

ESSAYS ON LIBRARY SCIENCE

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P R E F A C E

"Essays on Library Science" is a collection of articles already published in different journals and articles that are to be published. These articles were written between 1968 and 1973. Some of them were presented in seminars.

The book is designed to serve as a text-book for the students of Library Science. The first five chapters deal with the Physical Bibliography or Social Bibliography—Early Writing Materials, Paper Making, Making of a Book, Modern Reproduction Techniques and Parts of the Book. The sixth and seventh chapters deal respectively with the Public Library System in the United States of America and the United Kingdom. Chapter eight brings out the importance of a High School

Library. Chapter nine discusses the what, why and how of a Public Library.

The author wishes to express his gratitude to the Authorities of the University of Madras, particularly to the Vice-Chancellor, Padmashri *N. D. Sundaravadivelu*, M.A., L.T., for kindly granting permission to bring these published articles into a book.

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The royalty of the author will go to the Karnatak Library Society Trust, Dharwar.

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CONTENTS

1. Story of Early Writing Materials	1
2. Paper and Paper Making	10
3. Making of a Book	33
4. Modern Developments in Reproduction Technique	82
5. Parts of the Book	88
6. Land of Libraries	99
7. Public Libraries in Great Britain	118
8. A School Library and Its Uses	151
9. Know Your Public Library	169



Dedicated to my revered
Professor M. R. Kumbhar
in honour of his 50th Birthday

I Story of Early Writing Materials

Man's first means of communication may have been by gestures. He then erected heaps of stones to commemorate notable events or to establish landmarks.

Carvings

After sometime people memorized all that they considered was worth remembering and passed it on by word of mouth to succeeding generations. Collections of prayers, rituals, stories, etc. were transmitted orally. In course of time people began to communicate with each other by means of crude pictures carved on rocks and stones. Crude picture writing was done also on other materials which were at hand: cloth, wood, bark, vegetable fiber, animal skin, clay and metal. But only the writings on clay, metal and stone have survived. All

our systems of writing came from these crude carvings and picture writings.

Origin of writings

The system of writing of the Sumerians who lived in the Tigris-Euphrates Valley is the oldest system known. The word 'cunie-form' which describes their style of writing, is from *cuneus*, the Latin word for wedge. The materials used were soft clay and a wedge-shaped stylus of metal, ivory, or wood. Writing was done by scribes on soft clay. Then the clay was baked until it was hard as stone. These pieces of baked clay were called 'tablets'. These were the first books. The library which was established by the Sumerians at Tello had a collection of over 30,000 tablets.

To the Sumerians, writing was first of all a tool of trade and commerce. In addition, it was an instrument for recording religious works. Moreover, the records of the first schools, the first social reforms, the first tax levies, and the first political, social and philosophical thinking were also preserved on these clay tablets. When Sumeria declined in power in 2357 B. C., her culture passed to Babylonia in lower Mesopotamia, a civilization which lasted until 689 B. C.

The Babylonians also wrote on wet clay with a wedge-shaped stylus. To them writing was primarily a device to be used in business transactions and in record-

ing note-worthy events. The tablets found in the library of Borsippa were copied in their entirety by the scribes of Assurbanipal, king of Assyria, who preserved them in his library at Nineveh. These duplicates of the tablets from Borsippa are considered to be the chief sources of our knowledge of Babylonian life.

The Assyrians also followed the language and method of writing of the Sumerians with some modifications. Special mention must be made about their most important library at Nineveh. About ten thousand clay tablets were brought to this great royal library by the king's scribes. The catalogue of this library listed the contents of each cubicle or alcove, painted or carved on the entrance, where the clay tablets were arranged according to subject or type. Besides, each tablet had an identification tag.

Egyptians and the Papyrus

Another civilization which flourished simultaneously, with the above mentioned three civilizations is Egyptian Civilization. The people of ancient Egypt used the papyrus sheet as their writing material. Their instrument for writing was brushlike pen made by fraying the edges of a reed.

The papyrus sheet was made of longitudinal strips of fibre from the papyrus plant, placed in layers at right angles. The papyrus, a tall reedlike plant, grew in thick

tufts in the marshy land along the Nile. The papyrus sheet was the accepted writing material throughout the ancient Mediterranean world and is known to have been used as late as A. D. 1022. The form of the book in ancient Egypt was the roll. It was a little more the 12 inches high and about 20 feet long. It was made from papyrus sheets pasted end to end. Egyptians' style of writing was hieroglyphic. It is a word derived from the Greek "hieros", meaning sacred, and "glyphein", meaning to carve.

Egyptian scribes were specially trained in the temples to learn to draw in different characters. Writing was done in columns without spaces between words, punctuation marks, and titles. The text began at the extreme right and continued right to left. Egyptian rolls included religious, moral and political subjects. The Prisse papyrus in the Bibliotheque Nationale in Paris is the oldest Egyptian book known. This was written before the end of the third millennium (2880) B. C. It contains the proverbial sayings of Ptahhotep. Another papyrus roll - Harris Papyrus - is the longest Egyptian manuscript in existence. It is more than 130 feet long. It is the chronicle of the reign of Rameses II who founded a library at Thebes about 1250 B. C. In this library, rolls were kept in clay jars or in metal cylinders with an identifying key word on the outside or at the end. Some of them were also stacked on shelves.

The other Semitic peoples like Phoenicians, Aramaeans and Hebrews also used papyrus for writing purpose.

The Hebrews who lived in Palestine used not only papyrus but also leather and parchment, together with reed brush or quill as writing materials. Their book forms were the roll and the tablet.

Bone, tortoise shell, bamboo stalks, wooden tablets, silk and linen were used as writing surfaces by the ancient Chinese whose art of writing was known as early as the third millennium B. C. The writing instruments were the stylus, the quill and the brush pen. The book forms were the tablet and the roll.

The Greeks and The Parchment

In ancient Greece leaves or bark of trees, stone, or bronze for inscriptions and wax-coated wooden tablets were used as writing materials. From the sixth century B. C. papyrus was the usual writing material. But in Hellenistic Greece parchment, and vellum came into use. The Hellenistic period dates from 323 B. C. to 146 B. C.

Parchment was the skin of animals, principally that of the sheep or the calf, prepared for writing. The skin was washed carefully and then covered with lime to loosen the hair. After the hair was removed it was stretched on a frame, scraped, dusted with sifted chalk, and polished with pumice. The writing instrument was the broad pointed pen made from a reed or a quill. Parch-

ment proved to be a better medium for writing than papyrus. Because it was smooth on both sides and was less likely to tear. Vellum was made from the skin of calves. It was heavier than parchment and more expensive. It is considered to be the most beautiful and the most durable material ever used for books. The forms of Greek books were the roll, the wax tablet and the codex, in which the papyrus or parchment leaves of the manuscript were fastened together as a modern book.

In Hellenistic Greece there were private, governmental and royal libraries. The greatest library of all was at Alexandria in Egypt. It was founded during the reign of Ptolmy I (323-283 B. C.). At the the time of Roman conquest (146 B. C.) it contained 7,00,000 rolls including manuscripts from all parts of the known world, written in Egyptian, Hebrew, Latin, and other languages. But many volumes were burnt by the Romans. And they were completely destroyed when the Moslems conquered Egypt. Another important library was the one at Pergamum, founded by Eumenes II (197-159 B. C.). It contained 2,00,000 volumes when it was given by Antony to Cleopatra.

Book production was so intense at Pergamum, that an embargo was placed by the Egyptians on the exportation of papyrus, with the hope of discouraging the copying of books. This led to the increased production of parchment for use as a writing material.

The Romans and the 'Pen'

Rome which was founded in 753 B. C. adopted first the Greek alphabet through commerce with Greece. At the time of the Roman conquest of Greece the Romans were under the influence of the Greeks. They read and studied their literature, philosophy and science. Latin literature came into its own in the second century B. C.

The materials which the Romans used for writing were papyrus, parchment, vellum, wood tablets coated with wax, the stylus, the split point reed, and the split feather quill. Incidentally, the word "pen" comes from the Latin word for feather. The Romans developed a style of handwriting, much like the Greek, consisting largely of capital letters. By the end of the fourth century A. D. they developed another style called uncial script. It involved the use of large as well as rounded letters. It was the standard book script until the end of the eighth century. The forms of the book in ancient Rome were the roll, the wax tablet, the diptych-two boards hinged together at one side with waxed surfaces on the inside for writings, and the codex. Since the roll was found inconvenient to write upon and to read, it was superseded by the more usable form, the codex. It is already stated that the codex form was used to some extent by the Greeks. It was also in use among the Christians in the second century A. D. From that time it was generally

used for Christian works. Any how, the papyrus roll was also used for pagan works.

The earliest known fragment of a manuscript book is the Papyrus Rylands, a tiny piece of papyrus leaf of the Gospel according to St. John dated in the first half of the second century A. D. The Codex Vaticanus of the fourth century A. D. is the oldest extant manuscript of antiquity.

The classical culture declined after the fall of Roman Empire. During the dark ages (C. A. 400-900 A. D.), all libraries suffered at the hands of the barbarians. Some secular literature was transferred to Constantinople. There it was kept in the libraries and monasteries of the Moslem Empire. Many Christian writings were collected and preserved in the monasteries of monks. Besides, manuscripts were copied and recopied by the monks in the countless scriptoria throughout European and Muslim countries. The materials used by the monks were plain or dyed parchment or vellum, quill pens and many kind of coloured inks. The forms of book were the roll and the codex and were in use till the end of the thirteenth century.

Modern Printing

Printing is a recent invention. The art of printing was invented by Johan Gutenberg of Mainz in the thirties of the fifteenth century. The success of printing

depended upon a cheap substance on which to print, an ink which would adhere to type, a press which could apply heavy pressure over a large frame and a general knowledge of metal technology. By the second quarter of the fifteenth century these needs had been met. Paper was a cheap and plentiful material on which to print. A suitable ink was developed by adapting the oil paints. The screw presses which were used for pressing olives and grapes and in binding manuscript books were used to apply pressure over a large frame. The technical knowledge was borrowed from the goldsmiths and silversmiths.

II Paper and Paper Making

Cradle to Grave

The paper is a substance consisting essentially of cellulose fibres interwoven into a compact web, made by chemical and mechanical processes from rags, straw, wood, bark, and other fibrous material, into thin sheets or strips, for writing, printing etc. It gets its name from papyrus, a giant rush from which the ancient Egyptians made sheets of writing material.

The discovery of paper contributed greatly to civilization. It became indispensable to the successful development of printing since it was less costly and easily worked than vellum. Although some of the earliest typographic books were printed on vellum the substance which really gave printing its initial impetus was paper.

It was paper that made possible the spread of communication. It was paper that made possible libraries. In short paper is the store keeper of all accumulated knowledge and from cradle to grave we greatly depend on it.

History

The history of paper-making began around 2,500 B. C. when Egyptians made paper from papyrus. The Egyptians cut papyrus stalks into thin slices and pressed them into sheets. In other words, thin strips of stalk were placed side by side; and a second layer was added at right angles to the first. After soaking in water, pressing, drying and polishing, the surface was ready for use. But the making of woodpulp into paper began about 105 A. D. in China. It was in that year that the craft of paper-making was first reported to Emperor He Ti by the eunuch, Ts'ai Lun. In ancient times writing was generally on bamboo or pieces of silk in China. But silk was expensive and bamboo was heavy. Therefore these two materials were not convenient. Then Ts'ai Lun thought of using tree bark, hemp, rags and fish nets. He made a report to the Emperor and received high praise for his ability. His method was to beat materials containing cellulose fibre to a pulp which was then diluted with lots of water and drained through sieves. The moist fibres matted together and when dried formed paper. Thus paper was born in China. But

this process was kept secret for many centuries.

At the beginning of the 7th century knowledge of paper making reached Korea whence Buddhist monks carried it to Japan. The Japanese made paper from hemp or mulberry, using the inner part of the tree. Towards the end of the 8th century, the Arabs at Samarkand took some Chinese prisoners, from whom they learned the art of making paper. In 793 a paper factory was working at Baghdad, where the Caliph Haroun al Raschid had introduced Chinese labourers. The invention then moved on to Damascus, which became the main source of such supplies as reached Europe for several centuries. Thus the manufacture of paper spread rapidly to all parts of the Arab dominions. The material of the paper was substantially linen. The Arabs diffused the technique westwards, and the Mohammedan invasions carried it to India.

Paper-making spread gradually to Europe, especially during the Crusades and Moorish conquests. In the eleventh century the Moors brought the craft to Europe by way of Spain. Not only did the Moors introduced paper into Europe, they were the first people to crush the fibrous raw materials by other than human power. In about 1150 they set up a stamping mill in Jativa, an ancient town of Valencia and held a monopoly of paper in the western world.

The first paper mill in Christendom was the one

founded at Fabriano in Italy about 1270. In due course Fabriano became one of the great paper making centres. Besides, it was in Fabriano that the watermark, a distinguishing mark, lettering, or design made on paper during manufacture, was invented.

The manufacture of paper had also spread to the South of France by 1189. A paper mill was established in France at Troyes in 1338. Paper mills were also started in Germany at Nuremberg in 1389, in Switzerland in 1411, and in Austria at Wiener-Neustadt in 1498. Paper was used in England since 1309. It was imported from Spain. The first paper mill was set up in England at Stevenage in Hertfordshire in 1490 by John Tate. In 1588 John Spielman was licensed by Queen Elizabeth to make paper at Dartford in Kent. From then on some of the finest papers in world have been made in that country. Paper making was introduced into America in 1690 A. D. in Philadelphia.

The knowledge of materials used in the manufacture of paper, of the various finishes it receives thereafter and the limitations, technical, economical and aesthetic which these impose, is of prime importance to all who are interested in the physical make up of the various forms of printed literature. The librarian for his part can, by greater knowledge, exert some influence, on the standards of book production.

Materials used in Paper Making

Paper may be made from any natural fibrous plant. If one collects some straw, boil it in a strong soda solution, drain away the moisture through a wire mesh, leaving a thin even coating of pulp deposited thereon and dry it, he would have a sheet of lumpy paper. The quality of any paper depends upon the basic material used- the cellulose, the treatment that cellulose receives during the manufacturing process, and the subsequent finish given to the paper.

The most common celluloses used in printing papers are :

I Simple Cellulose Fibres :

a) Cotton rags :

They give a cellulose with a high degree of purity. Moreover there is only little wastage. The fibres are long which results in good fibre integration, an important feature from the point of view of durability. The paper made from pure rag cellulose gives a good quality hard paper with a natural whiteness which is of maximum durability. But cotton rags are in limited supply and thus expensive, and are used only where extremely high quality is desired.

b) Linen :

Linen is made from flax. It is hardly ever used alone for normal printing as it gives a paper which is

very stiff. It is normally used for bank note and ledger paper. It is occasionally mixed with chemical wood pulp or rag to give a good quality printing paper.

c) Hemp :

It is not in common use since it is very expensive. However, it is the main constituent of Bible paper.

The above simple cellulose fibres withstand the purification process best of all. All have long fibres which interlock well and give a strong, durable paper.

II Compound Cellulose Fibres :

a) Esparto :

It is a long, rough grass with fine, soft fibres. It grows in southern Spain and North Africa. It is used for paper making mostly in Britain. Esparto papers bulk well and are used as body papers for certain grades of coated stock.

b) Straw :

It is a cheap substitute for esparto. But the fibres are short so the resultant paper lacks strength. It is more suited to the manufacture of strawboard, cardboard or paper for bookjackets. Sometimes it is mixed with rag or woodpulp to make thin, hard writing paper known as bond or bank.

c) Mechanical woodpulp :

It is usually made from spruce. Soft wood logs are merely ground to pulp in water by a large grinding stone, all the impurities contained in the logs remaining

in the pulp. It is strengthened with 25 to 35% of sulphite pulp and used in the manufacture of cheaper quality printings such as newsprint.

d) Chemical woodpulp :

It is obtained by the chemical treatment of wood. It differs from mechanical woodpulp, by the fact that the resin, ligneous matter and oils contained in the wood are removed by boiling with acid or alkaline solution. This leaves the wood cellulose fibre isolated so that these dissolved impurities can be washed out preparatory to the bleaching and other processes of paper making. Variations in the process of manufacture result in a wide range of papers suitable for most purposes. The paper made from chemical woodpulp is normally more soft as well as bulky. If a proportion of rag pulp is added to the wood, a durable paper of excellent quality will result.

Manufacture of Paper

In the manufacture of paper, the material used has to be reduced first to a fibrous state known as cellulose. It has then to be subjected to a purification process to remove unwanted matter like dust or colouring in rags, lignins in wood or pectins in esparto or straw. The cellulose used alone or in mixtures of two or more, together with necessary chemical additives, are known collectively as the furnish of the paper. After purification and breaking, the furnish is beaten in order to fibrillate

the fibres, the pulp becomes known as stuff or stock. It is from this that paper will ultimately be made by hand or machine.

The following is an outline of the stages in the manufacturing processes of the various furnishes :-

I Rag

1. Rags are sorted so that only pure cotton rags are used and any unwanted matter is removed, and the rags cut into small pieces.

2. They are then willowed and dusted. Here they are passed through a long rotating drum made of a coarse wire mesh which, in tumbling the rags, extracts the dust.

3. Now the rags are boiled in a small rotary boiler under pressure for between two and fourteen hours, in a solution of caustic soda or other alkaline substance which will remove the dirt and grease.

4. Next the rags are fed into the breaker where they are first given a thorough washing. Then the rags are also disintegrated into threads.

5. The half stuff is now bleached with chlorine or chlorine compound solution and washed.

6. The bleached half stuff then moves to the beater or hollander which is similar to breaker but larger. If it is desired to mix other celluloses with the rag they are now added. The beating is the most important stage, for the quality and characteristics of the finished

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paper depend largely upon it. The purpose is to fray out the fibres and render them absorbent in degrees varying according to the paper required. If the process is rapid and the beaten bars sharp, the fibres will be shortened and the resulting paper will be less strong. In other words fast beating with sharp bars results in a fluffy absorbent paper. The better quality papers are given a gentle beating over a longer period than inferior papers. After beating the pulp is known as stuff.

7. Sizing :

Sizing is necessary to enable ink to rest on the paper surface. Besides, size acts as a protector. When sizing is done with machine made paper the process is known as engine sizing. Rosin, which is made from pine resin, and alum-aluminium sulphate are added to the stuff.

8. Mineral Loading :

To improve the printing surface of the paper by imparting a higher finish and increased opacity and the dimensional stability of the paper in changing atmospheric conditions mineral loading is also added at this stage. But the strength and the bulk of the paper are reduced in proportion to the amount of loading added. Therefore it should be kept to a minimum in the case of good quality papers. Titanium dioxide, china clay, gypsum, and barium sulphate are the most commonly used loadings.

9. Colouring :

This is done, if required, after beating by the additions of dyes and pigments.

The stuff is now ready to be made into paper.

II. Esparto and Straw :

1. The bales are split open and the esparto willowed and dusted to remove impurities.

2. It is then boiled in a solution of caustic soda in a boiler or digester.

3. (a) Mechanical Wood :

The wood is cut into logs and the bark removed. The logs are fed into a grinder where they are ground to pulp under a spray of water. The pulp is now washed and sieved to remove the coarsest pieces. It is then pressed into thick sheets and sent to the paper mill.

Mechanical wood is not used alone. A certain proportion of chemical wood pulp is usually added to make newsprint and other cheap printing paper. The thick sheets are broken up and added to the chemical wood pulp prior to beating.

(b) Chemical wood :

The logs are cut into small chips and digested in various chemicals, according to the type of paper required. The following are the three main digestion processes for producing chemical wood pulp.

1. Sulphate Process :

In this the chips are boiled under pressure in a

solution containing sodium hydroxide and sodium sulphide.

2. Sulphite Process :

In sulphite process the chips are boiled in a solution containing bisulphate of lime. It is most commonly used for printing papers. It gives good white paper. Besides, the paper is hard and of a somewhat transparent nature. After digestion, the process is similar to that employed in preparing rag pulp.

3. Soda Process :

In the soda process the wood chips are cooked with caustic soda solution to dissolve the materials which hold the cellulose, or paper making fibres.

Many modifications of the digestion processes have been developed to allow the use of more kinds of wood. The new processes are generally called semi-chemical cooking.

Qualities of Paper :

The chief qualities required of a good printing paper are :

- a) It should be of a good colour.
- b) It should not be over-sized. Because it produces a hard surfaced paper which is unnecessary for printing.
- c) The surface should be smooth and reasonably opaque.
- d) It should have a clean and even 'lookthrough'.

In other words it should be free from evident pulp thickenings in certain places.

e) It should be durable.

f) It should be suited the purpose required.

Hand-made Paper

The manufacture of paper, either hand or machine made, may be considered in two distinct parts, viz., the preparation of the raw material to form pulp and the treatment of the sheet once it has been produced.

For a very long time all paper was made by hand from the rag pulp. In making hand made paper rags-waste pieces of cloth-are sorted, cut into smaller pieces, cleaned and boiled in vat- a large vessel-in a solution of caustic soda or other alkaline which removes the dirt and beaten into pulp and mixed with water to form the stuff.

The pulp in vat is now dipped out in a mould by a vatman, the craftsman who dips the mould into a vat of pulp and skilfully shakes it into a sheet of paper. The mould is a sort of sieve made of a solid wood frame and a woven wire mesh open enough for the water to drain through leaving the fibres to felt on its surface. The wires of the mould may form one of two patterns according to whether laid or wove paper is being made. For laid paper the mould will consist of thin wire lines, close together, running the length of the frame. These

are crossed at right angles by thicker chain lines, spaced about 1 inch apart. For wove paper the mould is constructed of thin wires closely interwoven. When a flat sheet of wire mesh is dipped into the pulp and lifted out the pulp may flow over the edges. To prevent this, a frame known as the 'deckle' is fitted on to the mould. The use of the deckle gives hand made paper its characteristic edge which is slightly irregular and a little thinner than the rest of the sheet.

If water marks are required in the papers, lettering and designs are often sewn on to the wire mesh of the mould and these appear as white marks in the finished paper. They tell us the manufacturer's name or where and when the paper was produced. Where the wires and the water mark device occur, the paper will be thinner, thus enabling light to show through when the finished sheet is held up. In wove paper the wires are so fine and so closely woven that no lines are visible.

When the water drains off, the vatman gives the mould a peculiar shake sideways and a greater shake away from him to help the fibres to interlock and felt together. This is an important operation since the strength of the paper chiefly, depends upon it. In machine manufacture this two directional shake cannot be produced. Therefore, the paper is strong in one direction only instead of in both as with hand made. It will also tear more easily that way. Besides it may be liable to uneven

shrinkage and expansion. The expansion or contraction can make the registration of colours difficult in colour printing. After the sheet is formed it is transferred to a felt, woollen blanket by pressing the mould face down on to the material. When a pile of sheets interleaved with felts is built up it is put under great pressure in a wooden press to squeeze out more of water, press the fibres close together and form a free sheet. These are then removed from between the felts, pressed again and dried. During the final treatment surface sizing is added to render a surface more suitable to receive ink.

Size for hand made paper is made by boiling the hoofs and hides of animals in water until a gelatinous substance is formed. This is therefore called "animal size". In the oldest method the papers were dipped into a tub of size; hence the name "tub sizing". There is also "engine sizing" where the size is added to the pulp prior to being made up. At present tub sizing is done mechanically. The sheets of paper are fed through warm size at approximately 100°F. After sizing the sheets are separated and dried for several days.

The paper is now fit for use. But it has a rough surface. Therefore each sheet is laid between shiny plates of copper or zinc until a pile a few inches thick is built. This pile is then rolled between heavy rollers. Finally the sheets are separated and ready for use.

The making of paper in the early mills was almost

the same as it is for making paper by hand today. The only real difference between the making of hand made paper in the early mills and the process carried out today is better materials and equipment.

Sheets of hand made paper are naturally of limited size and expensive. Besides making paper by hand is laborious and slow. To meet the great demand for paper machine methods were developed. Today cheaper grades of paper are made by machines. Though the majority of printing papers have been machine made since the beginning of the 19th century, there is always a limited demand for hand made papers for special use. They are available with three different finishes: 1) Rough—that is the pressing operation has been omitted; 2) Not—that is not glazed; 3) Plat glazed or hot pressed where the sheets have been laid in a pile alternatively with sheets of smooth copper or zinc and passed several times under heavy rollers. This crushes the grain and gives a fairly smooth finish to the paper.

Machine Made Paper

Paper was made by hand until a Dutch man invented a machine in the 18th century. Improvements were made by Nicholas Louis Robert, a French man. He invented a continuous roll machine. His idea was developed by the Fourdrinier Brothers after whom the machine was later called the Fourdrinier. In the 19th

century a German devised a way to grind large logs to pulp. Later Benjamin Tilghaman, an American, separated wood fibres by using the corrosive liquid sulfurous acid. These processes steadily improved until the late 19th century when paper-making basically reached its present form.

The process of making paper by machine is more or less the same as that of handmade paper. The main differences are :

1) The raw materials may consist of wood, esparto grass, hemp, straw, jute and numerous other fibrous plants; and 2) once the pulp is of the required consistency, it is transferred not to the vat but to the paper making machine.

The modern paper making machine has basically two sections, viz., "wet end" and a "dry end". The wet end is centred around the endless and continuous moving belt of fine wire mesh on which the sheet is formed. The pulp which consists of 99 percent water and only 1 percent pulp, flows on to the belt through the "gates", which regulate the flow of pulp. Now the water drains through the wire. The stuff becomes felted into a continuous sheet of wet pulp. Then it moves along on the belt and passes under the "dandy roll." The dandy roll gives certain papers their watermarks and helps to consolidate the wet mass.

When more water is drawn away by suction devices

positioned under the wire belt, the wet pulp becomes dry and strong enough to pass from the wire to the felt-covered rollers. The stuff is no longer pulp but a paper. It passes through a series of press rolls which remove more moisture. Anyhow the sheet of paper is still very wet. Then it passes on to the first section of the drying cylinders. Even at this stage the water content is approximately 66 percent. Therefore the paper is passed round steam heated cylinders to remove the last of the water. Finally it passes between sets of cold iron rollers to give it the finished surface. It is then wound into reels.

Paper made in this way goes through no separate sizing process. The size is mixed with the pulp in the beater and permeates every fibre. This is cheaper than separate sizing. But the result is not quite as good. Certain superior kinds of machine made paper are sized after manufacture. They are known as tub-sized papers. In this instance the machine made paper is passed through a bath of gelatine prior to its final drying, which in this case is carried out gently by hot air on lattice-work cylinders.

Finish

The finish of a paper is of paramount in printing, for this will determine the use to which it is put. For example, when printing an illustrative material, the reproduction process requires a particular kind of surface.

The finish affects not only the surface but also has an effect on the bulk, strength and opacity of the paper, e. g., supercalendering makes a paper more transparent than it would be normally.

VARIETIES OF PAPER

The following are the important varieties of paper used in books :-

1. **Wove and laid paper :** All the papers are either wove or laid. Wove paper is the paper without wire marks. It is distinguished from laid paper.

Laid paper is the paper that shows close thin parallel lines crossed by heavier lines about an inch apart, which are produced in the process of manufacture. Laid papers are not as frequently used in the production of books as they were formerly. But they are common in writing and wrapping papers.

2. **Engine-sized papers :** Papers which have been hardened or sized, by the addition of such moisture-resistance substances as casein, starch, and rosin to the pulp, either in the beater or at a larger stage prior to the stuff actually flowing on to the machine wire. This idea was conceived in 1807 by a German chemist. Engine-sized paper is weaker than tub-sized paper and less resistant to penetration by the oil of printing ink or atmospheric action.

3. **Tub-sized papers :** These papers are sized,

like hand made papers, after being made. They are strong and have a high resistance to moisture.

4. **Antique paper :** A light, bulky, uncalendered paper having a rough finish in imitation of old hand made paper. Antique paper is thick and can be used to make a book with only a few pages.

5. **Cartridge paper :** It is a strong, tough paper, originally used in the manufacture of cartridges. The texture of this paper is rather like that of a good antique, but is harder. It is used occasionally for books.

6. **Super calendered paper :** Paper is at times given a high gloss or polish by the pressure of super calender rolls. In other words this paper is given a smooth finish by repeated rolling between hot and cold rollers. It is sometimes used for books where fine line blocks or half-tones are included in the book. Though it gives good result from type, it is sparingly used because its shine is uncomfortable to the eye.

7. **Machine finished paper :** Paper made smooth, but not very glossy, by the pressure of calender rolls. It prints well.

8. **Mould-made paper :** A manufactured imitation of hand made paper. A machine for this purpose was invented by John Dickinson in 1808. It is not as strong as hand made and not very good for books. It is fit for the limited editions for which so often hand made paper is considered indispensable. It is expensive.

But it is cheaper than hand made.

9. **Offset paper :** Offset lithography works good with this kind of paper, because it has a smooth surface, free from fluff, and with a particular kind of sizing. Good offset paper is very pleasant. It is used at times in letter press books.

10. **Art paper :** It is a paper, often of poor quality coated by brushing on china clay, sulphate of barium, or sulphate of lime and alumina, the last-named for satin-white finish, and then polishing. The surface thus produced reproduces sharply the excessively shallow relief of the half-tone process. Therefore it is frequently used for half-tone plates. But it has serious disadvantages. The coating weakens it and makes it so brittle that a fold quickly becomes a crack. Because of the coating the paper is very heavy and a book printed on art paper may feel like so much lead. Glazed art paper has high polish.

11. **Imitation art paper :** Real art paper is coated after the paper is made, so that the coating forms a layer on the surface. For imitation art the clay is mixed in with the pulp. This saves an operation and reduces cost. But it is inferior to real art. Anyhow it is used for the printing of half-tone blocks and gives good results.

12. **Loaded paper :** It is not a separate class of paper. Because most kinds of paper are loaded in some

way or other. Loading means the addition to the pulp of substances, for example, clay, chalk or similar minerals. Loading fills up spaces between the fibres, and increases the amount of paper which, when calendered, is given a smooth opaque finish resulting in a better printing surface.

13. India paper : Originally a soft absorbent paper, India paper, cream or buff in colour, imported from China for use in the proofs of engravings. Later, a thin opaque paper made from hemp or rag. Cheaper varieties can be made from chemically treated wood pulp.

14. Patterned paper : Paper used for jackets or bindings is called patterned paper. It is patterned in relief with some design simulating leather. It is made by passing the paper as it comes from the machine through rollers engraved with the pattern. For linen or crash patterns the rollers may be wrapped with the material itself.

BOOK SIZES OF PAPER

Paper sizes are standardized. They have names such as demy, medium, crown etc. Papers are divided into varieties. The papers that interest the publishers are printings, writings and covers. A few sizes of paper are made only in writing papers suitable for letter heads, note books etc. Cover sizes are generally larger than printings by half an inch in each direction. For

example, royal in cover is $20\frac{1}{2} \times 25\frac{1}{2}$ inches. Most books are printed on printings, in the subdivision of sizes shown below :-

Broadside	Folio	Quarto	Octavo	Sixteenmo
Imperial				
22 x 30	22 x 15	11 x 15	11 x $7\frac{1}{2}$	$5\frac{1}{2} \times 7\frac{1}{2}$
Royal				
20 x 25	20 x $12\frac{1}{2}$	10 x $12\frac{1}{2}$	10 x $6\frac{1}{4}$	5 x $6\frac{1}{4}$
Medimum				
18 x 23	18 x $11\frac{1}{2}$	9 x $11\frac{1}{2}$	9 x $5\frac{3}{4}$	$4\frac{1}{2} \times 5\frac{3}{4}$
Demy				
$17\frac{1}{2} \times 22\frac{1}{2}$	$17\frac{1}{2} \times 11\frac{1}{4}$	$8\frac{3}{4} \times 11\frac{1}{4}$	$8\frac{3}{4} \times 5\frac{5}{8}$	$4\frac{3}{8} \times 5\frac{5}{8}$
Large post				
$16\frac{1}{2} \times 21$	$16\frac{1}{2} \times 10\frac{1}{2}$	$8\frac{1}{4} \times 10\frac{1}{2}$	$8\frac{1}{4} \times 5\frac{1}{4}$	$4\frac{1}{8} \times 5\frac{1}{4}$
Large Crown				
$16\frac{1}{4} \times 21\frac{1}{2}$	$16\frac{1}{4} \times 10\frac{3}{4}$	$8\frac{1}{8} \times 10\frac{3}{4}$	$8\frac{1}{8} \times 5\frac{5}{8}$	$4\frac{1}{8} \times 5\frac{5}{8}$
Crown				
15 x 20	15 x 10	$7\frac{1}{2} \times 10$	$7\frac{1}{2} \times 5$	$3\frac{3}{4} \times 5$

Large crown is not a standard size. But it is adopted by some publishers to bridge the gap between crown and demy. Other special sizes are occasionally encountered. Paper is made in multiples of different

sizes for the convenience of printing machines. For example, double crown is 30 x 20, and quad crown is 30 x 40 inches.

Books are also printed occasionally on writings in order to obtain a special size of book.



III Making of a Book

The making of a book consists of the following major processes :-

1. Choosing the type;
2. Composing : Hand and Mechanical;
3. Imposing;
4. Printing : Hand Press, Mechanical Press and Rotary Press;
5. Book Illustration : (a) Line Engraving;
(b) Half Tone and Other Processes;
(c) Colour Printing; and
6. Binding : By Hand and Mechanical.

The details of these processes are found in the following pages.

1 Choosing the Type

The first step in making of a book is choosing the type. Therefore one should have some knowledge of type - parts of a type character, kinds of type, fount and type founding.

a Parts of a type character :

The following are the four main parts of a type character : i) The Face ii) The Beard iii) The Body and iv) The Feet.

The Face comprises the entire printing surface of any type character. It may be composed of one or all of the following parts :

- Main Stroke – Straight, thick stroke of a character.
- Serifs – Small lines found at the head and foot of main strokes in certain type families. Sans serif is a type face which has no serifs.
- Counter – Portion of a type character between the main strokes and immediately below the printing surface.
- Kern – Part of a type which overhangs the body. Kerned characters are very common in script and italic faces. They are prone to shear off under pressure. Therefore the kern is supported on the shoulder of the preceding or succeeding letter.

The Beard comprises the space between the foot of the character and front of the body. This was previously referred to as the “front shoulder”. The beard consists of the following two parts :

- Bevel – Sloping portion from the edge of the type face to the shoulder.
- Shoulder – Horizontal portion from the foot of the bevel to the edge of the type. It is required to support the descenders of the letters g, i, p, q, and y.

The third main part of a type character is the Body. It is otherwise called shank or stem. It consists of the following :

- Belly – Front of the type character. It is parallel with the back. The distance between these two is the body size. It is now referred to by numerical number in accordance with the point system.
- Pin Mark – It is found on one side of a type character. It is made by the pin ejecting the type from the mould. It is sometimes utilized to impress the founders’ name or the point body size of the type.
- Nick – Groove across the belly of the type. There is only one nick on Monotype. But founders’ types may contain two or

more. The nicks vary in shape and position. Therefore they are helpful to the compositors as a means of identifying odd type characters and for checking wrong founts prior to justifying the line.

The fourth main part of a type character is the feet which is the base on which a type stands. It is formed by a separating groove cut in it.

b. Kinds of types

There are many kinds of types. Each of which has a definite name such as Baskerville, Bodoni Bold, Bookman, Caledonia, Calson, Janson, News Gothic, Spartan Medium, Times Roman.

c. Fount

An average fount will contain a complete set of type characters of the same design and size, i.e. Upper and Lower case, Numerals, Punctuation Marks, Reference Marks (asterisk, dagger, double dagger, etc.), Spaces (hair, thin, middle, thick), Quads (en, em), Fractions, Split Fractions, Commercial Signs, Mathematical Signs, Accents, Ligatures (tied letters), etc.

d. Type founding

In early times printers made their own types. The old method of casting types was by hand. Nowadays type founding is greatly mechanized. The type founders cast mechanically the thousands of characters required to supply the ever increasing demand for more and

better type face from the mechanically produced matrices.

The metal employed in the manufacture of type is an alloy. It is a mixture of lead, tin and antimony. Sometimes copper is added. Bismuth is also added occasionally. Lead is the cheapest of these metals. It melts readily and chills easily. Antimony is added for the purpose of giving hardness. Tin gives smoothness and toughness. Very little amount of copper is added sometimes in type founding since it does not mix freely with the other metals.

2 Composition Or Setting Up the Type

a Hand Composition :

The type has to be cast the wrong way round so that a print from it shall be the right way. Therefore the hand compositor has trained himself to look at type upside down rather than to read it from right to left the right way up.

The compositor stands in front of the case which is on a high sloping stand. He has in his left hand a stick. The stick is a clamp which can be adjusted to the width of the type page which he is going to set. The compositor places the letters of each line of type into the stick. When sufficient words have been set, the spaces between the words are adjusted so that the line is justified to the full width required. The next line is then set in the same way and so on till the stick is full.

Then all the lines are transferred to a special tray called a 'galley'. Now the type is ready for 'proofing'. The type is inked. A sheet of paper is laid on the inked type to give an impression clear enough to be read and corrected. Mistakes are corrected by picking out the wrong letters and substituting correct ones. This is the simple way of hand setting type. But this is a slow, laborious way to set type. Besides it is expensive when more copies are printed.

Hand composition was the only method of composition from the time of Gutenberg until the end of the 19th century.

In the composition or setting of type small letters are called "lower case" and capital letters "upper case." When types are set by hand the lower case letters are kept in a case on a lower level since they are used frequently. The capital letters are higher in the case. Now a days sliding drawers are much used to keep the pieces of type.

Those working with types use the following measuring units :

1. Point - Very small, there being 72 points in one inch.
2. Pica - Larger, six of them to one inch and each therefore containing 12 points.
3. Em - Square of the body of any size of type.
4. En - Half an Em.

b Setting Type by Machine

Nowadays the matter for most books and newspapers is set by machines in which each type or line of type is cast from molten metal.

1 Linotype :

Today, if the work to be printed is a long one, it is composed by Linotype machine. The Linotype was invented in 1890. It is operated as a typewriter is operated. When the operator touches one of the keys on the Linotype machine, a small piece of metal with a letter stamped into it (a matrix) drops down a chute to a space on the front of the machine. This space is exactly of the same length as a line of type in the book will be. After the compositor has pressed out enough words to fill a line, he presses a lever which lifts the entire line of words to a pot of metal that has been heated to the point of becoming a liquid. The spaces between words are automatically made wider, if necessary, so that all lines of type are exactly of the same length. Just the right amount of metal is forced out of the pot against the line, and after a few seconds the metal hardens into a bar, or slug of type and drops to a tray by the Linotype operator's side. In brief, Linotype machine sets up lines of moulds or matrices. This machine is much quicker and the metal more easy to handle, so that it is the machine most often used for

quick work such as printing newspapers.

2 Monotype :

In 1897 another machine for composing type was invented. It produced single types. Therefore it was called a Monotype machine. If the work to be printed contains many numbers, symbols, and unusual letters, the type is set by Monotype method. Monotype setting consists of two separate machines, a composing machine and a casting machine. The composing machine has a keyboard very much like that on the Linotype. But instead of setting the type, coded marks are punched into a strip of paper. Each letter, each number, each punctuation mark, each symbol appears on the paper strip as a differently shaped hole. After the coded paper strip emerges from the Monotype composing machine, it is fed into the casting machine which casts on a separate piece of metal each letter or symbol. In a word the Monotype first casts each type singly and arranges them in rows of equal length. It is the most ingenious and elaborate machine that printers use at present.

When type is set by Monotype, a compositor may correct errors merely by taking out the wrong letter and substituting the right one, whereas in the Linotype method an entire line must be reset to correct even one misplaced comma. But the average person should have trouble trying to read a slug of type from a Linotype

machine, since all the letters and words are backwards.

The following are the advantages of setting type by machine:—

1. Composing machines save an enormous amount of time.

2. In hand composition, the compositor not only has to setup the work, but after it is printed he has to separate the types. In other words he has to replace each letter and sign in its appropriate compartment in the case. This will take a long time. But in machine composition, when a work is finished line of types is put back into the melting pot to be melted down and used again for casting another line of type or another set of Monotype letters.

c Photographic Typesetting

There is another typesetting method known as Photographic typesetting. It is otherwise called cold composition since no hot metal is used. In this method when the compositor presses a letter or number on his keyboard, a tiny photograph is made of that letter. The result is film negative. Generally this method is used for printing by the photo offset process in which the image is reproduced on a metal plate by photography.

3 Imposition

Imposition is the arranging of pages of type in a chase in a particular sequence known as the 'imposing

scheme' so that when folded the printed pages will be in consecutive order. Furniture (lengths of wood, plastic or metal used in a forme for making margins or filling large blank areas on a page) is added and the whole is locked up into a forme. Imposition is done in close liaison with the folding section, where it must suit the particular folding machine used by the binder.

Imposition also refers to the appearance of the margins on a pair of facing pages. Normally a printer submits for approval a margin or imposition sheet before completing page proofs.

4 Printing

Next comes the most important process – printing off the copies. The simplest machine used is very like the original hand press of the early printers. At present, however, the platen is forced down on to the type by a system of knuckle joint levers invented by a Lord Stanhope, and named after him. This gives greater accuracy and force than the old method of screws.

a) Hand Press :

First then comes the 'Hand Press' on which the printer takes a proof or a trial copy of each page or piece of printing. There is a solid cast-iron bed. It slides on oiled runners under a similar cast-iron platen. Both these plates have accurately machined surfaces and they work in absolute parallel to one another. The platen is

so attached to a long lever handle that when it is pulled, the platen sinks about quarter inch, and so presses a sheet of paper firmly on to the type or block which has been laid on the bed.

Now ink is applied to the type or block with a roller made of a composition of glue, treacle and glycerine. The roller is held in an iron fork and has a wooden handle. Ink is spread on a flat iron plate, and rolled out many times with the roller till an even film is formed. Very little is actually used. Otherwise a sharp impression will not result. The important thing is the even firmness of the pressure.

No doubt we cannot just lay one sheet of thin paper on the inked type, and then pull the iron platen down on to it. There must be just a little softness between platen and type. Therefore a hinged flap or 'tympan' is provided. The tympan is composed of a thin double steel frame which has a pair of sheets of vellum, or linen, stretched on it. Between these a couple of sheets of paper can be placed, and when this tympan is brought down on to the printing paper, it provides just the right amount of 'give' to make good copies.

To put it in nutshell the hand press is a printing press in which the forme is inked, the paper is fed and removed, and pressure is applied by hand. There are various transitional stages from the hand press to the printing machine in which one or more of these actions

are performed automatically or partly mechanically.

b) Platen and Cylinder Machines

Now a days there are two main kinds of machine mostly in use, the 'platen' and the 'cylinder.' The platen has type on a flat surface, and paper also on a flat surface meeting it. The cylinder has the type still on a flat surface, but the paper is on a revolving cylinder.

For quite small sized jobs, like leaflets and cards, the platen is used. It works in much the same way as the compositor's hand press. In other words the type is held on a flat bed, though in this case the bed is fixed quite rigidly in a vertical position. The paper is held on a rocking and sliching iron platen, which rises up into a vertical position and then is forced into contact with the type. In this quite a lot of pressure is required. More over it has to be applied all over the printing surface at the same time. So there is a limit to the size of paper that a machine of this kind can be made to handle.

The larger work is done on cylinder machines. In these the type is still laid on a flat iron bed plate. This bed slides to and fro on accurate and very strong roller tracks. There may be an air buffer at each end so that the bed bounces back at each end of its travel. This saves wear on the gears that drive it and makes quieter working. Over this bed is fixed a very strong and accurately ground cylinder. When this rotates it bring with it a sheet of paper, and this it rolls over the type

on the bed of the machine. Lightness of construction together with the circular motion of cylinder makes much more speed possible.

There are two main kinds of cylinder machines in use the 'one revolution' and the 'two revolution.' When the bed of either machine is travelling in one direction, the cylinder rolls on it, making the impression. When the bed returns, however, the cylinder of the first kind stops, with a flat on its circumference at the bottom so that the type can pass without touching. In the two revolution machine the cylinder does not stop, but revolves continuously in the same direction. In order that this surface may not touch the type on the return of the bed, the cylinder rises in its bearing about one eighth of an inch, and so just clears. The advantage of this machine is that the heavy cylinder is in perpetual motion, and this, together with pneumatic buffers on the bed, makes the machine very smooth running and silent.

Ink, of all these cylinder machines, is applied by rollers made of the same composition as the compositor's hand roller. These rollers are fixed in such a position that they do not press down on the type, but just touch it. They have, fixed above them steel rollers of smaller diameter. These distribute the ink or work it about, and at the same time they help to retain the smooth surface of the composition. The machine also has distributing rollers which work the ink about on a slab. On

the end of the type-bed this iron slab is fed regularly with minute quantities of ink. The slab passes under the composition rollers on each travel of the bed and so keeps them supplied with ink.

c) Rotary :

The third kind of machine used is the 'rotary'. It has a curved plate cast from the type to fit on a cylinder. It is mostly used for newspaper printing, where extreme speed is needed. A papier machine mould is made from the type, and this being flexible can be put into a curved casting box, so that its face form the outside of the curve. Molten metal is then poured in and when cool, a plate is taken out which will fit on to a cylinder of the rotary machine. The impression cylinder and the plate cylinder revolve continuously against each other, and paper from a reel is fed between them. The reel has to pass against a second plate cylinder to print its reverse side very high speed is maintained.

The impression cylinder on all these machines are covered with a few sheets of white paper and an outer layer of tough strong paper to provide a little 'give.' Upon this must be built up a 'make ready.' That is to say, a great deal of patching on of extra-layers, and cutting away of layers, wherever the first trial print shows that there is too little or too much pressure. This is most important and skilled work. The even-ness of the final prints depends on it. Another important point is

the setting of the mechanism. Because it controls the exact amount of ink fed to the inking rollers at each impression.

5 Book Illustration

Men have made pictures from the dawn of time. But it is only recently that they have discovered how to multiply copies of a picture. Many books have illustrations. Some may have drawings, others photographs. The important methods for reproducing drawings and photographs in a printed book are briefly described here.

a) Printing of drawings

All illustrations to print with type must be represented by blocks of one sort or another, but of the same nature as type. That is to say that what is to print must stand at the same height as the type, and where white paper is to remain, the level of the block must be lower.

Several books today are illustrated with blocks engraved on wood in the way described below :-

A flat block of wood could be so worked on that all except certain parts are cut away to a lower level. This block could be dabbed with block ink and then have paper pressed upon it. This will result in a print, or impression, of the wood block on the paper. But now a days most of the drawings are from blocks made on zinc by photographic methods. They are made from

drawings in Indian ink on white paper. The drawing need not be the same size as the intended block. It is frequently made larger. It is put up in front of a big camera and a negative is made from it, of the size which the block is to be. The prism on the front of the lens prevents the image being reversed. A sheet of polished zinc is coated with a photographic film and print from the negative is made upon it. The zinc is then treated in certain ways so that the image is protected when the whole thing is put into a bath of acid which eats away the metal of the background and leaves the image standing at the full height. The zinc plate is then nailed to a piece of mahogany to make its 'face' equal in height to the standard height of type. It is then ready for printing with type. It is now called a 'line Block.'

b) Printing of Photographs

To print a photograph or a drawing in wash like a block from either of these cannot be made in just the same way as a drawing that is definitely either black or white. To make a block that will reproduce such a subject; the whole surface must be broken up into dots with of varying size. This breaking up is done with a 'half tone' screen. Two sheets of glass, each having lines engraved on one surface, are filled in with black composition. When the two pieces of glass are put together with their lines at right angles, a net work of black lines is formed. One can see between the crossed black lines

tiny squares of clear glass.

The half-tone screen is used in front of the photographic plate in the camera, and in effect each clear glass square becomes a sort of lens. The negative therefore takes the form of dots of varying size. From it a print is made on a sheet of copper. This, when etched and mounted on wood to type height, is called a half-tone block.

The making of half-tone blocks is far from purely mechanical work. Much skill is needed in judging just the right exposure in making the negative. The etching also has to be most carefully controlled. Because fine etching will improve the tone values on the copper plate.

c Printing Coloured Pictures

There are very many different processes in making prints in full colours. If several colours are to be used, only one can be printed at a time, whatever process is used. The sheet of paper has therefore to be put through the printing machine again for each succeeding colour.

Colour reproduction is often done in four colours - yellow, magenta, cyan blue and black. The first three colours are considered as primary colours. If yellow is printed over one another in full strength they make nearly a black. An actual black printing sharpens up and gives depth to the result. If however, the colours are printed in varying strengths, they can reproduce

almost any colour or shade of colour. It is necessary therefore to make four half-tone blocks to be printed, in these four colours, but varying in strength, as required by the different parts of the original.

The process of making the blocks is very like that of half-tone block making. But four negatives have to be made, and for each a specially coloured glass is put behind or in front of the lens of the camera. These glasses are called colour filters. They are complementary in colour to the printing inks. In other words each pair of colours would make black.

In this process, the violet filter separates from the subject being reproduced the colours necessary for the yellow printing plate. The green does the same for the magenta plate. The red filter gives the cyan blue printing plate. The fourth plate printed in black is made so that it strengthens the black and softens the general effect, particularly the greys. From these colour separations the four printing plates are etched and then the four colours are built up, one over the other, to form the picture.

d Photogravure Printing

Photogravure is another different process for reproducing pictures. It can be used in black only, or in a series of colours, just like the half-tone process.

In this the whole surface of the subject is also broken up into dots. But instead of the dots standing-up,

they are eaten into a polished copper cylinder. Each dot forms a little pit, and instead of varying in size, they vary in depth. The whole surface of this cylinder has a very fluid ink flooded upon it. Afterwards a knife removes all the ink from the surface, leaving it only in the pits, paper is then pressed on to the cylinder and the ink is picked out of the pits, so forming the print. The deeper the pits, the darker the print, so variation of tone is given.

To print by photogravure in colours, a separate plate or cylinder must be etched for each colour, and the colour filters are also used for this process.

c Lithography – A Planographic Process

In this the printing surface is entirely flat. There is no difference in level between what is to print and what is to remain white paper. But when rollers with greasy ink on them pass over the surface, they leave ink only on certain parts.

The image is put on to the surface of a slab of limestone or a sheet of zinc with grease. The whole surface is then clamped. But the moisture will only remain where the grease is not already in possession. After that the surface is alternately damped and inked by two sets of rollers, each set leaving behind either moisture or greasy ink on the respective parts of the surface. Then paper is pressed on the whole surface by a cylinder, and the paper picks up the ink. If a zinc plate is used in

place of stone, it can be clamped to the cylinder of a rotary machine.

f Offset Lithography

Now-a-days an India - rubber covered cylinder is introduced between the plate cylinder and the impression cylinder. The image is printed onto the rubber and transferred from that onto the paper. This is called offset lithography. It is also called offset. The softness of the rubber surface against the paper makes a thinner film of ink possible. Therefore this results in very sharp and clear printing.

6 Binding

A. General

The word 'binding' as we all know is a very simple and ordinary word. What is the meaning of this word? The dictionary meaning of this word is 1) the act of fastening or joining; 2) anything that binds objects to each other, as the cover of a book; 3) any thickening substance added to a mixture to cause the ingredients to adhere; 4) a strip sewed over an edge for protection. These simple meanings have been made use of for defining the word in library terminology as follows :

In library terminology, the word 'binding' refers to 'book binding.' According to the *Encyclopaedia of Librarianship*, 'book binding' is the art of attaching covers by means of tapes or cords to the sewn gathering

of books for their protection and convenience in handling.

According to the *A. L. A. Glossary of Library terms* it is 1) the process of producing a single volume from leaves, sheets, signatures or issues of periodicals or of covering such a volume; 2) the finished work produced by this process; 3) the cover of a volume. All these definitions point out the fact that is something of an art. It will be interesting to know that a great and fascinating history lies behind this art, which has been practised for fifteen hundred years and more.

1) History

The kind of book with which we are familiar today composed of a number of leaves fastened together down on one side and known to scholars as a codex is a development of the scroll of the ancients. Book binding appeared with the codex. It is a general human instinct that impels man, to decorate any accessible blank surface; and few blank surfaces demand decoration more loudly than do the flat covers of books. There has always been a purely utilitarian aspect to binding. Clay tablets were protected by jars in which they were stored and small fabric envelopes into which they were placed. This much was needed for straight forward protective purposes. Similarly papyrus roll was equipped with cylinders in which they were housed on the shelves. With the advent of the codex form a different style of binding

became possible and decoration became easier.

Thin wooden boards were used for covers as a protection for medieval manuscript books. During the early middle ages these were given a leather covering to join across the spine, the back and front board. Pigskin and oxhide were mostly used. Calf was introduced in the 15th century, when parchment bindings became popular. Cardboard was substituted for wooden boards in Italy about 1500. At the same time coverings of imported goatskin (morocco) were also used. Wooden board continued in use in Germany until the 18th century.

Full leather bindings maintain their superiority. But half leather bindings are popular in the Continent. In England and America the cased books are in more general use. If cloth is substituted for leather it is called cloth or half cloth binding. Now-a-days paper boards are quite common. Besides, books are also provided with paper covers.

Before the invention of printing, books were scarce and valuable and they were displayed in a lying position. Therefore their ornamentation was concentrated on the front covers. Leather binding was often decorated in relief or stamped with dies. Before 1500 roll tools for impressing borders were used. In Southern Europe decoration had an oriental influence in gilded arabesques and interlaced strap work used for corner and centre pieces. By 1600 the vertical display of books on shelves

came into practice. Hence the decoration of the binding included the spine. Spinal lettering was introduced by Jean Grolier of France.

2 Classification of Book Binding

Binding may be broadly classified into two, viz. a) Letter – press binding, and b) Stationery binding. Letter press binding deals with the books intended for reading purposes. Stationery binding deals with the books intended for writing such as ledgers, exercise books, blank form work, counterfoils, etc. It is also called vellum binding or account book binding.

Each one of the above two categories of binding may be further subdivided as follows:—

1. Publishers' binding; 2. Library Binding; 3. Miscellaneous binding and 4. Extra letter press binding.

1 Publishers' Binding

This is the binding, usually cased, in which a publisher supplies books to the trade. It is also called edition binding and it is done by machine. It is the cheapest form of binding. Only the cheapest materials are used in order to keep the cost of the book as low as possible.

Most of the printed materials in the present day are not designed by their publishers for fundamental economic reasons to withstand the wear and tear of library use. When volumes are put into circulation, many factors conspire to damage and all too soon destroy the bright new appearance of the materials. For the past

century, the average publishers issue has been a cased book rather than a bound one. The publishers casing differs from binding in that it is manufactured as a whole independently and then lightly attached by paste to the book it is to cover. The slips of tape are short and up the book is laid a strip of linen mesh or mull. Both slips and strip can plainly be seen inside any cased book, since they are not inserted between split boards as in binding but merely covered over by the end paper, which is pasted down over the inner surface of the cover and the back edge of the outer section. If reasonably sound casing will keep a book in good order for a long time, so long it is subjected no more than normal private use. Because an appreciable percentage of books in modern libraries receive longer and harder use than a book in private hands and because many of the books must be kept as permanent stock, it follows that there is still a demand for the binder for library purposes.

Some publishers do attempt to meet the needs of libraries by issuing some books cased in what is frequently known as 'reinforced' publishers binding. These add a measure of extra strength, because they consist of of muslin-lined end papers with a cloth joint sewn in and inserted into a somewhat more substantial casing. They cannot, nevertheless remove more than a small fraction of the problem from libraries. The disadvantages in the publishers casing are :— 1. when a cased book

has to be bound a second set of sewing and piercings have to be made in the folds as in rebinding; 2. the casing adds to the cost; and 3. binding is far less used and is consequently regarded as an expensive luxury and becomes one.

2 Library Binding

In essentials, library binding is the same as 'extra' or Luxurious binding. By both permanence under hard wear is secured. But certain concessions to cheapness which only affect the appearance can be made. 1. The sewing can be done by machinery, if there are enough books being bound at one time to justify it. 2. Tapes may be used and laid with glue between split boards, i. e. two mill boards, a thick and a thin, instead of cords being laced through the one stout black board. But the tape must not be cut short. 3. Flaws in the surface or irregularities of dye on the skins may be accepted. But they do no harm. 4. Douglas Cockerell recommends that by using a french joint much thicker leather than usual can be used with corresponding gain in strength. For much library binding, however, leather has comparatively little current use, because of prohibitive cost of the material. Linen buckram is by far the strongest and best and makes an excellent binding material. It has also one great advantage over leather in ~~not~~ needing attention, if it is to be stored for any length of period.

3 Miscellaneous Binding

It is nothing but craft bookbinding which means the binding of individual books for individual customers. The craft book binder's work includes restoring valuable manuscripts, repairing old bindings, and sentimental work of all kinds, all processes are largely by hand.

Miscellaneous binding is some what better than publisher's work. The materials are slightly superiour. The covers may be attractive. In short miscellaneous binding falls midway between extra letterpress and publisher's work.

4 Extra Letterpress Binding

This involves extra materials and extra operations. Therefore it is expensive. It is also called "deluxe". In this, a book is bound by hand, with all plates guarded, the boards laced on by five cords, a tight or hollow back, a morocco cover, all edges gilt, and special attention given to the end papers, headbands, and finishing details, especially an abundance of gold tooling.

3. Styles of Binding

A book may be bound in the following styles :-

1. Quarter Cloth Cut Flush :

In this the back alone is covered with calico, the other portions of the board are covered with

paper or marble. Besides the boards and the inner leaves are cut together without any projections or squares on three sides.

2. **Quarter cloth turned in.**

3. **Half Cloth :**

The back and corners are covered with cloth and the sidings are with paper.

4. **Full Cloth :**

All are covered completely in cloth.

5. **Quarter Leather :**

The back (spine) alone is covered with leather and the rest with cloth.

6. **Half Leather :**

The back and corners are covered with leather and the other portions of the board are covered with cloth.

7. **Full Leather :**

All are covered completely in leather.

B. Hand Binding

1. **Five Fundamental Processes.**

Hand binding involves the following five fundamental processes.

a. **Preparing the signature :**

Folding the printed sheets into sections to make signatures and collecting the signatures for binding. When a section is folded a symbol is put on the back edge next to the fold, i.e. each section is signed. Hence

the term signature. Signatures maintain the proper sequence. The fold provides the foundation for sewing which is the very heart of book binding.

b. Sewing up the signatures:

Binding all the signatures into one flexible unit-the book. Each section is sewn firmly in its proper order to a series of tapes or cords in the case of leather binding. This operation places the folded backs of the signatures in a secure position. It also permits each leaf of the book to turn freely.

c. Gluing the back :

Adding a reinforcement to the backs of the sewn signatures in the form of a strip of cloth called mull. The mull is attached by means of binding paste applied to the backs of the signatures.

d. Attaching the Boards:

When the mull dries a stiff cover board is attached on either side of the sewn signatures. These boards hold the leaves of the book flat and protect them from damage and dirt. Boards are cut slightly larger than the pages of the book. They are firmly attached with paste to the tapes and mull.

e. Finishing:

Covering the front cover board, the back bone and the outside of the back cover board to protect the exposed backs of the signatures and the sewing from damage and soiling. This is the final step in the book

binding. At this stage a covering of cloth or paper or leather is pasted over the parts mentioned above. The edges of the covering material are turned under and pasted to the inside surfaces of both boards. Finally the end sheets are pasted down to the inside of their respective covers.

2. Materials used in Binding

Good materials are the basis for good binding. Therefore they should be selected carefully. Materials of good quality and durability should be selected. Poor, unsuitable material will spoil the binding and all the labour will go to waste. The following raw materials are required for book binding.

a. Paper

Rag papers, or rag content papers are best for making signatures in a blank book. White bond paper is excellent for this, as well as a wide variety of imported paper hand made especially for such purposes as book binding. These papers are available in white, cream and various intermediate shades, which make it possible to match new papers to those already used in a book being rebound. There are also many beautiful imported papers printed with handsome patterns. Therefore they are well suited to the purposes of covering or lining the boards.

b. Cloth

There are three types of cloth for use in book binding, viz. cotton fabrics, linens and buckram. The Cotton fabrics are available in unlimited range of colours, patterns and weights. Buckram is a specially woven binder's cloth filled with a sizing. But buckram is more difficult to work with. Besides it is not available to the hand book binder in the interesting colours found in cotton or linen.

c. Board

Regular binders's board is best for making cover boards and the backbone board. It is tough and more resistant to warping than common cardboard or paste-board. For very small books the best grades of artists' illustration board work well. Because they are made in a thinner weight.

d. Tape

Linen tape is far superior to cotton for sewing up the signatures. It is available in various widths. Two widths are sufficient for most work. one about 1/4 inch wide and another 3/8 inch wide. The width of tape should be determined by the size of the book to be bound. Three wide tapes may be needed for a thick book of fair size. Two narrow ones may be good for a slender volume.

e. Thread

Book binding thread should be used. Thread al-

ways be waxed before use.

f. Mull

Mull is the cloth strip pasted up the backs of the sewn signatures. It can best withstand wear and tear if it is cut from a piece of good quality linen. The ordinary mull is too flimsy and soon breaks down after the binding has been used a little.

3. Tools and Equipment

The essential tools and equipment for book binding include a steel carpenter's square for accurate cutting of all materials, two pencils for marking, a common steel edge ruler for measuring, and one or two good knives, a small carborundum stone on which to sharpen all cutting edges, a good pair of shears for cutting cloth, a flat wooden folder for folding signature paper, a squared card either of cardboard or still better, metal for squaring up the backs of signatures prior to sewing, a sewing frame for workmanlike binding, special formula book binding paste or vegetable glue, two paste brushes, an awl or two, a cake of beeswax, fine sand paper a package needles, wide mouth water jars, waste paper and a supply of cut magazine sheets for rubbing pasted work dry and a work bench, the surface on which the binding is done.

4. Technical methods for the proper handling of binding materials

The following are the technical methods for the proper handling of binding materials :

a. Measuring

The first step in good binding is accurate measuring of paper, boards, cloth or buckram. It must be precise.

b. Cutting

Cutting the paper, board, cloth or buckram, should be done carefully. Sometimes the materials may not be square on the corners. Therefore they must be squared up before cutting to size.

c. Pasting

There are many pasting operations in book binding, from attaching the mull to pasting down the end sheets in the final stage of binding. Pasting should be done neatly. The aim in pasting is to spread a thin, even coat of paste over the surface of the work. Spreading paste on paper, board, cloth or buckram should be accomplished by starting in the centre of the work, so that it allows the free hand to hold down the work without becoming sticky and delivers paste to the edges of the work last. This will help the edges to stick securely. Pasting should be done briskly. If it is done slowly, portions of the pasted work may be partly dry before the work is stuck down. Therefore a good tight job will not result.

d. Pressing

Putting the pasted work under weights. A piece of paper or cloth which has been pasted begin to expand atonce. Accordingly as the paste dries, the paper or cloth shrinks back to its original size. If the paper or cloth has been attached to a board then the board will be bent or warped as the paper shrinks. Therefore the pasted work must be held under control until the expansion and shrinkage has stopped. Putting the pasted work under heavy weights will hold everything in its proper position.

5. Detail of Binding Operations :

The following are the fundamental steps of all binding projects :

a. Folding

The entire structure of book binding depends on folding since the folded signature provides the foundation for sewing which in turn unites all the leaves of the book into a flexible unit. Accurate folding is basic to the preparation of signatures and to other binding procedures. Folding should be done carefully so that the leaves of the book turn freely and the top edges are smooth to prevent the accumulation of dust.

A signature may contain four to six folded sheets. This bulk provides the backing necessary for strong

sewing. All the Sheets for one signature must be folded as a single unit.

b. Collating

Examining and verifying the proper order of all the contents of a binding, including the signatures and any special material such as inserts, new end sheets, maps, or additions. In the case of rebinding an old book, one should first go through the entire contents to make sure the sequence and position of all the material is correct. During this procedure the folios, or page numbers should be checked. The new end sheets added to an old book should also be collated. Lastly, number each signature consecutively, starting with the first in the book. These numbers are a simple accurate means of checking the work as it is sewn together.

c. Marking up and Sewing on Tapes

Marking up is the first stage of sewing. Pencil lines are drawn across the backs of all the signatures to indicate the position of tapes and to provide guide marks for punching holes for the needle and thread to pass through. Next all the holes are punched. At this stage it should be determined how many tapes are needed. Normally a small volume - a slim book - with no more than four signatures requires only two 3/8 inch tapes. An average book of similar size should be sewn on to a pair of 1/2 inch tapes. Large books with many signatures should have three or four tapes. It is always

better to use a heavier tape. Now the tapes are to be inserted and adjusted to conform to the pencil marks on the signature. Finally the sewing frame to hold the tapes in a vertical position during sewing is set up and the sewing is done by a needle with a 30 inch length of good binding thread which has first been waxed so that the thread is drawn through more easily. Sewing is done from back to front. Moreover it is done over the tapes. When the sewing is completed the last signature should be tied off with a double knot.

d. Squaring the Head and Gluing up

These two steps will stabilize the backbone into one flexible unit which is square. Gluing up means attaching with paste a strip of cloth which is called mull lengthwise along the sewn signatures to reinforce the sewing. Gluing up holds the signatures in proper relation so that when the book closes, the backbone returns to its proper shape.

e. Making Boards

Preparing the cover boards which protect the pages from damage and dust and keep the sewing from being damaged and hold the pages flat. Further protection is provided by the overhanging edges of the boards. This overhang or square, absorbs any damaging blows. It also prevents the pages from touching the bookshelf. The boards are in three parts viz. front cover, back cover, and a narrow board to run up the backbone. From

the standpoint of durability, always use the minimum weight for a very thin book, and thicker boards in ratio to the increased weight and size of larger volumes. All three boards should be cut allowing $1/8$ inch at the head, fore-edge, and foot for square. But a large volume may require a square of $3/16$ inch. The two cover boards should extend only to within two thickness of board from the hinge. This will form a joint along the signatures and allow the covers to open without pinching. Another point to be noted here is that the combined thickness of the sewn signatures and the two cover boards should be determined before the backbone board is cut. Lastly the sharp edges from all three boards should be removed with fine sandpaper. The purpose of this is to allow smoother attachment of the cover paper or cloth and to make a more durable edge.

f. Attaching Boards

This process gives the appearance of a book to the sewn signatures. In this ends of the tapes and mull are pasted to the inside of both cover boards to make a secure attachment. After pasting the book is to be put under weight for sometime.

g. Covering

Covering the boards with covering material paper, cloth or leather. Covering demands great care. Careful measuring as well as cutting of the covering material are required to insure a good job. So also extreme care

should be used in pasting the covering material—paper or cloth — since it is easily stained. Covering consists of the following steps:

1. Selecting the covering material.
2. Marking guide lines for the corners.
3. Cutting the covering material.
4. Pasting the covering material on both sides of of the book.
5. Putting the book under weights for half an hour.

h. Mitering Corners

Mitering the corners of the cover material and turning in the head and foot, as well as turning in all four sides. This process is considered as the final stage of covering. It turns under all the raw edges of the cover material, whether paper or cloth. If paper is used, it permits the extra fullness of it to be neat by finished where it turns under at the corner of a board. If cloth is used, it prevents cloth from raveling. Besides it makes a more attractive finish. Since the corners are very conspicuous in the finished book, they should be done carefully. Moreover this work should be done without delay, so that after all edges have been turned in a final moulding of the paper in the hinges can be done while the pasted cover material is still slightly damp.

i. Pasting Down End Sheets

This is the final step in the basic construction of a binding. The first and the last leaves of the book are pasted

to the inside of the front and back covers, thus covering the mull and tapes as well as the raw inside surfaces of the boards. Though this process seems to be simply a finishing operation, it further reinforces the hinges of the binding.

j. Lining the Boards

Attaching decorative lining papers to the inside of the boards. The purpose of this is to obtain additional counter pull, for example when the boards have been covered with a very heavy cloth. It consists of the following two stages :

1. The end sheets are first pasted down in the usual manner; and
2. Then the lining papers are cut to the same size, pasted and attached.

C. Edition Binding

It is otherwise called publisher's binding. In this work of varying types and quality are bonnd at high speed since the whole editions running into thousands of copies have the same binding. Even in this some operations or part operations are carried out by hand. No one has yet invented a machine which takes in printed sheets at one end and presents a finished book, ready pressed and jacketed, at the other. Anyhow commercial binding is becoming increasingly mechanized. Various machines are used at present in edition binding. The

outcome of their several operations is of interest. The sequence of operations follows very closely that already described in hand binding, except where there is a necessary divergence, due to the fact that all edition binding is case bound. There are two distinct categories of edition binding, viz, sewn and unsewn.

1. Sewn Bindig

a. Folding

When the sheets of paper that make up a book are printed they have to be so arranged that there are many pages on each sheet of paper. Therefore the pages have to be printed on the sheets in such a way as to allow them to fall into their correct positions in the book when the sheets are folded into what are called "Sections".

The printed sheets are fed automatically into the folder which will then cut, fold, and inset them into sections of sixteen or thirty-two pages, as required. The folded sheets are called "Signatures".

b. Gathering

When all sheets have been folded, a heavy folded sheet of paper, called on end paper is pasted to the first page of the first signature and to the last page of the final signature.

Now all the signatures are sent for gathering. Gathering consists of collecting the various signatures of the

book in to their proper sequence. It is done by machine, a large complex one. Stacks of each signature are placed at various stations along one side of this machine. A mechanical arm picks the first signature of the book from its station and drops it on a moving platform. As this signature comes to each station, new signatures are automatically added until the last signature is included. As the gathered signatures come to the end of the machine, somebody picks up each pile, one at a time, and flips through it to be sure that only one signature is added at each station.

c. Sewing

The next step is to fasten the several separately printed signatures or groups of pages which make up one book together. This is done by sewing. There are many sewing methods. Very thin books may be wire stitched along the inside edge. Another method for the thin book is to "side sew" it, running the signatures through a machine that stitches them together with a heavy thread along the inside edge. Books so sewn do not lie open easily. But they are extremely sturdy. Generally the signatures of books more than half-inch thick are sewn together on a machine, which runs threads into the very middle of each signature and carefully nips the very inside edge of that signature to hold one to the other.

d. **Smashing, Trimming, Gluing and Rounding.**

At this stage it becomes necessary to smash the sewn sheets to press out excess air and to compress pages for tight binding. This is done by a machine that tightly squeezes the sheets. Now the edges of the signatures are trimmed off by placing them into a cutting machine that drops a huge heavy, knifelike blade on to the three unsewn edges, trimming off about 1/8 inch of paper and leaving these edges clean and smooth. All pages are thus separated.

Most books, especially thick ones, are slightly rounded along the sewn edge or spine. After rounding the front edge becomes concave. This concave edge makes for better binding and easier reading. The making of the rounded spine is done by a machine that holds the signatures firmly together as a rounded hard metal plate is rocked against the spine.

Lastly the signatures are given reinforcement along the spine by being sent through a machine that applies glue there, adds a strip of special cloth about 2 inches wider than the thickness of the book and a final strip of reinforcement paper.

While each step mentioned above can be done on separate machines, special machines have been devised that do all these steps in one continuous operation.

e. Making Covers

The heavy outside cover or "Case" of the book is made separately. It consists of a durable piece of heavy cardboard covered, usually with cloth, though paper, leather and other materials are used. Two pieces of cardboard are needed for each book, one for the front and the other for the back. These are cut by machine from sheets to size slightly larger than the page of the book, to give a slight overhang that will protect the paper edges. Then the pieces of the cloth or of the material to cover the boards are cut by another machine from large rolls to the correct size. Sometimes the cloth runs through a press so that a picture or design is printed on it.

Now the cut board and the cloth are fed into a machine which carefully applies glue to the inner side of the cloth, positions the cardboard on the cloth inserts a heavy strip of paper where the spine of the book will be located. Finally it turns over the edges of the cloth onto the board. Then the finished cover is fed between heavy metal rollers to squeeze the glue tight and to eliminate air-bubbles.

If the cloth of the cover has not been previously printed, the finished cover must then be stamped on the spine and often on the front with the book's title, the author's name and the publishers imprint. For this a brass plate or "die" is made with the names in raised

type on it. A simple kind of printing press, known as the stamping press, is employed to transfer the lettering of the die onto a cover. The die is inked with the desired colour and then pressed hard against the cover. The result is a clean impression on the cover of the names and words needed.

f. Casing in

The final step in book binding is "Casing in." In this process, the case is combined with the sewn and trimmed sheets. The strip of special cloth and the final strip of reinforcement paper which had been glued to the spine or sewn edge will hold the cover to the sewn sheets. The casing in machine applies a special paste to the outer sides of the end papers and to the overlapping spine cloth strip. The cover is then wrapped around the sheets and squeezed very tightly. Some casing in machines apply heat with the squeeze and in a few minutes books are completed. Other books are kept under pressure without heat for sometime before being completed.

The finished books are now ready to have the jackets placed on them. It is also done by machine if many copies of a book are printed.

2. Unsewn Binding

It is a method of machine-binding books without sewing or stitching their sections. There are many makes of machine but the principle in all is the same. The

books are gathered and fed to the machine one by one. There they are clamped and carried against a rotating cutter which shears off the back folds, leaving the book as a clamped block of single sheets. The sheared back is carried across gluing mechanism and a piece of lining cloth is applied. Its overlapping edges are turned over the sides of the book. Now a flexible adhesive is essential. If a polyvinyl is used it will be possible to round and back the books and subsequently case up in the usual manner. Such books open quite flat. In some machines provision is made to stick on a paper cover in place of the lining cloth and thus produce a paper-wrapped book which is subsequently cut flush. A great disadvantage is that unsewn books cannot be satisfactorily rebound by sewing, but only by the further shearing of the back margins. It is also known as 'perfect binding'. It is extensively used, today for the binding of paperbacks and fiction in paper covered boards. It is also used for the rebinding of fiction and the more ephemeral type of non-fiction book.

D. Flexible Binding

It is a binding style in which boards are omitted. Such books are usually covered in real or imitation leather, on to which the end papers are pasted direct. The leather may be slightly stiffened by first pasting on to it a stout paper or very thin card. This binding opera-

tion is easier and faster. It is cheaper. It is used for paperbacks, school textbooks, manuals, thick pamphlets and the like. These need not necessarily be unswen. It is customary for such books to be cut flush, that is, guillotined in covers.

E. Mechanical Binding

It is used in the case of certain limited categories of books such as cookery books, machine manuals which will lie absolutely flat. These are bound in ways which were formerly reserved for stationery. For example, wire spiral bindings, using single or double wire, or a plastic clasp binding. In all of these methods, pages and boards or paper covers are trimmed off square on all four edges, and the left hand edge of each is punched with a line of holes through which the mechanical holding device is threaded. Thin paper covered material, such as pamphlets, is often sewn or stabbed with wire either through the saddle in two or three places, or they are edge sewn or stabbed.

F. Prebound Books and Library Bound Editions

These are bindings which are specially reinforced for heavy use in libraries. They incorporate strengthening at various points which may include sewing on tapes, the use of millboard instead of straw board, the use of an end paper strengthened by a linen hinge which is

sewn through and a dust wrapper which is protected by a sheet of laminated plastic.

G. Detail of Reinforced Library Binding

Reinforced Library Binding is a strengthened binding, i.e. at the joints, for heavier usage and more handling of books found in a library than books belonging to an individual's collection. If the binding is done carefully with good quality materials and with reinforcement of the areas which are subject to strain, the life span of the books will be increased.

1. Specifications for Reinforced Library Binding

It is always good if the librarian and the binder enter into contract in getting the library books bound for a specified period, according to the following agreed specifications :

1. Books should be collected from the library and returned to it free of charge.
2. All the books received by the binder should be collated first. The books which are found to be imperfect or seriously damaged should be returned unbound to the library for further instructions.
3. Torn leaves and plates should be neatly repaired.

4. In the case of a periodical publication all the parts of a volume should be bound in correct sequence of pagination. The title and contents pages and indexes should be inserted in the proper places. Wrappers and advertisements should be bound in, if the binder is instructed to do so. Otherwise they should not be bound in.
5. Best quality materials should be used.
6. Sewing (a) Books printed on paper of good quality should be sewn one sheet on with unbleached thread of suitable thickness over unbleached linen tapes. (b) In the case books printed in other paper, the sections should be lined at inner and other folds with strips of thin but tough paper before they are sewn. (c) All sections broken at the back should be lined with tough paper or linen strips. If necessary, they should be overcast on modern methods of cross stitching before being sewn to the tapes. (d) The first and last sections should be enclosed at back in linen strips. (e) Plates, charts, and maps should be guarded with tough linen or bank paper and sewn in. Pasting on should not be permitted. (f) Double plates should be guarded at the fold (g) Tapes : Three tapes one quarter inch in width, should be used for books upto post Octavo [$6\frac{1}{4} \times 3.7/8$ "] Four tapes, one quarter inch in width should be used for books of crown octavo [$7\frac{1}{2} \times 5$ "]. For books of larger

sizes the number of tapes and their width is to be increased in proportion. Two of the tapes should be placed within one inch of the head and tail of each book.

(h) In the case of books printed on heavily loaded art paper, each leaf should be lined with a linen hinge on a thrown up guard.

7. The end papers should be of good tough opaque paper of approved mild colour, with atleast one plain white leaf between each of them and the printed matter. They should be made with strong linen of cloth joints and sewn on as a section.

8. The edges of books should be cut accurately. Care should be taken to leave margins as wide as possible. The edges may be sprinkled or tinted with a colour harmonising with the colour of the materials used for covering.

9. Forwarding : (a) All books should have french joints and tight or close flexible backs with the covering material attached directly to the back. (b) Tapes should be firmly inserted between split boards. (c) Books bound in quarter leather or in cloth or in buckram should have the boards slightly rounded at corners. (d) The covering material should be neatly folded. (e) Leather should not be unduly pared down or unduly stretched in covering. The covering material of extend over boards to atleast one sixth of the width of back should the book. (f) All books should open up

freely and lie flat.

10. Lettering and numbering should be done with the best quality gold leaf. They should be of good in size and easily readable.

11. Colour of the covering materials should be pleasing and attractive. Standard library buckram should be used as covering material unless leather is specifically mentioned.

12. Books in bad, dirty condition inside should not be rebound at all in fine binding because it would be a waste.

13. Above all, workmanship should be of the highest order.

14. The binding charges should be moderate.

15. When the preceding instructions are obviously inapplicable to any book or for any reason undesirable, the binder should submit suggestions for binding such a book with estimate of cost. On hearing from the librarian the binder can proceed with the work on such book.

IV. Modern Developments in Reproduction Technique

I. Near-Print

Both letterpress printing and lithographic printing are not economical for very small editions. For libraries, universities, learned societies and other bodies wishing to print small editions of theses, books or pamphlets near-print is useful. It involves typing out the text on to a lithographic master or causing a litho-plate to be made from ordinary typewriter copy. Printing is then carried out on a small offset-litho-machine such as Multiplith or Rotaprint. Illustrations can also be printed from the same master.

The use of ordinary typewriter is not satisfactory for near-print. Because they are fitted with typewriter and not typographical faces. In addition, the letter spacing is not variable. Therefore electric typewriters are now used. They are so highly developed as to produce a close approximation to the normal printed page. Their spacing is variable. In addition, a growing range of type faces is now available. But the machines are not cheap. Moreover, a specially trained operator is needed to obtain good results.

The IBM 72 composer equipped with proportional spacing and fitted with inter-changeable 'Golfball' heads to enable different typefaces, in sizes ranging from 7 to 12 points is also in use. The typefaces include light, medium, bold and italic. The total number of fonts available is fortysix, from five basic type sizes. Justification is obtained by typing the copy twice. The machine measures the amount of space left in the line during the first typing. It adds the units of word spacing so as to justify the line during the second typing. It requires no calculation by the operator.

Its automated version, MT 72 composer has recently been introduced. This consists of one or more typewriter recorders, which are similar to the IBM 72 models, on which the copy is typed. Copy and all layout instructions are stored on a magnetic tape, which will hold 40,000 words. The tape is then transferred to

a tape reading unit. The operator provides typographical instruction through a console. The reader interprets the tape upto twenty characters per second. It will also merge corrections with the original copy. In the final operation the tape is fed into a composer which will provide a printout up to fourteen characters per second.

Another simple machine is the IBM Executive. There are fifteen typefaces available for this. But they are not interchangeable. It is equipped with variable line and word spacing. Further, Varityper and Justowriter are also used. In varityper the keyboard has thirty keys, each bearing three characters, which are brought into operation by a double-shift system. The founts are semicircular bands, containing ninety characters in three rows, which fit into the head of the machine. Sixteen typefaces are available in sizes from 6 to 12 point. Most of them have bold and italic versions. It has proportional spacings. Justification is by double typing.

Justowriter consists of two basic units - the recorder and the reproducer. Typing on the recorder produces hard copy. It also produces a punched tape for automatic operation of the reproducer. The reproducer will turn out ready justified copy at about 100 words per minute. Sixteen typefaces are available for this machine, ranging in size between 8 and 14 point. But

these are not interchangeable. It is equipped with proportional spacing and automatic justification. It may be employed for composition in the case of newspapers printed by web-offest.

II. Electrophotographic Printing

Still another device is the Electrophotographic printing which is otherwise called Zerographic printing. It is now widely used. It is used for copying of documents. It is also used for reprinting single copies of out-of-print books and for the production of printed catalogues from card entries. In this process the image of the original copy is projected through a lens on to a selenium-coated drum bearing a positive electrostatic charge. Light from the white background areas of the original dissipate the charge which remains in the image areas. A developer, which is in the form of a black powder, is cascaded over the drum and the particles adhere to the image areas. A sheet of paper to which has been imparted a negative charge, is now placed over the drum. The powder is attracted from drum to paper by virtue of its opposite polarity. Finally the powder is fused to the paper by heat so as to form a permanent image.

The Xerox copyflo machine produces copies at high speed on a continuous web. It is capable of reducing or enlarging, so that it will print eye-legible copies from micro-forms. Fairly high quality is obtainable for

text and line reproduction. But this method remains unsatisfactory for the printing of continuous tone and fine line work.

III. Electrostatic Printing

Another true printing process, but not based on photography is electrostatic printing. It is developed by the Electrostatic Printing Corporation of America. It is based on electrostatic imaging systems which are used for the printout from an electrical signal employing direct charge deposition using special paper. The paper is coated with a non-conducting, charge-retaining substance. The opposite surface has a conductive coating. Images are placed on the paper by contact with a charged stylus. Then they are developed, by a method similar to that used in a electrophotographic printing.

The following are the advantages of such printing:

- 1) Printing on very fragile or uneven surfaces will be possible, as the image-bearing surface and the printing surface do not come into direct contact. Therefore this process is very useful in the production of packaging material.

- 2) The kind of paper-surface used in printing will no longer be significant.

- 3) It also permits the deposition of multiple colours without necessitating the use of drying or fusing between printings.

IV. Talking Books

Gramophone L P records of books are made for use by the blind. Twelve-inch discs are used, each side playing for twenty five minutes.

V. Parts of the Book

The book is central and basic in librarianship. Collecting books, keeping books, and giving books to the readers are the three important functions of a librarian. The Librarian spends most of his time in the company of books. Therefore he gets so accustomed to the presence of books around him that he seldom pauses to think what a book consists of and what its various parts are.

To a librarian, the parts of a book play a very vital role, since the knowledge of each aspect of the parts of a book helps him to carry out his various duties efficiently and diligently. Margaret Mann terms this knowledge of the parts of a book by a librarian as

"reading a book technically." The librarian must be able to describe a book in such a way that the reader can visualize the volume, its size, date of publication, publisher and all other details which go into its composition.

It is very important that those whose duty is to facilitate the use of the books namely librarians, to have an intimate knowledge of the parts of a book. The librarian must learn what to observe about a volume so that he can put his finger on the essentials without waste of time and effort. He must be able to discern the essence of the book, which the author may have revealed in his preface or introduction and come to realize that the "summary chapter" often discloses sufficient information to make the reading of the book as a whole unnecessary for cataloguing purposes.

The knowledge of the parts of a book helps the librarian not only for general purposes but also when he catalogues books, collects a book and buys a book. For instance, when the librarian is preparing added entries, then he needs to render only the brief title. For this purpose, if he has a thorough knowledge of the parts of the book, he will automatically refer to the half title page containing the brief title of the book instead of the title page and will thus be able to save his time. Again, a particular book may be a rare and precious one. If by chance the title page of that book is lost,

then by using his knowledge of the items that are to be included in a title page, he can prepare a similar title page, himself. Once again with this knowledge, he can choose the best books for his library for, by scanning through the contents and preface, he can more or less judge what type of people would read that book. Finally, when he sends the book for rebinding, this knowledge would help him to give the proper instructions to be given to the binder.

Parts of the Book

A book can be divided into four distinct parts (i) the binding, (ii) the preliminary matter, (iii) the text matter, and (iv) the end matter.

i) Binding :

The first part of the book namely binding is got by fastening all the printed sheets together or by putting the printed sheets into an unit-book. The binding holds the leaves of the book together. It also protects them and makes them easy to handle. If the binding is good it will add to the aesthetic value of the book. Just as there are two kinds of binding – plain and decorated – so also there are two parts of binding, viz. the spine and the end papers.

(a) Spine : The spine can be shortly summarized as the binding edge of the book. It is the narrow backbone of a book containing the brief title, the author's

name, the publisher and the call number in the case of a library book.

(b) **End papers :** The end papers are the leaves of paper at the front and end of a book. They cover the inner sides of the boards and serve together with the linings to secure the book to its case or binding. The simplest form is a four page sheet of cartridge paper tipped to the first sheet of the text and a similar sheet tipped at the end of the book. The outer leaf of each end paper is known as the paste-down and the inner leaf as the fly-leaf. The paper should be strong and suitable for pasting, an off-white shade tones in well with the average run of book papers. Coloured end papers are frequently used but with some risk of discolouration. End papers are some times printed with reference matter such as tables, maps, graphs and rules and with a decorative design. Fancy papers with figured or marbled designs lend a finish to the book. But they may require lining with a suitable paper. Elaborations are to mount the end paper to a folded four page of blank paper similar to the text. The additional leaves thereby created are also known as fly-leaves; to add a strip of coloured cloth to the joints is known as cloth joints; to add a guard at the back which wraps round the first section and thus the end paper becomes sewn in but without the sewing appearing in the joints. End papers which are mounted in any way are known as

made-end papers.

ii) **Preliminary Matter :**

The Preliminary matter includes the pages of book which precede the text. The order should be half title, frontispiece, title page, dedication, preface, acknowledgements, contents, list of illustrations, introduction. But there may be minor variations of this order. Since preliminary matter [prelims or preliminaries] is normally set up after the text, it often has separate pagination in roman numerals. It is also known as front matter.

(a) **Half Title :** Title of a book as printed on the leaf preceding the title page. The use of such a page dates from the latter half of the 17th century, though a blank leaf had been included in books to protect their title pages from earlier times. It is also known as bastard title or fly title. Some times it will include the name of the series to which the book belongs and the name of the editor, if any. A statement of other works by the same author or in the same series may be found on the verso of the half title page.

(b) **Frontispiece :** Leaf with illustration preceding the title page. The illustration usually faces the title page and meets the eye first. It relates to the subject matter of the book. For example, the frontispiece in a biography is often a portrait of the subject.

(c) **Title Page:** The first important printed page in the book. It may include :

- | | | | |
|------|---|---|---|
| i) | Title | — | Name of the book |
| ii) | Subtitle | — | Descriptive term explaining the Main Title |
| iii) | Author | — | Person who wrote the book |
| iv) | Collaborator— | | Person who worked with author in a secondary capacity such as editor, reviser, illustrator etc. |
| v) | Edition | — | if it is other than the first. |
| vi) | Name of the publisher and possibly his device usually printed at the foot of the title page. It may also include the date. Name of the series may be found if the book belongs to a series. | | |

On the verso of the title page will be found the bibliographical details, or biblio, which include the country or origin, the publisher's imprint, the printer's imprint, the statement of edition and date of publication and the name of the owner of the copyright written thus "© Arunachalam Sankaravallinayagam, 1972." If the bibliographical note is a full one it will include names of additional printers, block makers, and platemakers, together with details of paper and types used and the name of the binder.

In a word the title page provides a very good bibliographical description of the book.

The title page is generally regarded as the most important item of the preliminaries as it carries the most essential and the maximum information about a particular document.

There has been a continuous change in the very purpose of the title page ever since its evolution to its present form. In the early years of printing, books were sent out to book-sellers folded but unbound. But to protect the text from damage, the printer adopted the practice of leaving the first page blank, so that it could be cut away by the binder leaving the book whole and in good condition. But it caused much inconvenience to seller and the customer and again, as it was often turned to see what the book was, the first page of the book was exposed to damage even as before. To avoid this contingency, the title or some identifying phrase came to be printed on the face of the blank. It did not take very long for other information to be added after the title. This in turn led to the development of a full-blown title page. The title page gained value and now required protection. Hence another blank page was left in the beginning which in turn led to the development of the half title page. Originally, the title page was engraved and decorated so as to differentiate it from the rest of the text. But slowly the present generation is getting accustomed to the functional kind of title page and has realized that it belongs to utility sphere.

According to Esdaile "the title page should carry a clear and succinct statement of the book's title and subject matter with or without the aid of sub-titles; the author's name and relevant facts as to his status in relation to the book's subject, e. g. his academic position and authorship of similar works, the name of any translator, editor, introducer or illustrator; the edition number, the imprint, giving the place, the publishers's name and address, in other words, as to when copies could be procured; and lastly the date. Some publishers decorate their title page with their device".

(d) **Dedication Page :** Page containing the author's note prefixed to a work offering it to a friend or patron as a mark of esteem, affection or gratitude or as a plea for patronage. It follows the title page. These days dedications are usually brief. In the 16th and 17th centuries the dedication was an inscription by the author in which he commended his book to the favour of patronage of some nobleman or eminent person.

(e) **Preface :** Author's personal remarks to the reader which often conclude with a paragraph of acknowledgments. Preface will help us to know the purpose, standard, and use of the book. It follows the bibliographical matter and dedication.

(f) **Contents :** Part of the preliminaries where the separate divisions of a book are listed in the order in which they appear. It is printed on the next recto

page after the preface or forward. This part serves as a brief outline of the thought content of the book. It also helps us in searching for material on a subject.

(g) **List of Illustrations :** It lists the illustrative material found in the book and indicates where the illustrations are to be found in the text.

(h) **Introduction :** Declaration by the author of his view point, or an outline of his subject matter.

iii) **Text :**

It is the main body of the book and has many different parts such as chapter headings, running head lines, folios, foot notes and other notes, text headings, into which it can be sub divided,

iv) **End Matter :**

It includes the parts of a book excluding the binding, preliminaries and text, viz : appendix, notes, glossary, bibliography, index, plates and maps (when appearing at the end), colophon, end papers. It is also known as reference matter or subsidiaries. It follows the text of the book.

(a) **Appendix :** Matter subordinate to the text of a work and printed immediately after it. It differs from an addendum in that the need for the latter is only discovered when the book is set. The former is planned from the beginning as an integral part of the work.

(b) **Notes :** This section contains all footnotes if they are not placed at the bottom of each page. It

may contain explanations of certain passages in the text.

(c) **Glossary :** An alphabetically arranged list of unfamiliar, little used or technical terms together with explanations of them. Glossographers, compilers of glossaries were active in Greece in the 4th century B. C. Bilingual glossaries, e. g. of Greek explanations to Latin text, date back to the 6th century A. D. In England, early manuscripts were glossed either in Latin or in Anglo-Saxon.

(d) **Bibliography :** List of reference books consulted by the author and for further study. It provides information about additional material on the subject contained in the book.

(e) **Index :** It is a list of the topics discussed in the text, arranged alphabetically with page references. It may have subdivisions of the topics and cross references. It may also include the names of persons, places etc. mentioned in the text.

Talking of the index, E. B. Osborn in his *Essay on Indexing* states, "there is no greater literary sin than the omission of an index." Dr. Ranganathan is also of the same view when he declares in his *Social Bibliography* to get into a book without an index is like getting into a forest without a trained guide,"

The origin of the index dates back as far as the 4th century B. C. when Seneca, in sending certain volumes to his friend Lucilius, sent along with them

notes of particular passages in order that "he who only aimed at the useful might be spared the trouble of examining them entire." Much later, in the 17th century, Thomas Fuller also realized the value of indexes. He says, "an index is a necessary implement without which an author is but a labyrinth without a clue to direct the readers within." In the modern world, an index is indispensable.

(f) **Colophen (Printer's Imprint):** This may be a repeat of wording already stated on the verso of the title page, or it may appear here for the first time. If repeated, it may consist merely of the printer's device without name or address.

Now-a-days advertisement is rarely found in books.

VI. Land of Libraries

Introduction

The United States of America is a land of libraries. Its amazing advances in all the fields of knowledge have placed libraries very much on the map. Even the American colonists showed great interest in reading. Therefore books came over in the early ships. Besides, extensive private libraries were built up in almost all the colonies. One Reverend John Harward donated four hundred volumes in 1638 to establish the first university library at Cambridge in the English colonies. By the end of the century Dr. Thomas Bray set up a series of Parish libraries in the southern colonies and along the coast. He also equipped these libraries well with thousands of books. By the beginning of the eighteenth

century not only the Yale, William and Mary, Columbia, Brown and Dartmouth college libraries were founded, but also the state libraries were established in New Hampshire and Pennsylvania. Moreover the proprietary and subscription libraries were growing rapidly. The first subscription library of America was started by Benjamin Franklin. A small society of intellectuals was organised by him in Philadelphia in 1730. This society was named as the "Junto". The members of this society were asked to pool their private libraries into a single library for the use of all. But unfortunately Franklin could run this library only for a year. Thus Franklin started the first project of a public nature—a subscription library — which was called by him, "The Library Company of Philadelphia." In the meanwhile similar associations were set up in many connecticut towns. The subscription libraries were run by fees, whereas the proprietary libraries were operated on a joint stock principle. The members bought shares in the library company.

By the middle of the eighteenth century another type of library which was known as society library was started. A society library was also a voluntary association. The members of this association contributed money towards a common fund which was utilized for the purchase of books as well as for the maintenance of a library. The New York Society Library which was organised in 1754 is one of the best examples of such

libraries and it is still very active. In 1800 the Library of Congress which is considered to be one of the biggest as well as the finest libraries in the world was started. Mercantile Libraries were also started in New York and Philadelphia in 1820 and 1881 for the use of working people. In course of time "Fee libraries" were flourished. Rich people endowed reference collections in special subject areas. Besides scholarly libraries were established by the historical scientific societies.

Public Libraries :

The Public libraries in the States, in my opinion were thrust on the American people and not created by them, that is, thrust to the towns by the millionarie's endowments. Neither the philanthropists nor the elite ever thought whether the libraries thrust on the people were needed by them. It would be more appropriate and interesting to tell something about two merchants who gave a lion's share of their fortunes for the noble cause of the growth of public libraries.

In the late 1870's Enoch Pratt, a wealthy Baltimore merchant asked a prominent citizen what he considered the greatest present need of the city. When the gentleman hesitated in his reply, Pratt himself answered; "I will tell you - a free circulating public library open to all citizens regardless of property or colour." He also added "My library shall be for all. rich and poor

without distinction of race or colour, who, when properly accredited, can take out the books if they will handle them carefully and return them." With this in mind he began to construct a building in 1881. In 1882 he publicly offered Baltimore a central library building with branches in four quarters of the city and an endowment. Four years after the Pratt Library was opened, the steel magnate Andrew Carnegie who started his life as a messenger boy in the telegraph department visited this library as Pratt's guest. Together the two great philanthropists discussed the future of the American Public Libraries. Carnegie was impressed with Pratt's business like establishment, and it is not surprising that many years later, when reviewing his own contributions to libraries, he remarked "Pratt was my pioneer." He gave 5,00,000 (five hundred thousand) dollars to the Enoch Pratt free library to erect building for fourteen branches. This fabulously wealthy Pittsburgh iron and steel man who was a Scottish-American believed that the public library would be the most effective means of spreading knowledge because it would provide people both with reading for relaxation and inspiration and with the information they needed to fight their way up the ladder of success.

His first great gift one million dollars went to Pittsburgh, the city where he had made his millions. He also donated 60 million dollars to build over two

thousand library buildings in the United States and other countries. It is not out of place if mention is made about the solid contribution made by Dr. S. R. Ranganathan, the leading Library Scientist of our country. He had contributed a lakh of rupees to the University of Madras to institute a chair for Library science by name Sarada Ranganthan Chair. He had also created a Trust with the help of the money got through royalty for his books to invite a Library Scientist every year to deliver a series of lectures on library science.. Like him the late Kumarswami Raja who was the Chief Minister of Madras and then the Governor of Orissa, created a Trust to run a big public Library by name Gandhi Kalai Manram in his place Rajapalayam. So also the former president of our country Dr. S. Radhakrishnan donated his house and many valuable books collected by him to start a public library in his place Tiruttani.

By the middle of the nineteenth century the library became one of public concern in the United States. The State and the local governments showed great interest in starting libraries. American people welcomed the tax supported libraries. They thought that a library of good books should be provided in every place to help all, better to understand the history and condition of the world and their own country, their own nature, and their relations and duties to society. Therefore,

some of the state legislatures like New York, Massachusetts Connecticut and Rhode Island began to recognise the library as an extension of the system of public education beyond the formal instruction of the school provided for taxation by school districts for the establishment and maintenance of libraries.

First Tax Supported Library

The first tax supported public library in the United States was in Salisbury, Connecticut. This had been started in 1803 but did not get any money from the town until 1810. The first free public library founded as a tax supported public service was in Peterborough, New Hampshire, in 1833. In 1849, New Hampshire passed a law permitting towns to impose taxes for library purposes. Massachusetts also followed New Hampshire's lead. Among the cities that established tax supported public libraries before 1880 were Boston, Chicago, Cincinnati, Cleveland, Detroit, and Los Angeles. The Boston Library Law which was passed in 1848 was extended in 1851 to include the whole state of Massachusetts and by 1875, 144 communities had made use of the permission to levy taxes for library purposes. During the following decades most states followed suit with the same or similar legislation. Between 1850 and 1875, 257 free public libraries in all were founded. The period between the last quarter of the twentieth century was

favourable to urban and rural libraries. In 1876 there were 3,682 public libraries. These were increased to 5300 by 1900. The New York Public Library, the second largest public library was established in 1895.

State Libraries were also founded during this period. But they did not actually belong among public libraries in the beginning. The first one was founded in 1811 in New Jersey. Afterwards one state after another followed in establishing these libraries in the capital cities for official and legislature purposes. By 1850 thirty states had them. By 1875 all states had libraries. Besides a system of mutual exchange of documents had been extended to all states.

As more and more tax supported public libraries were started, librarianship began to be an important profession. In 1876, the ALA (American Library Association) was organised. It has worked tremendously to improve libraries and to bring their service to more and more people.

Carnegie Era

Another boon to the development of public libraries in the United States as already stated, came about through the generosity of Andrew Carnegie, who helped to start new public libraries in many cities. In brief, he planted free public libraries (1681 in the United States, 660 in Great Britain, and 125 in Canada) over the land

like Johnny Appleseed planting apple trees. This was really the Carnegie Era.

Commissioners

In 1930's and 1940's there were commissioners appointed to enquire and decide whether there were great inequalities of library services in the states. During that period states were able to get money from their legislatures for their library service.

National Plan

In 1948 the ALA's National Plan for Public Library Service was published. There it was suggested that no single standard pattern of service could be recommended for the whole country. So six different patterns were suggested.

Modern Conception

The modern conception of the role of public library service in community life shows a far-reaching change. As a community book store-house, its business was formerly conducted solely within its walls. Libraries were like endowed churches or temples. But present days library service carries educational activities into the community in whatever printed or audio-visual form may best serve the needs of the community.

Four Categories

According to the statistics given in the year 1950 four categories of public libraries may be recognised.

Population	No. of Libs.	% of all Public Libraries	Expenditure
Over 1,00,000	135	2	Over 1,00,000
25,000 to 1,00,000	577	8	25,000-1,00,000
5,000 to 25,000	1888	25	4,000-25,000
Below 5,000	4808	65	below 4,000

25% of all libraries serve 40% of the population which have adequate service. 65% of all libraries serve 10% of the population which have inadequate service. In the year 1950, 27 million people had no library service. In the year 1960, 20 million people had no service.

Library Bill

Never before 1950 had a library service Bill been voted on in the Congress. This Bill was lost by 3 votes. But since L. S. Act; June 1956 the Federal Government has been providing part of the costs for extension of service in rural areas, having a population of 10,000 or less. In 1958 the first National Library Week was declared by the President of the United States. Its slogan was "WAKE UP AND READ."

The New Library Services and Construction Act, which expands a programme which helps to make library services available to 38 million Americans in the rural areas — 38 million and authorizes efforts to strengthen inadequate urban libraries and for the first time grants for the constructions and renovation of library buildings was signed by President Johnson on 11th February, 1964.

The Statement made by President Johnson on the occasion of signing this bill is definitely worth mentioning.

“We are proud and delighted to have this, distinguished company with us this morning in the White House. There are few Acts of Congress which I sign with more pleasure, and certainly none with more hope than this New Library Services and Construction Act.

Good Public libraries must be placed within the reach of all of our people. Libraries are for everyone and therein lies their real value.

This nation needs a larger and more diversified collection of books. We need better housing for these books. We surely need libraries closer to the people whether through more centrally located libraries or through book mobiles and branch location. The central fact of our time is this. Books and ideas are the most effective weapons against intolerance and ignorance. A sensitive French man once said that mediocre minds

generally condemn anything that passes their understanding. Mediocre minds cannot survive in a modern world, but enlightened minds can survive. The library is the best training ground for enlightenment that rational man has ever conceived, and I am so happy that the enlightened members of Congress and others who supported their activities can participate in the ceremony this morning which they and their children and their children's children will always be proud of."

Library Systems

The following are the various library systems found in the United States :

1. Metropolitan Library System — Libraries run by the city councils or municipalities.
2. County Library System.
3. Regional Library System.
4. State Library System.

1. Metropolitan Library System

The main library, run by a city council, is usually in the centre of the downtown district. It is a good distance, from the houses of the people, who do not live near the centre of the city. So, in most big city public library systems, there are branch libraries, located in different parts of the city.

2. County Library System

A county library is a free public library maintained by county taxation for the use of the whole or a part of a county, established, as an independent institution or combined with a municipal or other library.

3. Regional Library System

A regional library may give service to a five county area. The head quarters of the regional library may be in a city close to the centre of the region it serves. With five counties, supporting the library, there should be enough money to provide for a good collection of books and other materials, for a staff of well trained librarians and for a bookmobile for each county. The big difference between the county library and the regional library is that a county library serves the people in one county alone, while the regional library gives service to a larger area that may include as many as 5 or 6 counties.

In a few places, city and county have consolidated their library services. Los Angeles is a best example of cooperating city and county library systems, independently set up.

Bookmobiles have become a modern symbol of rural library service. They are libraries on wheels. They are often used in rural areas, served by county or regional libraries.

4. State Library System

Every state in the union has an agency set up to look after the library needs of the people of that state, for the Nation believes that library service should be universal as well as free. This agency may operate under the States Department of Education; it may be tied in with the State Legislative or Historical Library or its Archives; it may be called the Travelling Libraries Commission, the State Travelling Library, the Library Extension Service or the Public Libraries Commission. It is the vital part of the State services.

Board of Trustees

The Public libraries in the States have a Board of Trustees to manage them. Normally they are appointed by the Mayor, but the city council must approve of their appointment. The Board of Trustees system has its own advantage for the following reasons :

1. The Board provides a check on the experts;
2. For continuity of policy, because librarians are always changing their jobs;
3. Protect the library from political influence; and
4. Board Trust has really a great trust.

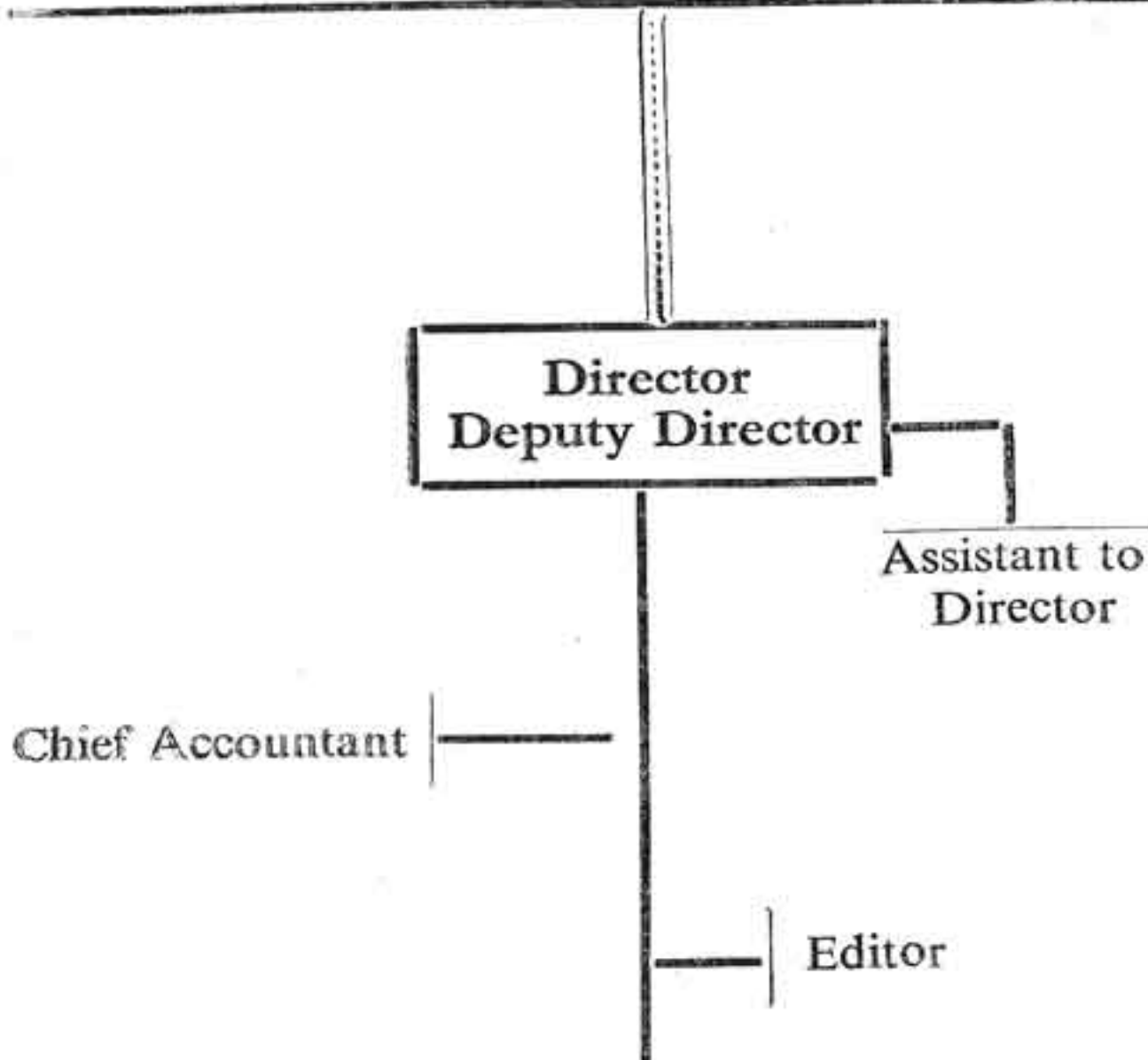
The Administrative structure of American Public Libraries is :

BOARD OF TRUSTEES

President Vice-Presidents Secretary Treasurers

COMMITTIES :

Reference	Art	Exe- cutive	Finance	Nomi- nation	Criculation Department
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Business Manager	Chief of the personnel office	Chief of the Reference Department	Chief of the Circulation Dept.	Exec- utive offi- cer	Chief of the Pub lic Rel- ations office
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The people of the United States wish that their country should lead the world always. So they want to continue their mental horizons and they think that their best means of doing so is by consistent intelligent use of the public library. Hence today's American Library is dedicated to, promoting enlightened citizenship and enriching personal life. The things that are important to contemporary society, are important in the library. People, rather than books, come first in modern library thinking. In some libraries this change has come suddenly with jolt of a new building, dynamic librarian, or awakened community interest - or very likely, all three of these. In other libraries the change is more gradual. But everywhere libraries of every kind, are keying themselves to the present day needs of people. At the same time, they are keeping an eye on the future and its amazing possibilities.

The modern service concepts of the public library are no longer confined to making books available in its premises. The development of Reader's Advisory Service, the use of Non-book Materials like pictures, films, and records, and the development of Group Activities, like talks, forums, lectures and discussions have turned the library into an active community centre. The public librarian is a participant in many local activities and he works in close cooperation with active local groups, such

as Youth Organizations, Womens' Club, Workers Education Groups, and Groups of Businessmen and of Social Workers.

Departmental Breakdown

The simplest Departmental Breakdown of a public library is by age groups - children, young people, and adults. Now half of the library's services are for children, and children's librarians make up one of the largest and most active sections of the American Library profession. The Public Relations Department, the Extension Department and the Reference Department of a big public library do tremendous work with Adults. Another kind of important library work is that of services to the Handicapped, Hospitalized, and Institutionalized.

Services

The services in the library are classified into two major groups :

1. Readers' Services which include Circulation, Reference and Departmental work; and
2. Technical Services which include acquisition, ordering, cataloguing - the most important work, and maintenance of books.

In some of the public libraries the modern communication and transport systems, the modern inventions and machinery have all been utilized to make service

diversified and speedy. The use of I. B. M. Machine in some of the county as well as metropolitan system for maintaining records for book movements, for providing elaborate catalogues to branch libraries and for centralising the records of charging systems, relieves the branch librarian of routine operations to devote himself better to the Reader's services. Another important machine found in a few big libraries is the INFORMATION STORAGE COMPUTER which lists all the books, pamphlets, magazines, recordings, films and tapes the library has. Now it is operated by a man. In the future, in 1980, it would be an automatic information storage computer. If a reader puts his request into it-a typed card-a list of all the holdings of a library on a particular subject in which the reader is interested will be dropped out of the big machine. A conveyor belt will carry new books from the receiving room to the acquisition department. Another conveyor belt will carry non book materials. Everywhere there would be machines to handle mechanical tasks like lettering, sorting, tabulating cards, pasting and reinforcing binding.

Conclusion

To conclude, the vast library field of America offers the most varied and matured experience. The rethinking and the revaluation, which are continuously taking place, are fruitful sources of new ideas and institutions. Their study can be most rewarding. Now the United

States leads the world in the total number of free public libraries in one country. There are more than 8,000 public libraries with about 4,000 additional branches. In short, more than half of about fourteen thousand libraries in the United States exclusive of school libraries are public libraries of one sort or another. The ten percent are in city, State or Regional systems. These range all the way from the New York Public Library, the country's second largest library, with its eighty branches, to the small city or town library with perhaps a single branch or book mobile. The ninety percent which serve small towns and villages are "One Woman" libraries, like our single teacher's schools, and they are kept open a limited number of hours and with a collection far too meager to meet today's needs. The librarian is usually untrained and sometimes unpaid. She (always it seems to be a woman) handles budget making, book ordering, classifying and cataloguing, processing and lending; she answers reference questions and helps children find their books. Above all, the Library of Congress, the world's biggest library which was started by the United States Government for the use of Congress has been made a public library from the very inception. Its services have been extended to other government agencies, other libraries, scholars and the general public. It is housed in two buildings in Washington, D. C. It contains 270 miles of bookshelves. It has the following six

VII. Public Libraries in Great Britain

Introduction

The library is a "collection of books made effective." A public library is a library supported by local rates. It will include municipal town libraries commonly known in the nineteenth century as the "free libraries" and county libraries. The free public library has long been claimed by the Great Britain as one of its great contributions to modern civilization.

Popular Libraries

In Great Britain the public library service has been developing much on its present lines for over a century.

Before then library provision was very limited. The first efforts to establish "Popular libraries" in Great Britain were made in the beginning of the seventeenth century. These efforts should have been made as the results of philanthropy. The first free public library was founded in Coventry in 1601. This was followed by libraries in Norwich (1608), Bristol (1615), Langley Marish (1623) Leicester (1632), Manchester (1653) and at Innerpeffray (1680). But only a few small collections bought with money given to the towns were found in these libraries. Besides these libraries soon became unused because there was no money to maintain them. So also there was no money to keep them provided regularly with new books. Today only one of them—the library at Manchester (which was founded by Sir Humphery Chetham) is in existence.

Kirkwood's Scheme :

In 1699 the Scottish Minister James Kirkwood proposed an ambitious scheme in his anonymously issued tract "An overture for Founding and Maintaining of Bibliothecs in every Paroch throughout Great Britain.." He also followed this in 1702 with his "A copy of letter anent a project for Erecting a library in every Presbytery or at least in the Highlands. He even succeeded in establishing seventy seven libraries with a fund collected by him in London. He also persuaded

the Church of Scotland to provide for their administration, growth, cataloguing, and use, and inspired a law of 1709 for the establishment of libraries in parsonages. But due to the scottish rebellion and the defeat of Young Pretender in 1749 with the resultant political and social confusion put a stop to this promising development.

Dr. Thomas Bray and his Parochial Library Movement

In the meanwhile the English Minister Dr. Thomas Bray, a contemporary of Kirkwood had started the parochial library movement with the help of influential friends. Funds were collected and libraries were founded for the clergy and for spreading religion in the colonies. Sixty one libraries were founded by Bray between 1704 and his death in 1730. In 1708 a law was passed with provision for their maintenance. These libraries soon became generally accessible. Even after the death of Bray more than a hundred such libraries were started by a society - Dr. Bray's Associates for Founding Clerical Libraries and Supporting Negro Schools - in the period 1757-1807. Most of them were for the use of the parochial clergy. But unfortunately most of the Bray libraries were neglected for lack of funds.

Narcissus Marsh and His Library

Narcissus Marsh, the Archbishop of Armagh,

founded a library for the public use in Ireland in 1713. He furnished it with a regular income and the valuable collection of Bishop Stillingfleet of Worcester. This library was reckoned among the best and most accessible in the country. It had 15,000 volumes by the end of the eighteenth century. Both Swift and Bruke were among its patrons. In the next century it was amalgamated with other collections to form the Dublin Public Library.

Itinerating Libraries

Towards the end of the eighteenth century and in the beginning of the nineteenth century, the ordinary man had little opportunity to read. But the working man had a growing desire to educate himself so that he could take a keener interest and play a greater part in the life of his time. Therefore, there was a great activity in the provision of popular libraries in the South Eastern Countries of Scotland and in the North East of England. The most famous of these schemes was Provost Samuel Browns's system of "itinerating libraries." This scheme was initiated in East Lothian in 1817. The chief object of this scheme was to promote the interests of religion and the plan was to have a library within a mile and a half of every inhabitant of the country, if possible and to station ~~a~~ ^a division of fifty volumes in every village and hamlet where a librarian could be found. The books

were to be removed at the end of two years and a general exchange effected. Fifty such libraries were started. But they were not functioning like many other similar libraries after the death of their founder. During this period two London clergymen—Mackenzie and Brereton—founded small reading rooms and lending libraries in thickly populated slums.

Mechanics' Institutes

Some institutes were created at that time for the instruction and continued education of Craftsman and mechanics. The first mechanic's institute was created in 1823. This later became the important Technical College of Glasgow. It grew out of lectures given by Professor George Birkbeck after 1800 at the Andersonian Institute of Glasgow. It was supplemented by a library. This example was initiated in Edinburgh and in the industrial northern part of England. Besides, Birkbeck himself founded six of these institutions in London in 1834. In course of time many such institutes were started through-out the country and in 1849 there were some 400 of these Mechanic Institutes. They were financed solely by the subscriptions of the members. Many of their libraries contained several thousand volumes. However there were not permanent institutions. By the latter part of the century they were taken over

by the technical colleges, by the larger municipal trade schools or by Public Libraries.

PUBLIC LIBRARY MOVEMENT

a) Ewart and Edwards

Toward the middle of the nineteenth century the time was ripe for a system of public libraries. The foundation of the British Public Library service owes much to William Ewart, M. P., Joseph Brotherton, M. P. and Edward Edwards. Edwards was a young library assistant at the British Museum. He was very critical of the library services then available in London. He succeeded in interesting William Ewart. In 1849 Ewart got parliament to authorize an enquiry into the State of libraries in this country as compared with the facilities available elsewhere in Europe. As a result of this document Ewart was able to persuade Parliament to pass the first Public Libraries Act in 1850. In the meanwhile together with Joseph Brotherton, Ewart had pushed the Museum Act of 1845 through the House of Commons. This law regulated municipal art collections and libraries and resulted in the opening of the first instruction of this kind in Salford near Manchester.

b) The Act of 1850

The Bill for the first public libraries Act received

the Royal Assent as "The public libraries Act, 1850" on 14th August. The Act of 1850 applied only to England and Wales. It permitted adoption only by towns with 10,000 or more population. Besides it limited the expenditure to the product of a halfpenny rate. In addition none of which was to be spent on books. In Great Britain the local government for cities, towns, rural districts and counties is in the hands of elected councils. They are responsible for providing local services like schools, roads, public health facilities etc. But they can only do what they are either told to do or allowed to do by Parliament. The Act of 1950 allowed them to provide library if they wanted to do so. In 1853 powers were extended to Scotland and Ireland.

c) The Act of 1855

In 1855 the Act of 1850 was revised. The revised Act (The Act of 1855) permitted the expenditure of a larger amount, the product of a rate of 1 d. in the pound. It also permitted expenditure on books. In addition the population limit was lowered to 5,000. But the progress was very slow at the beginning. Only 48 authorities in England, Wales, Scotland and Ireland adopted this Act before 1870.

d) Growth of Public Library

Norwich was the first to adopt the Act in September,

1850. But it could not provide any service until 1857. The first public library to be opened under the provisions of this Act was at Manchester in 1852. Edwards was the first Chief Librarian of Manchester. Brighton also began library activities in 1850 but by virtue of a private Act. Other pioneers were Winchester, Bolton, Ipswich, Oxford, Liverpool, Blackburn, Sheffield and Cambridge. The first to adopt the Act in London was the Parish of St. Margaret and St. John (Westminster).

Between 1870 and 1890, the number increased to 215 and by the end of the century to 401. The reason for this progress is the general advance in education and social progress. Moreover there were some benefactors like John Passmore Edwards, Andrew Carnegie who made many contributions to the development of public libraries in this country.

e) Benefactors

The local benefactors prior to 1880 are not numerous. Building funds were sometimes obtained by public subscription as at Cambridge in 1862 and at Dundee in 1869. There were a few benefactors who donated money as well as books, e. g., Michael Thomas Bass, M. P., gave £ 8,000 to Derby in 1875. The Seventh Duke of Devonshire presented over a thousand books and a thousand pamphlets of local interest. E. R. Langworthy, Mayor of Salford in 1849 gave over

£ 15,000. Sir Percival Heywood gave a site and also £ 2,000 to Salford in 1897 to construct a branch library. Special mention should be made here about a Bengali by name Dr. J. Ghosh who was the resident of Salford gave over 8000 books, chiefly of English and foreign literature. The cost of the first public library in Coventry was met by Messrs, John Gulson (£ 5,000) and Samuel Carter (£ 1,000) in 1872. A popular local doctor by name J. T. Winnard gave Wigan £ 12,000 in 1873 for the purchase of books. So also Thomas Taylor, a local cotton manufacturer gave £ 12,000 towards the cost of the first library building. One Edmund Robert Harris provided more than £ 1,20,000 to Preston in 1877 for public library and Museum purposes and so on.

There were numerous benefactors after 1880. As already stated John Passmore Edwards and Andrew Carnegie contributed a lion's share for public libraries. John Passmore Edwards (1823-1911), the son of a carpenter and born in Cornwall, became a successful publisher and devoted his fortune to philanthropy. Literary institutions, Mechanics' Institutes, hospitals, museums, art galleries, childrens homes, public gardens are all associated with his name. But public libraries were a special interest for him. He provided building funds and books for more than twenty, nearly all of them in London and his native country. Andrew Carnegie (1835-1919) who emigrated to the United States, entered the

iron industry in 1865 and became a multi-millionaire and began the benefactions which ensure his fame. By Carnegie's death in 1919 two hundred and thirteen towns in England and Wales, fifty in Scotland and fortyseven in Ireland had received grant aid. Besides about three hundred and eighty separate library buildings were associated with his name.

Another worker for public libraries who deserves not to be entirely forgotten was Thomas Greenwood (1851-1908). He was a publisher and became known as "the Apostle of the library-movement." The several editions of his compilation, "Free Public Libraries" are highly informative on contemporary aims and the changing trend of public opinion.

f) Library Association (London)

The Public library movement of this country also owes much to the Librarry Association which was founded in 1877.

The aims of the Association, as recorded in the charter, are :

1. To unite all persons engaged or interested in library work, by holding conferences and meetings for the discussion of bibliographical questions and matters affecting libraries or their regulation or management or otherwise.
2. To promote the better administration of libraries.

3. To promote whatever may tend to the improvement of the position and the qualification of librarians.
4. To promote the adoption of the Public Libraries Acts in any city, borough or other district within the United Kingdom of Great Britain and Ireland.
5. To promote the establishment of reference and lending libraries for use by the public.
6. To watch any legislation affecting public libraries and to assist in the promotion of such further legislation as may be considered necessary for the regulation and management or extension of public libraries.
7. To promote and encourage bibliographical study and research.
8. To collect, collate and publish information of service or interest to the Fellows and members of the Association, or for the promotion of the objects of the Corporation.
9. To form, collect and maintain a library and museum.
10. To hold examinations in Librarianship and to issue certificates of efficiency.
11. To do all such lawful things as are incidental or conducive to the attainment of the above objects.

The Library Association was certainly successful in uniting the librarians of this country. It convened many ordinary meetings and annual conferences and

thereby raised local library standards. Good progress was made in encouraging and assisting the public library movement. It also improved the training and professional education of library staffs. In a word the Library Association played a significant part and achieved good success in public librarianship.

g) Subsequent Legislation

One Act was passed in 1860 which removed the population limit altogether.

In 1861 the Malicious Damage Act was passed. According to this Act any person destroying or damaging books, manuscripts, work of art etc., in any library, museum or art gallery open to the public was liable to imprisonment for six months. This Act was applied to Ireland, England and Wales. There were some minor amending Acts in 1866 (England, Wales and Scotland). Even these failed to stimulate adoption vigourously. As mentioned earlier after 1870 the slow pace began to increase slightly. During the next ten years many Authorities adopted the Acts.

The Public Library Acts of 1871, 1877, 1884, 1887, 1889, 1890 and 1891 enacted only further provisions for adoption, area definitions and powers for Authorities to take joint action. In 1892 another Public Libraries Bill received the Royal Assent. This was the consolidating measure which repealed all earlier English

Public Library legislation. It remained the Principal Act until 1964. Scottish legislation was also consolidated by the Public Libraries consolidation (Scotland) Act of 1887.

The Act of 1893 enabled urban districts to adopt the Act. It further allowed two or more neighbouring urban districts to combine for executing these Acts. Other minor Acts were also passed in 1894, 1899, 1901 and 1902. Even then the Public Libraries Acts were not made applicable to the rural areas.

h) Carnegie United Kingdom Trust

The Carnegie United Kingdom Trust which was founded in 1913, exercised an important influence upon further development, especially by initiating county library services and supporting them till 1919. Afterwards it made substantial grants and gave invaluable guidance. In 1915 Professor W. G. S. Adams was asked to compile a report for the guidance of the Carnegie Trustees with special reference to past grants and future policy. Some important observations made in this connection by Adams are as follows :

1. Sixty two percent of the English, forty six percent of the Welsh, fifty percent of the Scottish and twenty eight percent of the Irish populations were served by public libraries.

2. Only nineteen of 222 towns with more than 30,000 people had failed to adopt the Acts.
3. Much of the service provided was of very poor quality.
4. 120 libraries which had received Carnegie Grants were spending less than £50 per annum on books and binding.
5. The librarian and the books are the most essential things and at present they are usually the residual charges on a limited income.
6. It was obviously in the rural areas that the greatest need for public library was apparent. Therefore the Trustees should take the initiative in rural service immediately. When doing so the Trustees will also be helping forward the claim for statutory reform.

Similar views on educational control of the Public Library Service were expressed to the Ministry of Reconstruction in 1919. It should be remembered here that 1 d. rate limit remained for England and Wales until 1919. In Scotland it was removed only in 1955.

i) The Act of 1919

The combined efforts of the Library Association, the Carnegie Trust, and the Adult Education Committee succeed in pushing through the Law of 1919. This Act is considered to be the most important legislative event

in the Library history of this country. Because it abolished the penny limit. The library authorities were now free to raise as much money through rates as they wished and required. Moreover it authorized the adoption of the Acts by the counties for the whole or any part of their areas excluding existing library areas with a proviso that the powers, except the power of raising rate or borrowing money should be referred to the Education Committee. This Act was an important milestone in the provision of library service throughout Great Britain especially in its rural areas. In addition the standards of library service were raised as more money could be collected and spent for the purpose.

j) **Kenyon Report**

In 1923 the President of the Board of Education, Mr. C. P. Trevelyan, appointed a Departmental Committee under the Chairmanship of Sir Frederic Kenyon to inquire into the adequacy of the library provision already made under the Public Libraries Act, and the means of extending and completing throughout the country. The Committee issued a questionnaire to all public library Authorities. It also took oral evidence. It met on thirty nine days and submitted a report which is a comprehensive one of more than two hundred pages plus more than one hundred pages of statistics. It was signed in 1927. Two of the important defects pointed

out by this report are:

1. Library Authorities grew rapidly in an uncoordinated fashion.
2. Standards of library service varied greatly between various library authorities and areas.

The following is the main recommendation of the Committee:

“There is a necessity of passing a new Act. It should consolidate the existing laws relating to libraries, bring changes in the constitution of library authorities, deal with provision of facilities and management and administration of library service, be of universal application, thereby, ensuring that every part of the country is covered and authorise all kinds of voluntary cooperation.”

k) McColvin Report

After thirteen years the Library Association conducted a survey of the British Public Library System and published its report in 1938 under the title “A Survey of Libraries; Reports on a survey made by the Library Association, during 1936-1937.” Its report was edited by Lionel R. McColvin. Funds were provided for this project by the Rockefeller Foundation.

Again in 1942 the Library Association asked its Honorary Secretary Lionel R. McColvin to make a further study of the public libraries and prepare a report.

McColvin did it with a fine comb and his report was published under the title "The Public Library Systems of Great Britain : a report on its Present condition with proposals for post-war Reorganisation." Some of the defects pointed out by McColvin are :

1. Unsuitable, unqualified and ineffective personnel.
2. Apathy on the part of the public due to the absence, locally, of opportunity to understand and appreciate the values of a good library service sufficient to make them seek it.
3. Failure of such public interest as does exist locally to make effective impact upon apathetic local authorities.
4. The limitations of local financial resources.
5. Limitations due to the insufficiency of the local unit of service in relation to population, etc.
6. The lack of coordination between the various local authorities responsible, and the duplications and omissions arising therefrom.

A few of the important conclusions of McColvin out of his survey are :

1. There must be complete coverage throughout the kingdom.
2. There must be proper relationship between demand and supply.
3. There must be a full appropriate supply of books at all stages in the project network of libraries.

4. Libraries must be properly managed.
5. The library services of the country must be properly coordinated.
6. We need some form of national central body which will guide, coordinate and encourage the development of local services.
7. Nevertheless the library service must remain a local service under the control and management of appropriate local bodies and not delivery under the control of the central government.
8. We must bring to bear upon all our considerations the widest possible vision.

It is well known fact that considerable public library progress in both towns and countries has been made since the publication of the McColvin Report.

1) Roberts Committee

In 1957 the Government of this country appointed a Committee to consider the future development of public libraries. Sir Sydney Roberts was appointed as its Chairman. Besides there were 15 members in the Committee. Their report "The structure of the Public Library Service in England and Wales: Report of the Committee appointed by the Minister of Education in September 1957" was presented to the Parliament in February 1959. This Report is popularly known as "Roberts Report." The Chief recommendation of his

Committee is that the Minister of Education should have general responsibility for the Public library services of local councils, with powers to insist that at least the more backward authorities shall improve their librarians.

Earlier it is mentioned that the county councils secured permission from 1919 to provide libraries. But the county councils were asked to provide libraries only for all those places within the county area that had not already established their local library. The Towns, Some of them with libraries 60 and 70 years old, could remain independent, or if they liked could hand over their powers to the county council. Very few of them did so. Therefore, there is a very illogical pattern. Roberts Committee considered it as a serious problem. It suggested that no local authority which was not able and willing to spend at least £ 5,000 a year on books alone should continue as an independent service.

A few other recommendations of this Committee are :

1. The existing regional committees should be given statutory recognition and they should be required to provide a satisfactory system of library cooperation within their regions and to work in conjunction with the National Central Library in providing a national system of cooperation.
2. In view of the help which the local authorities receive from the National Central Library, they

should contribute substantially to its cost, should have greater representation on its governing body and should play a larger part in its administration.

3. The completion of an adequate series of regional catalogues, and of the catalogue at the National Central Library should be undertaken as a matter of urgency, and the Treasury should be asked to make a non-recurring grant towards the capital cost of this work.
4. Salary scales for the staff of public libraries should be in commensurate with their qualifications and responsibilities....
5. Consideration should be given, particularly by counties with small populations, to the provision of joint library services or other forms for close cooperation between two or more library authorities.
6. Consideration should be given to the establishment in Wales of a School of Librarianship...
7. No charge should be made to borrowers of books or other material except for (a) notification that a book or other material is available; (b) retention beyond a prescribed period.
8. Legislative provision should be made authorising the levying of these charges by library authorities.
9. A new Public Library Act should be passed to give

effect, so far as is necessary, to the foregoing recommendations and to consolidate and revise existing legislation.

10. All library authorities should be given specific powers to combine or cooperate with each other and to cooperate with education and other authorities, provide lectures, pay fees to lecturers, spend money on activities of a cultural nature and charge of admission to meetings or other functions, provide and lend such material as gramophone records, pictures and films and acquire land compulsorily for library purposes under the public libraries act.

STRUCTURE OF THE PUBLIC LIBRARY SERVICE

a) Free Public Library Service

The most important feature of the British Public Library Service is that it must be given freely to any member of the public who wants to use it. The cost of the Public Library is borne collectively by all those people who pay local taxes (or rates) whether they use the library or not. But the person who wishes to use the library may not be charged any subscription or fee, or be asked to make any other payment in order to enjoy to the full whatever is provided by the library.

b) Freedom of Public Libraries

The British Public Library Service is and always has been entirely a local responsibility. There is no department of the national government which is concerned with Public Library Services. All the money has come from local revenue. Therefore, the local council has got more freedom. The result of this local independence is that a wide variety in the standards of efficiency is found in different libraries.

c) Local Authorities

There are three kinds of local authorities in Great Britain. First there are the Councils of the larger cities carrying out all the duties of local government for their own area. They are otherwise called county boroughs. They are the larger cities and towns. They are responsible for education, public health, libraries etc. within their own boundaries. The second type of local authority is the county. All the rest of the country, outside the county boroughs, is governed by county councils. Within each county, there are smaller towns, villages and county districts. Each of these smaller areas within the county has its own local council. Many of these smaller councils started their own library services before 1919. But as already stated, the county council was given power in 1919 to provide libraries for all those places inside the county area.

d) Pattern of Library Provision

Now let us know something about the pattern of library provision. Even though there are different standards most public libraries have the same pattern of library service. Let us take first a town library. The following are the four main departments of almost all town libraries :

1. Lending Department, from which books may be borrowed for home reading.
2. Reference Department providing the information service.
3. Periodicals (current) and Magazines Department.
4. Children's Department.

The above four departments may be continued in the case of smaller branch libraries. In a very small library all these services may be provided in one room. In some libraries, on the other hand, additional departments or developments will be found. Most of the town libraries will have one additional department for the local collections containing material relating to the history, social and cultural life of the city. There may also be special departments for Science and Technology, Music, Fine Arts etc. In some libraries the Science and Technology department may be combined with a special department for Business and Commerce. In some places there may be even separate commercial libraries.

e) **Branch Libraries**

In smaller towns there will be one library which will be within reasonable access for all people. In larger towns it becomes necessary to set up branch libraries in addition to a main central library. The branch library caters for the more popular and less specialised needs. The central library offers widest possible range of materials. The branch libraries are closely linked with the central library so that the books requested by branch readers can be sent for them from the central library or from any other place where they are available. Since it is undesirable to bring children into the busy centre of the town most of the work regarding children will be done by the branch libraries.

The books are an essential medium for both information and pleasure to children. In Great Britain the responsibility for the provision of books for children is shared between education authorities and public library authorities. In urban areas with larger schools, school libraries are excellent, especially for children of secondary school age, 11-15. The children of these schools can also have accessible public library facilities in central and branch libraries. Children of primary school age will have less satisfactory school libraries. About one third of all public libraries supply books to schools to serve the school library. But in towns served by a municipal library authority only about one in six schools will

have this service. The pre-school and private school children will have to make use of the public library service only. Children of secondary age in rural areas may have school library as good or better than the town children. Besides most of the children attend new central secondary schools to which they are taken by special school buses. Their use of the library after school, however, will be prevented by the necessity of catering the school bus home. But if these children live in a small village they can possibly use the mobile library which will call whilst they are at school, or a village centre in the primary school with suitable books. If they live in a larger village they can use either a part time branch or a mobile library which will be available at a convenient time in some part of the village. But if they live in a scattered area without a mobile library they will have no service. Anyhow the public libraries try their level best to make the children's books available by an efficient system of mobile libraries.

f) County Library Service

Now let us come to the county library service. In most counties there are many smaller towns. But there are still large towns served by the county service. The public library service provided in these towns within the county area is similar to the service provided by the libraries of independent towns of the same size. In

other words they will have whole time branches as big and as well provided as the libraries of independent towns. Besides the county libraries have also to serve the people who live in the very small town, the villages and in isolated farms and cottages spread throughout the countryside. Therefore many centres were opened by the county libraries. A centre is a place to which very small collection of books were sent from county headquarters. It will be kept open for two or three hours a week and looked after by unpaid volunteers. These centres are usually situated in such premises as village clubs, schools, post offices, shops etc. In addition the county readers are also allowed to use the branch in the town. During the last few years, county libraries have more and more developed system of travelling libraries. The travelling library is a specially constructed van. It is shelved inside to contain about 3,000 volumes with space for two library assistants and readers to go inside the van and choose their books from the open shelves. The travelling library—the mobile library was used solely by county libraries for the purpose of serving small and remote communities. But since the war they have been utilised more and more by urban libraries. The only reason for this was the post war accommodation difficulty when buildings were not available for new branches. So, for the first time, mobile libraries which were seen only in the rural England, began to remain in the

Victorian streets and in the suburban avenues of north London. At present children and old people lavish much affection upon the travelling library. It is an essential element in the build up of a public library system. It continues to be a welcome and regular feature in the lives of many people, who would not otherwise be able to enjoy the benefits of a library service. Another important advantage of this is that the vehicle brings books almost to the door steps in the case of old people. When the mobile library is used by a town it takes almost the form of an articulate vehicle, That is to say that it can be taken out to a site by a towing unit and left there until the time comes for it to be collected and taken back to headquarters. Thus the mobile library is a vital and integral part of the public library system.

The following are the different types of mobile library :

1. Large size — 30' in length (3000 book).
2. Medium sized vehicle — 25' (2400 books).
3. Small travelling library 16' (1000 books).

The most usual vehicle will be about 24-25' in length, 7' b in- wide and 10' in high. Its wheel base, i. e., distance between the centres of its axles, will be about 15', its rear overhang about 7' and 2' front overhang.

g) Regional Library

Another important development is that of the Regional Library. It is a large county branch serving as centre for the surrounding country districts. It may also act as the headquarters of one or more libraries. The librarian of a regional library is responsible for supervising the work done by the smaller branches and centres in his region.

When the public libraries were started first, the privilege of open access was not extended to readers. But now every public library offers its readers free access to the shelves so that they may see what is available and make their own choice of the books.

In fine, a public library, in this country has become the best means of educating and enriching the experience of the people and also the essential element in the social, educational and cultural life of the people.

Before we conclude let us know something about the two important libraries of this country, viz., British Museum Library and National Central Library.

British Museum Library

The British Museum Library (London) is one of the greatest libraries of the world. It holds all important records, both from past centuries and of the passing day, of the world's literature, history, science and thought. In short the British Museum is next to British Navy,

the national institution which is held in most universal respect abroad. This library was originated with the grant of £ 20,000 voted for Parliament in 1753 for the purchase of Sir Hans Sloane's collection of rare books, Mss., works of arts etc. Montague House was bought to accommodate Hans Sloane's collection. Afterwards several collections of books maintained by some individuals and libraries were added to Sloane's collection. Therefore the accommodation in Montague House was not sufficient. A new building on the old site, the present British Museum was constructed in 1847. In 1857 the present circular reading room with its surrounding book stacks was opened. It is only within the last century that the library has attained the commanding position which it now holds. For this it is indebted to Panizzi in respect of printed books and to Bond and Thompson in respect of the manuscripts. Now it is the national repository. It is entitled to receive one free copy of every work published in the United Kingdom.

National Central Library

The National Central Library, London began in 1916 as the central library for students. Its chief purpose was to provide books for organised study groups. In 1930 the central library was reconstituted as the National Central Library. It has now become a national centre for lending books to readers. It works with the Scottish

Central Library for students and Irish Central Library for the students and with other libraries. Besides, it has its own stock of important collections. It is maintained by annual grants from the Treasury, Municipal and County Authorities, the Carnegie United Kingdom Trust and gifts. It can draw books from all the principal British libraries. It supplies bibliographical information and sometime maintains an international lending service.

Public Libraries and Museums Act. 1965.

Earlier mention was made about the Roberts Committee Report. There was a mixed reception to this Report. Smaller local library authorities which were faced with the fear of extinction, were critical of it, while all others in general welcomed it. The Library Association took active and keen interest regarding the implementation of these recommendations. In 1960 the Minister for Education announced in the House of Commons that he had appointed two departmental working parties, viz., (1) on library cooperation, and (2) on the basic requirements for an efficient library service. These two working parties submitted their reports and they were published in 1962. After two years the Public Libraries and Museums Bill was made public. It became law on 31st July, 1964 and came into force on 1st April 1965.

The chief purpose of this Act is to place the public library service provided by local authorities in England and Wales under the superintendence of the Secretary of the State and to make new provision for regulating and improving that service. It provides for the appointment of two library Advisory Councils, viz, one for England, and the other for Wales and Monmouthshire respectively, to advise the Minister for Education upon matters connected with the provision of library facilities. It provides for the appointment of Regional Councils for ensuring proper inter library cooperation. It makes the library service free of all charges except the charges for reservation of books, the overdue charges and the charges for lending gramophone records, pictures, etc. It lays down certain conditions for library authorities to fulfil to enable them to continue as library authorities. The chief purpose of this provision is to provide larger units and to do away with smaller library authorities so as to ensure efficient library service. But it permits noncounty boroughs and urban districts to become members of Joint Boards so that they can retain library powers. It indicates that it shall be the duty of every library authority to provide comprehensive and efficient library service for all. Another provision made in this Act is that the government may make grants to any library authority. The library authorities have been empowered to make bye-laws.

This Act repeals all the previous public library Acts and indicates the latest trend in library legislation in the world.

Conclusion

To conclude the British Public Library Service is one of the best in the world. It is steadily improving. The Pattern of library service in the United States is basically similar to that in the United Kingdom. But it should be remembered here that in the United States, the Governmental unit and the legal basis varies considerably from State to State. Anyhow the ideals and the types of service and methods of the United States closely resemble the British.

The Public Libraries Acts of the United Kingdom are and have always been adoptive. In other words the local authority concerned has been free to decide whether or not to provide libraries and at liberty to spend as little and since 1919 as much as they wished upon them. Therefore it is remarkable and praiseworthy that almost complete nationwide coverage should have been achieved. In 1960, in United Kingdom, there was a cent per cent coverage of the entire country by public library service points. In 1966, the number of separate library authorities was 405 which included 138 authorities with less than 40,000 population, In 1965-66 these libraries had 91, 3, 47,000 volumes in stock with 5,431

professional qualified library staff members, 33% of the of the population had enrolled themselves as registered borrowers. Total expenditure on these libraries was £ 3,65,17,000, i.e. 13 s. 7d. per capita. Out of it, an amount of £ 9,201,000 was spent on books alone, giving 3 s. 5d. per capita expenditure on books. All public libraries in this country are now maintained under the latest Act "The Public Libraries and Museums Act 1964." The previous Acts were permissive. In other words they allowed councils to set up libraries if they wished. This Act is obligatory. It defines which authorities provide should libraries. It also lays down standards of service. The Department of Education and Science is made the ministry responsible for Public Libraries. Besides a system of inspection of libraries by the members of the Department is provided for.

VIII A School Library and Its Uses

Introduction

A library is a place where a collection of books and similar material are organized and administered for reading, consultation and study. A school library is an organized collection of books and other reading materials housed in a school for the use of students and teachers. A school library is one of the most important laboratories full of valuable materials. Since educational methods have changed and modernised both teachers and students have to depend only on the library.

Now the school library has become a centre for collection of books and other materials which all the students can use whenever there is need. Besides it is the heart of the educational institution and also the place of

discovery. In recent years we have come to realize that the library of the school fosters the reading habit and stimulates creative thinking. As we are now becoming more and more concerned with the education of our young people, we have been paying more attention to the development of school libraries.

In the old days students were confining their attention to mostly the prescribed text books and to their text book subjects. But present day students are anxious to know about other subjects also. They therefore need information and such information can be found only in the library. Even the teachers require information on many things and much more than is required by the students and they also seek the treasure stored in the Library.

Why We Need A School Library ?

A school needs a library for the following reasons:

1. to provide pupils the best possible resources such as books, magazines, and other reading materials;
2. to provide for the leisure time activities of youngsters and thereby reduce juvenile delinquencies and to furnish information on the scope of employment for children who pass out of the schools;
3. to meet the ever-increasing need for all kinds of teaching aids like audio-visual aids, recordings, maps, pictures and films;

4. to help children whose interest in a subject are intense to get more material on the subject; and
5. to foster the reading habit among the students.

How Best to Equip the School Library to Cater to the Children's Needs ?

The following four suggestions are aimed at organising the school library :

Although the importance of a school library has been recognised for many years most of the schools in our country are without school libraries or have inadequate library resources and services. In fact a school library is an educational force in the school. Its most important function is the work with teachers and pupils which can be carried on efficiently only when certain conditions prevail viz, an adequate library room, the services of a qualified librarian, a good collections of well selected materials and orderly arrangement that ensures easy accessibility to materials.

School Library Programme

A school library programme should be chalked out in such a way that it can (a) stimulate an interest in reading as a leisure time hobby (b) increase efficiency in the use of library and its resources (c) promote good citizenship through respect for public property, courtesy and responsibility (d) provide practice in using research

skills (e) develop appreciation for good books (f) provide guidance in the choice of reading materials by pupils in order to build proper aptitudes and to help in personality development (g) improve reading ability through practice.

School Library Room

A good school library is the most important room the young people pass through on their road to growing up. Here they must be made to learn to love reading as they are learning to read. Moreover, here they solve school work problems on their own and experience the thrill of discovery. Therefore there should be a separate spacious room for the school library. There should be more natural ventilation as well as light. It should be remembered here that inadequate library room will wreck a good library programme. The chief purpose of a school library is to motivate young people to read. So the library must be the most attractive room in the building. It should provide ample shelves to accommodate the maximum book collection for the school may need to plan. It should have sufficient space so that the students and the staff will have a place in which to read and work. Above all it must be one which will make the young people want to come in. If a new library building is to be constructed it is fair and sensible to consult the specialist for proper advice. In addition,

the librarian who is to work in the library should also be consulted before the plan is finalised.

A school library with convenient tables and chairs in an inviting atmosphere can do much to bring pupils and books together. Furniture and shelves should be dusted daily. Chairs should fit the tables. Books should be shelved with the spines at the front of the shelves. No shelf should be completely filled. Potted plants, figurines and book displays would enhance the appearance of the room.

Bulletin boards should be neat and attractive. Pictures from magazines can be enlarged and adapted as displays. Book jackets are also good display material. Paper sculpture, figures or real objects would add to the variety of displays. Collections of shells, cones or rocks and the books about them create much interest. Featuring a month or a class helps to tone down the busy appearance in the room. Using a colour scheme for the bulletin board and under vases, etc. makes the room more restful.

The library should be quiet and orderly. Research groups may be permitted more freedom. Students who waste time should not be permitted to stay in the library. Students should have regular places assigned to them for library periods. This will prevent confusion when a class enters the library. As far as possible, chairs and tables should fit the children. The teachers should

help the librarian in avoiding the undesirable combinations and see that discipline cases are separated.

In a word the school library should be housed in a smart, bright and soothing room with adequate as well as comfortable furniture.

School Library Resources

Every school library should have a sizable collection of books built up through annual purchases.

The Librarian

A school library should have a trained librarian, because his special knowledge of books will supplement the good work done by teachers in the class room. The librarian is not a mere custodian of materials found in the library. He is a dynamic force. He works with the teachers to provide the resources they need to carry on their classes. Moreover, he is a professional guide to help children derive pleasure in reading. So he must be a specialist in the twin fields of education and librarianship. He must understand child psychology. He must be conversant with the curriculum of the school. He must be able to work efficiently with teachers and pupils. He must be familiar with all the resources found in his library so that he can help easily any person approaching him for information or material. Above all he must be kind towards children. A good school librarian is an ex-

pert at choosing the right book for the right person at the right time. He should also know the important role of magazines and other materials such as pictures, photographs, and films, play in broadening young peoples' interests.

The chief function of a school librarian is to see that all books are used. From many new titles published every year he must select and buy the books that his students and teachers most need. He must also organise (classify and catalogue) these materials so that his clientele can easily know what is found in them. The other duties of a school librarian are (1) select magazines and other materials for purchase; (ii) organise them for effective use; (iii) plan and equip the library with shelves, tables, catalogues, charging desk, etc.

The librarian can help teachers, (i) by providing selections aids with explanation on how to use them to buy books; (ii) by preparing reading lists and bibliographies; (iii) by providing curriculum enrichment materials, pamphlets, films, and pictures; and (iv) by functioning as the school expert on books in general.

He can help students, (i) by administering the library efficiently so that they can work effectively; (ii) by assisting them in locating materials for topics, projects and assignments; (iii) by encouraging them to read for leisure and entertainment; and (iv) by inducing them to discover what materials are best for them.

He can also actively cooperate with teachers and administrators in (a) book selection and buying (b) curriculum making, especially preparing reading lists and outlines (c) students control and behaviour (d) planning and administering library rules and regulations.

In addition to a board general education plus some special training as a librarian a school librarian also needs some training as a teacher as he has to work closely with teachers and students, often on school assignments. He can do this more effectively if he has training as a teacher. In other words some experience as a teacher will help the librarian to understand better the problems of both the teachers and their students. It is pertinent to suggest that in our country the school authorities should select one of the teachers to undergo the training in librarianship and afterwards appoint him as the librarian, for schools of more than 500 students along with one clerk-cum-typist. The status of the school librarian must be the same as that of other trained Graduate Teachers. For schools of 200-500 students a certificate holder in librarianship is suggested and he may be treated on a par with other teachers.

There should be adequate library staff in larger schools so that the librarian would be freed from much technical and clerical work and devote more time, for reading guidance, reference work, promotion and publicity,

gathering resource material for enriching instructional activity, instructing the effective use of the library and keeping abreast of professional development and new materials.

Library Reading

Supervised reading and rapid reading of the non-detailed books will naturally lead to library reading that is unsupervised. A student who has developed the habit of going to a library in his childhood is more likely to keep that habit as an adult.

The proper adjustment of reading materials to a student's capacity is of profound importance. According to Dr. Huber the students' choices and enjoyment of literature are influenced by the following three factors : (i) type of material; (ii) quality of the material—the vocabulary burden.

The students will prefer books in the following order:— (i) books of stories and tales; (ii) books of fables; (iii) books of great people; (iv) books on travel and adventure; and (v) books on science, history and geography.

Library study may commence from Standard VIII and students should be provided with short interesting easy books of tales, stories and adventures written by popular authors. Simple short interesting books in Indian languages are lacking at present. Hence we

should undertake the noble task of producing more short books suited to the needs of our children in all the 14 national languages of our country.

Class Library

While it may be desirable to have a book nearly in a convenient place for a student to pick up in his spare time, it is more desirable that he gets into the habit of choosing from a larger collection in the school library. Besides, the formation of class libraries will naturally encourage the students' private reading. Hence the librarian in consultation with the headmaster and the teachers must organise class room libraries. The class teacher may be put in charge of a class room library. A register should be maintained by the class leader to show what books have been read by each student. This record should be perused by the class teacher periodically.

School Library Service

The four major areas of school library service with which the school librarian is concerned are (1) "Free" reading; (2) Reading guidance; (3) Teaching Library skills; and (4) Supervised reference work. "Free" reading is the reading that students do. They themselves choose the books and read without help from anyone else. But it is indirectly guided by the content of the collection from which the students freely choose. The

librarian's duty is to open the door to such students. He must also anticipate the subjects about which youngsters want to know and provide books in those subjects. Books of adventure, romance, facts, fantasy will attract the students. In other words, on tempting variety of books available in a good school library the students exercise their free choice and out of this experience develop the desire and ability to make good choices in the future.

Reading guidance is the help rendered by the librarian to both the poor readers and the gifted readers as well as middle group among the students in finding the books suited to their abilities and their interests. Through individual contacts or through discussions with the class teachers the librarian can help such students. Besides, he can also organise group guidance activities such as book displays, exhibits, story hours for children and discussions about good books, popular authors, and illustrators as well as book talks for young adults. Thus the librarian can make his library as a source of enjoyment and enrichment.

The third aspect of school library service is teaching the art of the use of the library to the pupils. It is the chief responsibility of the school librarian. Regular instructions in the use of library and its resources should begin from VI standard. Instructions may be given in the following :

1. Importance of a library;
2. Value of books;
3. Care of books;
4. Responsibility for public property promptness in returning books, neatness in library;
5. How to locate books;
6. Shelving of books;
7. Use of Childrens' magazines;
8. Meaning of terms: Call no., title, magazine, fiction, non-fiction, publisher etc;
9. Behaviour in the library.

The students of higher standards will be eager for new experiences. They may enjoy assisting in shelving of books, circulation of books and tidy maintenance of the library. So all should be given the opportunity to help the librarian in the above items of work. They should also be taught the following :

1. Circulation routine;
2. Classified arrangement of books on the shelves;
3. Functions of the library catalogue;
4. Kinds and uses of reference sources;
5. How to read a book and to take notes while reading;
6. How books are made;
7. How to compile a bibliography;
8. How to write essays;
9. Index and its uses.

The librarian and class teacher should show that they respect books. Then only the students will have interest in reading books. Reading to the class and suggesting books for further reading in the class will create interest in books. It will also help to build good attitudes towards books and to develop an appreciation of the functions of the Library. Moreover, the teachers can help to make the library an extension of the class room by planning with the librarian for the library periods and extra assignments. The teachers of the lower classes can help to instil a love of books by reading to the class and discussing illustrations. They can also arrange for occasional visit to the library and help the pupils to learn the following :

1. Good Library manners;
2. Care of Books;
3. Appreciation and enjoyment of books;
4. Selection of books for the class room library;
and
5. Techniques of taking out a book.

The fourth aspect of school library service is the supervised reference work. This depends upon the co-operative programme developed by the librarian and class teachers and develops from class assignments. It may begin with a help to a lower class as they search for some information, it should extend to the senior student writing an essay on some topic. But it must consist of a

carefully planned programme so that the students can become increasingly skillful and independent in the use of the books and other materials as information tools.

Some Suggestions for Improvement

1. There should be proper understanding and support given to the school library by the headmaster and the faculty. They should appreciate the contribution of the school library to today's schools and motivate the students to be effective library users.

2. The headmaster should consult the librarian on all matters relating to the school library.

3. There should be a library committee to suggest plans for improvement with the librarian as the ex-officio secretary.

4. The teachers should consult the librarian in planning new units or revising courses of study and inform the librarian in advance about the major assignments requiring the use of library resources. They should also help the librarian in building and maintaining the library's collection.

5. Book Fairs may be organised periodically and during festive occasions.

6. Public libraries may have a substantial collection of books and other reading materials for the use of both teachers and students. These books may be secured by the school librarian for use in the school from

time to time.

7. The library must be open to students and teachers half an hour before the commencement of school and for half an hour during the noon lunch recess. This out of school time will help the librarian to maintain good relationship with school staff. In addition it can be the most rewarding part of the day, because it is then that the librarian has with him those students who are really interested in reading.

8. The librarian should reserve the first fifteen minutes after school begins to check overdue books and to prepare the room for the day's work.

9. Students who have regular library periods may take books home. One book a week may be allowed, but renewals should be permitted. The practice of having all books due on the library period make it easy to keep down the number of overdue books. No fines are to be charged for overdue books. But the librarian should make every efforts to get overdue books within a day or two. Lost or mutilated books should be paid for in cash.

10. Magazines should be protected with periodicals covers and displayed in a prominent place. Children's magazines should not be circulated. But teachers can borrow their magazines. A record of the arrival magazines should be kept.

11. Open access system should be followed

All books and other reading materials should be classified and arranged on the racks by classification numbers.

12. A catalogue should be maintained for the use of both faculty and students.

13. Students help should be welcomed. The students can help the librarian in following items of work:-

- a) working at the circulation desk;
- b) Stamping ownership;
- c) Dusting;
- d) Sending out overdue notices;
- e) Shelving books; and
- f) Reading shelves (Checking the books on the shelves).

14. The school library should have audio-visual aids.

15. There should be a separate collection of text books.

16. There should be some minimum standards for a school library. The following may be the model standards for our school libraries :

Strength of the School	No of Books.	Annual Budget (Books)	Other Materials	Size of the Library	Staff
200-400	3,000	Rs. 1,000/- to Rs. 1,500/-	10 Magazines; 2 Newspapers; Educational Films.	Seating space for 30-40 students; shelving for resources.	One Certificate holder in Librarianship
401-800	5,000	Rs. 3,000/- to Rs 4,000/-	15 Magazines; 3 to 4 Newspapers; Educational Films.	Seating space for 50-60 students; shelving for resources; second reading room; work room.	One Graduate trained librarian and one Clerk.
More than 800	10,000	Rs. 5,000/-	20 Magazines; 5 Newspapers; Educational Films.	Seating space for 80 students; shelving for resources; second reading room; work room.	One Graduate trained librarian, one certificate holder in librarianship and one clerk.

- 168 -

In fine, a school without a library is a temple without a God. It is so to say a fundamental right to every school student.

IX Know Your Public Library

What is a Public Library ?

A public library is an institution for the public, by the public and of the public. It is for all without distinction of caste, creed, sex, age, class or locality. It is not just for the young and the curious about an exciting world. It is not just for our youth preparing for their careers. It is not just for busy people looking for information to help them to do their jobs. It is for every one and therein lies its real value. Besides, it has to supply individuals with the knowledge and wisdom they need to live fully.

A public library is an important educational institution in a democratic society. Because "the survival of democracy depends on the ability of large numbers

of people to make realistic choices in the light of adequate information." This adequate information is found only in a public library. In a word it is the information centre of the people.

Why a Public Library ?

A public library will assist people to :

1. Educate themselves continuously.
2. Keep pace with progress in all fields of knowledge.
3. Become better citizens.
4. Be more capable in their daily occupations.
5. Develop their creative and spiritual capacities.
6. Appreciate and enjoy works of art and literature.
7. Make such use of leisure time as will promote their personal and social well being.
8. Strengthen democratic ideals and deepen the sense of responsibility.

Public Library's Collection

The chief function of a public library is to help to make our system of public education complete. It should help the people in the decisions they take to inform themselves, to participate in civic affairs, to support the society and the way of life in which they move with more dedication, more vigour and more selflessness. It

should expand its services to the physically handicapped, the mentally ill, the aging, the unemployed and other groups.

The changing nature of our society will open new channels of library service. Therefore for all of them the resources of a public library should be adequate. They should be as open ended as the range of human needs.

The resources of a public library will normally fall into the following :

1. Books that cannot be taken out of the library such as dictionaries, encyclopaedias, important public documents, and books which cannot be easily replaced due to their rarity or costliness.

2. Books that few persons will wish to read. Therefore only one copy of these books may be kept. But it should be permitted to circulate freely.

3. Books that will be often asked for. So the more popular works of the time should always be duplicated.

4. Periodical publications which should not be taken out. They should be kept in a reading room accessible to everybody.

5. Audio - visual materials like phonograph records, motion picture films, slides and stereographs, framed reproductions of art and projected books - microfilmed editions of standard works and modern titles.

6. Materials on local history which include all kinds of materials such as books, newspapers, pamphlets,

maps, pictures, posters, letters, diaries, manuscripts and archives on the history of the locality of the library.

7. Other collections like, newspaper collection, pamphlet collection, map collection, picture collection, collection of catalogues, collection of music, collection of magazine article reprints and newspaper clippings etc.

Public Librarian And His Staff

The success of a public library, even though it may have the best of collections, depends on the public librarian and his staff. Therefore it should secure and retain the services of the best qualified persons and always encourage them to grow in personal and professional stature and to make their maximum possible contribution to the work of the library and to the profession.

To secure and retain outstanding employees the library has to pay salaries commensurate with those of other occupations requiring the same education as well as training. Besides, they should be assured of continued employment and protected from personal favouritism, politics or other factors unrelated to merit. They should also be given fringe benefits such as paid vacation, paid holidays, paid sick leave, hospital and life insurance, pension etc.

Service Classification

There are four major service classes :

1. Professional Library Service – Trained librarians and other specialists.
2. Pre – professional Library Service – pre – professional library assistants who are in training to become librarians.
3. Library Assistants Service – Staff members whose duties are closely associated with the work of the professional librarians like circulation of books, registration of borrowers, compilation of records etc.
4. Clerical and Mechanical Service – Staff members who are assigned to the clerical and mechanical service.

The library is judged by the attitude and professional conduct of each of its employees. It depends as much on its staff as on its book collections to achieve its high ideals of public service. So friendly, prompt and efficient service should be given by the staff at all persons using the library. If the staff members are courteous, dependable and willing to cooperate with their fellow workers and adaptable to all situations and if they try to suppress rumours and refrain from gossip, they will contribute to the smooth operation of the library. Loyalty to the library is essential in maintaining high staff morale. But constructive criticism is always welcomed. If there is any grievance one should talk it over to the chief librarian – the head of the library.

A good public librarian is the Soul of a public library. Therefore he should have (1) ability in leadership; (2) ability to develop the staff; (3) initiative and resourcefulness; (4) getting along with the variety of persons inside and outside the library; (5) enthusiasm; (6) buoyancy in the face of difficulties and disappointments; (7) physical stamina; and (8) frankness and firmness with tact and patience.

Above all, he should have a love for books, an endless, insatiable delight in reading, retentive memory, curiosity, accuracy and tidiness.

Planning and decisions on policy, activities, methods and rules, conferences with library committee, staff etc., considering report from staff, interviews with staff, candidates for employment, readers in regard to services, gift materials, suggestions, etc., and outsiders on internal matters, new shelving, equipment etc., attending to correspondence work, visiting the different sections of the library and professional and job reading are the important functions of a public librarian.

Operations And Services

Once a library was a place for adults only and there was age limit for borrowers. But now - a - days all children, young people, and adults - come to a public library. Therefore a public library should provide book service for three levels - adults, young adults and children.

In other words, the departmental break down should be by age groups – adults, young adults and children.

Work Programme For Adults

This includes registration of borrowers, circulation work, reading guidance to stimulate reading that will satisfy needs, public relations work such as making and supplying lists of appropriate books and other materials for civic group meetings, suggesting topics and speakers for meetings, setting up book exhibits, reviewing books on the radio, and speaking at club meetings, civic forums and other local organisation gathering and book talks, discussion groups, films showing, distribution of special book lists and periodic exhibits within the library, reference work – “Phase of library work directly concerned with assistance to readers in securing information and in using the resources of the library in study and research” – work programme for Young Adults (the age group of 14 to 21).

Nowadays young people are also coming to public library. Therefore the materials required by them should be kept in a separate form with attractive furnishings. Book reviews, panel discussion, parents meetings, film forums etc. may also be organised for them.

Work With Children

Children's work includes almost every activity

found in the adult side of a library with more thrown in. Besides, story telling and music appreciation under library direction, teaching the art of finger painting, making and dressing of puppets, writing and presenting of puppet plays – all through the aid of books – should be included in the children's programme.

Other Services

1. Services to the handicapped, hospitalized and institutionalized.
2. Branch library service : A public library serving a large area has to organise a few branches and delivery stations to make books readily available to several groups of people.
3. Rural library service :

This should also be organised by a big public library to serve rural folk who live too far from established branches of the central library to use them. For this book mobile service may be organised. A large public library can have one or two book mobiles.

Both branches and book mobiles have become essential to bring books closer to people.

Work Behind The Screen

This will include all the technical processes or operations which will bring to library users new books, periodicals, pamphlets, documents and reports and

non-print materials like films, records, tapes, etc.

The following are the important technical operations:

1. Acquisition – ordering and checking in new materials.
2. Classifying the books – Assigning the appropriate classification symbols to the books to arrange the books on the shelves by subjects.
3. Cataloguing – Preparing the necessary catalogue entries required by books and other materials.
4. Preparation of shelf list to indicate the exact location of all the library's resources.
5. Binding and repairing of books.
6. Processing – Making books ready for use which will include putting numbers on spines, inserting pockets, date slips etc. and checking for accuracy.

Library Publicity

The public library has an obligation to inform potential readers as well as actual readers of the library's resources. Compilation of book lists, talks to community groups on books and library services, preparation of newspaper, radio and television releases, displays of pictures, photographs, paintings, book jackets etc, preparation of book marks to acquaint the public with hours

and services of the library and its branches, if any, maintaining bulletin boards, organising citizen groups known as "Friends of the Library" who will help the librarian in all his functions are the important activities in the field of "telling the library story." But a library's best publicity comes from the satisfied customer who receives the best possible library service, well performed.

People's University

The public library has been called "the people's university" since it offers to the individual, opportunity to continue voluntarily, at his own pace, his life long education.

Today's library patrons seek wisdom from the humanities and information of developments in the fields of nuclear science, electronics, outer space and other areas beyond man's dream some fifty years ago. They also ask for facts on local, state, national and world affairs in order to exercise to the full their responsibilities as citizen.

The second law of library science of Dr. S. R. Ranganathan is "Every Reader His or Her Book." The simple meaning of this law is "Books are for all." "All" demands that library service should be extended to one and all in the country including children, rural folk, blind people, patients in hospitals, prisoners in jails and sailors on board the ships. This could be done only by the govern-

ment of a country. Moreover it is the duty of people's government of a democratic country to provide books for all the people by passing of a library act, so that they will have an equal opportunity to continue their self education all through life.

In fine, a public library is an arm of free public education. In a democratic country like India the school system and the public library should go hand. in hand The school system is the avenue of formal education, whereas the public library is an informal one. The public library should provide materials for all ages, from earliest childhood through maturity, on all subjects of human interest. Because it is a living, growing resource for educational activity and its development is the responsibility of the government.

How To Use A Public Library ?

Most public librarries issue several tickets to those who become their members. But they should meet certain basic requirements such as residence within the city or the locality. One has to obtain the tickets by applying to the librarian.

Whenever a member wants to borrow books for home reading he must give up one ticket for each book. The date of return will be stamped on the books by the librarian.

The public libraries have collections of magazines,

newspapers, or records as well as books. The reference section of the library is an information centre where one can get all kinds of facts about people, places etc. It contains all kinds of reference books. The reference books are books in which we can look up information about many things. Such books are not intended for general reading. Many of them contain lists of facts and figures, or tables of various kinds. There are many different kinds of reference books, such as encyclopaedias, dictionaries, gazetteers, atlases, year books and directories. Encyclopaedias contain condensed articles about a great many subjects. Dictionaries are books about words. There are also specialised encyclopaedias and dictionaries which are devoted to one subject, such as Science or Art. Gazetteers are dictionaries devoted entirely to geographical subjects. They furnish information about cities, rivers, lakes, mountains etc. Gazetteers are best used with atlases which contain maps. Several atlases have brief gazetteers, to help us to find places on the maps. Yearbooks contain the latest information about a particular country or place, or subject. They are brought upto date every year. Some yearbooks are called almanacs. Directories are guides to where people live, and where business are located in a town or country. For e. g., telephone directories list all the subscribers to a telephone service in a particular area. The street directories give people's names by the houses they live in. Classified

trades directories list people under their occupations, such as doctors, engineers, and so on. Books in the reference section are not usually intended to be taken out, but may be used in the library.

In a library books are arranged by subjects to make it easy for us to find any particular book. In other words the books are classified by their subject matter and kept on the shelves according to the classification symbols assigned to them. In some libraries all the fiction, which includes all novels and stories, is set out in alphabetical order of the author's names. There are various ways of classifying books. But in most of the public libraries the Dewey Decimal Classification system is used. This was the invention of an American Librarian by name Melvil Dewey. He grouped all books into 10 main classes, each represented by groups of numbers. The 10 main classes in the Dewey system are as follows :

- | | |
|---------|---------------------------------------|
| 000-099 | General Works. |
| 100-199 | Ethics, Philosophy, Psychology. |
| 200-299 | Religion, Mythology. |
| 300-399 | Social Sciences |
| 400-499 | Linguistics. |
| 500-599 | Science. |
| 600-699 | Useful Arts. |
| 700-799 | Fine Arts. |
| 800-899 | Literature. |
| 900-999 | Biography, Geogrpby, History, Travel. |

Each of these classes is divided into ten further divisions, and each of these subdivisions can be further divided. In this way, any branch of any subject can be given a set of numbers. By referring to a list of subjects, one can find out the numbers of the books he wants. Then he can go round the shelves till he finds the numbers, and there will be the books he wants. When he has found his book he will want to know how to locate the information in it. There are two guides to help him here. One is the list of contents, usually divided into chapters, found at the front of books. The other is the index found at the back of books. In an index, all the main people, places, and events dealt with in the book are listed, in alphabetical order. With such an index, it is easy to find what we are looking for. For example,

Arunachalan Pillai, E. M. 67, 42

Ettaiyapuram 76, 24

Sankaralingam Pillai, P. A. 101, 110

Saraswathy Pooja 8, 17, 36

There are other systems of classification and arranging of books like the system of the Library of Congress, the Universal Decimal Classification established by the Institute International de Bibliographie and the Colon Classification of Dr. Ranganathan. The colon classification is the unique contribution made by our country in the field of library classification. The

author has divided the knowledge into the following main classes :

z	Generalia	MX	Humanities and Social Sciences
1	Universe of Knowledge	N	Fine Arts
2	Library Science	NX	Literature and language
3	Book Science	O	Literature
4	Journalism	P	Linguistics
A	Natural Sciences	Q	Religion
AX	Mathematical Sciences	R	Philosophy
B	Mathematics	S	Psychology
C	Physics	Σ	Social Sciences
D	Engineering	T	Education
E	Chemistry	U	Geography
F	Technology	V	History
G	Biology	W	Political Science
H	Geology	X	Economics
HX	Mining	Y	Sociology
I	Botany	YX	Social Work
J	Agriculture	Z	Law
K	Zoology		
KX	Animal Husbandry		
L	Medicine		Illustrative
LX	Pharmacology	(: g)	Criticism Technique
M	Useful Arts	(p)	Conference Technique
Δ	Spiritual Experience and Mysticism	(r)	Administrative Report Technique

(P) Communication (X) Management
Theory

To find out what books the library has on a certain subject, or by a certain another one must use the library catalogue. Most public libraries maintain a card catalogue index. In this file there exists a card for every book in the library. These cards are filed in alphabetical order according to author, title, and subject matter. The number that appears on each card helps to locate the book quickly. In a small library the users can go directly to the shelves and find the desired books. But in larger libraries he has to write the number, title, and author on a slip of paper and give it to a library helper, who then brings the book for him.

Library Cess

In the Western countries like U. K. and U. S. the local governments are premitted to raise money for education, sanitation, parks, libraries and other local services provided by the various departments. Some money is also provided by the central government. In the case of public libraries almost all the money comes from the rates which are a local tax. In other words paying for public libraries is compulsory. Every family must pay its share. In our Country some of the states like Tamil Nadu, Mysore, Andhra Pradesh permit their local bodies to levy library cess on the property tax by

passing a library act to establish public libraries. They also give matching grants. Besides the central government sanctions special grants.

Library Authorities

With the passing of Public Libraries Acts by some countries mentioned earlier, the local authorities became responsible to provide a comprehensive and efficient library service for all persons. In U. K. and U. S. a library committee is set up by a local council for this purpose. It consists of mostly elected members and of a few other members. The Chairman of this committee, who is elected by the members, reports on the work and decisions of his committee to the council for approval, or disapproval.

To conclude, a public library is a general library. The books found in a public library are not about one or two particular subjects, but cover many subjects. In foreign countries most public libraries lend not only books but also gramophone records, pictures, photographs etc.

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