

CHAPTER-2
LITERATURE OF REVIEW

LITERATURE REVIEW - 2

A preliminary study has been done over the area by the West Bengal Forest Department, Research Wing in technical collaboration with North Bengal University, Botany Department for assessment of medicinal plant species diversity and richness. Floristic and ecological works were conducted by various authors like Misra 1968; Jain and Rao 1977; Rai 2006; Hooker 1872 - 1897; Prain 1903; Hara 1966, 1971; Ohashi 1975; Hara *et al.* 1997, 1996, 1995; Grierson and Long 1979, 1983, 1984, 1987, 1991, 1999; Noltie 1994, 2000; Pearce and Cribb 2002; Chowdhury 2009; Mondal and Chowdhury 2018; Mondal *et al.* 2019; Mondal, 2020 in various habitats of these areas. Medicinal and aromatic plants of the several floras have been recognized using a number of references including Kirtikar and Basu 1935; Biswas and Chopra 1956; Chopra *et al.* 1956; Khare 2004; Rawat *et al.* 1998. Biswas and Chopra 1956 documented some common medicinal plants of Darjeeling and Sikkim Himalayas. Kirtikar and Basu 1935, reported specific uses of several Indian Medicinal Plants. Tripathi *et al.* 2013, Tripathi and Mishra 1971, reported 10 rare medicinal plant species which are at the risk of extinction of South West Bengal and their need of conservation. Biswas *et al.* 2017 reported 57 ethno-medicinal plants belonging to 39 families in the Kakrajhore forest area and Sarkar *et al.* 2017, documented ecological status of several medicinal plants of Chalsa forest range under Jalpaiguri division, West Bengal. Saha and Biswas (2013) studied the detailed many medicinal plants from the Gorumara National Park, Jalpaiguri, and Datta *et al.* 2014, listed the medicinal plants used by tribal population of Coochbehar district and others author Bose *et al.* 2015, provided a detailed report of 115 plant species belonging to 103 genera and 62 families for treating 69 various physical ailments such as skin diseases, stomach ache, cough and cold etc. used by tribals in Jalpaiguri district. Yonzon *et al.* 2012, documented 218 medicinal plants species of 97 families and 195 genera in Darjeeling district, West Bengal. Floral diversity in sub-tropical forest in North East were explored by Sharma *et al.* 2001, Singh 1980; Khan *et al.* 1987; Rao and Hajra 1986; Rao *et al.* 1990; Barik *et al.* 1992 and Rao 1992. Ganesh *et al.* 1996 recorded the plant diversity in evergreen forest of Western Ghats. Takhtajan 1969; Clarke 1885; Hooker 1907; Chatterjee 1940; Hooker 1904; Singh and Chauhan 1998; Brandis 1978; Das *et al.* 2010, Mallick *et al.* 2020, 2021, presented a detailed report of medicinal plant with weeds species in Duars region of West Bengal.

The dense vegetation of Darjeeling Himalaya, Terai and Duars of North Bengal has attracted several researchers from different parts of the world since last few centuries (Don 1823, 1825). Griffith (1847) explored the vegetation of Terai and Duars areas of North Bengal later followed by Sir J.D. Hooker (1849, 1904). Hooker explored the entire region and recorded of approximately 2500 plant specimens. He published his expedition as the Flora of British India (Hooker 1854, 1872 - 1897, 1904), which is one of the earliest and important comprehensive descriptions of plant resources for this region. Various taxonomist (Cowan and Cowan 1929; Ohashi 1975; Grierson and Long 1979, 1983 – 1991, 1994 – 2000, 1999 – 2001) from different other parts of the world has made considerable contributions to the flora of Terai and Duars of North Bengal.

With the description of 36 plant species along with their local name, locality, altitude, family name, specific uses, and brief notes, Chaurasia *et al.* 1999, performed an ethnobotanical survey of the Nubra Valley of Ladakh. Mohamed Sham Shihabudeen *et al.* 2010 reported the usage of six medicinal plants as traditional medicine. Vaghasiya *et al.* 2011 documented some traditionally rich medicinal plants in the Western region of India. Chhetri *et al.* 2008 reported eight medicinal plants after photochemical analysis in Nepal. Similarly, in Nigeria, Edeoga *et al.* 2005 reported 10 medicinal plants. In Nigeria, Mensah *et al.* 2009 reported the treatment of hypertension and their mode of action with the identification of 12 taxonomic families including 14 local plant species. Kumar *et al.* 2007 listed some Indian medicinal plants with their anti-microbiological activities to counteract the ethnological agents of *Acne vulgaris*. Mallick *et al.* 2021 gave a detailed idea about arboreal spermatophytes in three MPCAs of West Bengal, India.

Phytosociological understanding for the forested vegetation of North Bengal terai duars and hills were studied by Kadir 2001; Rai 2006; and Sarkar 2014 following conventional nested quadrat sampling as suggested by Phillip 1959; Misra 1968; Shimwell 1971; Blanquet 1932; Matuszkiewicz 2002. Nested Quadrat technique is the most generalized techniques to study phytosociology and community structures. Various phytosociological parameter and species diversity for the vegetation of different habitats of North Bengal plains and hills were studied by different authors (Kadir 2001; Rai 2006; Phillips 1959; and Chowdhury 2009).

Traditional utilization from recorded medicinal plants was performed to prepare a list of medicinally important plants growing in these areas in different seasons. The ethnic

communities of forested villages will be interviewed with their Prior intimation about the frequent uses of such wild medicinal plant in their daily healthcare system. To construct a list of good number of plants, the literature like Kirtikar and Basu 1935; CSIR 948-1976; Chopra *et al.* 1956, 1969; Asolkar *et al.* 1992; Biswas and Chopra 1940; Chowdhury 2009 Mondal *et al.* 2017, Mondal 2020, Mallick et al. 2021 will be consulted.