P: ISSN No. 0976-8602 RNI No.UPENG/2012/42622 VOL.-7, ISSUE-4, October-2018

E: ISSN No. 2349-9443 Asian Resonance

Baccharoides Anthelmintica (L.) Moench (Asteraceae)*:* A New Record to the Flora of Rajasthan, India

Abstract

The species *Baccharoides anthelmintica* (L.) Moench.of family Asteraceae, so far has not been reported from Rajasthan. This species was first time collected from KumbhalGarhwildlife sanctuary of district Pali, Rajsamand and Udaipur districts of Rajasthan. The detailed description, up to date nomenclature, phenology, ecological notes, distribution and photographs of this species have been presented.

Keywords: *Baccharoides, anthelmintica,* Asteraceae, New record, Rajasthan, India.

Kanhaiya Lal Meena
Associate Professor,
Herbarium and Laboratory of Plant Taxonomy,
Deptt.of Botany,
M. L. V. Government College,
Bhilwara, Rajasthan

Nitesh Raj Keer
Research Scholar,
Herbarium and Laboratory of Plant Taxonomy,
Deptt.of Botany,
M. L. V. Government College,
Bhilwara, Rajasthan

Introduction

Rajasthan is the largest state of the India, occupying an area of about 3, 48, 861 sq. km i.e. nearly 11 % of total area of the India. It forms the eastern extremity of the great arid and semi-arid belt of the world. During botanical explorations in southern Rajasthan, the author collected some plant specimens from Kumbhal garh wildlife sanctuary (24° 33' N Latitude and 73°54' E Longitude) in Pali, Rajsamand and Udaipur districts of Rajasthan, India. The study area is intersected by the Aravalli ranges at several places. The Kumbhalgarh wildlife sanctuary is home to a variety of endangered species.The soil varies from hilly stones, sandy loams to heavy loams. This sanctuary has hot-dry summer and cold winter with monsoon season from last week of June to mid-September and from mid-September to about the end of November is the post monsoon season. Natural vegetation cover includes trees, shrubs and grasses occurs in between the hills, as well as on the hills.

During botanical explorations in southern Rajasthan, the author collected some plant specimens from Kumbhal garh wildlife sanctuary situated in three districts viz. Pali, Rajsamand and Udaipur Rajasthan. After a thorough survey of literature, critical examination and expert opinion from Botanical Survey of India, Arid Zone Regional Centre, Jodhpur, these specimens were determined as *Baccharoides anthelmintica* (L.) Moench., belonging to the family Asteraceae, a taxon has not been recorded by the earlier workers from Rajasthan

Review of Literature

Rajasthan is rich in biodiversity due to its variable climatic and geographical conditions. By floral study of Rajasthan it is found that family Asteraceae of flowering plant has a major contribution in biodiversity. Southern Rajasthan has a humid climate and less desert effect and has more water resources that favor the rich floral components. The family Asteraceae includes a great diversity of species, including annuals, perennials; stem succulents, vines, and shrubs. It is well naturalized family throughout the world. This family is a major family of medicinal and ornamental plants. In recent years, a large number of publications dealing with floral composition of Rajasthan have been published. After a thorough survey of literature (Shukla, 1993) critical examination and expert opinion from Botanical Survey of India, Arid Zone Regional Centre, Jodhpur, these specimens were determined as *Baccharoides anthelmintica* (L.) Moench, belonging to the family asteraceae, a taxon not recorded from theearlier workers of Rajasthan (Bhandari 1987, Sharma and Tyagi 1979, Shetty and Pandey 1983, Singh 1983, Singh, 1991, Prasad *et al*. 1996, Sharma 2002, Tiagi and Aery 2007, Meena 2010a, b, 2013a, b, c, 2014a, b, Meena and Yadav 2010, Yadav and Meena 2011 and Meena 2013). Recently, Meena (2015),

contributed to our knowledge about the flora of Rajasthan and added 28 species from southern Rajasthan. But *Baccharoides anthelmintica* (L.) Moench. has not been reported so far from Rajasthan. Thus, the present paper deals with the description, phenological data, ecological notes and Photographs for its easy identification in the field.

The genus *Baccharoides* Moenchestablished by Moench (1794). This genus consists of 2 species distributed in the India (Santhosh Kumar, 2014). The species has been reported from Madhya Pradesh by Shukla (1993), and identification as *Vernonia anthelmintica* (L.) Willd and *Conyza anthelmintica* L. is considered as synonyms. Recently Santhosh Kumar (2014) makes a new combination in *Baccharoides* Moench. (Asteraceae) from India. During the recent floristic survey of the southern Rajasthan, authors came across one interesting plant specimen of *Baccharoides anthelmintica* (L.) Moench. The report of its occurrence from Rajasthan is the first report for the Rajasthan. Thus, present findings contribute an addition to the flora of Rajasthan.

Aims of the Study

Inventorisation of the flora of the southern Rajasthan with special reference to family asteraceae. The study also including the Phytosociological study find out the Rare, Endemic, Endangered and threatened plants species occurring in the study area (if any) and its categorization. Along with the study voucher specimen are also prepared for future study. The repaired specimens were identified properly, identity is confirmed by authority (BSI, Jodhpur, (Howrah) then it is deposited to the herbarium, department of botany, MLV Government College, Bhilwara.

Research Design

Intensive and extensive Botanical exploration and exhaustive studies of the whole southern Rajasthan for study the asteraceous flora during 2015-2018 in different seasons (winter, summer and rainy) to find out all the specimens in flowering and fruiting stage for easy identification with live material. The herbarium sheet is repaired in its standard format, then collected plant specimens will be identified with the help of different recognized floras (such as Flora of India, Flora of Madhya Pradesh and Flora of Rajasthan), field data, consultation of authentic herbarium specimens lodged in Herbaria, Botanical Survey of India, Jodhpur. The nomenclature of taxa will be brought up to date using recent source as in accordance with the International Code of Nomenclature for algae, fungi, and plants (ICN).

Observations

Citation

Baccharoides anthelmintica (L.) Moench, Methodus 578. 1794; Grierson & Spring. in Grierson & D.G. Long, Fl. Bhutan (Ed. Spring.) 2(3): 1488. 2001. *Phyllocephalum anthelminticum* (L.) S.R. Paul & S.L. Kapoor in J. Econ. Taxon. Bot. 6: 728. 1985. *Conyza anthelmintica* L., Sp. pl. ed. 2.1207. 1763. *Vernonia anthelmintica* (L.) Willd., Sp. pl. 3: 1634. 1803; Hook. f., Fl. Brit. India 3: 236. 1881; Shukla in Fl. Madhya Pradesh Vol. I: 615. 1993. *V. stenolepis*Oliv. Trans. Linn. Soc. London, Bot. 2: 337. 1887. *Centratherum anthelminticum* (L.) Kuntze, Revis. gen. pl. 1: 320. 1891. (Plate 1)

Vernacular Name

Kala jira, Somraj.

Herbs, annual, robust, softly pubescent, up to 0.5 - 1.6 m high. Stems glandular, pubescent. Leaveslanceolate, oblanceolate or elliptic-lanceolate, acute, coarsely or sharply serrate, both surface pubescent. Heads terminal, corymbose or subcorymbose, up to 40-flowered; peduncle with linear bract near the top. Involucral bracts hemispheric, 4-5-seriate; outermost bracts foliaceous; inner bracts often purple tipped, linear-oblong, scarious. Bracts reflexed in fruit. Florets mauve or Florets tubular lilac. Achenes 4.6 mm long, up to 10-ribbed, ribs pubescent, glandular in between. Pappus hairs reddish, biseriate; outer setae up to 2 mm long, scale like, shiny, deciduous; inner setae 5 - 8 mm, rigid, paleaceous, flattened.

Ecological Notes

Rare among the Grasslands.

Flowering and fruiting's

September - March.

Specimens examined

India, Rajasthan, Kumbhal garh, 28 September 2017, Meena M-1956 (Herbarium, department of botany, M.L.V. Government College, Bhilwara).

Distribution

India, Throughoutin the Himalayas. Among the world, Afghanistan, India, Nepal, China, Sri Lanka, Malay Archipelago and Laos.

Acknowledgement

Authors are grateful to the Dr. Vinod Maina, Scientist & Add. Director BSI, Jodhpur and Dr. S. L. Meena Scientist BSI, Jodhpur for confirmation of the identity of specimens, valuable suggestions and deposition of specimens to the Botanical Survey of India, Arid Zone Regional Centre, Jodhpur. Authors are grateful to the department of forest, Government of Rajasthan for giving permission for survey in the forest area. Authors are grateful to Dr. B. L. Jagetiya, department of Botany, MLV Govt. College, Bhilwara for providing facilities. Thanks are also due to Principal and Vice Principals of MLV Government College, Bhilwara for providing the laboratory facilities.

Authors' Contributions

Kanhaiya Lal Meena and Nitesh Raj Keer surveyed the study area collected Plants specimens and observed the data from the field, Prepare voucher specimen were deposited to the herbarium, department of botany, MLV Government College, Bhilwara. Dr. S. L. Meena, Scientist D, Botanical Survey of India Identified the plant specimen and confirm the Identity of species.

Plate 1. *Baccharoides anthelmintica* (L.) Moench: A. Habit, B. Habitat, C. Achenes.

References

1. *Bhandari, M. M. (1987). Flora of the Indian Desert. MPS Repros, Jodhpur.*
2. *Meena, K. L. (2010a). Morinda coreia Buch.-Ham.: A new record to the flora of Rajasthan. J Indian Bot Soc. 89 (1-2) 210 - 212.*
3. *Meena, K. L. (2010b). Synedrella vialis (Less.) A. Gray: A new record to the flora of Rajasthan. J Econ Taxon Bot 34 (3) 614 – 618.*
4. *Meena, K. L. (2013a). Some New Records to the Flora of Rajasthan, India. The Journal of Biodiversity. Photon.112 233-240.*
5. *Meena, K. L. (2013b). Blumea malcolmii (C.B.Clarke) Hook. f., A new Record to the Flora of Rajasthan India. J Econ Taxon Bot. 37 (1) 53 - 55.*
6. *Meena, K. L. (2013c). Tageties minuta L. (Asteraceae): A newly naturalised plant in Rajasthan, India. J Econ Taxon Bot. 37 (2) 415 - 418.*
7. *Meena, K. L. (2013d). Diversity of family Acanthaceae from Sitamata Wildlife Sanctuary, Rajasthan, India. J Econ Taxon Bot.37 (3) 595 - 609.*
8. *Meena, K. L. (2014a). Flora of Wildlife Sanctuary, Discovery Publishing House Pvt. Ltd., New Delhi.*
9. *Meena, K. L. (2014b). Rediscovery of Cullen corylifolium (L.) Medik. (Fabaceae) from the Malwa region, India. The Journal of Biodiversity Photon. 113: 360-363.*
10. *Meena, K. L. (2015). Additions to the Flora of Rajasthan, India. Scholars' Press. Germany.*

11. *Meena, K. L., Yadav B. L. (2010). Spigelia anthelmia L. (Spigeliaceae): A New Generic Record to the Flora of Rajasthan. J Indian Bot Soc. 89(3-4) 258 - 261.*
12. *Prasad, V. P., Daniel, M., Joy, E. M., Ajit Kumar, C. R. (1996). Illustrated Flora of Keoladeo National Park Bharatpur Rajasthan. Bombay Nat. Hist. Soc., Bombay.*
13. *Sharma, N. K. (2002). Flora of Rajasthan. Aavishkar Publishers Distributors, Jaipur.*
14. *Sharma, S., Tyagi, B. (1979). Flora of North-East Rajasthan.Kalyani Publishers, New Delhi.*
15. *Shetty, B. V., Singh, V (1991). Flora of Rajasthan. VolII BSI, Calcutta.*
16. *Shetty, B. V., Pandey, R. P. (1983). Flora of Tonk District. BSI, Howrah.*
17. *Singh, V. (1983).Flora of Banswara District. BSI, Howrah.*
18. *Tiagi Y. D., Aery N. C. (2007). Flora of Rajasthan (South & South-East Region).Himanshu Publications, New Delhi.*
19. *Yadav B. L., Meena K.L. (2011). Flora of South Central Rajasthan. Scientific Publishers, Jodhpur.*
20. *Shukla, B. K. (1993). Asteraceae:In Verma, D. M., Balakrishnan,N. P., Dixit, R. D. (eds). Flora of Madhya Pradesh. Vol. I. BSI, Kolkata.*
21. *Santhosh Kumar, E. S. (2014). a new combination in Baccharoides Moench. (Asteraceae) from India. J. Sci. Res. 6 (1). 191-192.*