SUPPLEMENT TO THE FLORA OF MADHYA PRADESH
FLORA OF INDIA
Series - 2

SUPPLEMENT TO THE FLORA OF MADHYA PRADESH

K.K. Khanna
Anand Kumar
R.D. Dixit
N.P. Singh

BOTANICAL SURVEY OF INDIA
## CONTENTS

<table>
<thead>
<tr>
<th>Order</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>SYSTEMATIC ACCOUNT</strong></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Ranunculaceae</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Berberidaceae</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Papaveraceae</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Brassicaceae</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Capparaceae</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Violaceae</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Flacourtiaeae</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Polygalaecae</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Caryophyllaceae</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Portulacaceae</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Tamaricaceae</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Elatinaceae</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Malvaceae</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Bombacaceae</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Sterculiaeae</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Tiliaceae</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Elaeocarpaceae</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>Malpighiaceae</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Zygophyllaceae</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Tropaeolaceae</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Oxalidaceae</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Balsaminaceae</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Rutaceae</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Burseraceae</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>Meliaceae</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Erythropolaceae</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Rhamnaceae</td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Vitaceae</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Leeaceae</td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>Sapindaceae</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Anacardiaceae</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Fabaceae</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Caesalpiniaceae</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Mimosaceae</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>Family</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Rosaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saxifragaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crassulaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haloragidaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myrtaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecythidaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melastomataceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lythraceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucurbitaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cactaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aizoaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molluginaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apiaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araliaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubiaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asteraceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stylidiaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campanulaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sphenocleaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primulaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepiadaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boraginaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convolvulaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orobanchaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gesneriaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbenaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamiaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nyctaginaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amaranthaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Podostemaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loranthaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Euphorbiaceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moraceae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salicaceae</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES ... ... 163

INDEX

1. Botanical Names ... ... 165
2. Common Names ... ... 181
<table>
<thead>
<tr>
<th>No.</th>
<th>Plant Name</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cleome scaposa DC.</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Thespesia lampas (Cav.) Dalz. &amp; Gibs. var. longisepala Borss.</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>3.</td>
<td>Sterculia toetida L.</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>4.</td>
<td>Cissus adnata Roxb.</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>5.</td>
<td>Alhagi maurorum Medik.</td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>6.</td>
<td>Crotalaria filipes Benth.</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>7.</td>
<td>Flemingia stricta Roxb. subsp. pteropus (Baker) K.K. Khanna &amp; Anand Kumar</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>8.</td>
<td>Lathyrus sphaericus Retz.</td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>9.</td>
<td>Stylosanthes fruticosas (Retz.) Mohlenbr.</td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>10.</td>
<td>Taverniera cuneifolia (Roth) Arn.</td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>11.</td>
<td>Albizia chinensis (Osb.) Merr.</td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>12.</td>
<td>Potentilla sundaica (Blume) Kuntze</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>13.</td>
<td>Corallocarpus epigaeus (Rottl. &amp; Willd.) Hook. f.</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>14.</td>
<td>Peucedanum dhana Buch.-Ham. var. dalzellii C.B. Clarke</td>
<td></td>
<td>106</td>
</tr>
<tr>
<td>15.</td>
<td>Schefflera stellata (Gaertn.) Harms</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>16.</td>
<td>Gardenia jasminoides J. Ellis</td>
<td></td>
<td>112</td>
</tr>
<tr>
<td>17.</td>
<td>Hymenodictyon obovatum Wallich</td>
<td></td>
<td>114</td>
</tr>
<tr>
<td>18.</td>
<td>Wendlandia thyrsioides (Schult.) Steud.</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>19.</td>
<td>Cichorium intybus L.</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>20.</td>
<td>Cotula anthemoides L.</td>
<td></td>
<td>127</td>
</tr>
<tr>
<td>21.</td>
<td>Eclipta prostrata (L.) L. var. dixitii Anand Kumar &amp; Khanna</td>
<td></td>
<td>129</td>
</tr>
<tr>
<td>22.</td>
<td>Hypochoeris glabra L.</td>
<td></td>
<td>136</td>
</tr>
<tr>
<td>23.</td>
<td>Trichodesma indicum (L.) R. Br. ex Lehm. var. betulense K.K. Khanna &amp; Anand Kumar</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>24.</td>
<td>Homonoia retusa (Grah. ex Wight) Muell.-Arg.</td>
<td></td>
<td>161</td>
</tr>
</tbody>
</table>
INTRODUCTION

The state of Madhya Pradesh* which forms the central region of the country came into existence in the year 1956 after state reorganisation. It has an area of about 4,63,452 sq km and is a naturalist's paradise with about 31.5% of area covered with forests particularly of tropical forests of teak, sal, mixed and montane subtropical forests harbouring a variety of wild animals. Although the botanical explorations in the state have been undertaken by a number of earlier workers like Jacquemont, Vicary, Edgeworth, Griffith, Hole, Brandis, Jerdon, Hobson, Kuntze, Barclay, Clarke, Wood, Morris, Duthie, Cardon, Hope, Watt, Haines, etc., most of the districts of the state remained partially unexplored for a long time. However, after the establishment of the Central Circle, Botanical Survey of India at Allahabad in 1962 exploration of various districts of Madhya Pradesh got the required momentum. Besides, botanists from some other scientific institutions and universities also took tremendous interest in exploring certain regions of the state, which has resulted in the publication of various accounts of the floristics of different areas as well as some district floras.

Subsequently, Botanical Survey of India, Central Circle was assigned the task of bringing out the comprehensive Flora of Madhya Pradesh within certain time limit. It has resulted in the publication of Flora of Madhya Pradesh Volume I (eds. Verma, Balakrishnan and Dixit) in the year 1993 which deals with the Pteridophytes and Angiosperms (Ranunculaceae to Plumbaginaceae) and Flora of Madhya Pradesh Volume II (eds. Mudgal, Khanna and Hajra) in the year 1997 which includes Angiosperms from family Primulaceae to Ceratophyllaceae. First volume of the flora deals with the taxonomic account of 83 families of Angiosperms comprising of 874 species belonging to 407 genera. Whereas the second volume deals with the taxonomic treatment of 51 families with 792 species pertaining to 320 genera. Monocotyledons have been published in the third volume (eds. Singh, Khanna, Mudgal and Dixit) in the year 2001 which includes 37 families consisting of 706 species and 241 genera. Besides, 7 species of Gymnosperms belonging to 5 genera and 4 families have been dealt in the third volume.

* Although the state has been recently divided into two separate states Madhya Pradesh proper and Chhattisgarh but in the present work, it has been treated as undivided following the pattern of Flora of Madhya Pradesh Vol. I III.
However, during further study of herbarium specimens at Central National Herbarium, Howrah (CAL) and Central Circle, B.S.I., Allahabad (BSA) and perusal of literature, it has been observed that about 358 taxa of angiosperms have not been included in the first volume of the Flora of Madhya Pradesh. List of such taxa have been published by Kumar and Lal (1995, 1998) and Khanna and Kumar (in press). In addition, Kumar (1997a, 1997b) has also published an account of five families of Angiosperms, viz., Araliaceae, Elaeocarpaceae, Erythrophalaceae, Saxifragaceae and Tropaeolaceae since these families have not been dealt in the first volume. Further, Khanna and Kumar (2000) have also published a list of 32 taxa which are additions to the second volume of the Flora of Madhya Pradesh.

Therefore, in order to bring the Flora of Madhya Pradesh more comprehensive, it has been considered worthwhile to publish the taxonomic account of all additional taxa in the form of a supplementary volume which will be very informative to various research workers engaged on the study of the Flora of the state. The present work deals with 379 taxa of angiosperms belonging to 233 genera and 65 families.

As in the earlier volumes, here also the families have been arranged according to the Bentham and Hooker’s system of classification (with slight modifications as per recent treatment). Genera under each family have been arranged alphabetically and arrangement of the species under each genus is in the alphabetical sequence. Taxonomic citation, vernacular name/s (if any), description, phenology, habitat and distribution of each taxon have been provided in the present work.
SYSTEMATIC ACCOUNT

RANUNCULACEAE

DELPHINIUM L.


Herbs, annual. Leaves palmately lobed; each lobe linear to elliptic, acuminate. Inflorescence racemose. Flowers variously coloured, zygomorphic, spurred: bracteoles 2. Sepals 5: odd sepal posterior. prolonged into a long spur, petaloid. Petals 2, gamopetalous, the posterior hooded and drawn within the spur of the sepal. Stamens numerous, spirally arranged. Ovary 1-locular; ovules numerous, on marginal placentae.


NIGELLA L.


BERBERIDACEAE

BERBERIS L.

Shrubs. Leaves broadly obovate-elliptic, usually entire. Flowers in fascicles; pedicels red, ca 1.2 cm long. Outer sepals broadly ovate; inner ones longer and broader. Petals emarginate. Berries red, turning black, ellipsoid.


_Berberis hainesii_ Ahrendt var. _brevifilipes_ Ahrendt in J. Bot. Lond. 80 (Suppl.): 105. 1944.

Shrubs. Stems terete; spines sulcate. Leaves oblong-elliptic, entire or spinulose. Flowers subfascicled; pedicels 5-9 mm long. Petals narrowly obovate. Berries oblong-ellipsoid, shortly styloose.


**PAPAVERACEAE**

**PAPAVER L.**


Herbs, annual, erect, robust, glaucous. Basal leaves ovate-oblung, shortly petiolate, shallowly pinnatifid; lobes coarsely dentate; upper cauline leaves smaller, unlobed or shallowly lobed, sessile. Flowers solitary. Sepals
glabrous. Petals white or pale purple. Capsules globose or ovoid. Seeds white or grey brown.


BRASSICACEAE

BRASSICA L.


Cultivated for edible leaves which are used as a vegetable. Bhopal (Oommachan, Fl. Bhopal 42. 1977). Fl. & Fr.: Jan.-March.


Herbs, annual or biennial, up to 1 m high. Roots tuberous. Stems branched. Basal leaves lyrate-pinnatifid, up to 25 x 10 cm, middle and upper leaves oblong to oblong-lanceolate, cordate at base, glaucous. Flowers in terminal racemes, ca 1 cm across. Petals 4, yellow. Stamens 6. Fruits linear, subtorulose, 4-7 cm long. Seeds 8-12 in each locule.


**CAPSELLA** Medik., *nom. cons.*


Herbs, annual, up to 35 cm high. Basal leaves roslulate, oblong-lanceolate, pinnatifid-partite; cauline ones ovate-lanceolate to linear, acute at apex, auricled at base, entire or denticulate. Flowers in racemes. Sepals oblong, obtuse. Petals white, oblong-lanceolate. Fruits obcordate to obtriangular, emarginate at apex. Seeds reddish brown to black, ellipsoid, up to 12 in each locule.


**CARDAMINE** L.


Herbs, annual or biennial, flexuose, up to 30 cm high. Basal leaves orbicular, sinuate-dentate to lobed; cauline leaves ovate to lanceolate, 3-5 cm long, pinnate; lateral leaflets 2-4 pairs, orbicular-ovate, terminal leaflet
ovate or suborbicular, dentate. Flowers in racemes. Sepals erecto-patent, oblong to oblong-elliptic. Petals white, ca 4 mm long. Stamens 4 or 6, with 2 outer staminodes. Fruits elliptic-oblong or ovovate, 1.5-2.5 cm long. Seeds yellow, ovoid-compressed.


Herbs, annual, with variable habit, size, shape and number of leaflets. Basal leaves orbicular, rounded, sinuate-dentate to lobed leaflets; upper leaves ovate-rounded to lanceolate, entire-crenulate. Flowers in racemes; pedicels erecto-patent. Petals white, truncate. Stamens 4, rarely with 2 staminodes. Pods 2-2.5 cm long.

Rare in moist places among grasses at higher elevations. Hoshangabad. Fl. & Fr.: Feb. - April.

**IBERIS** L.

**Iberis amara** L., Sp. Pl. 649. 1753. *Candituft*.

Herbs, annual, up to 30 cm high. Leaves ob lanceolate to spatulate, 3-10 cm long, obtuse at apex, dentate towards apical portion. Flowers in terminal, globose clusters, zygomorphic. Sepals oblique. Petals white, obovate-oblong. Fruits suborbicular with divergent triangular wings, notched at apex. Seeds reddish brown, broadly ovate.


**RORIPPA** Scop.

Herbs, annual, up to 45 cm high. Lower leaves lyrate-pinnatifid to pinnatifidpartite, 5-9 x 2.5 cm; upper ones ovate-lanceolate to lanceolate-oblong, lyrate-pinnatifid. Flowers in terminal racemes. Sepals 2-3 mm long. Petals bright yellow, 3-4 mm long. Fruits beaked. Seeds reddish brown, orbicular, 2-seriate, rugose.


**CAPPARACEAE**

**CADABA** Forssk.


**CAPPARIS** L.


Shrubs, erect or low scrambling; spines recurved. Leaves elliptic-ovate, subcoriaceous, pubescent beneath. Flowers solitary, axillary; pedicels *ca* 1.5 cm long, puberulous. Sepals subequal. Petals white with orange throat. Stamens numerous; filaments white; anthers pinkish. Gynophore *ca* 2.5 cm long. Fruits ovoid.

Katni (Sebastine and Balakrishnan in Indian For. 89: 522. 1963). Fl. & Fr.: March - Sept.
CLEOME L.


**Fig. 1.**

Herbs, annual, scabrid, glandular hairy. Leaves simple, ovate-elliptic to orbicular, up to 2.5 x 1.5 cm, obtuse at apex, scabridly papillose. Flowers in lax racemes. Sepals elliptic or lanceolate. Petals yellow or white, ovate. Stamens 6. Capsules linear, glabrous, striated. Seeds brownish black, granular.


CRATEVA L.


Trees, up to 6 m high. Leaves 3-foliolate; leaflets obovate-lanceolate, up to 12 x 2.5 cm, middle leaflet elliptic-lanceolate, tapering at apex. Flowers polygamous, in corymbose cymes. Sepals free. Petals yellowish white, clawed. Berries red on maturity, globose. Seeds dorsally crested, tuberculate.


VIOLACEAE

VIOLA L.

**Viola tricolor** L., Sp. Pl. 935. 1753. - *Pansy*.

Herbs, annual, branched. Basal leaves cordate or rounded-cordate; cauline leaves ovate-oblong or lanceolate, crenate-dentate; stipules large, pinnately partite towards the base. Flowers showy, variously coloured, 5-merous, spurred. Anthers connivent in a ring about the style. Capsules 3-valved.
Fig. 1. Cleome scaposa DC.

**FLACOURTIACEAE**

**FLACOURTIA** Comm. ex L’Hérít.


Armed trees. Branches tomentose. Leaves oblong-elliptic or ovate-lanceolate, 10-15 x 5-8 cm, subcoriaceous, coarsely serrate or crenate. Flowers in lax racemes or dense paniculate clusters, unisexual, cream-coloured. Male flowers: Stamens numerous. Female flowers: Ovary surrounded by few staminodes. Berries reddish purple, globose.


**HOMALIUM** Jacq.


Trees. Leaves ovate-elliptic, 8-14 x 5-8 cm, crenate. Flowers in pyramidal, axillary panicles, foetid; pedicels densely hairy. Sepals 6-8, linear, densely pilose outside. Petals 6-8, white, spathulate, densely pilose outside. Stamens 6-8, opposite to each petal.


**POLYGALACEAE**

**POLYGALA** L.

Herbs. Leaves oblong or oblong-elliptic, 4-12 x 2-5 mm, subcoriaceous, recurved on margins. Flowers in leaf-opposed spikes; bracts ovate-oblong; bracteoles 2, linear. Petals blue or violet; lateral lobes obovate; mid lobe cymbiform, clawed. Stamens 8, monadelphous. Fruits orbicular, silky stiff hairy.


Herbs, prostrate or ascending. Branches tomentose. Leaves linear or narrowly lanceolate. Flowers in leaf-opposed racemes; bracteoles minute, caducous. Petals yellow; lateral lobes ca 3 mm long; mid lobe ca 5 mm long. Fruits obcordate, narrowly winged, unequal and emarginate at apex.


Herbs, annual, erect. Leaves ovate to obovate, 1-4 x 0.4-1.8 cm, ciliate. Flowers in terminal or axillary dense racemes; bracts and bracteoles lanceolate, caducous. Sepals caducous. Petals pinkish or deep yellow; lateral lobes oblong; mid lobe keeled, papillose. Fruits discoid, subquadrangular, notched at apex.


**SALOMONIA** Lour., nom. cons.


Herbs, annual, erect or ascending. Stems angular. Leaves ovate or lanceolate, 0.6-2 x 0.4-1.2 cm. Flowers in terminal or axillary, 5-10 cm long spikes; bracts lanceolate, fugaceous. Sepals 5, scaly. Petals 3, pink
or light violet. Stamens 4 or 6, monadelphous. Fruits orbicular, flat, minutely dentate on margins.


CARYOPHYLLACEAE

DIANTHUS L.


PORTULACACEAE

TALINUM Adans.


Undershruhs, perennial, suffrutescent, up to 1 m high. Leaves oblanceolate, up to 8 x 4 cm, succulent, obtuse or subacute at apex, narrowed at base. Flowers in terminal panicles. Sepals ovate-orbicular. Petals 5, purple. Stamens 20 or more. Capsules globose, crustaceous. Seeds reniform, concentrically striate.


**TAMARICACEAE**

**TAMARIX** L.


Shrubs. Leaves ovate-lanceolate, 0.5-3 mm long. Flowers in simple or compound racemes; bracts ovate-lanceolate, deflexed. Sepals 5, almost free, equal. Petals 5, pink, obovate or oblong-elliptic, caducous. Stamens exserted. Disk 5-lobed. Fruit a capsule.


**ELATINACEAE**

**BERGIA** L.


Shrubs, with decumbent or ascending glandular hairy branches. Bark peeling off in flakes. Leaves opposite, oblong-lanceolate to elliptic, up to 2 x 1.3 cm, obtuse at apex, glandular hairy on both the surfaces, crenate-


MALVACEAE

ABELMOSCHUS Medik.


Undershrubs, up to 2.5 m high. Stem, petiole and lamina glabrous or pubescent with simple or stellate hairs. Leaves variable in shape and size, broadly ovate, cordate or sometimes hastate, up to 16 x 18 cm, entire or 3-7-lobed. Flowers yellow, solitary, axillary or in racemes. Capsules ovoid-oblong, 5-gonous.


Herbs. Stems terete, stout. Leaves variable. Flowers axillary, solitary or in terminal racemes. Epicalyx-segments hispid along the margins with stiff hairs. Corolla yellow or white. Fruits ovoid-oblong. Seeds more or less globose.


Indore. Fl. & Fr.: Sept. - Nov.

ABUTILON Mill.


Undershrubs, perennial. Leaves ovate, 5-10 cm long, acute or acuminate at apex, cordate at base, sparsely hairy and scabrid above, velvety beneath. Pedicels stout, longer than the petioles, jointed near the apex. Calyx-lobes as long as the fruit. Corolla yellow. Fruits subglobose, ca 2.5 cm across, depressed.


Herbs, perennial, densely stellate and simple hairy. Leaves ovate, 4-12 x 3-9 cm, acute to acuminate at apex, crenate-serrate. Flowers solitary or paired, axillary or terminal; pedicels shorter than petioles, jointed


**ALCEA L.**


Herbs, annual, erect, 1.5-2 m high, stellate hairy. Leaves orbicular-cordate, 5-12 x 4-10 cm, deeply cordate; petioles 4-10 cm long. Flowers solitary, axillary or in terminal racemes; pedicels up to 1 cm long. Epicalyx-segments 6-7. Calyx-lobes ovate-lanceolate. Petals variously bright-coloured. Schizocarps depressed globose; mericarps longitudinally sulcate.


**DECASCHISTIA** Wight & Arn.


Undershubs, up to 1.5 m high. Leaves ovate, up to 10 x 4 cm, acute at apex, cuneate at base, puberulous above, tomentose beneath; mid rib with a glandular pore at the base. Flowers in solitary, axillary or terminal clusters. Epicalyx-segments 10, linear, acute. Calyx up to 1.5 cm long, 5-lobed, ciliate, acute. Petals yellow with purple centre, 3.5-4.5 cm long, hairy outside. Staminal column antheriferous in regular whorls. Capsules ca 1.5 cm long, 10-valved, hispid. Seeds 10, ovoid or reniform, ca 3.5 mm long.


**GOSSYPIUM L.**


HIBISCUS L., nom. cons.


Undershrubs, up to 3 m high, densely covered with rigid stellate hairs. Leaves ovate-cordate, 3-angled or slightly 3-lobed, 5-7 cm across; lobes ovate, acute; upper leaves narrow, ovate-lanceolate, serrate-dentate, hairy. Flowers axillary, solitary or in terminal racemes. Epicalyx with linear appendages arising from the base of the spathulate tip. Calyx equalling the capsule. Corolla yellow. Capsules ovoid, beaked, densely hairy.


Herbs or undershrubs. Stems sparsely covered with bristles and prickles. Leaves deeply 3-5-lobed up to base; lobes oblong or lanceolate, serrate, simple hairy above, stellate hairy beneath; stipules linear, up to 1 cm long. Flowers solitary, axillary; pedicels sparsely covered with prickly hairs. Epicalyx-segments 8-10, linear. Calyx-lobes lanceolate, connate at base. Corolla yellow with purple centre. Staminal column antheriferous throughout. Capsules ovoid.


SUPPLEMENT TO THE FLORA OF MADHYA PRADESH

Shrubs. Leaves suborbicular, palmately 3-7-lobed; lobes triangular, coarsely dentate, glabrescent or sparsely pubescent above; stipules linear or lanceolate. Flowers solitary, axillary or subcorymbose towards apex. Epicalyx-segments 8-12, linear-lanceolate. Calyx-lobes ovate-lanceolate, densely stellate and glandular hairy outside. Petals 5 or in multiples of 5, sparsely stellate hairy outside. Staminal column antheriferous throughout. Capsules subglobose.


Herbs or undershrubs, covered with simple hairs and recurved prickles. Leaves ovate or suborbicular, 3-5-palmilobed or 5-palmiparted; lobes lanceolate, crenate-serrate; stipules foliaceous, ovate, serrate-dentate. Flowers solitary, axillary; pedicels jointed near the apex. Epicalyx-segments spathulate. Calyx campanulate, deeply 5-partite. Corolla yellow with deep purple centre. Staminal column antheriferous throughout. Capsules ovoid.


**MALAVAISCUS** Fabric.

**Malvaviscus arboreus** Cav. var. *arboreus* Cav., Diss. 3: 131. t. 48. f. 1. 1787.
Shrubs, 1.5-2 m high, glabrous or densely pubescent. Leaves ovate-orbicular, 3-5-lobed, acute to acuminate at apex, rounded or shallowly cordate at base, crenate to serrate. Flowers solitary, axillary. Epicalyx-segments 6 or more. Corolla red, 2-3 cm long.


Shrubs, *ca* 1.5 m high, glabrous or pubescent. Leaves elliptic to ovate or lanceolate, entire or 3-lobed, acuminate at apex, rounded at base, crenate-serrate. Flowers solitary, axillary, pendulous. Epicalyx-segments 6 or more. Corolla red, more than 4 cm long.


**SIDA L.**


**THESPESIA** Soland. *ex* Correa, *nom. cons.*

*Thespesia lampas* (Cav.) Dalz. & Gibs. var. *longisepala* Borss. in Blumea 14: 118. f. 14C. 1966. **Fig. 2.**

Arborescent shrubs; twigs densely stellate hairy, glabrescent with age. Leaves orbicular, membranous to subcoriaceous, 3-5-lobed; lobes deltoid, acuminate at apex; petioles and stipules densely hairy. Flowers solitary, axillary. Epicalyx-segments 5, free. Calyx cupular; lobes subulate to triangular, 1-3 mm long. Corolla yellow with dark purple centre. Fruits ovoid to globose.


**BOMBACACEAE**

**CEIBA** Mill. *emend.* Gaertn.


Trees, up to 12 m high. Stems and branches green. Leaves digitate; leaflets 5-8, lanceolate, up to 12.5 x 3.8 cm, cuspidate at apex, acute at base. Flowers in clusters of 2-8 at the apex of branches. Calyx campanulate, 5-lobed. Petals 5, dull white. Stamens in 5 bundles, opposite the petals. Fruit a capsule. Seeds pyriform, silky hairy.


**STERCULIACEAE**

**DOMBEYA** Cav., *nom. cons.*

Fig. 2. Thespesia lampas (Cav.) Dalz. & Gibs. var. longisepala Borss.
Shrubs or small trees, evergreen. Leaves cordate or cordate-ovate, acute at apex, dentate, velvety, long petiolate. Flowers pink or white, showy, in pendulous, many-flowered umbels.


Shrubs, evergreen, 2-3 m high. Leaves ovate or cordate, 6-angular or lobed, 9-15 x 10-16 cm, serrate. Flowers fragrant, in cymose clusters. Petals white with rose-coloured veins. Capsules villous.


**ERIOLAENA DC.**


Small trees. Leaves orbicular, 8-20 x 7-15 cm, subacuminate at apex, cordate at base, crenate-serrate, stellate hairy above, softly tomentose beneath; petioles up to 8 cm long. Flowers white, in axillary pedunculate cymes; pedicels 2-3 cm long. Sepals linear-lanceolate. Petals obovate-oblong. Staminal column with irregularly arranged anthers towards apex. Capsules ovoid-lanceolate, beaked.


**PTEROSPERMUM** Schreb., nom. cons.


Trees. Leaves variable, oblong or oblong-ovate, 10-16 x 6-10 cm, acuminate at apex, cordate at base, dentate towards apical portion, glabrous


**STERCULIA L.**


Trees. Branches horizontally whorled. Leaves digitately 5-9-foliolate; leaflets elliptic or elliptic-lanceolate, acute at apex, tapering at base, entire; stipules ensiform, caducous. Flowers in erect, racemose panicles. Calyx campanulate; lobes 5, lanceolate, stellate hairy. Fruits cymbiform, 10-12 cm long.


**TILIACEAE**

**CORCHORUS L.**


Herbs, perennial, prostrate. Leaves elliptic, 1-3 x 0.7-1 cm, crenate-serrate, sparsely hairy on nerves, without basal filiform processes. Flowers in leaf-opposed cymes; bracts linear-lanceolate. Sepals reddish green, linear-oblong. Petals yellow, ovate-spathulate, as long as sepals. Capsules cylindrical, beaked, 4-loculed. Seeds black.

Fig. 3. Sterculia foetida L.
GREWIA L.


Trees. Leaves broadly elliptic or obovate, 3-8 x 2-6 cm, acuminate at apex, obliquely cordate or subcordate at base, irregularly crenate-serrate, tomentose beneath. Flowers in axillary, umbellate cymes; pedicels up to 1 cm long. Sepals lanceolate, woolly outside. Petals orange-yellow, oblong. Receptacle angular. Drupes subglobose, 5-7 mm across, obscurely 2-lobed.


Shrubs or small trees. Leaves ovate-elliptic or elliptic-oblong, 4-12 x 2-6 cm, acute or acuminate at apex, obliquely cordate at base, crenate-serrate. Flowers in axillary cymes; pedicels up to 1 cm long. Sepals oblong, pubescent. Petals white, ovate-lanceolate. Receptacle angular, softly villous. Drupes yellow, subglobose, *ca* 1.2 cm across, 4-lobed.


Shrubs. Leaves ovate or ovate-rhomboid, 5-13 x 2-7 cm, acute or acuminate at apex, rounded at base, crenate-serrate, glabrous. Flowers in terminal or axillary umbellate cymes; pedicels 1-2 cm long. Sepals lanceolate, woolly tomentose. Petals ovate-lanceolate. Receptacle angular. Drupes yellow, subglobose, *ca* 1.4 cm across, obscurely 2-4-lobed, tomentose.


Shrubs. Leaves obovate or ovate-rotundate, 8-18 x 6-12 cm, acuminate at apex, rounded or subacute at base, serrate, tomentose. Flowers in axillary cymes; pedicels up to 1 cm long. Sepals lanceolate, densely pubescent outside. Petals white, oblong-ovobovate, notched at apex. Receptacle hispid. Drupes globose, *ca* 1.5 cm across, stellate hairy.


Shrubs or small trees. Leaves orbicular or ovate-rotundate, 5-15 x 4-12 cm, abruptly acuminate at apex, cordate at base, crenate or serrulate, scabrous above, villous beneath. Flowers in axillary or leaf-opposed cymes; pedicels 2-5 mm long. Sepals lanceolate, pilose. Petals dull yellow, spathulate, emarginate. Drupes yellowish red, subglobose, up to 1.5 cm across, obscurely 4-lobed.


**ELAEOCARPACEAE**

**ELAEOCARPUS** L.


Trees, up to 18 m high. Leaves elliptic or elliptic-lanceolate, up to 14 x 3.5 cm, acute or acuminate at apex, cuneate or attenuate at base, crenate-serrate. Flowers in axillary, up to 8 cm long racemes. Sepals lanceolate, keeled. Petals white, obovate, 4-6 mm long, laciniate, ciliate. Stamens 15-
30; anthers oblong with short bristles at apex. Drupes oblong-ovoid or ellipsoid, up to 3 cm long; pyrenes oblong, rugose with 3 longitudinal grooves.


Trees, up to 20 m high. Leaves oblong-lanceolate or elliptic-lanceolate, up to 11 x 3.2 cm, acute or acuminate at apex, cuneate at base, subentire or crenate-serrate. Flowers white or cream-coloured, in axillary, up to 8 cm long, silky pubescent racemes. Sepals oblong-lanceolate, villous on margins. Petals oblong, up to 9 mm long, with 2 pits at the base, laciniate, silky hairy. Stamens 15-30; anthers short-awned. Drupes oblong-ovoid, up to 2 cm long; pyrenes ovoid, subtrigoneous, rugose.


Trees, up to 22 m high. Leaves elliptic or elliptic-oblong, up to 24 x 7 cm, subacuminate at apex, rounded or subacute at base, crenate-serrate. Flowers white; pedicels curved, sericeous. Sepals lanceolate or ovate-lanceolate, silky tomentose. Petals ca 6 mm long, laciniate. Stamens 25-30; anthers with reflexed awns. Drupes oblong or oblong-ovoid, up to 2 cm long; pyrenes subterete, finely rugose, 3-grooved.


**MALPIGHIACEAE**

**ASPIDOPTERYS** A. Juss.


Shrubs, climbing. Leaves ovate or ovate-elliptic, 6-10 x 3-6 cm, acuminate at apex, rounded at base, glabrous; petioles up to 1.5 cm long, rusty pubescent. Flowers in rusty tomentose panicles. Calyx-lobes ovate, tomentose. Petals white, ovate. Filaments connate at base. Ovary pilose. Samara-wings linear-oblong, equally broader on both sides.

Madhya Pradesh (Srivastava in Hajra *et al.* (eds.), Fl. India 4: 8. 1997).

**MALPIGIA L.**


Shrubs, *ca* 2 m high. Leaves opposite, ovate, elliptic or oblong-lanceolate, 4-7 x 2.5-4.5 cm, acuminate at apex, acute at base, subcoriaceous, entire, glabrous. Flowers in 4-12-flowered umbels borne in the axil of leaves; bracts and bracteoles present. Sepals 5, oblong. Petals 5, pinkish violet, ovate or suborbicular, clawed, crisped on margin. Berries red, *ca* 1 cm across.


**ZYGOPHYLLACEAE**

**Fagonia** Tourn. *ex* L.


Undershrubs, annual or perennial, erect to prostrate. Leaves 3-foliolate, upper ones 1-foliolate; stipular spines patent, longer than leaves. Flowers solitary, axillary; pedicels glabrous to glandular. Sepals ovate, persistent, sparsely glandular outside. Petals pinkish purple, *ca* 5 mm long. Capsules globose, *ca* 4 mm across, softly hairy.

**TROPAEOLACEAE**

**TROPAEAULUM L.**


Herbs, annual or biennial, climbing, decumbent or erect. Leaves simple, peltate, long petiolate; lamina orbicular, up to 5 cm across, glaucous beneath. Flowers solitary, fragrant; pedicels up to 25 cm long. Calyx 5-lobed, spurred. Petals 5, yellow or orange-red, broadly rounded, slightly notched, the 2 posterior ones up to 3.5 cm long, the 3 anterior ones slightly longer. Stamens 8. Fruits of 3, indehiscent, 1-seeded cocci.


**OXALIDACEAE**

**BIOPHYTUM DC.**


Herbs, perennial. Stems umbellately branched. Leaflets 15-20 pairs, oblong, 3-6 cm long, cuspidate at apex, truncate at base. Flowers in small umbels; peduncles exceeding leaves, appressed hairy; pedicels hairy; bracts lanceolate. Sepals lanceolate, mucronate. Capsules ovoid, blunt.


**OXALIS L.**

Herbs, acaulescent. Leaves 3-foliolate; leaflets 2-lobed, cordate, ca 5 x 15 mm, glabrous above, villous beneath, sessile. Flowers in few to many-flowered umbels; pedicels unequal; bracts minute, hairy. Sepals 5, lanceolate. Petals 5, yellow, oblong, shortly clawed. Stamens 10, connate into a tube at base.


**BALSAMINACEAE**

**IMPATIENS L.**


Herbs, 10-20 cm high. Stems hairy. Leaves alternate, elliptic-lanceolate, 2-6 x 0.7-1 cm, serrate, sparsely hairy above. Flowers pink or rose-coloured, in axillary fascicles; pedicels up to 5 mm long, scabrid. Capsules ellipsoid, mucronate, villous. Seeds brown, globose, tuberculate.


**RUTACEAE**

**CITRUS L.**


Small trees; young twigs glabrous. Leaves 1-foliolate, ovate or elliptic, acute or obtuse at apex, crenate; petiolar wings narrowly obovate-oblanceolate. Flowers axillary, solitary or few clustered; pedicels pubescent. Calyx cupular, irregularly lobed; lobes greenish white. Petals cream-coloured, oblong-ovoblate, glandular. Fruits orange, globose, 2-3 cm across.

**Citrus reticulata** Blanco, Fl. Filip. 610. 1837. - *Santra.*

Small trees. Branches spinous. Leaves 1-foliolate, narrowly to broadly lanceolate, 5-8 x 2.5-3.5 cm, tapering or sometimes emarginate at apex, acute or rounded at base, crenate to crenulate; petioles shortly marginate. Flowers axillary, solitary or few clustered. Sepals 5. Petals white, glandular. Fruits orange-yellow, variable, globose or pyriform; endocarp-segments easily separable.


Trees. Branchlets spinous. Leaves 1-foliolate, ovate to elliptic, 7-10 x 3.5-5 cm, emarginate at apex, cuneate at base; petioles narrowly winged. Flowers axillary, solitary or few in racemes. Sepals 4 or 5, suborbicular. Fruits greenish yellow, globose or subglobose, smooth, pitted; endocarp-segments fusiform.


**GLYCOSMIS** Correa


Shrubs. Leaves 3-5-foliolate; leaflets alternate and opposite, ovate, elliptic or linear-lanceolate, obtuse or subacuminate at apex, cuneate at base, entire, coriaceous. Flowers in axillary panicles; pedicels and bracteoles minute. Sepals 4 or 5, suborbicular. Petals greenish white, oblong-elliptic. Disk minute, lobulate. Berries pink, subglobose, *ca* 1 cm across.

TODDALIA Juss., *nom. cons.*


Shrubs, scandent or straggling. Stems armed or unarmed. Leaves digitately 3-foliolate; leaflets variable, oblong-elliptic or elliptic-ovate, asymmetrical, obtuse, acute or acuminate at apex, cuneate at base, entire or crenulate. Flowers creamy white, unisexual, in panicles, fragrant. Calyx-lobes deltoid. Petals narrowly to broadly oblong. Disk 5 or more lobed. Drupes orange or reddish, 4-5-grooved. Seeds reniform.


ZANTHOXYLUM L.


Trees. Stems and branchlets with prickles. Leaves paripinnate or imparipinnate; leaflets opposite or subopposite, ovate-oblong or lanceolate, caudate-acuminate at apex, cuneate and oblique at base, chartaceous to coriaceous, glabrous; petioles and rachis prickly. Flowers white or creamy yellow, unisexual, in terminal or pseudoterminal panicles. Sepals 4. Petals 4. Disk pulvinate, lobulate. Fruits globose, apiculate. Seeds bluish black, globose.


BURSERACEAE

COMMIPHORA Jacq., *nom. cons.*


Shrubs, dimorphic. Branchlets thorny. Leaves 1-3-foliolate; leaflets rhomboid-ovate or obovate, 1-3 x 0.5-2.5 cm, obtuse or acute at apex, cuneate at base, entire or serrate, subsessile, terminal leaflets larger. Flowers red or pinkish white, solitary or in 2-3-flowered fascicles; bracts glandular hairy. Calyx campanulate or tubular, 4-5-lobed. Petals 4-5, broadly linear. Drupes red, ovoid.


MELIACEAE

AGLAIA Lour.


Trees; young parts covered with scales. Leaves compound; leaflets 5-7, usually lanceolate, ca 10 x 2.5 cm, thinly coriaceous. Flowers yellow, in densely flowered panicles, shortly pedicellate. Calyx cupular, 5-lobed. Petals 5, longer than calyx. Style half as long as the staminal tube. Berries subglobose or pyriform.


APHANAMIXIS Blume

Trees. Leaves alternate, crowded at the end of branchlets; leaflets ob lanceolate, 8-20 x 4-8 cm, acuminate at apex, entire. Flowers dull white, in axillary or supra-axillary spikes, sessile, bracteate; male spikes paniculate; female spikes much shorter. Calyx 5-lobed. Petals 3, sparsely hairy inside, glabrous outside. Staminal tube as long as petals. Capsules yellow or purplish, obovoid.


**ERITHROPALACEAE**

**ERITHROPALUM** Blume

_Erythropalum scandens_ Blume, Bijdr. 921. 1826; Masters in Hook. f., Fl. Brit. India 1: 578. 1875.

Rambling climbers or lianas; tendrils axillary, shortly bifid. Leaves distichous, ovate-oblong to lanceolate, up to 17 x 10 cm, palmately 3-nerved, acute or subacuminate at apex, rounded or narrowly peltate at base. Flowers white, in axillary paniculate cymes. Calyx cupular, obscurely 4-5-segmented, accrescent. Corolla deeply 5-lobed; lobes ovate. Drupes ellipsoid, up to 2.5 cm long, obtuse, 3-6-valved. Seeds solitary.


**RHAMNACEAE**

**HELINUS** Meyer _ex_ Endl.

_Helinus lanceolatus_ Brandis _var_. _tomentella_ Bcdd. _ex_ Bhandari & Bhansali in Fasc. Fl. India 20: 44. 1990.

Shrubs, slender, with tendrils. Branches, tendrils and bracts appressed brown silky hairy. Leaves ovate or lanceolate, 2.3-4.6 x 1-2.8 cm, acute at apex, rounded at base, tomentose below, slightly pubescent above on nerves; petioles _ca_ 7 mm long, tomentose. Flowers 2-12 in umbels. Calyx 5-lobed; lobes deltoid. Petals white, 5, margin and apex incurved. Stamens 5; anthers dorsifixed. Disc glabrous. Fruits globose to slightly obovoid, 5-10 mm long, pendulous. Seeds plano-convex.

**VENTILAGO** Gaertn.


Climbing shrubs, woody. Branchlets green, pubescent. Leaves elliptic-oblong, 4-16 x 2.3-7.5 cm, obtuse or subacute at apex, oblique at base, crenate-serrate, pubescent. Flowers in axillary and terminal, pubescent panicles. Calyx 5-lobed; lobes deltoid. Petals 5, spatulate, emarginate at apex. Disc 5-lobed. Fruits 3.8-6 x 0.8-1 cm, pubescent; fruit wing bifid at apex, acute bifid portion ca 3.5 mm long.


**ZIZIPHUS** Tourn. ex Mill.


Large shrubs or trees, spiny. Leaves 5.3-9.8 x 2.8-4.3 cm, obtuse at apex, cuneate at base, glabrous above, tomentose beneath. Flowers in axillary cymes; peduncles 6-8 mm long, pubescent. Petals spatulate. Drupes ovate-oblong. *ca* 3.4 x 1 cm, pointed at apex. Seeds black, solitary, compressed, elongate.


Giant lianas. Leaves oblong-orbicular, up to 15 x 10 cm, somewhat longer than broad, coriaceous, truncate at apex, subcordate at base: stipular spines 2, tomentose at the base, one shorter and straight, the other longer and erect. Flowers greenish yellow, in short, axillary cymes. Drupes yellow when ripe, globose.

VITACEAE

AMPELOCISSUS Planch., nom. cons.


Climbers. Branchlets glabrescent. Leaves 3-foliolate, up to 15 cm long, acuminate at apex, cuneate at base, thinly coriaceous, double serrate; terminal leaflet broadly ovate; lateral leaflets more or less similar to terminal one, inequilateral, cordate; petioles up to 5.5 cm long. Flowers in diffuse, divaricate cymes; peduncles up to 8 cm long. Calyx 4 or 5-lobed. Petals 4 or 5. Berries ca 2 mm across.


CAYRATIA Juss., nom. cons.


Climbing shrubs. Branches apically densely pubescent, basally strigose. Leaves 5-9-foliolate; leaflets oblong or oblong-lanceolate, 5-10 x 2.5-5 cm, acuminate at apex, oblique at base, subentire or serrate; petioles 5-8 cm long. Flowers white, in axillary, corymbose, divaricate cymes. Calyx 4-lobed. Petals 4, ovate. Berries cream-coloured when ripe, subglobose, 6-8 mm across.

CISSUS L.

_Cissus adnata_ Roxb., Fl. Ind. (Carey & Wallich ed.) 1: 423. 1820. _Vitis adnata_ (Roxb.) Wallich, Num. List. no. 5998. 1831-33; Lawson in Hook. f., Fl. Brit. India 1: 649. 1875. _Fig. 4._

Climbers. Leaves broadly ovate, sometimes 3-5-lobed, 4-15 x 3-13 cm, acuminate at apex, cordate at base, serrate-dentate, tomentose beneath. Flowers red, in terminal, dichotomous cymes. Calyx saucer-shaped. Petals broadly oblong-ovate, spreading, hairy outside. Berries ovoid, _ca_ 8 mm long, beaked.


Herbs, scandent, slender. Branches suberete or angled; tendrils forked. Leaves broadly ovate, up to 15 x 9 cm, spinous toothed, glabrous, cordate at base; petioles up to 8 cm long. Flowers in leaf-opposed compound cymes. Berries subglobose or pyriform, usually 1-seeded.


Herbs, climbing. Stems quadrangular, leafless when old; tendrils simple, slender. Leaves simple, ovate or reniform, glabrous, 3-lobed, denticulate or crenate-serrate; stipules small, broadly ovate, obtuse. Flowers greenish white, in umbelliform cymes; peduncles 1-2.5 cm long. Calyx cupular, truncate or obscurely lobed. Petals 4, ovate-oblong, hooded at apex. Disk 4-lobed. Stamens inserted below the margin of the disk. Berries red, globose or obovoid.


Fig. 4. Cissus adnata Roxb.
Shrubs, climbing. Branches hoary pubescent; tendrils simple. Leaves ovate, palmately 3-5-angular or lobed, acuminate at apex, cordate or truncate at base, coriaceous, pubescent, dentate. Flowers pale yellow, in umbelliform, compound cymes; peduncles 4-6 cm long. Calyx obscurely lobed. Petals 4, ovate. Disk 4-lobed. Berries ovoid or pyriform, ca 1 x 0.6 cm, apiculate.


**CYPHOSTEMMA** (Planch.) Alston


Herbs, climbing. Branchlets fleshy, bristly setose; tendrils forked. Leaves 3-foliolate; leaflets oblong-obovate, 4-8 x 3-5 cm, rounded at apex and base, glandular puberulous, dentate-serrate; terminal leaflet larger. Flowers greenish, in dichasial, divaricate, glandular pubescent cymes. Calyx obscurely 4-lobed. Petals 4, ovate-oblong. Berries red when ripe, ovoid, ca 8 mm long.


**TETRASTIGMA** (Miq.) Planch.


Shrubs, climbing. Stems woody; branchlets glabrescent or tuberculate. Leaves 3-5-foliolate; leaflets oblong-lanceolate or oblanceolate, 4-12 x 2-
5 cm, acute at apex, cuneate at base, coriaceous, entire or distantly serrate. Male inflorescence a paniculate cyme; female inflorescence a corymbose cyme. Flowers greenish white. Calyx 4-lobed. Petals 4, ovate. Berries globose, ca 1 cm across.


**VITIS L.**


Climbers. Branches smooth; tendrils leaf-opposed, stout. Leaves digitately 3-foliolate; leaflets elliptic, ovate or obovate, oblique, sometimes falcate, acuminate at apex, coriaceous, distantly serrate. Flowers in axillary, dichotomously branched, subcorymbose, compound cymes; peduncles short. Berries oblong or ellipsoid, smooth, glossy.


**LEEACEAE**

**LEYA L., nom. cons.**


Shrubs. Leaves pinnate; leaflets lanceolate or oblong-lanceolate, 8-18 x 3-6 cm, acuminate at apex, rounded at base, serrate, membranous, hirsute above, with peltate glands beneath; petioles 8-12 cm long; stipules caducous. Inflorescence subterminal. Flowers greenish white; bracts ovate to oblong. Calyx glabrous or densely pubescent. Fruits orange-red, globose.

SAPINDACEAE

DODONAE A L.


Shrubs. Branches terete, often angled. Leaves broadly elliptic, 2-7 x 0.5-1.5 cm, subacute or shortly apiculate at apex, abruptly tapering at base. Flowers greenish yellow, in panicled cymes. Sepals oblong. Capsules compressed, membranous, 2-3-winged.


ANACARDIACEAE

BUCHANANIA Spreng.


Trees. Leaves oblong-lanceolate or elliptic-lanceolate, 5-12 x 2-4 cm, obtuse at apex, entire; petioles 1-2 cm long. Flowers in terminal and axillary, glabrous panicles, 3-4 mm across, shortly pedicellate. Calyx-lobes ovate. Petals oblong, reflexed. Stamens 10. Drupes ca 12 mm long.


FABACEAE

ABRUS Adans.


Climbers. Branches slender. Leaves paripinnate, up to 15 cm long; leaflets 12-16 pairs, oblong, up to 3 x 0.7 cm, apiculate at apex, rounded