ANNEXURE

Textile Times

(Historical Progress of Textiles)

B.C. 10, 000	Evidence of animal skins and furs used as body covering - vegetables clothing some leaves also used as body covering. Old sanskrit scripts are full of such descriptions.
7000	Evidence show that flax was in use in the same swiss lake dwellings.
6500	Evidence shows that weaving was in use.
6000	Evidence that flax was in regular use in Egypt.
5800	Spinning wheel and distaff in regural use. The early poetic works are full of spinning.
5600	'Athena', the greek goddess, is considered the Goddess of Distaff. Ample evidence of spinning wheel and distaff in early folklore.
4000	There are indications showing that cotton was regarded as a fiber.
3500	Cotton cloth was used. Ample evidence of this is found in the old Sanskrit script.
3000	Cotton fabrics of quality in regular use. Evidence of this found at Mohenjo-Daro (Sindh Pakistan) Shows cotton manufacturing as established industry. About this time there is evidence in old sanskrit writing showing that the method of preparing 'Indigo' a vegetable dye-was already known in India. Evidence shows that cotton was also in use in Mexico, Peru and North America.
2800	Vedic hymns give ample indications that cotton cloth of good quality was being used regularly in India.
2700	Ancient Chinese writing indicates that by this time Hemp was used as a fiber in China. Evidence shows that the properties of the rich fiber 'wool' were recognised by this time.
2640	Chinese Empress 'Si Ling - Chi' wife of Emperor 'Huage - ti' began experimenting with silk worms and sericulture. The invention of reeling of silk is attributed to her.
2600	Silk become an established industry in China, the art was however kept a closely guarded secret.
2100	Probably now began the art of dyeing and printing. Evidence of dyeing and printing of fabrics - pictured on the walls of a tomb in Egypt are shown people with decorated fabrics Also found there were illustrations of upright loom.
2000	Cotton Fabrics - Supremancy in India.
1466	Natural Dyestuff began to be used. Linen decorated with conventional design found in the tomb of Thothmus IV.
1200	A sample of Batik printing found in a temple of Java.

1050	Early Sanskrit Literature suggests the existance of silk industry, in India at about this time.
540	Evidence of ornamental linen tapestry.
500	Resist printing first practicised in China. Probably now began the art of fast colour dyeing with mineral colours.
445	Cotton clothes export from India to Europe was carried on fairly regularly by Arabs.
425	Evidence found that Babilonian and Egyption dress consisted of linen shirt reaching to the feet over which was worn a woollen tunic.
350	Secrets of silk manufacture were smuggled out of China. Japan tried to establish its silk industry - four chinese girls helped to establish the Japanese silk industry.
327	'Alexander the Great' in his invasion of India - took the Greece some quantity of printed cotton goods.
300	'Magasthenes' A Greek traveller writes in his narrations that in Indian people wore flowered garments made of finest muslins. This is probably the first indication of the famous Dacca - mulls. 'Megasthenes' - Greek ambasador to the court of 'Chandra Gupta Maurya' mentions decorated cotton fabrics with gold and silver threads and precious stones.
100	Records show evidence of domesticated breed of Angora goat in Turkey.
63	Old Roman records mention used of cotton awnings.
43	Evidence of woollen manufacturing process in writings.
01	Inventions of draw loom in Egypt was an important step in weaving.
00	"True lace fabrics" appear in the form of Egyption painting.

GLOSSARY

Term : Definition / Meaning

- **Abrasion resistant :** The ability of a fibre withstand rubbing in use and care.
- **Absorbent finish :** A finish that applied to a fabric improves its moisure absorption quality.
- **Antislip Finish :** A finish that applied to keep the yarn in place so that they will not slip over one another.
- **Basic finishes :** Finishes that are done to the most fabrics to prepare them for dyeing and special purpose finishes.
- **Basket weave :** The variation of plain weave produced when two or more filling yarns with little or no twist are interlaced with a corresponding number of lap yarns.
- **Bias :** Any direction in the fabric which does not follow exactly warp yarns or weft yarns.
- **Bleaching :** A Chemical process that makes fabrics, yarns or fibers white or prepares them for dyeing or printing.
- **Braiding :** A simple form of narrow fabric construction with interlocking or plaiting yarns of strips of cloth.
- **Brushing :** A machanical finish that removes short, loose fibres from the surface of the fabrics.
- **Carding :** An initial process in yarn making of removing impurities and arranging the fibers into parallel fashion and convert them into card sliver.
- **Cellulosic fibres :** Fibres having cellulose as their basic component. All natural vegetable fibres are cellulosic fibers. Rayon is a regenerated cellulosic fibre.
- **Cohesiveness :** The ability of fibres to stay together and adhere to each other.
- **Combing :** A process involved while manufacturing high quality yarns, which separates long desirable fibres of same length from short, undesirable fibres and arranges them in parallel order in the form of sliver.
- **Crease resistant finish :** A finish that makes fabric more resistant to wrinkling.
- **Cultivated silk :** Silk obtained after sericulture. It is produced by a species called Bombyx Mori.
- **Cut pile weave :** A type of pile weave in which loops formed on the surface of the fabric are cut or closely sheared.
- **Degumming :** Removel of the gum **Sericin** from silk filaments.
- **Delusterning :** The process of dulling the luster of man made fibre with chemicals usually titanium dioxide.
- **Density :** Mass / unit volume. It is expressed as gm/cc. The closeness with which the molecules of a substance are packed within it. Fabrics made with high density fibres are heavier than fabrics made with low density fibres.
- **Detergent :** A substance having cleaning ability.

- **Detergency :** The ability of a substance to clean.
- **Drawing :** A process in yarn manufacture in which the sliver is elongated by passing through a series of pairs of rollers.
- **Dry cleaning :** A method of laundry which uses special volatile solvents instead of water and soap to clean the clothes. It remove all greasy dirt easily.
- **Durable press finish :** A finish that imparts properties which resist wrinkling through many wearing and washing treatments.
- **Durability :** The quality of a substance which makes it long lasting.
- **Elasticity :** The ability of a substance to change dimensions when force is applied and to come back to original position once the force is removed. Clothes made from fibers having good elasticity are easy to put on or take off.
- **Felt :** Woollen fibres get interlocked with each other under special circumstances to form a non-woven fabric called Felt.
- **Felting :** A non-woven process of producing fabric directly from the fibres, usually wool or fur.
- **Fibroin :** The type of protein present in silk fibres.
- **Filament fibres :** Long, continuous, fibres whose length can be measured in meters or yards. All man-made fibres and silk are filament fibres.
- **Filature :** The processes done after Sericulture to produce silk yarn and fabric.
- **Finishing :** Any process that is applied either before or after weaving or kniting to fibre, yarn or fabric to change its appearance, hand or performance.
- **Flame retardant finish :** A finish that makes the fabric fire resistant.
- **Flammability :** The manner in which a fibre reacts to fire.
- **Fleece :** Wool obtained from live sheep.
- **Flexibility :** The ability to bend without breaking.
- **Fume fade finish :** A finish that prevents fading of dyes on textiles by environmental factors.
- **Hard water :** Water that contains calcium and magnesium salts in the form of bicarbonates, sulphates, nitrates and chlorides.
- **Heat conductivity :** The ability of substance heat to allow the heart to pass through it. Fibres with good heat conductivity are more comfortable in summer and fibres with bad heat conductivity are more suitable for winter.
- **Honeycomb weave :** A novelty weave having cell like appearance produced by floating yarns which form ridges.
- **Household Textiles :** Fabrics which we use for various activities in our homes.
- **Hydrophobic :** Substance which gets repelled by water (water hating).
- **Keratin :** The type of protein in wool fibres.
- **Knitting :** A method of constructing fabric by interlocking series of loops of one or more yarns.

- **Lace :** A method of construction of open-work fabrics usually with some figures, produced when yarns are knotted, interlooped interlaced or twisted.
- **Leno and Gauze weave :** Novelty weave with open mesh effect which has increased durabililty, stability and strength.
- **Lustre :** The amount of light reflected back and reaching our eyes from the surface of a substance.
- **Man – made fibres :** Fibres which do not occur in fibrous form in nature and have to be made into fibers.
- **Mercerization :** A chemical finish applied to cellulosic fibres especially cotton to impart luster or improve dye affinity.
- **Mildew-proof finish :** A finish applied to cotton, rayon and linen fabrics to protect them from the damage caused by mildew and fungi.
- **Monomer :** A single unit or molecule form which polymers are formed.
- **Moth-proof finish :** A finish applied to wool and silk fabrics to protect them from the damage caused by moth and carpet beetles.
- **Natural Fibres :** A fibre which is available in nature in fibrous form.
- **Non – thermoplastic fibres :** Fibres which do not change shape or melt due to heat. Such fibres burn and turn to ash on contacting fire.
- **Perspiration resistant Finish :** A finish applied to fabrics to inhibit bacterial growth and formation of perspiration odour.
- **Permanent hardness :** Hardness of water caused by the presence of calcium or magnesium sulphates, nitrates and chlorides.
- **Pile weave :** A novelty weave that produces decorative third dimension creating an effect of depth.
- **Piles :** The loops formed on the surface of a fabric with the help of extra warp or weft yarn.
- **Plain weave :** The simplest of the three basic weaves made on the simple loom by yarns at right angles passing alternately over and under each other.
- **Ply yarn :** A yarn made by twisting two or more single yarns together.
- **Polymer :** A large molecule formed by linking together many monomers.
- **Polymerisation :** The linking of many monomers to form a polymer.
- **Pulled wool :** Wool obtained from dead sheep.
- **Reeling :** The process of unwinding the cocoon and winding the silk filament on large bamboo wheels.
- **Regenerated fibres :** Fibres for which the raw material is taken from nature and then a new fibre is made by various chemical treatments. Rayon is a prime example.
- **Resiliency :** The ability of the fibre to recover after wrinkling or to save itself from wrinkling.
- **Rib weave :** Modification of plain weave producing rib or carded effect in the warp or filling direction.

- **Sanforishing :** A preparatory finishing process that minimises shrinkage and stabilizes the length and width of the fabric.
- **Saponification :** The process of mixing alkali, and fatty acid to produce soap.
- **Satin weave :** One of the basic weaves, characterized by luster because of the long floats that cover the surface of the fabric.
- **Scouring :** Finishing process that removes dirt, oil and sizing material deposited on fibres, yarns or fabrics.
- **Simple yarn :** Yarn that is even in size, has equal twist throughout length and is smooth and uniform.
- **Sericin :** The gummy substance which is produced along with silk fibre.
- **Sericulture :** The raising of silk worms for the production of silk.
- **Singeing :** A finishing process that burns off surface fibres and lint leaving an even surface before the fabric passes through any other finishing process.
- **Sizing :** The application of various materials to a fabric to produce stiffness or firmness.
- **Sliver :** Round, continuous untwisted rope like strand of fibres.
- **Soft water :** Water that contains minimum or no traces of salts.
- **Speciality fibres :** Body hair of animals other than sheep which are found only in limited areas in the world.
- **Special or functional Finishes :** Finishes which enable the fabric to perform certain function more effectively by adding to the aesthetics, comfort, ease of care or the economic attributes of textiles.
- **Spinneret :** A device consisting a series of tiny holes, essential for the manufacture of man-made fibres.
- **Spinning :** A final process of yarn manufacturing where twist is imparted to the yarn to give strength and other desirable characteristics.
- **Spun silk :** Silk yarns and fabrics produced from short fibres of a broken or damaged cocoon.
- **Stain and spot resistant finish :** A finish that protects the fabrics against permanent staining and soil retention.
- **Staple fibres :** Short fibres whose length can be measured in cm or inches. All natural fibres except silk are staple fibres.
- **Stoving :** Stifling the chrysalis with hot water or steam so that we can get unbroken cocoons.
- **Suction Washing :** A method of laundry which uses a special instrument called suction washer. This method is used mainly for heavy and large clothes.
- **Synthetic fibres :** Fibres made from chemicals that were never in fibrous form.
- **Temporary hardness :** Hardness caused due to the presence of calcium or magnesium bicarbonates.
- **Tenacity :** The tensile strength of a fibre expressed in gm / denier.
- **Terry weave :** A weave in which loops or piles are seen on both sides of the fabric. Makes a heavy, absorbent fabric.
- **Textile fibre :** A thin, long, thread – like structure which is enough flexible and strong to be made into yarns fabrics.

- **Texture :** The touch or feel of a surface.
- **Thermoplastic fibres :** Fibres which start changing their shape or start melting beyond a certain temperature.
- **Throwing :** The process of imparting slight twist to the silk yarn. Such silk is also called Thrown silk.
- **Twill weave :** A basic weave characterized by a diagonal line on the surface of the fabric.
- **Twist :** The spiral arrangement of the fibres around the axis of the yarn.
- **Uncut pile weave :** A type of pile weave in which loops formed on the surface of the fabric are cut or closely sheared.
- **Warp :** The lengthwise yarn in a woven fabric which in parallel to the selvedge.
- **Water proof finish :** A finish that makes fabric unable to be penetrated by water.
- **Weave :** The pattern of interlacement of warp and weft to attain the specific appearance of the fabric.
- **Weft :** The crosswise yarn in a woven fabric which is perpendicular to the selvedge.
- **Weighting :** Due to degumming, 25% of weight of silk is lost. To compensate this weight loss, weighting is done.
- **Wild silk :** Silk produced by moths of species other than Bombyx Mori without sericulture.
- **Worsted yarns :** Yarns made from longer wool fibres having better quality which look like any other normal yarn.
- **Yarn :** A continuous strand of textile fibers, filaments or material in a form suitable for knitting, weaving or otherwise intertwining to form a textile fibre.

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