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Einfeldia pritiensis, a new species of Chironomidae (Diptera) from Udaipur region (Rajasthan, India)

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Abstract

A new species of genus *Einfeldia* Kieffer, *Einfeldia pritiensis* sp. n. is described and its morphological descriptions and illustrations are given. Length and proportions of leg segments of male are given. Pictures and schematic diagram of wing and hypopygium of male are given. These diagnostic characteristics are important in species determination of Chironomidae.

Keywords: *Einfeldia*, Udaipur, Allopatric speciation, hypopygium, ICZN.

1. Introduction

Chironomidae (Diptera) is a cosmopolitan family. Larval Chironomids are most dominant in freshwater communities (Armitage *et al*, 1995) ^[7]. Larval *Einfeldia* are found in freshwater bodies. Udaipur is a hilly (Aravalli range) area located in western India. Among 11 subfamilies of Chironomidae only four subfamilies viz. Diamesinae, Tanytopodinae, Orthocladiinae and Chironominae are known from Indian region (Chaudhuri *et al*, 2001) ^[1], from which Chironominae is the most dominant and genus *Einfeldia* fall in this subfamily.

2. Materials and methods-Nomenclature of new species was done according to ICZN. Morphological nomenclature follows Saether (1980) ^[3]. Measurements were taken using calibrated micrometer and given in mm and μ m. Slides mounted on DPX and holotype is deposited in the Department of Zoology, Mohanlal Sukhadia University, Udaipur, India. Following abbreviations are used –

BV- Beinvarhalthnisse value [Length of (femur+tibia+ta1)/length of (ta2+ta3+ta4)]

Fe- Femur

HR- Hypopygium ratio (length of gonocoxite/length of gonostylus)

HV- Hypopygium value (total body length/length of gonostylus times ten)

LR- Leg ratio (length of tarsomere1/length of tibia)

SV- Schenkel-Schiene-Verhalthnis value [Length of (femur+tibia)/length of ta1]

Ta- Tarsus

Ti- Tibia

VR- Venarum ratio (length of cubitus (wing vein)/length of media (wing vein))

3. Results and Discussion

Diagnosis- Chironomids are dominant in Udaipur region but no species is yet recorded and identified neither in this region nor in its vicinity. A single Chironomid species recorded is *Chironomus circumdatus* in Jaipur, which is 300 km away from this region (Sharma and Gupta, 2014) ^[4]. So taking the idea of allopatric speciation, this species is considered to be new, which was further verified by its morphological characters. Genus *Einfeldia* was determined using larval characters using work of Epler (2001) ^[5]. And then reared in the laboratory. Adult male emerged in laboratory was diagnosed and considered to be new species based on following descriptions-

Morphological descriptions

Male Imago (n=1)

Total length –4.5mm

Wing length–3.4mm

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Coloration- Head brown, Thorax dark brown, Abdomen tapered and pale brown.

Head- oval with well-developed palpomeres

Thorax- triangular, broader on upper side

Wings- wing membrane transparent, wing scales absent, wing veins clear (Fig. 1)

Legs- 2 claws on each ta5 of each leg. Forelegs, midlegs and hindlegs are with tibial spurs, lengths and proportions are as per table 1.

Hypopygium- HR-0.8, HV-9, inferior volsella clubbed, gonostylus elongated (fig. 2).

Type materials- Holotype: 1 male, India, Rajasthan, Udaipur, Udaisagar lake, 24.577515, 73.825043 (7.VIII.2015), Singh P and Rawal D, Culture method.

Etymology- The species named after its founder, Dr. Preeti Singh using the Latin suffix *ensis*.

Taxonomic notes- This species resembles *Einfeldia synchrona* (Oliver, 1971) ^[6].

Table 1: Length (in μm) and proportions of leg segments of male.

	Fe	Ti	Ta1	Ta2	Ta3	Ta4	Ta5	LR	SV	BV
Foreleg	1600	1280	1700	900	800	640	300	1.328	1.694	1.957
Midleg	1600	1500	700	500	400	280	200	0.466	4.428	3.220
Hindleg	1700	1700	1100	680	600	80	200	0.647	30.90	2.710

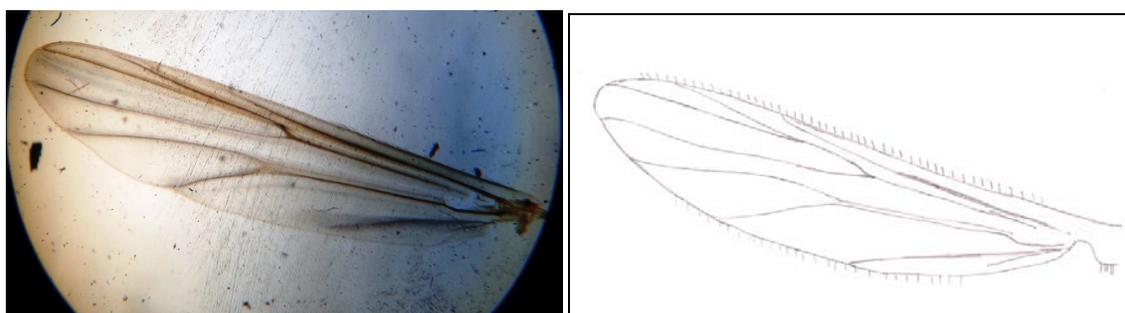


Fig 1: Wing (Male)



Fig 2: Hypopygium (Male)

4. References

1. Chaudhuri PK, Hazra N, Alfred JRB. A checklist of Chironomid midges (Diptera: Chironomidae) of the Indian subcontinent. *Oriental Insects*. 2001; 35:335-372.
2. International Commission on Zoological Nomenclature. *International Code of Zoological Nomenclature*. 4th ed. London, the International Trust of Zoological Nomenclature, 1999, 1-106.
3. Saether OA. Glossary of Chironomid morphology terminology (Diptera: Chironomidae). *Entomologica Scandinavica Supplement* 1980; 14:1-51.
4. Sharma MR, Gupta V. Morphological identification of *Chironomus* larvae in Jaipur district (Rajasthan, India). *International Journal of Scientific Research*. 2014; 3(9):413.
5. Epler JH. *Identification manual for the larval Chironomidae (Diptera) of North and South Carolina*, 1st ed. North Carolina Department of Environment and Natural Resources Division of Water Quality, USA, 2001, 1-526.
6. Oliver DR. Description of *Einfeldia synchrona* n. sp. (Diptera: Chironomidae). *The Canadian Entomologist*. 1971; 103:1591-1595.
7. Armitage PD, Cranston PS, Pinder LCV. *The Chironomidae: Biology and ecology of non-biting midges*. 1st ed. London, Chapman and Hall, 1995, 1-538.