INTRODUCTION
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Sericulture is a labour intensive, agro-based industry considered as being eminently suited for generating employment and income for poorer sections of society of this country. It provides employment for the workers throughout the year in mulberry cultivation, silkworm rearing, seed production, reeling, twisting, dyeing and weaving. The industry provides employment to more than 5.8 million people across 54 thousand villages, who operate 2,58,000 handlooms and 29,340 power looms producing 5 million square meters of silk fabric per annum. It exports silk worth about US $ 641 million, of which 70% comprises natural silk yarn and fabrics, 13% made-ups and 26% garments (Roongta and Parker, 2005).

India has been a sericulture country since time immemorial. Today India is the second largest producer of raw silk and also has the distinction of being the world’s largest consumer of pure silk. The country is known the world over for the exquisite brocade fabrics of Banaras, crepe sarees and silks of Karnataka, tie and dye and Patola of Gujarat and Rajasthan, Ikats from Orissa, fine Bandhej and temple silks of Kancheepuram and Tanjore. Throughout history only the weavers, the most skilled dyers and colorists, the most talented and gifted artists and technicians worked on silk to satisfy the demands and expectations of most particular patrons. Today silk is used across a wide spectrum of application areas like fashion, home textiles, floorings, home decoration, religious and ceremonial and medical. It is also being blended with cotton to
make denim, with new age specialty fibres like Lycra and Modal and also with linen.

However, the silk has glimmering side too, for the majority of people involved in different sub-industries there is a likelihood of getting exposed to various health hazards at different stages of silk industry (Sato et al., 1968; Kobayashi et al., 1971, 1972; Inasawa et al., 1974; Tadani et al., 1974; Kobayashi, 1975; Harindranath et al., 1985; Maribashetty et al., 1997). Silk reeling in much of India is based on a relatively simple technology, which people who are illiterate and semi skilled can easily learn. Reeling is carried out mainly in small units with wage labour or family labour. Wage labourers in reeling are among the poorest and substantial numbers are also from disadvantaged groups. Three main types of reeling technology are adopted in reeling. The simplest and quite economical to acquire and set up is the charka, the operation of which is based on manual power, though some innovations have been made in design for easy operation (Charssley, 1982). As it is cheaper to set up charaka units, entrepreneurs with only limited capital can set up such units, and they function mostly with family labour. Cottage-basin units have higher level of technology than the charakas and these units require many workers and most of them are hired. Multi-end units are larger units and are superior in technology to those of charaka and cottage basins and need large quantities of cocoons and relatively larger scale of operations to be cost effective.

There are about 28,014 charaka, 26,631 filature/cottage-basin units and 201 mutliend units in India (Roongta and Parker, 2005). The annual production of silk is about 16,319
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metric tonnes. Karnataka is a major silk-producing state in India, contributing about 60% of total production. Ramanagara has the biggest cocoon market in India and is also one of the major reeling centres with 1256 charaka, 1339 filature and 52 multiend units, which provide direct employment to over 6,100 people (Anon, 2007). Reeling is a labour-intensive enterprise, and continues to flourish in labour abundant countries like India and China.

Silk reeling involves cocoon sorting, cooking, brushing, reeling and re-reeling. Cocoon cooking, brushing and reeling involve exposure to hot and humid conditions. Also, during cooking, brushing and reeling, labourers are exposed to hot water and water vapour throughout the working period. It is mainly on the technology of reeling that one should find the reasons for the health problems many of the reeling workers face. Charaka reeling machines are built with basins where the cocoons are cooked directly in front of the reeling workers and they reel the silk from the same basins. During cooking and reeling of cocoons, reelers breathe the vapours containing sericin resulting in respiratory disorders. (Inbanathan et. al., 1998).

Cottage-basin units do not have the cooking basin in front of the workers as they are placed at a corner of the units. Since most units are small, the boiling is done near enough to the workers to have a similar effect as that in charaka units. The major health problems faced by workers are respiratory disorders and asthma (Harindranath et al., 1985). This is because of the allergic reaction of the sericin in cocoons, which is released into the water vapour when cocoons are cooked to
draw out the silk filaments. Though reeling has positive facets in terms of providing an opportunity for workers to earn a living and improve their life style, for some of the workers it also has the negative effect of causing health problems. The workers are also prone to fungal and bacterial infections on their hands and feet, blisters on hands being the common symptom. Other health problems encountered in these units include tiredness, eye irritation, stomach pain, body pain and irregular menstruation (Inbanathan et. al., 1998).

The largest proportion of reeling labourers are women who comprise about 75 percent of reeling workers and hence in the context of the health of reeling workers, a greater impact is on women. Children are also employed in the reeling units to do unskilled work where cooking of cocoons and picking up pupae are carried out. Though there are a few reports available on the indication of asthma due to exposure to silk (Figley and Parkhurst, 1933; Matsumura et. al., 1966; Harindranath et. al., 1985; Chaoming et. al., 1990; Uragoda et. al., 1991) a detailed study on the health hazards of workers employed in the reeling sector under Indian conditions is lacking. Hence, in the present study an effort is made to analyse the health hazards of workers in the silk-reeling units of Ramanagara town of Karnataka with the following objectives:
Objectives:

1) To study the health status of the workers employed in reeling units of Ramanagara.

2) To bring out the factors that are responsible for causing health hazards in the silk industry.

3) To advocate suitable preventive measures for the health hazards prevailing in the reeling sector of the silk industry.

4) To devise a strategy to reduce the general level of ignorance about the health hazards among the workers.