New Record of Dragonfly *Ictinogomphus angulosus* (Selys, 1854) from State Maharashtra, India

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Study Area: Nagpur, India

Coordinates: 21.15°45'75"N, 79.04°25'76"E

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Introduction:

Dragonflies are very conspicuous and brightly colored insects have long, slender abdomen, commonly known as aerial predators, hunting by sight. These are mostly found around the vicinity of freshwater habitats like rivers, streams, marshes, lakes and even small pools and rice fields. As predators it plays an important role in wetland and terrestrial food chains. Dragonflies are reliable indicators of overall ecosystem health, and also good Bio control agents (Andrew *et al.*, 2008; Tiple *et al.*, 2013).

The order Odonata includes both the dragonflies and damselflies, about 5,952 species and subspecies of Odonata belonging to 652 genera are documented world-wide (Schorr & Paulson, 2014). The taxonomy of Indian Odonata is well worked out and described for almost all the reported species (Fraser, 1924; 1933; 1934; 1936; Davis & Tobin, 1984; 1985; Prasad & Varshney, 1995). India harbors 474 species and 50 subspecies belonging to 142 genera in 18 families (Subramanian, 2014).

After Fraser (1924, 1933, 1934, 1936) determining work on odonates of India, number of workers studied odonate fauna of Maharashtra and efforts to add the species list to reach about 130 where from Nagpur city alone 72 species (Mitra 1986; Prasad 1996; Tiple *et al.*, 2008; Babu *et al.*, 2009; Kulkarni *et al.*, 2012; Tiple 2012a, 2012b; Kulkarni & Subramanian 2013; Talmale & Tiple 2013; Tiple *et al.*, 2013; Koparde *et al.*, 2014). This paper adds an additional record of *I. angulosus* from Nagpur city, Maharashtra along with morphometric details.

Area of Occurrence:

During a survey, conducted on 06th October 2013 in the Futala Lake, of Nagpur city, Maharashtra, India, we found a female specimen of *Ictinogomphus angulosus* (Selys, 1854). The green city Nagpur lies on the Deccan plateau of the Indian Peninsula, mean altitude of 310.5 meters above sea level. It has tropical wet and dry climate with dry conditions, an annual rainfall of about 1,205 mm (June to September), temperature rise up to 48.9°C during summers (March-June) and falls up to 10°C to 6.9°C in winter (November-January). Annual relative humidity varies in between 22% to 80%. The area

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of about 18% of Nagpur is under forests and plantations, 17% under cultivation and 2% under water bodies having diversified natural vegetation.

About the Species:

Ictinogomphus angulosus, is reported here for the first time from Maharashtra State. The earlier recorded distribution of it was only restricted from Himachal Pradesh, West Bengal, Madhya Pradesh (Prasad & Varshney, 1995; Suri Babu *et al.*, 1995; Suri Babu & Srivastava, 2001) and Nepal (Dow, 2010).

The morphological characters of the collected specimen matched with that of the male specimen described earlier by Fraser (1934). Except genitalia, in general male and female are morphologically resemble to each other. For confirmation present specimen was compared with the specimen collected from Veerangana Durgawati WLS, Damoh, Madhya Pradesh which is deposited in ZSI, CZRC, Jabalpur (A/13491) (Fig.1 C & D). Minimal variations recorded were: pterostigma lighter or paler than the ZSI specimen and covering $5\frac{1}{2}$ to 6 cells; primary antenodals- the first and seventh or eighth in the fore wing and first and seventh in the hind wing; bases of the wings clouded with dark brown as far as the first antenodal nervure, however not much clouded in the specimen collected from Nagpur.

Fig. 1: *Ictinogomphus angulosus*; (A & B) specimen collected from Nagpur, Maharashtra & (C & D) specimen from Madhya Pradesh in ZSI, CZRC collection (A/13491). Arrow mark shows pale yellowish brown pterostigma as per Fraser (1934).

Conclusion:

With the addition of new records for the State Maharashtra, odonate diversity counts now 131. During last decade, the city Nagpur has expanded twice in its circumference causing considerable loss of natural habitats of Odonata. Urban development is expected to have a deleterious impact on Odonata populations (Tiple & Chandra, 2013). The quality of residual habitats may also be adversely affected by various forms of pollutants. Further, since odonates are indicator species, it is necessary that other than diversity, abundance studies and long-term monitoring needs to be taken up for major water bodies in the city (Tiple *et al.*, 2008 and Tiple & Khurad 2009). Odonata vary in their sensitivity to environmental change, and while some individual species can indicate change; it is recommended that surveys of Odonata diversity, particularly within ecologically important areas of Nagpur, like 'Futala' lake is important aesthetically because, its presence making the urban site beautiful. Therefore, the preventive environmental management aspects for the restoration and conservation of lake are important.

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References:

Andrew R.J., Subramaniam K.A & Tiple A.D. (2008): **A Handbook on Common Odonates of Central India**, Publisher: South Asian Council of Odonatology, Nagpur, India 54pp.

- Babu R., Sinha C. & Prasad M. (2009): New records of Odonata (Anisoptera) from Maharashtra. *Rec. Zool. Surv. India*, 108(4): 113-117.
- Davies D.A.L. & Tobin P. (1984): **The Dragonflies of the world: a systematic list of the extant species of Odonata**. Vol.-1; Zygoptera, Anisoptera. Pub.: Societas Internationalis Odonatologica, Rapid Communications.
- Davies D.A.L. & Tobin P. (1985): **The Dragonflies of the world: a systematic list of the extant species of Odonata**. Vol.-2; Zygoptera, Anisoptera. Pub.: Societas Internationalis Odonatologica, Rapid Communications.
- Dow R.A. (2010): *Ictinogomphus angulosus*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2.
- Fraser F. C. (1924): A Survey of the Odonate (Dragonfly) Fauna of Western India with special remarks on the genera *Macromia* and *Idionyx* and descriptions of thirty new species with appendices I & II. *Records of the Indian Museum*, 26(5): 423-522.
- Fraser F.C. (1933): **The fauna of British India, including Ceylon and Burma, Odonata Vol. I** Publisher: Taylor and Francis Ltd., London, 1-423.
- Fraser F.C. (1934): **The fauna of British India including Ceylon and Burma. Odonata Vol. II**, Publisher: Taylor and Francis Ltd., London, 1-398.
- Fraser F.C. (1936): **The fauna of British India including Ceylon and Burma, Odonata Vol. III**, Publisher: Taylor and Francis Ltd., London, 1-461.
- Koparde P., Mhaske P. & Patwardhan A. (2014): New records of dragonflies and damselflies (Insecta: Odonata) from the Western Ghats of Maharashtra, India. *Journal of Threatened Taxa*, 6(5): 5744-5754
- Kulkarni A.S. & Subramanian K.A. (2013): Habitat and seasonal distribution of Odonata (Insecta) of Mula and Mutha river basins, Maharashtra, India. *Journal of Threatened Taxa*, 5(7): 4084-4095.
- Kulkarni P.P., Babu R., Talmale S. S. Sinha C. & Mondal S. B. (2012): Insecta: Odonata. In: **Fauna of Maharashtra**, State Fauna Series, (Ed. Director, Zoological Survey of India, Kolkata) 20 (Part-2): 397-428.
- Mitra T. R. (1986): Note on the Odonata fauna of Central India. *Rec. Zool. Surv India*, 83:69-81.
- Prasad M. (1996): An account of the Odonata of Maharashtra State, India. *Rec. Zool. Surv. India*, 95 (3-4): 305-327.
- Prasad M. & Varshney R.K. (1995): A check list of the Odonata of India including data on larval studies. *Oriental Ins.*, 29: 385-428.
- Schorr M. & Paulson D. (2014): World Odonata List. www.pugetsound.edu/academics/academicresources/slatermuseum
- Subramanian K.A. (2014): **A Checklist of Odonata** (Insecta) of India (2014:version 2.0). Publisher: Zoological Survey of India, Kolkata, India, 31pp.
- Suri Babu B., Srivastava B. K. & Srivastava, V. K. (1995): Description of last instar larva of *Ictinogomphus angulosus* (Selys) with notes on biology (Anisoptera: Gomphidae). *Fraseria (N.S.)*, 2(1/2): 9-11.
- Suri Babu B. & Srivastava V. K. (2001): Annotations of the dragonfly fauna of Sagar, Madhya Pradesh, Central India (Odonata: Anisoptera). *Opusc. Zool. flumin.*, 193: 1-7.
- Talmale S.S. & Tiple A.D. (2013): New records of damselfly *Lestes thoracicus* Laidlaw, 1920, (Odonata: Zygoptera: Lestidae) from Maharashtra and Madhya Pradesh states, central India. *Journal of Threatened Taxa*, 5(1): 3552-3555.
- Tiple A. (2012a): Dragonflies and Damselflies (Insecta-Odonata) from Nagpur city environs in Vidarbha, together with other records from Maharashtra, India. *Colemania*, 27: 1-12.
- Tiple A. (2012b). Odonata (damselflies and dragonflies) fauna of Tadoba-Andhari National Park and surroundings, Chandrapur, Maharashtra (Central India). *Bionano Frontier*, 5(2-1): 1-4.
- Tiple A.D, Andrew R. J, Subramanian K.A. & Talmale S. S. (2013): Odonata of Vidarbha region, Maharashtra state, Central India. *Odonatologica*, 42(3): 237-245.
- Tiple A.D & Chandra K. (2013): Dragonflies and Damselflies (Insecta, Odonata) of Madhya Pradesh and Chhattisgarh States, India. *Care 4 Nature*, 1(1):2-11.
- Tiple A.D, Khurad A.M. & Andrew R.J. (2008): Species diversity of Odonata in and around Nagpur City, Central India. *Fraseria*, 7: 41-45.
- Tiple A. D & Khurad A.M. (2009): Butterfly Species Diversity, Habitats and Seasonal Distribution in and Around Nagpur City, Central India. *World Journal of Zoology*, 4(3): 153-162.