



# A Report on *Rivina humilis* L. an Invasive Alien Weed from Telangana State, India

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**Abstract:** An invasive alien weed *Rivina humilis* L., commonly known as 'Bloodberry' belongs to the family Petiveriaceae found to be naturalized in most of the moist and shady regions of the Hyderabad British Residency which is now known as University College for Women, Koti in Hyderabad, Telangana State, India. The present report of the plant is first of its kind from University College for Women, Koti and Osmania University Campus, Hyderabad, Telangana State. A detailed account of the species with reference to the morphology and habitat of the plant is described.

**Key words:** *Rivina humilis* L. Petiveriaceae, Invasive, weed, naturalized, Hyderabad, Telangana.

## INTRODUCTION

Genus *Rivina* is recognized by Linnaeus for the first time in 1753 (Linnaeus, 1753) and since then several species are identified and reported from different places in the world (Walter, 1909; Dequan, 2003; Mabberley, 2008; Tseng *et al.*, 2008). A population of the species of *Rivina* was found in the moist and shady regions of the gardens in Hyderabad. After critical examination, the taxon was identified as *Rivina humilis* L. (Petiveriaceae, incl. Rivinaceae C. Agardh, as per APG IV, 2016). Earlier, it was studied under the family Phytolacaceae (Jasbir, 2017). The genus *Rivina* is known as monotypic genus (Mabberley, 2008). The genus *Rivina* is named after A.Q. Rivinus, Professor of Botany and Medicine at Leipzig 1691-1725 (Ghosh and Sikdar 1983). There are reports on different states in India from time to time (Mandal *et al.*, 2014, Jasbir, 2017, Venkaiah *et al.*, 2019) but a report of it from Telangana State even in the Flora of Telangana (Pullaiah, 2015) is not documented. So, here is a report of *Rivina humilis* L. from Hyderabad city of Telangana State. It is growing luxuriantly in the shady regions as wild weed all over the campus of University College of Women, Koti, (Hyderabad British Residency) and also in Osmania University Campus, Hyderabad, Telangana State especially during rainy season over the past 20 years. It represents the sole member in the family Petiveriaceae from Telangana. A detailed account of the species is presented in this report.

## Scientific Classification

Kingdom: Plantae  
Clade: Tracheophytes  
Clade: Angiosperms  
Clade: Eudicots  
Order: Caryophyllales  
Family: Petiveriaceae  
Genus: *Rivina*  
Species: *R. humilis*

## Synonyms

*Piercea acuminata* Raf., *Piercea glabra* Mill., *Piercea obliquata* Raf., *Piercea tomentosa* Mill. *Rivina acuminata* Raf., *Rivina aurantiaca* Warsc. Ex Schenk, *Rivina brasiliensis* Nocca, *Rivina canescens* G. Don ex Steud., *Rivina gracilis* Salisb., *Rivina laevis* L., *Rivina lanceolata* Willd., *Rivina obliquata* Raf., *Rivina orientalis* Moq., *Rivina pallida* Salisb., *Rivina paraguayensis* S.Parodi., *Rivina portulacoides* Nutt., *Rivina procumbens* Ruiz ex Moq. *Rivina puberula* Kunth., *Rivina purpurascens* Schrad., *Rivina tetrandra* Desf., *Rivina viridiflora* Bel., *Rivina viridis* Schmidt in Meyer, *Solanoides laevis* (L.) Moench, *Solanoides pubescens* Moench, *Solanoides undulata* Moench (theplantlist.org).

## Common Names

Baby pepper, blood berry, pigeon berry, Ink berry, coral berry, baby pepper, rouge plant, small pokeweed (English), groseille; petite groseille (France), coralito (Spain), coralberry; turkeyberry (Australia), shu zhu shan hu (China), bloedbessie; bloodberry (South Africa), sminkbär (Sweden), polo (Tonga), pigeonberry; turkeyberry (USA).

## Vernacular Names

Netturu pallu (Telugu), Bon-Moricha (Bengali), Raktha nelli (Malayalam)

## Distribution

It is native to tropical and sub-tropical America but introduced and naturalized in many parts of the world like Madagascar, tropical Southeast Asia, Malaysia, Indonesia, Philippines, Singapore, Pakistan, Burma, Sri Lanka, Eastern Asia, West Indies and India (Walter, 1909; Dequan, 2003; Mabberley, 2008; Tseng *et al.*, 2008). In India, it is known from Telangana (Present Report), West Bengal (Mandal *et al.*, 2014), Jharkhand (Jasbir, 2017), Maharashtra (Deshmukh and Rathore, 2017), Bihar, Karnataka, Kerala, Meghalaya, Rajasthan, Tamil Nadu, Uttar Pradesh and Andhra Pradesh (Venkaiah *et al.*, 2019).

*Rivina* is found as invasive alien weed in New Caledonia, Queensland, Australia, Cocos Islands, Réunion, Norfolk Island, Fiji, Tonga, French Polynesia, Hawaii, Galapagos Islands and India (Sudhakar Reddy *et al.*, 2008).

## Details of the location where the plant is collected

**Soil pH:** 8 to 9, alkaline soil

**Soil type:** Black loamy soil

### GPS Location from the campus:

- Administrative Block: "N17°23'03.8", E78°29'16.8"
- Botany Department: N17°22'54.7", E78°29'15.2"
- Botanical Garden: N17°22'50.9", E78°29'06.1"
- Empress Gate: N17°22'54.5", E78°29'15.0"
- Hostel: N17°38'22.4", E78°48'82.8"

### Flowering Period

June to February, more prevalent during October to December.

### Taxonomic Treatment

*Rivina humilis* L. Sp. Pl. 1: 121. 1753

### Habitat

*Rivina humilis* is found in hammocks, roadsides, forests, thickets, shell middens and area at elevations from sea level to 1,700 m. It is growing in shady places and are tolerant of full shade, saline and alkaline soils (FNA, 2009).

In the present observation, they are growing not only in moist soil but also in the crevices of walls of old buildings in the campus, especially near drainage pipe leakages.

### Description

*R. humilis* is an herbaceous to woody perennial erect plant growing up to a height of 2 to 4 feet. Stems are erect, branching dichotomous, glabrous, angular and pubescent at the nodes. Leaves are simple, exstipulate, ovate to elliptical 10 -12 cm long, petiolate, the base rounded or attenuate, apex acute to acuminate, dark green to light green in colour, surface mostly glabrous sometimes found to be pubescent. Margins are smooth to wavy. Leaves are arranged spirally around the stem. Inflorescences are terminal or axillary raceme, 5-15.5 cm long and slender bearing 30-54 flowers. Flowers are small, white with pink shade, pedicelate, pedicel 5mm long, bracteate, bracteolate, bisexual, tetramerous, 4 tepals, 2-3 x 1-2.5 mm, green when young, white with pink tips when mature, persistent; slightly hairy outside, 4 stamens alternating with tepals, dimorphic, two short and two long, filaments persistent, anthers are introse, dithecous, pollen grains spheroidal, 24-30 µm, psilate, pentazoniporate; ovary is superior, ovoid to globose, monocarpellary, unilocular. Style is shorter than the ovary, persistent, curved; stigma capitate. Fruit is a berry, scarlet red in colour, globose, 3-4 mm in diameter, glossy surface, persistent tepals and style present. Berries are loosely arranged in some and compactly arranged in others. Seeds are black, small, 3 mm in diameter, lenticular and pubescent.

**Note:** Herbarium specimen deposited at P.G. Department of Botany.

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## References

1. APG IV 2016. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV. *Botanical Journal of the Linnean Society* 181: 1–20.
2. Dequan, L. 2003. Phytolaccaceae. In: Zhengyi, W. and Raven, P.H. (eds.), *Flora of China* 5: 435–436. Chinese Academy of Science, Beijing
3. Deshmukh, U.B and Rathor, O.S. 2017. *Rivina humilis* var. *bracteata* D. Maity et al. (Phytolaccaceae), A new distributional record for (Maharashtra) India. *Bioscience Discovery*, 8(3):486-487.
4. *Flora of North America*. 2009.eFloras.org. Retrieved 2009-12-11.
5. Ghosh, R.B. & Sikdar, J.K. 1983. A revision of the Indian Phytolaccaceae (sensu lato). *Journal of Economic and Taxonomic Botany* 4: 153–163.
6. Hooker, J.D. 1883. *The Flora of British India*. Vol.5, L. Reeve and Company, Kent
7. <http://www.theplantlist.org/tp11.1/record/kew-2425661>
8. Jasbir, B. 2017. *Rivina humilis* L. (Phytolaccaceae) a new distributional record of plant species and family for Palamu Division of Jharkhand, India. *International Journal for Innovative Research in Multidisciplinary Field* 3 (4): 107,108.
9. Lawrence, H.M.G. 1974. *Taxonomy of Vascular Plants*. 4th edn. Oxford and IBH Publishing Company, New Delhi
10. Mabberley, D.J. 2008. *Plant Book – A Portable Dictionary of Flowering Plants and their Uses*. Cambridge University Press, Cambridge.
11. Linnaeus, C. 1753. *Species Plantarum*. Ed.1.Laurentius Salvius. Sweden. pp. 121-122.
12. Mabberley, D.J. 2008. *Plant Book – A Portable Dictionary of Flowering Plants and their Uses*. Cambridge University Press, Cambridge
13. Mandal, M., Mitra, S., Maiti, G.G. & Maity, D. 2014. A new variety of *Rivina humilis* and the status of *R. bengalensis* (Phytolaccaceae). *Rheedea* 24(2): 99-104.
14. Pullaiah, T. 2015. *Flora of Telangana-the 29th state of India*. *The Journal of Indian Botanical Society*, 94(1and2), 1-8.
15. Sivarajan, V.V. & Indu, B. 1987. In pursuit of new herbal sources for Indian medicine. *Ancient Science of Life* 7(1): 39–44.
16. Srivastava, S.C. & Paul, T.K. 2003. *Rivina bengalensis* – a new species from India. *Indian Journal of Forestry* 26: 357, 358.
17. Sudhakar Reddy, C. & Bagyanarayana, G. & K. N, Reddy. 2008. *Invasive Alien Flora of India*. Published by National Biological Information Infrastructure, US Geological Survey, USA, 2008

17. Tseng, Y.H., Wang, C.C. & Chen, Y.T. 2008. *Rivina humilis* L. (Phytolaccaceae) – A newly naturalized plant in Taiwan. *Taiwania* 53(4): 417–419.
18. Venkaiah, M & Jonnakuti, Prakasa Rao & Padal, S. & Rapaka, Prameela. (2019). *Rivina humilis* (Petiveriaceae) -An Addition to the Naturalized Flora of Andhra Pradesh, India. *Journal of Economic and Taxonomic Botany*. 42 (1-4), 82-84.
19. Walter, H. 1909. Phytolaccaceae, *Pflanzenreich* IV 83(39): 1–154.



Fig 1: Luxuriant growth of *Rivina humilis*



Fig 2: Different stages of inflorescence formation



Fig 3: Variations in lengths of inflorescence and berries



Fig 4: Compact and loose type of inflorescence and berries

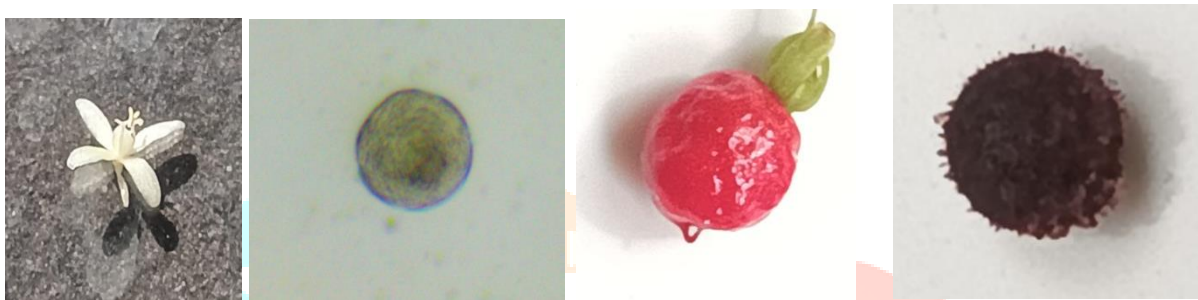


Fig 6: A Flower

Fig 7: Pollen grain

Fig 8: Fruit

Fig 9: Seed



Fig 10: Hairs on seed