



Butterfly checklist of Bongal Gaon village, including a sighting note of the globally rare *Liphyra brassolis* (Westwood, 1864) (Lepidoptera, Lycaenidae) from Upper Assam, India

Catálogo de las mariposas de la aldea de Bongal Gaon, incluida una nota de avistamiento de *Liphyra brassolis* (Westwood, 1864) (Lepidoptera, Lycaenidae) del Alto Assam, India

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ABSTRACT

The butterfly checklist of Bongal Gaon village in Assam revealed a total of 171 species which included 20 species listed as protected under the various schedules of the Wildlife (Protection) Act 1972, enacted in India. Fieldwork for butterfly collection took seven years. The checklist comprises six families, 22 subfamilies, and 105 genera. It includes sightings of the 'rare' and 'very rare' Moth Butterfly, *Liphyra brassolis* (Westwood, 1864), the Veined Palmer, *Hidari bhawani* (de Nicéville, 1889), the Colon Swift, *Caltores cahira* (Moore, 1877), and the Scarce Rajah, *Charaxes aristogiton* (C. & R. Felder, 1867), from in and around Dergaon urban areas of upper Assam in north-eastern India.

Keywords: *Insect; Biodiversity; Checklist; Dergaon; Liphyra brassolis.*

RESUMEN

El catálogo de mariposas de la aldea de Bongal Gaon, en Assam, reveló un total de 171 especies que incluían 20 especies protegidas en virtud de los diversos programas de la Ley (Protección) de Vida Silvestre de 1972, promulgada en la India. El trabajo de campo para recolectar mariposas llevó siete años. El catálogo comprende seis familias, 22 subfamilias y 105 géneros. Incluye los avistamientos 'raros' y 'muy raros' de la polilla *Liphyra brassolis* (Westwood, 1864), la 'Veined Palmer', *Hidari bhawani* (de Nicéville, 1889), la 'Colon Swift', *Caltores cahira* (Moore, 1877), y la 'Scarce Rajah', *Charaxes aristogiton* (C. & R. Felder, 1867), del interior y alrededores de las áreas urbanas de Dergaon, en el alto Assam, en el noreste de la India.

Palabras clave: *Insecta; Biodiversidad; Catálogo; Dergaon; Liphyra brassolis.*

INTRODUCTION

As per IUCN, the North-eastern region of India is a part of 'Indo-Burma hotspot' (New & Collins, 1991) and more than 50% of the Indian butterfly species are known to occur in this region (Singh *et al.*, 2015). Upper Assam lies on the southern bank of the Brahmaputra River Basin which is dominated by Karbi Hills in the Golaghat, Karbi Anglong districts and the Patkai range in Dibrugarh, Tinsukia districts. This area lacks altitudinal gradients and hence the diversity is likely to be lower here. Arthur G. Butler (1879), Wood-Mason and de Nicéville (1887) reported extensive work from its neighbouring Cachar hills. In British India, Sir Harry Christopher Tytler (1911, 1912, 1914, 1915a, 1915b, 1926a, 1926b) extensively surveyed Naga Hills of Assam (now in a separate state Nagaland), Manipur Hills (then a kingdom, now a separate state Manipur) and Burma Hills (now in Chin and Arakan states of independent Myanmar). Butterfly diversity of Khasi-Jaintia hills (now in the separate state of Meghalaya) (Swinhoe, 1893; Parsons & Cantlie, 1948; Cantlie, 1952, 1956), Margherita, Sivasagar, Jorhat, Nambor (Norman, 1953, 1956) of Assam were surveyed earlier. 137 species of Hesperids and 116 species of Lycaenids were reported respectively from Panbari Reserve Forest (in Golaghat district) and its adjoining areas (Gogoi, 2013a, 2015). The butterfly seasonality of Hollongapar Gibbon Sanctuary (in Jorhat district) was presented by Singh *et al.* (2015). Illustrious works have been done in Regional Research Laboratory campus of Jorhat (Bhuyan *et al.*, 2005), Jeypur Reserve Forest (Gogoi, 2013b); Barail Wildlife Sanctuary (Gogoi *et al.*, 2016), Dangori Reserve Forest (Boruah & Das, 2017), and Dibru-Saikhowa National Park (Das *et al.*, 2017). Occurrence of 375 species of butterflies was confirmed from the eastern part of Assam, one-third of which is endemic to this hotspot (Singh, 2017). Very recently, Konwar and Bortamuly (2021) recorded 158 butterfly species from non-protected areas of Titabor (in Jorhat district) in Upper Assam. There is no literature available on butterfly species diversity in

Bongal gaon. This study provides a species checklist for this area, as well as data on diversity and richness of butterflies and updated distribution information of *Liphyra brassolis*.

METHODOLOGY

The present study was conducted in the area adjacent to the Bongal Gaon village (26.678845° N and 93.979014° E) near Dergaon town, situated beside Dergaon-Golaghat Road at an altitude of 92 m asl. The study area is located around 88 km east of Kaziranga National Park, 25 km west of Jorhat, 24 km north of Golaghat town near the southern bank of Brahmaputra River in Assam, India. The study site is dominated by mixed vegetation like irrigated paddy fields, Bamboo patches, vegetables, sugarcane and herbs. Most of the study area is covered with semi-evergreen shrubs and woody climbers, tree ferns, screw-pines, giant bamboo, and ferns.

Authors regularly carried out extensive field surveys in the different landscape elements, like remnants of semi-evergreen forest, bamboo patches, shrubs, paddy fields, and cultivated fields. Surveys of butterflies were carried out from April 2015 to March 2021. Sampling followed the Pollard's walk methodology (Pollard, 1977) for approximately two hours (9:30 am to 10:30 am and 1 pm to 2 pm) on each field visit. Based on the percentage of number of days of sightings from the study area during the entire survey period, the butterfly species are classified as Very Common (VC) >50%, Common (C) = 25-50%, Uncommon (UC) = 5-25%, Rare (R) = 1-5% and Very Rare (VR) <1%. The species were documented using Canon Power shot SX540 HS point and shoot camera. Butterflies were identified from the photographs taken in the field guide using Evans (1949); Kehimkar (2016); and Ek-Amnuay (2012). All scientific and English common names follow the catalogue by Varshney & Smetacek (2015). Fieldwork photos of some of the listed species are also presented (Figures 2-3).

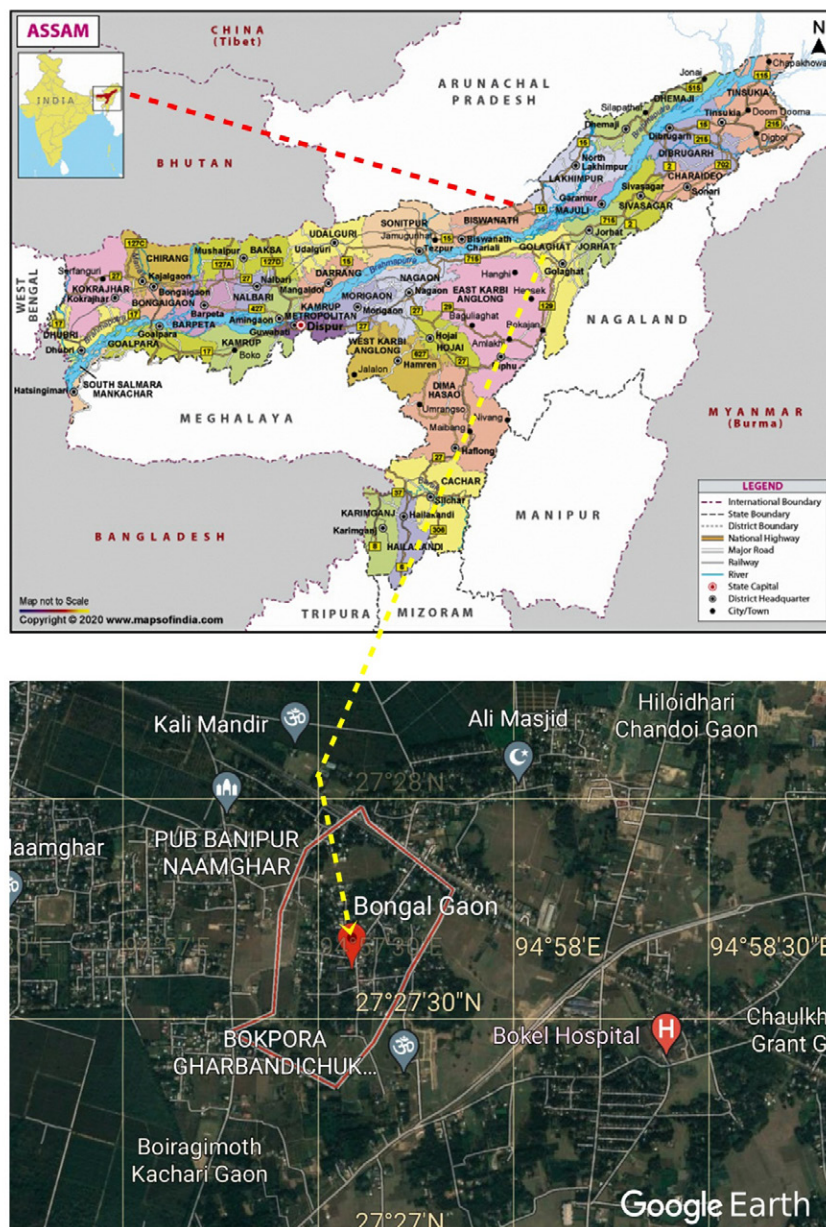


Figure 1: Study area map showing around Bongal Gaon (in Golaghat district) of Assam state, India.

RESULTS

This study reports 171 species, out of which four species (*Ethope himachala*, *Dophla evelina*, *Kaniska canace* and *Hasora chromus*) were observed by the first author (SB) in flight but could not be

photographed. Nymphalidae was found to be the most dominant family (59 species under 32 genera and accounting 34.50% species richness), followed by Lycaenidae (46 species, 34 genera; 26.90%) (Table 1).

Table 1: Overview of the taxonomic diversity of butterfly species of Bongal Gaon along with butterflies protected under various schedules of the Indian Wildlife (Protection) Act, 1972.

Family	Subfamily	Genera	Species	Wildlife (Protection) Act, 1972		
				Sch. I	Sch. II	Sch. IV
Papilionidae	1 (4.54%)	3 (2.85%)	12 (7.01%)	-	-	-
Nymphalidae	10 (45.45%)	32 (30.47%)	59 (34.50%)	-	5	2
Pieridae	1 (4.54%)	7 (6.66%)	15 (8.77%)	-	2	1
Lycaenidae	6 (27.27%)	34 (32.38%)	46 (26.90%)	1	6	-
Hesperiidae	3 (13.63%)	27 (25.71%)	37 (21.63%)	-	-	3
Riodinidae	1 (4.54%)	2 (1.90%)	2 (1.16%)	-	-	-
Total: 6	22 (100%)	105 (100%)	171 (100%)	1	13	6

It is interesting to note that though several extensive surveys were conducted from the state of Assam, the very rare (Kehimkar, 2016) and myrmecophagous (Eastwood *et al.*, 2010) Moth Butterfly *Liphyra brassolis* (Westwood, 1864) was not recorded after the Gupta & Mondal (2005) record (Gogoi, 2015; Mudai *et al.*, 2015; Singh *et al.*, 2015; Singh, 2017; Konwar & Bortamuly, 2021; Bohra & Purkayastha, 2021; Anonymous, 2021). Gupta & Mondal (2005) published the photographs of the specimens (collected from Sikkim and Assam) after D'Abrera's record (1986). Earlier, Mr. W. L. Distant (de Nicéville, 1890) expressed that "this unique genus is known only by one species, which is probably the largest and most robust butterfly found in the whole of the Lycaenidae". Its geographical area can at present be only estimated by that of its sole representative. Mr. W. Doherty (de Nicéville, 1890) concluded that "*Liphyra brassolis* flies slowly with a distinct humming sound, and an uncertain circling flight, hesitating a long time before alighting." The authors reconfirm the presence of this species from Assam after more than a decade. It was photographed on 18.X.2020 from this study area.

Subsequently, Parixit Kafley photographed one live specimen from Gangmouthan village (~240 km aerial distance from study area) in Behali Tehsil of Biswanath district in Upper Assam in April 2019. Sasanka Dhaval Saikia recorded photographic view of an unknown, single pupa along with Weaver ants (*Oecophylla smaragdina* Fabricius, 1775) from Numaligarh town (in Golaghat district) (~41 km aerial distance from study area) in April 2017, which was later identified as *Liphyra brassolis* (Eastwood *et al.*, 2010).

Charaxes aristogiton, *Cethosia biblis*, *Pieris brassicae*, *Dacalana cotys*, *Hidari bhawani*, *Pelopidas sinensis* and *Caltores cahira* are also among the rare sightings reported in this checklist. Singh (2015) recorded (rarely) *H. bhawani* twice (26.III.2014 and 04.IX.2014) from Rain Forest Research Institute, Jorhat in Upper Assam. However, SB photographed this species on several occasions (24.V.2016, 2018, 17.XI.2020 and 08.IV.2021). 20 species of this checklist are among those protected under the Wildlife (Protection) Act, 1972 (Anonymous, 2010) enacted in India (Table 2).

Table 2: Butterfly checklist of Bongal Gaon (in Golaghat district) in Upper Assam, India. Legend: OS, Occurrence Status; VC, Very Common; C, Common; UC, Uncommon; R, Rare; VR, Very Rare; WPA: Wildlife (Protection) Act (India).

Subfamily	Species name	Common name	OS	WPA
Papilionidae (1 subfamily, 3 genera, 12 species)				
Papilioninae	<i>Graphium agamemnon</i> (Linnaeus, 1758)	Tailed Jay	C	
	<i>Graphium doson</i> (C. & R. Felder, 1864)	Common Jay	UC	
	<i>Graphium sarpedon</i> (Linnaeus, 1758)	Common Bluebottle	C	
	<i>Papilio clytia</i> Linnaeus, 1758	Common Mime	C	
	<i>Papilio demoleus</i> Linnaeus, 1758	Lime Butterfly	VC	
	<i>Papilio helenus</i> Linnaeus, 1758	Red Helen	C	
	<i>Papilio memnon</i> Linnaeus, 1758	Great Mormon	C	
	<i>Papilio nephelus</i> Boisduval, 1836	Yellow Helen	UC	
	<i>Papilio paris</i> Linnaeus, 1758	Paris Peacock	R	
	<i>Papilio polytes</i> Linnaeus, 1758	Common Mormon	VC	
	<i>Papilio protenor</i> Cramer, [1775]	Spangle	UC	
	<i>Troides helena</i> (Linnaeus, 1758)	Common Birdwing	R	
Nymphalidae (10 subfamilies, 32 genera, 59 species)				
Acraeinae	<i>Cethosia biblis</i> (Drury, [1773])	Red Lacewing	VR	
	<i>Cethosia cyane</i> (Drury, [1773])	Leopard Lacewing	UC	
Biblidinae	<i>Ariadne ariadne</i> (Linnaeus, 1763)	Common Castor	VC	
	<i>Ariadne merione</i> (Cramer, [1777])	Angled Castor	C	
Charaxinae	<i>Charaxes aristogiton</i> C. & R. Felder, [1867]	Scarce Rajah	R	Sch. II
	<i>Polyura arja</i> (C. & R. Felder, [1867])	Pallid Nawab	C	
	<i>Polyura athamas</i> (Drury, [1773])	Common Nawab	C	
Cyrestinae	<i>Cyrestis thyodamas</i> Boisduval, 1846	Common Map	UC	
Danainae	<i>Danaus chrysippus</i> (Linnaeus, 1758)	Plain Tiger	UC	
	<i>Danaus genutia</i> (Cramer, [1779])	Common Tiger	C	
	<i>Euploea core</i> (Cramer, [1780])	Common Crow	C	
	<i>Euploea klugii klugii</i> Moore, [1858]	Blue King Crow	C	
	<i>Euploea mulciber</i> (Cramer, [1777])	Striped Blue Crow	C	Sch. IV
	<i>Euploea radamanthus</i> (Fabricius, 1793)	Magpie Crow	R	
	<i>Parantica aglea</i> (Stoll, [1880])	Glassy Tiger	VC	
	<i>Parantica melaneus</i> (Cramer, [1775])	Chocolate Tiger	UC	
	<i>Tirumala limniace</i> (Cramer, [1775])	Blue Tiger	C	
	<i>Tirumala septentrionis</i> (Butler, 1874)	Dark Blue Tiger	C	

Heliconiinae	<i>Phalanta phalantha</i> (Drury, [1773])	Common Leopard	C	
	<i>Vagrans egista</i> (Cramer, [1780])	Vagrant	UC	
	<i>Vindula erota</i> (Fabricius, 1793)	Cruiser	UC	
Limenitinae	<i>Athyma asura</i> Moore, [1858]	Studded Sergeant	UC	Sch. II
	<i>Athyma nefte inara</i> Westwood, 1850	Color Sergeant	C	
	<i>Athyma perius</i> (Linnaeus, 1758)	Common Sergeant	C	
	<i>Athyma ranga</i> Moore, [1858]	Blackvein Sergeant	UC	Sch. II
	<i>Athyma selenophora</i> (Kollar, [1844])	Staff Sergeant	UC	
	<i>Dophla evelina</i> (Stoll, [1790])	Redspot Duke	VR	
	<i>Euthalia aconthea</i> (Cramer, [1777])	Common Baron	VC	Sch. II
	<i>Euthalia lubentina</i> (Cramer, [1777])	Gaudy Baron	UC	Sch. IV
	<i>Euthalia monina</i> (Fabricius, 1787)	Powdered Baron	C	
	<i>Moduza procris</i> (Cramer, [1777])	Commander	UC	
	<i>Neptis clinia</i> Moore, 1872	Clear Sailer	VC	
	<i>Neptis hylas</i> (Linnaeus, 1758)	Common Sailer	C	
	<i>Neptis sappho</i> (Pallas, 1771)	Pallas's Sailer	UC	
	<i>Pantoporia hardonia</i> (Stoll, [1790])	Common Lascar	C	
	<i>Phaedyra columella</i> (Cramer, [1780])	Short-Banded Sailer	UC	
	<i>Tanaecia lepidea</i> (Butler, 1868)	Grey Count	C	Sch. IV
Morphinae	<i>Discophora sondaica</i> Boisduval, 1836	Common Duffer	C	
Nymphalinae	<i>Hypolimnias bolina</i> (Linnaeus, 1758)	Great Eggfly	VC	
	<i>Junonia almana</i> (Linnaeus, 1758)	Peacock Pansy	UC	
	<i>Junonia atlites</i> (Linnaeus, 1763)	Grey Pansy	VC	
	<i>Junonia hierta</i> (Fabricius, 1798)	Yellow Pansy	UC	
	<i>Junonia iphita</i> (Cramer, [1779])	Chocolate Pansy	C	
	<i>Junonia lemonias</i> (Linnaeus, 1758)	Lemon Pansy	C	
	<i>Kaniska canace</i> (Linnaeus, 1763)	Blue Admiral	VR	
	<i>Symbrenthia lilaea</i> (Hewitson, 1864)	Common Jester	UC	
Satyrinae	<i>Elymnias hypermnestra</i> (Linnaeus, 1763)	Common Palmfly	VC	
	<i>Elymnias malelas</i> (Hewitson, 1863)	Spotted Palmfly	C	
	<i>Elymnias nesaea</i> (Linnaeus, 1764)	Tiger Palmfly	VC	
	<i>Ethope himachala</i> (Moore, 1857)	Dusky Diadem	R	
	<i>Lethe chandica</i> (Moore, [1858])	Angled Red Forester	UC	
	<i>Lethe europa</i> (Fabricius, 1775)	Bamboo Treebrown	UC	
	<i>Melanitis leda</i> (Linnaeus, 1758)	Common Evening Brown	VC	
	<i>Mycalopsis gotama</i> Moore, 1857	Chinese Bushbrown	UC	

Satyrinae	<i>Mycalesis mineus</i> (Linnaeus, 1758)	Dark-band Bushbrown	VC	
	<i>Mycalesis visala</i> Moore, [1858]	Long-brand Bushbrown	C	
	<i>Orsotriaena medus</i> (Fabricius, 1775)	Medus Brown	VC	
	<i>Ypthima baldus</i> (Fabricius, 1775)	Common Fivering	C	
	<i>Ypthima huebneri</i> Kirby, 1871	Common Fourring	VC	
Pieridae (1 subfamily, 7 genera, 15 species)				
Coliadinae	<i>Appias albina</i> (Boisduval, 1836)	Common Albatross	UC	Sch. II
	<i>Appias indra</i> (Moore, 1857)	Plain Puffin	UC	
	<i>Appias lalage</i> (Doubleday, 1842)	Spot Puffin	UC	
	<i>Appias libythea</i> (Fabricius, 1775)	Striped Albatross	UC	Sch. II
	<i>Appias lyncida</i> (Cramer, [1777])	Chocolate Albatross	C	
	<i>Catopsilia pomona</i> (Fabricius, 1775)	Common Emigrant	VC	
	<i>Catopsilia pyranthe</i> (Linnaeus, 1758)	Mottled Emigrant	UC	
	<i>Delias descombesi</i> (Boisduval, 1836)	Red-spot Jezebel	UC	
	<i>Delias pasithoe</i> (Linnaeus, 1767)	Red-base Jezebel	UC	Sch. II
	<i>Eurema blanda</i> (Boisduval, 1836)	Three-spot Grass Yellow	VC	
	<i>Eurema hecabe</i> (Linnaeus, 1758)	Common Grass Yellow	VC	
	<i>Hebomoia glaucippe</i> (Linnaeus, 1758)	Great Orange Tip	UC	
	<i>Leptosia nina</i> (Fabricius, 1793)	Psyche	VC	
	<i>Pieris brassicae</i> (Linnaeus, 1758)	Large Cabbage White	UC	
	<i>Pieris canidia</i> (Linnaeus, 1768)	Indian Cabbage White	VC	
Lycaenidae (6 subfamilies, 34 genera, 46 species)				
Aphnaeinae	<i>Spindasis lohita</i> (Horsfield, [1829])	Long-banded Silverline	UC	
Liphyrinae	<i>Liphyra brassolis</i> Westwood, 1864	Moth Butterfly	VR	Sch. I
Lycaeninae	<i>Heliophorus epicles</i> (Godart, [1824])	Purple Sapphire	UC	
Miletinae	<i>Spalgis epius</i> (Westwood, 1852)	Apefly	C	
	<i>Taraka hamada</i> (Druce, 1875)	Forest Pierrot	UC	
Polyommatainae	<i>Acytolepis puspa</i> (Horsfield, [1828])	Common Hedge Blue	UC	
	<i>Anthene emolus</i> (Godart, [1824])	Ciliate Blue	C	
	<i>Anthene lycaenina</i> (C. Felder, 1868)	Pointed Ciliate Blue	UC	Sch. II
	<i>Castalius rosimon</i> (Fabricius, 1775)	Common Pierrot	C	
	<i>Catochrysops panormus</i> (C. Felder, 1860)	Silver Forget-me-not	UC	

Polyommatainae	<i>Catochrysops strabo</i> (Fabricius, 1793)	Forget-me-not	C	
	<i>Chilades lajus</i> (Stoll, [1780])	Lime Blue	VC	
	<i>Euchrysops cnejus</i> (Fabricius, 1798)	Gram Blue	UC	Sch. II
	<i>Jamides alecto</i> (C. Felder, 1860)	Metallic Cerulean	UC	
	<i>Jamides bochus</i> (Stoll, [1782])	Dark Cerulean	C	
	<i>Jamides celeno</i> (Cramer, [1775])	Common Cerulean	C	
	<i>Jamides elpis</i> (Godart, [1824])	Glistening Cerulean	UC	
	<i>Lampides boeticus</i> (Linnaeus, 1767)	Peablu	UC	Sch. II
	<i>Leptotes plinius</i> (Fabricius, 1793)	Zebra Blue	UC	
	<i>Megisba malaya sikkima</i> Moore, 1884	Malayan	UC	
	<i>Nacaduba beroe</i> (C. & R. Felder, [1865])	Opaque Six-lineblue	UC	
	<i>Nacaduba hermus</i> (C. Felder, 1860)	Pale Four-lineblue	R	
	<i>Nacaduba kurava</i> (Moore, [1858])	Transparent Six-lineblue	VC	
	<i>Neopithecops zalmora</i> (Butler, [1870])	Quaker	UC	
	<i>Prosotas dubiosa</i> (Semper, 1879)	Tailless Lineblue	UC	
	<i>Prosotas nora</i> (C. Felder, 1860)	Common Lineblue	C	
	<i>Pseudozizeeria maha</i> (Kollar, [1844])	Pale Grass Blue	VC	
	<i>Zizina otis</i> (Fabricius, 1787)	Lesser Grass Blue	C	
Theclinae	<i>Ancema blanka</i> (de Nicéville, 1894)	Silver Royal	VR	Sch. II
	<i>Arhopala amantes</i> (Hewitson, 1862)	Large Oakblue	UC	
	<i>Arhopala centaurus</i> (Fabricius, 1775)	Centaur Oakblue	C	
	<i>Charana mandarinus</i> (Hewitson, 1863)	Mandarin Blue	R	
	<i>Cheritra freja</i> (Fabricius, 1793)	Common Imperial	C	
	<i>Dacalana cotys</i> (Hewitson, 1865)	White-banded Royal	VR	
	<i>Deudorix epijarbas</i> (Moore, 1857)	Cornelian	R	
	<i>Horaga onyx</i> (Moore, [1858])	Common Onyx	UC	Sch. II
	<i>Hypolycaena erylus</i> (Godart, [1824])	Common Tit	C	
	<i>Loxura atymnus</i> (Stoll, [1780])	Yamfly	UC	
	<i>Rapala iarbus</i> (Fabricius, 1787)	Red Flash	C	
	<i>Rapala manea</i> (Hewitson, 1863)	Slate Flash	C	
	<i>Rapala pheretima</i> (Hewitson, 1863)	Copper Flash	C	
	<i>Rapala varuna</i> (Horsfield, [1829])	Indigo Flash	R	Sch. II
	<i>Remelana jangala</i> (Horsfield, [1829])	Chocolate Royal	UC	
	<i>Ticherra acte</i> (Moore, [1858])	Blue Imperial	UC	
	<i>Virachola isocrates</i> (Fabricius, 1793)	Common Guava Blue	R	
	<i>Zeltus amasa</i> (Hewitson, 1865)	Fluffy Tit	C	

Riodinidae (1 subfamily, 2 genera, 2 species)				
Riodininae	<i>Abisara bifasciata</i> Moore, 1877	Twospot Plum Judy	UC	
	<i>Zemeros flegyas</i> (Cramer, [1780])	Punchinello	VC	
Hesperiidae (3 subfamilies, 27 genera, 37 species)				
Coeliadinae	<i>Burara harisa</i> (Moore, [1866])	Orange Awlet	UC	
	<i>Hasora badra</i> (Moore, [1858])	Common Awl	UC	
	<i>Hasora chromus</i> (Cramer, [1780])	Common Banded Awl	R	
Hesperiinae	<i>Aeromachus pygmaeus</i> (Fabricius, 1775)	Pygmy Scrub Hopper	UC	
	<i>Ampittia dioscorides</i> (Fabricius, 1793)	Bush Hopper	C	
	<i>Ancistroides nigrita</i> (Latreille, [1824])	Chocolate Demon	UC	
	<i>Baoris chapmani</i> Evans, 1937	Small Paintbrush Swift	UC	
	<i>Baoris farri</i> (Moore, 1878)	Paintbrush Swift	VC	Sch. IV
	<i>Baoris unicolor</i> Moore, [1883]	Black Paintbrush Swift	UC	
	<i>Borbo cinnara</i> (Wallace, 1866)	Rice Swift	UC	
Hesperiinae	<i>Caltoris cahira</i> (Moore, 1877)	Colon Swift	UC	
	<i>Cephrenes acalle</i> (Hopffer, 1874)	Plain Palm Dart	UC	
	<i>Erionota torus</i> Evans, 1941	Banana Redeye	UC	
	<i>Gangara thyraxis</i> (Fabricius, 1775)	Giant Redeye	UC	
	<i>Halpe porus</i> (Mabille, [1877])	Moore's Ace	C	
	<i>Hidari bhawani</i> de Nicéville, [1889]	Veined Palmar	VR	
	<i>Hyarotis adrastus</i> (Stoll, [1780])	Tree Flitter	UC	Sch. IV
	<i>Iambrix salsala</i> (Moore, [1866])	Chestnut Bob	C	
	<i>Matapa aria</i> (Moore, [1866])	Common Redeye	C	
	<i>Notocrypta curvifascia</i> (C. & R. Felder, 1862)	Restricted Demon	C	
	<i>Notocrypta paralysos</i> (Wood-Mason & de Nicéville, 1881)	Common Banded Demon	UC	
	<i>Oriens gola</i> (Moore, 1877)	Common Dartlet	C	
	<i>Parnara bada</i> (Moore, 1878)	Ceylon Swift	UC	
	<i>Parnara ganga</i> Evans, 1937	Evans's Swift	UC	
	<i>Pelopidas agna</i> (Moore, [1866])	Obscure Branded Swift	C	
	<i>Pelopidas mathias</i> (Fabricius, 1798)	Variable Swift	UC	
	<i>Pelopidas sinensis</i> (Mabille, 1877)	Chinese Swift	UC	Sch. IV
	<i>Suastus gremius</i> (Fabricius, 1798)	Indian Palm Bob	UC	
	<i>Telicota bambusae</i> (Moore, 1878)	Dark Palm Dart	C	
	<i>Udaspes folus</i> (Cramer, [1775])	Grass Demon	C	

Pyrginae	<i>Celaenorrhinus leucocera</i> (Kollar, [1844])	Common Spotted Flat	R	
	<i>Pseudocoladenia dan</i> (Fabricius, 1787)	Fulvous Pied Flat	C	
	<i>Sarangesa dasahara</i> Moore, [1866]	Common Small Flat	C	
	<i>Tagiades gana</i> (Moore, [1866])	Suffused Snow Flat	C	
	<i>Tagiades japetus</i> (Stoll, [1781])	Common Snow Flat	VC	
	<i>Tagiades litigiosa</i> Moeschler, 1878	Water Snow Flat	C	
	<i>Tagiades menaka</i> (Moore, [1866])	Spotted Snow Flat	UC	



Figure 2: Some photographs of recorded butterfly species in Bongal Gaon 1. *Papilio helenus* (Linnaeus, 1758) 2. *Athyma asura* (Moore, 1858) 3. *Athyma ranga* (Moore, 1858) 4. *Athyma selenophora* (Kollar, 1844) 5. *Cethosia cyane* (Drury, 1773) 6. *Charaxes aristogiton* (C. & R. Felder, 1867) 7. *Discophora sondaica* (Boisduval, 1836) 8. *Elymnias nesaea* (Linnaeus, 1764) 9. *Euploea radamanthus* (Fabricius, 1793) 10. *Euthalia lubentina* (Cramer, 1777) 11. *Lethe chandica* (Moore, 1858) 12. *Lethe europa* (Linnaeus, 1775) 13. *Moduza procris* (Cramer, 1777) 14. *Mycalesis gotama* (Moore, 1857) 15. *Tanaecia lepidea* (Butler, 1868) 16. *Catopsilia pomona* (Fabricius, 1775) (Photos: Smritirekha Bortamuly).



Figure 3: Some photographs of recorded butterfly species in Bongal Gaon. 1. *Appias lalage* (Doubleday, 1842) 2. *Catochrysops panormus* (C. Felder, 1860) 3. *Charana mandarinus* (Hewitson, 1863) 4. *Cheritra freja* (Fabricius, 1793) 5. *Dacalana cotys* (Hewitson, 1865) 6. *Horaga onyx* (Moore, 1858) 7. *Liphyra brassolis* (Westwood, 1864) 8. *Rapala varuna* (Horsfield, 1829) 9. *Taraka hamada* (Druce, 1875) 10. *Zeltus amasa* (Hewitson, 1865) 11. *Zemerus flegyas* (Cramer, 1780) 12. *Caltoris cahira* (Moore, 1877) 13. *Celaenorrhinus leucocera* (Kollar, 1844) 14. *Gangara thyrsis* (Fabricius, 1775) 15. *Hidari bhawani* (de Nicéville, 1889) 16. *Tagiades gana* (Moore, 1866) (Photos: Smritirekha Bortamuly).

DISCUSSION

Butterflies were found to be more abundant during monsoon and post monsoon seasons compared to winter and summer. These seven-years introductory data indicate the occurrence of altogether 171 species. Dominance of the Nymphalidae and Lycaenidae families is similar to that observed in other parts of the world. But this biodiverse habitat

is increasingly threatened by demographic pressure and the expansion of national highway, fuel wood extraction and unplanned urbanization that are altogether spoiling the ecological equity at a rapid pace (Dey, 2021). *Borbo cinnara*, *Pelopidas agna*, *Ampittia dioscorides* and *Parnara* spp. were easily seen in paddy cultivation, but their abundances are declining due to the use of pesticides. Butterfly abundances in the rural landscapes will promote the pollinations of

different plant species that can increase the dwindling vegetation. Several sightings of rare butterflies like *Liphyra brassolis* and *Hidari bhawani* in Upper Assam suggest the need of such large-scale surveys at unexamined and unprotected sites. Undoubtedly, this survey might not be comprehensive but will definitely act as a baseline data for future research studies from this region. 20 species protected under the schedules of Wildlife (Protection) Act, 1972 are represented in this inventory study, which means conservation strategies and management programmes are essential to prevent these rare species from going extinct.

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