



On *Homonoia Lour.* (Euphorbiaceae)

Paradesi Anjaneyulu, S. M. Nagesh and B. Ravi Prasad Rao.

Department of Botany, Sri Krishnadevaraya University, Ananthapuramu 515003,

Andhra Pradesh, India.

Abstract: Globally, *Homonoia* (Euphorbiaceae) represented by three species and we located all the three species from different localities of Andhra Pradesh. This paper deals with the taxonomy, distribution, and conservation status of all the three species. *Homonoia intermedia* is being reported as a new distributional record to Andhra Pradesh.

Keywords: *Homonoia*, Global distribution, New record to Andhra Pradesh

Introduction: The genus *Homonoia* was described by Loureiro, João de in 1790 in Flora of cochinchinensis with its type species *H. riparia* (Balakrishnan & Chakrabarty, 2007). The genus *Homonoia* Lour. comprises three species, *H. intermedia*, *H. retusa* and *H. riparia*, of which the former species is endemic to India, confined to few states and the latter species are known to occur in Bangladesh, South East Asia and China. We recorded all the three species, collected from different localities in the state of Andhra Pradesh. Taxonomic treatment for all species, key for identification, phenology, voucher specimens, conservation status and other relevant data along with photographs is provided.

Materials and methods:

While conducting floristic surveys in different districts of Andhra Pradesh since 2016 to till date, the authors could collect curious specimens of *Homonoia* from West Godavari and Kurnool districts. The specimens were processed and mounted by the following standard herbarium methodology (Jain & Rao, 1977) and identified following Gamble, 1921; Balakrishnan et al., (2012). Perusal of literature (Pullaiah et al., 2018) revealed that *Homonoia intermedia* is found to be a new record for the state of Andhra Pradesh. All the voucher specimens are deposited in SKU (Sri Krishnadevaraya University Herbarium, Ananthapuramu, Andhra Pradesh, India).

Homonoia Lour.

Key to species

1. Leaves elliptic-spathulate, not exceeding 3.5 cm in length; inflorescence to 1 cm long.....*H. retusa*
1. Leaves otherwise:
 2. Leaves exceed 20 cm; inflorescence to 10 cm long.....*H. riparia*
 2. Leaves not exceeding 10 cm; inflorescence to 3.5 cm long.....*H. intermedia*

Homonoia intermedia Haines, Bot. Bihar & Orissa Pt. 2, 111 (1921); Susila Rani & N.P. Balakr. in N.P. Balakr. et al., Fl. India 23: 123. 2012.

Evergreen shrubs or small trees up to 5 m high; branches dark pinkish when juvenile, glabrescent to pubescent, with lepidotes, minutely pubescent; Leaves alternate, oblong-lanceolate or ovate, base cuneate, minutely serrate at the upper half, rounded to acute or apiculate at apex, midvein exerted slightly, 3.5-10 x 1-2.5 cm, coriaceous, glabrescent above, pubescent on nerves beneath, covered with minute, orbicular glands and few scales beneath; lateral nerves up to 10 pairs, looping within margins, bulletly visible beneath, faintly lepidotes beneath; sub sessile to petiolate, up to 4 mm long, pubescent; Inflorescences axillary spikes up to 3.5 cm long, pubescent; bracts ovate to lanceolate; bracteoles oblong. Staminate flowers: 7 mm across, buds ovoid, globose, pointed; tepals 3, ovate to lanceolate, concave, membranous, 3.0 x 2.0 mm, hairy outside; stamens with dense, globose clusters. anthers red, Pistillate flowers: sessile, reddish-brown, pubescent; styles 3, connate at base, papillose and recurved at apex. Fruits globose, with 3 valved cocci, hairy dark brown. Seeds minute, ovoid, globose, yellowish-brown.

Phenology: January-May.

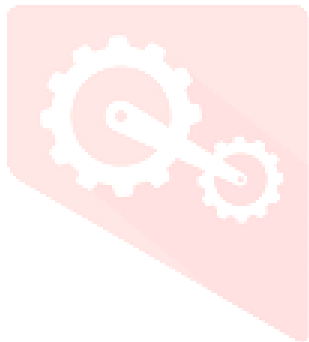
Specimen examined: Bobbarlanka, West Godavari, Andhra Pradesh, P. Anjaneyulu and S.M. Nagesh 56266 (SKU), 19/02/2019, 16°56'2.92"N, 81°44'15.69"E, Elevation: 8 m.

Distribution: Endemic to India (Bihar, Goa, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu); **Andhra Pradesh:** West Godavari.



Distribution of *Homonoia intermedia*.

Conservation status: Not Evaluated (IUCN). Found about 50 specimens in the collected site.





Homonoia intermedia: A. Habit, B. Flowering Twigs, C. Lepidots, D. Flowering stalk magnified.



Herbarium specimen of *Homonoia intermedia*.

Homonoia retusa (Graham ex Wight) Müll.Arg., Linnaea 34: 200. 1865; Hook. f., Fl. Brit. India 5: 456. 1887; Gamble, Fl. Madras 2: 1333. 1925; Susila Rani & N.P.Balacr. in N.P. Balacr. et al., Fl. India 23:

125. 2012; Pullaiah et al., Fl. Andhra Pradesh 4: 1724. 2018; *Adelia retusa* J. Graham ex Wight, Icon. Pl.

Ind Orient. 5: t 1869. 1852.

Synonyms: *Adelia retusa* Graham ex Wight

Evergreen shrubs up to 3 m high; branches dark pinkish when juvenile, grabrescent, with lepidots, minutely pubescent; Leaves , elliptic-spathulate or obcordate base cuneate, serrate, rounded- retuse, piculate at apex, midvain exerted slightly, 3.5 x 1.5 cm, coriaceous, glabrescent on both sides, orbicular glands and few scales beneath; lateral nerves up to 5 pairs, bulletly visible, scarcely lepidont beaneath; sub sessile to petiolate, up to 3 mm long, glabrescent; Inflorescences axillary spikes up to 1 cm long, glabrescent; bract lanceolate; bracteoles oblong. Staminate flowers: 6 mm across, globose, pointed; tepals 3, ovate to lanceolate, concave, membranous, 3.0x2.0 mm, hairy outside; stamens with a dense, globose clusters. anthers red, Pistillate flowers: sessile, reddish-brown; glabrescent, styles 3, connate at base, papillose and recurved at apex. Fruits globose, with 3 valved cocci, puberulous, dark brown. Seeds minute, globose, brown.

Phenology: January-May.

Specimen examined: Author substantiate: On the banks of Godavari, Vadapalle, West Godawari, Andhra Pradesh, P. Anjaneyulu and S.M. Nagesh 56256 SKU, 19/02/2019, 16°56'5.251"N, 81°43'55.535"E; Elevation 8 m.

Distribution: Endemic to India and Bangladesh. India (Karnataka, Kerala, Maharashtra, Tamil Nadu). Andhra Pradesh: West Godavari and Kurnool districts.



Distribution of *Homonoia retusa*.

Conservation status: Least Concern.

The screenshot shows the IUCN Red List entry for *Homonoia retusa*. The page features a red header with the IUCN logo and navigation links. The species name is prominently displayed, followed by its scientific name. A citation is provided: Kumar, B. 2011. *Homonoia retusa*. The IUCN Red List of Threatened Species 2011: e.T177264A7401952. <https://dx.doi.org/10.2305/IUCN.LIJK.2011-1.RLTS.T177264A7401952.en>, Downloaded on 28 November 2020. The conservation status is indicated as 'Least Concern' (LC) with a corresponding red circle icon. A horizontal bar below the status shows the IUCN categories: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, and Extinct. The 'Least Concern' category is highlighted. The page also includes a 'Download' button, a 'Translate page into' option, and the last assessment date: 14 December 2010. The scope of assessment is listed as 'Global'. There are links to 'Skip to Assessment in detail' and 'Skip to Text summary'.

Conservation status of *Homonoia retusa*.





***Homonoia retusa*: A. Habit; B. Male Flowers; C. Female flowers.**



Herbarium specimen of *Homonoia retusa*.

Homonoia riparia Lour., Fl. Cochinch 2: 637. 1790; Hook. f., Fl. Brit. India 5: 455. 1887; Gamble, Fl. Madras 2: 1333. 1925; Susila Rani & N.P. Balakr. in N.P. Balakr. et al., Fl. India 23: 125. 2012; Pullaiah et al., Fl. Andhra Pradesh 4: 1724. 2018; *Adelia neriifolia* Heyne ex Roth, Nov. Pl. Sp. 375. 1821.

Plate 3.2 & 3.3

Synonyms: *Adelia neriifolia* B.Heyne ex Roth; *Croton salicifolius* Geiseler; *Haematospermum neriifolium* (B.Heyne ex Roth) Wall. ex Voigt; *Haematospermum salicinum* (Hassk.) Baill.; *Lumanaja juviatilis* Blanco; *Ricinus salicinus* Hassk.; *Spathiostemon salicinus* (Hassk.) Hassk.

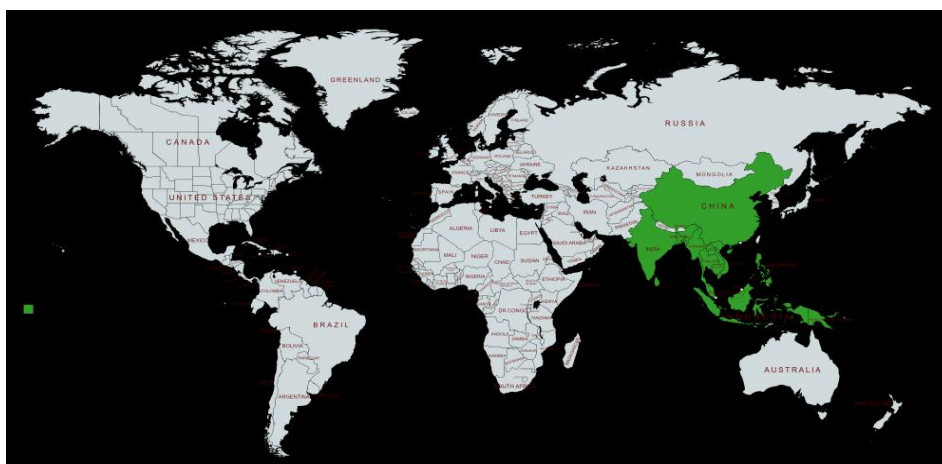
Evergreen shrubs, up to 3.5 m high; branches pinkish when juvenile, glabrescent, with lepidotes, minutely pubescent or glabrescent; Leaves linear-lanceolate, base rounded-obtuse, margin entire or slightly wavy, obtuse-acuminate, 25 x 2.5 cm, coriaceous, glabrescent on both sides, when comparing densely below; lateral nerves up to 20 pairs, faintly visible, densely lepidotes beneath; petiolate, up to 1 cm long, glabrescent; Inflorescences axillary spikes up to 10 cm long, glabrescent; bracts and bracteoles ovate. Staminate flowers: 9 mm across, globose, tepals 3, lanceolate, concave, membranous, 4.5x2.5 mm, hairy outside; stamens with dense, globose clusters. anthers red, Pistillate flowers: sessile, reddish-brown; glabrescent, styles 3, connate at base, papillose and recurved at apex. Fruits globose, with 3 valved cocci, puberulous, dark brown. Seeds minute, globose, brown.

Phenology: April-January.

Specimen examined: Author substantiate: Kanumalakshminarasimha swami temple, Kurnool District, Andhra Pradesh, B. Ravi Prasad Rao & P. Anjaneyulu 49280 SKU (Fruting),12/25/2016, 274 m; GBM (KNL), S. Sunitha & A. Madhusudhana Reddy, 9130,2.7.1989; Mamandur (CTR), BSS & SKB, 34321, 3.10.2009.

Distribution: World: Bangladesh, Borneo, Cambodia, China South-Central, China South-East, Hainan, Jawa, Laos, Lesser Sunda Is., Malaya, Maluku, Myanmar, New Guinea, Philippines, Sri Lanka, Sulawesi, Sumatera, Taiwan, Thailand, Vietnam. **India:** Assam, Andaman and Nicobar Is., East Himalayas.

Andhra Pradesh: Chittoor and Kurnool districts



Distribution of *Homonoia riparia*.

Conservation status: Least Concern.

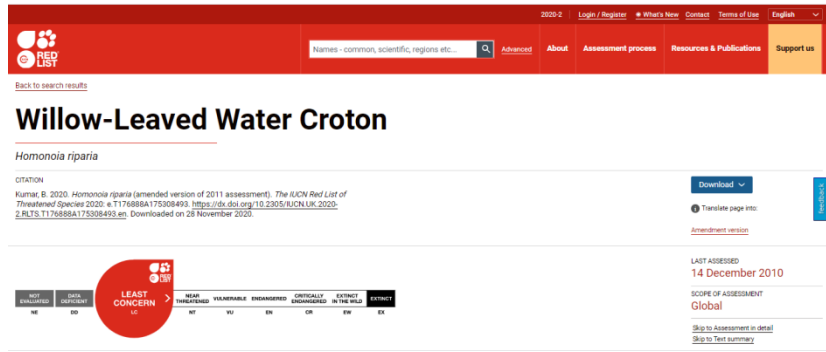


Plate 3.1: Conservation Status of *Homonoia riparia*.





Homonoia riparia: A. Habit, B. Leaves, C. Inflorescence.



Herbarium specimen of *Homonoia riparia*.

Acknowledgements:

We thank Andhra Pradesh Forest Department for according permission to fieldwork, and also thank home university for providing research facilities.

References:

Gamble J.S., (1921). Flora of the Presidency of Madras. Vol.II: 579 -1346. Bishen singh Mahebdra pal singh 23-A, Connaught Place Dehra Dun-248001(India.).

Haines and Henry Haselfoot, (1867-1943); The Botany of Bihar and Orissa, Adlard and sold by agents for Indian Official Publications,1921-25.

Jain, S. K. and R.R. Rao. (1976). A Hand Book of Field and Herbarium methods. Today and Tomorrows, New Delhi.

Balakrishnan, N.P. & Chakrabarty, T. (2007). The family Euphorbiaceae in India. A synopsis of its profile, taxonomy and bibliography: 1-500. Bishen Singh Mahendra Pal Singh, Dehra Dun.

Singh, P., Karthigeyan, K., Lakshminarasimhan, P.& Dash,S.S. (2015). Endemic Vascular Plants Of India. Bcha;niealSurvey of India, Kolkata

Pullaiah T, D Ali Moulali & SS Rani, (2018). Flora of Andhra Pradesh. Vol. 4. Scientific Publishers, Delhi.

Sankara Rao, K., Raja K Swamy, Deepak Kumar, Arun Singh R. and K. Gopalakrishna Bhat (2019). Flora of Peninsular India. (<http://flora-peninsula-indica.ces.iisc.ac.in/index.php>).

IUCN (2020). The IUCN Red List of Threatened Species. Version 2020-2. <https://www.iucnredlist.org>. Downloaded on 09 July 2020.

Plants of the World Online (<http://www.plantsoftheworldonline.org/>).