

Design Resource

## Silk Reeling

The Making of Silk Threads

by

Prof. Bibhudutta Baral and Antony William

NID Campus, Bengaluru

Source:

<https://dsource.in/resource/silk-reeling>



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2. Tools and Machinery
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## Introduction

Ramanagara about 48 km southwest of Bangalore is a newly formed district (2007) of Karnataka. Ramanagara is known for its silk production and has Asia's largest cocoon market and is widely known for its sericulture. Ramanagara produces one of the finest qualities of Mulberry silk produced in India and is home to many varieties of silkworms of class B called Mori (most commonly found in India). It is the hub for silk and sericulture activities.



A magnified observation of the silk cocoon prior to the reeling process.



They are spread evenly over the surface to ensure heating and extermination of the worms.



The bamboo tray used to store and transport the cocoons.

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These cocoons are stored for two days to undergo a natural cooling process.



The cocoons are spread over the storage space for natural drying.



The matured worms are segregated and readied for cocoon formation.

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## Tools and Machinery

In current times boom in the mechanized world and industrial automation has affected every area of production and manufacturing. The rearing of silk in the past used to be a tedious job whereas now it can be done within no time with the help of modern machines.



The furnace that is used to produce heat.



Hot Air Cocoon Drying Machine is the latest machinery used to dry the cocoons.



The bamboo tray used to store and transport the cocoons.



The boiler that enables the process of cocoon cooking.

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The container where the cocoons are boiled.



After the process of cocoon cooking, they are transferred to trays for cooling.



The tray has pores for the water used for cooling to be drained out.



Sophisticated machinery enables the cocoons to be transferred into plastic containers.

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The automatic silk reeling machine to clean the cocoons.



The pipe hose enables the transportation of heat for processing the cocoons.



People feeding the cocoons to automatic silk reeling machine to undergo cleaning and reeling process of the cocoons.



The brushing device to remove the coarse fibers of the cocoons.

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A bunch of coarse paddy stalks are attached to the brushing device.



The waste from the brushing device is wound.



The machine automatically picks the filament from the cocoon and reels it.



This machine maintains the water level in the tray for cooling and segregation of adjoining cocoons.

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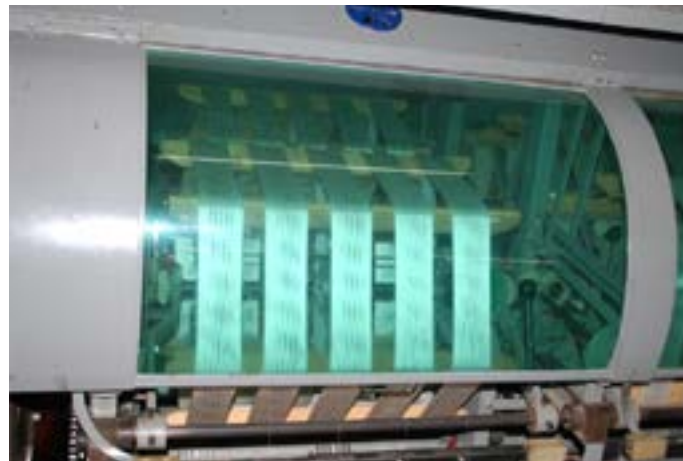
<https://dsource.in/resource/silk-reeling/tools-and-machinery>



The hanks are to be loaded on the machine to enable the reeling of the silk yarn.



Automatically the filament is picked from the cocoon and reeled.



The re-reeling machine which automatically reels and dries the silk yarn.



The hanks are detached from the reeling machine for further compression and packaging.

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The bamboo sticks are used to stretch the yarn and increase its strength.



The yarn is affixed to the bamboo sticks and stacked one above the other.



The silk yarn is placed in the compression machine to enable compression of the yarns.

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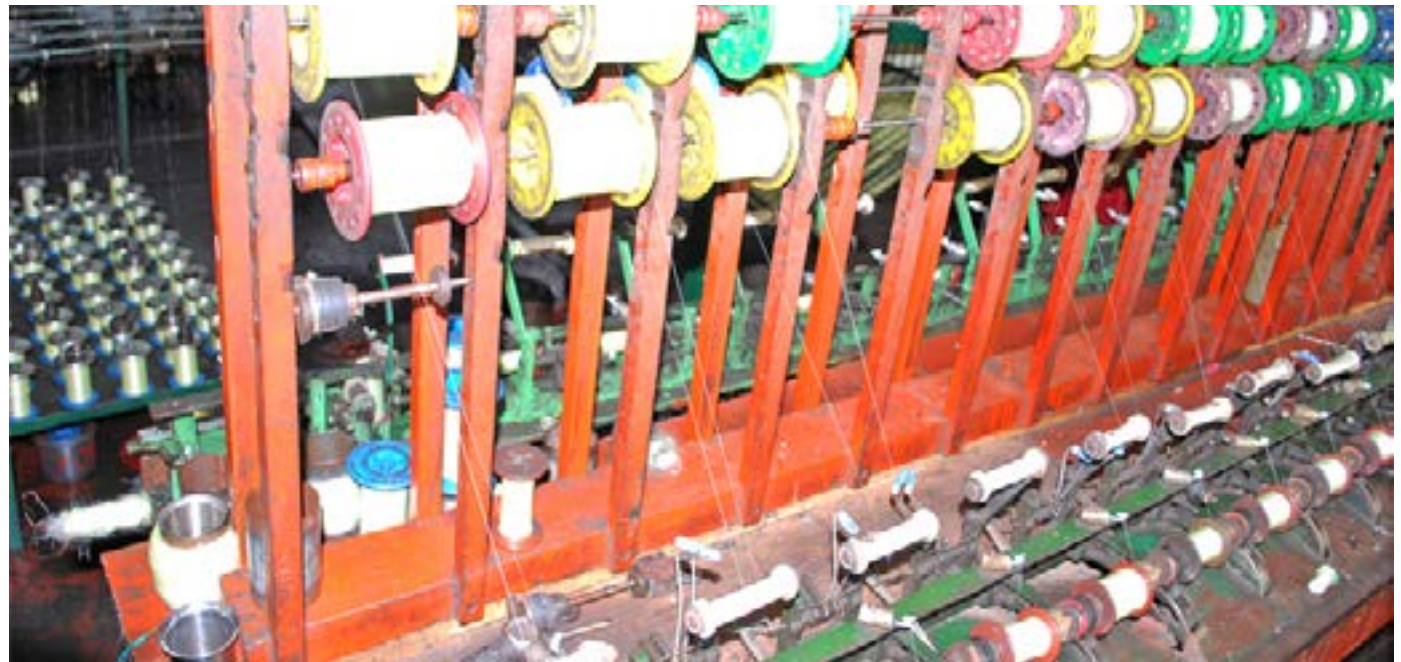
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Test Plate is a special equipment to inspect the quality of raw silk.



The yarn is wound on the silk winding machine to be reeled into spools.



The threads from the bigger spools are wound into smaller spools.

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An overview of the reeling process.



A closer perspective of the wound spools.

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A weaver working on the warp winding machine.

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## Making Process

1. Use bamboo montage (Chandrika) or plastic montage.
2. 50 matured worms need for a 1 sq. ft. area in the montage for smooth spinning
3. Mount 1000 to 1100 worms in a Chandrika.
4. Maintain 240 C temperature and 60-65% humidity besides providing good aeration in time of spinning.
5. Spinning of cocoons completes within 2-3 days, so harvest cocoons on the 5th day in case of multivoltine and 6th day in bivoltine.
6. Collect good, double, flimsy and stained cocoons separately from the montage.
7. Clean the cocoons by removing the floss.
8. Loosely pack the cocoons in a bamboo basket for transporting to market/reeling units/grainage.



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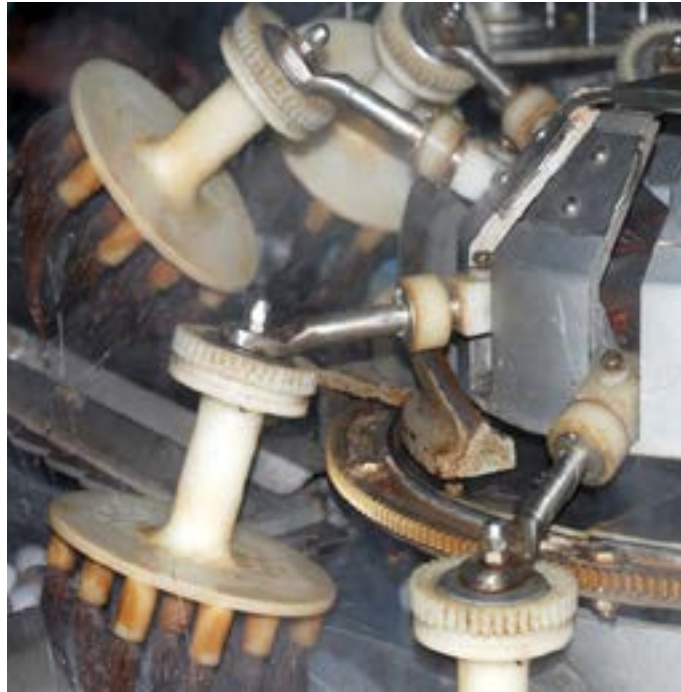
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## Links

- Craft Design in India(<http://www.designinindia.net/everywhere/disciplines/craft-design/index.html>)
- Online Infomation Centre for Crafts(<http://www.india-crafts.com/>)
- Handmade in India(<http://www.cohands.in/handmadepages/book0.asp>)
- Crafts Council of India(<http://www.craftscouncilofindia.org/>)
- Craft Mark(<http://www.aiacaonline.org/>)

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## Contact Details

This documentation was done by Prof. Bibhudutta Baral and Antony William at **NID, Bengaluru**.

You can get in touch with him at [bibhudutta\[at\]nid.edu](mailto:bibhudutta[at]nid.edu).

You can write to the following address regarding suggestions and clarifications:

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