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RESEARCH PAPER

Exploring the "Green": A Review of Environment and Ecology as Embedded in the Historical Literature of Pre-Colonial Assam

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Abstract: "Green history" in general refers to environmental history that traces the development of human–nature relationships and patterns of natural resource extraction and mobilization in our past. Needless to say, a concern for the "green" is becoming a fast-developing field of enquiry given the growing incidence of environmental hazards across the world. However, comparatively, in India, environmental history is yet to make much headway. That is why David Arnold and Ramchandra Guha, the pioneers of environmental history in India, have remarked that environmental history in India, and South Asia in general, is under-developed as a discipline. Assam, situated in the north-eastern part of India, has always been known for its rich flora and fauna and diverse biodiversity hot spots. This region shows a great diversity of climate, topography, and geology, which explains the rich biological diversity of this part of the country. But, interestingly enough, very few studies have been undertaken to examine the environmental history of Assam, and most of them are on the colonial period. This paper aims to review particular references to the ecology and environment of pre-colonial Assam that are embedded in the available historical literature.

Keywords: Green History, Environmental History, Ecology, Kamarupa, Ahom Kingdom, Buranji, Pre-Colonial Assam

1. INTRODUCTION

Till at least a few years ago, when talking about the environmental history of India, the pre-colonial period was used only as a standard or reference point to understand how things changed or stayed the same in the nineteenth century and afterwards. The notion of a "static" pre-colonial India is often still dominant in the historiography of environmental history.

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In the case of Assam, the region's environmental history is relatively unknown, particularly during the pre-colonial period. One of the reasons for this void is the lack of written records, as most of them date only from the thirteenth century onwards, from the advent of the Ahoms. Another reason is the lack of attention given to the natural environment in historical records. Records from the Ahom period primarily focus on political and social events—such as wars and dynastic changes—rather than on the natural environment. This is not unique to pre-colonial Assam and is a common issue in many historical records from around the world. In recent years, scholars like Rajib Handique and Arupjyoti Saikia have increasingly turned their attention to the environmental history of Assam, but their studies primarily focus on the colonial period. In *British Forest Policy in Assam*, Handique (2004) attempts to analyse the British forest policy from 1864 to 1947 AD in the context of Assam, while in *Forests and Ecological History of Assam, 1826–2000,* Saikia (2011) comprehensively describes the changes in Assam's forests and ecology from the beginning of the nineteenth century to the end of the twentieth century. However, in the recently published *The Unquiet River: A Biography of the Brahmaputra,* Saikia (2019) throws some light on the dependence of the Ahoms on the Brahmaputra and its tributaries for farming, irrigation, military defence mechanisms, etc. While there is still much to learn, there are ways to reconstruct the environmental history of pre-colonial Assam. We observe a similar notion in the colonial perception of an "a-historical" India. Romila Thapar, in her erudite essay, "Society and Historical Consciousness: the *Itihasa–Purana* Tradition" states that we can use two terms to express historical consciousness of a time: "embedded history" (in which historical consciousness has to be prized out),and its opposite, "externalized history" (Thapar 1986). The same phenomenon can be seen in the case of the environmental history of Assam as well. As E. H. Carr states, "The facts speak only when the historian calls on them: it is he who decides to which facts to give the door, and in what order or context" (Carr 2018, 11). Literary sources on Assam's history never considered the environmental aspects of the green world to be significant enough to incorporate them within their corpus, and the instances are therefore more-or-less embedded in nature and hence deserve close scrutiny.

2. METHODS

The methodology adopted for this study is both descriptive and historical–analytical in nature. This study has been conducted as an empirical research, in the form of content analysis, using qualitative data. The sources of data include both primary as well as secondary sources available in the form of

books, lectures, articles, seminars, etc. The major primary texts that have been consulted include the *Kalika Purana*, *Deodhai Asam Buranji*, *Purani Asam Buranji, Asam Buranji, Satsari Asam Buranji, Tungkhungia Buranji, Baharistan-i-Ghaibi, Hasti Vidyarnava, Fathiya-i-Ibriyya,* and the *Katha Guru Carit*. The study focuses on the early and medieval periods of Assam's history and therefore concentrates on the period from the fourth to the nineteenth centuries AD. Due care has been taken to make the interpretations rational and scientific.

3. RESULTS AND DISCUSSION

Religious texts can provide valuable insights into the environmental history of a region by offering information on the beliefs and practices of the people who lived in that particular region. Many religions have teachings and rituals that are closely tied to the natural environment, and religious texts often contain references to plants, animals, and natural phenomena that are important to the people who practise that religion. By analysing these texts, historians can gain insights into the beliefs, practices, and attitudes of the people who lived in the region, and they can use this information to develop a deeper understanding of the complex relationship between human societies and the natural environment. The *Kalika Purana*, one of the 18 minor Puranas in the Shaktism branch of Hinduism, and written in the early Kamarupa region of Assam, is centred on the supremacy of the Goddess in her regional manifestation as Devi Kamakhya. Though the *Kalika Purana* is devoted mainly to the religious history of early Assam, we find different places, *tirthas* (pilgrimage spots), rivers, rivulets, hills, hillocks, lakes, ponds, groves, and forests that are sacred to various gods and goddesses. With respect to topographical descriptions, the *Kalika Purana* looks mature enough, because it tries to conceptualize geography not only in terms of terrain names, but also in terms of cosmology and climate. A section of the *Kalika Purana*, Chapters 78–80, is especially devoted to extolling the geography of Kamarupa and the various places within it. In Chapter 55, under the title "Offering Sacrifice to the Goddess", the Kalika Purana mentions different plants and animals. Describing the entry of Naraka into the city of Pragjyotispura, it states:

Then the city of Pragjyotisa being inhabited by the delightful and energetic people, full of herds of cattle, horses and elephants started shining again in splendour and became free from the impediments and calamities, and looked like Amaravati, the favourite city of Indra. (Shastri 1994)

Table 1: Identification of Current Geographical Locations from the Data of the Kalika Purana

Geographical Location in *Kalika Purana*	**In reference to Deity/Person**	**Chapter of *Kalika Purana***	**Present Name**	**Present Location**
"Kamarupa"	-	Chapters 78–80	Kamrup	Kamrup
"Tattvasaila"	Sri Surya	Chapters 78–80	Sri Surya Pahar	Goalpara
"Manikuta"	Hayagriva	Chapters 78–80	Hayagriva-Madhava	Kamrup
"Asvakranta"	-	Chapters 78–80	Asvakranta Devalaya	Kamrup
"Manikuta"	Manikarna	Chapters 78–80	Manikarneswara Temple	Kamrup
"Matsyadhvaja"	Madana	Chapters 78–80	Madan-Kamdev	Kamrup
West of "Nilakuta"	Pandunath	Chapters 78–80	Pandunath Devalaya	Kamrup
"Nilakuta"	-	Chapters 78–80	Nilachal	Kamrup
East of "Nilakuta"	Ugratara	Chapters 78–80	Ugratara Temple	Kamrup
"Urvasikunda"	-	Chapters 78–80	Urvasi Island	Kamrup
"Citracala"	Worship of nine planets	Chapters 78–80	Navagraha of Citracala	Kamrup
"Sandhyacala"	Sage Vasistha	Chapters 78–80	Vasisthasrama on Sandhyacala	Kamrup

Source: *Kalika Purana* (Shastri 1994)

The *Kalika Purana* recommends worshipping the Goddess by offering various forest products such as gourds, coconuts, dates, breadfruit, grapes, mangoes, bael fruits, citrons, water chestnuts, betelnuts, roots, rose apples, Indian persimmons, dairy products, sugar lumps, various varieties of honey, parched grains, rice, fruits, sugarcane, white sugar, gooseberries, and oranges. In the *Kalika Purana*, animals were generally treated as mere offerings to the deity, which was a major feature of the Saktism and Tantrism that prevailed in early Assam (Shastri 1994). It was believed that by offering sacrifices of tortoises, alligators, he-goats, boar, buffalo, lizards, deer, yak, spotted antelope, hares, lions, and other animals, a devotee could achieve liberation, and, specifically, a king could defeat enemy kings. The prime flowers used as offerings to deities included *kadamba* (*Neolamarckia cadamba*), *jati* (*Jasminum grandiflorum*), *mallika* (*Jasminum sambac*), *maloti* (*Aganosma calycina), kamala* (*Nelumbo nucifera), tulasi* (*Ocimum sanctum*), *utpala* (*Nymphaea stellata*), and *bakula* (*Mimusops elengi*).

The enormous territory of early Kamarupa previously abounded with forests, hills, and rivers. The *Kalika Purana* states that of these, more than 50 different hills and rivers (most of which were regarded sacred) seemed to have been situated in the region of Assam. Rivers and mountains were treated as holy manifestations, and their names were inspired by Brahmanical Hinduism, while the physical environment was viewed with religious fervour. The *Kalika Purana* deified the rivers and mountains and promoted them as places of pilgrimage (*tirthas*), thus forging a relationship between pilgrims and nature. Consequently, it played a seminal role in drawing people's attention to the natural environment as well as instilling in them a wholesome respect for it. Moreover, it also can be assumed that the Purana writers bestowed sanctity upon them with the aim of promoting conservation of these natural resources (Nath 2009). Some geographical locations mentioned in the *Kalika Purana* that can be identified with present-day sites are described in Table 1.

The *Kalika Purana* text can also be seen from the perspective of ecofeminism. The *Kalika Purana* revolves around the magnificence and worship of the Goddess Kamakhya, who is referred to as a manifestation of the all-encompassing Goddess Mahamaya. The Goddess is portrayed as the supreme deity in various portions of the book. The Devi is regarded as the cause of the universe, without which creation is impossible. It is one of the few *Upapuranas* that claim the Goddess as the Supreme Being, as opposed to the male gods Brahma, Vishnu, and Siva. Kamakhya's special powers are love, attraction, and sexual fulfilment. According to ecofeminism, the female body is believed to be the site where life can emerge, just as forests

provide a habitat for a diverse range of plants and wildlife. Both forests and women's wombs provide space for life to emerge, grow, and develop. Forests offer enough nutrients for flora and fauna to stay alive and thrive, while a woman's womb provides a safe haven for the advent of life. Nature is the womb: a place and space where life begins, is born, and develops. In the same vein, the *Kalika Purana* states:

sā śaktiḥ sṛṣṭirupā ca sarveṣāṁ khyātirīśvarī/
kṣamā kṣamāvatāṁ nityaṁ karuṇā sā dayāvatām//
(Shastri 1994, 140)
(Transl.: The Goddess is the creative energy behind everything and is recognized as knowable. She is forgiveness for those who possess it, and kindness for those who are merciful.)

Ecofeminists believe that nature and women are producers of life as they give life to all creatures. According to Vandana Shiva, women's effort in generating food and life is a truly productive relationship with nature, since throughout human history, they did more than just gather and consume what grew there; they also created conditions for things to thrive (Shiva 2016). Hugh Urban claims that Kamakhya can be seen as a "matrix of power", since she is both the generative mother of the universe (Sanskrit *matr*, *matrka*, which is etymologically related to Latin *mater*, *matrix*), and the life force (power) that permeates all of its constituent elements (Urban 2011). The divine force of the Goddess, known as Sakti, infuses the cosmos, society, and the human form alike, and it is the source of all finite existence. Sakti is the power of birth and death and production and destruction. She manifests herself in all the universes, helps them, and will eventually incorporate them back into herself (Woodroffe 2014). Echoing this notion of ecofeminism, the *Kalika Purana* declares:

utpannamaṅkaraṁ bījād yathāpo meghasambhavāḥ/
prarohayati sā jantūstathotpannān prarohayet//(Shastri 1994, 153)
(Transl.: The cloud's rainwater helps the sprouts that sprung from the seeds to grow in the same way that she causes the creatures to mature once they are born.)

Apart from religious texts like the *Kalika Purana*, other sources such as the Ahom chronicles, hagiographies, and inscriptions from early and medieval Assam offer some unique insights into the different natural components of the region such as the rivers, forests, and wildlife. Rivers have been a vital source of water, food, and transportation for humans and wildlife alike in almost every civilization. They have also been instrumental in the

development of human societies, providing a means of communication and trade. The Brahmaputra in Assam is a massive river that has influenced the region in numerous ways. According to the Gauhati copperplate inscription of Indrapala, it was named Lauhitya because its waters were reddened by the thick blood shed by the axe of Parasurama (Shastri 1994). We also find several references regarding the rivers of this region in the Buranji literature. The Ahoms were experts in hydraulic engineering and could build intricate networks of dams and embankments to regulate river flow and stop flooding. The rivers of Assam not only guaranteed a consistent supply of water of a quality that was suitable for rice cultivation, but the annual flooding also guaranteed the deposition of silt in the soil, which further enhanced the conditions needed for wet rice farming. When the Varman dynasty first came into being, water management was in its infancy (Lahiri 1984). References to field ridges (*ksetra ali*) and bunds *(vrhad ali*) over fields can be found as far back as in the eleventh-century copperplate grants from the western part of the valley. References to ships and boats are crucial when discussing the environmental history of a region, especially in areas that are heavily reliant on waterways for transportation, commerce, and military activities. In Assam, where multiple rivers dominate the landscape, the Ahoms' high regard for the naval department facilitated the development of a highly effective military apparatus. The rivers would serve as a means for conducting offensive and defensive operations for the state. The Ahoms realized this and gave their naval department considerable attention (Saikia 2019). Most of the Ahom chronicles acknowledge the existence of *khels* (work groups) dedicated specifically to boat construction and related industries. The *Deodhai Buranji* mentions the assignment of high-ranking Phukan officers to oversee these spheres of activity—these officers included Pani Phukan, the admiral in charge of the Lower Assam flotilla; Naoboicha Phukan, in charge of the boatmen; Naoshalia Phukan, in charge of the boat builders and dockyards; and Choladhara Phukan, who oversaw the country's commercial and foreign affairs, and maintained tight ties with maritime issues (Bhuyan 1962).

The rivers also had a tremendous impact on the transition and transformation of the medieval polity. The famous battle of Saraighat (1671 AD) between the Ahoms and the Mughals was fought on the Brahmaputra, and on many occasions, the Ahom army used their excellent knowledge of the river and its floodplains to chase off the Mughal army (Saikia 2019). The Ahom kings, after losing battles against the Mughals, created an artificial flood in their kingdom by funnelling the nearby rivers on to the land, which ultimately sent the enemies back home. These descriptions are available in different Ahom chronicles, including the *Saraighat Yuddhar Katha, Ram*

Simhar Yuddhar Katha, Purani AsamBuranji, and *Deodhai Asam Buranji.*

Water bodies like ponds, tanks, and lakes are important sources of water for human populations and wildlife, and they have been used for various purposes throughout history. There are many terms used in the inscriptions of early Assam to describe ponds, tanks, and lakes. For example, the Nidhanpur grant alludes to a pond called *Vyavaharikhasoka pusakarni* and the Nowgaon plate refers to *Sewaparyaddha* pond (Sharma 1978). The Sualkuci grant and the Guakuci grant mentions *Diyambara jola* and *Strotasi jola* or pond, respectively (Ghosh 2014). The Ahom kings also built several massive ponds for the welfare of nearby subjects in different corners of the kingdom. These ponds were well-maintained, and a layer of *rah* or *para* (mercury) was often laid on the bed of the ponds once the digging was completed. In addition to serving as a source of drinking water and to soak the *kothiya* (paddy shoots), these ponds were also intensely used for farming fish, *Nao Khel* (boat races), and other activities. When the pond was filled with spring water, several gold- and silver-decorated fish and turtles would be released into it, as the Ahoms believed this would keep the water clean (Goswami 2020). The names of the ponds inferred from the Buranji literature are presented in Table 2, some of which can still be found in present Assam. When the pond was established, a subway would be built along the main road, and trees such as *aobar*, *ahot* (*peepal* or strangler fig), *joree,* and *bar* (banyan tree) would be planted on both sides. People believed that the various gods living in these trees were responsible for the well-being of the state and the longevity of the king. Special rituals would be also organized, in which *mangalacharan* (invocation) would be chanted by a Mohan-Deodhai *pundit* (a priest) near the tree's foot and roots (Goswami 2020).

Inscriptions from early Assam suggest that the term "*prayogvida*" or medical men may have referred to physicians who used medicinal and herbal plants collected from the forest to treat diseases (Nowgaon plate of Balavarma) (Sharma 1978). According to Harjaravarma (Tezpur inscription), boats and ships were common in the western part of Assam. The fragmented Nagarjai Khanikargaon stone inscription, which dates back to the early fifth century, mentions a *vatta* or banyan tree. *Sarkara mula*, a tuberous root of a class of creepers, is mentioned in the Sualkuchi grant of Ratnapala; archaeobotanists have identified it as a type of yam (Sharma 1978). In early Assam, the state promoted the donation of land to Brahmans (Agrahara settlements), which resulted in the expansion of large agrarian tracts. This trend continued under the medieval Ahom kingdom in a more systematic and crystallized form through the *Paik* system. The majority of the Ahom chronicles talk

about the *Paik* system and its management, but one has to minutely analyse these texts to understand its profound impact on the contemporary environment and ecology of the region.

Table 2: Names of Some Ponds Constructed by the Ahom Kings

Name of the Pond	Patron King	Name of the Buranji, Page Nos.
Kartowa Pukhuri	Suhungmung	*Purani Asam Buranji* (ed. H. Goswami),pg49
Gorgaonor Pukhuri	Gargaya Raja	*Assam Buranji* (ed. SK Bhuyan), pg 25
Nahor Pukhuri	Khura Raja	*Asam Buranji* (ed. Tamuli Puhkan), pg 24
Mechlow Pukhuri	Khura Raja	*Asam Buranji* (ed. Tamuli Puhkan), pg 24
Mechagarh Pukhuri	Pratap Simha	*Assam Buranji* (ed. SK Bhuyan), pg 51
Rupahi Pukhuri	Pratap Simha	*Assam Buranji* (ed. SK Bhuyan), pg 56
Rohdoi Pukhuri	Gadadhar Simha	*Asam Buranji* (ed. Sadaramin), pg 60
Jaysagar Pukhuri	Rudra Simha	*Asam Buranji* (ed. Sadaramin), pg 60
Sibsagar Pukhuri	Siva Simha	*Asam Buranji* (ed. Sadaramin), pg 60
Moglow Pukhuri	Rajeshwar Simha	*Asam Buranji* (ed. Sadaramin), pg 75
Rudrasagar Pukhuri	Lakshmi Simha	*Asam Buranji* (ed. Sadaramin), pg 75
Gauriballav Pukhuri	Lakshmi Simha	*Asam Buranji* (ed. Sadaramin), pg 75
Bishnusagar Pukhuri	Chandrakanta Simha	*Asam Buranji* (ed. Sadaramin), pg 79

Source: *Ahom Buranjis* mentioned within the table

The density of the forests of the region can be gauged using references from the Ahom chronicles. During the advent of the Ahoms in the thirteenth century, the forest cover in the Brahmaputra valley was enormous. Buranji literature, such as the *Deodhai Asam Buranji*, maintains that Sukafa, the founder of Ahom kingdom in Assam, travelled through the Patkai mountain range where various Naga tribes lived, and that the road that crossed Patkai into the plains was flanked with towering forests so dense that even narrow beams of sunlight were blocked (Bhuyan 1962). It took six consecutive months for Momai Tamuli Barbarua, minister and commander-in-chief under the Ahom ruler Pratap Simha, to clear the bamboo forests and reeds and to establish the Choki barracks at the mouth of the Kapili River (Baruah 1995). It was for its agar wood and elephants

that the Ahom state experienced repeated Mughal invasions through the seventeenth century. It was difficult to fight battles in the Brahmaputra basin due to the presence of dense trees and the lack of large open spaces. Sihabuddin Talish, a foreign traveller who accompanied Mir Jumla on his expedition to the Ahom kingdom in the seventeenth century, has provided a vivid description of the obstacles the Mughal army encountered as it entered Assam. Mir Jumla, the supreme commander of the invading armies, personally supervised the battle against nature, as soldiers dedicated themselves to chopping the impenetrable trees (Nath 2019). Talish noted that the trees of the valley were quite large, thick, and strong:

From Kaliabar to Gargaon, houses and orchards full of fruit trees stretch in an unbroken line, and on both sides of the road, shady bamboo groves raise their heads to the sky. Many varieties of sweet-scented and garden flowers bloom here and from the rear of the bamboo groves up to the foot of the hills there are cultivated fields and garden. (Sarkar 1915, 185)

The Ahoms exploited the forest resources in a systematic and planned manner. This notion goes, however, against the opinions of Madhav Gadgil, Ramchandra Guha, and Vandana Shiva, who claim that there was minimal intervention by the pre-colonial state (Gadgil and Guha 1993; Shiva 2016). These scholars blame the British for their interventionist stance in attempting to manage and control natural resources, not for conservation purposes, but also to increase tax revenue. However, it may be misleading to assign interventionism solely to colonial and post-colonial authorities. The Ahoms were skilled in exploiting the natural resources of the region, which helped them develop a prosperous and culturally rich state that lasted for several centuries.

In the Ahom state, many *khel*s (organised working groups under the Ahom administration) were involved in various facets of forest management and utilization. Forest organization encompassed, among other things, the construction of forest paths and wooden pillars; the supply of timber, wood, and bamboo; the collection of thatch and other natural products for royal use; and the use of forest products for commercial and architectural purposes. The *Ahom Buranjis* mention different kinds of such *khels*—which shows that a targeted approach was taken by the Ahom state in extracting natural resources. It is interesting to note that Sumit Guha strongly contests the notions of Gadgil and Guha (1993) and Shiva (2016) on the prudent use of natural resources by traditional societies in his research on the Khandesh region, which was controlled by the Marathas (Guha 2002). Mayank Kumar offers a similar analysis regarding Rajasthan (Kumar 2005). Pre-colonial literature on Assam also paints a similar picture of this region. The

management and appropriation of natural resources was a high priority for the medieval Ahom state, as it sought to ensure stable and consistent revenue. Table 3 uses the Buranji literature to identify the *khels* engaged in targeted and specific extraction of forest products during Ahom rule.

Table 3: Resource Extraction by the Ahoms via Specific *Khel*s

Name of *Khel*	**Purpose**
Charaimaria khel	Bird shooters
Pahumaria khel	Deer hunters
Pakhimaria khel	Feather hunters
Baghamaria khel	Tiger hunters
Khari-jogania khel	Firewood suppliers
Kharicha-jogania khel	Suppliers of fermented bamboos
Kher-jogania khel	Thatch suppliers
Takaupat-joganiar khel	Suppliers of *takau* or fan palm leaves
Bah-jogania khel	Bamboo suppliers
Kukurchungi khel	Game preservers for dogs
Pahuchungi khel	Game preservers for deer
Hatichungi khel	Game preservers for elephants
Namchungi khel	Lower valley game preservers
Charaichungi khel	Game preservers for birds
Chunibasa khel	Makers of forest road
Khutakatia khel	Makers of wooden pillar
Kharikatia khel	Woodcutters
Kathkatia khel	Timber cutters
Habichowa khel	Forest preservers

Source: Ahom Buranjis (G.C. Barua 1930; G. Barua 1972; Tamuli-Phukan 1906; Sadaramin 1930; Boruah 1992; Bhuyan 1962; H. Goswami 1922; Bhuyan 1969, 1964)

The Ahom chronicles describe several extraction methods for the region's unique natural resources. During the reign of the Ahoms, the sands of numerous rivers held gold dust, and the woods were home to tusker elephants (Goswami 2010). Hence, the ivory carving and gold washing

industries characterized the pre-colonial economy of Assam. The Ahom chronicles of the nineteenth century provide quantitative estimates of the metals obtained from eastern Assam (Bhuyan 1969). Gold was the most valuable metal available. Historically, an entire community of gold-washers, called the *Sonowals*, washed gold from the sands, suggesting that the operation was commercially viable. According to the Ahom chronicles, every man earned one *tolah*(1 *tolah*=11.7 grams)of gold every year, which was paid to the king (Goswami 2010). According to Wade (1805), a sizeable amount of gold was discovered in nearly all the northern rivers. He reported that substantial quantities of gold were discovered in the sands of the Brahmaputra, Subansiri, Dikrong, and Borgang rivers. The gold found in meandering streams with the strongest currents was deemed the best (Wade 1805).

The Ahoms were adept at cultivating silk, too, and utilized it to create exquisite textiles that were greatly coveted. The climate was conducive to the production of *muga*, *endi*, and *pat* silk, which constituted a cottage industry. The Ahom chronicles demonstrate how the *muga* thread was traditionally harvested from cocoons or shells (Bhuyan 1969). The grubs in the cocoons or shells containing the *muga* thread had to be destroyed by exposure to the sun or to fire before the thread can be extracted. In the subsequent step, they were boiled in an alkaline solution before the floss was removed and soaked in the water. Silk could only be extracted from cocoons by a team of two people: one to extract the silk, and another to reel it. The first person gathers silk threads from anywhere between 7 and 20 cocoons, then passes them to the reeler, who rolls them on their own thigh using the palm of the right hand and the underside of their right forearm. The reeler uses their left hand to operate the *bhangori*(a reeling device) next to him. The central axle of the *bhangori* is pivotal to its operation. With this method, about half a *seer*'s (1 *seer* = 933.10 gram)worth of thread can be reeled off the axle at a time (Basu 1970).

During the Ahom era, lime (a mineral) was extensively extracted from limestone. Limestone was utilized in the construction of *maidams* or royal tombs, as well as in ramparts, bridges, temples, and burial sites. Because the limestone in medieval Assam was of the highest grade, buildings fashioned of it stand till today. According to the Ahom chronicles, people searched for limestone in the hills during the dry season, brought it down the slopes, and collected it at a location called Chunchali, where it was burnt to generate lime. Chunchali (which is close to contemporary Guwahati) and Chunpura(which is close to contemporary Sivasagar) were the two locations where limestone was burnt to create lime. Limestone was discovered in

Nambar, Deopani, and Hariyahjan under the Ahoms (Gohain 1999). Mercury, or *rah* in Assamese, is another element that appears frequently in the region's written records. The Ahoms used unique methods to extract juice from the leaves of the bael tree (*Aegle marmelos*) to make *para* or *rah*. The *para* or *rah* ensured that the Ahom monarchs' tanks were always brimming with fresh and pure water (Borboruah 1997). Throughout their rule, the Ahom monarchs dug several tanks whose water is still potable. *Rahdhala Pathar* (*Rah* means mercury, *dhala* means pour, and *pathar* means field) still exists in the Golaghat district, where *rah* or mercury was once generated.

Sihabuddin Talish depicts the process used by the people of medieval Assam to make a kind of alkali solution called *khar* or *kharani* (Sarkar 1915). According to Talish, after cutting the bananas to pieces, they dried them in the sun and burnt them at first. After that, they put the ashes on a piece of fine linen above a pot and gradually sprinkled water on the cloth. They used the extremely brackish and bitter drippings as a substitute for salt. He also noted that such a practice has not been seen anywhere else in the whole of India. While the Ahoms faced periodic Muslim invasions, the Ahom rulers mandated that every Assamese family supply the royal armoury by providing a set quantity of saltpetre (gunpowder), a naturally occurring mineral, wrapped in *takau pat* or fan palm leaves (Handique 2005). According to the Buranji literature, the populace produced saltpetre from cow urine and delivered it to the state's arsenal through an officer named Kharghoria Phukan (Handique 2005). According to Tavernier, the Assamese were the first to discover the gun and gunpowder (Tavernier 1889), and the *Fathiyah-i-Ibriyah* states that the Assamese employed various types of gunpowder (Sarkar 1915). During the time of the Ahoms, massive cowsheds were created, and cows (especially those black in colour) were held there for six months. Their urine was collected, dried, and used to create saltpetre through the use of a white-coloured fungus that grew on it. The cows would then be released, and the cowsheds closed for several months (Borboruah 1997).

The Buranji literature of medieval Assam details the extreme diversity of the region's economic goods. The Ahoms engaged in trade with neighbouring kingdoms and regions, utilizing the Brahmaputra River and trading routes to transport agricultural goods, forest products, metals, and minerals. Cotton, Indian madder (*mujistha*), fir trees (*agar*), gold, musk, ponies, mustard seed, tobacco, betelnut, lac, *endi* and *muga* silk, elephant tusks, and rhino horns were among the items exported to Bengal (Bhuyan 1962). Natural products formed the basis of trade between the Ahom state and neighbouring tribes. In addition to Bengal and Tibet, the *Tungkhungia*

Buranji indicates that the Ahoms engaged in trade with the Dafla, Mishmi, Miri, Naga, and Garo regions. They exchanged items such as ginger, pepper, copper, cotton, musk, cow tails, bison, and horses (Bhuyan 1964). The Ahoms also devised a taxation system for the many natural products within their territory. Products like elephant ivory, lac, and timber (such as aloes and agarwood) generated significant revenue for the royal treasury. According to Prof. M. Neog's *Prāchya-śāsanāvalī*, medieval inscriptions reveal a systematic pattern of natural resource extraction by the Ahoms (see Table 4), as evidenced by the various taxes documented (Neog 1974).

Table 4: Some Taxes Found in the Medieval Inscriptions

Name of the Tax	Purpose of Taxation
Beth	The responsibility of catching wild elephants, buffaloes, etc.
Jalkar	Tax for fishing in rivers, lakes, etc.
Yavaksāra	The responsibility of supplying nitre for the preparation of gun-power
Dāna	Sales tax; tax for ferrying over rivers, etc.
Ghāt	Tax on ferry crossings
Phāt	Customs duty, imposed on marketplaces, especially on the banks of a river or lake (called *pāniphāt*)

Source: *Prāchya-śāsanāvalī* (Neog 1974)

Humans have co-existed with beasts and birds—some hostile and others hospitable—since the beginning of creation. There are numerous proverbs or maxims available in the Buranji literature that put together different names of animals, birds, plants, herbs, etc. For example, Ghora Konwar, on seeing a flash flood-like situation, insisted that Lachit Barphukan attack the Mughals. However, Barphukan declined, saying "*Kesha borolok jukale ga sariboloi taan* (It is deadly to play with a young wasp)." Actually, Barphukan believed in tactical attacks rather than a straightforward aggressive entry into Mughal territory, and therefore was reluctant to engage with the conscious and powerful Mughal force without proper planning (Bhuyan 1969). The Ahom king, Pratap Simha, on ordering the assassination of Bhandari Gohain's entire family, reportedly said *"Tita gasar aagu tita, guriu tita* (If the stem of a plant is bitter, so is the root)." There are many similar examples that are available in the Buranji literature:

(a) "Enduror mukhat kāhāni hastidāt goje?"

(Does a rat ever produce the elephant's tusk?)
(b) "Endur gātot jodi hasti sumāba pare tehe tāk dhoribo pāre"
(A rat can be caught only if the size of the rat hole is big enough that an elephant can enter it.)
(c) "Khorāi parbat bogaise, bobā catur hoise, pacā kātharo gajāli āhise"
(A lame person starts climbing mountains, a mute person speaks volubly, and rotten wood begins to sprout.)
(d) "Piṭhi dile hasti parbatako nedekhi"
(An elephant can even block the sight of a huge mountain.)
(e) "Pahu khedā kukure khuj jodi pāle, si pahu nāpāi māne ereneki?"
(If a hunting dog tracks a deer, then it does not leave off the hunt till successful.)
(f) "Ji siṁha haba śṛgālar agyāye hastik nahi mare"
(One who is destined to become a lion never kills an elephant obeying the order of a fox.)
(g) "Uttam janak vākya gajadanta tulya, situ gajadanta neki kono kāle phire?"
(The words of a noble man are like the elephant's tusks, which never retract.)
Source: Ahom Buranjis (Bhuyan 1962; Goswami 1922; Bhuyan 1969, 1964)

Besides the general descriptions of elephants in *Baharistan-i-Ghaibi*, medieval Assamese writer Sukumar Barkaith's *Hasti Vidyarnava* described in detail 148 types of ivory, as well as 17 types of female elephants with their characteristics, training methods, and more (Bagchi 2008). Due to the abundance of wild elephants in Assam, elephant trapping as a profession increased, and elephantry consequently became an essential component of the Ahom military (Guha 1982). During medieval times, the Ahom Empire relied heavily on elephants to transport large goods. To this end, a department was created to collect and train elephants for both household and military usage (Bhuyan 1964). Throughout the medieval period, Assam's elephants, tusks, and ivory products were highly prized by outsiders. In 1808, Assam traded ivory products worth ₹6,500 with other countries over the checkpoint at Hadira Choki (Hamilton 1963). According to the copperplate inscription of Devottara to Devahari-*brahman* of Srihati sattra, Saka 1660, Tarun Duvara Barphukan granted *puras* (1 *pura*= 2.5 acre) of *faringati* (comparatively high land used for dry crops) land in Sonari village under *Chayania pargana* (a group of villages) to one Devahari-*brahman*, a resident of the *sattra* (institutional centres associated with Neo-Vaishnavite tradition of Assam), for his knowledge of the ailments and treatments of elephants, on the orders of King Siva Simha (Neog 1974). The rock inscription of Saka 1570 (discovered in situ at Phatasil Duar in Guwahati) states that during the reign of Susenpha (alias Pratap Simha), Barphukan (the son of Barbarua) captured a vast quantity of elephants, horses, and weapons after defeating the Mughal army (Neog 1974).

The Ahoms were proficient hunters, and the region's abundant animal populations provided them with a steady food supply. Hunting also aided the Ahoms in developing their military skills, which was crucial to their growth and consolidation of power. In addition, the most important games and sports of the Ahoms were elephant fighting and falcon fighting. Elephant fights were held in the area in front of Rong Ghar, the royal sports pavilion; while falcon fights were held at several convenient locations. On 24 November 1755, a French agent named Jean-Baptiste Chevalier entered Assam near Goalpara and spent two months travelling up the Brahmaputra to Garhgaon. This was the former capital of the Ahom empire, located 13 kilometres east of Sivasagar, where King Rajeshwar Singh was the Ahom ruler (reigned 1751–1769). During his stay at the court, Chevalier wrote about a hunting party the king had organized:

I was invited to the king's hunting party, a show unimaginable in Europe and something that deserves curiosity… The troops make an enclosure around the area with fences made of the stakes brought by them. Outside the fence, a large scaffold like a giant watchtower is built for the king and his invitees to watch the show from a vantage point. After the arrival of these dignitaries, some men step inside the fence and set fire from all sides to the long dry straws, within which the trapped animals are hiding. The rising flames excite the animals which, in their rage and fury, try to escape from every side. As they throw themselves on the fence trying to break it, their dreadful howling and roaring fill the air. But instead of freedom, it is the spears held by the people positioned outside the fence that pierce their bodies. Firing guns and darting arrows thrown by the amused king and his retinue spare no animal that passes back and forth below their scaffold. At last the hunt is over in a day as the flames eat up all the ferocious animals; thousands of wild buffaloes and elephants, quantities of tigers and rhinoceros are destroyed in an instant. It is a superb horror to see and to hear. (Caroline Dutta-Baruah 2008, 29)

In medieval Assam, social concern for the environment manifested itself in various forms. The attitude towards nature is distinctly apparent in the teachings of Sankaradeva, the instigator of the Bhakti movement in medieval Assam. Sankaradeva believed that all living things, including plants and animals, had intrinsic value and should be honoured. He advocated non-violence and urged individuals to avoid harming or killing animals. In other words, Sankaradeva's philosophy implied a spiritual connection to the natural world and was based on the belief that nature might inspire individuals to live a decent and ethical life. Sankaradeva's philosophy attributed everything to God, and he believed that recognizing God's

presence in every living thing could have a wonderful effect on civilization and its ecology, and help stop anthropocentric actions responsible for ecological devastation. In his religious worldview, God was inseparable from both Man and Nature. This view—of nature being a manifestation of God—is evident from Sankaradeva's literature:

tumi paśu pakṣī surā nara taru trna
ajnānata muḍhasabe dekhe bhinna bhinna (Neog 1980, 84)
(Transl.: God lives within the animals, birds and the plants,
but, due to ignorance, fools perceive these as different)

In the *kirtana*, Sankaradeva writes:

kukkura sṛgāla gardavaro ātmān rama
jāniyā savāko paḍi karibā praṇāma (Neog 1980, 138)
(Transl.: The dog, the fox and donkeys too have God within them, and,
realizing this, we should respect all the creations)

Sankaradeva remodelled his drama *Harmohana* (from the *Bhagabat Purana*) by incorporating different plants from his locality, which demonstrates his familiarity with the bioregion. In the text, trees are revered and regarded as if they contain God. According to Sankaradeva's *Urekha Barnan*, circumambulating the *Bata Briksha* tree bestows divine happiness and can lead to moksha or spiritual enlightenment. It should be noted that during the medieval era, hunting was common, and hence animals and birds were vulnerable to human greed. However, Sankaradeva was uncomfortable with this utilitarian approach and sought refuge in the divine. He believed that animals were divine components of the natural world and condemned cruelty to them in the strongest terms. Through his concept of spiritual ecology, Sankaradeva attempted to conquer the guilt associated with exploiting animals for human gain. When Sankaradeva discovered a deer stuck in a hunter's net, he chose to save the deer's life by freeing it from the net (Neog 1986). His ideology is characterized by a non-violent approach to all natural species. Sankaradeva's warning against oppression in *Nimi-Nava-Siddha Samvada* states that one who overpowers others for the sake of one's own body goes to hell after death.

Carit puthis or the hagiographies of medieval Assam are some of the first scriptures that make up the amazing legacy of the Bhakti movement initiated by Sankaradeva in Assam. These books are enormous and were written over the course of decades, so they contain the characteristics of the social, economic, and cultural life of Assamese society in the sixteenth to eighteenth centuries. One of these, the *Katha Guru Carit* is a biography of 25 Vaishnavite saints—including Sankaradeva, Madhavadeva, and their most important disciples. These texts also record various aspects of the contemporary physical environment and different instances of animal

hunting, elephant catching, and water resource utilization, providing a comprehensive picture of the nature–human relationship at that time. We can get a detailed understanding of the contemporary plants and animals of medieval Assam from the descriptions of the *Carit puthis*. These texts provide a list of several plants in the region such as banyan trees, jam and wood apple, bamboo, mango, fig, betel nut, jackfruit, blackberry, silk, cotton, plum, and areca nut trees. Regarding fruits and vegetables, it is written in the hagiographies:

ām jām leteku konṭhāl nārikal,
madhuphal dālimba bela āru je triphal.
ālu kocu mūlā ādā kerelā beṇgan,
mug māh barkala nan bastugan. (Lekharu 2002, 169)
(Transl.: Mangoes, java plum, Burmese grapes, jackfruit, coconut, papaya, pomegranate, stone apple, Indian gooseberries, potatoes, taro, radish, ginger, bitter gourd, brinjal, lentils, black gram etc. are available there.)

The hagiographies include mention of a number of animals, birds, and aquatic creatures. Of the domestic animals, the cow is mentioned most frequently. Killing of cows was prohibited in medieval Assam as the cow was considered a sacred animal in society. Cow products, such as milk, curd, and even cow dung, were sold for daily earnings. It is written in the Bangayagiri's *Sri Sri Harideva Carit* that Rampala and Haripala of Puri-*khetra* provided milk to Harideva: "*Haripala Ramapala baidya duyujan, Banijya koriya pasa barshe bahu dhan*" (Transl: "Haripala and Ramapala, two merchants earn a lot from different trading activities") (Giri 1931, 189). On the sale of cow dung, the *Carit* states: *"Gubara bikai Puwala bikai, Bismai bhoiluha dekhi"* (Transl: "It is surprising to see selling of cow-dung along with precious gemstones like red coral") (Dwija 2014, 156). If someone mistakenly committed the sin, then they had to carry a *pagha* (a rope used for hobbling the cattle) and beg in the nearby villages for atonement. In this connection, the *Katha Guru Carit* says:

goruti māilu:
ote puti thoisu jagarhe lāgil:
dandu lobo:
jā lar mār tur ista-mitrat koi māti āngoi ki buddhi dio sudhgoiyu (Neog 1986, 247).
(Transl.: A cow was killed and buried and therefore the required punishment would be given. You are advised to go fast and consult with family and friends about it.)

The *Carits* mention serpents among reptiles and small creatures and insects such as scorpions, mice, and frogs. In addition, snake charming is described as a profession, as seen in the quote "*Sarpa nasuwai situ fure deshe deshe*" (Transl: "He wanders in different countries by performing snake

charming") (Thakur 2001). Furthermore, horses were used as a mode of transportation, as indicated by the phrase "*Ghurat chariya korila gaman jahara parama nam"* (Transl: "He thus departed riding on the horse"). The *Carit Puthis* contain references to the meat of different animals and birds, such as duck, goat, and deer. In one instance, Madhavadeva is seen mentioning the meat of deer, stating "*Harinar mangsho aji bhujan koribe"* (Transl: "Today, we will eat the meat of a deer") (Thakur 1989). The *Carit Puthis* depicts a scene where a group of Vaishnavite saints, after finishing a meal at Barpeta, state "*Khasitu adhik swad maas sukumal"* (Transl: "The mutton was delicious while the fish was also delicate". Additionally, honey is described as being extracted and commonly used for medicinal purposes, as evinced by the quote "*Tumasobe mou bhujan karilahak: amiw mautoria ghusa koru*" (Transl: You have partaken the honey, now let us recite the holy scripture which is also as sweet as honey) (Neog 1986). Fish are mentioned on numerous occasions and appear to be a common article of food. We encounter various types of fish, including *sal, sol, singi, chenga, barali, balichanda, darikona, rou, chital, kuhi, katol*, and others, among the aquatic creatures in the *Carit Puthis*, some of which are unspecified (Lekharu 2002). The *Carit Puthis* mention:

> *dugdha dadhi ghṛta dilā jahā sāwolok,*
> *ār rou māch dilanta mogur dālik* (Thakur 1989, 262)
> (Transl.: Milk, curd and ghee are served with joha rice, and rohu fish is prepared with the lentil soup.)

Colonial ethnographical works also provide some insight into the ecological set-up that existed prior to the advent of colonization in this region. The British authorities compiled information on the history, regimes, goods, people, and the kingship of Assam. The first British officer to gather data about Assam was Captain Welsh, who worked alongside John Peter Wade. They wrote about Assam's geographical conditions and explained that Assam was divided into different regions by the Brahmaputra. RB Pemberton, a British surveyor, formed certain conceptions about the people, geography, mineral resources, and commercial and trade activities of the region through his observations and investigations (Pemberton 1966). John Butler's *Travels in Assam* also provides some idea of the existing ecological set-up in the region. Further, Christian missionary William Robinson's book, *A Descriptive Account of Assam,* covers a wide range of topics, including Assam's climate, geology, geography, and history from the beginning to the early days of British occupation of the region (Robinson 1841). Mrs. Brown's *Bhugolar Biwaran* (geographical information) is another similar work.

4. CONCLUSION

Humans were born in the cradle of nature. Human civilization cannot exist without its surrounding environment, consisting of plants, animals, and birds. In human life, these elements have always played a vital role, and Assamese society was no exception to this. The role played by the physical geography and the plant and animal kingdom in early and medieval Assam is embedded in the region's historical literature. However, a critical analysis of the physical environment, the living resources (such as the flora and fauna), and the different natural resources utilized by the state provides an eloquent picture of the contemporary geographical and ecological aspects of Assam in the given period. It reflects the pragmatic approach taken by early societies towards the environment, seeking solutions in religious beliefs and everyday ritual observances. The *Kalika Purana* deified the rivers and mountains and promoted them as places of pilgrimage (*tirthas*), drawing people's attention to the green world. Similarly, the references contained in Buranji literature and hagiographies reflect, to a great extent, the psyche of the people who were reasonably aware of the different sources of nature and environment. Hence, while the existing historical literature of pre-colonial Assam may be inimical in nature, a closer scrutiny of it would significantly compliment one's journey back to the greener world.

Ethics Statement: I hereby confirm that this study complies with requirements of ethical approvals from the institutional ethics committee for the conduct of this research.

Data Availability Statement: The data used to support this research is available in a repository and the hyperlinks and persistent identifiers (e.g. DOI or accession number) are stated in the paper.

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REFERENCES

Bagchi, Anita. 2008."Paintings as Source of Science in the Past: Understanding Indian Elephants."*Karatoya* 2 (March): 24–35

Barua, Golap Chandra. 1930. *Ahom Buranji*. Calcutta: Authority of Assam Administration.

Barua, Gunabhiram. 1972. *Assam Buranji*. Guwahati: Asam Prakashan Parishard.

Baruah, Swarna Lata. 1995. *A Comprehensive History of Assam*. New Delhi: Munshiram Manoharlal Publishers.

Basu, Nirmal Kumar. 1970. *Assam in the Ahom Age*. Calcutta: Sanskrit Pustak Bhandar.

Bhuyan, Surya Kumar, ed. 1960. *Assam Buranji*. Gauhati: Department of Historical and Antiquarian Studies, Assam.

———.1962. *Deodhai Assam Buranji*. Gauhati: Department of Historical and Antiquarian Studies, Assam.———. 1964. *Tungkhungia Buranji*. Gauhati: Department of History and Antiquarian Studies, Assam.

———. 1969. *Satsari Assam Buranji*. Gauhati: Gauhati University.

Borboruah, Hiteswar. 1997. *Ahomar Din*. Guwahati: Assam Publication Board.

Boruah, Bhim Kanta. 1992. *Changrung Phukanar Buranji* Dibrugarh: Assamese Department, Dibrugarh University.

Dutta-Baruah, Caroline and Jean Deloche, ed. 2008. *Adventures of Jean-Baptiste Chevalier in Eastern India (1752–1765)*. Guwahati: Lawyer's Book Stall.

Carr, Edward Hallett. 2018. *What Is history?* London: Penguin Classics.

Dwija, Bhushan. 2014. *Sankar Carit*. Edited by Sanjib Kr. Borkakati. Guwahati: Bani Mandir.

Gadgil, Madhav, and Ramachandra Guha. 1993. *This Fissured Land: An Ecological History of India*. Berkley: University of California Press.

Ghosh, Suchandra. 2014. "Understanding Boundary Representations in the Copper-Plate Charters of Early Kāmarūpa."*Indian Historical Review* 41 (2): 207–222. https://doi.org/10.1177/0376983614544568.

Giri, Bangaya. 1931. *Mahapurush Sri Sri Harideva Carit*. Barpeta: Bahari Satra.

Gohain, Uma Nath. 1999. *Assam Under the Ahoms*. Guwahati: Spectrum Publications.

Goswami, Hemchandra. 1922. *Purani Asam Buranji*. Guwahati:Lawyer's Book Stall.

Goswami, Nandita. 2020. "The Systems of Digging Ponds by the Ahoms, the Greater Tai Tribe in the North-East India." *International Journal of Management* 11 (09): 657–662.

Goswami, Surendra Kumar. 2010. *Asomor Rajnaitik Aaru Arthanaitik Buranji*. Guwahati: Asom Prakashan Parishad.

Guha, Amalendu. 1982. "The Medieval Economy of Assam." In *The Cambridge Economic History of India Vol.1*, edited by Tapan Raychaudhuri and Irfan Habib, 480-485. Cambridge: Cambridge University Press. doi:10.1017/CHOL9780521226929.029.

Guha, Sumit. 2002. "Claims on the Commons: Political Power and Natural Resources in Pre-colonial India." *The Indian Economic and Social History Review* 39 (2–3): 181-196. https://doi.org/10.1177/001946460203900204.

Hamilton, Francis. 1963. *An Account of Assam*. Guwahati: Department of Historical and Antiquarian Studies, Assam.

Handique, Bhuban Chandra. 2005. *Purani Asomar Silpa*. Sivasagar: M/S Printworks.

Handique, Rajib. 2004. *British Forest Policy in Assam.* New Delhi: Concept Publishing Company

Kumar, Mayank. 2005. "Claims on Natural Resources: Exploring the Role of

Political Power in Pre-colonial Rajasthan, India."*Conservation and Society* 3 (1): 134–149.

Lahiri, Nayanjot. 1984. "The Pre-Ahom Roots of Medieval Assam."*Social Scientist* 12 (6): 60–69. https://doi.org/10.2307/3517004

Lekharu, Upendra Chandra. 1987. *Katha-Guru-Carit*. Guwahati: Dutta Barua & Company.

Nath, Pratyay. 2019. *Climate of Conquest: War, Environment, and Empire in Mughal North India.* Delhi: Oxford University Press. https://doi.org/10.1093/oso/9780199495559.001.0001.

Nath, Vijay. 2009. *The Puraṇic World: Environment, Gender, Ritual, and Myth.* New Delhi: Manohar Publishers & Distributors.

Neog, Maheshwar. 1974. *Prachya-Sasanavali.*Guwahati: Publication Board, Assam.

———. 1980. *Early History of the Vaiṣṇava Faith and Movement in Assam: Śaṅkaradeva and His Times.* New Delhi: Motilal Banarsidass.

Neog, Maheswar, ed. 1986. *Guru-Carit-Katha*. Guwahati: Guwahati University.

Pemberton, Robert Boileau. 1966. *Report on the Eastern Frontier of British India.* Guwahati: Department of Historical and Antiquarian Studies, Assam.

Robinson, William. 1841. *A Descriptive Account of Assam: With a Sketch of the Local Geography and a Concise History of Tea-Plant of Assam*. Calcutta: Ostell and Lepage, British Library.

Sadaramin, Harakanta Barua. 1930. *Asam Buranji.* Edited by S.K.Bhuyan. Guwahati: Department of Historical and Antiquarian Studies, Assam.

Saikia, Arupjyoti. 2019. *The Unquiet River: A Biography of the Brahmaputra.* Delhi: Oxford University Press. https://doi.org/10.1093/oso/9780199468119.001.0001

———. 2011. *Forests and Ecological History of Assam, 1826–2000.* Delhi: Oxford University Press.

Sarkar, Jadunath. 1915. "Assam and the Ahoms in 1660 A.D." *Journal of Bihar and Orissa Research Society* I, no. II: 179-195.

Sharma, M.M. 1978. *Inscriptions of Ancient Assam.* Gauhati: Department of Publication, Gauhati University.

Shastri, Biswanarayan. 1994. *Kalika Purana*. Delhi: Nag Publishers.

Shiva, Vandana. 2016. *Staying Alive: Women, Ecology, and Development.* Berkley: North Atlantic Books.

Tamuli-Phukan, Kashinath. 1906. Assam Buranji. Calcutta: Authority of Assam Administration.

Tavernier, J.B. 1889. *Travels in India*. Translated by V. Ball. London, New York: Macmillan and co.

Thakur, Daityari. 1989. *Mahapurush Sri Sankardeva aru Sri Madhavdevar Jiban Carit*. Edited by Hali Narayan Dutta Barua. Guwahati: Dutta Barua Publishing Pvt. Ltd.

Thakur, Ramcaran. 2001. *Guru Carit*. Edited by Hari Narayan Dutta Barua.

Guwahati: Dutta Barua Publishing Pvt. Ltd.

Thapar, Romila. 1986. "Social and Historical Consciousness: The Itihāsa-Purāṇa Tradition." In *Situating Indian History: For Sarvepalli Gopal,* edited by Sabyasachi Bhattacharya and Romila Thapar, 353–383. Delhi: Oxford University Press

Urban, Hugh B. 2011. "The Womb of Tantra: Goddesses, Tribals, and Kings in Assam." *The Journal of Hindu Studies* 4 (3): 231–247. https://doi.org/10.1093/jhs/hir034.

Wade, John Peter. 1805. *A geographical sketch of Assam*. Calcutta: Asiatic Annual Register, East India Company.

Woodroffe, John. 2014. *Principles of Tantra: Part I and II*. New Delhi: Motilal Banarsidass.