

Boards (Figure 1, no.11)

The sound beech boards are slightly larger than the text-block (210 x 144 x 6 mm). Their outer faces are cushioned, the outer spine edge is rounded and all inner edges are square.

Short (9 mm) outer spine channels for board lacing were chiselled out, at the end of which tunnels were cut through the board to the inner face. Quite long (8 x 40 mm) channels were then cut into the inner face. Outer grooves (11 mm) for the headband cores were cut from the corners, to tunnels drilled through to the inner face where further grooves (13-15 mm) were cut. Rectangular recesses (16 x 28 mm) were cut into the exterior of the upper board at the fore-edge for fixing the catch plates; square recesses (16 x 16 mm) were cut to accommodate the fastening straps at the lower board fore-edge.

Covering (Figure 1, no. 12)

The codex is completely covered in alum-tawed sheepskin, cracked on the front joint and rather worn above the bands (Figure 4).

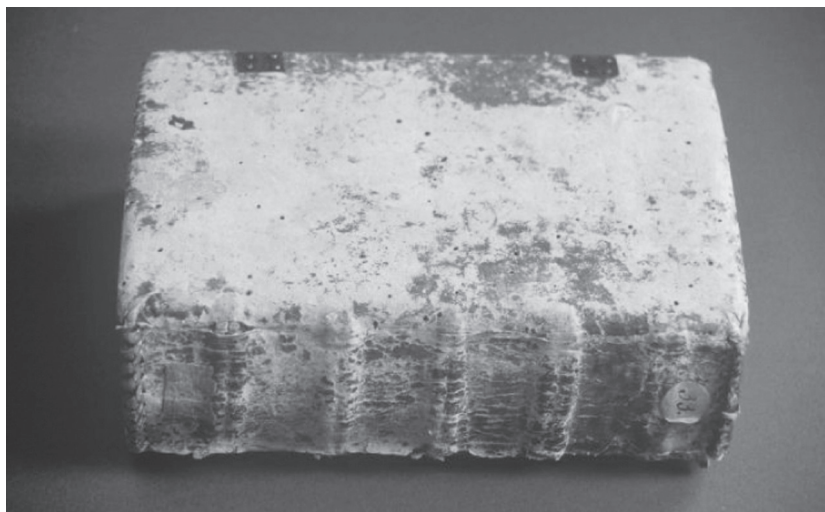


FIGURE 4.

The codex is completely covered in alum-tawed sheepskin

Turn-ins (Figure 1, no. 14)

The turn-ins are medium width (10-18 mm), evenly trimmed and mitered.

Book opening

The spine is slightly rounded (Figure 4), flexible and adequately concave on opening (Figure 5). The codex opens to the fold, though the opening is slightly restricted due to the thickness and the size of the folios. Slight force is required for flat opening.

Fastenings (Figure 1, nos.13 & 23)

The volume is clasped with two fastenings at the fore-edge of the upper board. The lower one is intact. The plain brass, rectangular (16 x 29 mm) catch plates are each fixed with three brass rivets. The alum-tawed fastening strap (39 mm long, 16 mm wide, 2 mm thick) has a plain rectangular brass clasp (16 x 18 mm) with a hook. The strap is anchored with a square, brass plate (16 x 16 mm), fixed with four brass rivets into the fore-edge of the lower board.

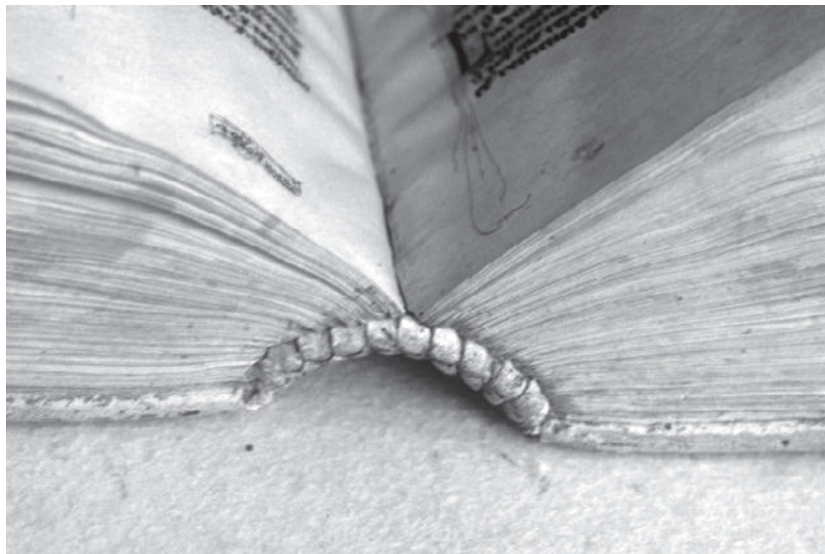


FIGURE 5.

The spine is flexible and adequately concave on opening

Results and Discussion

The richest collection of 49 codices with preserved mediaeval bindings is housed in the Maribor Archdiocesan Archive (SAM). Further, important holdings of 29 codices are preserved in the National and University Library (NUK) and 17 in the Archdiocesan Archive in Ljubljana (NSAL). Some codices with preserved mediaeval bindings are also kept in the Maribor University Library (UKM), the Seminary Library in Ljubljana (SKL) and the Koper Cathedral Archive (SAK), each preserving one volume.

Almost all the Slovenian codices are Gothic bindings from the 14th and 15th centuries.

The majority of volumes show structures and binding techniques characteristic of German bindings. Only 10 codices show Italian characteristics. The provenance of bindings cannot be established with certainty on the basis of structural elements alone; therefore additional research and comparisons will be necessary.

In our collections there are 44 codices with parchment text-blocks, 51 with paper text-blocks and one text-block consisting of a mixture of parchment and paper leaves. The paper codices originate from the late 14th and 15th century and are in a contemporary binding; none of them was rebound. Rebinding evidence is traceable solely in parchment codices, including almost all important illuminated manuscripts.

Observed codices have no extensive damage due to environmental conditions. Nevertheless, mechanical damage is visible on one third of the volumes, in most cases being extensive in the spine region, especially at the endbands and spine-folds. Damage to beech boards is comparatively frequent; the boards are in most cases at least slightly worm-eaten, 5 of them are also broken.

The great majority (80%) of boards are beech, 5 are oak, 2 maple, 2 spruce, 1 silver fir, 1 lime.²⁰ In some cases, due to the good condition of the cover and endleaves, identification was not possible.

All over-size volumes have extensive mechanical damage, with bands, lining and folds in especially bad condition.

The text-blocks of the majority of volumes are well preserved; the exceptions being just 3 codices, the text-blocks of which are extensively damaged due to humidity, leaves,²¹ are decayed while 5 volumes are damaged due to overuse.

20 Vodopivec, J. *Op. cit.*, pp. 75-78.

21 In this context folios is the same as leaves.

The study also includes rebound codices, though without their original bindings. All 14 volumes, rebound completely or partly before 1500, have parchment text-blocks and are of historical or artistic importance. Their structural elements suggest that all re-bindings were executed in the 15th century. We have not traced any rebinding among codices with paper text-blocks, because in the 15th century paper as a writing medium was used for less distinguished codices which were usually not rebound. It is evident from the mediaeval and modern history of the book that re-bindings were done mostly for aesthetic or re-fashioning reasons and not to replace damaged or worn bindings. Mostly outsize and heavy codices met this fate. This practice was customary in all libraries, and the Slovenian ones were no exception. Almost all important Slovenian codices were rebound, probably to modernise and unify the appearance of the library.

The majority of the listed bindings consist of parchment text-blocks. Among paper codices, numerous novelties, such as simplifications in the binding technique and the materials used, are noticeable.

The bindings differ very much, and judging by their structure, originate from different countries with long traditions and comparatively large production, or they were the work of itinerant bookbinders who had been trained in one of these centres.

Conclusion

Mediaeval manuscript codices are important historical documents, which are often also important art documents. If not rebound in later centuries, they represent a very important source for understanding the structures and the functioning of mediaeval as well as later books.

The results of the present research show that until the mid-15th century there were no noticeable differences in the binding structures of parchment and paper codices. Deviations from the mediaeval binding tradition are noted in the second half of the 15th century, more frequently in paper volumes. Parchment codices remain true to the mediaeval tradition towards the end of the Middle Ages. The observed codices have no extensive damage due to environmental conditions. The text-blocks of the majority of volumes are well-preserved. Mechanical damage was noticed on the spine, especially at the endbands and folds. Damage to the beech boards is comparatively frequent. All over-size volumes have more explicit mechanical damage. On the basis of the presented results, we can determine the structural elements,

materials and consequently formulate a description form related to the book, and obtain correct information about the book condition.

The presented methodology and research of the binding structure intends to advance knowledge and understanding of the book as a material object among librarians and archivists, to improve co-operation among all partners in determining the conditions for storage and usage of the object in book form in the reading room or on an exhibition, and for planning the necessary conservation and restoration procedures on damaged books.

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Biographical sketch

Dr. Jedert Vodopivec obtained her BSc and MSc degrees in Chemistry and PhD in Conservation Science at the University of Ljubljana, Slovenia. Since 1983 she is collaborating with the Pulp and Paper Institute of Ljubljana, mainly on research projects on durability and permanence of paper and on the production and use of permanent paper in Slovenia. Since 1997, she has lectured at the University of Ljubljana on book and paper heritage. From 1996 to 2006 she was a full member of The Preservation Committee of the International Council on Archives (ICA/CPTE). From 2003 to 2006 she was coordinator for organic materials in the EU COST Action G8 - WG3 project "Degradation processes, corrosion and weathering" WG3 "Non-destructive Analysis and Testing of Museum Objects". She is author of national and international papers, organiser of conferences, seminars and workshops on conservation of cultural heritage on paper and parchment, and collaborates on research projects dealing with book and paper conservation.

STRUKTURA UVEZA – VAŽAN ASPEKT KNJIGE

Sažetak

Srednjevjekovni rukopisni kodeksi važni su povijesni dokumenti. Ako kasnije nisu bili ponovno uvezani, važan su izvor za razumijevanje struktura i funkcioniranja srednjevjekovnih i kasnijih knjiga.

Znanje o strukturi uveza knjige jedan je od osnovnih zahtjeva za uspješan opis knjige kao objekta kulturne baštine. Uobičajeni knjižnični ili arhivski opisi uključuju podatke o sadržaju, ali rijetko daju informacije o materijalima, strukturnim elementima i stanju očuvanosti knjige. Predstavljena je metodologija istraživanja srednjevjekovnog tvrdog uveza slovenskih srednjevjekovnih rukopisa. Rad završava razmatranjima i zaključcima koji se temelje na analizi slovenske zbirke kodeksa s tvrdim uvezima.

Ključne riječi: srednjevjekovni rukopisi; uvezi; tvrdi uvez, strukture; Slovenija