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Study of medicinal plants utilised by Rajbangsi's: Against fever in Cooch Behar, West Bengal, India, from an ethno botanical perspective

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Abstract

Due to its location and ecologically fragile conditions, the northern region of India offers a wide variety of medicinal plants. Since 3,000 years ago, sickness has been treated using these conventional methods. Due to the high demand for these therapeutic herbs, the majority of plant populations have declined, which suggests that the communities who use the plants lack basic ecological understanding. Thus, an attempt was made in this study of ethnomedicinal plants that are used by rajbangsi people for fever, to determine their availability on the growing site and to inform people about the sustainable exploitation of medicinal plants in the wild. Cooch Behar have a great wealth of traditional knowledge and medicinal plants. Medicinal plants have played an important role of primary health care system among the local people of Cooch Behar. The present paper is a study of traditional knowledge of medicinal plants and its use by local people of Cooch Behar and Rajbangsi community. Due to the unique geographic location and different climatic condition, it has variety of plant species. The present paper focuses about the indigenous knowledge of different medicinal plants in the Cooch Behar region. Ethno medicinal uses of 35 plant species along with botanical name, family, local name, parts used and therapeutic uses are given in this paper.

Keywords: Traditional knowledge, Rajbangsi, medicinal plants, ethno medicinal, therapeutic use

Introduction

About 70% of Indians live in rural areas, and many of them are located close to forests where they rely on various plant parts for food, medicine, and a variety of other daily needs. Since ancient times, Indians have used medicinal plants^[1].

Throughout the entire evolution of human culture and the environment, indigenous healing methods have been accepted. About 40% of all health care delivered today is still based on traditional medicine, which is widely used^[2].

Approximately 85% of conventional medications come from plants^[3].

Many indigenous communities have a long history of using medicinal plants as a key component of their traditional medical practices to treat a variety of illnesses, especially to treat minor aches and pains. This practice is based on hundreds of years of beliefs and observations. A total of over 7500 types of plants are utilized by various ethnic tribes, and almost all of India's population uses them as medicine. In particular, tribal people practice herbal therapy and gather and preserve locally grown and wild plant species to treat a range of illnesses and problems. India is one of the world's main centers of ethno botanical riches due to its very diverse ethnic groupings and abundant biological resources^[4].

Many contemporary researchers are engaged today to explore the enormous potential of ethno botanical knowledge for treating various diseases, and there is an increasing effort to integrate traditional medicines, especially herbal preparations, in the local health care systems in developing countries^[4-7].

Deforestation, overgrazing, and careless use, however, are endangering the Ethnomedicinal plants. Therefore, it highlights the pressing need for their conservation. Traditional knowledge must be preserved while biological resources are preserved and used sustainably^[32]. India is sitting on a rich mine of thoroughly documented and regularly used traditional herbal medical knowledge.

But despite the developed world's renewed interest in herbal medicines, India has not been able to take advantage of this wealth in herbs by promoting their use there. This may be accomplished by carefully selecting products based on illnesses prevalent in the developed world for which there are no treatments; these herbal medicines will have simple access to those nations. Allopathic medicine, which is the preeminent medical system in the industrialized world, tends to be practiced outside of traditional medicine.

Despite a flurry of studies on the condition and usage of medicinal plants in different regions of India, the Cooch Behar district of West Bengal has not yet produced any such scientific data. Therefore, this study was created to investigate the use of medicinal plants used for fever among the tribal people of the Cooch Behar district as well as to determine the most recent status of these plants through a thorough survey.

The Rajbanshi medical system was the first, and it is still widely used today in many parts of North Bengal, carrying on a long heritage. Mostly in the rural, Rajbanshi medicine had gained popularity. Because of their relative independence, freedom, and self-sufficiency, the peasants were unconcerned with the political upheavals and advancements. As a result, various Ayurvedic practices as well as historic Indian cultural practices might be seen in the villages^[9].

Importance of traditional medicine for indigenous peoples and local communities

Traditional medicine sometimes referred to as complementary, alternative, indigenous, or folk medicine, is the body of knowledge that existed in diverse communities before the advent of modern medicine.

Traditional medicine is described by the World Health Organization (WHO) as "the totality of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, where explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement, or treatment of physical and mental illness." The WHO has referred to these systems as "holistic," which is to say that they emphasizes the idea that disease or ill health is caused by imbalance or disequilibrium of man in his total ecological system and not just by the causative agents and pathogenic evolution. Traditional medicine encompasses all forms of folk medicine, unorthodox medicine, and, in fact, any treatment approach that has been passed down through an ethnicity or

community's heritage. Today's pre-industrial societies are responsible for discovering the majority of therapeutic plants, and many of them are engaged in the domestication, collecting, cultivation, and management of medicinal plant sources. This activity aids several local communities and indigenous people, as well as the preservation of traditional medical practices^[10].

Since the beginning of recorded human history, traditional medicines have been used to treat and prevent a wide range of illnesses. Ayurveda, Siddha, Unani, Amchi, and local health traditions are ancient Indian medical systems that give a solid foundation for the use of many plants in terms of safety and effectiveness leading for the prevention and treatment of many illness problems. According to the World Health Organization, 80% of people utilize herbal therapy as their primary source of healthcare today. Herbs and herbal formulations are employed as rejuvenators^[33].

The key element of Ayurvedic, homoeopathic, naturopathic, traditional Chinese, and Native American Indian medicine is herbal treatment. According to the WHO, 119 contemporary pharmaceuticals made from plants are used in methods that directly correspond to their historic applications^[12].

Rajbanshi's held that several factors, including pollutants, unfavorable weather, the displeasure or wrath of gods, and malevolent spirits, were the primary causes of many ailments. Local ojhas were contacted for the treatment of various illnesses. By reciting mantras, the ojhas (village exorcists) attempted to appease the disgruntled gods. Additionally, they made an effort to appease the offended deities by providing both vegetable and animal products. The goddesses were the deities in the majority of situations. Herbs and bushes were extensively used as raw materials for making medications to cure the rural people^[13].

Methodology

We conducted a comprehensive assessment of the literature in order to compile the most recent data on the medicinal plant. The State Medicine Plant Board's website was the primary secondary source from which the data was gathered. For the sake of data interpretation, references from research papers, books, and articles were used. Along with a thorough review of the local resources, some data on the application of conventional herbal medicine was gathered through individual interviews and a literature review. In addition to data collecting, the study's main goal was to understand how the community and medicinal plants interacted. (Table 1)

Table 1: Ethnomedicinal plants used by Rajbanshi people for fever^[14-31] [Figures 1-4]

Sl. No.	Scientific name and family	Local name	Parts used	Therapeutic uses
1	<i>Tamarindus indica</i> (Leguminosae)	Tetul	Leaves, Fruits	Reduces Heart disease, blood sugar, fever
2	<i>Andrographis paniculata</i> (Acanthaceae)	Kalomegh	Whole plants	Leaf extract to treat jaundice, dried leaf extract to treat body pain, fever
3	<i>Stephania japonica</i> (Menispermaceae)	Akundi	Leaves	Diabetes and various kinds of fever.
4	<i>Azadirachta indica</i> (Meliaceae)	Neem	Leaves	Sun dried leaves are crushed and then pan fried and taken with food to treat blood impurities and Skin disease.
5	<i>Centella asiatica</i> (Apiaceae)	Thankuni	Leaves	Freshly prepared leaf extract is taken orally early in the morning on empty stomach to treat stomach Complain.
6	<i>Lindernia crustacean</i> (Linderniaceae)	Najukboti Ghash ful	Leaves	Its use against human herpes virus infection and its anti-Epstein-Barr virus (EBV) effect and fever.
7	<i>Corchorus capsularis</i> (Malvaceae)	Teto pat	Dry leaves	Dry leaves are used to treat fever.
8	<i>Ocimum sanctum</i> (Lamiaceae)	Tulsi	Whole plant	Dried leaf, fruit and bark are crushed and the mixture is taken orally to Treat cough and cold.
9	<i>Clerodendrum viscosum</i> (Lamiaceae)	Vatigachh	Young leaves, Root	Root paste is given in fever.

10	<i>Acacia nilotica</i> (Fabaceae)	Babla	Spines, pods	Pods are prescribed in dysentery, fever.
11	<i>Tinospora cordifolia</i> (Menispermaceae)	Gulancha	Stem	Freshly prepared stem decoction is used to treat Diabetes, blood purifier, fever.
12	<i>Hibiscus rosa-sinensis</i> (Malvaceae)	Joba	Leaves, Roots	Leaves used to treat burning sensation, fatigue and skin diseases; root extract used to treat cough and fever
13	<i>Nycanthes arbortristis</i> (Oleaceae)	Sefali	Leaves	Arthritis, malaria, seasonal fevers
14	<i>Rauwolfia serpentine</i> (Apocynaceae)	Sarpagandha	Leaves, Roots	i) Root paste (freshly prepared) is used in cuts and Wounds, mild blood pressure. ii) Freshly prepared leaf decoction is used as remedy To the removal of opacity.
15	<i>Ananas comosus</i> (Bromeliaceae)	Anaros	Fruits, leaves	The whitish thick basal portion of the leaf is made into a paste and consumed in the Treatment of fever.
16	<i>Phyllanthus emblica</i> (Phyllanthaceae)	Aamlaki	Fruits, leaves	plant parts are dried and then crushed and the mixture is taken Orally to treat gastric Problems. Leaf decoction is used to treat Fever.
17	<i>Aegle marmelos</i> (Rutaceae)	Bael	Leaves, Roots, Fruits	Fruit pulp and bark are crushed for preparing sharbat and consumed against indigestion and dysentery.
18	<i>Piper longum</i> (Piperaceae)	Pipli	Fruit	i) Fruit decoction is used to treat dysentery. ii) Bark extract is used to reduce lethargy.
19	<i>Piper cubeba</i> (Piperaceae)	Kababchini	Fruits, seed	Used in fever, gonorrhoea, dysentery, syphilis, abdominal pain, diarrhea, enteritis, and asthmatic diseases
20	<i>Piper retrofractum</i> (Piperaceae)	Chab	Roots, fruits	Treating indigestion, abdominal colic, poisoning, anorexia, fever.
21	<i>Alstonia scholaris</i> (Apocynaceae)	Chhaiton	Bark	Bark extract used to treat intestinal worm; bark juice used to treat fever.
22	<i>Justicia adhatoda</i> (Acanthaceae)	Basak	Leaves	Freshly prepared leaf extract is taken orally to Treat cough and cold.
23	<i>Tinospora crispa</i> (Menispermaceae)	Padma guloncho	Stem, leaves	Malaria and other fevers.
24	<i>Drynaria quercifolia</i> (Polypodiaceae)	Pankhiraj	Leaves, Rhizomes	Purulent penile discharge, possibly indicating gonorrhoea or other sexually Transmitted diseases. Astringent, purgative, anti-inflammatory, Bronchitis, asthma, catarrhal fevers.
25	<i>Scoparia dulcis</i> (Plantaginaceae)	Bon Dhonia	Seed, Leaves	Leaf paste used against fever and red urine
26	<i>Costus speciosus</i> (Costaceae)	Keo	Young stem, Leaves, rhizomes	Fever, Purulent penile discharge, possibly indicating gonorrhoea or other sexually transmitted diseases (passing of dense, whitish, sticky substance or sperm before or after urination) Paralysis of hands and legs
27	<i>Nigella sativa</i> (Ranunculaceae)	Kalojeera	Seeds, oils	Seed paste is used to treat Cough and cold. Seeds are also boiled in water and inhale the fumes to reduce Nasal congestion.
28	<i>Gmelina arborea</i> (Lamiaceae)	Gamari	Whole plants	Useful in burning sensation, fever, thirst, emaciation, heart diseases, nervous disorders and piles.
29	<i>Mimosa pudica</i> (fabaceae)	Lajjabati	Leaves, Stem	Long-standing Infections, fever.
30	<i>Amorphophallus paeoniifolius</i> (Araceae)	Olkochu	Fresh roots, dried tubers	Treatment of gastrointestinal diseases viz. hemorrhoids, vomiting, anorexia, dyspepsia, flatulence, constipation, fever.
31	<i>Glycomis arborea</i> (Rutaceae)	Ashsewra	Roots, Branches	Root powder used in fever, hepatopathy, eczema, skin diseases, to treat wounds and liver complaints.
32	<i>Ludwigia perennis</i> (Onagraceae)	Ban lavanga	Leaves, Plant extract, plant ash	Boiled plant extract used externally to reduce fever.
33	<i>Plumbago zeylanica</i> (Plumbaginaceae)	Chitra	Leaves, Roots	Root used to treat high fever; leaves used to treat cut.
34	<i>Sesamum indicum</i> (Pedaliaceae)	Til	Seed	Fried fruit taken in case of fever.
35	<i>Ziziphus mauritiana Lam.</i> (Rhamnaceae)	Boroi	Root, Fruits, spines	Paste of seeds is good for leucorrhoea.





Fig 1: Images of ethno-medicinal plants

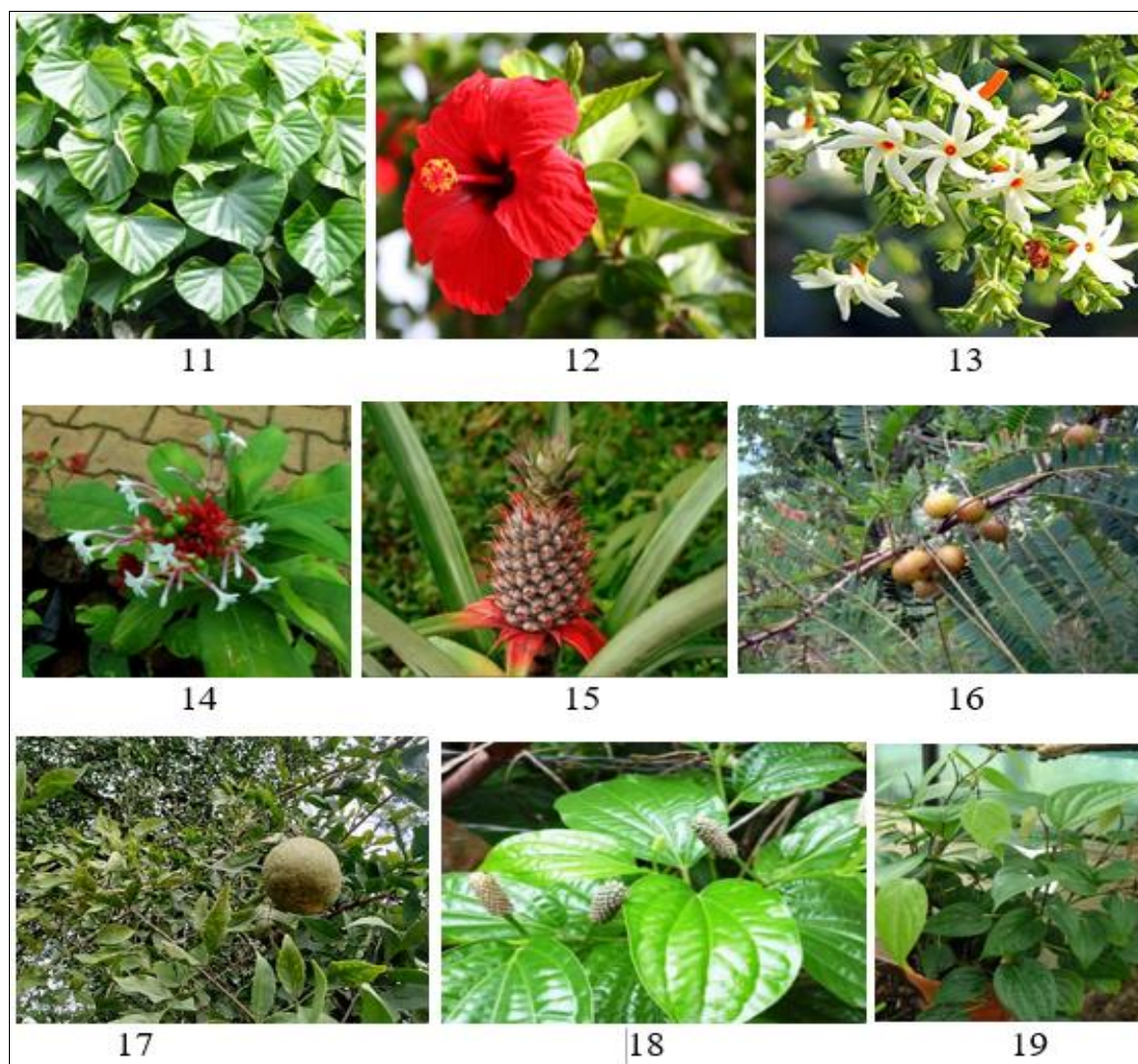


Fig 2: Images of ethno-medicinal plants

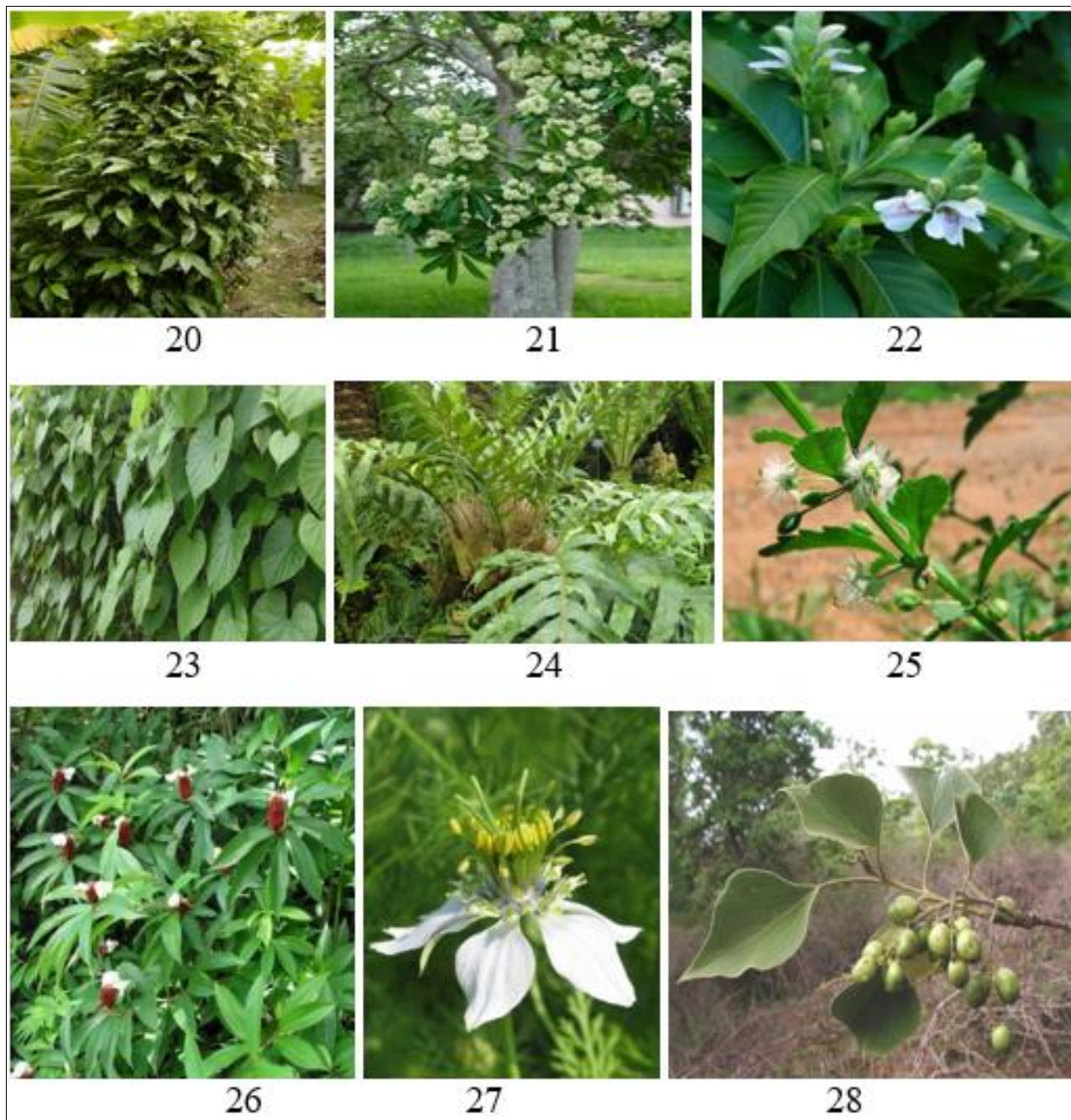


Fig 3: Images of ethno-medicinal plants





Fig 4: Images of ethno-medicinal plants

Conclusion

The Rajbanshi people are deeply connected to the natural world. They are entirely dependent on the forest and flora for their food, fruits, fodder, medicinal herbs, and health care. The locals in this area think that using these historically used medicinal herbs for health is preferable to using modern medicine since they are more readily available, less costly, and have less side effects. The current state of traditional knowledge on medicinal plants is a concern since it is progressively deteriorating and vanishing from rural areas. Inhabitant groups in north India strongly support the use of medicinal herbs in spiritual activities. They revered plants as gods, goddesses, and other lesser deities. People in rural regions still rely on traditional remedies for their medical needs because of the lack of modern medical facilities, poverty, and connectivity to urban centers, awareness, etc. Due to the lack of contemporary medications, primary healthcare employs wild herbs that have therapeutic significance. Due to a variety of problems including deforestation, the effect of tourism on the area's native vegetation, population growth, extensive building, and climate change in the Himalayan, terai and dooars region. To preserve the woods and medicinal plants, we must develop sound policies and put them into practice. The fallow land that has been left fallow should be used to grow and conserve medicinal plants.

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