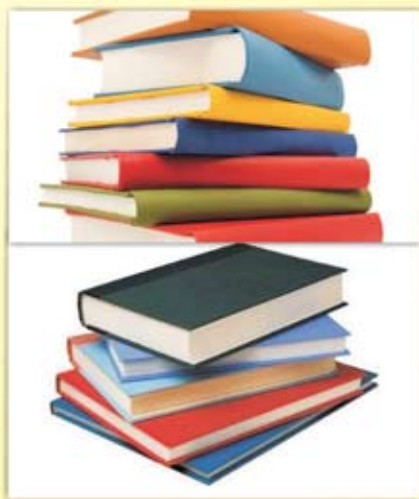


Book Binding in Indian Academic Library



MALLIKARJUN KUMBAR

**BOOK BINDING
IN INDIAN
ACADEMIC LIBRARY**

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Mr. Mallikarjun Kumbar, Senior Scale Librarian of Government First Grade College, Nesargi has emerged as an author of good number of articles in daily newspapers and written many articles on Library and Information Sciences. He was born in Khakandaki Village of Vijayapur District, Karnataka on 20th July 1978. He got his primary education and also his degree in Dharwad then did his M. L. I. Sc. from Mangalore University in the year 2002 with first class. His career began as Librarian in Mount Carmel Institute of Management, Bangalore one of the top ten colleges in India. He pursued his MPhil from Barthidasan University, Thiruchrapalli, Tamil Nadu and secured it in First Class with Distinction. He got an Appreciation Letter from Association of Indian University, New Delhi. To his credit he has published academic research papers in National Level Journals. Having put in ten years of service he has worked as a Subject Expert in Selection procedure of Private Aided College Librarian Affiliated to Rani Channamma University, Belagavi.

Now we feel proud to present this book **“Book Binding in Indian Academic Library”** we hope this meets the needs of Library, Librarians, Researchers in LIS, Teachers and Students.

WE WISH THEM SUCCESS IN LIS.

Book Binding in Indian Academic Library

Research work

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Dedicated

to

My beloved Grand Father



Late, Shri Ishwarappa Mallappa Kumbar,

&

Smt.Sangamma Ishwarappa Kumbar

And to

My Son

Kushal, Kundan

Sweet Daughter

Shreejha

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Foreword

The type of library and how it is used reflect the preservation needs of its collections. The preservation requirements of a local public lending library are obviously different from those of a national library. However, both are obliged to maintain and keep accessible their collections, whether for a few years or indefinitely. Economically, libraries cannot afford to let their holdings wear out prematurely. Replacing library material, even when possible, is expensive. Preservation makes good economic sense. It cannot be easily predicted what will be of interest to researchers in the future. Preserving current collections is the best way to serve future users. Responsible and professional library staff should be committed to caring for and preserving the material with which they work.

This book “**Book Binding in Indian Academic Library**” is one of the good attempts in re-emphasizing the importance of Books and Bookbinding because the print collection of any library is very important and it has to be transferred into one generation to another. For this, the LIS

professionals have to take the binding and preservation skills or activities seriously. This book also discuss about the factors affecting the print collection hence the preservation of such valuable collection in the library using various binding techniques will be very helpful for young LIS professionals to implement in their libraries.

The binding techniques and materials used have improved overtime period and so also the machines used for the same. Since many studies have already concluded with the help of user survey conducted at national and international level that the hybrid library system where both digital and physical collection needs to be balanced to satisfy the modern user community. This shows that the print collection will not vanish in the future too therefore the library print collection development and preservation of such resources using binding method will exist forever without any doubt. We cannot think of paperless society because at certain point in time both technical and nontechnical people dependent on print media for their information seeking and communication purpose.

According to Wikipedia “Bookbinding is the process of physically assembling a book of codex format from an ordered stack of paper sheets that are folded together into sections or sometimes left as a stack of individual sheets”.

Before digital era books were the primary medium of transforming knowledge from one generation to the other. Hence libraries before 21st Century was given all importance to build and preserve print materials in the form of books, journals, Bound Volumes, Reports, etc. Therefore the importance of binding and rebinding of print materials was major activities in the library at that time. The majority of the University libraries, special libraries and public libraries use to have a big binding and repair sections in their libraries and many skilled employees use to work day and night in those sections. There was an important course offered in Library and Information Science on Book Binding and preservation, it was an additional technical skill most of the Library professionals use to pursue.

Conservation of print materials is nothing but specific practices taken to slow deterioration and prolong the life of an object by directly intervening in its physical or chemical make-up. Examples would be repairing damaged bindings or de-acidifying paper.

According to IFLA report on Scientific Research on Books and Book-Binding it says that “the role of binding is both for decoration and for protection. The binding not only connects the pages within, but also protects them from physical damage”.

Depending on the time period and location, books were created using various materials. The most common types of coverings for bindings were leather and fabric, also wooden boards, paper, and other materials. Traditionally, the cover could be richly decorated in accordance with the style of the time, using expensive materials: precious metals, precious gems and others. However, there are exceptions of no less interest. Including, for example, re-using documents from other sources as binding materials.”

The main factors that cause damage to book-bindings are the natural aging of materials, improper storage conditions and bad handling. Proper storage conditions for books protect against physical-chemical and biological threats, as well as slow down the natural aging of materials, but it is impossible to stop it. Improper handling of the book, such as removing from the shelf by pulling the spine, improper opening of the book, contamination of the binding and others, are related to human factors and are addressed by raising people's awareness.

This book should help not only LIS professionals even for the common person to understand the book binding techniques and importance in their life. I am confident that all of you will benefit by reading this book and gaining knowledge on book binding and

preservation methods. I am sure that the discussions in the book will go long way in enriching readers.

I wish to congratulate **Mr. Mallikarjun Kumbar** for bringing out this book very meticulously and commend this book for all in LIS field.



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PREFACE

Book binding is one of the most important subjects in the field of Library and Information Science. This book is beneficial to students pursuing their course in Library and information Science and to the general public as well. It dwells to update the Librarians, Teachers and Students, of Library and Information Science with the practice and focuses on the current development in the field of book binding.

Understanding and learning of Book binding is made more fun and informative through the usage of colorful and relevant photos and diagrams. It is hoped that these will assist the readers to understand the concepts without any confusion.

I thank our Principal Prof. M Y Hitaragoudar, Senior colleague Prof. S. R. Mulla, Smt. Surekha Shetty, Dr. Vinayak M. Bankapur, H.O.D, Dept. of LIS, R.C.U., Belagavi, Dr. Bharat Alasandi, Dr.Vijay Naik and Shri Shivanand Sangapur for their support. This wouldn't have been an easy task without the heartfelt support and feedback from my colleagues Prof. Shambhulingappa S. Kayakad, Prof. Shivanand Hiremath, Prof. M B Koppad, Prof Vinay Kulkarni, Prof. Shridevi Narawade, Dr. N T

Renakigoudar, Prof. Pruthvi Raj N. and Shri B.S.Huded for their constant encouragement and suggestions in the preparation of this book has been helpful for the fruition of this book. Our college Guest Faculty Prof. B. F. Hakkarki, Dr. M. B. Chobari, Prof. M.G. Naganoor, Dr. R. Y. Goudar, Prof, S. N. Neelanvar, Prof, R. G. Yarragatti, Prof. G. R. Chobari, Prof. R. V. Kulakarni, Prof. N. I. Sattigeri, Dr. P. L. Hoskotti Prof. M.B. Resaldhar, Prof. N.S. Benakatti and many other Guest Faculties for their valuable work while preparation of 2nd cycle NAAC “B” grade achievement.

The encouragement from our college development council members was another boost to make this a full-fledged book.

Thanking my parents and family members won't be enough because of their many sacrifices and support my herculean task as become an easy one.

I hope that this book will satisfy and cater to the needs of the Library, Librarians, Faculty of library and information science, students, readers in general.

I expect that the reader will receive this book with greater enjoyment and support me with constant feedback.

Belgavi,

28th October, 2020

Mallikarjun Kumbar

**BOOK BINDING
IN INDIAN
ACADEMIC LIBRARY**

CHAPTER 1

INTRODUCTION

In the present day book binding is an important aspect in academic education. Generally, the education includes books, and books, must have binding either hard-bound or soft (Paper) bound. Binding is the process of putting the pages of a book between covers. Binding holds books together and protects them from wear and tear. It also makes them attractive and easy to use. Binding ranges from elaborate, hand-tooled leather to heard-board or papers.

Books once were bound entirely by hand. Today, machines bind almost all books. A single book binding plant called a bindery can produce by machines as many as 1,50,000 books in a day. This is many times more than that could be bound by hand in that time. But hand bound books have special values, such as appearance, and durability, and avoid shabbiness. “The binding of books is both a craft and an art” {1} of attaching stout covers by

means of tapes or cords (Gages) to the sewn gathering of books for their protection and convenience of handling. A craft refers to requiring a high degree of technical skill and a considerable fond of information about the materials and process used in book production, during all periods of history. An art refers to decoration of the cover in various styles heights of achievement, comparable to artistic creativity in other media.

Books, the wares of a library are to be preserved for posterity as the older books have been handed over to us by our ancestors. The paper, of which the books are made, is a perishable and delicate material. There must be some other covering material so that it can be saved from its various enemies such as insects, dampers, dirt, heat and cold. Various covering materials have been used in binding; book protection and book restoration have been an integral part of Librarianship from the earliest to present times.

Book Binding:

“According to Everyman’s Encyclopedia the processes of making up the leaves of a book in

to a volume with a protective cover, often or maintained to enhance the value.” [3]

1.1 NEED FOR BOOK BINDING:

“Each library adds to its collection, some reading materials according to its funds and policies”. [4] In turn, these books and periodicals are issued to readers for their use. In this process, wear and tear of reading material not of lasting value but at the same time, there are some books which are repaired for the constant use of readers.

The term ‘repair’ here means the binding of books and periodicals. A big library normally has its own binding section. But a considerable number of libraries get their materials bound through the commercial book binders.

Binding is also a process of preserving books. As the proverb goes, “a stitch in time saves nine” unless any worn out or damaged book is bound in time, it is not possible to preserve it. The following are the reasons to bind the books.

1. To keep the book preserved for longer period.
2. To keep the book cleaned and well decorated.
3. To preserve perishable and frail materials.

4. To resist wear and tear.
5. To avoid damaged from rough handling.
6. To give a new look.

The important reason of book binding is that, if a book is properly maintained, bound and shelved it will attract the reader. Reader will at least open the book for the sake of its decoration and shining of bookbinding. It is the best medium of advertisement also. Books are our great friends. We must treat them with full regards and should save them from injuries and injurious elements.

CHAPTER – 2

HISTORICAL DEVELOPMENT

2.1 HISTORICAL BACKGROUND

Early man wrote on rocks, sand, mud and tree trunks. But to make his knowledge available to others, he had to write on something that could be passed from one generation to another generation. Ireland Richard stated that, “The people of ancient civilization wrote on tablets of wet clay. When the tablets were dried in the sun or baked in hot oven, they became very hard. The hard tablets could then be passed around for many years.” [1] But as man found more and more to write about, the clay tablets became less suitable, for they were too heavy and bulky to be easily carried. What was needed was something right enough to be portable and yet contain many thousands of words. At the same time, it had to be easy to read and had to last a long time so man needed a book.

Books and Libraries form an important part of our culture and society. In ancient and medieval period, libraries were considered as an important center of learning and significant medium of education. Many religious and monastic organization, emperors, kings and nobles had libraries of their own. Books and manuscripts were social mechanism for preserving religious and secular knowledge of the society. Sharma Ram Sowroop says. “The words such as ‘Grantha Kriti’ (Name of book); ‘Kitab Khanna’ (Department of Books); ‘Saraswathi Bandar’ (Storehouse of knowledge), abound to make ancient literature.” {2}

Formal education was a privilege of the very few in ancient and medieval periods. Women were practically excluded with significant exceptions. Libraries and Books were few and far between and were an exclusive possession of royalty and scholar priestly class of monastic organizations. Manuscripts were written, copied, multiplied and preserved in religious schools of monastic orders and temples. Priests and monks were the preservers and custodians of books and were the sole authority of interpretation, multiplication and preservation of

manuscript. Copying manuscripts was considered a work of religious merit. There were professional scribes who did large scale of copying.

“**Shruti**(*hearing*) and **Smriti**(*remembering*) were the means through which knowledge was imparted to pupils in Ancient period.” {3} Oral communication was the generally accepted and practiced method of communication and learning was through the repetition of spoken work. This did not encourage writing of books. The teachers were the living books and book mobiles. When a community lacked a text, it would borrow a learned monk from another community just as we borrow a scarce edition from old libraries. The monk would come and recite his book, and the book was reprinted on the minds of his hearers. This was the common practice in earlier days.

2.2 A SHORT HISTORY OF BOOK BINDING

The history of book binding essentially linked with that of writing; as the nature of materials and forms used to determine the method of preservation. According to Bets-Hewitt, the word ‘book’ is probably derived from the same root as

‘beech’, the bark of this tree having been anciently used for writing in most of the northern countries of Europe. The Greek names ‘bibles’ or ‘billions’ are derived from the Egyptian papyrus, and the Latin word ‘Libber’ from the same source.” {4} an event of the greatest importance in history of writing and book binding was the invention of papyrus by the Egyptians about 4000B.C Great skill was displayed in the preparation of this material for writing purposes. It was made from the stem of papyrus plant, a kind of reed that grew in the marshes of Egypt. The outer concentric layers of the stalk were first separated into thin sheets by means of needle; two or more sheets were then laid on one another crosswise, covered with a thin paste, and rolled or beaten to weld the fibers together and dried in the sun. The sheets thus obtained were afterwards coated over with a preparation that gave them an even surface and made them plant and flexible. By joining the sheets thus formed, rolls of any length could be obtained, and frequently twenty or more were employed for a single manuscript.

Pens of reed were used for writing. Such pens are still in common use throughout the East. The ink

was made from lamp-black, burnt ivory, charcoal, sepia, etc.; the particles being ground very fine and suspended in gum water.

At first the writing was in short lines on the rolls; at each end a roller would be attached and the reader would unroll and roll as he read. Sometimes the writing was in long lines the length of the roll; later columns across the roll. There is no doubt that the writing in columns suggested folding as being more convenient to read and for storage. This form led the sewing of the back folds together, as is still done in China and Japan. The first step in bookbinding was thus evolved. The oldest manuscript known written in this form is the '*Papyrus Presse*' in the Louver at Paris, consisting of fifteen pages in Egyptian hieratic writing, ascribed to about 2500 B.C. The rolls were often put for further protection into cylindrical cases, called '*Caps*' or '*Cranium*' frequently made of beech wood and stored in 'The House of Rolls'. The Romans called the roll 'volume' hence the word-volume.

A still nearer approach to modern binding was made by the Romans in their papillary or table books. They consisted of two to eight leaves made

of ivory, wood or metal, with raised edges, and covered with wax to take the impression of the stylus. They were connected at the back by rings or thongs of leather. These papillary, much more than the rolls, suggested a cover, which at first was of sheep or other skin; afterwards boards were attached.

With the introduction of parchment both writing and book-binding were much advanced. Successive experiments in the manufacture of skins for writing purposes led to the invention of vellum and parchment. This discovery is attributed to the prohibition of the exportation of papyrus from Egypt, by one of the Ptolemy's, in order to throw an obstacle in the way of Eumenes, King of Paramus, who endeavored to rival him in the magnificence of his library. Thus, left without material for writing on, we find that Eumenes invented a method of cleaning skins on both sides; before they could only be written on one.

The word parchment is said derived from '*Portamento*', a city in Asia Minor, where the sheep skins were first prepared about the year 190 B.C.

Vellum treated in the same way as parchment is made from calf skin.

At first time parchment was on were the papyrus rolls, but later Eumenes adopted the method of writing on separate leaves on both sides; hence the folded form came into use. The sheets were folded once, and gatherings of four or more folded sheets were made, so that stitches through the fold at the back would hold all the sheets together and each leaf could be conveniently turned over.

Very soon the obvious plan of fixing several of these gatherings, of sections, together by fastening the threads at back round by a strong strip of leather of vellum was adopted. This early plan of sewing is today used in the case of best bound books; it is known as flexible sewing, and has never been improved upon.

When the method of sewing sections together in this way become known, it was found that the projecting bands at the back needed protection, so that when the book was sewn, strips of leather were fastened all over the back. It was also found that the parchment leaves were apt to curl, and to counteract

this tendency wooden boards were put on each side, the loose ends of the bands were placed into the boards and protecting strip of leather at the back was drawn over the boards far enough to cover the lacing-in of the bands. So, we get what is now termed quarter-binding.

The tendency of wood to warp and crack led to the use of sheets of papyrus or parchment pasted together and heavily pressed-this formed a strong and tough material, which when dry would not crack, shrink or warp.

To the East we must look for the most marked advance in the art book binding. Recent research and discoveries have proved that the Copts, an intelligent and Christian race, direct descendants of the Ancient Egyptians, were well advanced in the art of writing and bookbinding in the second century of our era. The newly discovered Bible texts of papyri from Egypt assigned to the second century are all written in Codex form – i.e. in sections like modern books. This form was used by the Christians at a time when pagans still adhered to the roll.

Later we come to the massive books which were carried in the public processions of the Byzantine Emperors in the fifth century; doubtless these mighty records of the nation's laws and scared manuscripts impressed the populace with awe and added to the dignity of the sovereign ruler. The bindings of these splendid volumes were in red, blue or yellow leather, and thin golden rods were placed across the back.

In the sixth century these 'Byzantine Coatings' as they were called, were decorated by the silversmith-the binder was only allowed to sew the leaves together and fasten them into the wooden boards. In this state they were passed on to the silversmith, who covered them with beaten gold and silver, into which jewels and precious stones introduced.

A century or two later we find that the monks were almost the only 'literature'. They wrote chiefly upon subjects of religion, and bestowed great pains upon the internal and external decoration of their books. They not only transcribed and bound books, but they prepared the parchment for their manuscripts and the leather for the binding.

An interesting example of monastic writing and binding in the seventh century is that of a book, usually known as St. Cuthbert's Gospel. It is one of the earliest known examples of the semi-uncial style of writing in Britain and, If the binding is contemporary, the earliest known decorated leather binding in Europe.

The present of this volume is in red leather, either Russia or goat skin. In the center of the front cover is a repose Celtic design; above and beloveld are small oblong panels filled with interlaced work executed with a style, and colored with yellow paint. As to the date of this binding there are different opinions, some assigning it too early as the seventh century, others the twelfth Mr. Douglas Cockerel, an authority on ancient binding, writes of this volume: The early date is not universally admitted, mainly because it is difficult to believe that a binding could have survived the know vicissitudes of St. Cuthbert's coffin without damage.

However, as the manuscript itself shows no serious signs of damage, we may, I think, suppose that the conditions that have led to the preservation of the manuscript have preserved the binding. The

little book probably had a stout leather outer case, and it may well have been preserved and carefully cherished as a holy relic apart from the coffin, an only has been placed in the outer coffin for convenience of transport.

The ornament is such as we might expect to be produced under the Lindisfarne tradition, and nothing we know of at all like it was produced in the twelfth century, when it has been suggested the book might have been rebound.

In the eighth and ninth century's bookbinding as an elaborate art is said to have made great progress in the age of Charlemagne, when Italian artists and craftsmen were employed. It is unfortunate that none of these bindings have been preserved, as an examination of them might have assisted us in forming a more accurate idea of the progress of the art in this period.

Then the art was neglected for several centuries, owing to the plunder and pillage that overran Europe, and books were destroyed to secure the jewels and metals with which they were covered.

In the twelfth century it is claimed that England was still ahead of all European nation as regards binding. Winchester, London, Durham and other monasteries had each their school of binding. Their books were covered with stag-hide, calf, and pig skin, and were tooled with numbers of small engraved blocks in the Gothic style.

This method of forcibly impressing from metal stamps in blind-tooling had a soldering effect on the bookbinder's art-the elaborate work of the silversmith gradually gave way to this more legitimate means of decoration by the actions binder himself.

The method of making blind impressions from engraved metal dies is claimed by Mr. Weal to be of English origin, and may have idea to the invention of printing. In the light of modern research, however, it has been discovered that the Copts were familiar with `bind-tooling either by heated tools or with punches, before the sixth century.

Although the majority of medieval leather binding are decorated with engraved metal stamps,

contemporary with these there were produced a number of remarkable bindings, the decoration of which was worked with a blunt, pointed tool or cut into the surface of the leather. (This method was much the same as now used on our modern embossed Leather work.) Generally, the design is impressed on the surface of the leather and the background stippled, making the pattern stand out in apparent relief.

In the Middle Ages many bindings were brought from the East by the Crusaders, which no doubt helped to mould the destinies of book binding.

Towards 1465 the Saracen patterns on Venetian books began to be sprinkled with gold. This innovation gradually sealed the fate of gold-tooling.

The invention of printing by Gutenberg in 1438 entirely changed the character of book binding. As rule wooden boards clasps, and gold ornaments were laid aside and leather and parchments became of ordinary use. The printer at first was his own binder, but as books increased in number, book

binding became a separate trade, and a consequence of men applying themselves to one craft, the art improved so much that in the fifteenth and sixteenth centuries some of the finest specimens of book binding were executed.

About the year 1470 gold tooling by means of engraved stamps (as used at the present time) was introduced into Venice, and under the patronage of Mainly and Grolier a new and beautiful method of decorating books came into fashion. Their designs were, of course, influenced by then dominant style decoration, namely the Renaissance: while Byzantine in its original element, it also has a mixture of Venetian and Normal ornament. It reasserted the aesthetic principal, and attained its highest pitch of excellence in the sixteenth century. It is little wonder that this style gained such favor with designer of the period. Its influence was so powerful that the old somewhat dull Gothic work of Western Europe was speedily extinguished in the efforts of the book binder to intimate Italian work.

Book binding sharing in the general advance of the fine art in England during the period of Queen Elizabeth I, and the bindings of the Queen's books

are superior, both as regards beauty of design and finish of workmanship, to those of her predecessors. Elizabeth was very fond of embroidered book-covers, some of which she worked with her own hands.

Charles and Samuel Marne, binders to Charles II, did much to raise the artistic side of the craft in this country. They invented the 'Cottage' style of decoration. Many of their bindings have the fore-edge painted, under the gilt, in such a way that the work is invisible when the book is shut and only shows when the leaves are fanned out.

Towards the end of the eighteenth-century bookbinding in England was decoratively at a low level, when Roger Payne, a native of Windsor, came to London and set up as a bookbinder. He adopted a style peculiarly his own, and was the first English binder who endevoured to make his ornaments appropriate to the character of the book on which he put them. He knew the secret that elemental forms combine best. Dots, gouges, simple little circles, a crescent, and one or two sprigs of flowers made up the whole of his stock. But their marvelous combinations under the old craftsman's hand are the

administration of all who admire good bookbinding in the English-speaking world. He drank much and lived recklessly; but not withstanding his irregular habits, his name ought to be respected for the work he executed. His sewing is as good now as when it felt his for wording excellent. His tools, original in form, were both designed and cut by himself. His favorite leathers were Russia and straight grained morocco, which he decorated chiefly with corners and borders, and the field studded with gold dots. Even though the French school influenced him at the commencement of his career, when he became a master of his art he stood alone, original and unique.

It may be observed here, that as the mechanical aids to the art grew in number, taste declined. After Payne's time we see little else than reproduction of the great models, with often an extremely in judicious combination of different styles. The modern binder, in imitating some old master, is not able to reproduce the spirit of the original – he only betrays his own lack of invitation, and his copy remains, for all his labors, the mechanical production of today.

2.3 BOOK BINDING IN INDIA

Book binding has an interesting history and differs from country to country. The ancient Indian method of writing on Leaves of Palmyra and collecting and keeping these Leaves together, was by passing through on central like a cord. The Arabic method of binding a book was altogether different in as much as the leaves were sewn at one side, In India it is useful books were kept and preserved in monasteries, temples and shrines, pages of the same manuscripts were kept together in the manner described above. The feature worth noting in this type of type of book or is that each page whose length is much more than its breadth is spread distinct from the other pages of the same. Each book used to have two wooden boards one above and other below. The body of book pressed between the two wooden boards was then wrapped with piece of cloth and kept on wooden boards, were then wrapped the shelf. No leather binding was known in India, Central Asia and China partly explained by the fact that most of the books of the time being religious in Nature and leather being considered impure in these places, it could hardly be

used for bookbinding. Sometime the wooden boards serving as the covers of the book were designed with various drawings, engravings and patterns etc., and then given a varnishing to protect these on the cover. Similar waste method prevalent in Europe before the Crusade after Crusades however the Arabic method of book binding (which today has been accepted all over the civilized world) spread it Europe. In Arabia and adjoining countries, the people have enough of animal skin (skin of camels and goats etc.) which they fruitfully employed in binding their sacred religious scriptures. On this leather binding often tooling was none. An Arabic raid which has business contacts with Italian ports e.g. brandish, Rome etc. spread this method from those places. Beginning with the 11th Century the method came to be adopted more and more extensively in the 12th and 13th century. In England it spread in the 16th century during the rule of the Tudors. Each country adopted it to its requirements imposed and changed it to some extent and made designs over the biding cove after their own fashion, from the designs over the binding cover, after their own fashion. From the nature of the design on the cover and from the

nature of the binding of the cover itself the country and time in which the book was bound and hence written could be detected. Library- Binding: In comparison with the western countries Book binding for library especially in India is very poor. It was during this decade that various provincial Governments planned to improve these libraries and tried to diffuse library consciousness throughout the country. A vast literature consisting mainly of poetry had developed and it was handed down from father to son, manuscript was prepared and deposited in temples, ashrams etc. which were the basic source of the libraries. Library binding has become a highly specialized section of the binding trade. Very few libraries in India can afford the necessary space and equipment or keep machines binding fully employed at library premises. It will no doubt save much anxiety in getting books bound avoiding the risk of loss and damaged the cost special insurance. Books in library are for frequent use as such as the library binding should not only be of good finishing but durable at the same time to protect books from constant wear and tear. The repair and rebinding of valuable books in branch of

the work that can be specialized in so that an individual style ornament may be developed as it is a matter of good taste for deeper than fashion in an open market. The immense expenses involved must therefore be a serious drag on the usefulness of libraries that led to the production in modern times of bindings by best methods based on a common knowledge of manipulative skill and good materials was well. It is seen that 90% of books bound in leather during the last 30 years will need rebinding during the next thirty whereas European bindings of the 15th and 16th century now existing on books are still in excellent condition. Indian binding that fail to protect books may be seen by visiting any large libraries where it will be found that, many bindings have their board loose and leather crumbling to dust. A living may be earned at this craft whose demand is increasing on a sliding scale with the growth of libraries due to recent library movement in India.

2.4 CHANGES IN RECENT CENTURIES

It is a tribute to the skill of Gutenberg and the other pioneers in the development of printing that books today are still made in much the same way that the first printed books were. The only major

change has been in book binding. The original wooden boards have been replaced by cardboard, and binding is usually done by machine rather than by hand. But most of the changes in printing have been little more than improvements of the earliest methods. Printing today is faster and easier, and less work is done by hand but the original principles have not been changed.

Ireland Richard says that the 19th century brought few changes. A great amount of engraving was used, and since it is difficult to print line engravings, books become smaller. New type faces and ornaments were designed.

Cost-cutting methods of mass production reduced the artistic quality of 19th century books. But as compared to India in England the artist joined with the best typographers and binders could find and wishing to recreate the beauty of medieval books, they published books using the best materials available. Many people feel that their books had an old-fashioned look, but their efforts inspired many others and opened the way for a new trend in book binding.

CHAPTER – 3

BOOK BINDING MATERIALS AND SPECIFICATIONS

3. BINDING MATERIAL:

Shelves full of worn and soiled books waiting to be sent the binding do not present the problem to the present-day librarian that they did to the librarian of a comparatively few years ago. Felipe and Bowing are the opinion that, “The librarian had no definite standards of binding to guide him. He either had to take what the binder had to offer or he had to have sufficient knowledge of binding method to tell the binder what he wanted and, what was fully as important, he had to be able to judge whether or not the binder has supplied those materials and used those specifications in binding the books and other reading materials.” [1].

In academic libraries there are significant amount of reading materials (sources) which are

heavily used by readers must be continue a binding treatment that will permit them to stand on the shelves to circulate, and in many cases to be preserved identically.

Binding material and craft together make a fine or good binding. The binding must be whole of its materials, cloth, vellum, leather, etc., but the last of these is the most desirable of all, if only because it takes the tooled design better than any other material.

The quality of binding material varies in different kinds of bindings. These are commonly used in one or the other kind of binding. It is essential that a librarian makes him/her conversant with various qualities of these binding materials. These materials can be easily described by classifying them in the following manner:

3.1 Covering Materials.

3.2 Sewing Materials.

3.3 Pasting Materials

3.4 Ornamentation Materials.

3.1 COVERING MATERIALS:

3.1.1 Leather:

Leather as a binding material is considered an ideal one because it is readily pliable. It is suitable for forwarding, finishing, tooling and lettering purposes. The books bound in leather provide a pleasant look and touch to a book. Leather is a material which provides strength and permanence to the binding.

Leather for binding is taken from many kinds of cattle and other animals and mammals, cows, calves, sheep, goats, pigs and snakes etc. The original leather is unsuitable for binding purposes. In order to improve its appearance and to increase its durability the leather is subjected to 'tanning'. the leather is beaten down in such a manner that its roughness is removed. The leather is further treated with certain chemicals to give it a better look. "These processes have often resulted in the leather being left with an acid content, or more usually have rendered them susceptible to the absorption of sulfur dioxide from the atmosphere.



3.1.2 Morocco leather:

This type of leather is mainly used for library binding. It is derived from the goat skin. Its main distinction is that its fibers are long and have prominent grains on its surface. Morocco leather is found in many qualities which include cape goat Morocco found in Nigeria and Mediterranean, Persian Morocco and Levant morocco. Many other qualities of leather, which has artificial grains, is found in African and European countries.



3.1.3 Sheep Skin

Sheep skin is a quality of leather which is very soft and durable. It has attractive light brown color. Its original quality can retain if this skin is properly tanned and is saved from excessive graining processes. Basil is a popular quality of sheep skin. It has got a grained surface and is found in many soft coolers. It is used for rebinding and covering old books. But many craftsmen do not like this quality. For personal libraries, an inferior quality of sheep skin, known as ‘Skivers’ is used, this the upper option of the belt when whole skin is split in to two portions, it has an attractive color and is capable of giving easy finish but it is very much short –living. Another quality of sheepskin is ‘roan’. It is goat after tanning Sheep skin in so mach.



3.1.4. Calf leather

Calf leather is beautiful, smooth and delicate in appearance. But it is not durable because it is got from the skin of animals which are immature. This can be varied from many books bound in calf leather. Though calf leather is preferred in making shoes because it is delicate and gives an excellent appearance, but for books, this kind of leather is considered quite inappropriate.



3.1.5 Pigskin or Hog skin

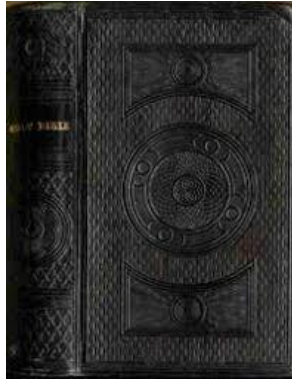
Pigskin is hard –wearing and attractive in appearance. It has the defect of being thick and flexible. It is better if it is processed and dyed very mildly. It should not be subjected to usual tanning processes. It is most useful for binding large volumes, especially newspapers. If it is pared, it is liable to lose its strength. it can easily be recognized. It has hot triangular groups of small holes found on its surface due to hairs.



3.1.6 Seal skin

Seal skin is used in thirties of the 20th century is not used much now-a-days because it is very costly and tough to give proper finish. Douglas Cockrell used it occasionally with great success, and

it is one of the three types of skins produced in accordance with the test.



3.1.7 Imitation leather

Leather is costly, imperfect and irregular in shape and form. It has given way to imitation leather cloths. These varieties are cheaper and stronger than leather. The cost is 8\$, to 7\$, a square yard as compare with 6\$, a square foot for nicer morocco. (The prices have now gone up) The leather cloth has become a proper substitute of leather. It is manufactured in various qualities. It has various attractive shades and colors. It has grained surface. It gives a fine finish. It is staining

resistant and is strong enough to stand excessive use. But it is sticky.



3.1.8 RegZion:

A strong coated cloth usually in the form of an imitation leather and used as a covering material for books, the weave and composition of the base (Gray) cloth depend on the grade of cloth being manufactured at the time, and may be cotton or a cotton and rayon mixture. The cellulose nitrate coating is colored by mixing powdered pigments with synthetic oils and is applied in several layers each being dried before the next application. Polyvinyl chloride may also be used for the coating. Embossing is done with engraved steel rollers, usually to imitate the grain pattern of leather, but sometimes with modern geometric designs. This

type o cloth has been in use since the first decades of the 20th century.



3.1.9 Cloth:

Since has advanced so much that binding cloth is considered as the popular substitute for leather. Now-a-days binding cloth is found in many varieties which include water-proof, and oil resistant cloth, etc., Binding cloth is washable but it is preferred mainly because it is strong and stain and rain resistant. The quality of the cloth is based on the strength of the original cotton cloth and this ranges from the open weave light quality fabric used for the cheapest type of publisher's casing to the double warp closely woven fabric can be very roughly judged by the number of threads per square inch, and the American Library Association's minimum specification for class 'A' library binding

lays down that there shall be at least 100 threads per square inch. The process of making this cloth is the same as that used in the manufacture of a wide variety of unfinished cotton fabrics.

Book binding cloths are dyed in desired coolers before these are filled or coated. The latter processes are meant to make the surface of the cloth capable of resisting the penetration of glue. These processes also provide a fine appearance and strength to the cloth.

Essentially cloth is susceptible to water and other aerosols, therefore a different type of binding cloth has been devised and this is most frequently used. The ordinary cotton cloth is treated with rubber or plastic on one side and this is known as binding cloth. It is cheaper than resin and leather but a little dearer than ordinary cloth. Since it is plain on one side, it sticks to the adhesive used on cardboard and protects the book from moisture or any other aerosols to a certain extent. It gives good finishing in fact, but not better than leather. It extends the durability comparatively more than bare cotton cloth or bare silk. Normally this is used for text books and for the Library books. It is available

in plenty in the market and that too in different colors. Coating does extend the life but the natural quality of cloth remains the same. It cannot be preserved for a very long period with constant use. For that, leather or any other synthetic materials is advisable.



3.1.10 Paper:

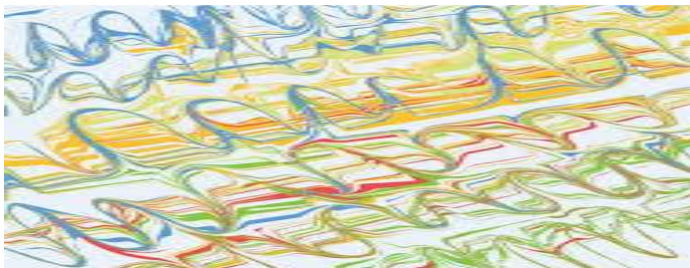
The books in the publisher's casings and other cheap editions are bound paper-covered bindings. It means that the card boards are covered by some thicker paper or some fancy paper. It has got two purposes to serve. i.e., some kind of covering material is used to eliminate the ugly look of uncovered card board, and secondly, the card

board is protected. In the first case, the binder generally uses fancy paper and this is generally printed in many designs and colors. It is found that books of primary and secondary school children are generally bound by paper covers.



3.1.11 Marble Paper:

There is yet another variety of paper named marble paper which is used primarily for decoration the edges and covers of books and half-calico bindings, etc.



3.1.12 Plastic:

The pure plastic impregnated cloth has advantage over other covering materials since they can be wiped clean with a piece of damp cloth to remove dust and dirt. But their use is still restricted, being confined only to the binding of pamphlets, commercial catalogues, etc.

3.1.13 Calico:

A plain cotton fabric that is heavier than muslin. As early as the first quarter of the century calico was dyed in various colours and used for covering publishers it was in fact one of the first cloth to be used for covering books. It is still used to some extent for lining the spines of edition binding although for this purpose it is inferior to several other fabrics.



3.1.14 Boards:

Though wooden boards were used for binding books in the early times but with the invention of printing devices by movable types, paper boards were made use of. The library binding board is found in many qualities out of which the following are important.

3.1.15 Straw Board:

A cheaper quality of card board, generally used for smaller and cheaper books, is known as Straw Board. It is made up of straw and is found in abundance in Holland. For measuring the thickness or thinness of this kind of board, the weight of one board is taken into consideration. Its size is 30 by 25 inches. Minimum and maximum weight of this kind of board varies between $\frac{1}{2}$ pound to 4 pounds.



3.1.16 Mill Board:

Mill Board is manufactured from old hemp ropes and other rages etc., To produce a fine quality of mill board, the finished dark boards are highly calendared. By this process these boards become tough and hardwearing. This kind of board is used generally for standard books.



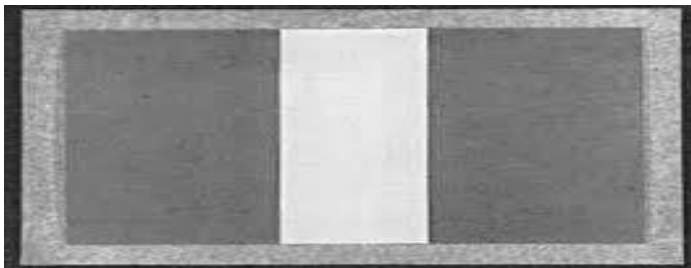
3.1.17 Grey Board:

The medium quality of board is known as Grey Board. It is compact and hard-wearing. The mode of selling these boards is either by the number of boards' equivalent to a hundred weights or by thickness.



3.1.18 Split Board:

For re-in forced library binding, split boards are used. These split boards are generally made by gluing the thin black mill board and thick straw board. Big pieces of mill board and straw board are taken and the straw board is glued properly. But center of the board is left unglued because It is already covered by a thin strip mill-board or tin. The latter is removed by thin black board and after gluing, it is pressed properly.



3.1.19 Gold Tooling:

The art of process lettering or decorating the spine and covers of a book with gold leaf (or, at times other metals, e.g., platinum) impressed in to the covering material, usually leather by means of a heated letter, lettering or finishing tool.

In the traditional method of gold tooling, or lettering the design is first blinded in, generally first through paper and them again directly on the leather. The second working of the tool polishes the base of the impression and assists in creating a particular brilliance in the tooling. An adhesive (glair) is applied to the leather (either all over or directly into the blind impressions); strips of gold leaf are laid over the impressions and held in place with the heated tool. When done properly, the affinity of the gold for leather is such that it will particularly never come off, nor will t tarnish.



3.1.20 Lettering

Palladium metal foil is used now-a-days for doing white lettering on important books. This kind of lettering is also used for decorating purposes.

The process of marking a binding with author, title or other distinguishing bibliographical information, and, in a loose sense, with accompanying ornamentation, e.g., lines, library imprints, etc. The lettering of hand-bound books is usually done either with individual letters (as in the best work), or with type set in a pallet. It is also done at times with straight lines or gouges. Edition and library bindings are usually blocked (stamped), either in an automatic or hand-blocking machine.

Type sizes for lettering books generally range from 6 point (very small) to 36 point (relatively large), depending on several factors, including the size of the book and the relative degree of legibility desired. Design of the type face and proper arrangement of the lettering, however, are as important for legibility as is the size of the type. As a general rule, the factors governing lettering are: 1)

only one type face should be used on an individual book or set of books; 2) spacing between lines should be logical and pleasing to the eye; 3) spacing between the letters should be the same on all lines; and 4) the type should be appropriate for the size of the volume.

3.1.21 Gold leaf

For gold finishing or lettering, gold leaf i.e. a thin leaf of gold, which is properly beaten, is required. From very early times, gold leaf has been used for decorative purposes. Gold leaf can be made in many ways. Gold leaves can be prepared by mixing gold with copper and silver in varying ratios. There should be no draught and the knight and the cushions be kept free of grease.



3.2 SEWING MATERIALS:

3.2.1. Sewing.

The process of securing the sections or leaves of a publication by means of thread in such a manner as to insure a consecutive and permanent unit. There are two basic approaches to sewing a book. 1) Through the center sewing frame folds of the sections, e.g., flexible sewing; and 2) through the sides of the leaves e.g., over sewing. There is also a sub-division of the letter, one which involves penetration of the sewing thread through the entire thickness of the text block e.g., side sewing.

3.2.2 Flexible sewing.

No saw-cuts are made at the back. Sections are sewn one by one to stout cords, they ultimately form the raised bands across the back and leather is pasted directly to the back. With the thread needle in the right hand, it is pushed through the inside of the section at the head of kettle stitch mark and with the left hand it is returned again to the outside at the far side of the first cord and passes through again to the inside and sewn round or encircling all the cords similarly, until a knot is made at the kettle stitch

mark. This process should be repeated with the rest of the sections. The knot made at the kettle stitch mark is known as kettle stitch, chain stitch or catch up stitch.

When the needle comes near very cord the thread should be pulled taut and even and not as in the case of ordinary sewing where thread is pulled taut when the needle comes at the kettle stitch mark before a knot is made. It is advisable to tap the sections at the back with a piece of wood or fingers from time to time in order to keep the sewing solid and the swelling at the back reduced as much as possible. Several books can be seen in one frame setting by keeping pressing boards in between the books to give two side to side slips on each side.



3.2.3. Over sewing

A method of sewing the leaves of a book by hand or machine almost always the letter in library binding, The sewing thread passes through the edges

of each “section” in consecutive order, using prepunched holes through which the sewing needles pass.

The over sewing process generally entails the removal of the sections, which is usually accomplished by planing, grinding, sawing, or cutting the spine of the book, thus removing an eighth of an inch or more of the binding margin. Sometimes the spine was first nipped to remove the original backing shoulders before the folds are removed. The book, having been reduced to individual leaves, is then jogged, and a very light coat of glue is applied along the binding edge to hold the leaves together temporarily. A number of leaves, or a “section”, between).055 inch in thickness (depending upon the thickness of the paper) is then sewn, either by hand, or more commonly, in an over sewing machine. The thread passes through the section perpendicular to the plane of the paper (Holloway method) or obliquely. This later, diagonal method is known as the Chives method, which is employed in over sewing machines, Altogether, about 5/16th inch of the binding margin is consumed by the process.



3.2.4 Slide sewing:

A method of sewing the leaves of sections of a book with thread near the binding edge, from front to back through the entire thickness of the text block. When a book is said to be side sewn, it is implied that the text block does not consist of individual sections which are first fastened by themselves and then to each other, but all of the leaves are sewn through at one time. Side sewing is an extremely strong form of sewing, however, it affords very little open ability, unless the inner margin is very extensive, the paper is very flexible, e.g., Japanese sewing, or the book is very large e.g., an unabridged dictionary, also called stab sewing side stitching.

3.2.5 Needles

The long, slender, round steel instruments pointed at one end and with an eyelet at the other and through which the thread passes. They are used to carry the thread through paper or cloth in sewing a book through the folds. The eyelet should be designed so as not to cut the thread and yet allow it to pass freely through the holes made in paper or cloth. The special straight, curved, spiral and/or hollow needles used in machines which sew through the folds of sections, through the side of a pile of leaves, or in lacing sheets together. Most of these needles have the eyelet at the pointed end or carry the thread through the hollow.



3.2.6 Thread:

Sewing is a very important job in binding. The life of a binding actually depends upon the kind of sewing and the material used for sewing. If too thick thread is used for a thin volume, it may cause damage to the book itself and, on the other hand, if too thin thread is used for sufficiently thick volume, there is a danger that the sewing may give way and the binding may break down. The thread to be used for binding should be superior, otherwise labor and money incurred on binding would be a sheer wastage. By whatever standard method a book is bound-flexible, library or “Sawn-in”—its life depends more completely on the thread, cards or tapes than on any other structural components, apart from the paper. Good quality unbleached linen tape or strips of vellum can usually be relied upon for permanence but the hemp cards and linen thread used in books found a century ago have often deteriorated to a serious extent, resulting in loose sections and broken backs.

Thread is a means for bringing together various parts of a book into one whole volume and thus some order is brought out of a chaos. The

materials which are used for preparing thread for sewing the books for binding include cotton, silk, nylon, and linen, etc. The quality and strength of various kinds of threads differ. Though cotton threads are fairly strong but if this compared with the linen thread, it will be found that the latter is cheaper and stronger than the former. Other kinds of fibers like ramie and hemps like manila and sisal can also be used for sewing purposes but these are not in much use. In choosing a thread for a book, whether to be for a publisher's casing or a hand-sewn extra binding, the thickness of the thread chosen must be related to the thickness of the paper and the number of sections. A thread that is too thin will not give a sufficient swelling at the back, to enable the book to be effectively rounded and backed. One that is too thick will produce a book that is too swollen at the back, and this will produce difficulties nipping, rounding and backing, resulting in a tendency to produce creases in the margins and a poorly-shaped back. The modern synthetic fibers because these are much stronger and uniform since each filament is stretched to four times of its original length and it automatically proves the strength of the

thread. Accelerate digging tests, which are considered by many to be much too drastic for paper and textiles very little effect on “Nylon 66” and “Terylene”. These synthetics are free from any tendency to rot when damp and they retain a large part their dry strength on wetting. They are also almost free from contaminating metals which might tend to cause impermanence in polluted atmosphere. All these advantages call for serious thought and its s the writer’s belief that the new materials will ultimately displace the traditional thread.



3.2.7 Thread gauze:

To prove to strength to connecting card board and to increase the life binding, a closely woven

cotton mesh is put on the spine of the book by means of glue and both its ends are inverted into the inner side of the covering board. This is known as 'Thread Gauze'.

3.2.8 Tapes and cords:

Tapes and cords for library binding are made from different fibers. Strips of vellum bring durable and tough are considered superior to types made of other fibers. Nylon and Terylene tapes are superior to those of vellum because of their longer fibers. The help of thread is also taken. These tapes are pasted with glue on the card board used for binding the books.

For larger books, cords made up of pig skin, vellum, catgut are used for ensuring strong and durable bindings. Sisal hemp can also be used for making cords, its s very strong, durable and cheap. "If ordinary binder twine is cut into 12 in. length, knotted at one end teased out to remove loose fibers, knotted at the other end and with the first knot untied, tensed out and freed from the remaining short fibers, it will usually yield about 50-70 per cent of its weigh to of parallel full-length fibers.

These refined fibers are excellent for the raised cords in full flexible binding – they are sufficiently flexible, they allow the sections to be slid over them during rounding and backing and they give slips as strong as the cords themselves.

3.3 PASTING MATERIALS:

3.3.1 Adhesives:

The use of adhesives in book-binding should be regarded as a necessary evil on the principle that joints are potential sources of weakness. It is not so much that the adhesive itself may be weak but that the contact between it and the materials to be joined may be so. Furthermore, most adhesive dry to a hard, horny layer, which, in the case of paper will usually have an abrupt edge, thus, if the paper is bent it will, in all probability, bend sharply about this edge, concentrating most of the stress along it and causing it eventually to crack. This, perhaps, is strongest argument against single page binding, no matter how good the adhesive or how strong the paper.

3.3.1.1 Qualities of a good adhesive;

1. It should be capable of wetting the surface of the papers to be joined together; otherwise the resultant joint would be very weak as the surfaces will main separate from each other.
2. An adhesive should have three stages:
 - (i) Stage in which the surfaces can be freely manipulated as desired. It can be ensured only if the adhesive is in a fluid from.
 - (ii) A stage in which initial setting may be achieved quickly.
 - (iii) A stage in which final setting may be achieved, thereby providing much strength.
3. The adhesive should be as strong as the material to be joined together so that the resultant material remains strong.
4. The adhesive should not be too wet; otherwise difficulties will be encountered while drying the joined materials and the surfaces will be uneven.

3.3.2 Starch paste:

Starch paste is previously used by Egyptians. It has been adopted by modern binders it is very cheap and suitable adhesive for paper and leather. It can be prepared with much convenience by mixing flour or starch, water in 1:10 ratio and heating the same to the boiling point. Care should, however, be taken that it is saved from the onset of *gelling*, moldiness and moisture.

3.3.3 Industrial Pastes:

Starch is used for preparing better pastes while pastes made from flours are liable to putrefaction because the flour contains lot of gluten of the grain or the tuber and it is liable to result in pastes of undesirable colors. The pastes are made from many kinds of starches e.g. common and waxy maize, sago and tapioca, white and sweet potato. It is doubtful if anything can surpass well-made starch paste for simplicity in preparation, cheapness and effectiveness for paper and leather, there is a fairly close chemical and similarity between the cellulose paper and the starch of the paste, while water is an excellent medium for preparing the paste, care

should be taken that no acidic or antiseptic material like alum, is used because it is considered an archenemy of paper. To avoid this predicament, white dextrin should be mixed with straight starch paste, there by reaching one to one ratio. Such a ratio is normal for good paste. Cold water starches or starches which consist of modified starches or starches gaited by heating with a minimum amount of water are considered unsuitable for permanent preservation.



3.3.4 Glues and galantines:

Glues and galantines are prepared from animal skin i.e. the trimmings of the hides and skins used for tanning purposes. For removing hair, these are soaked in lime, and for extracting glue these are

put into hot water. The liquor thus obtained is cooled down and is cut into sheets or slabs which are dried in air.

In case bones are used, these are first treated with dilute acids in order to remove minerals from them. Later on, the processes followed for skins are gone through for getting glues.

Very satisfactory glue for book binders is a light colored cabinet maker's glue. This is rather high in galantine and may set rapidly for some purpose; this is easily remedied by adding a little phenol (Carbolic acid) which has the added advantage of preserving the glue and rendering it somewhat less palatable to insect and other pests.

3.3.5 Other glues:

Other kinds of glues e.g., flexible, liquid and vegetable flues etc. are used for binding purposes. Gum Arabic, gum strip and rubber adhesives are used for some miscellaneous binding jobs, Synthetic adhesive, though costlier than glues and pastes, are also in use now.

3.4 ORNAMENTATION MATERIALS:

Ornamentation of the books and periodicals is an important work of the book binders; the following ornamentation materials are heavily used in the process of book binding.

3.4.1 Band stick (Folding stick):

A hard smooth length of wood, frequently bench wood used in pressing and smoothing the leather over the bands on the spine. The band stick may consist of a narrow strip having a smooth sharpened edge on one side, in which case it is used to work one side of a band at a time, or it may be grooved so that the stick fits over the band. The latter type may have graduated bands of varying widths. It is also called “rubbing-up stick”.

3.4.2 Back Saw:

A short, fine-toothed hand saw stiffened by means of a metal rib along its back edge. It is used to saw-in the kettle kerfs and the grooves or saw-in cords.

Although almost any small saw will suffice in lieu of the back saw, it has the advantage of being

short, stiff and easy to hold. It must be very sharp to avoid tearing the paper, also called “tenon saw”.

3.4.3 Head - Band

A functional and ornamental band at the head and tail of a book between the sections and the spine covering, which projects slightly beyond the head and tail. Originally, the headband consisted of a thong core, similar to the bands on which the book was sewn, around which the ends of the threads were twisted and then laced into the boards of the book. Today, however, the headband is much simpler and is usually made of colored silk sewn to the book or simply attached after the volume has been forwarded. In edition binding they are almost always manufactured separately and then attached, while in library binding they have been replaced for the most the most part by a length of cord around which the covering materials is rolled at both head and tail.

Head bands at one time were distinguished as the “headband” and “tail band”, but both are now called “headbands” or simply “heads”, although the term “end band” to indicate both, single headband

with core of vellum seems to be preferred by some bookbinders.

The original head bands were in strinsically a part of the sewing of the book, and were used in lieu of kettle stitches in linking the sections together. They were a part of the construction of the book, which possibly explains why they were (and are) at both the head and tail, rather than just at the head. This type of headband was eventually discarded, however, because it did not permit cutting the edges subsequent to sewing, despite the fact that it has the great advantage of also banding the top and bottom of the sections together tightly.

3.4.4 Backing hammer:

A heavy iron hammer with a short handle, heavy face, and wedge-shaped, used in rounding and backing books. It is sometimes referred to as a ‘collet hammer’ or bumping hammer”.



3.4.5 Needle holder:

It is heavily used in the process of hand book binding process because books and periodicals very thick in size to face the needle in cords binder face difficulty so to avoid this difficulty binder will use the needle holder.

3.4.6 Touché

There is the wooden and iron mixed tool produce and it is used to make cords in book binding work.



3.4.7 Scissors:

A lot of cutting is needed in book binding. Good quality scissors will save you time and annoyance.



3.4.8 Paring knife

A knife is used for paring the edges of leather to be turned the edges of the boards. The knife has its cutting edges at the end and is ground flat on the

underside and beveled on the upper. There are varieties of knife are rounded; the English paring knife has a flat cutting edge; is also ground at an angle. Except for paring the edges of leather, it is used.



3.4.9 Bench knife

Two blades the upper of which is curved and fitted with a handle, while the lower is drilled and countersunk so that it can be bolted to the bench. Bench knives are made in various sizes to cut from 16 to 42 inches. They are useful for cutting light weight board but are not as heavy or efficient as the board cutter.

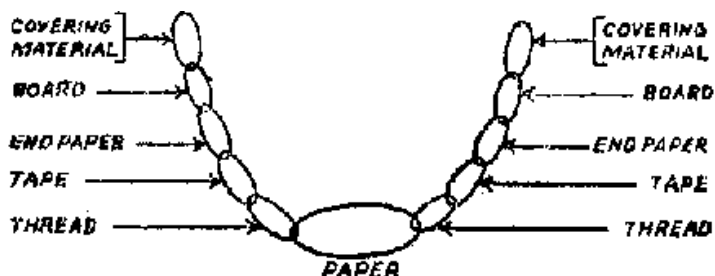
3.4.10 Knife

General knives are also used to card bounds and paper in time work of book binding.



3.5 ANATOMY OF THE BOUND BOOK

Viewed from the angle of binding, a book is a chain of eleven links. It is a symmetrical link with paper as the central link. The following diagram gives a schematic representation of the book as such a symmetrical link.



The diagram discloses the parts of a bound book needing attention while binding.

3.6 BOOK BINDING SPECIFICATION:

Specifications includes instructions prepares for a binder, printer or builder setting out the details of work to be carried out. Today the problem of getting books and periodicals rebound in substantial materials with legible lettering and sound, careful workmanship can be fairly simple matter mainly as a result of the gradual development since the turn of the centuries in the country.

Reinforced binding implies strengthening the structure of a weakened volume usually by adding materials, for example, the strengthening of hinge with cloth or the reinforcing of a page by coring it with tissue.

Minimum specification for class “A” Library Binding:

The council of A.L.A., the Library Binding Institute, the Joint Committee of A.L.A. and Library Binding

Standard and the Book Binding Committee of A.L.A. approved the specifications for Re-in forced (Pre-library bound) binding of new Books in the year (1939) revised in July (1950) as follows:

1 Collating and Mending:

- a. All books shall be carefully collected before being taken part to detect any missing or damaged leaves or any peculiarities of paper or construction that might make rebinding inadvisable.
- b. All tears through print shall be mended with Japanese tissue or onionskin bond, and all tears in margins wit bond paper of suitable weight.

2. Preparation for sewing:

- a. All double leaves, maps, or inserts shall be set out with strips of bond paper, or equal.
- b. Books unsuited for over sewing shall be prepared and reinforced for sewing through their folded sections.

3. Removing Back:

For books that are to be over sewed, folds on the back shall be sanded of with wheel, or removed

by taking a very narrow trim, not more 1/16inch, so as to leave all back margin possible.

4. Dividing into sections:

a. Books that are to be over sewed shall be divided into uniform sections, each section not to exceed. 0.50 inch in thickness, except flexible pulpy paper which may be in thicker sections not to exceed .0.60 inch each.

b. All sections of books in which paper is moderately stiff shall be scored before sewing. (Extra stiff papers unless hinged shall not be over sewed usually these may be sewed through their folded sections after necessary reinforcement of folds)

5. End papers:

a. All end papers shall consist of three functional parts: a pasted-down or outward end-leaf which becomes the cover lining; at least two free fly-leave; and reinforcing fabric.

b. The following three types of end papers shall be permissible:

Type X: Three leaf; single reinforcement; invisible joint; with the inward fly leaf not pasted to the middle leaf.

Type Y: Three – Leaf; single reinforcement; visible joint; with the inward fly leaf not pasted to the middle leaf.

Type Z. Four-leaf; double reinforcement; visible joint; with the two middle leaves pasted together forming a single leaf.

c. The construction of ends paper shall be such that the sewing will go through the reinforcing fabric the same as through the sections of the book.

6. Sewing:

a. Most books having proper inner margins and suitable paper shall be sewed with thread by over sewing method, either by machine or by hand. If sewed by machine, all section shall be pasted. No over sewing will extend more than 3/16 inch in the form the back edge of the volume, and no nearer to the head and tail than ½ inch.

b. Exceptional books such as little folks, picture books, music, certain at books, and some reference books, shall be sewed through their folded sections.

When such sewing is used, weak folds of sections shall be reinforced with strips of bond paper, and the sewing shall be done on three or more reapers or cords, with linen thread, usually one-on.

1. Trimming:

All books shall be trimmed as slightly as possible (or left untrimmed if so instructed)

2. Edges:

Edges shall be sprinkled, stained, or left plain, instructed.

3. Gluing, Rounding, Backing, and Lining:

Backs of books shall be glued with approval flexible glue, well rounded and backed, and lined with approved Canton flannel extending to within $\frac{1}{4}$ inch of head and tail of books, and well onto each end paper (approximately 11/2 inches).

4. Covers:

a. Covers shall be made heavy weight starch-filled or pyroxylin filled buckram or drill base pyroxylin-coated material of a quality at least equal to the standards set forth in part V of these specifications.

b. Covers shall be made over hard rolled binders board, with uniform squares, in a neat and workmanlike manner. The thickness of the board shall be suited to the size and weight of the book.

c. The cover material shall be turned in enough to insure proper adhesion (normally 5/8 inch is necessary)

5. Casing in:

Books shall be cased in with glycol paste, or equal, and pressed between metal-edged boards until thoroughly dry.

6. Lettering:

Lettering should be done after proper sizing in clear type of a size appropriate to the book, in style and position as instructed, using X.X. 23 carat gold deeply impressed to insure long adhesion to the cover. At the option of the library, approved colored foils or inks may be used; but no gold-colored substitute of any kind may be used without the express approval of the library.

7. Protective Lacquering of Backs:

All books shall be sprayed or treated with a protective material evenly and lightly applied over their lettered backs.

8. Inspection:

All books shall be carefully opened out and critically inspected for defects in binding or errors in lettering.

BINDING OF PERIODICALS:

1. Collating and mending:

a. All issues shall be carefully examined to detect any damage or any peculiarities of paper or construction in order to determine the most suitable method of binding or the necessity for special handling.

b. All issues shall be carefully checked and collated for proper sequence, pagination, title-page, index, inserts, and supplements. Incompleteness or defects shall be reported.

c. Inclusion or omission of covers, advertising, and similar material shall be handled in accordance with instructions.

d. Foreign language and technical magazines shall be given such special checking and collation as may be necessitated by the nature of the contents.

e. All tears through print shall be mended with Japanese tissue or onion-skin bond, and all tears in margins with bond paper of suitable weight.

2. Preparation for Sewing:

a. All double leaves, inserts, and folded sheets shall be set out with strips of bond paper.

b. Volumes unsuited for over sewing shall be prepared and reinforced for sewing through their folded sections.

3. Removing Backs:

a. For margins that are to be over sewed, folds on the back shall be stranded off with a sand wheel or removed by taking a very narrow trim, not more than 1/16 inch, so as to leave all back margin possible.

b. Magazines that are wire-stitched in bulky “saddle” style, and which have excessively narrow margins, shall be prepared for over sewing by being

slit with a knife by hand (instead of being sanded or cut off).

4. Dividing into sections:

a. Magazines/Journals that are to be over sewed shall be divided into uniform sections, each section not to exceed not 050 inch in thickness, except flexible pulpy paper which may be in thicker sections not to exceed 060 inch each.

b. All sections of magazines in which paper is moderately stiff shall be scored before over sewing. (Extra stiff papers unless hinged shall not be over sewed, but may be sewed through folded sections after necessary reinforcement of folds.)

5. End papers

a. End papers for ordinary periodical-volumes shall of the types and construction permissible for books, as specified in partial section 5.

b. End papers for heavy, bulky or large periodical-volumes shall receive special reinforcement in accordance with their special needs. Materials like those specified for newspaper – volumes shall be used whenever necessary.

6. Sewing

- a. Most periodical having proper inner margins and suitable paper shall be sewed with thread by over sewing method, either by machine or by hand. No over sewing method, either by machine or by hand. No over sewing shall extend more than 3/16 inch in from the back edge of the volume and no nearer head and tail than ½ inch.
- b. Because of narrow margins, or for flat opening, exceptional periodicals shall be sewed through the folded sections. When such sewing is used, all weak folds shall be reinforced with strips of bond paper, loose leaves hinged in, and the sections sewed on four tapes or cords (or more, according to height of volume), with linen thread, usually one-on.
- c. Special arrangements, whenever necessary, shall be made with the library as to the sewing or other handling of periodical which are originally bound by the spiral, plastic, or similar methods.



7. Trimming

All periodical volumes shall be trimmed to sample, or recorded size, where instructed; otherwise as slightly as possible.

8. Edges.

Edges shall be sprinkled, stained, or left plain, as instructed.

9. Gluing, Rounding, Backing, and Lining.

Back volumes of periodicals shall be glued with approved flexible glue, well rounded and backed, and lined with approved canton flannel, extending to within $\frac{1}{4}$ inch of head and tail of volume, and well onto each end paper (approximately 1 1/2 inches).

10. Covers:

- a. Covers shall be made of heavy-weight starch-filled or pyroxylin filled back ram, or sateen-base pyroxylin-coated material of a quality at least equal to the standards set forth in part V of these specifications.
- b. Covers shall be made over hard-rolled binders' board, with uniform squares, in a neat and workmanlike manner. The thickness of the board shall be suited to the size and weight of the volume.
- c. The cover material shall be turned in enough to ensure adhesion (normally 3/8-inch s necessary).

11. Casing in

Periodicals shall be cashed in with glycol paste, or equal and pressed between metal – edge boards until thoroughly dry.

12. Lettering

- a. Lettering shall be done after proper sizing in a clear type of a size appropriate to the periodical, in style and position as instructed, using X.X. 23 carat gold deeply impressed to ensure long adhesion to the cover.

b. At the option of the library, approved colored substitute of any kind may be used without the express approval of the library.

c. Binders shall keep necessary records by which uniformity of sets may be maintained.

13. Protective Lacquering of backs

Periodical volumes shall be sprayed or treated with a protective material evenly applied over their lettered backs.

14. Inspection

All periodical volumes shall be carefully opened out and critically inspected of defects in binding or errors in lettering.

For books which are to be either rebound or which are bound for the first time, **Dr. Ranganatha's** specifications are given below in brief:

1. Collation: All books received by contractors are to be examined and collated and any found to be imperfect or seriously damaged are to be returned unbound to the Librarian.

A periodical shall not be held to have been collated properly or to be perfect, unless all the parts of a volume are bound in correct sequence

of pagination and the usual title and contents pages and indexes are inserted in the proper places.

2. Wrappers and advertisements in periodicals and books are to be bound in, if the contractor is instructed to do so; otherwise, they are not to be bound in.
3. Sewing: Books printed on paper of good quality are to be sewn one sheet on (except where thinness of paper makes it necessary to sew two sheets on) with unbleached thread of suitable thickness over unbleached linen tapes. Books printed in soft, spongy or brittle paper are to be lined at inner and outer folds with strips of this but tough paper before they are sewn. All sections broken at the back are to be lined with tough paper or linen strips, and where necessary neatly overcast on modern methods of cross stitching before being sewn to the tapes. The first and last sections of all books are to be enclosed at back in linen strips. All separate leaves, plates, maps, plans, etc. are to be mounted on guards of linen, or tough thin paper and to be sewn in. Pasting on is not be permitted. Two of the tapes are to be placed within one inch of the head and tail of each

book. Straight-line machine stitching will not be accepted.

4. End papers: End papers are to be of good opaque paper of approved mild color, with at least one plain white leaf between each of them and printed matter. The end papers are to be made with strong linen of cloth and to be sewn on as a section.
5. Cutting edges: Unless otherwise instructed the contractor is to cut edges of book accurately and take care to leave margins as wide as possible.
6. Forwarding: Unless otherwise directed, all books should have French joints and tight or close flexible backs with the covering materials attached directly to the back-tapes are to be firmly inserted between split boards.
7. Leather is not to be unduly pared down or unduly stretched in covering. The covering material of back is to extended over boards to at least one-sixth of the width of the books should open up freely and lie flat.
8. Lettering: Lettering is to be impressed in best gold directly onto the materials which covers the book.

9. Sizes: The size of a book to be determined by the measurement of the board, the square of which must not exceed one eighth of an inches in books up to the crown octavo, and proportionately for larger sizes.
10. Material to be used for in forced binding should be of best quality.

Dr. S. R. Ranganathan the father of library science in India, points out the necessity of laying down detailed specifications of a Library Binding. He says “Unlike printing, binding is a very vital affair for Library. Hence it must have a voice in all matters connected with the binders. The standard of binding in India appears to be poor at present. I found that reinforced library binding was quite unknown in Madras thirty years ago. Even such things as split boards, and French joints were absolutely unknown to the binding trade. We could not get, for example; mill boards in sufficient quantity, as the binding trade was using only inferior straw boards. We could not get, again, unbleached tape for sewing. Buckram or any other unbleached linen as covering material was not available. It took us some time to teach the workmen the correct way of binding. During World War II, what had been gained has been lost. We are in a bad position. Hence, it is necessary that the

most detailed specifications for library should be included in the tender form.

Douglas Cockrell suggests the following specifications: -

1. Straight-line machine stitching may be allowed for thin books.
2. Unbleached-linen or nylon thread of good quality and strength should be used for sewing.
3. Tapes should be of unbleached linen on strong cloth.
4. Plates, maps and drawing should be properly guarded and the guards should be sewn through instead of pasting.
5. Damaged leaves should be mended properly before these are sewn.
6. Books of handmade paper should not be unduly pressed.
7. If there are any defects in the books, these must be brought to the notice of the Librarian.

Chapter – 4

TECHNIQUES AND TYPES

Book binding is a term for the organization arrangement of different stages that make up a book. What do we mean by the size, shape, color, weight or the appearance of any object? Why should a book need to be well designed? The answer is that the book, whether expertly planned or just thrown together has its own design, but if it well designed, it is more useful.

“The designer of book is somewhat like an architect. An architect plans the size and shape and interior arrangement of a building suit its intended use. A home must be comfortable, an office convenient, a factory efficient. He also tries to make the building good looking inside and outside, and strong and durable. And the structure must be built within a planned budget”. (1)

The book designer works towards similar goals. Each different kind of book (encyclopedia,

text book, novel, children's story, biography, poetry collection) gives him special problems that he must study and solve. This purpose is to make the novel pleasant to read and appropriate looking in relation to its contents. The text should present facts and ideas in clear and orderly way. The encyclopedia must be a convenient source of information that is easily located and logically arranged.

When books were copied out-laboriously by hand, they were rare and prized possessions. The covers were often decorated with gold and jewels, and the few people who could afford books cared as much about the handsome binding as the contents.

These decorative covers hid different painstaking binding stages as follows.

4.1 TECHNIQUES OF BOOK BINDING:

4.1.1 Collation

The first job involved in preparing books for binding is to collate them. It is ensured that the paging sequence is in order and that no page is either defective or missing. It is difficult to collate manuscripts and older printed books because these

are generally not paged. It is checked if there are equal number of leaves in all the sections of the book at each side of the sewing.

4.1.2 Pulling Down:

The collated books are pulled down by the assistants or binders themselves. It means that older binding materials are taken off from the binding section are separated and all the plates, illustrations and maps are repaired. It would be better if these books are packed by a tape or a string so that these may not be disarranged.

4.1.3 Refolding:

In case the sheets of books to be bound are not properly folded, these should be refolded. “The folding of the whole book may be corrected by taking each pair of leaves and holding them up to the light and adjusting the fold so that the print on one leaf comes exactly over print on the other and creasing the fold to make them stay in that position.

4.1.4 Guarding:

For strengthening the folds of damaged leaves or maps, plants, and pictures slips made of thin paper or linen are used for guarding.

Whatman's bark notepaper is considered suitable for guarding purposes. Pieces of this paper or some other thin. Paper is prepared, folded and attached with the card board. In order to avoid the swelling of the back of the guarded books, the sheets should be pressed before these are sewn. The amount of guarding is related to the care taken in pulling down a book and the bulkiness of the paper used for printing the book. An excessive amount of guarding will produce a spine, which is swollen, that if it is nipped sufficient to allow it to be adequately rounded, there is a risk of squashing the threads through the paper.

4.1.5 Throwing out:

When maps diagrams in a book are guarded the process is known as: "Throwing out". The size of the guard is equivalent to that of the sheet. In case, insertion of a small plate or some other figure or leaf is to be made in a bigger book, the former should be got inlaid on a thicker paper than the plate itself.

4.1.6 Flattening

In case of wrinkled leaves of a vellum book, flatten them by damp blotting paper and dry them under pressure. “The process of flattening, although so simple, requires the utmost care. if the blotting paper is used to damp, a manuscript may be ruined; and if not damp enough, the pressing will have no effect.

4.1.7 Sizing:

In case of soft or woolly paper, (It’s specially found in order books because the size of the paper perishes) it is essential to preserve it properly by resizing it. It can be ensured by dipping to the spoiled paper into hot solution made by dissolving an ounce of isinglass or gelatin in a quart of water at a temperature of about 120F the pencil or dust marks should be removed beforehand.

4.1.8 Washing:

In case the stains or other marks of ink etc. are so deep and strong on the paper that these are removed by sizing, these should be washed in a solution made by dissolving an ounce permanganate of potash in a quart of water which should be heated

slightly. The paper is washed by putting the sheets in this solution and keeping them in solution until they become dark brown.

4.1.9 Mending:

In case the sheets of books are torn (generally found in older books), these should be mended by using similar paper.

4.1.10 End papers:

It is found that the leaves in the beginning and at the end of old books get spoiled because these are subjected to much pressure since these perform a protective function, many leaves of good paper should be put on both ends of the book. This is attained by pasting the folded sheets of paper of larger size than the book up to one – eighth of an inches from the fold of the said sheet.

4.1.11 Leather joints:

Sometimes, pieces of thin leather are used for covering the weakened joints inside the card board by this method proper finishing is attained.

4.1.12 Pressing:

The section of a book in which end papers to be pasted should be pressed under pressing boards keeping in between tin sheets covered with ordinary paper. A standing press can also be used.

4.1.13 Trimming the edges:

After the sheets are passed, the edges of the sheets of the book are trimmed. It is done either before sewing or when the card-board are to be cut. Special care should be taken in trimming the leaves so that printed matter is not cut and smaller pages are not touched.

4.1.14 Edges gliding:

The trimmed sheets are glided by ‘knocking up. It is attained by bringing to the front as many short leaves as it is possible. This is highly scrapped by pressing them in a “lying press”. Red chalk paste is applied on the edges by dipping the brush in this mixture and the gold is spread softly and evenly and is dried under normal temperature.

4.1.15 Marking up:

The backs of trimmed sections are marked for the guidance of the person who has to sew the sheets. Generally, five bands are used for sewing. So, the back is divided into 6 equal portions. These are made distinct by pencil lines drawn across the back of the book.

4.1.16 Sewing:

As we know there are three important types of sewing types in practice. But when we examine the sewn book will show that while the sections are linked together with thread, the book block is in no way a homogenous whole. It is achieved by an application of adhesive that is carefully brushed between the sections so that a minimal film is visible after drying.

The spine folds letterpress books tend to be rounded and books in this category require a thin flexible adhesive preferably of low moisture content. In practical this means high-grade flexible animal glue or a suitable poly vinyl acetate with minimum water added; excessively wet adhesive may swell the spine unnecessarily. For gluing the spine of

account books, a thicker adhesive is needed to till the space caused by thick sections and the sharp fold used.

Drying may take from ten minutes to two hours depending upon the type's adhesive used the atmospheric conditions pertaining at the time. Distortion that occur at this stage is very difficult to evaluate and great care should be taken to ensure that the book is allowed to dry undistributed with at go to the end papers.

4.1.17 Fraying out slips and Gluing-up:

After sewing, the cords are cut off up to within about two inches of the book on each side and free portion, which are called slips. These are subjected to flying out processes. The back of the book along with the protecting boards is screwed up into the lying press and hot but not very thick glue is put in such a way that it reaches every section.

4.1.18 Rounding and Backing:

Rounding process consists of placing a book somewhat projecting over the edge of the press. It is than hammered by the workman on both sides. The binder must be very carefully while subjecting the

book to rounding because excessive back margins of the sheets are taken up by rounding. If the back is left very flat, there is a danger that the book may become concave I due course of time.

The backing process consists of making a groove into which the edges of the boards properly fit. Besides, the backs of sections are hammered one the other from the center outwards on both sides so that a groove is formed.

These processes are aimed at controlling the swelling of the back of the book which caused due to sewing process.

4.1.19 Cutting and attaching boards:

The boards are cut to size either by a cutting machine or by shears screwed up in a 'lying press'. The plough is used for having straight and square boards. Fairly thin paste is used for lining boards in case split boards are used. It should be ensured that the height of the boards allows some projected end on all sides so that the boards are marked with pencil in accordance to the position of the slips. Another parallel line is drawn at half an inch distance towards the inner side. Points at which the

lines cross, holes are made by binder's bodkin from the outer side on a lead plate. After turning over the board, second series of holes is made reduced in size. These are put into the holes of board from the outer sides and passed back through the second series of holes. These free slips are cut and hammered so that these are riveted into the board.

4.1.20 Cleaning of the back and pressing:

After the boards the book is pressed and the back is soaked with paste. The surplus glue is scrapped before it goes dry.

4.1.21 Forwarding:

The knife used for cutting edges is very sharp; otherwise there is a danger that the paper may be torn. Top edges are cut first very carefully and then the other edges are cut.

4.1.22 Gliding and coloring the edges:

If the edges are not glided at the time of trimming the edges, these are glided after cutting the boards. "The purpose of gliding or coloring the edges of a book is primarily protective as the intention is to give a smooth solid surface that will prevent dust being admitted"

In gliding a book, the following processes are involved:

1. The book is locked in a press and the edges of the book are scrapped either by a steel scraper or a piece of glass.
2. It is sand-papered.
3. A coating of black lead or red ochre is given.
4. A coating of glair is given. It is made from the egg albumen.
5. The gold leaf of an appropriate size is floated on the surface of the edges.
6. As soon as the glair dries, the edges are rubbed by a sheet of paper by keeping in between either an agate or blood stone across the leaves.
7. The edges are afterwards waxed and brushed.

Edge-gliding is achieved by two methods i.e. fore-edge painting and buffering. The former method consists of scrapping smooth the fore-edges and the painting of fore-edges and the painting of fore Edges in fanned position. The second method consists of denting, marking and pricking the already glided edges with heated tools.

4.1.23 Fixing head bands and lining-up of the spine:

Head bands in machine and craft bindings serve as decorative pieces. There are many methods of lining up the back. The common feature of these methods is smoothening the surface of the spine by gluing over it a craft paper.

In order to serve the spine from the cracking, hollow backs are recommended. These hollow backs are achieved by gluing on the spine heavy wrapping paper. The width of this paper is three times of the spine and its length is bit larger than that of the spine. A tube of the paper is attained by gluing two thicknesses apart from the spine and one thickness with the spine. This method known as ‘one on the off’ is an English variety.

4.1.24 Covering:

A binding is covered wholly or partially by leather or cloth. The partially-covered binding may be either “three-quarter bound “or half -bound” The former is achieved by covering the back fully and the one-third of card-board width –wise by leather. In the later method only, the back is covered by

leather and it extends to about one-fifth of the width of the card-board. Similarly, cloth binding is secured. The projecting skin or cloth coverings are trimmed. To get and dried up properly, the coverings are trimmed. To get it and dried up properly, the books are tied round the joints at the joints at the backs.

4.1.25 Finishing:

The actual technique of finishing involves the preparation of the leather, the preparation of the design, the actual tooling and variation in the technique of decoration.'

The lettering is of two kinds i.e. blind and gold-tooling. In the former case, no material such as gold leaf etc. is used while in the second case, lettering is done with foil, gold leaf or some similar material. the tooling can be done in two ways i.e. by applying the binder's type by setting it up in pallet or stick. It is used after heating it. The type is composed in a stick by the finisher or his assistant and is heated after fastening it in the frame which has got a wooden handle. This heated type stick is used on the spine or front board either with or

without the foil or gold leaf. This apparatus and method of lettering is a bit expensive one. Only larger libraries can afford it.

Putting individual letters by an electric pen may do the second type of lettering. Other tools used for lettering and tooling consists of fillet or roll i.e. a metal wheel that carries one respective design and gouges used for having curved lines. The leather is smoothened by working a heated polishing iron on its surface. The dry leather is then washed in water with acid qualities is used. A paste wash or gelatin wash is given to it, as the case may be.

The design of tooling is decided by the binder. It may be worked on the paper. The latter is subjected to tooling. The lettering is done on the spine by one of the methods mentioned above.

Though the order of the main stages of binding consists of preparation, forwarding and finishing, yet the binders doing the binding by hand do some forwarding jobs in the end. For example, the end papers are attached to the hard-boards as a last job and thereafter, the books are put inner some

pressure so that a smooth and curve less binding is ensured.

4.2. TYPES OF LIBRARY BINDING:

It is a special kind of binding known as extra or luxurious binding, which imparts great strength and much durability to the book so that it may withstand severe library use.

The sewing in this case is generally done by hand, but if there are enough book to bound at one time, sewing can also be done by machinery. Normally cords are used and laced through strong black board, but if necessary, even imperfectly dyed skin may be used because it does no harm. Lastly, even thicker leather can be used with the help of a joint with corresponding gain in strength. A joint is nothing but a free-swinging joint produced by setting the cover board a little distance away from the raised edge or flange. It also known as open joint. The joint leaves a space of about 1/8 of inch between the edge of the cover-board and the back, which enables the leather to bend down when the book is opened.

4.2.1 Publisher's Casing:

It is same as case binding or case work. It is different from binding altogether because the case in this method is made separately and then lightly attached by glue to the book. At first the sheets are sewn on to a strip of some linen mesh or mull and short tapes up the back and the case is then attached to the mull and tapes by means of paste or glue. As such, one can easily see both the strip of linen mesh and the tapes inside any cased book because they are not inserted between split boards as they are done in binding but merely covered over by the end paper. A cased book cannot, therefore, withstand heavy library use because the connection between the case and the book is rather loose, being dependent on the strength of the tapes and the end-paper as well as on the life of the glue which holds them together. As regards materials and methods straw board and cheap cloth often go in to its making and the whole process is now carried out by machinery.

Publisher's Casing has some serious disadvantages. For example, when a cased book has to be bound, a second set of sewing pressings have to be made in

the folds as in re-binding. secondly, casing adds much to the price. It is really an expensive luxury.

4.2.2 Edition Bindings:

The kind of book-binding that is furnished to the book trade goes by the name of Edition binding. That is to say, it is quantity binding in uniform style for a large number of copies of single titles.

4.2.3 Publisher's Bindings:

It is the binding of a book as it is issued by its publishers. It is almost identical with edition binding and commonly uses ordinary cloth.

4.2.4 Reinforced Binding:

It is a term loosely used by publishers for edition binding which profess to be strong enough to withstand library use. Sometimes it means pre-library binding, i.e., binding prior to or at the time of original sale.

4.2.5 Reinforced Library Binding:

Normally it means a secondary binding in pre-library-bound style. Sometimes, however, it is used to refer to a pre-bound book in which the publisher's original cover is retained.

4.2.6 Perfect Library Binding:

It is a misleading term which in fact means just the opposite of what it literally suggests. In this process as there is no sewing, all the folds are cut off and the edges of the leaves are then fixed together by some adhesive. The advantage of this binding is that the book opens quite flat. But its disadvantage is rather serious and it is that the leaves fall out as soon as the adhesive loses its strength. Indeed, this binding lasts as long as the adhesive remains.

4.2.7 Full Calico:

A book is said to be full bound when it is bound completely (both back and sides) with any one material. Truly speaking this term should apply only to calico binding.

4.2.8 Half Calico:

It is a style of binding having leather back and leather corners, and cloth or paper sides. A book is, therefore, said to be half calico when it has the side of cloth and the corners and face or back of leather, vellum or some other materials different from the sides. This makes an ideally cheap and durable binding, showing a face of calico,

sometimes ornamentals, when placed upon the shelf. Even when leather is justified, it is wasteful to bind books in full leather. Indeed, half calico is quite adequate even for the larger books.

4.2.9 Quarter Binding:

It is the binding of a book in cloth-covered boards, with leather backs in which the back materials extend slightly on to the side. It may have also paper-covered sides, with cloth or leather backs. Quarter binding is quite adequate for smaller, books, for limited and private press editions.

4.2.10 Three-Quarter Binding:

This is similar to half binding except that the leather extends further on the side, roughly to three-quarters of half the width of the sides. In this binding corner are proportionately large.

4.2.11 Tight back and hollow back:

When the covering materials is stretched over the boards and is firmly pasted down the spine of the book, the book is said to have tight or flexible back. In tight back binding the strain is, therefore, distributed over the whole spine. It is called 'hollow back' because it opens the book, one can easily see

down between the back of the book and the back of the board. If one can, one is sure to conclude that the book has hollow back. In this kind of binding instead of distributing the strain over the whole spine the binder throws it only over the joints and thus reduces the strength of the binding.

4.2.12 Full-leather binding:

Full-leather binding implies that whole of the hard board is covered by leather. This binding is recommended for those books which are expensive and rare and those which due to constant use are liable to easy wear and tear. Such bindings are very costly. Full-leather binding are given to reference books such as encyclopedias, dictionaries and atlases etc. Leather is prone to decay and to avoid it, a constant care should be taken to provide greasing to such bindings. These are also liable to crack if these are kept unused for a long time.

4.2.13 Half-leather binding:

In such bindings half of the card board is covered with leather while the rest of it is covered by cloth or buckram. The back and the corners are covered by leather because there are the portions of

the books which have to bear lot of wear and tear. This kind of binding should be given to heavy materials like backsets of periodicals and magazines, newspapers and other serial publications.

4.2.14 Binding of other Reading Materials:

Journals and periodicals are important tools for references and research especially in academic and special libraries. These are preserved properly for maximizing their use. Efforts are made to have complete volumes of periodicals because fuller information on various topics can be had only when all the relevant issues are label to be lost. Therefore, it is desirable that all the issues of a periodicals should be got bound as soon as the volume is completed and title, contents and index pages are received.

In case the library adopts a policy of lending individual issues of periodicals, it would be economical and convenient not to get these bound for some time. If these magazines are loaned on interlibrary loan, it would be economical to get individual issues bound separately.

But all the periodicals are not preserved. Therefore, all of these need not be bound. Only learned periodicals are preserved for future use. So, these should be got bound. The kind of binding should be decided so as to fulfill the following pre-conditions:

1. The binding should be such that the pages of the volumes can easily lie flat for photocopying purposes.
2. The binding should be strong enough to bear the continued strain and use.
3. Before sewing is undertaken, all the wire stitching should be removed from the volume.

The following kinds of binding should be provided for the periodicals:

1. Leather – for those heavily used.
2. Cotton-calico or linen buckram-for those lightly used.
3. Cotton-calico or linen buckram with paper or board sides for those subjects to even less wear and tear.

The periodicals present many problems to binders because contains much superfluous matter like advertisements these do not have any permanent or research value. Moreover, some periodicals give rise to problems of collation etc. due to their varied paging systems. The following steps should be taken before periodicals are sent for binding:

(a) All issues should be examined to detect any damage, i.e. clippings, tears, and penciled comments, etc. All defects should be noted.

(b) Each volume checked to see that no numbers are missing and then collated in proper sequence with consecutive pagination.

(c) If any supplements are included with different pagination, the general practice is to place them with the issue with which they were published, although an alternative method is to place them at the end of a sequence.

(d) Make sure that the title page and index is included. The title page is placed at the beginning of a volume and the index at the end. Some publishers, however, begin the index on the reverse side of the title page, which leaves no

alternative but to place the index at the beginning of a volume.

(e) Tie up volume tape for dispatch to the bindery. If two volumes are to be bound as one, they should be tied together and instructions accordingly entered on the binding slip. The use of string to tie up periodicals is apt to damage them. If, following collation, a set is found to be too incomplete to send immediately to the binder, a different colored tape may be used to distinguish it from those which are ready.

One copy of the list of books sent for binding should be kept in the office while the other copy should be sent to the binder along-with standing instructions for binding. These instructions, in addition to the usual ones, should include the following:

1. Brief title should be given on the top of the spine.
2. The volume number along with month and year, should be given in the middle of the spine.

3. The call number and location number should be given one inch above the bottom of the spine.

The binding of rarely used periodicals or the value of whose contents is little, would be wasteful. These should have label holders on one of the out-sides. The little, volume number, year and call number should be provided on the label holders.

4.2.15 Binding of Pamphlets:

Pamphlets are very thin in volume, these have paper covers. ‘the majority of those pamphlets which are considered to be worthy of permanent preservation can be sewn and pasted into pamphlet cases. This process necessitates guarding the spine of the pamphlet with two sheets of white cover paper and a strip of white linen, all of which are then sewn together in conventional way through the fold of the single section. The case is made quite separate, usually in quarter cloth, and the pamphlet is then placed in the case and the end papers and reinforcements are pasted down. a superior type of case with quarter leather and good cloth sides is occasionally used, but this would seem to be rather

heavy and extravagant use of materials under normal circumstances. Commonly, card boxes are used for keeping pamphlets. Slander Book Box is a well-known variety. Its name is after its inventor who belonged to the British Museum. Many types of boxes can be used for this purpose. These include ‘telescope type’ which is made in two parts and fits together by means of a deep collar on the bottom part of the box over which the top part of the box can slide.... Slip case or thumb case which ‘is usually tailored to the individual book and consists of a five sided, limp cloth-covered case which when made correctly should fit snugly so that the case does not slip off easily nor should it be so tight it must be pulled off’ and the Chinese which “is a loose protective covering for fine binding or a rare books, either as alternative to or in addition to the Slander”.

4.2.16 Music Bindings:

Distinct works are found in full cloth and the spines are properly lettered. Complementary parts of music are put in the pockets specially provided in the conventional binding covers. Sheets music is generally bound either as a composite nook or these

sheets are filled in manila covers and are kept in vertical file cabinets. The latest method of binding music is the lamination of sheet music with a transparent film.

4.2.17 Binding of Maps:

Generally, three methods are used for protecting maps. The maps are either mounted on linen, or strong muslin, or these are subjected to edge binding for which self-adhesive tapes are very cheap and easy to use or these are laminated with a cellulose acetate film.

4.2.18 Binding of Manuscripts:

The material originally used in the Public Record Office and outlined by Sir Hilary Jenkinson in his book *A Manual of Archive Administration* is now widely used by archivists and librarians. The process consists of fastening a fine silk net over the surface of the manuscript or print by means of a carefully prepared chemical-free paste made from corn-flour. The finished work is nicely strengthened by a process which is accepted as appropriate in our most important depositories, but now cellulose acetate is used for this purpose.

4.2.19 Binding Routines:

After ascertaining the need of binding, rebinding or mending of books, the material to use for binding, kinds of library bindings, the librarian is position to control the library bindery. But they would be more successful if he also acquaints himself with the routines. His aim is to ensure standard binding at minimum cost and within minimum amount of time. Before collecting books for binding, the librarian should know the routines followed in binding of books and the cost of binding so that the expenditure on binding remains within the sanctioned budget for the purpose.

Chapter- 5

SUGGESTION AND CONCLUSION

The study has helped to obtain a total perception of different aspect of library binding in the context of academic education. A few tentative suggestions about the book binding to observe by librarians, after getting the books bound from commercial book binder.

When books and periodicals are returned from the bindery the person in- charge of binding will, of course, inspect them carefully, to see that the instructions to the binder have been carried out in a careful and workman-like manner. It is comparatively easy to detect the more obvious faults, if there are any, in volumes not too carefully bound or rebound. Not every person, however, who is responsible for the library binding knows how to detect the less obvious faults; hence, it is important that he know how to judge the good and bad points in a rebound book. this is all the more important if

he must evaluate the work of some binder who is trying to obtain the library's contract with no better argument than low prices, a point by point comparison of finished books are to be observed by the section in charge.

5.1 GENERAL APPEARANCE:

The first step in examine a binding is to consider the general appearance of the closed book. The cover should fit at the back and should be neither too loose nor too tight; it should be the proper size for the book and should not project so far beyond the body of the book as to appear oversize nor be cut to so close to the book itself as to give an over trimmed appearance.

The boards of the cover should be of proper thickness for the book. Joints should be straight and neat, and the cover should show no warping. Edges of the book should show no warping. Edges of the book should be trimmed neatly.

If besides being bound properly a volume is to look well throughout its lifetime, careful inspection of the lettering should be made. the lettering should be entirely legible, well centered

and arranged on the surface where it is displayed, and the lines should be straight. If the lettering is to last in a clear and easily read condition, the gold or foil should be impressed deeply and uniformly. Uneven impression is often found in the work of careless or inexperienced binders, but it may not be noticed at the library until months later, when its separate letters become indistinct or disappear entirely.

Waterproofing over the lettering should be of a clear material, lightly applied and so evenly spread as to be practically unnoticeable.

5.2. INTERIOR WORKMANSHIP:

In opening the volume of further inspection, lay the volume flat on a table and beginning at first and last section slowly and carefully open and press down a few pages at a time, progressing towards the middle of the volume and noticing whether the volume opens satisfactorily considering the nature of the paper and the fact that the volume has just been bound. Inner margins should be examined to see that they have been so narrowed moderately stiff, it should have been scored; i.e., a crease should

have been made lengthwise of the page near the binding edge of each signature. Front and back covers all the way and fan out the pages from the middle, to see if the sections are uniform and that the back is flexible.

Examine the stitches, as they appear along inner margins, to see that they are a uniform distance apart and seem to be done in a neat manner.

Careful inspection and examination should be confined to just one or two volumes in each lot returned from the bindery, but should be given to as many books as possible, and by different staff members. It will be found very much worthwhile if at least one person in each department and branch library is taught how to examine those received.

If it is found that the binding conforms to specifications have been followed and that a Class “A” library binding has been provided.

Of course, a complete examination of the sewing, gluing and backing cannot be made without dissecting the volume. This is not desirable unless there is serious doubt that Class “A” binding has been furnished. In such a case, the matter should be

reported to the Joint Committee of the American Library Association and the Library Binding Institute, whose duty it is to see that at least certified binderies deliver Class “A” bindings when asked to do so. The committee provides a free and unbiased examination service for such volumes through its subcommittee on appraisal.

5.3. LATER EXAMINATION:

Bindings should be examined not only when they are received fresh from the library, but also when the rebound book is worn out and is to be discarded. Then it can be determined whether or not the library has received its money’s worth. Such an examination will show that it is not the first cost of rebinding that is of most importance but that it is the number of issues and the number of years the book has given service that really count.

With the poor grade of paper used in many books being published today, and with their narrow margins, too much cannot be expected even if the books have been bound by the best binders. If a book is found that has cracked open in the middle, examine it closely before blaming the binder. The

paper, too porous to hold stitches any length of time, may be to blame, or the binding margins may have been so narrow that the impatient reader may have forcibly broken its back.

Every volume is thoroughly inspected before it leaves the bindery, but binderies, like libraries, cannot always maintain staff with the desirable amount of training and experience. Mistakes will sometimes creep in. When found, the volumes having mistakes should be returned to the binder without delay; mistakes are not too readily rectified or adjusted after a lapse of considerable time. If no mistakes or imperfections in binding are found, a word of appreciation from librarian would encourage the binder and his staff to increase their efforts to give their best possible service.

5.4 CONCLUSION:

“Books are the life-blood of great thinkers of the past and the present. They represent the life-long labors and researches undertaken by philosophers, sages, scientists, and litterateurs. It is a very pleasant, though difficult, task of librarian to preserve the treasure of knowledge which is found

in the duty to conserve this knowledge in an appropriate manner.” [2]

Books deserve care and respect. They should be properly handling so that they may serve many readers. Careful treatment will make them last longer so that the library will save and have more money for purchase of other books. Thoughtless readers, who mark books, turn down the leaves or damage them by tearing out pictures, lessen the pleasure of future readers and cause the books to be discarded sooner. Through carelessness readers sometimes injure books by exposing them to rain or storm, by letting them become soiled, and especially by straining the stitching. Books get injured if pads of paper, note books, pencils or other thick objects are placed inside them. The spine of a book where the leaves are fastened has a coating of glue. Sometimes, the spine of a new book breaks if we force it open and the leaves near the broken part soon become loose.

Students should be instructed on the care and handling of books and a sense of responsibilities and respect for the rights and property of others should be inculcated in them. They should be made to feel

that the library is the common property of all and the books should not be defected or mutilated. They ought to realize the fragile nature of books, and should learn the correct method of handling them and to practice good care in their use.

Books like human beings have got a body and a soul. Its body is represented by the material by which the book is made and content is the soul. The librarian has a two-fold obligation towards books. He is entrusted with the task of preserving the books as well as publishing them. These functions seem to be self-contradictory to a librarian but there are quite distinct obligations of librarian.

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APPENDIX

EXAMINING A LIBRARY BINDING

This is an attempt to put in to non – technical words, and logical order, the various points which a librarian should check in examining a library binding without after books bound by any book binder. The questions represent the points to be looked for in any library bound book.

1. Examine a book closed-back, sides, top, and bottom-for general appearance.
 - a. Does the cover fit at the back?
 - b. Is the cover the proper size for the book?
 - c. Is cover free from signs of excessive warping?
 - d. Are the joints (grooves) straight and neat?
 - e. Are the boards of the proper thickness for the book?
 - f. Are the edges trimmed neatly?

2. Examine lettering.
 - a. Is it legible?
 - b. Is it properly planned, centered and arranged?
 - c. Is it straight?
 - d. Is the gold deeply and uniformly impressed?
3. Examine lettering.
 - a. Is it put on a moderate amount?
 - b. Is it of a clear kind?
 - c. Is it evenly applied?
4. Open cover (front and back).
 - a. Are the joints flexible (not too stiff)?
 - b. Are the boards cut neatly and uniformly?
5. Examine each cover.
 - a. Is the cloth of proper “weight”?
 - b. Is the cloth cut precisely? (Cut edges will show under the paste down of the end papers).
 - c. Is the turn in ample?

- d. Are the corners neat?
 - e. Is the adhesion of cloth to board adequate at all points?
 - f. Is there just the right amount of “play” in gently moving body of book up and down, while holding cover?
6. Examine end papers.
- a. Are they of strong paper, of neutral color?
 - b. Are they neatly cut and properly pasted?
 - c. If the joint is visible, is the reinforcing fabric of finely- woven strong muslin?
7. Turn title page.
- a. Have the title and instructions, if any, been accurately followed in lettering on back?
8. Lay book on table, open it about mid-way, and then open it slowly and carefully each side, away from the middle, a few sections at a time.
- a. Does the book open satisfactorily, considering the nature of the paper and the fact that the book is newly rebound?
 - b. Are the margins adequate?

- c. Where paper is moderately stiff, are sections scored?
9. Raise book, slowly open covers all the way back and “fan” out the pages from the middle, so that sections separate themselves naturally (If machine – sewed).
- i. Are the sections uniform and just the right thickness? (Not thicker than twenty to the inch in the case of ordinary paper slightly thicker in the case of flexible pulpy paper).
 - ii. Is the back flexible?
10. Examine sewing.
- a. Are the stitches a uniform distance apart?
 - b. Are they neat?
 - c. Is the thread of the right kind and thickness?
 - d. Between sections, does the thread show the right tension- neither too loose nor so tight as to cut the paper?
 - e. If book is machine-sewed, are all sections properly pasted?

MALLIKARJUN KUMBAR



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