



New Records of Dragonflies (Insecta: Odonata: Anisoptera) From Chhatarpur District, Bundelkhand, Madhya Pradesh, India with Their Conservation Status and Distribution

Akhlaq Husain*, Hishmi Jamil Husain** and Gaurav Sharma***

*(formerly associated with Zoological Survey of India) 41, Hari Vihar, Vijay Park, Dehra Dun– 248 001.

**Rio Tinto, 3rd Floor, The Capital Court, Munirka, New Delhi-110 067.

***Zoological Survey of India, 535, New Alipore, Kolkata-700 053.

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ABSTRACT

The present communication deals with the dragonflies of Chhatarpur district, Bundelkhand Division, Madhya Pradesh (India), all of which are the new records for the district and some to the Division. Interestingly, some of these species are found common both with western (Gulf and around) and south-east Asian countries. Further, as regards their conservation status, none of these species is 'Threatened' under IUCN Red List.

Key Words: New Records, Dragonflies, Bundelkhand, Conservation

INTRODUCTION

The Odonate fauna of Madhya Pradesh State (Central India) and around has attracted the attention of various workers during the past (Mitra, 1988, 1995; Srivastava & Suri Babu, 1997; Suri Babu & Srivastava, 2001; Mishra, 2007; Prasad, 1966; Prasad & Mishra, 2008; Tiple *et al.*, 2008; Tiple *et al.*, 2012) but no record from Chhatarpur district in Bundelkhand Division is available. In the present communication an attempt has been made to study and identify dragonflies (Anisopterans) of Chhatarpur district, based on photographs provided by one of the authors (HJH).

These belong to six species, six genera under a single family (Libellulidae) and recorded here for the first time from the district and out of these four species viz. *Orthetrum pruinosum neglectum*, *Potamarcha congener*, *Diplacodes trivialis* and *Trithemis aurora* are new to the Division. Fortunately, none of these species is Threatened and all fall under 'Least Concern' of 'Low Risk Category' of IUCN Red List.

Systematic account with conservation status and distribution

Order: Odonata Fabricius, 1793

Suborder: Epiprocta Lohmann, 1996

Infraorder: Anisoptera Selys, 1854

Family: Libellulidae Rambur, 1842

Subfamily: Libellulinae

Genus: *Orthetrum* Newman, 1833

1. *Orthetrum pruinosum neglectum* (Rambur, 1842)

Crimson-tailed Marsh Hawk

Libellula neglecta Rambur, 1842. *Ins. Nevrop.*: 86

Correspondence:

Emails: *drakhlaqhusain@gmail.com

**hishmi.husain@riotinto.com

***drgaurav.zsi.india@gmail.com

Libellula petalura Brauer, 1865. *Verh. zool.-bot. Ges. Wien*, 15: 506.

Libellula pruinosum Brauer, 1865. *Verh. Zool.-bot. Ges. Wien*, 15: 1013

Orthotetrum pruinosum, Kirby, 1886. *Proc. Zool. Soc. Lond.*, 24: 554.

Orthotetrum petalura, Kirby, 1890. *Cat. Odon.*: 39.

Libella pruinosus clelia Selys, 1891. *Ann. Mus. Civ. Genova*, 30: 461.

Orthetrum pruinosum ceylanicum Forster, 1903. *Ann. Mus. Hungar.*: 541.

Orthotetrum schneideri Forster, 1903. *Ann. Mus. Hungar.*: 541.

Orthetrum pruinosum neglectum, Ris, 1909. *Cat. Coll. Selys. fasc.*, 9: 181, 293, 240; Fraser, 1936.

Faun. Brit. India Odonata., 3: 311-312; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series*, 15 (part-1): 259, 271 (Raigarh and Sarguja districts); Prasad & Mishra, 2008. *Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.*: 78, 85-86 (Jabalpur + Seoni and Umaria dists.).

Conservation Status: IUCN Red List: Least Concern (as *Orthetrum pruinosum*) (Sharma, 2010).

Material Examined: 1 ex., Chhatarpur district, Bundelkhand Division, Madhya Pradesh.

Diagnostic Features: Robust species with unique violet abdomen; wings hyaline enfumed with pale-brown toward apices in aged adults and basal marking extending distalwards in hind wing, pterostigma reddish-brown to black over two cells.

Male: Frons dark brown to black; prothorax and thorax reddish-brown to dull purple Basal marking in hind wing reddish-brown

Female: Frons pale olivaceous-brown; thorax reddish brown or dull ochreous with a faint brown

stripe on each side of dorsum; basal marking in hind wing paler and almost obsolete

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: New record.

Madhya Pradesh: As above and Jabalpur, Seoni and Umeria districts.

India: Throughout. Delhi, Himachal Pradesh, Rajasthan, Tamil Nadu (Ooty, Nilgiris dist.), Uttarakhand.

Elsewhere: China, Hong Kong, Indochina, Indonesia, Malaysia, Myanmar, Nepal, Sri Lanka, Taiwan, Thailand and Tibet.

Afghanistan, Bangladesh, Brunei Darussalam, China (including Taiwan, Tibet), Hong Kong, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Nepal, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam.

Remarks: Aside from nominate subspecies, three subspecies are recognized:

O. pruinatum neglectum: widespread in mainland Asia and is followed here.

O. pruinatum schneideri (likely to be a junior synonym of *O. pruinatum clelia* which is likely to be a separate species): occurs in Malay Peninsula and Borneo.

O. pruinatum clelia: occurs in Philippines and Taiwan (China) (where *O. pruinatum neglectum* also found).

O. pruinatum migratum: some times recognized but is considered to be a separate species (*O. migratum*).

Genus: *Potamarcha* Karsch, 1890

2. Potamarcha congener (Rambur, 1842)

Yellow-tailed Ashy Skimmer

Libellula obscura Rambur, 1842. Ins. Nevrop.: 64.

Libellula congener Rambur, 1842. Ins. Nevrop.: 70.

Orthoterum obscurum, Kirby, 1890. Cat. Odon.: 38.

Potamarcha obscura, Fraser, 1936. *Faun. Brit. India Odonata*. 3: 289-291.

Potamarcha congener, Prasad & Varsheny, 1995. *Oriental Insects*, 29: 410; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh)*, *State Fauna Series*, 15 (Part-1), ZSI Publi.: 261 (Ambikapur and Gwalior); Prasad & Mishra, 2008. Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.: 78, 85-86 (Jabalpur + Seoni and Umairia dist.).

Conservation Status: IUCN Red List: Least Concern (Mitra, 2010).

Material Examined: 2 exs. From Chhatarpur district, Bundelkhand, Madhya Pradesh.

Diagnostic Features: Labrum yellowish with black margin; face and frons olivaceous-yellow; prothorax dark brown, thorax blackish; wing apices tipped brown, pterostigma reddish-brown, extending on 2-4 cells, anal appendage black.

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: New record.

Madhya Pradesh: As above and Jabalpur, Seoni and Umairia districts.

India: Throughout. Andaman Islands, Andhra Pradesh, Assam, Bihar, Chhatisgarh, Goa, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere: Australia, Bangladesh, Cambodia, China (including Taiwan, Tibet), Hong Kong, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam.

Remarks: Species name *congener* (Rambur, 1842: 70) instead of *obscura* (Rambur, 1842: 64) has been followed here followed after Prasad and Varshney (1995), Martin & Dennis (2012), Mishra (2007), Subramanian (2005, 2009) and other literature.

Subfamily: Sympetrinae

Genus: *Bradinopyga* Kirby, 1893

3. Bradinopyga geminata (Rambur, 1842)

Granite Ghost/ Indian Rock-dweller

Libellula geminata Rambur, 1842. *Ins. Nevrop*: 90. *Trithemis geminata*, Brauer, 1868. *Verh. Zool.-bot. Ges. Wien*, 18: 736.

Bradinopyga stigmata Kirby, 1890. *J. Linn. Soc., Zool.*, 24: 553.

Bradinopyga geminata, Ris, 1911. *Cat. Coll. Selys, fasc.*, 13: 545, 548, fig. 324;

Fraser, 1919. *J. Bombay nat Hist. Soc.*, 26: 514-15; Fraser, 1936. *Faun. Brit. India Odonata*, 3: 349-350; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh)*, *State Fauna Series*, 15 (part-1): 266, 271 (Chhindwara, Datia, Gwalior and Morena districts); Prasad & Mishra, 2008. Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.: 78, 87 (Jabalpur + Chhindwara, Datia, Gwalior and Morena dist.).

Conservation Status: IUCN Red List: Least Concern (Mitra, 2010).

Material Examined: 1 ex., Chhatarpur district, Bundelkhand Division, Madhya Pradesh.

Diagnostic Features: Medium-sized grey dragonfly with black and white markings.

Male: Eyes brownish above, grayish below; thorax grey, marbled and peppered with black and lighter grey; abdomen with 5 light-grayish bands; wings transparent, pterostigma black in centre and white at both ends; anal appendage pale creamy-white.

Sexual Dimorphism: Anal appendage half as long in female than that of male.

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: As above (new record) and Datia district.

Madhya Pradesh: As above and Chhindwara, Gwalior, Jabalpur and Morena districts.

India: Andhra Pradesh, Assam (doubtful), Bihar, Chhatisgarh, Delhi, Haryana, Karnataka, Kerala (Kottayam, Trivandrum-Varkala);, Maharashtra (Mumbai: Pali), Meghalaya (doubtful), Nagaland (doubtful), Odisha, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh (Agra-Taj Mahal, Fatehpur Sikri); West Bengal. From sea-level to 457.2 m (1, 500 ft).

Elsewhere: Nepal, Sri Lanka and Thailand. Bangladesh and Myanmar main (doubtful).

Genus: *Diplacodes* Kirby, 1889 (Perchers)

4. *Diplacodes trivialis* (Rambur, 1842)

Chalky Percher/ Ground Skimmer

Libellula braminea Fabricius, 1798.

Libellula trivialis Rambur, 1842. *Ins. Neurop*: 115.

Libellula phalerata Uhler, 1858.

Diplax trivialis Brauer, 1866. *Novara*: 104.

Trithemis trivialis, Kirby, 1889. *Trans. Zool. Soc. Lond.*: 12: 278.

Diplacodes trivialis, Karsch, 1891. *Ent. Nachr.*, 17: 246; Fraser, 1936. *Faun. Brit. India Odonata*, 3: 336-338; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series*, 15 (part-1): 263-64, 271 (Gwalior, Jabalpur, Mandsaur, Raigarh and Sarguja districts); Prasad & Mishra, 2008. *Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.*: 78, 88 (Jabalpur + Gwalior and Mandsaur dists.).

Diplacodes remota Ris, 1911.

Conservation Status: IUCN Red List: Least Concern (Subramaniam, 2010).

Material Examined: 2 exs. (male and female), Chhatarpur district, Bundelkhand Division, Madhya Pradesh.

Diagnostic Features: Small greenish-yellow or bluish species.

Male: Face bluish-green; eyes reddish-brown above, bluish or yellowish below; thorax greenish-yellow or olivaceous, dorso-laterally violet-brown and speckled with fine dots; abdominal segments 1-7 greenish-yellow with mid-dorsal and sub-dorsal black stripes, rest blackish; wings transparent; pterostigma grey to black, appendage yellowish.

Female: Like young or subadult. Abdominal markings broader and continued on segments 8-10, 10th segment and anal appendage more yellowish.

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: New Record.

Madhya Pradesh: Gwalior, Jabalpur and Mandsaur districts.

India: Andaman & Nicobar Islands, Andhra Pradesh (Hyderabad), Arunachal Pradesh, Bihar, Chandigarh, Chhatisgarh (Sarguja (Ambikapur) and Raigarh dists.), Delhi, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tamil Nadu, Tripura,

Uttarakhand, Uttar Pradesh and West Bengal. Plains to 2133.6 m (7000 ft).

Elsewhere: Australia, Bangladesh, Brunei Darussalam, Cambodia, China (including Taiwan), Fiji, Hong Kong, Indochina, Indonesia, Iraq, Japan, Lao PDR, Malacca, Malaysia, FS Micronesia, Myanmar, Nepal, Papua New Guinea, Pacific Islands, Philippines, Ryudys, Seychelles, Singapore, Solomon Islands, Sri Lanka, Thailand, Timor-Leste and Viet Nam.

Subfamily: Pantalinae

Genus: *Pantala* Hagen, 1861 (Rain-pool Gliders)

5. *Pantala flavescens* (Fabricius, 1797)

Globe Skimmer/ Wandering Glider

Libellula flavescens Fabricius, 1798. *Ent. Syst. Suppl.*: 285.

Libellula viridula Palisot de Beauvois, 1805. *Ins. Afr. Et Amer.*: 69, pl. 3, fig. 4

Libellula analis Burmeister, 1839. *Handb. Ent.*, 2: 852.

Libellula terminalis Burmeister, 1839. *Handb. Ent.*, 2: 852.

Pantala flavescens, Hagen, 1861. *Syn. Neur. N. Amer.*: 142; Fraser, 1936. *Faun. Brit. India Odonata*, 3: 414-416; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series*, 15 (part-1): 268-69, 271 (Datia and Gwalior districts);

Pantala flavescens, 2008. *Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.*: 79, 90-91 (Jabalpur + Datia and Gwalior dists.).

Sympetrum tandicoda Singh, 1955 (vide World Odonata List)

Conservation Status: IUCN Red List: Least Concern (Suhling & Clausnitzer, 2009).

Material Examined: 3 exs., Chhatarpur district, Bundelkhand Division, Madhya Pradesh.

Diagnostic Features: Medium-sized and robust species. Head front yellowish to reddish, eyes chestnut-red. Hairy thorax and abdomen usually yellow to golden (sometimes brown or olive) with a dark line. Wings clear, may be yellowish towards tip very broad at base (some specimens with olive, brown and yellow wings), pterostigma yellowish and body (prothorax, abdomen and anal appendages) bright ochreous, dorsum tinted with bright brick-red, segment sides 1-4 yellowish and 8-10 with pyriform black spots.

Sexual Dimorphism: Male: Face bright golden yellow or orange, eyes reddish-brown above, bluish-grey on sides and below; thorax hairy, olivaceous or rusty; abdomen reddish-brown, tinted with brick-red above, segments 8-10 with black spots above; wings transparent, hind wing base amber yellow, pterostigma reddish-brown. Wings darker and longer front and shorter hind wings than those of females.

Female: Mostly like males except eyes olivaceous-brown above; face vivid chrome-yellow abdomen without red colouration above, wings smoky.

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: As above (new record) and Datia district.

Madhya Pradesh: Gwalior and Jabalpur districts.

India: Delhi, Himachal Pradesh, Punjab, Rajasthan, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere: Algeria, Angola, Argentina, Bahamas, Belize, Bolivia, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Cambodia, Cameroon, Central African Rep, Chad, Chile, China (including Taiwan, Tibet), Colombia, Comoros, DR Congo, Costa Rica, Cote d'Ivoire, Cuba, Cyprus, Dominican Rep, Ecuador, Egypt, El Salvador, Equatorial Guinea, Ethiopia, French Guinea, Greece, Guaramala, Guinea, Guyana, Haiti, Honduras, Hong Kong, Indonesia, Iran, Iraq, Israel, Jamaica, Japan, Kenya, Korea, Kuwait, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Mauritius, Mexico, Morocco, Mosambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, N Mariana Islands, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Puerto Rico, Qatar, Reunion, Sao Tome & Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Solomon Island, Somalia, South Africa, Sri Lanka, Sudan, Suriname, Swaziland, UR Tanzania, Thailand, Togo, Trinidad & Tobago, Turkey, Uganda, UAE, Uruguay, Venezuela, Viet Nam, Yemen, Zambia and Zimbabwe.

Benin, Burundi, Canada, Djibouti, Eritrea, Gabon, Gambia, Ghana, Guinea-Bissau, Jordan, DPR Korea, Libya, Portugal, Rwanda, Spain, Syria and UK (doubtful).

Subfamily: Trithemistinae

Genus: *Trithemis* Brauer, 1868 (Drop-wings)

6. *Trithemis aurora* (Burmeister, 1839)

Cromson Marsh Glider

Libellula aurora Burmeister, 1839. Handb.Ent., 2: 859.

Trithemis aurora, Brauer, 1868. *Verh. zool.- bot. Ges. Wien.*, 18: 177, 735; Fraser, 1936. *Faun. Brit. India Odonata*, 3: 383-385; Mishra, 2007. *Fauna of Madhya Pradesh (including Chhatisgarh), State Fauna Series*, 15 (part-1): 267, 271 (Betul, Chhindwara, Jabalpur, Mandasaur, Sarguja and Ujjain districts); Prasad & Mishra, 2008. Faunal Diversity of Jabalpur District, Madhya Pradesh, ZSI Publi.: 78, 89 (Jabalpur + Betul, Chhindwara, Mandasaur and Ujjain dists.).

Trithemis soror Brauer, 1868. *Verh. zool.- bot. Ges. Wien.*, 18: 179, 735.

Trithemis adelpha Selys, 1878. *Mitt. Mus. Dresden*: 315.

Trithemis fraternata Albarda, 1881. *Veths. Midden Sumatra, Neur*: 4

Trithemis intermedia Kirby, 1886. *Proc. Zool. Soc. Lond.*: 327, pl.38.

Trithemis congener Kirby, 1890. *Cat. Odon.*: 18.

Trithemis liturata Selys, 1891. *Ann. Mus. Civ. Genova*, 30: 464.

Conservation Status: IUCN red List: Least Concern (Subramaniam, 2010).

Material Examined: 2 exs., Chhatarpur district, Bundelkhand Division, Madhya Pradesh.

Diagnostic Features: A medium-sized dragonfly. Males and females distinctly different as under:

Sexual Dimorphism:

Male: Face reddish brown changing to reddish above, eyes crimson above and brown on sides; thorax red with a fine purple pruinescence; abdomen having swollen base, crimson with a violet tinge; wings transparent with crimson venation and base with a broad amber patch, wing spots (pterostigma) dark reddish-brown and legs black.

Female: Face olivaceous or bright reddish-brown and eyes purplish-brown above and grey below; thorax olivaceous with brown median and black lateral stripes; abdomen reddish-brown with median and lateral black markings (confluent at end of each segment and enclose a reddish-brown spot); wings transparent with brown tips, venation bright yellow to brown and basal amber markings pale, wing spots (pterostigma) dark brown and legs dark grey with narrow yellow stripes.

Distribution:

Chhatarpur District: New record.

Bundelkhand Division: New record.

Madhya Pradesh: Betul, Chhindwara, Jabalpur, Mandasaur and Ujjain.

India: Assam, Chhatisgarh (Sarguja district), Delhi, Meghalaya, Rajasthan, Sikkim, Uttarakhand, Uttar Pradesh and West Bengal. Up to about 1219.2 (4000 ft).

Elsewhere: China (including Taiwan and Tibet), Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Timor and Viet Nam.

CONCLUSION

Distribution: Chhatarpur District: Six species of dragonflies viz. *Orthetrum pruinosum neglectum*, *Potamarcha congener*, *Diplacodes trivialis*, *Bradinopyga geminata*, *Pantala flavescens* and *Trithemis aurora* are being recorded for the first time from Chhatarpur district of Bundelkhand Division in Madhya Pradesh.

Bundelkhand Division: Four species viz. *O. pruinosum neglectum*, *P. congener*, *D. trivialis* and *T. aurora* are new to this Division of Madhya Pradesh.

Conservation Status: All the six species dealt here are classified as 'Least Concern' under Lower Risk category of IUCN red List of Threatened Species.

Zoogeography: South-Eastward Distribution: *Orthetrum pruinosum neglectum*, *Potamarcha congener* and *Trithemis aurora* are found further east (to Indonesia, Philippines etc.), *Bradinopyga geminata* up to Thailand only.

South-East and Westward Distribution: *Diplacodes trivialis* and *Pantala flavescens* is widely distributed and is found both in south-east (Indonesia, Philippines etc.) and west (Gulf areas) locations.

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