MLIS/1/CT/02
UNIT 1:
EARLY WRITING MATERIALS IN INDIA

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s it had been almost everywhere, the earliest writing materials, which have survived in India too were stone and me
ates. Stone, whether as a rough block or as a smoothened pillar *(Silasthamba)* was used extensively for writ
scriptions. Metal glues, usually of copper *(tamra)* were used for engraving sacred scriptures, deeds of gift and so on.
rge number or archaeological evidences of stone inscriptions and copper plate engravings are in existence, spread
er the country. Literacy evidences also show that boards of wood *(phalaka - Samputa)* inscribed with chalk also serv
r writing records. In the 11th and 12th centuries AD, cotton fabrics impregnated with tamarisk resin *(pata)*, even fabr
silk were also often used for writing. Unlike stone and metal-plates, the specimens of such writing materials, ha
sintegrated over the past centuries, and are practically non-existent except in literary references. The typical Ind
aterials were birch-bark and palm-leaf. Compared to the other materials of which mention has been made in the abo
ragraph, birch-barks and palm-leavesare of lesser antiquity. Yet, because of their very extensive use for seve
nturies replaced only by paper, these have acquired special significance, requiring special attention.

rch-bark

lm-leaf

APER

per is often. called “the handmaiden” of civilisation. Today, per capita consumption of paper is often considered a
liable index to the cultural level of a nation and a measure of its natural wealth. Paper is composed of cellulose fibres
bstance found in all plants.

he plants which are specially used for paper making include trees like fir, poplar, pine etc., cotton plants, rice and wh
raws, grasses, hemp, jute etc. A large proportion of paper is produced these days from wood by extracting cellulo
ough for manufacturing writing paper of a very high grade, cotton rags are still used.

How Paper is Made

hundreds of years rags were the principal raw material for paper. However, these days most of the varieties of paper are made fr od pulp. Rag papers, which are very durable are used chiefly for documents, required for many years and for preservation. Whatever raw materials used for making paper, its manufacturing process involves various stages like removal of undesirable constitue uction to fibrous state, bleaching, beating to pulp and converting the pulp into paper. Cellulose fibres which are the basic constituen type of paper need to be separated from non-cellulosic ingredients and the various steps involved in the process are:

) Preparation of Pulp Wood

e Cellulose is separated from the materials, which hold it, through a. mechanical or chemical process. In the mechanical process b e logs of wood are treated against a grind-stone by using an appropriate quantity of water to control the heat produced by friction. .of little effort in this process results in least desirable non-cellulose associates still remaining with the cellulose and giving us pape or strength and colour. Consequently, mechanical wood pulp is seldom used alone in manufacturing paper. It is, therefore, mixed w out 20% to 30% of chemical wood to set up paper. However, the paper that we get through this process is of a poor quality and its us tricted to cheaper periodicals and newspapers. In the chemical process, as its name indicates, solutions are used to dissolve ulosic materials in wood, bamboo, grass, rags, etc. under controlled high temperature and pressure. The concentration of chemi d in the process is also regulated so that the cellulose is not adversely affected. Special care is taken while using wood as it is dest of all the said materials. Here, bark is removed first and then wood is cut into small pieces before they are subjected to a chem atment. The chemical process is further sub-divided into -three categories according to the variety of chemicals used for digestion:

oda Process

his process, raw materials like rags and grasses are treated with a solution of sodium hydroxide and sodium carbonate. But when st sed as raw materials, calcium hydroxide is also added to the solution.

Sulphate Processes

this case, bamboo and wood is treated in a chemical solution consisting of a mixture of sodium hydroxide and sodium sulphate ting pulp. The process is mostly used for manufacturing kraft paper required for wrapping purposes.

ii) *Bisulphite Process*

this process, the digesting chemicals are magnesium bisulphite or calcium bisulphite or a mixture of these two emicals is used in the presence of a free flow of Sulphur dioxide gas. This process is generally used for treating od chips.

The wood pulp is than washed to free it from chemicals used in any of the above chemical processes.

) It is followed by passing the pulp through a series of screens to remove all impurities.

) Water is then drained off to form a thick mass.

The pulp is then bleached in a solution of chlorine and hypochlorite, and washed again thoroughly to remove ces of chlorine.

) The pulp is then beaten in a Beater (large oval shaped vat) to rub and press thecellulose.

I) It is then passed through *Jordan Machine* to brush the fibres and cut them to proper length.

II) It is then passed through *Fourdrinier Machine.* The bed of this machine is very long; the first part, called the wet d; is made up of a wire-cloth belt on which the fibres are allowed to mat, or felt, into the form of a sheet. The sheet hen dried in the second part, i.e., the 'dry land' by being passed over a number of suction boxeswhich drain out st of the water.

) The sheet is then squeezed between heavy press rolls and then passed over a number of steam-heated drier inders. Finally, the paper passes through *Calender presses* where a smooth surface is put on the sheet by. using ing materials, "Such as clay, resin, starch, alum etc., which provide different types of surface finish to the paper.

) The paper is then wound into a large roll or cut into sheets and packed in reams (480 sheets or 500 sheets.

◦ **Varieties of Paper**

By blending different kinds of pulp, by using different kinds of sizing material, and by applying different types o manufacturing techniques, a large variety of paper suitable for different kinds of use, can be produced. Some of th broad varieties are listed below:

i) *Newsprint* is made by using a blend of one part sulphite pulp and three parts of mechanical or groundwood pulp.

ii) *Durable writing paper:* uses rags or sulphite pulp or a mixture of the two.

iii) *Bond paper* is a superior quality paper, generally used for business letter-heads. A heavy quality of bond paper called *-ledger paper* which is used for keeping records. Bond papers contain *water-mark,* produced by wire-mes design which is pressed against the wet pulp sheet before It is fully formed on the Fourdrinier Machine.

iv) *Laid paper and Wove paper:* A paper having a gridiron appreciate is called laid paper; and the one with plai surface is called wove surface. Among the papers in this group are drawing papers, onionskin paper, bank-chequ paper etc.

v) *Art paper:* Smooth glossy paper, also known as coated paper. The base paper is coated on both sides with chin clay and casein glue and then glazed under pressure between rollers.

vi) Imitation Art paper: Unlike Art paper, which is coated Imitation Art Paper is 'loaded' by adding clay and glue t the pulp itself.

vii) *Parchment Paper:* This has nothing to do with animal skin. Also known as 'vegetable parchment' this variety o paper is made by dipping unsized (i.e., without using sizing material) into a cooled mixture of Sulphuric acid an water, and then washing and drying it under pressure. This process makes the paper partly transparent and muc stronger than ordinary paper. It is used for legal documents, and maps etc.

Reference

1. htt://egyankosh.ac.in

Thanks