

NATURE

BAHERA: An Excellent Medicinal Tree

Dr R D Gupta

Bahera (Terminalia belerica) or Baheda is a forest tree and is also found outside the forests in other lands. This is the most useful tree of Ayurvedic System of Medicine and constitutes one of the component of "Triphala". Its leaves are used as fodder and wood as timber for various uses.

MEDICINAL USES

Fruit of the bahera tree is a constituent of famous Ayurveda formulation "Triphala" and is used in this form in innumerable diseases and body disorders. Fruit kernel possesses narcotic properties and is very effective in dyspepsia, dropsy and piles. Fruit pulp is given in diarrhoea, leprosy and in fever. Half ripe fruit is a purgative. Fruit extract has antibacterial properties. It is applied to hair for hair problems. It is demulcent also and is effective in rheumatism.

The fruit of bahera is quite bitter and pungent. It has been found very good remedy for respiratory disorders and cures cough. When it is kept in the mouth for suffi-



cient times cures breathing problems. It is also laxative and is effective in pile's troubles. The bark of bahera tree has been found diuretic in properties and is very effective in urinary problems. Its bark is also found useful in anaemia and leucoderma.

The bahera has antimutagenic effects and is used in herbal digestive tonic for ruminants along with harar. As already mentioned, the bahera becomes one of the constituent of "Triphala" which is used as an eye-wash for various eye ailments in addition to for various stomach disorders. Oil of bahera has been proved very effective in children suffering from oozing ears.

OTHER USES

In the leather industry, bahera is used to give flexibility to the leather. Dyeing and ink production units in India use bahera tree as well. The bahera is of great economic importance from timber point of view. The timber is mainly used in house building as rafters, boards and also for packing cases. The timber is also found suitable for the manufacture of plywood and tea-chests.

DESCRIPTION OF PLANT

Although bahera is a forest tree species yet it is also found outside the forests in other lands. Infact, bahera tree is disappearing from the forests as per field studies (Singh, 2006). It is due to its overexploitation for medicinal and timber uses as well as for fodder purpose. On private lands even, it occurs sparsely but on the whole it is found in fairly good quantity all over Kandi belt of Jammu (Jammu and Kashmir), Punjab, Himachal Pradesh and Haryana. In Jammu Siwalik hills, the fruit is collected for local use only and not exported. Its cultivation is easy from seed, directly sown in the field or from nurseries stock. It is now a common plant of our nurseries.

CULTURAL PRACTICES

Climate and soil : In the natural environment, where the bahera shows its luxuriant growth the absolute maximum shade temperature lies between 36 to 46° Celsius and the minimum temperature varies from -1° to 15° Celsius. And the normal rainfall varies from about 1000 mm to 3000 mm. In Jammu Siwaliks, it grows under subtropical climatic conditions especially in Kandi belt having an elevation between 300 to 800 m.

Bahera is capable of growing in various soils having texture from loamy sand / sandy loam to loam silty loam, provided moisture retention capacity is adequate. The best growth, however, has been noticed in sandy loam soils having good moisture supply and good subsoil drainage. Moderate to deep soils having medium to high organic matter status and high water holding capacity are preferred.

SUGGESTIONS AND IMPROVEMENT

As the population of bahera tree is reducing especially from the Siwaliks, so its overexploitation for various uses must be stopped.

Departments of forests are required to pass suitable acts / laws and thereafter get them enforced to prevent the above said exploitation of the tree.

Although fruit extract of this tree species has been found to possess anti-bacterial properties yet more research in this line needs to be conducted.

Being a local species, bahera must be grown in the nurseries along with harar and aonla. This will enable the farmers to obtain these species easily for growing in their non-arable private land holdings.

It is further suggested that under the principle of Social Forestry, "A nursery for every village" should be established so that the farmers can get medicinal plants like bahera, harar, amla as well as others to grow in their farms.

Supplies of nursery stocks from central nurseries as is being done today, will not work effectively. Carrying plants over long distances will only discourage the farmers.

The trees/shrubs will also serve to improve the wastelands, check soil erosion and prevent further cutting from floods. The lands will, thus, be rehabilitated.

Creation of strong extension and training network, formation of Village Forest Committees and preparation of joint management plans to save the disappearing plant tree species including bahera tree will go a long way in creating public awareness and effective participation of people in afforestation programmes.

In degraded forests, tree species such as amla, bahera, harar, jaman, neem can be grown with ease.

(The author is Ex-Associate Dean Cum Chief Scientist KVK-Jammu)

BOOK-REVIEW

Dramas with lessons of life

O P Sharma

Name of Book : TAANDAV, (Hindi Plays)

Writer : Rajneesh Kumar Gupta

Publishers : Hybrow Publications

Bari Brahmana, Jammu

Price : Rs. 500/-

This book "Taandav" (a collection of five Hindi stage plays) is just like a breath of fresh air in the world of Hindi literature. Writer of the book Rajneesh Kumar Gupta belongs to non-Hindi speaking area. Jammu who has been serving Hindi and Dogri literature for the past twenty years and has many beautiful writings to his credit. He was praised for his stage plays viz. Thar Link Express, Kirayedaa, Chhote Log, Adalat Mein Giddan Te Loath, Kabuliwala etc. Literary fraternity has been insisting on compiling his plays in the form of a book for many years and at last book "Taandav" has been released.

The book consists of five stage plays which opens with play "Taandav" in verse form. Journey of a wild man with his transformation into a Taandav dancer away when he finds that his lover has become a Nagarvadu who works in the king's Palace, dances to please the visitors there. Once again he is seen searching for the path of yoga, goes towards the forest saying :

"Taralochna Paane Badla, Maine Kupathgami chola, Mili mujhe hai bhrishtha, Uska Karm Jo Tola Banta Hoon Vanvaasi, Roke Mujhe Na Koi Mag Mein Natrajan Punha Maadav Hoga, Dharni Tere Tal Mein".

Delicate composition

Getting upset on the sacrifice of him, his lover, a Nagarvadu, breaks all her jewellery, leaves all worldness and follows the path of Yoga.

The whole play is just like a long poem with flashing use of Hindi words like Kunjar, Mrig, Ulook, Pichaan, Keki, Sugaa, Kehri, Vyagra, Kikum, Vanpoi etc. make the play both readable and viewable. It appears that the whole play has been inspired from a folk tale. The playwright has enlivened the quotation :

A poet reaches where Ravi does not reach .

The play has been staged in the annual Drama Festival conducted by J&K Academy of Art, Culture and Languages, Jammu and in 34th Pathiputra Natya Mohpsta at Patna and was well received by the viewers at both places.

"EK PANNA GUMNAAM" is the second play of the book which is based on the life history of great freedom fighter, Ashfaq - Ullah - Khan of Shahjhapur, Uttar Pradesh depicting how our freedom fighters faced hardships and struggles to attain independence. Hindu - Muslim unity is also depicted through the friendship of Ashfaq and Ram Parsad Bismil. It is a pity that Ashfaq was betrayed by his own compatriots. The British took advantage of our weakness and ruined us. Ashfaq and Bismil were both great poets and have created beautiful poems.

Writer of the play has tried to use pure Urdu language and has succeeded in his attempt when he says :

"Pinjron ke undar Phadphdaati andleebein dekhi hain na aapne. Parwazon ki keemat jaan sakti hain. Khoob ache se" Or

"Mere soje - jigar ne jalaa ke mujhe noor jo baksha hai, usi noor ki roshni se mazloom watan ka kona - kona aabad karoonga main"

See some verses of poetry :-

"Uss Bismil ka rang chadaa hai, arsh hai Bismil, charakh

hai Bismil

Khalke - khuda saari hai Bismil, Tu bhi Bismil, Main bhi Bismil."

The dialogues are so crispy and meaningful that reader gets lost while reading. The play was presented in Abhibhyakti Natya Sangh, Shahjahanpur in December, 2019 and was adjudged as best play which it deserved.

Life-blooded characters

Third Play of the book is "Shah - Shahni" which was adopted from the Dogri play "Shah- Shahni" of Sh. Rajneesh Kumar Gupta. It is a poignant love story of Hindu lady Shahni and Muslim Shah who had to settle in Pakistan. When Samjhota Express started between two countries, Shah visits Jammu in Hindustan to find his lover but once more he has to part from her as he has got limited time here. The scene of their departure is so beautifully written that it is sufficient to bring tears in the eyes of readers. The writer says : "Shahni, chahe lakh Pakistan ban jayein insaan ke undar saans leti mohabbat kabhi bhi tukdon mein nahi batti, Shah aur Shahni ek doosre ke liye jeete rahenge, chahe Shah rahe Pakistan aur Shahni rahe Hindustan."

Informative & instructive

The writer has given message that nothing is gained by bloodshed, all that is got is sadness, pain and loneliness. Love is the only instrument that is useful in the development of humanity. The play is craftly written and it again shows the vast range of ideas of the writer who has used Dogri words in the play giving it a realistic touch viz, Kalarian, Guccian, baladian , rus bakarkhani, addni wala glass, malai - kulfi ka chunga, gulgale etc. The play has been performed at various places so many times.

"Ek Dhoo Saphed Si" depicts the agony of loneliness of those parents whose children have been settled abroad. Raju has returned India after fifteen years for business meetings. He has no time for his parents here. Parents decide to commit suicide so that their last rites be performed by their son but the moment they are going to commit suicide, their inner - conscience arises and they decide to live their life for themselves. The play is very emotional and depicts how parents become helpless in the affection for their children. At one stage they say:

"Aur aaj who lauta hai poore pandrah barson baad.

Vanvaas kisne bhoga ? Ram ne ya kaushlya ne ?

Vanvaas kaatte to Ram hain, lekin bhogti usse hamesha

kaushlya hi hai, har yug mein ?

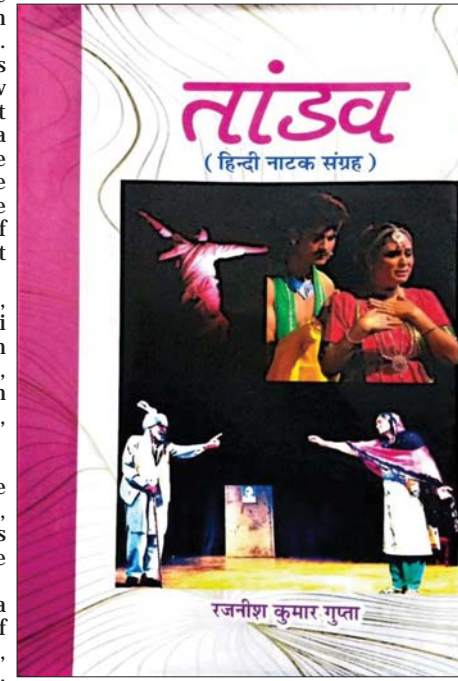
The play consists of only two characters yet it has pace and script is tight with meaningful dialogues. The play has raised universal problem of loneliness of parents.

Last play of the book is "Ghumshuda Sant ki Talaash" which is based on child exploitation. PCO law has come into force to deal with child sexual abuse cases , but despite the fact how many children can raise their voice. It is a serious problem and solution has to be found out.

The writer has successfully raised the case of Mithu who is a victim of sexual harassment by the son of Mohan who is a staunch Gandhian. The play leaves burning question before the society and we all should find solutions for the protection of our children. It is a very good play and its pace does not look weak at anywhere. With minimum use of set, it can easily be played at anywhere.

In short , Taandav is the saga of humanity as far as its contents are concerned. Topic of all plays are totally different from each other. Nothing is repeated. Language is no doubt Hindi but with the use of Urdu, Dogri and Sanskrit words makes it very interesting. Dialogues are crispy and beautifully knitted. Writer Rajneesh Kumar Gupta deserves congratulations for such a nice piece of literary work.

(starline_syndicate.service@gmail.com)



SCIENCE & TECHNOLOGY

Green Architecture

Swarn Veer Singh Jaral

Green roof technology is progressively being used to increase the energy and environmental efficiency of buildings and appears to be an attractive option for sustainable design as it may offer specific benefits to the building, especially at the energy level. The thermal comfort, which shows the satisfaction of the inhabitants, is one of the key factors in the energy usage in buildings. Energy savings, however, are one of the benefits that a greenery scheme can give a house. Roofs add about 20-25% of the overall metropolitan environment, and they may have a huge effect on the size of the structure and the atmosphere. Green roofing is the most widespread type of greenery seen in European, North American and some tropical Asian countries. Germany is known as the global leader in green roofing technology growth. Nevertheless, typically dynamic models implemented for the simulation of green roof efficiency involve the awareness of certain parameters, which are frequently challenging to predict, in order to better describe the thermal interactions with the exterior world. However, the explana-



tion of the thermal behavior of green roofs is very complicated because it relies on several variables and is dependent on nuanced phenomena. Vacant spaces, such as unplanted, unmanaged or poorly accessible green roofs, may play a vital role in preserving urban biodiversity. The advantages of green roofs are widely discussed in literature: insulation and cooling impacts, elimination of urban heat islands, sun absorption, sound and noise absorption, monitoring and maintenance of rainfall and drainage of water are only a couple. However, there is a lack of requirements at European level for the determination of several of these advantages and in particular, for the measurement of the thermal resistance of the increasing media and the drainage layer. Green roofs will, however, improve energy savings in winter and a

thorough review of their efficiency in various climates is strongly recommended. Many researchers used various types of insulation products, the drainage method, planting and soil selection with appropriate layer thickness could be more oriented. The insulation layer is used to reduce heat transfer rates whilst the drainage device is very useful for removing the water in a systematic manner without damaging the concrete surface.

Benefits:

The main purpose of this article is to justify the value of going green which will assist decision making process. It is even more valuable under the context of Global Financial Crisis where clients have comparatively smaller finance capacity and financial institutions are more conservative in terms of lending decision. A common approach adopted in existing studies is to compare the characteristics of green buildings to those of conventional buildings such as energy efficiency, water efficiency, indoor environmental quality, thermal comfort, health and productivity. There are several advantages to using green construction methods, which is well acknowledged. Green buildings, through utilizing sustainable land use, contribute to enhancing urban biodiversity and preserving the environment. Sustainable building design must include measures to reduce waste from development and demolition. When it comes to reused and recycled materials in new construction, the recycling rate must be over 90% in order to reduce the evident environmental effects of construction and demolition waste.

Green buildings often perform better than traditional structures, as seen by their increased energy efficiency, reduced water usage, and reduced carbon emissions. Improved building performance is also linked to cost savings, especially when viewed from a life cycle viewpoint. The operation cost is reduced as a consequence. Economist claims that green buildings may save energy use by 30% compared to conventional ones. According to a research commissioned by the General Services Administration, green buildings outperform their conventional equivalents in terms of energy efficiency, water efficiency, and cost

efficiency when it comes to upkeep. Some academics asserted that there are other advantages to green building that are not directly connected to costs. This research gave special attention to the positive effects of green buildings on people. This occurs as a result of the length of time people spend inside buildings. Thermal comfort, which is a complex dynamic of temperature and humidity, is intimately connected to the happiness of building users. Researchers have given this substantial consideration when modelling and calculating the thermal comfort level in green buildings in comparison to conventional structures. The desired range of room temperature might then be proposed. Adaptive thermal comfort may also be attributed to psychological, physiological, cultural and behavioral variables.

(The author is Ph.D Scholar in Mechanical Engineering)

ART & CULTURE

Significance of Vikrami Samvat

Puran Chand Sharma

Just because of the hard fact that we have been ruled by Britishers after Mughls and many others, for two hundred years during which they very cleverly and clandestinely changed our cultural and educational system and the age old cultural traditions as well as the beliefs to delink us from our rich socio-cultural heritage. Interestingly they did not resort to any kind of forcible machinations but accomplished this significant feat by way of shrewd diplomacy and administrative skillfulness. They successfully overhauled the mental makeup of elite society and moulded them to follow their foot prints in all matters of Governance and also distorted our socio-cultural, religious faith, traditions and moral values. They did it on the basis of a study and findings of their versatile philosopher, Lord Macaulay ,who carried out exhaustive tour of our country, minutely and keenly observed the Indian way of life and returned the Judgement " It is difficult to rule India. If at all India is to be ruled, then their educational and cultural institutions need to be destroyed." British Parliament accepted the Macaulay Doctrine and implemented it in letter and spirit for ruling Bharat having the most ancient culture as well as history.

Now when the Nation is in buoyant mood and celebrating Amrit Mahotsav of freedom after 75 years of Independence, it is high time to restore our old glory and national prestige. Atleast our upcoming generations must be fully aware about the achievements of our ancestors who have done prolonged penance and painstaking research work to give their best to the world based on science and staying in harmony with the nature. However, due to colonial mindset and lack of awareness we did not replace British calendar with Indian calendar which is duly supported by scientific evidence and is in sync with the natural phenomena explored and observed by our spiritual scientists as per the calculation of vedic mathematics which is still relevant. This is most opportune time to educate our younger generation with regard to our vital achievements and pristine glory in the field of culture and science. We always lived in harmony with the nature and did not indulge in exploitation of her vast resources. We are proud to be the first Nation created by Brahma in his endeavour and adventure of creating the whole universe on chaitra shukal Pratipada which is also called as Varash Pratipada in Satyuga having a span of 17,28,000 years followed by Tretaayuga famous for incarnation of Prabhu Shree Ram with a tenure of 12, 96,000 years. The coronation of Shree Ram happened on this auspicious occasion of Varash Pratipada e.i first day of the new year in Tretaayuga. Then follows Duapuryuga whose age is 8,64,000 years. Obviously in the present times we are navigating through Kaliyuga which would last for 4,32,000 years and probably the world is passing through Infancy stage of Kaliyuga experiencing bizarre trials and tribulations.

There is no denying the fact that we remained under the yoke of foreign aggressors and invaders for a prolonged period of time and got Independence in the year 1947 after a massive struggle of all Indians who never looked back to make the supreme sacrifices for the national cause. Unfortunately we had to accept freedom at a huge price of

partition on communal basis. This division was unnatural and unscientific. The country witnessed unprecedented communal violence. Another blunder on the part of dispensation of the times was not to enforce the complete transfer of population from both sides to their respective homelands. In fact that was the most opportune time to put in place the required changes and essential reforms in the British model of administration right from day one. Some kind of concrete pre-planning and futuristic outlook on the part of Leadership of the day could have worked wonders in all walks of national life by overhauling our colonial mindset. At this crucial juncture we are fully poised to take the quantum jump in understanding and implementing all those things which belong to us and qualitatively better than the things of foreign origin being based on logic, science and research. Our Panchhang is accurate to the dot based on vedic Mathematics which is unique and unailing. Once a foreigner asked Mahamana Malviya ji, revered founder of Banaras Hindu University as to how to Hindus across the world get invitation to join the Kumbh Shnan or Mela in India. Malviya ji politely said, " Do Aanne Ke Panchaang Se."

As of now all religious and social events, inaugural functions , marriages, Bhoomi puojan , upvas Brat etc. excepting financial transactions are conducted in our country as per Vikrami Samvat which commences on Chaitar Shukal Pratipada every year, accordingly we are passing through first month of Vikrami Samvat 2080 which is 57 years ahead of Gregorian calendar (2023+57=2080). This Samvat was started by king Vikramaditya of Ujjain after annihilating Shakas from Indian soil and was bestowed the title Shakari which means eliminator of Shakas. Samvat is also called Panchaang e.i having five constituents :-1.

Vaar (Days) 2. Tithi (Dates) 3. Nakshatra (star) 4. Yog 5. Karan. Great Astronomer, Brahmihir was contemporary of king Vikramaditya, who diligently worked out the perfect Panchaang in those critical times. All Scientists do recognize and respect the veracity of our Panchaang or calendar. This is also the established and cogent evidence of our rich cultural heritage and legacy which makes us greatly proud in the comity of nations. We can understand this from statements of world famous geniuses who have spoken so high about our culture and Hinduism which is not a religion but a way of life:-

Leo Tolstoy (1828-1910), "Hinduism and Hindus will one day rule this world because it is a mixture of Knowledge and Wisdom."

Michael Nostradamus (1503-1566) " Hinduism will become the ruling religion of Europe. The famous metropolis of Europe is the Hindu capital"

The loud and clear message of Vikrami Samvat 2080 is to stay connected with our roots, imbibe inspiration and enthusiasm from the deeds and exploits of our great ancestors as the 21st century belongs to Bharat .

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