

Bridging Science and Society: The **eFloraofIndia** Citizen Science Model



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Scientist-E

Agharkar Research Institute, Pune

&

Team eFloraofIndia



Mango (*Mangifera indica* L.)

M. andamanica

M. nicobarica

M. camptosperma

M. sylvatica

M. khasiana

Why is it important to know?

Knowing about the diversity of plants is important because it helps us understand ecosystems, support conservation efforts, and discover resources for medicine, food, and sustainable living.

Indian Phytodiversity

Known plant species (angiosperms): >22000

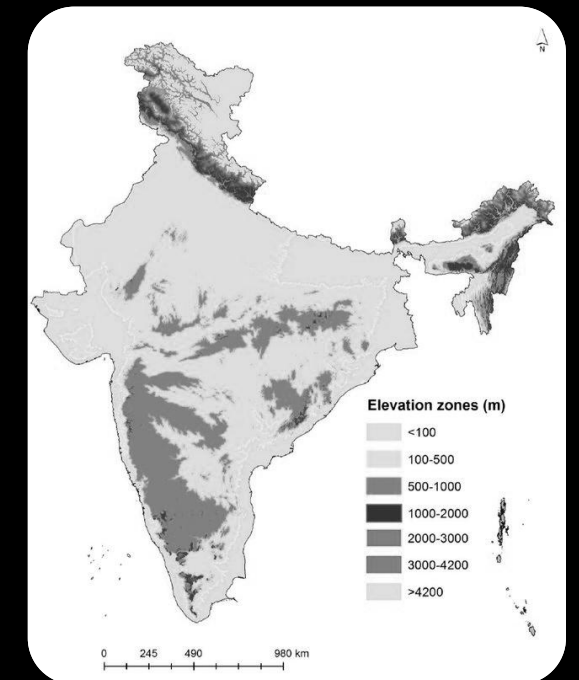
Updated list? X

Taxonomic keys? X

Photographs? X

Distribution? X

Threat Status? X





भारतीय वनस्पति सर्वेक्षण
BOTANICAL SURVEY OF INDIA

Flora of India: 31 Volumes

Only 14 volumes published till 2023

Knowledge Gap!





J.M. Garg

CMM, Indian Railways

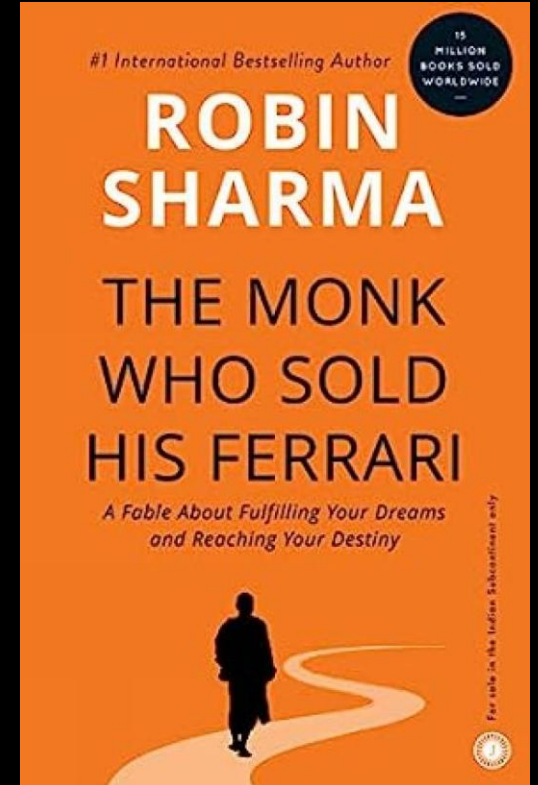
A passionate naturalist & wildlife photographer.

Creating awareness about our plants, birds, butterflies, etc.

Author: A photoguide to the birds of Kolkata & Common birds of India.

Worked on 'Wikiproject Lepidoptera' & 'WikiProject Birds' & contributed a lot to 'Tree of Life Wikiproject' of Wikipedia.

Created Google e-group, i.e. 'Efloraofindia', in June 2007



What is **eFloraofIndia**?

1. A citizen-driven digital platform for documenting Indian flora.
2. Operated entirely by volunteers.
3. Core of the model: Google e-group and website.
4. Participants include botanists, students, nature enthusiasts, etc.



eFloraofIndia

Database of Plants of Indian Subcontinent
Developed by members of the eFloraofIndia Google group

eFloraofIndia: The Incredible Journey



J M Garg

A passionate naturalist & wildlife photographer.



Dinesh Valke

Engineer by profession, Passionate about plant names in Indian languages



Prof Gurcharan Singh

Passionate Botanist



Prashant Awale

Passionate Naturalist



Dr Satish Phadke

Anesthetist and passionate naturalist



Dr Pankaj Kumar

Passionate Orchidologist



Dr Balkar Arya

Professor (Botany)



Dr Nidhan Singh

Professor (Botany)



Dr Vijayasankar R

National Botanist, USDA

and so on.....





>3500 members



>400000 pictures

>14000 species

Subject Area Experts



Dr. Manoj Chandran (Poaceae)
Dr. M. Sabu (Zingiberaceae, Marantaceae & Musaceae)
Late Dr. N.P. Balakishnan (Euphorbiaceae)
Dr. Chris Fraser-Jenkins (Pteridophytes)
Dr. V P Prasad (Cyperaceae)
Dr. Mayur Nandikar (Commelinaceae)
Dr. Wojciech Adamowski (Impatiens)
Dr. Anil Kumar (Poaceae)
Dr. V. Sampath Kumar (Lamiaceae)
Dr. Pascal Bruggeman (Arisaema)
Dr. Andrew Henderson (Arecaceae)
Dr. J R I Wood (Strobilanthes)
Dr. M. V. Krishnaraj (Fabaceae)
Dr. Shantanu Chavan (Alysicarpus)
Dr. M.K.Jana (Lentibulariaceae)
Dr. R. H. Archer (Celastraceae)
Dr. Mark Hughes (Begonia)
Dr. Sukla Chanda (Saliaceae)
Dr. Magnus Liden (Papaveraceae)
Dr. S. Panda (Ericaceae)
Dr. Late Bhaskar Veeralinga (Impatiens)
Dr. K M Prabhu Kumar (Zingiberaceae)
Dr. Subir Bandyopadhyay (Bauhinia & related genera)
Sh. Ron Kushner (Convolvulaceae)
Sh. Suhaib Firdous Yatoo (Fungi)
Dr. A B Nadaf & Dr. Rahul Zanan (Pandanaceae)
Sh. Pudji Widodo (Araceae, Aracaceae & Myrtaceae)

Sh. Late Krishan Lal (Himachal)
Dr. N. Sasidharan (Kerala)
Dr. A R Sivu (Memecylon)
Dr. Rajib Gogoi (Impatiens of Himalayas)
Sh. Chris Chadwell (Ladakh & North Western Himalayas)
Sh. Bhaskar Adhikari (Berberidaceae)
Sh. Varun Sharma (Ornamental plants & Maharashtra)
Sh. Ajinkya Gadave (Ornamental plants)
Smt. A. Lalithamba (Andhra Pradesh)
Smt. Radha Veach (Maharashtra)
Sh. Viplav Gangar (Maharashtra & Gujarat)
Sh. Satish Pardeshi (Maharashtra)
Sh. Prasad Dash (Orissa)
Sh. Raman Arunachalam (Bengaluru)
Sh. Nayan Singh (Madhya Pradesh)
Sh. Ashwini Bhatia (Himachal Pradesh)
Sh. Anil Thakur (Himachal Pradesh)
Sh. Santanu Dey (Meghalaya/ North East India)
Sh. M Sawmliana (Mizoram)
Sh. Samiran Panday (North East India)
Dr. Rakesh Singh (Gujrat)
Sh. Ashutosh Sharma (Himachal Pradesh & Fungi)
Dr. Alastair Culham (Europe)
Ms. Sheila (Europe)
Dr. G S Rawat (Western Himalayas)
Sh. Siddarth Machado (South India)
Dr. Ishwari Rai (Western Himalayas)

....and many more



www.efloraofindia.com

- One of the biggest non-commercial plant-related websites
- Unique of its kind globally
- Completely free of advertisements
- Based on a vast collection of photographic images of plants
- Operates without any financial or professional organizational support



- Driven solely by the selfless efforts of its dedicated members
- Includes contributions from experts worldwide and volunteers from diverse backgrounds
- Focused on documenting the flora of the Indian Subcontinent
- Discussions and contributions take place on the eFloraofIndia Google e-group



Image: Google

www.efloraofindia.com

A User-friendly Website



eFloraofIndia

Database of Plants of Indian Subcontinent
Developed by members of the eFloraofIndia Google group

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Aralia armata

Aralia armata (Wall. ex G.Don) Seem., *J. Bot.* 6: 134 1868. (syn: *Aralia tengyuehensis* C.Y.Wu; *Aralia thomsonii* var. *glabrescens* C.Y.Wu; *Panax armatus* Wall. ex G.Don);

E. Himalaya to Indo-China and E. India as per [WCSP](#);

Assam; China South-Central; East Himalaya; India; Myanmar; Thailand as per [Catalogue of Life](#);



MS Oct.2018/13 Aralia sp. ? for Id : 10 posts by 4 authors. Attachments (2)

Location : Farkawn, Mizoram

Date : 02-10-2018

Habit : Prickly shrub

Habitat : Wild



Oryza minuta

Home / *Species- Seed plants (families) / M--Z (families) / Po / Poaceae / Oryza / Oryza minuta

November 22, 2024 admin_jmgarg Oryza

Oryza minuta J.Presl, in C.B.Presl, Reliq. Haenk. 1: 208 (1830) (syn: *Oryza manilensis* Merr. ; *Oryza sativa* var. *minuta* (J.Presl) Körn.);

Tropical Asia: Assam, Bangladesh, Borneo, East Himalaya, India, Jawa, Lesser Sunda Is., Malaya, Maluku, Myanmar, Nepal, New Guinea, Northern Territory, Philippines, Sulawesi, Sumatera, Thailand as per POWO;



Need ID: Wild Rice Species?: 4 images.
Tadoba, Oct 2024

Oryza rufipogon Griff.

Oryza minuta (*O.officinalis*)

References:

POWO Catalogue of Life WFO India Flora Online India Biodiversity Portal Lucid Central

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 - > M—Z

Oryza

🏠 / *Species- Seed plants (families) / M---Z (families) / Po / Poaceae / Oryza

March 17, 2011 | 👤 admin.jmgarg | Poaceae

Oryza coarctata Roxb. (Indian Subcontinent to Myanmar: Bangladesh, India, Myanmar, Pakistan as per POWO)



Oryza meyeriana (Zoll. & Moritz) Bail. (Tropical & Subtropical Asia: Andaman Is., Assam, Bangladesh, Borneo, Cambodia, China South-Central, China Southeast, East Himalaya, Hainan, India, Jawa, Laos, Malaya, Maluku, Myanmar, Philippines, Sri Lanka, Sumatera, Thailand, Vietnam as per POWO)



Oryza minuta J.Presl (Tropical Asia: Assam, Bangladesh, Borneo, East Himalaya, India, Jawa, Lesser Sunda Is., Malaya, Maluku, Myanmar, Nepal, New Guinea, Northern Territory, Philippines, Sulawesi, Sumatera, Thailand as per POWO)



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❖ One major achievement has been providing comparative images at genus and family pages, which generally one does not find anywhere in the world.

❖ These serve as digital keys, much different from the traditional contextual keys.

Have a question? Ask or enter a search term.

SEARCH



Acanthus ilicifolius

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Acanthus ilicifolius

January 31, 2011 admin_jmgarg Acanthus

Acanthus ilicifolius L., *Sp. Pl.* 639 1753. (Syn: *Acanthus doloarin* Blanco; *Acanthus ilicifolius* var. *subintegre* Nees; *Acanthus neoguineensis* Engl.; *Dilivaria ilicifolia* (L.) Juss.);

a-KANTH-us — Greek: *ákantha* (thorn); also spine or spike ... [Dave's Botany](#)

il-liss-ee-FOH-lee-us — having leaves like a holly ... [Dave's Botany](#)

commonly known as: holly-leaved acanthus, holly-leaved bear's breech, holly mangrove, sea holly • **Bengali:** হাড়গোজা hargoza, কটকি kataki, নীল টেংরাকাটা nila tenrakanta • **Gujarati:** હરગોજા hargoja, કાંટાળીયો kantaliyo • **Hindi:** हड़कत harkata • **Kannada:** ಹೊಳೆ ಚುಳ್ಳಿ hole chulli, ಕಂಡ್ಲಾ ಚುಳ್ಳಿ kaandla chulli • **Konkani:** मारंडी maramdo • **Malayalam:** ചുളളി chulli, ചുളളിക്കണ്ടൽ chullikkantal, പയിങ്ങാച്ചുളളി payingngaachchulli • **Marathi:** मारंडी marandi, निवगूर nivagur, वागाटी vagati • **Odia:** ହାକୁଚା କଣ୍ଠା hakucha kanta, ହାଡ଼କାଠା harda katha, ହାଡ଼କଣ୍ଠି hardakanchi • **Sanskrit:** हरीकुसा harikusa • **Tamil:** ஆற்றுமுள்ளி arru-mulli, கழுதைமுள்ளி kalutai-mulli, கோழிமுள்ளி koli-mulli, உப்புக்கரிநீர்முள்ளி uppu-k-kari-nir-mulli • **Telugu:** అలస్యకంప alasyakampa, అలిసి alisi, ఏటిచిల్ల etichilla, తూడిచిల్ల thude chulli • **Tulu:** ತುದೆಚುಳ್ಳಿ tudechulli • **Urdu:** کھڑا harkata

Names bibliography at <https://dineshvalke.blogspot.com/2020/09/acanthus-ilicifolius-l.html>

Native to India, Sri Lanka, Asia, Malesia, Australia and Pacific Islands.

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EN English (India)

Vernacular Names

Citizen Science Leading to Species Discovery

- Group members keep sharing photographs to identify unknown species.
- In several instances, these photos sparked discussions about their distinctness.
- Some of these organisms were later confirmed as a **species new to science/ new records**.
- A few notable examples are highlighted below:



Dendrophthoe gamblei

(Andhra Pradesh)



Piper dravidii

(Maharashtra)



Combretum shivannae

(Karnataka)



Arisaema anatinum

(Arunachal Pradesh)



Henckelia umbellata

(Arunachal Pradesh)

Citizen Science Leading to Species Discovery

- Distribution records of some rare and threatened plant species in India.



Sapria himalayana

A rare root
parasite reported
from Mizoram by
an esteemed
member

Photo Credit: M. Sawmliana

Citizen Science Leading to Species Discovery

- Distribution records of some rare and threatened plant species in India.

Ann. Bot. Fennici 51: 409–413
Helsinki 12 November 2014

ISSN 0003-3847 (print) ISSN 1797-2442 (online)
© Finnish Zoological and Botanical Publishing Board 2014

Rediscovery of *Zeuxine rolfiana*, a ‘Critically Endangered’ endemic Indian orchid from Andaman and Nicobar Islands, with a note on its typification

K. M. Manudev¹, Avishek Bhattacharjee^{2,*} & Santhosh Nampy³

Photo Credit: Dr M. Madhavan

Citizen Science Leading to Species Discovery

➤ Distribution records of some rare and threatened plant species in India.



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<https://doi.org/10.11646/phytotaxa.573.2.8>

Rediscovery of *Phlogacanthus jenkinsii* (Acanthaceae) from India after 140 years

ROHAN MAITY¹, MAL SAWMLIANA² & SUDHANSU SEKHAR DASH^{3*}

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*Corresponding author: ✉ ssdash2002@gmail.com



Photo Credit: M. Sawmliana

jenkinsii

after 140

am

Citizen Science Leading to Species Discovery

➤ Distribution records of some rare and threatened plant species in India.

Notes on the occurrence of *Ipomoea acanthocarpa* and *Ipomoea laxiflora* (Convolvulaceae) in India

Kattee A.V.¹, Patil C.R.², Patel S.L.³, Kahalkar V.I.⁴ & V.B. Shimpale^{1*}

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³Department of Botany, Government College of Daman (UT), Nani Daman, Gujarat – 396 210, India.

⁴Mahatma Gandhi Arts Science and Late N. P. Commerce College, Armori, Gadchiroli district, Maharashtra – 441 208, India.

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eFloraofIndia Supports and Improves Google Lens Identifications

Enhances Accuracy: Validates and corrects plant identifications made by Google Lens using expert-reviewed content.

Rich Plant Database: Leverages India's largest citizen-science-based flora repository with over 14,000 species.

Contextual Clarity: Provides ecological, geographical, and seasonal insights often missing in Google Lens results.

Community Support: Offers expert feedback through a collaborative platform to resolve doubtful or conflicting IDs.

How much value has eFloraofIndia created?

Estimated value: ₹1000 crore+ (possibly much higher if valued in international terms, probably >\$100 Million in the USA)

Based on:

- **Thousands of hours contributed by passionate members**
- **Enterprise and brand value created over the years**

Strengths:

- **Invaluable contributions from top taxonomists and experts worldwide**
- **Participation from professionals across diverse fields**
- **Powered by *passion*, not profit**

Brand identity:

- **Difficult to replicate due to deep trust, collaboration, and community**
- **Continuously evolving, *always feels like just the beginning***

17 June 2007- July 2025
Going well, Hale & Hearty!



Moderators



eFloraofIndia
Celebrating its 15th Anniversary

Societal impact over financial return:

Not designed for profit but for the public good and botanical awareness

**True value lies in the unmatched
satisfaction and social contribution,
*worth several hundred crores in itself***

“Never doubt that a small group of thoughtful, committed citizens can change the world. indeed, it's the only thing that ever has.” — **MARGARET MEAD**

**Join us to discuss and learn more about the
Indian flora**

<https://groups.google.com/g/indiantreepix>

Thank you!

(rkchoudhary@aripune.org)