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## Mecardonia Ruiz. & Pav., Plantaginaceae an addition to the Flora of Allahabad, Uttar Pradesh, India

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**Abstract-** *Mecardonia Ruiz. & Pav.* belong to family Plantaginaceae is reported here as a new addition to the Flora of Allahabad district Uttar Pradesh. It is collected from Prayagraj district of Uttar Pradesh and identified as *Mecardonia procumbens* (Mill.) Small. Taxonomic description of the species is provided with up-to date citation, phenology, ecology, and photograph for easy identification.

**Key words:** *Mecardonia*, *Plantaginaceae*, New record, Prayagraj (Allahabad).

### INTRODUCTION

*Mecardonia Ruiz. & Pav.* (axilflower) belong to the family Plantaginaceae (Plantain family). The genus *Mecardonia Ruiz. & Pav.* was first described by Hipólito Ruiz López and José Antonio Pavón in 1794.<sup>1</sup> It includes 9 species, of which 5 species are native to Argentina.<sup>2,3</sup> It is represented by one species in India<sup>4</sup> Uttar Pradesh.<sup>5</sup> It spread widely in warmer regions of the world and mainly distributed in South America and is now naturalized on all continents except Antarctica. It is collected from Prayagraj district, Uttar Pradesh and identified as *Mecardonia procumbens* (Mill.) Small. also known as yellow-flowered waterhyssop, baby jump-up. *Mecardonia Ruiz. & Pav.* and *Mecardonia procumbens* (Mill.) Small are new record as genus and species respectively to the Flora of Allahabad district U.P.<sup>6</sup>, Prayagraj (Allahabad) district of Uttar Pradesh have been explored by different botanists.<sup>7-10</sup>

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### Study area

Prayagraj (Allahabad) is located between 24°47' N & 25°47' N latitude and 81°09' E & 82°21' E longitude. The district covers an area of 70.5 km<sup>2</sup> and average maximum and minimum temperature 48°C and 2°C respectively.

### MATERIALS & METHODS

Field trips were regularly arranged to cover entire area of the district and plant samples were collected from different localities in different seasons. During the collection notes should be kept in a notebook under the collection number, date of collection, accepted name, family, locality, vegetation type and photographs etc. of the plant specimens. The levels that should be attached to the mounting sheet, and used to document the scientific name of the plant, habitat, place, height, color, collector name, the specimens collections number and any information which is necessary for plant identification.<sup>10</sup> These specimens were deposited in Duthie Herbarium

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**Taxonomic Description:**

**Mecardonia**

Ruiz & Pav. Fl. Peruv. Prodr.: 95 (1794). Type: Lectotype, *M. procumbens* (Mill.) Small.

*Mecardonia procumbens* (Mill.) Small., Fl. S.E.U.S.: 1065 (1903); *Erinus procumbens* Mill., Gard. Dist. Ed. 8. n. 6 (1768). *Lindernia dianthera* Sw., Prodr. 92 (1788). *Mecardonia ovata* Ruiz & Pav., Fl. Peruv. Prodr. 95 (1794). *Herpestis vandelliooides* Kunth., Gen. Sp. (quarto ed.) 2: 367-368 (1817). *Herpestis caprariooides* Kunth., Gen. Sp. (quarto ed.) 2: 368 (1818). *Herpestis chamaedryoides* Kunth., Gen. Sp. (quarto ed.) 2: 368 (1818). *Herpestis colubrina* Kunth., Gen. Sp. (quarto ed.) 2: 368 (1818). *Herpestis montevidensis* Spreng., Syst. Veg. 2: 802 (1825). *Herpestis peduncularis* Benth., Compan. Bot. Mag. 2: 56 (1836). *Bacopa chamaedryoides* (Kunth) Wettst., Nat. Pflanzenfam. 4(3b): 76 (1891). *Moniera procumbens*

(Mill.) Kuntze., Revis. Gen. Pl. 2: 463 (1891). *Moniera chamaedryoides* var. *peduncularis* (Benth.) C. Mohr, Contr. U. S. Natl. Herb. 6: 721 (1900). *Mecardonia peduncularis* (Benth.) Small., Fl. S.E. U.S. 1338 (1903). *Mecardonia tenuis* Small., Fl. S.E. U.S. 1065, 1338 (1903). *Mecardonia viridis* Small., Fl. S.E. U.S. 1065, 1338 (1903). *Bacopa chamaedryoides* f. *intermedia* Chodat & Hassl., Bull. Herb. Boissier II, 4: 288 (1904). *Bacopa procumbens* (Mill.) Greenm., Publ. Field Columb. Mus., Bot. Ser. 2: 261 (1907). Raizada, Suppl. Fl. Upper Gangetic Plain: 180 (1976). *Bacopa procumbens* var. *schottii* Greenm., Publ. Field Columbian Mus., Bot Ser. 2: 262 (1907). *Herpestis procumbens* (Mill.) Urb., Symb. Antill. 4: 558 (1911). *Bacopa chamaedryoides* var. *peduncularis* (Benth.) M.C.Matz., Catholic Univ. Amer. Biol. Ser. 16: 173 (1934). *Bacopa procumbens* var. *peduncularis* Fernald., Rhodora 37: 442 (1935). *Bacopa procumbens* var. *tenuis* (Small) Fernald., Rhodora 37: 442 (1935). *Pagesia procumbens* (Mill.) Pennell., Monogr. Acad. Nat. Sci. Philadelphia 1:



**Table 1- *Mecardonia procumbens* (Mill.) Small. (A) Habitat; (B) Plant twig; (C) Leaves at apex of branch; (D) Flower; (E) Petals and stamen; (F) Gynoecium.**

68 (1935). *Bacopa tenuis* (Small) Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 1: 174 (1936). *Bacopa peduncularis* (Benth.) Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 11: 174 (1936). *Pagesia vandelliooides* (Spreng.) Pennell., Notul. Nat. Acad. Nat. Sci. Philadelphia 43: 2 (1940). *Mecardonia dianthera* (Sw.) Pennell., Proc. Acad. Nat. Sci. Philadelphia 98(2): 87 (1946). *Mecardonia montevidensis* (Spreng.) Pennell., Proc. Acad. Nat. Sci. Philadelphia 98(2): 87 (1946). *Bacopa dianthera* (Sw.) Descole & Borsini., Gen. & Sp. Pl. Argent. 5: 151 (1954). *Lindernia dianthera* (Sw.) Pennell., Prodr. Acad. Nat. Sci. Philadelphia 98: 87 (1976).

Branched, prostrate, glabrous, herbs, annual, branches 15-25 cm long; stems 4-angled, rooting at the lower nodes. Leaves sessile or sub-sessile, opposite, ovate-rounded or ovate-orbicular, 0.8-2 x 0.5-1 cm, margin crenate, apex obtuse, narrowed at the base. Flowers solitary, axillary; pedicels 1-2 cm long. Calyx 3-4 mm long, outer 3 sepals ovate, 3-5 veined, 2 inner ones linear, 1-veined, enlarged in fruits. Corolla lemon yellow, 4-5 mm long, bilabiate, throat hairy. Ovary globose, style dilated at apex. Capsules cylindrical, globose 3-4 mm long, many-seeded. Seeds minute, reticulate.

**Fl. & Fr.:** September-May.

**Habitat:** Occasionally, in marshy habitat.

**Specimens collected:** Phaphamau, Prayagraj (Allahabad) District, Uttar Pradesh, Rahul 36104, 25° 30' 25.92" N, 81° 51' 58.68" E; Alfred park, Rahul 36105, 25° 27' 24.1164" N, 81° 51' 3.3912" E.

#### Distributions:

It is distributed in South America, South Africa, Nepal, Sri Lanka and India. India: Kerala, Karnataka, Assam, Andhra Pradesh, Odisha, Bihar, West Bengal and Madhya Pradesh, Uttar Pradesh: Varanasi, Bahraich, Gonda, Kheri and Saharanpur.

#### RESULT & DISCUSSION

Earlier district Allahabad is described with the vegetation of dense forest, wetlands, ponds, lacs and rivers. The forest areas are changed into plain waste places due to the deforestation. It is generally found in degraded moist deciduous forests, grassland, waste places, moist places, irrigation channels and in lawns and gardens. The distribution of the plant indicates suitable habitat and climatic conditions. The species grows in summer season in high temperature of above 40°C in sandy soil along the

river Ganga with annual rainfall of 1027 mm and 90 m above the sea level. *Mecardonia procumbens* (Mill.) Small. is increased distribution due to the seed dispersal by wind because seeds are minute and light in weight.

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#### REFERENCE

1. Mabberley D. J. 1997. The Plant-Book: A portable dictionary of the vascular plants. 2<sup>nd</sup> Edition. Cambridge University Press, 652. Cambridge. Landon.
2. Greppi J. A., Sosa M. D. L. M. and Dematteis M. 2017. A new polyploidy species of *Mecardonia* (Gratiolae, Plantaginaceae) from South America. *Phytotaxa*. 303(3): 264–270.
3. Souza V. C. 1997. Studied on the delimitation of *Mecardonia procumbens* (Mill.) Small. (Scrophulariaceae). *Acta Botanica Brasiliaca*. 11:181-189.
4. Mao A. A. and S. S. Dash. 2020. Flowering Plants of India: An Annotated Checklist; Dichotyledons. 2 Vol. 220. Botanical Survey of India. Kalkata.
5. Kumar A. 2020. Scrophulariaceae., In Sinha G.P. and A.N. Shukla Edt. Flora of Uttar Pradesh. Botanical Survey of India. 2 Vol. 242. Kolkata.
6. Mishra B. K. and V. K. Verma. 1992. Flora of Allahabad district. Bishen Singh Mahendra Pal Singh, Dehradun, India.
7. Hooker J. D. 1872-1897. Fl. Brit. India. Reeve and Co. Ltd., 7 Vol. London.
8. Duthie J. F. 1903-1929. Fl. Upper Gangetic Plain and of the adjacent Siwalik & Sub-Himalayan tracts. 3 Vol. Govt. Press, Calcutta.
9. Raizada M. B. 1976. Suppl. Duthie's. Fl. Upper Gangetic Plain: Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
10. Jain S. K. and R. R. Rao. 1977. A Handbook of field and Herbarium Methods. Today and Tomorrow's Print and Publ. New Delhi.

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