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A Taxonomical Shortnote On Microgomphus Torquatus (Anisoptera: Odonata) From Pavana River (Pune District, Ms: India)

A. R. Sonawane*, A. N. Shendge, S.S Doshi, R.G. Kudale, V.B. Nale
Post Graduate Department of Zoology, Tuljaram Chaturchand college, Baramati, Pune, Maharashtra, India

ABSTRACT

Microgomphus torquatus (Anisoptera) species belonging to Family: Gomphidae, which is also called as Clubtails. This type of the species commonly identified by their unique eyes, which are well separated and black, brown to yellow colouration. This family derived its name gomphides due to its last abdominal segment which are bulbous, club or dilated downward in shape. As compared to other dragonflies it shows variability in body size. Usually this species shows abdomen about 22-25 mm in length in case of male and 26-27 mm in case of female, Hind wings about 20-22 mm in case of male while 23-24mm in case of the Female. Wings are tinted in colouration with brownish shade and abdomen generally 29- 30 mm in length. They show greenish brown coloration, legs are whitish and also possessing black spines on it. They occur in the habitat from River surroundings with shady vegetations.

Keywords: Microgomphus torquatus, Gomphidae, Clubtails, Pavana River etc.

I. INTRODUCTION

Pseudagrion species are belonging from the family Coenagrionidae, one of the major families which is distributed all over the Planet in which there are 1000 known species of damselflies found worldwide, Coenagrionidae are small and generally held their wings close above the abdomen. The genus Pseudagrion is particularly well developed in Africa with more than 40 species exhibiting much disparity in habitat requirements, appearance and behavior. This genus is also diverse and widespread in Asia with 28 species including, Ceriogrion coromandelianum Fabricius 1798 is common and widespread in most parts of tropical Asia. Depending upon the habitat specificity regarding temperature, atmosphere, changing climate they act as a very good indicator of environment. As they show carnivorous mode of feeding habitat they ultimately act as a bio indicator (Tiple et. al, 2008). Sonawane in (2014) reported the distribution of the Ceriogrion coromandelianum Fabricius, 1798. In which the genus Ceriogrion is particularly well developed in Africa with more than 40 species. Ceriogrion coromandelianum was reported as a common damselfly over Lakes, Ponds and Rivers. As in Ceriogrion coromandelianum species their habitat and also feeding ability noticed similarity in Microgomphus torquatus in this research work. Sonawane and Khandagle (2014) reported a field note on odonates of Ganesh Lake, Akurdi-44 (Pune District, MS: India).

The main objective of the study was measuring the population, diversity and abundance of damselflies throughout year 2013. During this survey water quality also matter for the occurrence of the species specificity. According to Nair (2011) some of the species of the Family: Gomphidae showed mosquitovorous ability in which Microgomphus

torquatus, Dysphaea ethela, Caconeura sp. Onycothemis testacea, Zygonyx eiris had been noticed. Microgomphus torquatus also showed remarkable thing that this species occurs within undisturbed habitats with good water and forest ecosystem (Shady Area). The reported species showed some differences in anal appendages which help in separating genera level classification.

Mostly Gomphides inhabited majoritily aquatic habitat with flowing water like rivers for their breeding purposes, Nair (2011). Out of the 90 species found in peninsular India, (Subramanian, 2005) 9 species reported from the Orissa by Nair in 2011. Sonawane et al., (2013) reported seasonal variation and abundance of damselflies (Zygoptera) at Gupteshwar Lake 18.2509 Latitude (Nº); 74.3345 Longitude (Eº) habitat specifying several species of the odonates preferably. The cannibalism property also reported in this work and the cannibalism by Microgomphus torquatus over Disparoneura quadrimaculata. Andrew et. al., 2008 reported the impact of changing in landscape going on since from last fifty years or so in the peninsular India over odonates.

DISTRIBUTION:

Microgomphus torquatus showed ancient finding from the Western Ghats including the Deccan, Pune and Satara region. This species which showed their occurrence very rare mentioned localities. While Fraser (1934) reported that distribution of this species is very common during rainy season.

PAVANA RIVER

The Pavana River is located at 18.383'' Latitude (Nº) from north side and 73.4510" Longitude (Eº) East-side. Originates in the Western Ghats and is a tributary of Bhima River from opening to the Lonawala city east side. It is located at a distance of 1800 feet ASL. The river Pavana merges with the river Mula in Pune city. The Pavana River is slightly polluted, than the river Mula. It is more polluted than the river Bhima.

SCIENTIFIC CLASSIFICATION

Kingdom: Animalia
Phylum: Arthropoda
Class: Insecta.
Order: Odonata
Suborder: Anisoptera
Family: Gomphidae
Genus: Microgomphus
Species: torquatus

II. METHODS AND MATERIAL

Specimens were collected with the help of Insect collecting Net during morning time; total

32 species were collected in total 3 month survey reports. Specimen were collected individually and kept in butter paper envelop so as to make them to allow for void their excreta. After that they were placed into the vial with 100% Ethanol for permanent preservation it get dehydrated. Morphometrical analysis was done by using thread because the collected specimen got stip and also certain post mortem changes. Wet preservation method used because dry preservation will give more brittleness to the specimen.

DETAILS OF SIGHT

While describing taxonomical shortnote on Microgomphus torquatus from Pavana River at Rawet Bridge, Pune Maharashtra on 25 September 2014 to 10 November 2014, a tandem pair of yellowish -colored dragonfly was spotted at 09:51 a.m. The pair was initially thought to be the common Gomphides species after field guide, morphological characters this species were identified the Clubtail which was commonly, found species. However the yellow colored with black striped marking on head of the male suggested otherwise and on closer investigation, it was recognized to be Microgomphus torquatus. The pair remained in tandem for two minute at submerged aquatic vegetation of water lancet.

III. RESULTS AND DISCUSSION

SPECIMEN DETAILS

The following descriptions are based on the pair captured on 17 August 2014. The male Microgomphus torquatus is generally of a moderate yellow color from the head to the thorax with black strips over it. The eyes are yellowish, being darker above and lighter below with light dark black dot in eyes as they shows compound eyes. The abdomen has continuous yellow rings at every interval throughout the abdomen.

Taxonomical features: The morphological characters observed are –

1. Remarkable black 'Y' marking on thorax region.
2. Wings with tinted brownish in colouration at the base.

A. On Thorax of the Microgomphus torquatus shows yellow and black colour alternating strips which are separated by blackish brown midline of the thorax.

B. Male:

Head: Labium yellow in colour, Labrum is greenish yellow in colour, the base and the front border narrowly black, the basal marking produced as a triangular mark in the middle line; frons bases of mandibles ante and post- clypeus greenish yellow in colouration. Prothorax: yellow and black strip, Thorax: black, marked with yellow. laterally greenish yellow, with black strips which tapers apically. Wings are transparent Hyaline. Pterostigma pale yellow in colouration. Abdomen black, marked with greenish yellow as follows Segment – 1. Segment 2 with a mid dorsal blobbed spot not quite reaching the apical border the sides broadly yellow , including the large , abdomen segment no 3 showed black strip.

Male (♂) anal appendages:

- Superior anal appendages yellowish in colour, with small yellow spot over it and black border beneath.
- Superior anal appendages have a minute distinct spines at apex region.
- Genitalia black, yellow coloured at base & very prominent

C. **Female (♀)**

Females are generally looking like male but dull in colouration but larger with blunt abdomen. There are 3-4 spines on the thorax of the abdomen. Lateral lining of the abdomen showed black demarcation. Abdominal segment no 8th with yellow coloured mark.

Female (♀) anal appendages:

- Anal appendages in male are relatively very small but expandable and yellow in colouraton.
- Conical, pointed

Microgomphus torquatus inhabits slow running water in open, degraded habitats with rich aquatic vegetation as well as rivulets on the lateral side of the river. The habitat is shaded with trees and high grassy vegetation along Pavana River Region. The location was near submerged vegetation and edge of the river side is trapped under the tall trees, which had created a small- undisturbed area around the river region. This habitat was very different from the other shady areas because marshy place also including around one side of the river. Nodal Index is nothing but square from costa to median (Nodus) and nodus to wings spot respectively for every wing individually.

Fig.: 1 Microgomphus torquatus (♂)

Fig: 2 Head of Microgomphus torquatus

Fig: 3 Thorax of Microgomphus torquatus

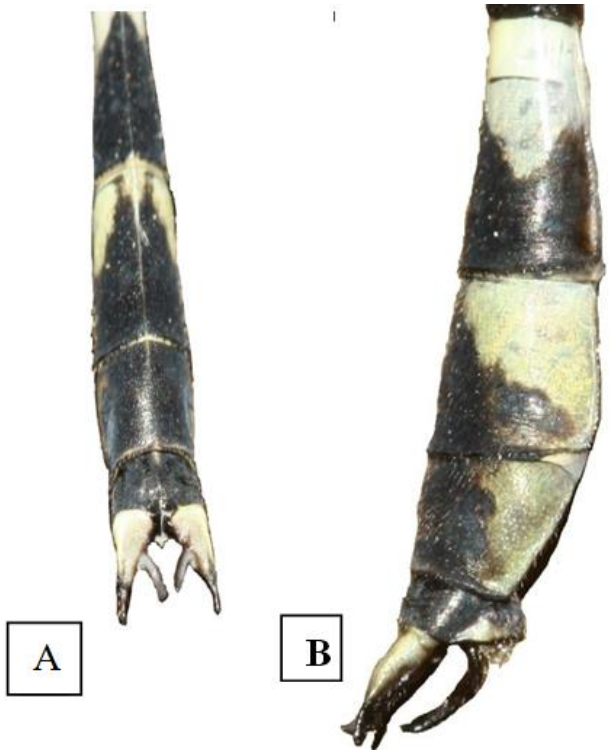

Fig: 3, A: Anal appendages of Microgomphus torquatus (♂) dorsal view & B: anal appendages of Microgomphus torquatus (♂) Lateral side view.

Fig 4: Cannibalism Microgomphus torquatus over Disparoneura quadrimaculata (♀).

No.	Authors	Left Fore wing (mm)	Right Fore wing (mm)	Left hind wing (mm)	Right hind wing (mm)
1	Fraser F.C. 1933	9-12	12-8	9-10	9-8
2	Sonawane A.R. 2014	12-7	12-7	9-11	10-8

(♂)/(♀)	Abdomen Length (mm)	Hindwing (mm)	Wings spot	Eyes
Male(♂)	22-25	20-22	Pale brown	Above: brown above golden combination below.
Female(♀)	26-27	23-24	Pale brown	Light brown

Table: 2, Morphometry of Microgomphus torquatus {(Male (♂) & Female (♀)}

Microgomphus torquatus were reported to be absent around the lakes and ponds. Therefore the distribution of this species is as not usual as seen throughout the state. There are several open ponds in Maharashtra included parks and other forested areas in India but Microgomphus torquatus have been recorded in few part of Maharashtra (Satara, Nagpur). Thus yet unknown inhibiting factors could be restricting the species distribution in India. One reason could be due to ecological niche segregation from the more common and dominant Gomphidae family.

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