Plantae Scientia – An International Research Journal in Botany Publishing Bimonthly Open Access Journal

Plantae Scientia: Volume 07, Issue 03, 2024

ISSN 2581-589X

REVIEW ARTICLE

Exotic Biodiversity as Depicted in Vamana Purana

Patil, D.A.

Post-Graduate Department of Botany,
S. S. V. P. Sanstha's L.K. Dr. P.R. Ghogrey Science College, Dhule-424005 (M.S.), India.
**Corresponding Author:* dapatil_10aug@yahoo.com

Manuscript Details

Manuscript Submitted : 09/02/2024
Manuscript Revised : 16/03/2024
Manuscript Accepted : 27/04/2024
Manuscript Published : 15/05/2024

Available On

https://plantaescientia.com/ojs

Cite This Article As

Patil D.A. (2024). Exotic Biodiversity as Depicted in Vamana Purana. *Pla. Sci.* 2024; Vol. 07 Iss. 3:29-32

DOI-

https://doi.org/10.32439/ps.v7i3.29-32

Copyright

© The Author(s). 2024. Open Access
This article is distributed under the terms of the Creative Commons Attribution 4.0 International License
http://creativecommons.org/licenses/by/4.0/

Indexed In

CrossRef, Scientific Indexing Services (SIS), Google Scholar, Index Copernicus International (ICI), Directory of Research Journal Indexing (DRJI), CiteFactor, Scientific Journal Impact Factor (SJIF), General Impact Factor, Journal Factor, Cosmos Impact Factor, AJIFACTOR Indexing, etc.

ABSTRACT

After Vedas, Puranas are the literary heritage of India. Vamana Purana is one of the 18 major Puranas. It is divided into 196 sections or chapters with Sanskrit Slokas in which Sanskrit plant names are incorporated. These Sanskrit plant names are equated with valid botanical (Latin) names and their nativities are ascertained to pinpoint plant invasion in ancient period of times on Indian landmass. As many as 16 species pertaining to 16 genera and 14 angiospermic families are revealed. Of these, 04 species are monocotyledons, whereas rest others belong to dicotyledons. Majority of them (11 species) are cultivated, whereas other (05) species run wild on Indian landmass. These are discussed in the light of ancient plant invasion (bioinvasion) in India.

Keywords: Vamana Purana, Exotic Plants, Bioinvasion, India.

INTRODUCTION

Vaman Purana is the 14th Purana among the total 18 major Puranas. It is named after dwarf, incarnation *viz*., 'Avatar' of Hindu god Lord Vishnu. The earliest core of the text has been dated variously between 450 CE-900 CE but some scholars consider between 9th to 11th Century (*cf*. Rocher, 1986). Purana (Pura Navam Bhavati) etymologically is that through the old becomes new again. The term 'Puranas' was sometimes thought which religious books since they were regarded to be the 5th Veda. Puranas freed the religion from the hands of chosen few and spilled over to masses who were unable to understand the complexities of the Vedic doctrines. Vedas are primary source of religion (Vedokhilo Dharmamulam), the Puranas, however, are the essence of the religion of Hindu society. Vamana Purana especially embedded within itself useful prescription of Hindu religion so as to make the lives of people purposeful. The Puranas are a source of valuable information from the ancient period of Indian history. They give us material for critical study of diverse subjects such as folklore, ethnology, politics, sociology, philosophy, apart from religion. They thus retain the spirit of newness by emphasizing the essential oneness of all men irrespective of their caste and creed (*cf*. Dutt, 2016).

METHODOLOGY ADAPTED

Vamana Purana, translated and edited by Joshi and Bimali (2005) forms the chief source of literary information for the present account. A large number of Sanskrit verses have been mentioned in total 96 sections (Chapters). Sanskrit plant names are incorporated in some of these verses. They are equated with their recent botanical (Latin) names and assigned to respective families. These taxa are studied revealing their status regarding habit, cultivated or wild in current era. The exotic status is determined by the earlier past taxonomic works as suggested against each species recorded. This account only projected exotic plant taxa in view of plant invasion (bioinvasion) in ancient Indian landmass. The data so obtained is presented in the Table-I. The results are discussed pertinently.

RESULTS AND DISCUSSION

Mankind of learning world over aims at unfolding treasure-trove of ancient human societies on various grounds. One has to carry out literary surveys in different perspectives to have information of the past. The present author conducted a literary tourism in ancient Sanskrit scriptures especially Puranas *viz*., Garuda Purana (2018), Kurma Purana (2021a) and Linga Purana (2021b). These accounts brought to fore-front 24, 18 and 24 exotic plant species pertaining respectively to them. The present communication is in the same perspective and order. The manuscript of Vamana Purana (*loc.cit*.) is critically investigated. The Sanskrit plant names have been carefully equated with the recent and valid (Latin) plant names of each exotic species and assigned to their respective families circumscribed after Bentham and Hooker's system (1862-1883) of plant classification. The exotic status is indicated consulting relevant earlier taxonomic literature against each species (Table-I).

The present literary inventory on Vamana Purana revealed a total of 16 exotic plant species pertaining 16 genera and 14 angiospermic families. They are either dicotyledonous (12 species, 12 genera and 12 families) or monocotyledonous ones (04 species, 04 genera and 02 families). Obviously, the former ones share a major contribution in bioinvasion in Indian landmass still prevailing and forming integral segment of Indian biodiversity. The latter ones have a little share in this regard. They are either cultivated (11 species) or run wild (05 species) in present period of time. They belong to habital categories such as: trees and shrubs (04 species each) and herbs (08 species). The herbaceous taxa are, however, predominant numerically. All these are originated from 13 different biogeographical areas such as: Africa (06), China (03), America (02), Europe (02) and Ethiopia, Persia, Sino-Japanese, Moluccas, Arabia, besides tropical and subtropical regions (01 each). The figures in parenthesis denote the number of species invaded in the ancient India. The African exotic floral elements have a major share as compared to other biographical regions, countries or continents. The cultigens (11 species) appear brought purposefully being economic sources for sustenance of human-life of the then Indians. Other wild plant species (05 species) probably invaded on Indian subcontinent negligently or naturally by various vectors, means or sources of plant dispersal (*cf*. Patil, 2020).

CONCLUSIONS

Investigations on plant invasion in India were initiated by past taxonomic studies by Maheshwari (1960, 1979) and Nayar (1977). A vast amount of information on this line is now on records by subsequent workers in biodiversity studies. However, ancient reports in this realm of research are far from satisfactory. The present authors extended investigations on ancient Sanskrit manuscripts especially the Purans (Patil, 2018, 2021a,b). The present account will also aid as additional information for the better management of biodiversity on Indian landmass.

ACKNOWLEDGEMENTS

Authors are thankful to the authorities of S.S.V.P. Sanstha for library and laboratory facilities extended.

REFERENCES

Almeida, M.R. (2001) Flora of Maharashtra (Rubiaceae To Ehretiaceae) Vol.3A. St.Xavier College, Orient Press, Mumbai, Maharashtra, India.

Badr, A., Sch. K.M.R., Rabey, H.EI. Effgen, S., Ibrahim, H.H., Pozzi, C., Rohde, W. & F. Salamini (2000) On the origin and domestication history of Barley (Hordeum vulgare). Molecular Biology and Evolution 17(4):499-510.

Bailey, L.H. (1949). Manual of Cultivated Plants (Rev.Ed.) The Macmillan Co., New York, USA.

Bentham, G. & J.D. Hooker (1862-1863). Genera Plantarum. Vol.I-III. L.Reeve. & Co., London, UK.

Chandra Sekar K. (2012) Invasive alien plants of Indian Himalayan region: Diversity and implication. American Journal of Plant Sciences. 3:177-184.

Cooke, T. (1958) The Flora of The Presidency of Bombay Vol.I-III. Bot.Surv.India, Calcutta, India (Repr.Ed.).

Dar, G.H., Bhagat, R.C. & M.A. Khan (2002) Biodiversity of The Kashmir Himalaya. Valley Book House, Srinagar, India.

De Candolle A. (1959) Origin of Cultivated Plants (Rev. 2nd Ed.) Hafner Publishing Co., London, UK.

Debnath, A. & B. Debnath (2017) Diversity, invasion status and usages of alien plant species in North-Eastern Hilly State of Tripura: A Confluence of India-Barman Hotspot. American Journal of Plant Sciences 8:212-235.

Dogra, K.S. (2011) Alien plants distribution and ecology in the temple-courtyards of Himachal Pradesh (N.W.Himalaya). Himachal Pradesh University Journal, July 2011.

Dutt, M.N. (2016) The Garuda Mahapuranam (The Text with English Translation & Notes). Vol.I-II. (4th Edition Text & Edited By S.Jain). New Bharatiya Book Corporation, Delhi India.

Fekadu Gadissa, Meskerem Abebe & Tesface Bekele (2021a) Agro-morphological trait-based genetic diversity assessment in Ethiopian barley (Hordeum vulgare L.) landrace collections from Bale highlands, Southwest Ethiopia. In: Agriculture & Food Security 10. Article No.58.

Gaikwad, S.P. & K.U. Garad (2015) Flora of Solapur (Maharashtra). Laxmi Book Publications, Solapur, Maharashtra, India.

John Cameron (1891) Catalogue of Plants in The Botanical Garden, Bangalore and Its Vicinity (2nd Ed.). Mysore Government Central Press, Bangalore, India.

Joshi, K.L. & O.N. Bimali (2005) Vamana Purana (Sanskrit Text, English Translation, And Exhaustive Introduction, Notes and Index of Verses) (First Edition). Parimal Publications, Delhi, India.

Maheshwari, J.K. (1960) Studies on the naturalized flora of India. In: Proceedings of The Summer School of Botany (Ed.Maheshwari, P., Johri, B.M. and I.K.Vasil) pp.156-170.

Maheshwari, J.K. (1979) Alien flora of India. In: Progress In Plant Research. Silver Jubilee Publication. NBRI. Vol.I (Ed.Khoshoo & Nair). pp.219-228.

Matthew, K.M. (1991) An Excursion Flora of Central Tamil Nadu, India. Oxford & IBH Publishing Co.Pvt. Ltd. New Delhi, India.

Nayar, M.P. (1977) Changing patterns of the Indian flora. Bull. Bot.Survey India 19:145-154.

Patil, D.A. (1990) Exotic elements in the flora of Dhule District (Maharashtra). J.Econ.Tax.Bot. 14(3):721-724.

Patil, D.A. (1995) Exotic elements in the flora of Dhule District (Maharashtra)-II Biojournal 7(1-2):1-8.

Patil, D.A. (2003) Flora of Dhule and Nandurbar Districts (Maharashtra). Bishen Singh Mahendra Pal Sinigh, Dehradun, India.

Patil, D.A. (2017a) Invasive alien species in Khandesh region (Maharashtra: India): Diversity, implications and measures. Sch.Acad.J.Biosci. 5(12):867-876.

Patil, D.A. (2017b) Alien plant species recorded in Vedic and Post-Vedic period of India: An assessment. Sch.Acd.J.Biosci. 5(17):812-819.

Patil, D.A. (2018) On some alien plant species: Gleanings from Garuda Purana. J.Biosci. 6(2):ISS-2A:163-166.

Patil, D.A. (2019a) Scientific history of some alien plants in India: Origin, implications and culture. Plantae Scientia 1(5):66-75.

Patil, D.A. (2019b) Amarsimha's Amarkosa in the perspective of plant invasion in India and implications. International Journal of Agricultural Inventions 4(2):163-169.

Patil, D.A. (2020) Plant Dispersal: Mechanisms, History and Distribution. Lambert Academic Publishing, Beau. Bassin, Mauritius.

Patil, D.A. (2021a) Origins of alien species and plant invasion in India as Tapped from Kurma Purana. 4(3):137-142.

Patil, D.A. (2021b) An Investigation on Linga Purana in perspective plant invasion in India and plant science. International Journal of Agricultural Invention 6(1): 35-39.

Purseglove, J.W. (1968) Tropical Crops-Dicotyledons. 2 Vols. Longmans, London, UK.

Reddy, C. Sudhakar (2008) Catalogue of Invasive Alien Flora of India. Forestry And Ecology Division, National Remote Sensing Agency, Hyderabad-500037, India.

Rocher Ludo (1986) The Puranas. Wiesbuden. Otto Harrassowitz, Verlag.

Shetty, B.V. & V. Singh (1987) Flora of Rajasthan.Vol. I Bot. Surv. India, Calcutta, Inidia.

Singh A.K. & S.N.Nigam (2017) Ancient alien crop introductions integral to Indian agriculture: An overview. Proc.Indian Natn.Sci.Acad. 83(3):549-568.

Singh, S.C. & G.N. Srivastva (2000) Exotic medicinal plants of Lucknow district (U.P.) India. In: Ethnobotany And Medicinal Plant of Indian Subcontinent (Ed. Maheshwari, J.K.) Scientific Publishers, Jodhpur, India.

Wagh, V.V. & A.K.Jain (2015) Status of ethnobotanical invasive plants in Western Madhya Pradesh, India. South African Journal of Botany 114:171-180.

Yadav, S.R. & M.M.Sardesai (2002) Flora of Kolhapur District (Maharashtra). Shivaji University, Kolhapur, Maharashtra, India.

Table-I: Exotic Plant Species in Vaman Purana.

Sr.No. (1)	Plant name & Family (2)	Sanskrit Name (3)	Habit (4)	Cultivated (C)/ Wild (W) (5)	Nativity & Reference (6)
1.	*Borassus flabellifer* L. Arecaceae	Tala	T	C	Tropical Africa: Reddy, 2008; Patil, 2019a, 2021a, Chandra Sekar, 2012, Cooke, 1958
2.	*Calotropis gigantea* (L.) Ait. Asclepiadeceae	Mandara	S	W	Tropical Africa: Reddy, 2008; Patil, 2017b; Chandra Sekar, 2012
3.	*Hordeum vulgare* L. Poaceae	Yava	H	C	(i) Ethiopia: Fekadu *et al*., 2021a. (ii) Fertile crescent: Badr *et al*., 2000.
4.	*Nerium inidicum* Mill. Apocynaceae	Karvira	S	C	(i) China: Almeida, 2001a. (ii) Persia To Japan: Matthew, 1991. (iii) Tropical & Subtropical Asia: Yadav & Sardesai, 2002.
5.	*Hibiscus rosa-sinensis* Linn. Malvaceae	Japa	S	C	(i) China: Patil, 1995, 2003; Shetty & Singh, 1987. (ii)Sino-Japanese: Singh & Srivastava, 2000.
6.	*Eclipta prostrata* (L.) Linn. Asteraceae	Bhrnga	H	W	South & Tropical America: Patil, 1990, 2017a,b; Reddy, 2008; Chandra Sekar, 2012.
7.	*Triticum aestivum* L. Poaceae	Godhuma	H	C	Fertile crescent: Singh & Nigam, 2017; Patil, 2017a, 2019a.
8.	*Myristica fragrans* Houtt. Mynsticaceae	Sinhlaka, Jatiphala	T	C	Moluccas: Singh *et al*., 2001.
9.	*Cynodon dactylon* (L.) Pers. Poaceae	Durva	H	W	Tropical Africa: Debnath & Debnath, 2017; Wagh & Jain, 2015; Patil, 2017a,b, 2019a, 2021a.
10.	*Sesamum indicum* L. Pedaliaceae	Tila	H	C	Africa: Dogra, 2011
11.	*Linum usitatissimum* L. linaceae	Atusipushpa	H	C	(i) Mediterranean Region: De Candolle, 1959; Patil, 2019b. (ii) Europe: Dar *et al*., 2002.
12.	*Raphanus sativus* L. Brasicaceae	Mula	H	C	(i) Western Asia: Purseglove, 1968. (ii) Europe: John, 1891. (iii) Europe & Temperate Asia: Patil, 1995.
13.	*Datura metel* L. Solanaceae	Dhattura	S	W	Tropical America: Chandra Sekar, 2012.
14.	*Gossypium herbaceum* L. Malvacee	Karpasa	H	C	(i) Arabia & Asia Minor; Bailey, 1949. (ii) Africa & Asia (Excl. India): Purseglove, 1968.
15.	*Adansonia digitata* L. Bombacaceae	Kalpvriksh	T	C	(i) Tropical Africa: Patil, 1995; Bailey, 1949. (ii) Africa: Gaikwad & Garad, 2015.
16.	*Vitex negundo* Linn. Verbanaceae	Sindhuvaraka	T	W	North China & Mongolia: Bailey, 1949.