New records of gall midges (Diptera: Cecidomyiidae) from Northern Western Ghats, Maharashtra, India

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Abstract
Gall midges are small, inconspicuous flies, but they may be very important both in forest ecosystems and in agroecosystems. These are most common flies in all the zoogeographic regions. Information about its geographical distribution in India is very limited and many records are restricted to the type locality. The present study reports two species of gall midges i.e., Clinodiplosischampioni (Mani) 1935 and Clinodiplosisindica (Rao) 1953 as new records from Northern Western Ghats of Maharashtra. Previously, these two species have been reported from Southern Western Ghats (Karnataka) and Uttar Pradesh. The known distribution of these species now includes Northern Western Ghats as well.

Keywords: Gall midges, Diptera, Cecidomyiidae, Northern Western Ghats

1. Introduction
Galls or tumours are abnormal growths on plants developing as a result of the nutritional dependence of microbes like viruses or mycoplasma like organisms, bacteria and fungi; animals such as nematodes, insects and mites[1]. Among the gall making insects, Cecidomyiidae are the most common ones in all the zoogeographic regions. Little is known about the geographical distribution of gall midges in India and many records are restricted to the type locality[2].

Presently, the family consists of six subfamilies viz. Catotrichinae (not reported from India), Lestremiinae, Micromyinae, Winnertziiinae, Porricondylinae and Cecidomyiinae. The number of species of all cecidomyiidae in the world at large and India in particular is still unknown and inestimable. Of the 6590 species and 812 genera of living and fossil gall midges known from the world[2], Indian fauna of gall midges is represented by 394 species[3], of which, 32 species of 18 genera under two subfamilies are known from Northern Western Ghats.

During the studies on collections of gall midge present in the Western Regional Centre, Zoological Survey of India, Pune, we found out two species of gall midges (Clinodiplosis championi and C. indica) not reported from Northern Western Ghats.

2. Materials and methods
Gall midge specimens were collected during the field survey of Ahmednagar district, Maharashtra during January 2017. Adult gall midges were collected with a fine alcohol moistened brush at light. The wings get stuck to the brush by a mere touch thus they can be easily transferred into a specimen tube containing 70% alcohol. Then, the material was dehydrated with increasing series of alcohol grades. After dehydration, it was removed to xylene for five minutes. Finally, adults were dissected and mounted on microscope slides in Canada balsam. Identification of midges has been done with the help of literature[4-6]. The specimens are deposited in the National Zoological Collection of WRC, Zoological Survey of India, Entomology Section, Pune, India.

3. Results and Discussion
The present study yielded two species of gall midges (Clinodiplosis indica and C. championi) as new record from Northern Western Ghats. The genus Clinodiplosis is represented by 09 species in India and 107 species in the world[2]. These midges are generally associated with fungi. Some are gall makers and some are inquilines. Earlier, these two species have been reported from Southern part of Western Ghats (Karnataka) and Uttar Pradesh[7-9].
Now it’s known distribution includes Northern Western Ghats as well. 

Clinodiplosis championi (Mani) 1935
Material examined: 2 ♂, collected at light, Near Bhandardara Dam, Akole Tal., Ahmednagar dist. Coll. VD Hegde & Party; Date of Collection 16.01.2017
Distribution: Chakrata (Uatter Pradesh), (Nagarhole National Park) Karnataka and Bhandardara (Maharashtra)

Clinodiplosis indica (Rao) 1953
Material examined: 3 ♂, collected at light, Near Bhandardara Dam, Akole Tal., Ahmednagar dist. Collected by VD Hegde & Party; Date of Collection 18.01.2017
Distribution: Agra (Uatter Pradesh), (Nagarhole National Park) Karnataka and Bhandardara (Maharashtra)

4. Conclusion
The present study reports first record of two species of gall midges from Northern Western Ghats. The record of these two species signifies a contribution towards the knowledge of the geographical distribution of these species. Further explorations will definitely reveal the possible occurrence of these species in the other parts of the country.

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6. References