

Checklist of Papilionoidea fauna from Rajasthan, India (Insecta: Lepidoptera)

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Abstract

This study presents a comprehensive checklist of 204 species and subspecies, belonging to 101 genera across six families, derived from published literature on Papilionoidea fauna of Rajasthan, India. Notably, the checklist incorporates 21 species that are protected under the Wildlife (Protection) Amendment Act, 2022. This extensive inventory significantly enriches our knowledge of the diversity and distribution of Papilionoidea in Rajasthan.

Keywords: Insecta, Lepidoptera, Papilionoidea, Rajasthan, systematic, India.

Lista de control de la fauna de Papilionoidea de Rajasthan, India (Insecta: Lepidoptera)

Resumen

Este estudio presenta una lista exhaustiva de 204 especies y subespecies, pertenecientes a 101 géneros de seis familias, derivadas de la literatura publicada sobre la fauna Papilionoidea de Rajasthan, India. En particular, la lista incorpora 21 especies que están protegidas por la Ley de Enmienda (de Protección) de la Vida Silvestre de 2022. Este extenso inventario enriquece significativamente nuestro conocimiento de la diversidad y distribución de Papilionoidea en Rajasthan.

Palabras clave: Insecta, Lepidoptera, Papilionoidea, Rajasthan, sistemática, India.

Introduction

Rajasthan is India's largest state by area, covering 342,239 km², which accounts for about 10.4% of the country's total area. Approximately 61% of Rajasthan is desert, forming part of the Indian Thar Desert, hence it is often called 'Maru Pradesh'. Geographically, Rajasthan is situated in the northern and western hemispheres, predominantly north of the Tropic of Cancer, with coordinates ranging from 23°3' to 30°12' north latitude and 69°30' to 78°17' east longitude. It shares borders with five Indian states-Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, and Gujarat and has an international border with Pakistan. The Aravalli range, a remnant of ancient Gondwanaland, runs from northeast to southwest, dividing the state into two main regions: the arid plain in the northwest and the semi-arid plain along with the southeastern plateau in the east (Sharma & Mishra, 2021). Rajasthan has a tropical dry climate with an average annual rainfall of 57.8 cm. The vegetation in Rajasthan ranges from dry tropical forests to desert thorn scrubs and grasslands.

Due to their extensive knowledge, Lepidoptera are considered especially important in evolutionary biology and as indicators of biodiversity and conservation (de Jong et al., 1996). In India, the order Lepidoptera comprises 13,124 species, including 1,379 Papilionoidea species (Singh et al. 2024). With its varied landscapes, Rajasthan is home to a wide range of species, though the information on their diversity is scattered. In an earlier effort, (Trigunayat, 2008) listed 125 species of Papilionoidea described from Rajasthan.

After that, (Das et al. 2023) most recently confirmed the presence of 124 species in Rajasthan. Apart from them over the years, the following researchers have made a substantial contribution to our understanding of Rajasthan's Papilionoidea fauna: MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), and Varshney & Gupta (1996) were among the primary contributors. More recently, Kazmi et al. (2003), Palot & Soniya (2000, 2001, 2005), Trigunayat & Singh (1998), Maulik (2004), Sharma (2011, 2012, 2013, 2014, 2018), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Singh et al. (2017), Choudhary et al. (2019), Bhagat (2020), Khandal & Sharma (2020), Kaur et al. (2020), Meena (2020), Panwar (2020), Sundar et al. (2020), Tripathi & Koli (2020), Chandra et al. (2021), Gehlot et al. (2021), Sengupta (2021), Meena et al. (2021), Prajapat & Meena (2021), Prajapat et al. (2021), Prajapat et al. (2023) and Panwar & Patel (2023).

This study aims to consolidate fragmented information on Papilionoidea documented in Rajasthan and present the first comprehensive species inventory with distributional records within the state.

Materials and Methods

STUDY AREA

Rajasthan is located in the northwestern part of India between 23.3° N and 30.12° N latitudes and 69.30° E and 78.17° E longitudes.

METHODS

The current checklist of Papilionoidea species in Rajasthan was assembled through a comprehensive examination of published literature. No specimens were collected during the study. The taxa are organized according to the updated classification system proposed by van Nieukerken et al. (2011). The checklist is organized systematically up to the subfamily level and then alphabetically. The scientific names of the described species and subspecies included herein have been updated from Funet.fi (Savela, 2024) and Lepindex (Beccaloni et al. 2024). In addition to the scientific names, the referenced sources and distribution of each species and subspecies have also been provided in the corresponding columns in Table 1. Reliable references were used to cross-check the known range of the species under consideration: Evans (1932), Wynter-Blyth (1957), Varshney & Smetacek (2015), and Kehimar (2016).

Results

The checklist incorporated 204 species and subspecies from 101 genera across six Papilionoidea families documented in the study area. A detailed list of reported species, their references, and distributional records within Rajasthan is provided (Table 1). The distribution by family reveals Lycaenidae as the most prevalent, with 61 species and subspecies (29.9%) across 5 subfamilies and 35 genera. The family Nymphalidae follows this with 57 species and subspecies (27.9%) across 8 subfamilies and 27 genera, Pieridae with 39 species and subspecies (19.1%) across 2 subfamilies and 16 genera, Hesperidae with 32 species and subspecies (15.7%) across 3 subfamilies and 19 genera, Papilionidae with 14 species and subspecies (6.9%) in 1 subfamily and 3 genera, and Riodinidae with 1 species (0.5%) in 1 subfamily and 1 genus. Among these, 21 species (10.3%) are protected under India's Wildlife (Protection) Amendment Act, 2022 (Anonymous, 2022). Specifically, one species is listed under Schedule I, while 20 are listed under Schedule II of the above act (Table 1). In the protected category, the family Nymphalidae has the most representation with 9 species, followed by Lycaenidae with 6 species, Papilionidae with 3 species, and Pieridae with 3 species.

The checklist underscores the importance of Rajasthan as a hotspot for Papilionoidea diversity, with varying habitats supporting a wide range of species despite having inhospitable environmental conditions. Further studies are warranted to elucidate the ecological requirements of various species in Rajasthan.

Table 1. Systematic checklist of Papilionoidea from Rajasthan (India).

Scientific name	Reference(s)	Distribution	WPA-2022 status
Family PAPILIONIDAE			
Subfamily Papilioninae			
<i>Graphium agamemnon agamemnon</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Sharma (2014), Sharma & Dhadeech (2014), Jangid et al. (2016), Kulshrestha & Jain (2016), Choudhary et al. (2019), Bhagat (2020), Prajapat et al. (2023)	Ajmer, Jaipur, Jhalawar, Kota, Mount Abu, Pratapgarh, Sirohi, Udaipur	
<i>Graphium agamemnon menides</i> (Fruhstorfer, 1904)	Gupta & Thakur (1986)	Mount Abu, Pali, Udaipur	
<i>Graphium doson</i> (C. & R. Felder, 1864)	Sharma (2014), Sharma (2018), Prajapat et al. (2023)	Jaipur, Mount Abu, Udaipur	
<i>Graphium nomius</i> (Esper, 1799)	MacPherson (1927), Gupta & Thakur (1986), Kazmi et al. (2003), Gasse (2013), Varshney & Smetacek (2015), Bhagat (2020)	Jaipur, Jodhpur, Mount Abu, Kota	
<i>Graphium sarpedon</i> (Linnaeus, 1758)	Sharma (2012), Sharma (2014)	Mount Abu, Pali, Udaipur	Sch-II
<i>Graphium teredon</i> (C. & R. Felder, [1865])	Das et al. (2023)	Rajasthan	
<i>Pachliopta aristolochiae</i> (Fabricius, 1775)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat & Saxena (2009) Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Dholpur, Jaipur, Jhalawar, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Rajsamand, Sirohi, Sriganganagar, Udaipur	
<i>Pachliopta hector</i> Linnaeus, 1758	MacPherson (1927), Trigunayat & Singh (1998), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018)	Ajmer, Bharatpur, Hanumangarh, Jaipur, Jodhpur, Mount Abu, Sirohi, Sriganganagar	Sch-II
<i>Papilio demoleus</i> Linnaeus, 1758	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Sharma (2012), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Bikaner, Churu, Dholpur, Jaipur, Jhalawar, Jodhpur, Kota, Mount Abu, Nagaur, Pali, Pratapgarh, Rajsamand, Sirohi, Udaipur	
<i>Papilio machaon</i> Linnaeus, 1758	Trigunayat & Singh (1998)	Jaipur	Sch-II

<i>Papilio polymnestor</i> Cramer, [1775]	Trigunayat (2008), Gehlot et al. (2021)	Jodhpur	
<i>Papilio polyctor</i> Boisduval, 1838	Sharma (2014)	Mount Abu	
<i>Papilio polytes polytes</i> (Linnaeus, 1758)	Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat & Saxena (2009) Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Jangid et al. (2016), Rathoure (2016), Sharma (2018), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Bikaner, Churu, Dholpur, Jaipur, Jalore, Jhunjhunu, Jodhpur, Mount Abu, Neem Ka Thana, Pali, Pratapgarh, Rajsamand, Sirohi, Sriganganagar, Udaipur	
<i>Papilio polytes romulus</i> Cramer, [1775]	MacPherson (1927), Gupta & Thakur (1986), Kazmi et al. (2003), Maulik (2004), Ghorpade (2016), Choudhary et al. (2019), Bhagat (2020)	Barmer, Bharatpur, Jhunjhunu, Jodhpur, Kota, Mount Abu, Udaipur	
Family PIERIDAE Subfamily Pierinae			
<i>Appias albina</i> (Boisduval, 1838)	Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Bhagat (2020)	Ajmer, Bharatpur, Jhalawar, Kota	Sch-II
<i>Appias libythea</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat (2008), Gasse (2013), Varshney & Smetacek (2015), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Mount Abu, Udaipur	
<i>Aporia agathon</i> (Gray, 1831)	Trigunayat (2008)	Bharatpur	
<i>Belenois aurota</i> (Fabricius, 1793)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Bundi, Churu, Dholpur, Dungarpur, Jaipur, Jhunjhunu, Jodhpur, Jhalawar, Mount Abu, Pali, Pratapgarh, Rajsamand, Sirohi, Udaipur	
<i>Cepora nerissa nerissa</i> (Fabricius, 1775)	MacPherson (1927), Kushwaha et al. (1963), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Bikaner, Dholpur, Jaipur, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Sirohi, Sriganganagar, Udaipur	
<i>Cepora nerissa evagete</i> (Cramer, [1779])	Varshney & Smetacek (2015)	Rajasthan	
<i>Cepora nadina</i> (Lucas, 1852)	Trigunayat & Saxena (2009)	Dholpur	Sch-II

<i>Colotis amata amata</i> (Fabricius, 1775)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Varshney & Smetacek (2015), Jangid et al. (2016), Bhagat (2020), Kaur et al. (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Churu, Dholpur, Jaipur, Jodhpur, Mount Abu, Kota, Pali, Udaipur	
<i>Colotis amata modesta</i> (Butler, 1876)	Singh et al. (2017)	Udaipur	
<i>Colotis danae danae</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Ghorpade (2016), Jangid et al. (2016), Bhagat (2020), Kaur et al. (2020)	Ajmer, Bharatpur, Churu, Dholpur, Jaipur, Jodhpur, Jodhpur, Mount Abu, Kota	
<i>Colotis danae dulcis</i> (Butler, 1876)	Gupta & Thakur (1986), Ghorpade (2016)	Bharatpur	
<i>Colotis etrida</i> (Boisduval, 1838)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Varshney & Smetacek (2015), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020), Prajapat et al. (2023)	Ajmer, Barmer, Bharatpur, Churu, Dholpur, Jaipur, Jalore, Jhalawar, Jodhpur, Mount Abu, Kota, Nagaur, Pali, Pilan, Sawai Madhopur, Udaipur	
<i>Colotis eucharis</i> (Fabricius, 1775)	Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma (2018), Prajapat et al. (2023)	Bharatpur, Dholpur, Jaipur, Jodhpur, Pali, Rajsamand, Sriganganagar, Udaipur	
<i>Colotis fausta fausta</i> (Olivier, 1804)	MacPherson (1927), Trigunayat & Singh (1998), Palot & Soniya (2001), Varshney & Smetacek (2015), Ghorpade (2016), Kaur et al. (2020), Prajapat et al. (2023)	Bharatpur, Churu, Jaipur, Jodhpur, Mount Abu	
<i>Colotis fausta faustina</i> (C. & R. Felder, [1865])	Gupta & Thakur (1986), Gasse (2013)	Jodhpur, Mount Abu	
<i>Colotis fausta fulvia</i> (Wallace, 1867)	Choudhary et al. (2019)	Udaipur	
<i>Colotis phisadia</i> (Godart, 1819)	Varshney & Smetacek (2015), Kaur et al. (2020)	Churu	

<i>Colotis protractus</i> Butler, 1876	MacPherson (1927), Gupta & Thakur (1986), Maulik (2004), Gasse (2013), Varshney & Smetacek (2015), Choudhary et al. (2019)	Jaisalmer, Jodhpur, Udaipur	
<i>Colotis vestalis</i> (Butler, 1876)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021)	Ajmer, Alwar, Bharatpur, Jaipur, Jodhpur, Kota, Udaipur	
<i>Delias eucharis</i> (Drury, 1773)	MacPherson (1927), Kushwaha et al. (1963) Gupta & Thakur (1986), Trigunayat (2008), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Jaipur, Jodhpur, Mount Abu, Pali, Pratapgarh, Rajsamand, Sirohi, Udaipur	
<i>Hebomoia glaucippe</i> (Linnaeus, 1758)	Sharma (2014), Rajpurohit et al. (2017), Bhagat (2020)	Jodhpur, Kota, Sirohi	
<i>Ixias marianne</i> (Cramer, [1779])	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Jangid et al. (2016), Rathoure (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Bikaner, Dholpur, Jaipur, Jhalawar, Jodhpur, Mount Abu, Kota, Neem Ka Thana, Pali, Pratapgarh, Rajsamand, Sikar, Sirohi, Sriganganagar, Udaipur	
<i>Ixias pyrene</i> (Linnaeus, 1764)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Varshney & Smetacek (2015), Ghorpade (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Alwar, Bharatpur, Dholpur, Jaipur, Jodhpur, Mount Abu, Kota, Pali, Pratapgarh, Sirohi, Sriganganagar, Udaipur	
<i>Leptosia nina</i> (Fabricius, 1793)	Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009) Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Bharatpur, Dholpur, Jaipur, Kota, Pratapgarh, Rajsamand, Udaipur	

<i>Pareronia valeria</i> (Cramer, 1776)	Trigunayat (2008), Sharma (2014), Ghorpade (2016), Sharma (2018)	Ajmer, Bharatpur, Sirohi	
<i>Pieris brassicae</i> (Linnaeus, 1758)	Trigunayat & Singh (1998), Trigunayat (2008), Trigunayat & Saxena (2009) Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Sharma (2018)	Ajmer, Barmer, Bharatpur, Churu, Dholpur, Jaipur, Jodhpur, Pratapgarh, Rajsamand, Sriganganagar, Udaipur	
<i>Pieris canidia canidia</i> (Linnaeus, 1768)	Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma (2018), Kaur et al. (2020)	Ajmer, Bharatpur, Churu, Dholpur, Jaipur, Rajsamand, Sirohi, Sriganganagar	
<i>Pieris canidia indica</i> Evans, 1926	Ghorpade (2016)	Bharatpur	
<i>Pontia glaucanome</i> (Klug, 1829)	Mukherjee et al. (2021)	Jaisalmer	
<i>Prioneris thestylis</i> (Doubleday, 1842)	Kushwaha et al. (1963), Trigunayat (2008)	Udaipur	
Coliadinae			
<i>Catopsilia pomona</i> (Fabricius, 1775)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Dholpur, Hanumangarh, Jaipur, Jhalawar, Jodhpur, Kota, Mount Abu, Pratapgarh, Sirohi, Sriganganagar, Udaipur	
<i>Catopsilia pyranthe</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Dholpur, Jaipur, Jhalawar, Jhunjhunu, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Rajsamand, Sirohi, Udaipur	
<i>Colias fieldii</i> Ménétriés, 1855	Trigunayat & Singh (1998), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Sharma (2018)	Bharatpur, Dholpur, Jaipur, Pratapgarh, Sirohi, Sriganganagar	
<i>Eurema andersoni</i> (Moore, 1886)	Trigunayat (2008), Ghorpade (2016), Jangid et al. (2016),	Ajmer, Bharatpur	Sch-II
<i>Eurema blanda</i> (Boisduval, 1838)	Sharma (2014), Jangid et al. (2016), Sharma (2018)	Sirohi, Ajmer, Sriganganagar	
<i>Eurema brigitta brigitta</i> (Stoll, 1780)	Palot & Soniya (2001), Trigunayat & Saxena (2009), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Bharatpur, Dholpur, Udaipur	

<i>Eurema brigitta rubella</i> (Wallace, 1867)	MacPherson (1927), Gupta & Thakur (1986), Trigunayat & Singh (1998), Trigunayat (2008), Ghorpade (2016), Choudhary et al. (2019)	Ajmer, Alwar, Bharatpur, Jodhpur, Udaipur	
<i>Eurema hecabe</i> (Linnaeus, 1758)	MacPherson (1927), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma & Dhadeech (2014), Sharma (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rathoure (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Dholpur, Dungarpur, Jaipur, Jhalawar, Jhunjhunu, Jodhpur, Mount Abu, Neem Ka Thana, Kota, Pali, Pratapgarh, Rajsamand, Sirohi, Sriganganagar, Udaipur	
<i>Eurema laeta</i> (Boisduval, 1838)	MacPherson (1927), Trigunayat & Singh (1998), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Varshney & Smetacek (2015), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Dholpur, Dungarpur, Jaipur, Jhalawar, Jodhpur, Kota, Mount Abu, Pali, Sriganganagar, Sirohi, Udaipur	
Familia NYMPHALIDAE Subfamilia Danainae			
<i>Danaus chrysippus</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Maulik (2004), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rathoure (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Bhilwara, Churu, Dungarpur, Jaipur, Jalore, Jhalawar, Jhunjhunu, Jodhpur, Mount Abu, Kota, Nagaur, Neem Ka Thana, Pali, Pratapgarh, Rajsamand, Sriganganagar, Udaipur	

<i>Danaus genutia</i> (Cramer, 1779)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021)	Ajmer, Alwar, Bharatpur, Bikaner, Chittorgarh, Dholpur, Dungarpur, Hanumangarh, Jaipur, Jhunjhunu, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Rajsamand, Sirohi, Udaipur	
<i>Euploea core</i> Cramer, [1780])	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat & Saxena (2009), Sharma & Dhadeech (2014), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Barmer, Bharatpur, Dholpur, Jaipur, Jhunjhunu, Jodhpur, Kota, Mount Abu, Nagaur, Pali, Pratapgarh, Rajsamand, Sikar, Sirohi, Sriganganagar, Udaipur	
<i>Parantica aglea</i> (Stoll, 1782)	Trigunayat & Singh (1998), Sharma (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Bhagat (2020)	Bharatpur, Jaipur, Jhalawar, Kota, Sirohi	
<i>Tirumala limniace limniace</i> (Cramer, [1775])	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Dholpur, Jaipur, Jodhpur, Mount Abu, Pratapgarh, Sriganganagar, Udaipur	
<i>Tirumala limniace leopardus</i> (Butler, 1866)	Trigunayat & Singh (1998), Kazmi et al. (2003), Ghorpade (2016)	Bharatpur, Jaipur, Jodhpur, Sirohi	
<i>Tirumala limniace exotica</i> (Gmelin, 1790)	Sharma (2012)	Mount Abu	
<i>Tirumala septentrionis</i> (Butler, 1874)	Sharma (2014), Ghorpade (2016), Sharma (2018)	Bharatpur, Hanumangarh, Sriganganagar, Sirohi	
Satyrinae			
<i>Lethe rohria rohria</i> (Fabricius, 1787)	Trigunayat (2008), Sharma (2014)	Mount Abu	
<i>Lethe rohria neelgheriensis</i> (Guérin-Méneville, 1843)	MacPherson (1927), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	
<i>Melanitis leda leda</i> (Linnaeus, 1758)	Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021)	Ajmer, Alwar, Barmer, Bharatpur, Dholpur, Hanumangarh, Jodhpur, Kota, Pali, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	

<i>Melanitis leda ismene</i> (Cramer, [1775])	MacPherson (1927), Gupta & Thakur (1986), Trigunayat & Singh (1998), Ghorpade (2016)	Bharatpur, Jaipur, Jhunjhunu, Jodhpur, Mount Abu, Sirohi, Udaipur	
<i>Melanitis phedima</i> (Cramer, [1780])	MacPherson (1927), Gupta & Thakur (1986), Trigunayat & Singh (1998), Trigunayat (2008), Ghorpade (2016)	Ajmer, Bharatpur, Sirohi, Udaipur	
<i>Melanitis zitenius</i> (Herbst, 1796)	Trigunayat (2008)	Rajasthan	Sch-II
<i>Mycalesis mineus mineus</i> (Linnaeus, 1758)	MacPherson (1927), Palot & Soniya (2001), Trigunayat (2008), Sharma (2014), Sharma (2018), Bhagat (2020)	Alwar, Bharatpur, Jodhpur, Mount Abu, Kota	
<i>Mycalesis mineus polydecta</i> (Cramer, [1777])	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Mycalesis perseus</i> (Fabricius, 1775)	Sharma (2014), Trigunayat & Saxena (2009), Rathoure (2016)	Dholpur, Neem Ka Thana, Sirohi	
<i>Mycalesis visala</i> Moore, [1858]	Trigunayat (2008)	Rajasthan	
<i>Ypthima asterope</i> (Klug, 1832)	MacPherson (1927), Trigunayat (2008), Sharma (2014), Jangid et al. (2016), Sharma (2018), Prajapat et al. (2023)	Ajmer, Alwar, Jaipur, Jodhpur, Mount Abu, Pali	
<i>Ypthima baldus</i> (Fabricius, 1775)	Trigunayat (2008), Sharma (2014), Sharma (2018)	Ajmer, Sriganganagar	
<i>Ypthima huebneri</i> Kirby, 1871	Trigunayat & Saxena (2009), Sharma (2014), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019)	Ajmer, Dholpur, Pali, Sirohi, Udaipur	
Heliconiinae			
<i>Acraea violae</i> (Fabricius, 1775)	Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rathoure (2016), Bhagat (2020)	Ajmer, Banswara, Bharatpur, Churu, Dholpur, Jaipur, Jalore, Jhalawar, Jodhpur, Kota, Pali, Sriganganagar, Udaipur	
<i>Argynnis hyperbius</i> (Linnaeus, 1963)	MacPherson (1927), Trigunayat & Singh (1998), Trigunayat & Saxena (2009), Gasse (2013), Sharma (2014), Varshney & Smetacek (2015), Ghorpade (2016), Jangid et al. (2016), Sharma (2018)	Ajmer, Bharatpur, Dholpur, Jaipur, Jodhpur, Mount Abu	
<i>Cupha erymanthis</i> (Drury, 1773)	Sharma (2014)	Mount Abu	

<i>Phalanta phalantha</i> (Drury, [1773])	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Rathoure (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Alwar, Barmer, Bharatpur, Churu, Dholpur, Jaipur, Jodhpur, Mount Abu, Kota, Neem Ka Thana, Pali, Pratapgarh, Sirohi, Sriganganagar, Udaipur	
Nymphalinae			
<i>Hypolimnias bolina</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021)	Ajmer, Bharatpur, Dholpur, Hanumangarh, Jaipur, Jodhpur, Mount Abu, Kota, Pratapgarh, Sriganganagar, Udaipur	
<i>Hypolimnias misippus</i> (Linnaeus, 1764)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Rathoure (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Dholpur, Bikaner, Jaipur, Jodhpur, Kota, Nagaur, Neem Ka Thana, Pali, Pratapgarh, Mount Abu, Udaipur	Sch-II
<i>Junonia almana</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Barmer, Bharatpur, Churu, Dholpur, Hanumangarh, Jaipur, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	

<i>Junonia atlites</i> (Linnaeus, 1963)	MacPherson (1927), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Alwar, Bharatpur, Dholpur, Jaipur, Jhalawar, Kota, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	
<i>Junonia hierta</i> (Fabricius, 1798)	MacPherson (1927), Kushwaha et al. (1963), Gupta & Thakur (1986), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Bundi, Churu, Dholpur, Jaipur, Jhunjhunu, Jodhpur, Mount Abu, Kota, Pali, Pratapgarh, Mount Abu, Sirohi, Udaipur	
<i>Junonia iphita</i> (Cramer, [1779])	Kushwaha et al. (1963), Trigunayat (2008), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Sharma (2018), Choudhary et al. (2019)	Ajmer, Alwar, Bharatpur, Hanumangarh, Jaipur, Pratapgarh, Sriganganagar, Sirohi, Udaipur	
<i>Junonia lemonias lemonias</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Sharma & Dhadeech (2013), Sharma (2014), Sharma & Dhadeech (2014), Varshney & Smetacek (2015), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Alwar, Bharatpur, Jaipur, Jhalawar, Jodhpur, Kota, Mount Abu, Pali, Pratapgarh, Sirohi, Udaipur	
<i>Junonia lemonias vaisya</i> (Fruhstorfer, 1912)	Gupta & Thakur (1986), Varshney & Smetacek (2015)	Jodhpur, Mount Abu, Sirohi	
<i>Junonia orithya orithya</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Bharatpur, Churu, Dholpur, Jaipur, Jhalawar, Jodhpur, Mount Abu, Kota, Pratapgarh, Udaipur	
<i>Junonia orithya swinhoei</i> Butler, 1885	Gupta & Thakur (1986), Gasse (2013), Ghorpade (2016)	Bharatpur, Jodhpur, Mount Abu, Sirohi, Udaipur	
<i>Kaniska canace</i> (Linnaeus, 1963)	Sengupta (2021)	Alwar	

<i>Vanessa cardui</i> (Linnaeus, 1758)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat & Singh (1998), Kazmi et al. (2003), Trigunayat (2008), Sharma & Dhadeech (2014), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Prajapat et al. (2023)	Ajmer, Bharatpur, Hanumangarh, Jaipur, Jodhpur, Pali, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	
<i>Vanessa indica</i> (Herbst, 1794)	Sharma (2014)	Mount Abu	
Limenitidinae			
<i>Athyma perius</i> (Linnaeus, 1758)	MacPherson (1927), Sharma (2014), Trigunayat (2008)	Mount Abu	
<i>Euthalia aconthea</i> (Cramer, [1777])	Trigunayat & Singh (1998), Trigunayat (2008), Sharma (2014), Gehlot et al. (2021)	Jaipur, Jodhpur, Udaipur	Sch-II
<i>Modusa procris</i> (Cramer, [1777])	Gehlot et al. (2021)	Jodhpur	
<i>Neptis hylas hylas</i> (Linnaeus, 1758)	Kushwaha et al. (1963), Trigunayat (2008), Sharma (2012), Sharma & Dhadeech (2013), Sharma (2014), Sharma (2018), Gehlot et al. (2021)	Ajmer, Barmer, Jaipur, Jodhpur, Mount Abu, Pali, Pratapgarh, Sirohi, Sriganganagar, Udaipur	
<i>Neptis hylas varmona</i> (Moore, 1872)	Jangid et al. (2016), Bhagat (2020)	Ajmer, Kota	
<i>Neptis jumbah</i> Moore, [1858]	Trigunayat (2008)	Rajasthan	Sch-II
<i>Phaedyma columella</i> (Cramer, [1780])	Trigunayat (2008)	Rajasthan	Sch-II
<i>Symphaedra nais</i> (Forster, 1771)	MacPherson (1927), Trigunayat (2008), Gasse (2013), Sharma (2014), Sharma & Dhadeech (2014), Varshney & Smetacek (2015), Jangid et al. (2016), Gehlot et al. (2021)	Ajmer, Jodhpur, Pratapgarh, Mount Abu, Udaipur	
Biblidinae			
<i>Ariadne ariadne ariadne</i> (Linnaeus, 1963)	Sharma (2014), Sharma & Dhadeech (2014), Sharma (2018)	Alwar, Bharatpur, Churu, Jalore, Jodhpur, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	
<i>Ariadne ariadne indica</i> (Moore, 1884)	Sharma (2018)	Kota	
<i>Ariadne merione merione</i> (Cramer, [1777])	MacPherson (1927), Palot & Soniya (2001), Trigunayat & Saxena (2009), Sharma & Dhadeech (2013), Sharma (2014), Sharma (2018), Choudhary et al. (2019)	Alwar, Bharatpur, Dholpur, Pali, Mount Abu, Sriganganagar, Udaipur	
<i>Ariadne merione tapestrina</i> (Moore, 1884)	Ghorpade (2016)	Bharatpur	
<i>Byblia ilithyia</i> (Drury, [1773])	Trigunayat (2008), Jangid et al. (2016)	Ajmer	
Charaxinae			
<i>Charaxes bernardus</i> (Fabricius, 1793)	Gehlot et al. (2021)	Jodhpur	Sch-II

<i>Charaxes solon</i> (Fabricius, 1793)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat (2008), Gasse (2013), Varshney & Smetacek (2015)	Kota, Mount Abu, Udaipur	Sch-II
<i>Polyura agraria</i> (Swinhoe, 1887)	Das et al. (2023)	Rajasthan	
<i>Polyura athamas</i> (Drury, 1773)	Kushwaha et al. (1963), Trigunayat (2008), Sharma (2014)	Sirohi, Udaipur	Sch-II
<i>Polyura bharata</i> (C. & R. Felder, [1867])	Das et al. (2023)	Rajasthan	
Apaturinae			
<i>Dilipa morgiana</i> (Westwood, 1850)	Jangid et al. (2016)	Ajmer	Sch-I
Family RIODINIDAE			
Subfamily Nemeobiinae			
<i>Dodona durga</i> (Kollar, [1844])	Sharma (2014), Sharma (2018)	Ajmer, Mount Abu, Jodhpur, Nagaur	
Family LYCAENIDAE			
Subfamily Polyommatainae			
<i>Acytolepis puspa</i> (Horsfield, 1828)	Sharma (2014), Jangid et al. (2016)	Ajmer	
<i>Anthea lycaenina lycambes</i> (Hewitson, 1878)	Trigunayat (2008), Chandra et al. (2021)	Rajasthan	Sch-II
<i>Azanus jesous</i> (Guérin-Méneville, 1849)	Trigunayat & Singh (1998), Trigunayat (2008), Sharma (2014), Jangid et al. (2016), Prajapat et al. (2023)	Ajmer, Jaipur	
<i>Azanus ubaldus</i> (Stoll, [1782])	MacPherson (1927), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Gasse (2013), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Kaur et al. (2020), Prajapat et al. (2023)	Ajmer, Bharatpur, Bharatpur, Churu, Jaipur, Jodhpur, Udaipur	
<i>Azanus uranus</i> Butler, 1886	MacPherson (1927), Trigunayat & Singh (1998), Trigunayat (2008), Gasse (2013), Jangid et al. (2016), Kaur et al. (2020), Prajapat et al. (2023)	Ajmer, Churu, Jaipur, Jodhpur	
<i>Castalius rosimon</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Jangid et al. (2016), Sharma (2018), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Alwar, Barmer, Dholpur, Hanumangarh, Jhalawar, Jodhpur, Kota, Pratapgarh, Mount Abu, Sriganganagar, Udaipur	
<i>Catochrysops strabo</i> (Fabricius, 1793)	MacPherson (1927), Trigunayat (2008), Sharma & Dhadeech (2014), Sharma (2014), Jangid et al. (2016), Sharma (2018)	Ajmer, Alwar, Bikaner, Jalore, Jodhpur, Pali, Pratapgarh, Mount Abu, Udaipur	
<i>Celastrina huegelii</i> (Moore, 1882)	Sharma (2014)	Mount Abu	
<i>Chilades lajus</i> (Stoll, [1780])	MacPherson (1927), Trigunayat (2008), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Bharatpur, Jodhpur, Mount Abu, Udaipur	

<i>Chilades parrhasius parrhasius</i> (Fabricius, 1793)	Gasse (2013), Varshney & Smetacek (2015), Jangid et al. (2016)	Ajmer	
<i>Chilades parrhasius minuta</i> (Evans, 1932)	Trigunayat & Singh (1998)	Jaipur	
<i>Cupido lacturnus</i> (Godart, [1824])	Trigunayat (2008)	Rajasthan	
<i>Euchrysops cnejus</i> (Fabricius, 1798)	MacPherson (1927), Palot & Soniya (2001), Kazmi et al. (2003), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020)	Ajmer, Bharatpur, Churu, Dholpur, Jaipur, Jodhpur, Kota, Pali, Pratapgarh, Mount Abu, Udaipur	
<i>Freyeria putli</i> (Kollar, [1844])	MacPherson (1927), Trigunayat & Singh (1998), Trigunayat & Saxena (2009), Ghorpade (2016)	Bharatpur, Dholpur, Jaipur, Jodhpur, Mount Abu	
<i>Freyeria trochylus</i> (Freyer, 1845)	Trigunayat (2008), Jangid et al. (2016), Choudhary et al. (2019), Kaur et al. (2020)	Ajmer, Bharatpur, Churu, Udaipur	
<i>Jamides bochus</i> (Stoll, 1782)	MacPherson (1927), Trigunayat (2008), Jangid et al. (2016)	Ajmer, Jodhpur	
<i>Jamides celeno</i> (Cramer, 1775)	Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Jangid et al. (2016), Ghorpade (2016)	Ajmer, Bharatpur, Dholpur, Rajsamand	
<i>Lampides boeticus</i> (Linnaeus, 1767)	MacPherson (1927), Trigunayat (2008), Trigunayat & Saxena (2009), Sharma (2014), Sharma & Dhadeech (2014), Kulshrestha & Jain (2016), Ghorpade (2016), Jangid et al. (2016), Rajpurohit et al. (2017), Sharma (2018), Choudhary et al. (2019), Bhagat (2020), Kaur et al. (2020), Gehlot et al. (2021), Prajapat et al. (2023)	Ajmer, Barmer, Bharatpur, Churu, Dholpur, Jaipur, Jhalawar, Jodhpur, Mount Abu, Kota, Nagaur, Pali, Pratapgarh, Sriganganagar, Udaipur	
<i>Leptotes plinius</i> (Fabricius, 1793)	MacPherson (1927), Palot & Soniya (2001), Trigunayat (2008), Jangid et al. (2016), Ghorpade (2016), Choudhary et al. (2019), Bhagat (2020), Prajapat et al. (2023)	Ajmer, Bharatpur, Jaipur, Jodhpur, Mount Abu, Kota, Udaipur	
<i>Luthrodes contracta</i> (Butler, 1880)	Das et al. (2023)	Rajasthan	
<i>Luthrodes ella</i> (Moore, 1881)	Das et al. (2023)	Rajasthan	
<i>Luthrodes pandava</i> (Horsfield, [1829])	MacPherson (1927), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Kaur et al. (2020), Prajapat et al. (2023)	Ajmer, Bharatpur, Churu, Jaipur, Udaipur	
<i>Megisba malaya malaya</i> (Horsfield, [1828])	Trigunayat (2008)	Rajasthan	Sch-II
<i>Megisba malaya sikkima</i> Moore, 1884	Chandra et al. (2021)	Thar Desert (of Rajasthan)	

<i>Neopithecops zalmora</i> (Butler, [1870])	Trigunayat (2008)	Rajasthan	
<i>Prosotas dubiosa indica</i> (Evans, 1925)	Jangid et al. (2016)	Ajmer	Sch-II
<i>Prosotas nora</i> (C. Felder, 1860)	MacPherson (1927), Trigunayat (2008), Sharma (2014), Jangid et al. (2016)	Ajmer, Jodhpur	
<i>Pseudozeeria maha</i> (Kollar, 1848)	MacPherson (1927), Palot & Soniya (2001), Trigunayat & Singh (1998), Trigunayat (2008), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Bharatpur, Hanumangarh, Jaipur, Mount Abu, Sriganganagar, Udaipur	
<i>Talica nyseus</i> (Guérin-Ménéville, 1843)	Sharma (2014)	Mount Abu	
<i>Tarucus balkanica</i> (Freyer, 1844)	Das et al. (2023)	Rajasthan	
<i>Tarucus callinara</i> Butler, 1886	MacPherson (1927), Gupta & Thakur (1986), Choudhary et al. (2019), Kaur et al. (2020)	Churu, Jodhpur, Mount Abu, Udaipur	Sch-II
<i>Tarucus extricatus</i> Butler, 1886	Kazmi et al. (2003)	Jodhpur	
<i>Tarucus indicus</i> Evans, 1932	Trigunayat (2008), Gasse (2013), Varshney & Smetacek (2015)	Rajasthan	
<i>Tarucus nara</i> (Kollar, 1848)	Trigunayat (2008), Sharma (2014), Sharma & Dhadeech (2014), Varshney & Smetacek (2015), Jangid et al. (2016), Choudhary et al. (2019), Kaur et al. (2020), Prajapat et al. (2023)	Ajmer, Churu, Jaipur, Mount Abu, Pratapgarh, Udaipur	
<i>Tarucus theophrastus</i> (Fabricius, 1793)	MacPherson (1927), Palot & Soniya (2001)	Bharatpur, Jodhpur, Mount Abu	
<i>Tarucus venosus</i> Moore, 1882	Trigunayat (2008), Ghorpade (2016)	Bharatpur	
<i>Zizeeria karsandra</i> (Moore, 1865)	Trigunayat & Singh (1998), Trigunayat (2008), Sharma (2014), Ghorpade (2016), Jangid et al. (2016), Kaur et al. (2020)	Ajmer, Bharatpur, Churu, Jaipur	
<i>Zizina otis otis</i> (Fabricius, 1787)	Trigunayat (2008), Sharma (2014), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Bharatpur, Mount Abu, Udaipur	
<i>Zizina otis indica</i> (Murray, 1874)	MacPherson (1927), Ghorpade (2016)	Bharatpur, Mount Abu	
<i>Zizula hylax</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat & Singh (1998), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Prajapat et al. (2023)	Ajmer, Bharatpur, Dholpur, Jaipur, Jodhpur, Mount Abu, Udaipur	
Theclinae			
<i>Arhopala atrax</i> (Hewitson, 1862)	Jangid et al. (2016)	Ajmer	
<i>Arhopala amantes</i> (Hewitson, 1862)	Trigunayat (2008)	Rajasthan	
<i>Cigaritis acamas acamas</i> (Klug, 1834)	Trigunayat (2008), Sharma (2014)	Alwar	
<i>Cigaritis acamas hypargyros</i> (Butler, 1886)	Gasse (2013), Chandra et al. (2021)	Rajasthan	
<i>Cigaritis ictis</i> (Hewitson, 1865)	MacPherson (1927), Trigunayat (2008), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	

<i>Cigaritis lilacinus</i> (Moore, 1884)	Sundar et al. (2020)	Southern Rajasthan	
<i>Cigaritis vulcanus</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat (2008), Trigunayat & Saxena (2009), Gasse (2013), Ghorpade (2016), Jangid et al. (2016), Choudhary et al. (2019), Bhagat (2020)	Ajmer, Bharatpur, Dholpur, Mount Abu, Kota, Udaipur	
<i>Deudorix isocrates</i> (Fabricius, 1793)	MacPherson (1927), Kushwaha et al. (1963), Trigunayat (2008)	Mount Abu, Udaipur	
<i>Pratapa deva</i> (Moore, [1858])	Sharma (2014)	Aravalli range (of Rajasthan)	Sch-II
<i>Rapala iarbus iarbus</i> (Fabricius, 1787)	Trigunayat (2008), Tripathi & Koli (2020)	Bhilwara	
<i>Rapala iarbus sorya</i> (Kollar, 1848)	MacPherson (1927), Gasse (2013)	Mount Abu, Jodhpur	
<i>Rapala manea</i> (Hewitson, 1863)	Meena (2020)	Udaipur	
<i>Rathinda amor</i> (Fabricius, 1775)	Trigunayat (2008)	Rajasthan	
<i>Surendra vivarna</i> (Horsfield, [1829])	Trigunayat (2008)	Rajasthan	
<i>Tajuria cippus</i> (Fabricius, 1798)	Trigunayat (2008), Choudhary et al. (2019)	Udaipur	Sch-II
<i>Zesius chrysomallus</i> Hübner, 1821	Trigunayat (2008), Sharma (2014)	Mount Abu	
Miletinae			
<i>Spalgis epius</i> (Westwood, 1852)	Trigunayat (2008), Sharma (2014)	Ajmer	
Curetinae			
<i>Curetis acuta acuta</i> Moore, 1877	Trigunayat (2008), Rajpurohit et al. (2017)	Udaipur	
<i>Curetis acuta dentata</i> Moore, 1879	Trigunayat (2008)	Rajasthan	
<i>Curetis thetis</i> (Drury, [1773])	Trigunayat (2008)	Rajasthan	
Lycaeninae			
<i>Heliophorus tamu</i> (Kollar, [1844])	Trigunayat (2008)	Rajasthan	
Family HESPERIIDAE			
Subfamily Hesperinae			
<i>Arnetta vindhiana</i> (Moore, [1884])	MacPherson (1927), Evans (1949), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	
<i>Borbo cinnara</i> (Wallace, 1866)	MacPherson (1927), Sharma (2014)	Ajmer, Mount Abu	
<i>Caltoris kumara</i> (Moore, 1878)	Palot & Soniya (2001), Trigunayat (2008), Ghorpade (2016)	Bharatpur	
<i>Parnara bada</i> (Moore, 1878)	MacPherson (1927), Trigunayat (2008), Ghorpade (2016)	Bharatpur, Mount Abu	
<i>Parnara guttatus</i> (Bremer & Grey, [1852])	Sharma (2014), Jangid et al. (2016), Sharma (2018)	Ajmer, Alwar, Barmer, Jodhpur, Pali, Sriganganagar	
<i>Pelopidas conjuncta</i> (Herrich-Schäffer, 1869)	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Pelopidas mathias</i> (Fabricius, 1798)	MacPherson (1927), Evans (1949), Kushwaha et al. (1963), Kazmi et al. (2003), Sharma (2014), Jangid et al. (2016), Prajapat et al. (2023)	Ajmer, Barmer, Jaipur, Jodhpur, Mount Abu, Udaipur	

<i>Potanthus dara</i> (Kollar, [1844])	MacPherson (1927)	Mount Abu	
<i>Potanthus pseudomaesa</i> (Moore, [1881])	Evans (1949), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	
<i>Suastus gremius</i> (Fabricius, 1798)	MacPherson (1927), Palot & Soniya (2001), Trigunayat (2008), Trigunayat & Saxena (2009), Ghorpade (2016), Jangid et al. (2016), Bhagat (2020)	Ajmer, Bharatpur, Dholpur, Kota, Mount Abu	
<i>Taractrocera maevius maevius</i> (Fabricius, 1793)	Trigunayat & Singh (1998), Trigunayat (2008)	Bharatpur, Jaipur	
<i>Taractrocera maevius sagara</i> (Moore, [1865])	Ghorpade (2016)	Bharatpur	
<i>Telicota augias</i> (Linnaeus, 1963)	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Telicota bambusae</i> (Moore, 1878)	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Udaspes folus</i> (Cramer, [1775])	MacPherson (1927), Trigunayat & Singh (1998), Trigunayat (2008), Ghorpade (2016)	Bharatpur, Jaipur, Mount Abu	
Pyrginae			
<i>Caprona ransonnetii</i> (Felder, 1868)	MacPherson (1927)	Mount Abu	
<i>Celaenorrhinus ambareesa</i> (Moore, [1866])	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Coladenia indrani indrani</i> (Moore, [1866])	Chandra et al. (2021)	Thar Desert (of Rajasthan)	
<i>Coladenia indrani indra</i> Evans, 1926	Khandal & Sharma (2020)	Sawai Madhopur	
<i>Ernstia zebra</i> (Butler, 1888)	Panwar (2020), Panwar & Patel (2023), Prajapat et al. (2023)	Ajmer, Chittorgarh, Dungarpur, Pali, Pratapgarh, Rajasamand, Sirohi, Udaipur	
<i>Pseudocoladenia dan</i> (Fabricius, 1787)	MacPherson (1927)	Mount Abu	
<i>Sarangesa dasahara dasahara</i> Moore, [1866]	MacPherson (1927), Choudhary et al. (2019)	Mount Abu, Udaipur	
<i>Sarangesa dasahara adona</i> (Evans, 1949)	Evans (1949), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	
<i>Sarangesa purendra purendra</i> Moore, 1882	MacPherson (1927), Jangid et al. (2016), Choudhary et al. (2019)	Ajmer, Mount Abu, Udaipur	
<i>Sarangesa purendra pandra</i> (Evans, 1949)	Evans (1949), Gasse (2013), Varshney & Smetacek (2015)	Mount Abu	
<i>Sarangesa sati</i> de Nicéville, 1891	de Niceville (1891), Khandal & Sharma (2020)	Sawai Madhopur	
<i>Spialia galba</i> (Fabricius, 1793)	MacPherson (1927), Sharma (2014), Jangid et al. (2016), Kaur et al. (2020)	Ajmer, Churu, Mount Abu	
<i>Spialia doris evanida</i> (Butler, 1880)	Meena et al. (2021)	Jaisalmer	
Coeliadinae			
<i>Badamia exclamationis</i> (Fabricius, 1775)	MacPherson (1927), Trigunayat (2008), Trigunayat & Saxena (2009), Ghorpade (2016), Choudhary et al. (2019)	Bharatpur, Dholpur, Mount Abu	
<i>Hasora chromus</i> (Cramer, 1780)	MacPherson (1927), Trigunayat & Saxena (2009), Jangid et al. (2016)	Ajmer, Dholpur, Mount Abu	
<i>Hasora vitta vitta</i> (Butler, 1870)	Trigunayat (2008)	Bharatpur	
<i>Hasora vitta indica</i> Evans, 1932	Ghorpade (2016)	Bharatpur	

Abbreviation used:

WPA-2022 = Wildlife (Protection) Amendment Act, 2022 of India.

Sch-I = Schedule-I; Sch-II = Schedule-II.

Discussion

The current study provides Rajasthan's first thorough inventory of Papilionoidea species, incorporating previously dispersed data and distributional records and considerably enhancing the state's known diversity. The checklist of 204 species and subspecies across 101 genera and six families marks a substantial increase from earlier records by Trigunayat (2008) and Das et al. (2023), who listed 125 and 124 species, respectively. However, as already indicated, both investigations mentioned above only included species data. This expansion underscores the rich biodiversity of Rajasthan's Papilionoidea and highlights the importance of continued research and conservation efforts.

Certain species were excluded from the list: *Kallima paralekta* (Horsfield, [1829]) of the Nymphalidae family, *Hesperilla ornata* (Leach, 1814), *Gegenes nostrodamus* (Fabricius, 1793), and *Spialia doris* (Walker, 1870) of the Hesperidae family. *K. paralekta* is endemic to Indonesia and was reported from Jodhpur by Gehlot et al. (2021) based on photographic records without physical specimens. The genus *Kallima* Doubleday, 1849, includes four species in the Indian subcontinent: *K. horsfieldi*, *K. albofasciata*, *K. knyveti*, and *K. inachus* (Varshney & Smetacek, 2015; Kehimkar, 2016). *H. ornata* was reported from Bikaner (Bhati & Srivastava, 2016), but this identification may be erroneous as *H. ornata* is typically found along the non-tropical eastern coast of Australia (Braby, 2004), making its presence in India doubtful. *G. nostrodamus* and *S. doris* were excluded because they were recorded from Deesa (Rajputana) (Evans, 1949), now part of Gujarat state.

A noteworthy aspect of the findings is the documentation of 21 species listed under Schedule I and II of the Wildlife (Protection) Amendment Act, 2022. The inclusion of protected species highlights Rajasthan's ecological significance and the necessity for stringent conservation measures in light of ongoing habitat loss and climate change.

Conclusion

This study significantly enhances our understanding of Papilionoidea diversity in Rajasthan, providing crucial baseline information for future ecological and conservation research. Further research should focus on detailed ecological studies to understand lesser-known species' habitat preferences and life cycles.

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Conflict of Interest

The authors declare that there is no known financial interest or personal relationship that could have influenced the work presented in this article.

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