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Species diversity of family rubiaceae at district Bhopal

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Abstract
The present study was conducted at district Bhopal with the purpose of collecting and recording of different species belonging to family rubiaceae. In the present study 30 field visits were carried out at different places of Bhopal. The field surveys were mostly made during fruiting and fruiting periods which lead to the collection of 15 plants under 11 genera belonging to family rubiaceae. The plants were collected at different sites under investigation, and each part of the species in the form of flower, leaf and fruit were collected in vasculum which were latter taken to plant taxonomy laboratory for their morphological investigation. Of all the plants collected from different sites the plants were distributed as 3 trees, 6 shrubs and 6 were recorded as herbs. The present investigation reports that the area has rich diversity. All the plants have been described with their scientific name, English names and habit.

Keywords: field survey, Bhopal, rubiaceae, diversity

Introduction
Floristic study and diversity assessments are necessary to understand the present diversity status and conservation of biodiversity. Floristic study plays an important role in the economic development country. Floristic study is necessary prequiste for much fundamental research in tropical community ecology. For the conservation and sustainable management of any forest; it requires good knowledge of its biodiversity [1].

The rubiaceae are very large family of 500 genera and 6000 species mostly tropical but some grow in the temperate zone and a few species of *Galium* even occur in the arctic region. In India the family is represented by about 76 genera and 274 species occurring chiefly in the tropical and subtropical Eastern Himalayas ascending up to about 4,600 meters, and mountains of Southern and Western India [2]. Flora of Bhopal has been studied by many workers [4, 6, 7, 8]. Therefore the present investigation was carried at district Bhopal to study taxonomy of family rubiaceae and to record its species growing throughout the study area.

Materials and Methods
In the present study floristic surveys were carried at different places of Bhopal with the sole purpose of collecting and identifying of different species of family rubiaceae growing throughout the study area. For the purpose of collecting of floristic elements about 30 field visits were made to different places during flowering and fruiting periods. All the plants were collected for herbs, shrubs and trees, and each part of the collected species in the form of flower, fruit and leaf were taken to plant taxonomy laboratory for morphological studies, and the identification was done with the help of relevant literature [3, 5, 6, 7, 8]. All the plants have been described with their scientific name, Common name, habit and site of collection. (Table 1).

Results and Discussions
The present study was conducted at district Bhopal with the purpose of collecting and identifying of different species belonging to family rubiaceae. The present study records about 15 plants under 11 genera belonging to family growing throughout the district Bhopal. Of all the collected species plants were distributed as 6 herbs, 6 shrubs and 3 were recorded as trees (fig1.) the present study reveals that the genus, borreria, gardenia, ixora and oldenlandia recorded 2 species each where as rest of the genus dentella, anotis hamelia, hedyotis Hydotis, mussaenda, pentas, and spermadictyon recorded 1 species (fig 2.) The present research study shows that shrubs (6) and herbs (6) were dominant in the study area occupying (1) position followed by trees (3) occupying (2) position in the study area. The appropriate reasons of recording more shrub and herbs diversity in the study could not be ascertained however it may be associated with high regeneration better competence in expoliating the available resources and high ecological amplitude of these species where as the low diversity recorded to other genera may be due to over exploration of these species for folk and medicinal uses however. There could be also many other factors governing the growth and distribution of the plant species in the study area. The present investigating is the first of its kind carried out in such area after reviewing the past literature no such study has been made in this area before.

Conclusion
The present study was conducted at district Bhopal with the sole purpose of collecting and recording of different species

belonging to family rubiaceae. In the present study about 15 plant species under 11 genera belonging to family rubiaceae were recorded from the study area. Of all plants collected from the study area 6 were distributed as herbs 6 shrubs and 3 were distributed as trees. the factors adversely affecting the floristic composition of the study area were construction of roads, buildings, indiscriminate cutting of forests and road side plantation and other anthropogenic activities going on in this area which doesn't only affect the present floristic diversity of the study area but pose a great threat to some species which are rare and endemic in this area therefore some measures must be taken for the purpose of proper investigation, management and protection of the biodiversity of this area before the species inhabiting to this place becomes extinct.

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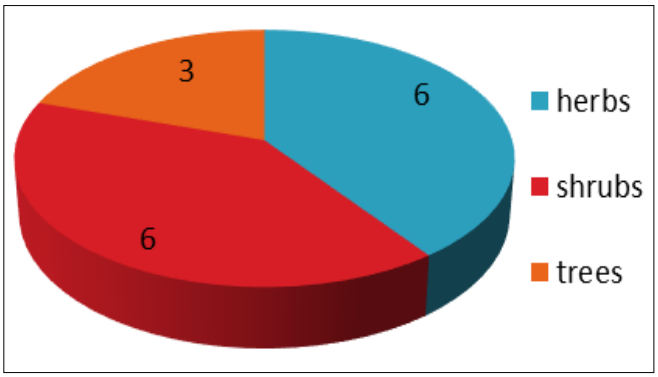

Fig 1: Showing distribution of habit of species.

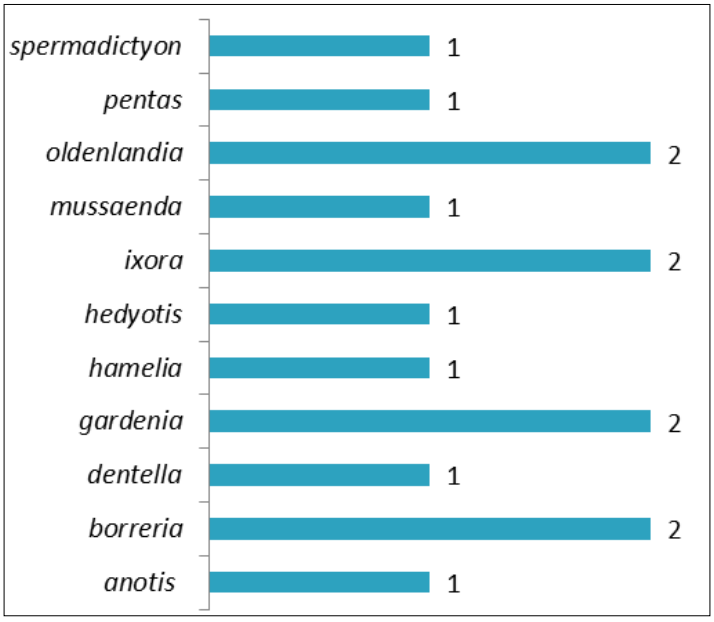

Fig 2: Showing no of genera with their species.

Table 1: Shows scientific name, English name, and site of collection of species.

S. No.	Scientific name	Common name	Habit	Site of collection.
1	*Anotis lancifilia* (Dalz.) Hook	……..	Herb	Civil line area
2	*Borreria articularis* (Linn.f.)	Medanaghanti	Herb	BHEL area
3	*Borrerria stricta* (Linn.f.)	Safeed phooli	Herb	Khanugaoun
4	*Dentella repens* (L.)	Creeping lickstoop	Herb	Shyamla hills
5	*Gardenia latifolia* Ait.Hort.	Papda	Tree	Piplani
6	*Gardenia turgid* Roxb.	Karumba	Tree	Govind pura
7	*Hamelia patens* Jacq.	Hamelia	Shrub	Habiabjanag
8	*Hedyotis aspera* Heyne ex Roth.	Rough diamond	Herb	Barkhedi
9	*Ixora arborea* Roxb.	Kotagandhal	Shrub	Security lines
10	*Ixora coccinea* L.	Vedchi	Shrub	Arera colony
11	*Mussaenda glabrata*(Hook.f.)	White lady	Shrub	Shivagi nagar
12	*Oldenlandia corymbosa* L.	Daman pappar	Herb	Shymala hills
13	*Oldenlandia nudicaulis* Roth.	Blue diamond	Herb	Givind pura
14	*Pentas lanceolata* (Forsk.)	Star flower	Shrub	Piplani
15	*Spermadictyon suaveolens* Roxb.	Ban champa	Shrub	BHEL area

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