

ASCLEPIADACEAE OF MAHARASHTRA

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A B S T R A C T

Family Asclepiadaceae is represented by 250 genera and *ca* 3000 species mainly distributed in tropical and subtropical regions of the world. It is represented by 43 genera and *ca* 243 species in India, of which, 31 genera, 82 species, 2 subspecies and 7 varieties are known from the State of Maharashtra. The family is well known for endemism, most elaborate complicated flower of all the dicots and contrivances for pollination. Most of the members of the family are restricted in distribution and many of them fall under some IUCN categories of rare plants. Many of the species are not available for taxonomic studies due to rarity of plant materials. Similarly fleshy nature of flowers makes it difficult to study floral structure in dried herbarium specimens. During last decade, deliberate attempts were made to collect asclepiads of Maharashtra and study their characters in fresh and prickled liquid preserved materials. During 10 years intensive survey of asclepiads of Maharashtra, about 63 species of the total 82 species reported for the State have been collected, documented, photographed, studied and reported in the present paper. The genus *Ceropegia* alone accounts for 24 species and 2 varieties for the state. Photographs of asclepiad flowers are found to be of paramount value in easy identifications than their descriptions. The paper gives an account of Asclepiads of Maharashtra, their distribution and present field status.

INTRODUCTION

The Asclepiadaceae have the most elaborate, complicated flowers of all the dicotyledons (Endress, 1994). This interesting group of plants has attracted attention of several workers and significant contributions have been made to morphology and taxonomy (Bookman, 1981; Endress, 1994; Leide, 1996; Bruyns, 2000), structure, development and evolution of flower (Endress, 1994), pollinarium and translators (Bruyns, 1985, 2000; Newton, 1984; Harnold, 1985; Leide 1996) and especially on pollination biology (Vander Pijl, 1961; Ramakrishna and Arekal, 1979; Pant and Chaturvedi, 1982; Chaturvedi, 1986, 1987; Barad, 1989; Meve, 1994; Ollerton, 1997). Most of the Asclepiadaceae members are sparsely distributed and restricted in distribution. In India, many of them are found growing in remote places, not easily accessible for collection and studies. The herbarium specimens are of little use in studying flower morphology as the flowers are fleshy and are of little use in dried condition.

In Maharashtra, family Asclepiadaceae (*sensu lato*) are represented by about 82 species (with 2 subspecies and 7 varieties) belonging to 31 genera. About 36 species recorded as endemic Peninsular India occur in Maharashtra (with 21 species endemic to Maharashtra state only). The present account of Asclepiads of Maharashtra is based on actual collection of plant materials and studies on prickled plant materials. Many of them are rare and fall under some IUCN category of rare plants. An account of Asclepiads of Maharashtra is presented in Table-I.

Table I: An account of Asclepiads (Asclepiadaceae & Periplocaceae) of Maharashtra and their distribution:

Sl. No.	Name of Plant	Distribution	Present Field Status	Remarks
ASCLEPIADACEAE				
1.	<i>Asclepias curassavica</i> L.	Throughout Maharashtra.	Common.	Weed naturalized in wet places.
2.	<i>Bidaria cuspidata</i> (Thunb.) Huber	Kolhapur-Burki, Gajapur, Manoli. Bhandara.	Rare.	Frequent at high altitudes in evergreen and semi evergreen forests.
3.	<i>Bidaria khandalense</i> (Sant.) Jagtap & Singh	Poona-Khandala. Kolhapur-Panhala.	Endemic to Maharashtra, Endangered. Included in "Red-Data Book".	So far was known only from type locality. Recently it has been collected from Panhala fort.
4.	<i>Bidaria montana</i> (Roxb.) Rahman & Wilcock	Poona, Satara.	Endemic to south India.. Rare.	So far not collected by authors.
5.	<i>Bidaria tingens</i> (Roxb.) Decne.	Nanded.	Rare.	So far not collected by authors.
6.	<i>Brachystelma edulis</i> Coll. & Helmsl.	Kolhapur-Babu Jamal hills, Kagal.	Rare.	Grows on rocky hill slopes in drier parts of the State between 74° to 75° latitude.
7.	<i>Brachystelma malwanensis</i> Yadav & N.P. Singh	Sindhudurg- Malwan.	Endemic to Maharashtra, Endangered.	It grows in crevices of lateritic plateaus of Konkan, has tuberous root, which is edible. Very sparsely distributed in the area.

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8.	<i>Brachystelma naorojii</i> Tetali <i>et al.</i>	Satara.	Endemic to Maharashtra, Rare.	A new species described recently.
9.	<i>Calotropis gigantea</i> (L.) R.Br. in Ait.f.	Throughout Maharashtra.	Common.	Frequent on hill slopes, wastelands, and cultivated fields.
10.	<i>Calotropis procera</i> (Ait.) R.Br.	Throughout Maharashtra.	Common.	Frequent on wastelands along roadsides.
11.	<i>Caralluma adscendens</i> (Roxb.) R.Br. var. <i>adscendens</i>	In eastern drier regions of the State.	Rare.	So far not collected by authors.
12.	<i>Caralluma adscendens</i> var. <i>attenuata</i> (Wight) Grav. & Mayur.	Ahmednagar, Aurangabad, Beed, Jalna, Latur, Nanded Osmanabad, Parbhani, Poona.	Common.	So far not collected by authors.
13.	<i>Caralluma adscendens</i> var. <i>fimbriata</i> (Wall.) Grav. & Mayur.	Satara-Khindwadi, Poona, Buldhana-Lonar lake Nasik-Nayaydongri, Shinde-wadikuran (Melghat range) Kolhapur-Babu Jamal, Bahubali.	Rare.	Rare in hill slopes, under the bushes, young stems used as vegetable.
14.	<i>Caralluma crenulata</i> Wall.	In drier regions of the State.	Not Common.	So far not collected by authors.
15.	<i>Caralluma edulis</i> (Edgew.) Benth.	In drier regions of the State.	Not Common.	So far not collected by authors.
16.	<i>Ceropegia anantii</i> Yadav <i>et al.</i> Sindhudurg -Salva	So far known only from Type locality- Rare. Dongar.	Endemic to Maharashtra.	Recently collected new species (in Press).
17.	<i>Ceropegia attenuata</i> Hook.	Kolhapur- Katyayani, Mumbai, Poona, Raigad Ratnagiri, Sindhudurg Amboli. Thane.	Endemic to Peninsular India, Rare. Included in "Red-Data Book".	Found throughout Konkan region, grows in crevices of lateritic rocks around and below bushes.

Sr. Name of Plant No.	Distribution	Present Field Status	Remarks.
18. <i>Ceropegia bulbosa</i> Roxb. var. <i>bulbosa</i>	Akola, Aurangabad, Mumbai, Nanded, Kolhapur-Appachiwadi, Babu Jamal, Bahubali, Kagal, Katyayani, Ramling, Panhala, Poona, Raigad, Satara-Kas Kartikswami, Khatav, Saikade. Thane.	Fairly common.	Frequent, in bushes on hill slopes.
19. <i>Ceropegia bulbosa</i> Roxb. var. <i>lushii</i> (Grah.) Hook.f.	Aurangabad, Kolhapur- Babu Jamal, Bahubali, Kagal, Ramling, Poona, Satara-Kas, Kartikswami Pusegaon, Karad, Thane.	Rare.	Usually grows in association with <i>Ceropegia bulbosa</i> Roxb. var. <i>bulbosa</i>
20. <i>Ceropegia candelabrum</i> L.	Konkan, Poona	Rare	So far not collected by authors.
21. <i>Ceropegia evansii</i> McCann.	Poona- Khandala, Lonavla and neighboring Sakarapathar and Ambavane range, Ratnagiri-Ambaghat. Kolhapur-Amba, Patgaon, Tambyachiwadi.	Endemic to Maharashtra, Critically Endangered. Included in "Red-Data Book".	Commonly grows in <i>Carvia callosa</i> thickets.
22. <i>Ceropegia fantastica</i> Sedgwick	Kolhapur-Gavase. Sindhudurg- Amboli.	Endemic to Peninsular India, Endangered. Included in "Red-Data Book".	It grows along forest borders.
23. <i>Ceropegia hirsuta</i> Wight & Arn.	Akola, Aurangabad, Kolhapur- Appachiwadi, Babu Jamal, Bahubali, Kagal, Katyayani, Panhala, Ramling, Mumbai,	Vulnerable.	Frequent on hill slopes, in grasslands. Tubers eaten by cow-boys.

Sl. No.	Name of Plant	Distribution	Present Field Status	Remarks
		Nanded, Nasik, Poona, Ratnagiri, Satara- Khindwadi, Kartikswami, Saikade, Surli ghat, Pusegaon, Yavateshwar.		
24.	<i>Ceropegia huberi</i> Ansari	Kolhapur-Amba, Burki, Gaganbavda, Gajapur, Ratnagiri- Ambaghat, Satara- Vasota fort.	Endemic to Maharashtra, critically endangered. Included in "Red-Data Book".	Restricted to higher peaks of Sahyadris in Kolhapur district, flowers curious.
25.	<i>Ceropegia jainii</i> Ansari & Kulkarni	Kolhapur- Pokhale, Sindhudurg- Amboli, Satara- Chalkewadi, Kas plateau.	Endemic to Maharashtra, critically endangered. Included in "Red-Data Book".	Grows on plateaus of highest altitudes, rarely shows fruit bearing and formation of seeds; tubers edible.
26.	<i>Ceropegia juncea</i> Roxb.	Satara- Saikade, Manewadi.	Endemic to Peninsular India, Rare.	Succulent herb with reduced scaly leaves. stem photosynthetic, show CAM, grows in drier parts.
27.	<i>Ceropegia lawii</i> Hook.f.	Ahmednagar- Harischandragarh, Kolhapur- Gaganbavada, Poona- Sinhagad, Purandhar, Radha- nagari, Satara Mahableshtar.	Endemic to Maharashtra, Endangered. Included in "Red-Data Book".	Erect species, which grows in crevices of lateritic rocks at higher altitudes in open situations.
28.	<i>Ceropegia mccannii</i> Ansari	Ahmednagar, Poona- Sinhagad hill, Purandhar.	Endemic to Maharashtra, Critically endangered. Included in	Erect, tuberiferous herb, growing on hill tops and steep slopes in grasslands; known only from type

Sl. No.	Name of Plant	Distribution	Present Field Status	Remarks
29.	<i>Ceropegia mahabalei</i> Hemadri & Ansari	Poona -Ralegaon hill and Bhivade khurd hill near Junnar.	“Red-Data Book”. Endemic to Maharashtra, Critically endangered. Included in “Red-Data Book”.	locality. Erect species with longest flowers among Indian species of <i>Ceropegias</i> .
30.	<i>Ceropegia media</i> (Huber) Ansari	Poona- Sinhagad hill, Ralegaon hills. Purandhar, Khandala Bhimashankar Rajgad- Raireshwar Satara- Panchagani, Mahabaleshwar, Kas plateau, Kumbharli ghat, Ahmednagar- Kalsubai hill.	Endemic to Maharashtra, Critically Endangered. Included in “Red-Data Book”.	Grows along forest borders of higher elevations of Sahyadris, endemic to Maharashtra. Tubers edible and stem has power to regenerate and form new plants from stem cuttings.
31.	<i>Ceropegia noorjahaniae</i> Ansari	Satara- Wai-Panchagani ghat, Jarandeshwar hill, Yavateshwar, Pateshwar, Kartikswami, Munavale, Rethare.	Endemic to Maharashtra, Critically endangered. Included in “Red-Data Book”.	Grows in grasslands on slopes of hills in eastern part of Sahyadris, has curious flowers and edible tubers.
32.	<i>Ceropegia oculata</i> Hook.	Ahmednagar, Amaravati, Mumbai, Kolhapur- Dajipur, Barki, Gaganbavada, Panhala, Radhanagari, Poona, Raigad, Ratnagiri, Satara- Yavateshwar, Sindhudurg-Amboli, Ramghat, Malwan.	Endemic to Peninsular India, Endangered. Included in “Red-Data Book”.	curiously variegated flowers of great ornamental value. Tubers edible and eaten by cowboys.
33.	<i>Ceropegia odorata</i> Nimmo ex Hook. f.	Amaravati-Melghat, Mumbai.	Endemic to Peninsular India, Criti-	So far not collected by authors. Probably extinct?

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			cally Endangered. Included in "Red-Data Book".	
34.	<i>Ceropegia panchganiensis</i> Blatter & McCann	Satara- Mahabaleshwar hills, Kate's point	Endemic to Maharashtra, Critically endangered. Included in "Red-Data Book".	Erect species restricted to its type locality. Recently collected from Harischandragad Dist. Ahmadnagar.
35.	<i>Ceropegia pusilla</i> Wight & Arn.	Sindhudurg- Amboli- Mose Plateau	Endemic to Peninsular India, Endangered.	So far not collected by authors.
36.	<i>Ceropegia rollae</i> Hemadri	Ahmednagar- Haris- chandragarh. Poona- Malshej ghat, Durga khilla and Dhaka khilla near Junnar.	Endemic to Maharashtra, Critically endangered. Included in "Red-Data Book".	Erect species growing on tops of forts.
37.	<i>Ceropegia sahyadrica</i> Ansari & Kulkarni	Kolhapur- Gaganba- wada, Poona- Lonavala, Nashik- Anjaneri hill, Ratnagiri- Gothani village. Satara- Rede ghat, Vasota. Sindhu- durg- Ambolighat.	Endemic to Maharashtra, Endangered. Included in "Red-Data Book".	An erect, robust species, grows on inaccessible steep slopes of Sahyadris in ghat regions.
38.	<i>Ceropegia santapau</i> Wadhwa & Ansari	Satara- Mahad ghat, Kumbharli ghat.	Endemic to Maharashtra, Critically endangered. Included in "Red-Data Book".	Slender twiner with small white flowers.
39.	<i>Ceropegia vincaefolia</i> Hook.	Kolhapur- Kondoshi, Patgaon, Kulaba	Endemic to Maharashtra,	Climbing species, grows along forest

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		Canheri caves, Mumbai, Poona- Sinhagad, Raigad- Karjat, Neral. Satara- Chalkewadi, Kas plateau, Kumbharli ghat, Mahabaleswar, Vasota. Thane- Takmak hill, Mumbra hill.	vulnerable. Included in "Red-Data Book".	borders of higher altitudes, has curiously formed flowers of great ornamental value.
40.	<i>Ceropegia</i> species	Sindhudurg- Kochara.	Seems to be undescribed species.	Grows on lateritic plateaus in vicinity of seashores.
41.	<i>Cosmostigma racemosum</i> (Roxb.) Wight	Kolhapur- Amba, Dajipur, Chikkewadi, Mumbai, Poona, Raigad, Satara- Vasota Sindhudurg- Otavane. Thane.	Fairly common.	Throughout state in semi evergreen forests.
42.	<i>Cynanchum callialatum</i> Buch.-Ham. ex Wight	Ahmednagar, Kolhapur- Anuskura, Ghungur, Mangewadi. Poona, Satara-Kas, Thoseghar, Karad. Sindhudurg- Amboli, Charatha, Thane.	Fairly common.	Occasional among bushes.
43.	<i>Cynanchum tunicatum</i> (Retz.) Alston	Konkan, Poona	Not common.	So far not collected by authors.
44.	<i>Frerea indica</i> Dalz.	Ahmednagar, Poona- Avre, Shivaneri, (Junnar), Vazirgarh, Raigad, Satara- Sajjangad, Kates point (Mahabaleswar), Raigad- Shivatharghal (Mahad).	Endemic to Maharashtra, Critically endangered. Included in "Red-Data Book".	Monotypic, growing in rock crevices, ornamental succulent. It has beautiful red variegated flowers of great ornamental value. It can be easily propagated by cuttings. Already it has found place in Home gardens

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				as succulent. It has C3 leaves and stem shows CAM. Recently collected from Nasik Trumbakeshwar.
45.	<i>Genianthus laurifolius</i> (Roxb.) Hook. f.	Kolhapur- Dajipur, Tillarinagar, Mumbai, Sindhudurg-Amboli, Bhedsi Ramghat.	Rare.	Grows in semi evergreen forests.
46.	<i>Gomphocarpus physocarpus</i> E. Meyer	Kolhapur- Ganganagar.	Cultivated.	Grown in garden.
47.	<i>Gymnema sylvestre</i> (Retz.) Schult.	Ahmednagar, Beed, Chandrapur, Kolhapur- Babu Jamal, Bahubali, Shelap, Mumbai, Nanded, Osmanabad, Poona, Raigad, Satara Kas, Tambi Sindhudurg Amboli, Bhedsi, Nangartas, Solapur, Thane.	Common.	It is found throughout the State. Leaves eaten by diabetic patients.
48.	<i>Heterostemma alatum</i> Wight	In semi evergreen and moist deciduous forests of the State.	Rare.	So far not collected by authors.
49.	<i>Heterostemma dalzellii</i> Hook. f.	Mumbai, Osmanabad, Poona, Raigad, Satara, Ratnagiri Pavas, Solapur- Barshi.	Rare.	Grows in undergrowth of forests.
50.	<i>Heterostemma deccanense</i> (Talbot) Swarup. & Mangaly	Nasik-Deodongar, Deoli temple area. Poona Junnar hills, Thane.	Endemic to Peninsular India, Critically Endangered. Included in "Red-Data Book".	Climber, grows in open scrubby forests in drier parts of state.
51.	<i>Heterostemma disciflorum</i> (Hook. f.) Swarup. & Mangaly	Satara -Kartikswami hills, Kolhapur- Tambyachiwadi,	Endemic to Peninsular India,	Grows in bushes of dry forests of hills.

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		Sindhudurg-Ajgaon.	Endangered. Rare.	
52.	<i>Heterostemma tanjorensis</i> Wight & Arn.	In some regions of the state.	Rare.	So far not collected by authors.
53.	<i>Heterostemma urceolatum</i> Dalz.	Kolhapur Tillari ghat, Poona, Raigad, Satara - Kusavade, Kartikswami-hills. Thane.	Endemic to Peninsular India, Endangered.	Grows in bushes of dry forest.
54.	<i>Holostemma annulare</i> (Roxb.) K. Schum.	Aurangabad, Beed, Chandrapur, Dhule, Mumbai, Nanded, Nasik- Igatpuri, Kolhapur- Amba (Kalakdara), Osmana- bad, Parbhani, Poona, Raigad, Satara Khindawadi, Nitral, Sindhudurg- Aronda, Ambegaon, Banda- Satarda, Otavane, Thane.	Fairly Common.	Twining shrubs. Found throughout the State.
55.	<i>Hoya alexicaca</i> (Jacq.) Moon	Ahmednagar, Kolha- pur Amba, Patgaon, Suleran, Raigad, Sindhudurg- Amboli Ambegaon, Danoli Davsum.	Rare.	Frequent on high altitudes, hanging from trees
56.	<i>Hoya carnosus</i> R.Br.	Mumbai.	Cultivated.	A native of Queensland, grown in gardens.
57.	<i>Hoya griffithii</i> Hook. f.	Mumbai.	Cultivated.	A native of Khasia mountains, grown in gardens.
58.	<i>Hoya retusa</i> Dalz.	Mumbai.	Endemic to Peninsular India. Rare.	So far not collected by authors.
59.	<i>Hoya wightii</i> Hook. f.	Kolhapur-Chandgad, Tillari. Poona, Raigad.	Endemic to Peninsular	Occasional, growing on tree-trunks and on

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		Satara -MetIndvai, Kasapur. Sindhudurg- Bhedsi, Ramghat, Thane.	India, Fairly Common.	rocks in hilly semi evergreen forests.
60.	<i>Leptadenia pyrotechnica</i> (Forssk.) Decne.	Kolhapur.	Rare.	So far not collected by authors.
61.	<i>Leptadenia reticulata</i> (Retz.) Wight & Arn.	Buldhana-Sangrampur, near Jalgoan, Jamod, Kolhapur, Sindhudurg- Charatha, Poona, Satara-Mahabaleshwar.	Common.	Generally growing in association with <i>Pergularia daemia</i> (Forssk.) Chiov. and with only one follicle, though almost all species of Asclepiadaceae bear follicles in pairs.
62.	<i>Marsdenia tenacissima</i> (Roxb.) Moon	Dhule, Poona.	Rare.	A climber in open scrubby forests.
63.	<i>Oxystelma esculentum</i> (L.f.) R. Br.	Ahmednagar, Auranga- bad, Beed, Chandrapur, Dhule, Kolhapur Ghotawade, Shirgaon, Mumbai, Nanded, Nasik- Igatpuri Osmanabad, Parbhani, Poona, Raigad, Satara- Umber, Sindh- durg- Aronda, Thane.	Rare.	Grows in marshy places.
64.	<i>Pentatropis capensis</i> (L.f.) Bullock	Kolhapur-Sangawade, Mumbai, Poona, Satara, Thane.	Rare.	Grows on Bunds of fields.
65.	<i>Pentatropis nivalis</i> (J.F. Gmel.) Field & Wood	Ahmednagar, Aurangaba Beed, Jalna, Mumbai, Thane.	Common.	So far not collected by authors.
66.	<i>Pergularia daemia</i> (Forssk.) Chiov.	Satara-Maha- baleshwar, Mahadare, Kamathi, Kas, Pirachiwadi Buldhana- near Jalgoan Jamod.	Common.	Found throughout the State.

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67.	<i>Sarcostemma intermedium</i> Decne.	Kolhapur-Bidri, Kagal, Murgud. Satara-Khambatki ghat, Pasarni ghat, Poona- Khandala ghat.	Endemic to Peninsular India, Rare.	Common in xeric hill slopes and rocky places.
68.	<i>Sarcostemma viminale</i> (L.) R. Br. ssp. <i>viminale</i>	Ahmednagar, Aurangabad, Beed, Dhule Kolhapur- Babu Jamal Hills. Mumbai, Poona, Satara Khambatki ghat, Mahabale- shwar, Tapola.	Rare.	Grows in rocky soils.
69.	<i>Sarcostemma viminale</i> (L.) R. Br. ssp. <i>stocksii</i> (Hook. f.) Ali	Deccan, Poona.	Rare.	So far not collected by authors.
70.	<i>Seshagiria sahyadrica</i> Ansari & Hemadri	Kolhapur-Tillari Ghat, Panhala fort Bhudar- gad, Patgaon Poona, Satara- Yawateshwar, Sindhudurg-Amboli.	Endemic to Maharashtra, Endangered, Rare. Included in 'Red-Data Book'.	Recently described monotypic genus, so far known only from Maharashtra.
71.	<i>Stapelia grandiflora</i> Masson	Kolhapur-Ichalkaranj, Mumbai, Poona.	Cultivated.	Native of S. Africa, grown in gardens.
72.	<i>Stephanotis floribunda</i> Brong.	Mumbai.	Cultivated.	A native of Madagascar, occasionally grown in gardens.
73.	<i>Telosma cordata</i> (Burm.f.) Merr.	Mumbai.	Cultivated.	A native of Himalaya, cultivated in some gardens.
74.	<i>Telosma pallida</i> (Roxb.) Craib	Akola, Mumbai, Nasik, Osmanabad.	Not Common.	So far not collected by authors.
75.	<i>Toxocarpus kleinii</i> Wight & Arn.	Kolhapur- Dajipur, Mumbai, Sindhudurg- Amboli.	Rare.	Climbing shrubs.
76.	<i>Tylophora dalzielii</i> Hook. f.	Ahmednagar, Kolha-	Endemic to	Found throughout the

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		pur Ajra, Gavase, Parle, Mumbai, Nasik-Ambewadi (Igatpuri range), Anjaneri hill, Daityacha dongar, Hatgad Kasara, Kiratmal, Saptashringi hill, Trimbak. Poona, Raigad, Ratnagiri, Satara- Vasota, Dicholi, Pali. Sindhudurg-Amboli. Karivada, Insuli, Mordongri. Thane.	Peninsular India, Common.	State in semi evergreen, moist and dry deciduous forests.
77.	<i>Tylophora fasciculata</i> Buch.-Ham. ex Wight	Akola, Aurangabad, Chandrapur, Mumbai, Nanded, Poona, Satara-Mahabaleshwar, Sindhudurg- Malwan, Deogad. Thane, Yavatmal.	Rare.	Grows on lateritic plateaus.
78.	<i>Tylophora indica</i> (Burm. f.) Merr.	Buldhana- Sonala, near Shimba river. Kolhapur-Palasabe, Radhanagari. Latur, Mumbai, Nanded, Nasik, Osmanabad, Poona, Ratnagiri, Satara-Kargaon. Sindhudurg-Charatha, Otavane, Bhedsi, Banda, Karivada, Thane.	Common.	Grows along streams in forest areas.
79.	<i>Tylophora rotundifolia</i> Buch.-Ham	Aurangabad, Kolhapur Tarewadi (Nesari). Nanded, Sindhudurg-Banda, Satrda.	Endemic to Peninsular India, Rare.	Grows in dry regions on hill slopes.
80.	<i>Tylophora tetrapetala</i> (Dennst.) Suresh	Mumbai, Sindhudurg-Aronda (Savantawadi).	Rare.	So far not collected by authors.

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81.	<i>Wattakaka lanceolata</i> (Cooke) Jagtap & Singh	Ahmednagar, Aurangabad, Beed, Jalna, Kolhapur, Nanded, Poona, Satara-Maha- baleshwar.	Endemic to Maharashtra, Rare.	So far not collected by authors.
82.	<i>Wattakaka volubilis</i> (L.f.) Stapf	Satara-Kasani, Falni, Baposhi, Lingmala, Maha- baleshwar, Panchagani, Nauja. Buldhana-Lonar lake Nasik-Sawarna Kumbhala, Tondwal (Peint range) Kolhapur-Kagal, Tamadalage. Sindhudurg-Charatha	Common.	Grows on bushes throughout the State.

PERIPLOCACEAE

83.	<i>Cryptolepis buchanani</i> R. Br. ex Roem. & Schult.	Throughout Maharashtra.	Common.	Climbing shrubs.
84.	<i>Cryptostegia grandiflora</i> (Roxb.) R.Br.	Throughout Maharashtra.	Common.	Suberect or climbing shrubs.
85.	<i>Cryptostegia madagas- cariensis</i> Boj.	Mumbai.	Cultivated.	A native of Madagascar, occasionally cultivated in gardens.
86.	<i>Hemidesmus indicus</i> (L.) Ait. var. <i>indicus</i>	Throughout Maharashtra.	Common.	Grows on bushes in forests and around fields.
87.	<i>Hemidesmus indicus</i> (L.) Ait. var. <i>pubescens</i> (Wight & Arn.) Hook. f.	Aurangabad, Beed, Jalna, Latur, Nanded, Osmanabad, Parbhani.	Common.	Grows on bushes in forests and around fields.

DISCUSSIONS

Of the total 87 species reported for Maharashtra, 36 species are endemic to Peninsular India. Genus *Ceropegia* alone accounts for 24 species (including 2 new species and two varieties) of which 21 species are reported to be endemic to Peninsular India. Most of the endemic species of *Ceropegia* are included in "Red Data Book of Indian Plants" (Nayar & Sastry, 1987-89). Some of the *Ceropegia* species, viz. *C. ananthii*, *C. fantastica*, *C. huberi*, *C. jainii*, *C. maccannii*, *C. mahabalei*, *C. noorjahaniae*, *C. panchaganiensis*, *C. rollae*, and *C. santapau* are restricted to very small areas and are critically endangered. In spite of serious field survey, *C. odorata* could not be located in last two decade and there is possibility of its extinction (?).

Two monotypic genera viz., *Frerea indica* and *Seshagiria sahyadrica* are reported to be endemic to the state and are sparsely distributed. *Frerea indica* is considered to be one of the critically endangered species and, therefore, attempts have been made to study populations variations, propagation and multiplication of the species (Tetali *et al.*, 1997).

Genus *Heterostemma* is represented by 6 species in Maharashtra. All of them are of very rare occurrence and need thorough investigations. *Bidaria khandalense* has been collected after about 4 decades from locality other than type locality. *Brachystelma malwanensis* and *B. naorojii* are also sparsely distributed and are of rare occurrence.

Field studies indicate that there is need for special concentrated efforts for conservation of Asclepiads of Maharashtra.

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