



Rigveda In The Perspective of Ancient Plant Invasion In India

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Abstract: Ancient Indian scriptures provide us a glimpse of the biodiversity and even economic life of the then Indians. The hymns (mantras) of the Rigveda reflect culture of the Aryans at different periods of ancient past. The present investigation sheds light on total 17 exotic plant species belonging 17 genera and 09 angiospermic families gleaned from Rigveda. Of these, ten species are cultigens, whereas others run wild even today. This fact is indicative of economy plant invasion of the ancient Vedic period in India. Their origins belong to different 15 continents, countries, mountains and specific geographical areas outside India. This study may help better understand history of plant invasion on Indian landmass.

Key Words: Rigveda, Exotic Plants, Plant Invasion, India.

Introduction

Mankind in his earliest days was the hunter leading the life as a parasite on biotic world. They did not have a settled life. Eventually, he settled down to a pastoral life and also evolved working knowledge of the things integral to his environment. Obviously, plants formed such environment which he used for betterment and sustenance of his life. The Indian way of life and philosophy is recognized, in general, as the Aryan one. The literary resume and evidences clearly indicated that Aryans were a civilized people. Plants played significant role in their economic and spiritual life, nay they formed the chief basis of their economic life. It is needless to state that Vedic and even post-Vedic literature in Sanskrit is manifestation of their all-round development. They also seem to stand on high pedestal of advancement.

Rigveda, one of four Vedic treatises, is the earliest literature of the Aryan *vis-à-vis* Hindus. The hymns of Rigveda are thought composed between 1500-1200 BC. It is further supposed that the collection of the hymns in the present form was completed by 800 BC. (Patil, 2020). Rigveda is not simply a treatise of mythology. It although provides guidelines for religious and ritualistic acts, it also inform elements of science or medicine with scant references to medicinal herbs (Ragazin, 1961). It has been studied worldover by

various scholars of different fields. As far as plant world is considered, the first scholar to realize the importance of plants in the Vedas is Majumdar. He enumerated a list of ancient Indian plants which is the first pioneering effort on plants (Majumdar, 1945). Subsequently, Roy (1984) shed more light on them in the context of plant economy. However, these plant taxa has not, to date, evaluated from the standpoint of bioinvasion on the Indian landmass. The present account is aimed at divulging status of plant invasion in the then Indian and discussed critically.

Methodology Adapted

The information has been borrowed with particular emphasis on Sanskrit plant names from the literary source viz., (i) Rigveda Samhita (Wilson, 1850), (ii) Rigveda Samhita (Sharma, 2013) and (iii) Economy of Plant In The Vedas (Rajiv Kamal, 1988). These names were equated with the recent botanical (Latin) names and assigned to their respective families. The exotic status is determined by using relevant taxonomic sources mentioned against each plant species in the Table-I. The subject matter is dilated in view of plant invasion in the then India.

Results & Discussion

As the environmental pollution and climate change putting long strides and showing negative impacts on the biodiversity and the earth in general, it is essential to study plant invasion (bioinvasion) which is thought the second worst threat to the biodiversity after habitat destruction. Bioinvasion can be traced since ancient period and at this backdrop the ancient texts, scriptures or records may prove helpful in tracing history in this realm of research. The present author extended investigation earlier on some ancient scriptures (cf. Patil, 2017a,b; 2018a,b; 2019a,b,c; 2020a,b; 2021a,b,c,d,e; 2023). The present attempt is in the order and aimed at the same objective.

The literary investigation in Rigveda, which holds a space in world heritage is, therefore, important. The culture of Aryan is reflected by the hymns in Rigveda which also informs some medicinal plant species. Total 67 plant species are reported from Rigveda (Sharma, 1993). As many as 17 exotic plant species pertaining to 17 genera and nine of families of angiosperms. These can be further categorized as the dicotyledonous taxa (08 species, 08 genera and 07 families), whereas the monocotyledons contributed for nearly equal taxa (09 species, 09 genera and 02 families). Their habital categorization is thus: trees (01), shrubs (02), climbers (01) and herbs (13). The figures in parenthesis denote number of species. Obviously, the herbaceous plant species exhibited more invasion in the then India. Of these, ten species are found under cultivation, whereas seven species run wild in India landmass in modern era. The nativities of each species has been also interesting. As many as 15 different geographical areas are revealed to which these invaded taxa belong. They are thus: (i) America (06), Africa (05), Asia (Excl. India) (04), China (02), Mediterranean Region (02) and other Australia, Caucasua mountains, Fertile Crescent, Tupi Island, Arabia, Persian Gulf, Afghanistan, Turkistan, Asia Minor and Siberia contributed a single species each. The farthest American continent shared maximum species, which is then followed by African ones. The fair number cultigens (10 species) indicate that these have been brought intentionally to support the economy of the then Aryans (Indians). The wild species are indicative of a fact they either dispersed naturally or by negligence by mankind

during human migration and purposeful activities in the said era. The present author is still extending his research on other Vedas. Their results will be then discussed more relevantly and comparatively wherein a note on the present report will be also significant. The plant invasion in Vedic period will help trace history of bioinvasion and may be useful for the better management of biodiversity.

Acknowledgements

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

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Table-I: Exotic Plant Species In Rigveda

| Sr. No. (1) | Sanskrit Plant Name (2) | Botanical Name & Family (3) | Cultivated (C)/ Wild (W) (4) | Habit (5) | Nativity & Reference (6) |
|-------------|-------------------------|---|------------------------------|-----------|---|
| 1. | Yava | <i>Hordeum vulgare</i> Linn. Poaceae | C | Herb | Europe & North America: Dar <i>et al.</i> , 2002 |
| 2. | Darbha | <i>Imperata cylindrica</i> (L.) Raeuschel. Poaceae | W | Herb | (i) Tropical America; Reddy, 2008; Chandra Sekar, 2012 (ii) Africa: Almeida, 2009b. (iii) Tropical Asia: Titiek <i>et al.</i> , 2015. |
| 3. | Salmali | <i>Bombax ceiba</i> L. Bombacaceae | C | Tree | (i) Africa: Gaikwad & Garad, 2015 (ii) America & Australia: Mukhopadhyay & Chakraverty, 2008. |
| 4. | Bhanga | <i>Cannabis sativa</i> L Cannabaceae | W | Herb | (i) Central Asia: Chandra Sekar, 2012. (ii) Caspian Sea Region & Caucasus Mountains: Watt, 1908; Patil, 2019a. |
| 5. | Durva | <i>Cynodon dactylon</i> (L.) Pers. Poaceae | W | Herb | Tropical Africa: Debnath & Debnath, 2017; Wagh & Jain, 2015; Srivastava <i>et al.</i> , 2014. |
| 6. | Tila | <i>Sesamum indicum</i> Mill. (Syn.S.orientale L.) Pedaliaceae | C | Herb | Africa: Dogra, 2011. |
| 7. | Godhuma | <i>Triticum aestivum</i> L. Poaceae | C | Herb | (i) Fertile Crescent: Singh & Nigam, 2017. (ii) Fertile Crescent & Middle East: Patil, 2017a, 2019a. |

| Sr. No. (1) | Sanskrit Plant Name (2) | Botanical Name & Family (3) | Cultivated (C)/ Wild (W) (4) | Habit (5) | Nativity & Reference (6) |
|-------------|-------------------------|---|------------------------------|-----------|--|
| 8. | Priyangu | <i>Setaria italica</i> (L.) P.Beauv. Poaceae | C | Herb | (i) Near East (China): Singh & Nigam, 2017. (ii) East Asia: Naik, 1998. (iii) Northern China: Castillo <i>et al.</i> , 2016. |
| 9. | Kasa | <i>Sccharum spontaneum</i> L. Poaceae | W | Herb | Tropical West Asia: Reddy, 2008; Patil, 2017b; Chandra Sekar, 2012. |
| 10. | Balbaja | <i>Eleusine coracna</i> (L.) Gaertn. Poaceae | C | Herb | (i) Africa: Singh & Nigam, 2017. (ii) Tropical Africa: Gaikwad & Garad, 2015. |
| 11. | Canaka | <i>Cicer arietinm</i> L. Papilionaceae | C | Herb | (i) Mediterranean Region: Shetty & Singh, 1987. (ii) South Europe: Patil, 2019a. |
| 12. | Sipala | <i>Vallisneria natans</i> (Lour.) Hara (Syn.V.spiralis L.) Hydrocharitaceae | W | Herb | Europe: Kak, 1990; Patil, 2019a. |
| 13. | Parayati | <i>Ananas comosus</i> (L.) Merr. Bromeliaceae | C | Shrub | (i) Tropical America: Yadav & Sardesai, 2002; Belly, 1949. (ii) America: Sorenson, 2005. (iii) Tupi Island: Almeida, 2019a. |
| 14. | Maduga, Madhug | <i>Glycyrrhiza glabra</i> Linn. Papilionaceae | W | Shrub | Arabia Persian Gulb, Afghanistan, Turkistan, Asia minor & Siberia: Rajiv Kamal, 1988. |

| Sr. No. (1) | Sanskrit Plant Name (2) | Botanical Name & Family (3) | Cultivated (C)/ Wild (W) (4) | Habit (5) | Nativity & Reference (6) |
|-------------|-------------------------|---|------------------------------|-----------|--|
| 15. | Avasti | <i>Linum usitatissimum</i> L. Linaceae | C | Herb | (i) Mediterranean Region: De Candolle, 1959. (ii) Europe: Dar <i>et al.</i> , 2002. |
| 16. | Ucchusma | <i>Mucuna prurens</i> (L.) DC. Papilionaceae | W | Climber | America: Singh & Nigam, 2017 |
| 17. | Sobhanjana | <i>Moringa oleifera</i> Lam. Moringaceae | C | Tree | America: Singh & Srivastava. 2000. |