rejuvenating plants'. Extensive documentation and detailed research is necessary to identify more plants in Indian floras belonging to this peculiar ecological group.

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35. FLOWERS OF SAHYADRI: A CRITICAL APPRAISAL

FLOWERS OF SAHYADRI, a handy field guide, by S.H. Ingalhalikar is easy to carry and contains data on flowers of 500 species of the Western Ghats. The map highlights the geography of the areas covered; charts with scales are given for easy reference. The appendices make the references easier, faster and comfortable.

However, flowers of many related species appear identical, and it is sometimes difficult even for an expert to name the species correctly. Some of the pictures in the book are misleading. Flowers like *Pavetta crassicaulis* (p. 56, no. 382), *Tithonia diversifolia* (p. 70, no. 465), *Kleinia grandiflora* (p. 70, no. 302), *Argyreia boseana*, *Argyreia involucrata* (p. 90, nos. 33, 36), *Argyreia sericea* (p. 87, no. 38), *Argyreia elliptica* (p. 94, no. 35), *Eriocaulon sedgwickii* (p. 126, no. 210), *Smithia bigemina* (p. 158, no. 433), *Smithia setulosa* (p. 172, no. 436), *Eriocaulon tuberiferum* (p. 140, no. 211), *Pulicaria wightiana* (p. 157, no. 404), *Sonchus oleraceus* (p. 158, no. 439), *Senecio bombayensis* (p. 172, no. 426), *Senecio edgeworthii* (p. 105, no. 427) can be mistaken for any of their allies and vice-versa. There are several misidentifications in the book which is unfortunate. Some are listed below:

1. *Physalis peruviana* (p. 134, no. 391): The photograph is that of *Nicandra physaloides*. Not only is the scientific name but its common name also is erroneous. 'Popati' is a common name used for *Physalis* species and perhaps this has been copied from the source of the misidentified species. The common name is apparently not obtained from the locality where the plant has been photographed.
2. *Avicennia marina* (p. 39, no. 46): This is probably a picture of *Avicennia officinalis*, which is mentioned as a synonym of *A. marina*. Both species are distinct and are found in marine swamps of Konkan. The vernacular name cited for this species is incorrect. 'Tiwar' is used for species of *Barringtonia* in coastal Konkan, both for *Barringtonia acutangula* ('Newar' of the author) and *B. racemosa*. Pronunciation of many local names varies tremendously. Such names have to be verified with some standard books before their application to a new species and adding to the already existing confusion.
3. The correct name for 'Nana' is perhaps *Lagerstroemia parviflora* Roxb., which is erroneously called *L. lanceolata* by T. Cooke and it is not *L. lanceolata* Wall. ex Wight & Arn. (1834), also it is not *L. microcarpa* Wight (1842). *L. microcarpa* Wight is a different species found only in South India.
4. The correct name for 'Tupa' (p. 46, no. 93) under genus *Canthium* is *Canthium umbellatum* Wt. Sometimes it is only recognised under varietal rank and Gamble identified it as a variety of *Plectronia didyma* Brandis. Brisden (in Kew Bull. 48: 762. 1993) has retained it as *Psydrax umbellata.* (Wt) Brisden.
5. *Bombax insigne* (p. 47, no. 71) or 'Deo-savar' – Both of these appear to be doubtful. It is definitely not *B. insigne* of Wallich and its local name appears to be a new one.
6. The photograph of "Kabar" (p. 49, no. 99) called *Capparis spinosa* is that of *Capparis murrayana* Graham. *Capparis spinosa* L. is a much larger leaved species found at higher altitudes in the Himalayas. The prostrate plant which is generally found on river-beds in Pune and Raigad districts is described by John Graham, a Presidency Postmaster of Bombay in his Catalogue of Bombay Plants (1839). (see "Flora of Maharashtra" by M.R. Almeida, Vol. I, pp. 46-7, t. 42, lower figure, 1996).
7. "Pinela" (p. 103, no. 468): *Trachyspermum roxburghianum* is not the correct name for the plant found wild at Sinhagad, which is photographed. It is correctly called *T. stictocarpum* (Clarke) Wolf.
8. *Capparis rotundifolia* (p. 54, no. 98) is not a typical variety, but a local variety *C. rotundifolia* Rottl. var. *longispina* (Hook. f. ex Cooke) Almeida, which was described as *C. longispina* Hook. f. & Thomson, in Flora of British India. In comparison with *C. rotundifolia* Rottl., which has rounded leaves and short spines, this variety has ovate leaves with pointed apex and long sharp spines.
9. *Ceropegia sahyadrica* (p. 119, no. 120) should be placed in the synonymy of *Ceropegia lawii* Hook.

10. *Barringtonia* species collected at Chowpatty, Bombay (= Mumbai) is definitely not *B. racemosa*. It is an introduced species, native of Bengal and has been planted along Marine Drive. Its proper identity is *Barringtonia asiatica* (Linn.) Kurz, also known as *B. speciosa* Forst & Forst. This species is found in Maharashtra only in cultivation. *Barringtonia racemosa* is an endemic wild species reported by Dalzell & Gibson and T. Cooke from Srivardhan. Some recent collectors have gathered it from Uran, Khed, Thane, Malvan and Deobag in Maharashtra.

Changes in local names, contradictory to the traditionally used ones, have to be meticulously scrutinized before adopting them.

1. Names like 'Gojibha' for *Anisomeles malabarica* (p. 50, no. 20) while the Sanskrit name 'Gojivha' represents a different species will definitely cause confusion in identification. We must go towards standardization, be it the scientific or common name of the species.
2. Local name "Koshta" for *Costus speciosus* (p. 60. no. 147) is also an improper application. This species in Marathi is called 'Pev' which is used in a Marathi proverb also 'Pev phutne'. Koshtha is a Sanskrit name for *Saussurea koshtha* (*Saussurea lappa*), a Compositae plant found in the Himalayan region much reputed for its medicinal and cosmetic properties.
3. *Withania somnifera* p. 63, no. 493: there are already half a dozen plants with the common name "Shankha-pushpi". There is a standardized name "Ashwagandha" used almost universally for this species.
4. *Ceiba pentandra* (p. 28, no. 109): Common names for this species are mentioned as "Shalmali" and "Pandhri Savar" but the correct common name is "Kapok". It is an African species, only found in cultivation and does not occur in India naturally (as mentioned in the distribution). Shalmali is a Sanskrit name for *Bombax ceiba* L. which is called 'Semul' in Hindi and "Simili" in Oriya. Similipal is in Mayurbhanj district in Orissa.
5. *Holarrhena pubescens* (p. 75, no. 265) is 'kala kuda' and not 'pandhra kuda'.

Some plant names conventionally used in our old floras have been proved incorrect. Some examples from the field guide are cited below:

1. Correct name for *Impatiens oppositifolia* (p. 159, no. 275) is *I. rosmarinifolia* Retz. Originally named *I. oppositifolia* Linn. (1753) based on van Rheede's figure in Hortus Malabaricus, the plant is identified now as *Lindernia oppositifolia* (L) Mukherjee.
2. *Ipomoea campanulata* (p. 77, no. 285) or "Tambar-vel": The correct name for this species is *Ipomoea illustris* (Clarke) Prain. *Ipomoea campanulata* L. was applied to the species presently known as *Thespesia populnea* Soland (Paras-bhendi).

Following identifications are not convincing and need a fresh look:

1. *Marsdenia tenasissima* Wt. & Arn. 'Kesdodi': The corolla is described as greenish-yellow, which is not so in the photograph. This species has been reliably reported from Dangs Forest. The plant photographed comes from Katraj and its identity needs rechecking. The description matches with Cooke's description of the species, but disagrees with his photograph in respect of the corolla and calyx.
2. *Ochna obtusata* (p. 55, no. 367) equated with *Ochna squarrosa* (Kanak-champa) reported from Castle Rock and Goa is obviously an error. *Ochna obtusata* DC. is a tall shrubby plant sometimes attaining the height of a small tree found in cultivation in gardens and very often wrongly named as *C. squarrosa* DC. Plant found in Castle Rock and Goa is *Gomphia serrata* (Gartn.) Kanis. Neither the species nor the genus can be definitely identified with only flowers as shown in the photograph.
3. *Ehretia aspera* (p. 56, no. 201) is a doubtful identification. *E. aspera* Roxb. has been reported from Marathwada with some certainty. Plants mentioned by Woodrow and Cooke from Poona district, appear to be *Ehretia laevis* Roxb. Ingalhalikar's locality scrub forests of plains, is not clear to me. If he meant coastal plains of Konkan then it could be *E. indica* (Denst. ex Kostel.) Almeida & Almeida. The identity can be confirmed only from the leaf.
4. *Rivea laotica* (p. 59, no. 412) is *Rivea ornata* (Roxb.) Choisy. A species from Laos, which is confused with *R. ornata* and has been renamed as *R. laotica* by Ooststroom (1957). Babu in FLORA OF DEHRA DUN (1957) has confused the nomenclature of our Indian plant with that species and V.N. Naik (1998) has followed Babu.
5. *Bombyx micranthus* (p. 114, no. 72) 'Pandhari-Jasvand': This generic segregation is not recognised by any good taxonomic work. Even *Bombycidendron* Zollinger & Moritze (Blumea 14:53, 1966) is not recognised as a genus and has been treated as synonymous with *Hibiscus* Linn.
6. *Crotalaria hebecarpa* (p. 171, no. 153) is certainly not a *Crotalaria* L. The name accepted here is based on a later synonym of *Hallia hirta* Willd. The current name for this is *Goniogyna hirta* (Willd.) Ali. (See Almeida, in Flora of Maharashtra, Vol. II, pp. 83-4, 1988).

7. *Kleinia grandiflora* (DC.) Rani is a species of restricted distribution in Maharashtra. The only specimens available are from Purandhar, leaves of which are rounded at the tip in addition to the absence of inflated pappus specified by Dalzell and Gibson while describing a new species from Katraj and other areas in Poona district, with inflated pappus. In addition to Dalzell & Gibson's characters I have found that leaves in this taxon are obtuse at the apex, not visible in the picture in the book.
8. *Boerhavia fruticosa* Dalz. & Gibs. The photograph is perhaps of *B. chinensis*. Proper locality of this plant is not mentioned. Some recent authors have equated *B. fruticosa* with *B. grandiflora* A. Ricb., an Abyssynian species.
9. *Cyathocline purpurea* (Don) Kuntze pictured has pinkish red heads. *C. purpurea* is reported to have purple flowers and two varieties of this species have been published by Rev. Fr. H. Santapau: *alba* (with white heads) and *bicolor* (flowers purple and white mixed). S.R. Yadav has reported a new record of *Cyathocline* from Maharashtra, a species published from Calicut by Prof. Sivadasan and others. I doubt if that is the plant photographed. I saw the report of this taxon only after publication of the 3rd volume of 'Flora Maharashtra' by M.R. Almeida (see Vol. IIIa, p. 94-5, 2001).

Some examples of wrongly synonymised cited names are given below:

1. *Exacum petiolare* Griseb. (p. 103, no. 219) and *E. pedunculatum* L. are two distinct species. The correct name for *E. petiolare* Griseb. (1845) is *E. carinatum* Roxb. (1820). The two species can be distinguished only on the basis of their leaves and number of veins arising from the base of the leaves.
2. *Haplanthus plumosa* (p. 104, no. 254) 'Kesal-jakara': If you consider *Haplanthodes plumosa* as distinct at species level, then *H. tentaculatus* is not synonymous with it. *H. plumosa* does not have hard spines as in *H. tentaculatus*. But *H. tentaculatus* has priority and modern taxonomists consider *H. plumosa* as a variety of *H. tentaculatus*.
3. *Caralluma adscendens* (p. 120, no. 101) is not the correct name for the plant photographed. *C. adscendens* Haworth is a taxon related to *Caralluma fimbriata* Wall. Graham in Catalogue of Bombay Plants named it *C. fimbriata* Wall., but later authors accept it on varietal level and call it *C. adscendens* Haw. var. *fimbriata* (Wall.) Gravely & Mayurnathan.
4. The correct name for the plant named *Exacum tetragonum* (p. 153, no. 221) is *E. bicolor* Roxb. This species from Western Ghats was misidentified as *E. tetragonum* by Graham. *E. tetragonum* is a separate species not found in Konkan region, but present in other parts of Maharashtra like Vidarbha.
5. E- 6. *Murraya paniculata* L. and *M. exotica* L. are distinct taxa at least on varietal level. *M. exotica* L. is called 'Kamini' under cultivation. It has glazed polished foliage and more fragrant flowers and somewhat blunt fruit at the apex. Its fragrance is believed to have aphrodisiac properties, particularly for women.

Rule of priority in taxonomic nomenclature governs the legitimacy of the correct names. The following are a few examples where this rule should be applied:

1. *Centaurium meyeri* (p. 106, no. 111) 'Luntak' – Correct name *C. centauroides* (Roxb.) Rao & Hemadri.
2. *Osbeckia muralis* Naud. (1850) (p. 148, no. 371) Correct name *O. truncata* D. Don (1834).
3. *Polygonum auriculatum* Meissn. (p. 162, no. 399) is now correctly called *Persicaria chinensis* (L) Gross., which is based on *Polygonum chinensis* Linn., although some taxonomists consider it as a variety of Linnean species and not the typical variety.
4. Correct name for *Hygrophila auriculata* (p. 168, no. 268) is *Hygrophila schulli* (Buch.-Ham) Almeida & Almeida.
5. Correct name for *Lavandula lawii* Wight (1849) (p. 168, no. 310) is *L. gibsonii* Graham (1839).
6. Correct names for *Paracaryopsis coelestinum* (p. 169, no. 379) and *P. malabaricum* (P. 154, no. 380) are *Adelocaryum coelestinum* (Lindl.) Brandis and *A. malabaricum* (Clarke) Brandis respectively.
7. *Crotalaria retusa* is found at sea level and has retuse leaf apex. The species found at little higher elevation and also at Mahabaleshwar, Amboli, Matheran, is a bushy shrub having acute or mucronate apices, named *C. leschenaultii*.

Ingalhalikar's terminology for the distribution of species is very often confusing, for example:

a. Occasional in deciduous forests in hilly areas of slopes. (Occasional in deciduous forests on slopes of hills?)
b. Occasional in dry deciduous forests of plains (Occasional on the plains in dry deciduous forests?)

Distribution of some of the species is based on limited field experience and could be misleading. One example should suffice:

Santalum album (p.43, no. 419) – Habitat is given as dry deciduous forests in plains. This is not an endemic species in Sahyadris. It is planted and occurs under cultivation in plains as well as in mountainous terrains.

The spelling of plant names needs correction, such as:

p. 17. *Moulluva* - *Moullava*
p. 17. *Neaotis* - *Neanotis*
p. 18. *Wadelia* - *Wedelia*
p. 34. *Albizzia lebbek* - *Albizia lebbeck*
p. 50. *Boerhaavia* - *Boerhavia*
p. 51. *Dendropthoe* - *Dendrophthoe*
p. 75. *gigantia* - *gigantea*

Flowering periods represented in colour can be true only to the limited localities that he has mentioned. They are far from the general flowering patterns of many of the species given.

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ERRATA
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pg. 225, Table 2, Column 2 **for** Total (mg/g) **read** Total Phenol (mg/g)
pg. 247, Photocredits, **for** T. Tulsi **read** T. Tsujii

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