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vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

Edítoríal...

Greetíngs!

Thanks a lot. This is how I can only express my gratitude to all those who have turned Asian Resonance (AR) as a true multi-disciplinary research journal in a quick span of time. Even a cursory glance at the list of contributions in this issue bears testimony to the fact that more and more subjects and topics of varied interests are on the rise with each new issue of the journal. This augurs well not only for the journal but for its stakeholders as well. Since independence, research has remained neglected in India. Barring few renowned universities and institutes, research activities did not find due attention. As a result, Teachers also stopped thinking research as a prerequisite to their career growth. It is indeed heartening to note that now the teaching fraternity has woken up from its slumber and exhibiting renewed interest towards research activities. A teacher needs to be a thinker. He or she needs to possess three crucial Ps-Pedagogical Knowledge, Professional Attributes and Personal Attributes. Inclination towards research truly makes a teacher professional, besides enhancing his or her academic performance index. Asian Resonance since its inception has been trying to cultivate a taste for research activities among the academicians .I really feel delighted that our efforts are getting encouraging response from the fellow academicians. I am sure that your continued support will make the journal an outstanding publication of global standards.

I look forward to receiving more contributions from your end in the form of quality research papers and wish you a Happy Reading.

Contents

S. No.	Particulars	Page No.
1.	Humanism in Girish Karnad's Plays Sultan Singh Dhurwey, Shahpura Distt. Dindori (M.P.)	1 - 3
2.	Dr. B.R. Ambedkar and his Annihilation of Caste M. S. Vimal – Chhatarpur (M.P.)	4 - 5
3.	Philosophical Leanings of Shiv K. Kumar on Various Aspects of Life, Expressed through Proverbial Type of Statements and Generalizations in his Poetry Mauji Ram – Rampur (U.P.)	6 - 15
4.	Sustainable Development with Optimizing Quantity of Soil Pollutants from Industries: A Goal Programming Approach Rajesh Dangwal - Pauri, Arvind Kumar, Dehradun & Vivek Naithani – Pauri (Uttara Khand).	16 - 19
5.	Highly Geo-effective Solar Transients and Their associated Geomagnetic Activities Subhash C. Kaushik – Datia, Sanjay Kumar Kirar, Sabalgarh, Varsha Sahu & Sonia Sharma – Gwalior (M.P.),	20 - 23
6.	Identification of solar features causing GMSs during solar cycle 21-22 M. P. Yadav – Katani & Santosh Kumar - Jabalpur (M.P.)	24 - 27
7.	Solar Wind Transient Plasma Events and their Characteristics Features Varsha Sahu - Gwalior, Sanjay Kumar Kirar – Datia, Sonia Sharma – Sabalgarh & Subhash C. Kaushik – Gwalior (M.P.)	28 - 31
8.	Interplanetary Plasma Flows and Associated Forbush Decrease Kamal Kishor Agarwal, Ashutosh Shrivastava, Sonia Sharma – Gwalior & Subhash C. Kaushik, Datia (M.P.)	32 - 34
9.	Cosmic Rays during Intense Geomagnetic Conditions and Their Solar / Interplanetary Causes Kamal Kishor Agarwal, Ashutosh Shrivastava – Gwalior & Subhash C. Kaushik, Datia (M.P.)	35 - 37
10.	Synthesis, Spectral Characterization and Biological Evaluation of Schiff Base Metal Complexes derived from 5- Nitrosalicyaldehyde Yvonne Fernandes & Jignesh Pandya – Rajkot (Guj.)	38 - 41
11.	Pharmacokinetic Studies of Some Leading Anti-inflammatory Drugs Tasneem Fatma, Z. A. Khan – Azamgarh & N. P. Singh – Jaunpur (U.P.)	42 - 45
12.	Synthesis,Characterization,antimicrobialstudyandSpectrophotometricdeterminationofMn(II)ionbyPyridine2,3dicarboxylicacid.AjitVPandya & JayprakashS. Chauhan – Ahemdabad (Guj.)	46 - 49

S. No.	Particulars	Page No.
13.	Study on Reproductive Performance, Survivality and Mortality of <i>Lymnaea stagnalis</i> by Plant Glycoside of <i>Abrus precatorius</i> Payal Mahobiya – Sagar (M.P.)	50 - 52
14.	Assessment of the Water Quality of Rihand Reservoir, Sonbhdra (U.P.), Using Selected Physico-Chemical Parameters Sandeep Kumar Shukla & Devendra N.Pandey - Mauganj, Rewa (M.P.)	53 - 62
15.	<i>In vitro</i> adventitious shoots regeneration from <i>in vitro</i> raised hypocotyls in <i>Aegle marmelos</i> (L.) corr. Renuka Verma & Chhabi Mittal – Ajmer (Raj.)	63 - 65
16.	Estimation of Air Pollution: A case study of Kanpur city in India Rahila Rehman, M.J.A. Siddiqui, & Rupali Dixit - Shilong.	66 - 67
17.	Role of Wireless Technologies in e-commercialization of Indian Rural Market - A Hope for Rural Market Ruchi Sachdev, - Kanpur	68 – 72
18.	Need of Work-Life Balance to Manage Job Stress among Indian Women Professionals Neetu Maurya , Hena Zaheer, Kanpur	73 – 76
19.	Social Networking Sites : A Global Ground for Youth to connect with the World or a Deep Well Ruchi Sachdev, Amit Sengar – Kanpur	77- 81
20.	Growth and Development of Indian Cement Industry Dharma Veer - Barabanki, Jeetendra Pratap Singh - Faizabad (U.P.)	82 - 84
21.	Operational Aspects of Rajasthan Tourism Development Corporation: A Case Study Bajrang Lal Bagaria, Laxmi Narayan Arya – Churu (Rajasthan)	85 – 92
22.	ICT: A Pedagogical Tool For Teaching-Learning Process Jitender Kumar – Kurukshetra & Amardeep Kaur - Yamuna Nagar (Har.)	93 – 97
23.	Value Based Education- A Need of Today Suman Lata – Kanpur	98 - 101
24.	Emotional Intelligence: With Reference to Job Performance Puneet Sharma – Shillong & Poonam Madan – Kanpur	102 - 104
25.	Developing Accountability Among Teachers Poonam Madan – Kanpur	105 - 107
26.	Swami Vivekananda as an Educationist Kamlesh Kumar Yadav - Kanpur	108 - 109
27.	Nuts and spices: Potent antioxidant sources and their application in food Prachi Avinash & Arti Sankhla – Udaipur	110 – 114
28.	Counseling Psychology Firoj Ibrahaimi – Jamshedpur	115 - 117

29.	Conception of Socialism and Development in India : A Nehruvian Perspective Sonu Puri - Kannauj	118 – 120
30.	Intellectual Property Rights in Plant Varieties: an overview of Concept and Development Harsh Pratap Singh & Chitra Singh – Bijnor (U.P.)	121 - 125
31.	Cyber Stalking: A Nightmare Pooja Malik – Mewar (Raj.) & Chitra Singh – Bijnor (U.P.)	126 - 129
32.	Buddhism and Human Life Manmeet Kaur – Bareilly (U.P.)	130 - 133
33.	A Prologue to Intaglio Printmaking Technique Amita Raj Goyal & Garima Jain – Jaipur	134 - 137
34.	The Religious Philosophy of Raja Ram Mohan Roy Jyotsna Kumari – Bermo	138 - 140

प्रकाशक,	राजीव कुमार मिश्रा द्वारा
मुंद्रक, स्वामा	ए) एण्ड एस) कम्प्यूटस, 127/1/61, डब्ल्यू-1, साकेत नगर णित साकेंट पराग डेयरी रोड
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- 7. Journal: Devashish, S. K. (Oct. 1996), The Giving Model and Corporate Excellence : A field Report Decision, pp 219-224, Monikutty, S (1997) Telecom Services in Urban and Corporate Segments : A Consumer Perspective, Vikalpa, Vol. 22, No. 3, pp 15-18.
- 8. **Book reviews**, which require no abstract, must be in the following order: Name of author/title of book reviewed/place of publication/publisher/year of publication/number of pages, in Roman and Arabic figures to include preliminary pages.
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VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance Humanism in Girish Karnad's Plays



Sultan Singh Dhurwey, Asstt. Prof. (Eng.) Govt.Degree College Shahpura Distt. Dindori (M.P.)

Abstract

People relate God nature and world in terms of power and might. God is omnipotent and omnipresent. People think that God is someone to whom one turn when one is in trouble and needs help, someone who might invoked upon to aid one in seeking revenge against enemy. People are running behind material prosperity and glamorous life. No one is worried about the needs of the poor, low and downtrodden. Girish Karnad is a man who asserts that drama is meant for the demos i.e. common people. In his plays, it seems, he wants to break the age-old stereotypes in order to instruct, elevate and liberate ordinary humanity. His basic concern is human spirit. He castigates blind worship and idolatry in the name of caste and creed and upholds the cause of the humble and lowly who are denied the sacred rights of man, especially women, children and oppressed. The present paper concentrates on humanistic concerns in the plays of Girish Karnad.

Introduction

"O my unfortunate country, those whom you have debased, they shall drag you down to their own level till their shame is yours;

Those whom you have deprived of their human right, who stand before you but find no room in your lap, they shall drag you down to their own level till their shame is yours."

Girish Karnad is a leading and the most active playwright of the contemporary Indian stage. His ideas and notions are startlingly new .Indian drama through the centuries has been one of the means of finding out as how a human being can achieve an optimal human existence—cultural, social, political, material and spiritual. He is a fine social critic. His humanistic approach asserts itself against all religious orthodoxy. He throws light on every aspect of the society. He has vividly selected the subject matter of his plays which have the social relevance and meanings. His plays present the life of the oppressed and offer glimpses of the oppressors. He used the myths, histories and folk-stories for personal reasons. This self reflexive note is evident in Yayati, Tughlaq and Hayavadana. They reveal his deep humanism. Thus in his hands the plays become an instrument of his humanism, an instrument for the enlightenment of man, and a means for the expression of his love, sympathy and compassion.

> "Girish Karnad is a humanist in the sense that he has a profound concern for both men and women, especially the oppressed and downtrodden."

Girish Karnad as a humanist has deep insight into the present social and political issues, which are eternally relevant to mankind. He does not openly suggest any pragmatic solutions for them. No doubt his humanistic solutions are there in his plays. His humanism is tinged with a sense of loss, pain, suffering, incomprehension and helplessness. As a revolutionary humanist, he succeeds in making his voice heard. His humanistic vision is multidimensional and complex. "He has been a bitter critic in recent years of the rise of religious fundamentalism in India. He publicly condemned the destruction of the Babri Masjid in 1992. When religious fundamentalism tried to whip up communal tensions over the controversy about the Idgah Maidan in Hubli, Karnad (who hails from Dharwad) strongly opposed them. More recently, he has publicly opposed the threats made by the Sangh Parivar of stopping the Tipu Bicentennial celebration."

Karnad has realized what life meant to the down trodden people. How they lived and suffered .What he aimed was to present the miserable condition of the poor, of the outcaste and the woman before the people of India as well as the people of the world. They suffered every kind of humiliation and suffering. Karnad's very soul revolted against the narrow religious outlook. He condemns castes and creeds which divide mankind and points out those narrow religious outlooks, which are against the oneness of mankind. All human beings are equal to the Creator. There is no untouchable in the great body of God. Karnad's sympathy can be seen towards the poor, lowly and the lost .His profound humanistic concerns are mirrored in all his plays. According to Subhash Bisaria the salient features of Karnad's humanism in his plays are as follows-

- 1. Deep concern for man, especially the weak and oppressed.
- Return to the past and reinterpretation of the past mythical, historical and oral stories.
- 3. A determined demystification of the dominant beliefs and practices.
- 4. A sympathetic understanding and affirmation of this ephemeral life.
- 5. Contemporary social relevance.⁴

He wrote *Yayati* as an escape from his stressful situation, when he was going to England for higher study. *Tughlaq*, also reflects a fear of failure that Karnad himself suffered. *Hayavadana*, too has a personal strain that he has acquainted with.The important characteristics is that all his plays have a direct social relevance. This is his humanistic vision.

Hayavadana occupies an important place in the humanistic world of Karnad. Hayavadana becomes the mouthpiece of the playwright to get across the point that gods and celestial beings often delight in giving pains to humans; visit to holy places, temples, places, gods and goddesses for the fulfillment of wishes can be futile. It encompasses the three worlds, the human, the divine and the animal. Hayavadana represents the third. By his conscious and penetrating observation and insight he questions the established norms to demystify the dominant beliefs and practices. Karnad shows his sympathy for Hayavadana, who becomes a horse, and the child (Padmini's child) that learns to laugh. The tragedy of the adults is left behind and the comedy of the children is looked forward to. It is pertinent to quote Dr. Punam Pandey - "Though the irony is felt but the iron will of Karnad asserts itself giving the colour of hope to Karnad's humanistic vision. Being a thorough going humanist, Karnad suggests that transcendence is possible only in immanence and believes that the generous acceptance of the tantalizing reality will be meaningful, even if the terribly incomprehensible world remains and inexplicable."5

In Naga-Mandala and Hayavadana Karnad tries to show how women are plaything in the hands of men. In Naga-Mandala, Rani is married to Appanna, but is deprived of her sexual, personal and familial needs. She is even treated like a maid servant. She is confined in locked house. She is not permitted to talk anybody or contact. She is, worse still, not allowed to speak with her husband. When tries to correspond with Kurudavva, first dog and then a mangoose guards in her house. The husband lives with a concubine instead of living with her. By the strange magic of Kurudava's roots, however, Rani gets the love and affection of Naga unknowingly. Naga also finally releases her from the tyrannical clutches after the snake ordeal afflicted by the elders, sitting in the chair of judgement. The playwright is of the view that women cannot be confined in safety lockers, while the men can be thieves elsewhere. Perhaps the matriarchal order may be conducive to male as well as female. He raises many feminine questions out of his humanism. A man can keep

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

as many wives as he likes but a woman is denied such previleges. In *Hayavadana*, Kapila proposed to Padmini and Devadatta is noteworthy—'Could not we all three live together like the Pandavas and Draupadi?'⁶ Padmini shows her agreement but shows her negligence and disagreement. It means that a woman does not have a desire to have more husbands than one. The play presents it affirmatively.

As a humanist, Karnad has raised many questions related to caste, religion, family and society. In Naga-Mandala, he raises numerous questions regarding the relationship between husband and wife and the crisis of human values. Rani is acceptable either as a slave or a whore or as a goddess by her husband and society both, but not as a human being. Appanna devotes his day and night to the concubine; but no one questions him for his extra-marital relationship with a concubine. In Hayavadana, no one takes the proper care of the children. Hayavadana is left alone after the dispute between his parents. The child of Padmini is also left alone in the end. They are deprived of the love and affection that a child gets in a joint family. In Tale Danda, the playwright has a humanistic vision with an appeal of social justice. Human being should be accepted as human being and there should be no division on the basis of caste and creed. There are many scenes that highlight the pitiable condition of the downtrodden people. The playwright exposes the age old rituals by Brahmins and their maintaining distance from the untouchables. They proclaimed their superiority and established a patterned hierarchy in the society. Sharanas demolished the boundaries of the caste and class for the sake of equality, humanity and social change. Their firm faith in Lord Shiva inspired them to believe in the equality of sexes and hard dedicated work.

In the Fire and the Rain misbehavior of male gender towards female gender is presented through the character of Nittilai and Vishakha. Nittilai is killed by her husband when she walks out on him. The gender discrimination and the oppression of women by the patriarchal society and the sympathy of the playwright can be seen in his plays. In most plays of the playwright, " the worst sufferers are women......who are caught up in a whirlpool of Hindu patriarchy and are sucked down helplessly."7 The expectations and desires of a woman are always suppressed in a patriarchal society, whether she belongs to a higher or lower caste. In Yayati Chitralekha belongs to an Aryan family, in Bali: the Sacrifice the protagonist is a queen and Vishakha in the Fire and the Rain is a Brahmin, all these characters are from a higher social order but suffer at the hands of unjust patriarchal society. It seems that society had forced Padmini in Hayavadana to perform Sati. Nittilai in the Fire and the Rain is murdered and the queen in Bali: the Sacrifice is sacrificed herself.

Karnad believes that the world has not been created for man to conquer and abuse it. What he aims at is an ecological vision in which animate as well as inanimate

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

objects would live in harmony. He emphasizes that man cannot live by ill will, enmity, destruction, hatred and so forth. Keeping this view in his mind Karnad has focused his attention on the downtrodden, oppressed, exploited and poor fellow of the society. His plays consistently favour for the female, children and the people at grass root level. In brief, we can say that Karnad as a playwright exposes the chain of tradition, caste discrimination, gender inequality, social injustice and political problems in his plays with an appeal of humanistic approach. It is evident by its glory.

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VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance Dr. B.R. Ambedkar and his Annihilation of Caste

Abstract

Dr. Bhim Rao Ambedkar (14th April 1891-6th December 1956) known as Baba Saheb , was a Dalit Political leader, Indian nationalist, editor, economist, historian, activist, philosopher, scholar, revolutionary, revivalist of Buddhism in India, jurist, thinker, anthropologist, orator and prolific writer. He is regarded as the maker of the Indian Constitution. He was born in a poor untouchable Mahar family. He spent his whole life fighting against social injustice, caste-discrimination based on the system of Chaturvarna- the Hindu categorization of human society into four Varnas- Brahmin , Kshatriya, Vaisya and Shudra. Dr. Ambedkar believes that the existence of caste in India is due to the notion of inequality imposed by religion. 'Annihilation of Caste' is a famous book written by him in which he asserts that if the social and cultural practices cease, caste could be annihilated. As a leading Dalit scholar, Ambedkar had received his education in India, America, England and Germany. As a writer he had written so many articles, reports, theses, speeches, critical notes and books. His 'Annihilation of Caste' is a speech-note prepared for Jat-Pat-Todak Mandal, Lahore in 1936. Unfortunately, it could not be delivered due to certain reasons. Later, Dr. Ambedkar published it in a book form in December 1944 in order to serve the purpose for which it was intended.

Introduction

Value His 'Rise and Fall of Hindu Women', 'Who were the Shudras?', 'What Have Gandhi and Congress Done to Untouchables?', 'The Thoughts on Pakistan', and 'The Buddha and His Dhamma' are the most famous books in prose. Dr. Ambedkar was a highly studious man. About his reading habit, Devidayal writes:

"Dr. Ambedkar read leaving his bed in the morning; he read in the toilet, he read while he ate, while he moved, while travelling by a car, train or aeroplane. He read even when relaxed, lying or sitting and before going to bed.^{1,}

Dr. Ambedkar himself said:

"I always study difficult subjects. I never read simple, recreational literature like novels and short stories. I am always busy with difficult literature"²

Annihilation of Caste is a speech prepared by Dr. B.R. Ambedkar in 1936 for annual conference of the Jat-Pat-Todak Mandal of Lahore, but it could not be delivered owing to the cancellation of the conference by the Reception Committee on the ground that the views expressed in the Speech would be unbearable to the Conference. In this book, Dr. Ambedkar has focused on castesystem in India and its bad effects. Being born into an untouchable caste (Mahar), he had faced its clutches and remained always a miserable victim of caste system yet he did not lose courage and fought against orthodox Hindus and untouchability. He criticized them in his writings and speeches on social occasions. For this, he was also criticized by a large number of Hindu activists. Speaking at the 'Yeola Conversion Conference' on October 13, 1935 near Nasikh, he had announced his intention to convert to a different religion and exhorted his followers to leave Hinduism. In a thesis, on the origins of untouchability, Dr. Ambedkar wrote:

"The Hindu civilization... is a diabolical contrivance to suppress and enslave humanity. Its proper name would be infamy. What else can be said of a civilization which has produced a mass of people....who are treated as an entity beyond human intercourse and whose mere touch is enough to cause pollution?"

As a social reformer, he wanted to establish a casteless society in India as he thought that only such a society could establish peace and prosperity in the nation. He wrote:

"The path of social reform like the path of heaven at any rate in India is strewn with many difficulties. Social reformers in India have few friends and many critics. The critics fall into two distinct classes; one class consists of political reformers and the other of the socialists."4



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It means that it is difficult to make India casteless where most of the people feel pride in their castes. In 'Annihilation of Caste', Dr. Ambedkar has drawn our attention towards the contemporary society in which the untouchables were victims of so-called religious rules of Hindus.

The writer has quoted a number of incidents, times and places when, where and how the lower castes people were treated mercilessly by the upper castes people. He quotes a report of 'Times of India' (4th January 1928) in which the correspondent of 'Times of India' reported that high caste Hindus in Indore district (of the Indore state) informed the Balais (Lower castes people) that they could live in the village only when they were ready to follow these rules:

- "1. Balais must not wear gold –lace-bordered pugrees.
- They must not wear dhotis with coloured or fancy borders.
- 3. They must convey intimation of the death of any Hindu to relatives of the deceased- no matter how far these relatives may be living.
- 4. In all Hindu marriages, Balais must play music before the procession and during the marriage.
- 5. Balais women must not wear gold or silver ornaments: They must not wear fancy gowns or jackets."⁵

But the Balais did not follow these rules, so Hindus proceeded against them. Balais were prohibited from getting water from the wells. They were beaten bitterly. The Balais submitted their petitions to the Durbar against these persecutions but there was no positive result. The poor Balais had to run away from their villages to Dhar, Dewas, Bagli, Bhopal, Gwalior and other states.

A most pathetic incident has been reported from the village Chakwara in Jaipur state. It was also mentioned in newspaper that an untouchable of Chakwara arranged a dinner to his fellow untouchables. The guests were gathered, food was served. Actually, food was prepared with ghee and butter so Hindus did not like this because untouchables were fully prohibited from taking such delicious food. The Hindus were having their hundred lathis, reached among the untouchables and despoiled their food. Untouchable ran away for their lives. Dr. Ambedkar writes criticizing this incident:

"This means that an untouchable must not use ghee even if he can afford to buy it, since it is an act of arrogance towards the Hindus. This happened on or about the 1^{st} of April 1936."⁶

In those days, India was burning in the fire of slavery. Mr. W.C. Bonnerji was a leader of rebellions against the British Government. Indians, under the directions of Mr. Bonnerji were trying to achieve political power. Dr. Ambedkar asks the political-minded Hindus:

"Are you fit for political power even though you do not allow a large class of your own countrymen like the untouchables to use public school? Are you fit for political power even though you do not allow them the use of public wells? Are you fit for political power even though you do not allow them the use of Public Street? Are you fit for political power even though you do not allow them to wear what apparel or ornaments they like? Are you fit for political power even though you do not allow eating any food they like?"⁷

Further Dr. Ambedkar writes:

"I am sure no sensible man will have the courage to give an affirmative answer. Every Congress man who

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

repeats the dogma of mill that one country is not fit to rule another country must admit that one class is not fit to rule another class."⁸

Dr. Ambedkar tells about the reason why these types of injustices are prevalent in Indian Society. Its one and the only reason is **Chaturvarna Vyavastha.** He writes:

"I contend that it is the most vicious system. That the Brahmins should cultivate knowledge that Kshatriya should bear arms, that the Vaisyas should trade and the Shudra should serve sounds as though it was a system of division of labour."⁹

It is regretting that in India, this bad and vicious system is considered to be religious system. The book in which these so-called rules are written systematically is regarded as the religious book of Hindus. Not only have these Hindus supported this **Chaturvarna** saying:

"Why should the Shudra need trouble to acquire wealth, when the three Varnas are there to support him? Why need the Shudra bother to take to education, when there is the Brahmin to whom he can go when the occasion for reading or writing arises? Why need the Shudra worry to arm himself because there is the Kshatriya to protect him?"¹⁰

Here, it is clear that the defenders of **Chaturvarna** do not have human- feeling. Their hearts are hollows. The theory of **Chaturvarna** treats Shudra as the ward and the three Varnas as his guardians. Dr. Ambedkar attacks this system and he also criticizes its defenders. He suggests a way to all Indians that we must change this so-called social system. Without changing it, we can not make desirable progress. He warns us that on the foundations of caste we can not build any nation.

Hence, Dr. B.R. Ambedkar is a great writer of prose. His **Annihilation of Caste** is a famous book. It has many tragic incidents relating to the exploitation of the depressed classes. This small book may be summed up as the black history of untouchables in India. It also reflects the real picture of so-called religious Hindus that they might be sympathetic and kind towards the dogs and cats but remained always merciless and cruel towards human beings whom they treated as untouchables.

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Asian Resonance Philosophical Leanings of Shiv K. Kumar on Various Aspects of Life, Expressed through Proverbial Type of Statements and Generalizations in his Poetry



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Abstract

Shiv K.Kumar, a stalwart Indian-English litterateur, being a professorpoet, is basically a thinker who has keenly observed and deeply speculated on almost all the important aspects of human life and made certain generalizations which beautifully comprehend human psychology and behaviour and they are transcendental as they leap beyond the ramparts of their contextual interpretations. Throughout his writings, such generalizations keep coming up time and again. The paper is focussed on all such proverbial type of statements and generalized remarks in his poems, published in his eight volumes, which, quite remarkably, unfold the philosophical leanings of Kumar.

Introduction

Shiv k. Kumar, born and brought up in the family of shri Bishan dass kumar, a teacher, a theologician knowing several languages, an erudite scholar and hence a rationalist and the intuitive, religious and caring mother, Smt. Ishwar Kaur. As a Poet, novelist, playwright, short story writer and critic, he has played a pivotal role to bring about a poetical renaissance from decadent nineteenth century Romanticism. He covers a wide range of human experiences and has fabricated a well articulated imaginative world into which he resolves the contradictions of self and society. He is deeply influenced by the famous philosopher Bergson who believes in the superemacy of intuition over reason. He thinks that reason and intellect can never help us understand the reality. The only way to know it is intuition. Further he is also influenced by Romantic literature, Stream of Consciousness Novel, D.H. Lawrence, T.S. Eliot, and the Bhagwad Gita and hence as a thinker he has developed his personal confirmed viewpoints and concepts and these concepts intermittently keep coming up time and again in the form of proverbial statements and generalizations. All such passages taken from the eight volumes of his poetry have been organized and presented in the following data -

1. Articulate Silences

- **1.1.** Better it is to remain busy with companions and friends because secluded moments are extremely painful-
 - -- loneliness's frenzied search for companionship.

(Waiting.13)

1.2. Doubt, which, no doubt can create crevices even in the strongest bonds, also provides an opportunity to the other alternates-

Doubt's stylus

- can wedge into granite sandstone, showing hairbreadth crevices. The wrinkled triangle between the agitate eyebrows is both a three pronged jab into affirmation and a release into fresh openings. (The Face.15)
- **1.3.** Memories keep on haunting a person throughout the life. However, to avoid the tension generated by the recollection of undesirable, painful memories, it is advisable that one should keep one's memory's cells paralysed-

The easiest path to renunciation is to paralyse memory's cells,

so that when confronted with a face from the reservoir of time, the mind blinks like an idiot, lacking recognition. (Renunciation.18) Perceptions received through sense organs are 1.4. generally incomplete and illusive-The dull ears hear only the eidolons of proration whizzing past on invisible wings, dropping deprivation in the starveling's bowl. (Sounds of Hunger.21) 1.5. Commenting on 'Images', the poet says-Images drafted into action are always dodgers, snarling restively like circus lions when rudely jabbed, showing their dragon teeth, brandishing their monstrous paws. (Images.30) 2. Cobwebs in the Sun 2.1 Without the 'soul', anything is a dead matter, and intuitive urges are the very soul in human life. Hence the poet says -Denuded of incense or gesture the flower may sear into a papier-mâché. (Lear to Cordelia.5) 2.2. Any intellectual exercise at the time of copulation must shatter the whole pleasure-Nudity feels stripped When the mind plays at catching its own tail. (Cerebral Love.11) 2.3. Perversion sometimes also leads to perception-Perversion too is perception. (The Unbeliever.17) 2.4. Half-hearted endeavour to perform generally leads to inutility-Bevond the flame's nervous leap chafing at the fringes of endeavour, the smoke writhes in coiled inutility. (Limitations.20) 2.5. One should clearly identify one's competence and capabilities and then alone, one should move ahead-Don't let the music's impassioned blare deflect the stillness of our reflections in the black coffee. What you can't, you can't. (Limitations.20) 2.6. Flow and flux, not the stagnancy leads to immortality-Immortality is born of flux. (Flux.21) 2.7. Precaution is needed to prevent the past, unhappy moments to revive and mar the present and future both----the first rav from the old sun may decide the next eclipse. (Returning Home.28) Man should not leave efforts even in adverse **2.8**. circumstances and remain hopeful because ----- there are saplings that may grow out of season and clime if the mulching is rich and hope shields stems and tendrils

VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance (Reclamation.35) from horers. 2.9. Positive attitude is the most important thing in life. We should not feel depressed or dejected-Deep in the earth's bowels there are seeds that may have lain untouched by moisture awaiting reclamation. (Reclamation.35) 2.10. Age does not spare anyone living; it must leave its marks on all living beings -Age brands its indelible marks on humans onlyhow can a gold-fish conceal its sagging face, its drooping jaws? (Reclamation.35) 2.11. It is not possible to shoot the dart of logic and on shadow, reason the as it must dodge it -The shadow always dodges the dart. (Patient Number Eleven Ward C.36) 2.12. Sometimes crabwise movements are better ----the easiest way to hit the destination was to march crabwise. (Pilgrimage.41) A woman should be approached by a man as a 2.13. whole, with total devotion and surrender-A man should come to his woman wholenot when the mind is a perverted sunflower turning face to darkness.(A Dark Mood.43) 3. Subterfuges May be, it is a proverb 'Speech is silver, silence is 3.1. gold', but it is not always true as silence sometimes may prove to be fatal---and silence is no virtue. (Broken Columns-6.14) 3.2. Sense organs like eyes, ears have their own limitations and nothing can prevent the free flow of

imaginative, intuitive perceptions-Subterfuges can cloak only the turret not the stereobate anchored in certitude. And no blinkers can hoodwink the albino glow in your third eye

(Broken Columns-7.15)

3.3. Commenting upon the most frequently emphasised value in India i.e. 'self control', placed against the intuitive upsurge of sex feelings, after the father takes the son to the priest as he has sniffed the danger of love letter, the poet, through the mouth of the priest, pleads for it, though, in the context, it is satire-

Self control is the force that keeps the sky's circus- tent

staid above the multitude.(Broken Columns-7.16)

3.4. It is not at all a sin to review one's past carefully and safely because any act done with utmost care is not harmful-Gloved hands leave no fingerprints. And a brisk review of all your yesterdays is no sin.

(A Letter from NewYork.18)

3.5. Actually it is cheaper to have a live-in relationship than engaging in a ritual of marriage-*It's cheaper* to take a woman to live with than breed mammals after a brief church ritual,

only to be betrayed by the uncanny grocery mirror, the scourge of all shoplifters. **4.9**. (A Letter from New York.20) **3.6**. It is necessary to always remain hopeful and pour all one's energy and devotion to a work and the success is sure-Like the sunset's parting thrust at the mirror's retina words may glow even from faded dog-eared parchments. (My Grandfather's Love Letters.26) **4.11**. Affirmation is always the result of perfect logos-3.7. --- the perfect logos is the act of affirmation. (The Sun Temple, Konark.28) There can be two ways to interpret and analyse 3.8 anything-rational and intuitive and one can easily discover and reach the truth-You can always kill a thing twicein light and shade – wash its bones to primordial whiteness till you can not tell (Coromandel Beach.42) **4.14**. 4-Woodpeckers Love, sex and consummation **4.1**. need totally undisturbed moments -4.15. Is there a point at which even parallel lines meet? out of sheer exhaustion? (Broken Columns III.3) **4.**2. The poet has beautifully used the proverbial line in his poem -When gold rusts what can iron do? (Broken Columns V.5) 4.4 The poet quotes the idea from the scriptures that self control in terms of relationship with a woman is necessary-Where a woman's body creases at the core of existence a sever runs through the dark (Broken Columns VII.8) foliage **4.5**. Misuse of freedom often leads to disaster-'Freedom is the demon that devours its own brood. (Broken Columns VIII.11) 4.6 Children are like clean slates. It is the way of grooming them which shapes their future personality -The creepers on the wall have no clear concept of truth. If fed on cactus milk, they may grow into pythons to stifflethe church. (Broken Columns IX.12) 4.7. Sometimes it becomes hazardous to cross the boundaries without appropriate knowledge and equipments-The bird that stretches its wing beyond the water's brink often lands on some insidious rock. (Broken Columns X.14) Every work requires appropriate person, time and 4.8. tools. Everybody can not do every work at any time-

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

How could a zebra be yoked to carry cabbages to the market place? (Broken Columns XII.16) Inanimate objects are not supposed to procreateprocreation is for the living only. (Flower-pot in my Study.18) 4.10. Love does not lend to any kind of legal or moral restraint-No emperor's law now prohibits Love's parody. (The Taj.21) Even the bad people have some soft corners and instincts to do good and -Even impostors have some graces— (My Son.23) 4.12. All what we hope to happen may not take place because destiny plays its own role-Resilience is not for everybodyperish in the womb before sunrise. (An Old Dry Well.26) 4.13. Language of gestures and body movements is sometimes more powerful than words-A mere smile can be a ritual and a frank swivel of the hips send gazelles capering through infinite space (Young Maidservant.30) Pointing towards the fact, the poet says that there is no difference between one woman and another-What's it that one woman has and the other hasn't? (Love Letter.33) Sometimes even very petty object can prove to be highly useful-A mere scrap of paper (Love Letter.33) can be one's undoing. 4.16. Exposing the hypocrisy in religion, the poet, sarcastically comments on it-All prayer is dual. (Thanksgiving.35) 4.17. It is very difficult to resist an onslaught from an invisible invader and it also hurts more deeply and fatally-The invisible always hurts more. (A Dead Bird on an Electric Pole.36) 4.18. Man made mechanical technical and devices/equipments are unable to discriminate between what is good and what is bad-The electric is neutral to bird, assassin and saint. (A Dead Bird on an Electric Pole.36) 4.19. It totally depends upon a person to sustain his secret a secret or share it with everybody-One may consolidate the gains discreetly or share the night's secret in the market-place. (A Pregnant Woman in the Queue.37) 4.20. To keep on moving consistently up to a long distance is not possible with weak feet-How much can you carry on your petite feet? (A Pregnant Woman in theQueue.37) 4.21. Depression and despair can overpower anybody, any time, without any consideration of time, place and age -The moment of despair has no age (Midnight Musings.39) no discretion.

5. Trapfalls in the Sky

- 5.1. Muteness and silence is a gift for love as it is with this muteness that one can perform wonders-When in love go mute like pebbles under crystal water, wear white silk, or take the veil. Your eyes will then glow like fire-flies, your footsteps fall like dew-drops on banana leaves on a summer morn. You may then leap through a ring of fire, kiss a cobra's hood, work miracles with sand, for you are then the Virgin's bridesmaid-only half mortal like lotus.
 (Mother Teresa Feeds her Lepers at her Home for the
- **Destitute, Calcutta.13**) **5.2.** Any argument or verbalisation during the moments of surrender must shatter the whole experience-Don't ever argue at the moment of surrender for the end is ineluctable.

(An Indian Mother's Advice to her Daughter Before Marriage.14)

5.3. Memories of human beings are short and myopic; they forget all in due course of time-*A man's memory is myopic* like a sparrow's; once filled up he hardens into a rock.
(Amathematical Amathematical Amath

(An Indian Mother's Advice to her Daughter Before Marriage.14)

5.4. It is not possible for a man to simultaneously do the contradictory jobs and try to obtain both the goals-

can not swallow both ends of rainbow.

(An Indian Mother's Advice to her Daughter Before Marriage.14)

5.5. Verbalisation and excessive use of rhetoric often creates suspicion-*rhetoric*

often deepens the suspicion,-----.

(An Indian Mother's Advice to her Daughter Before Marriage.14)

5.6. An adolescent must believe in and have full faith, confidence and control on his nascent power and then, nothing can deprive him of success------; *if you can tame the genie of your nascent power, the pyramids will give out their mysteries and the moon craters fill up with ambrosia.*

(Adolescence.17)

5.7. Joy and mirth is the feeling that may be derived from any source- physical or spiritual-

sleeping on a spiked bed like a yogi, or letting your coffee nipples dirk into my breast. Either way leads to nirvana. (At a Whorehouse.18)

- **5.8**. It takes time to convince a raw hand or a person who is going to do anything first time-----.*A new convert needs time to intone an exotic chant.*
- (At a Whorehouse.18)5.9. As a matter of fact, it is not the final punishment or doom but the excessively long wait which causes harassment and pain-It's the long wait that kills

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

- and the petitioner. (Tis Hazari Courts, Delhi.23)
 5.10. Tears are not the permanent solace to one's sufferings and despairs, but the headstone-Often the moment of pain seeks solace in a headstone, not in tears. (Solid Objects.27)
- **5.11.** Horoscopes, stars and movements of planets, particularly at the time of one's nativity often play important role to decide one's fate and it is through the study of this horoscope that one can foresee one's death-And how can you foresee your death

without knowing the configuration of stars and moon at your nativity? (Death of a Dog.28)

5.12. Dogmatically speaking, night and darkness have their own negative effects, side effects and after effects-Burial at night may sometimes cause a lunar eclipse- and darkness

is always a lone whiner. (Death of a Dog.28)

- **5.13.** One should not feel disheartened due to adversities as there are always the chances to resurrect-But to fade away is not to die for there's always resurrection. (Clouds.30)
- **5.14.** Earlier part of life or childhood of almost all the creatures is always holy, pious and innocent-*At nativity all creatures are chaste, like breast-milkthe downy chick, pecking its way out of the shell's prison, the littlum calf, gravitating on tottering legs to its mother's udders and the undiapered babe, thumped and thrashed into primal consciousness.*

(Cleansing Ganga.35)

5.15. There is hardly any difference between the sense perceptions of an ordinary woman and a whore-*Even a whore has some in-built censors*—

(O! Delhi.37)

5.16. All preparations are to be made in advance and all efforts, to be poured into, before we start a work-One must be stripped, bathed in one's perspiration, and robed in pallid white before confronting the unknown. (Refugees.39)

5.17. To remain sticking to one's past is no more needed. Confident movement with full force is rather more helpful-*There are no horizons here*

to prolong the ceremony of retreat. Just one dip behind the hilltop and its done. (Sunset Over

- (Sunset Over Simla Hills.41)
- 5.18. Raw materials are always anonymous; it is the sculpting, finishing and polishing of a stone alone which can convert it into a piece of art, or even god-Anonymity shrouds every rock until the sun's chisels sculpt it into a god. (A Wayside Shiva Temple.45)
- **5.19.** Any kind of involvement in any sinful act or any collaboration and connivance with a person involved in such an act or to hold somebody trafficking in sin must invoke hatred and punishment-

It's only when you stray into the crossroads of life and hold someone

trafficking in sin that you may get poked in the sides and shooed away with a brusque ''tut' ' tut!'.

(A Stray Cow.48) 5.20. Some physical gestures like the movement of hips, thighs and calves are certainly an invitation-If hips, thighs and calves sway to some rhythm, it must be a sort of love-play that knows how to leap across a pot-hole in the side-walk, an arc of the sky and also swing in bed.

(A Young Female Jogger.55) 5.21. Hunger and starvation pinch the soul--------hunger scrunches like gravel

under the feet. (The Holocaust Survivor.58)
5.22. Full blooded liveliness is needed for any kind of success-The only way to vanquish the sun

is to glower back into the vitals (The Holocaust Survivor.59)

5.23. Sheer verbalisation and self praise does not attract commendation. It is rather the actions done which speak more loudly-'Actions speak louder than words.'

(A Reminescence.62)

5.24. Sex instinct does not have any relationship with age of a person; it can upsurge anytime, anywhere and at any point of age-But the eyes------, has no age,

no discrition for even the wrinkled hands are smoothed

by a rabbit's caress.

(Shakespeare Seminar: Fall 1981.64)

5.25. The generation gap is a universal phenomenon and hence, the clash between parents and children is imminent-And isn't every parent an easy prey

to revolt? (Birth of Adam.70)

not the rule that squirms its way through the wet sand like a snail blindfolded.

(Serpent to Eve.73)

5.27. In order to grow, cooperation and collaboration are the basic requirements and for any construction, destruction is also needed-

-----to multiply is to seek confluence with another tributary,

----to replenish the earth is to first ravage it

(Adam to Eve.75)

5.28. Without axis it is impossible for any creature to move------every creature that moves

has a still axis, ----- (Adam to Eve.75)

5.29. One may have to face indifference if one is aware of one's own downfall-

When the sunrise knows

how and when it will meet its grey end,

even the cypresses lapse into indifference.

(After the Departure of Adam and Eve from Eden.77)

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

5.30. Eyes have got their own limitations and sometimes fail to comprehend the reality---to the naked eye any rudy, round object carries the succulence of life.

(After the Departure of Adam and Eve from Eden.77)

6. Woolgathering

6.1. Pre-dawn hours in Indian scriptures and mythology are supposed to be the sacrosanct hours as it is the time when gods and goddesses pour their blessings upon human beings-*Predawn is the hour when gods relish their nector in conclave.*

(Dew-drops on Lotus Leaves, Nagina Lake, Srinagar.7)

is always a whipiash. New drops on Lotus Loovos, Negine Lek

- (Dew-drops on Lotus Leaves, Nagina Lake, Srinagar.7) 6.3. Death is a great leveller which closes all-
 - But once the last rites are over there'll be deep silence---
 - (The Death of my Father.13)

6.4. What is visible to the naked eyes or what is projected by someone may be illusive and away from reality-*But isn't each plain statement a heresy, just as each resume*

is a perversity, like a foetus

with two heads or three legs? (I Say it on Oath, Your Lordship.14)

6.5. Courts are the places where people are put on oath to speak the truth and nothing but the truth. However it is a great embarrassment to speak out one's mind there-

Speaking out one's mind in an open court

is always an embarrassment—

- (I Say it on Oath, Your Lordship.14)
- **6.6**. Duality between rough and soft, gentle and rude is astringent-

There is an astringent duality, -----between stone and water, an owl's hoot and a bird's warble.

(I Say it on Oath, Your Lordship.15)

6.7. 'Well begun is half done' and hence small beginnings may be teasing-Small beginnings are teasers when they herald an event that doesn't take place.

(Drizzle.18)

6.8. Life is a consistent struggle. Therefore, to seek shelter every time under a tree or a temple's cupola is not desirable-But is it life to always seek shelter under a tree or a temple's cupola.

(Drizzle.18)

6.9. Light, even though for a moment is significant and powerful enough to devour the darkness and make the truth least hurting - *But after the lightning's grin even the truth ceases to hurt.*

(After the Rain.19)

6.10. Some of the dreams keep coming up, 'recycling themselves eternally' time and again----- there are some dreams that recycle

themselves eternally because love forges its own scriptures to defy time's scoffing. (Golconda

to defy time's scoffing. (Golconda Fort.21)6.11. The poet, here points out that the day, specifically for the poor, is meant for hard menial work and labour-

Day is for sweating-

for shoe-shining foraging for crumbs from dustbins,

for pan-handling, or wiping the windscreens of cars as the traffic freezes at the red signal.

(Pavement-sleepers of Bombay.22) 6.12. Even the church and ecclesiastical institutions have got their limitations-

never rise beyond the cathedral's dome.

(Pavement-sleepers of Bombay.22) 6.13. Any kind of restraint or taboo is unable to totally control the basic instincts-*How long the soul's breath vanquish the red flame*?

(Khajuraho.24)

6.14. Forcefully created distance between the objects which have natural tendency to remain sticking together is sure to increase the appetite further-----any distance between leaf and bud, bone and flesh hand and breast, only whets appetite---.

(Khajuraho.24)

6.15. Time plays an important role in life. If any work is not done in time, it will definitely conclude in nothingness-Disaster comes too soon to those

> who converse with water at dusk when the blood loses its immunity against amnesia, and the past and present eddy around each other reinforcing nothingness

(Walking by the Riverside.30,31)

6.16. To provide outlet to suppressed emotions is necessary as silence must choke the soul and loneliness; sometimes it is also fatal - *Silence can choke the soul like grey fog, and lonliness may breed only white ants that could bring even a citadel down to its knees.*

(The Lemon Tree in my Backyard.33)

6.17. To remain anonymous is not always fruitful; it may rather turn into a curse-*Anonymity can be a curse*.

(A Color Do "

- (A Subway Railway Station.35) 6.18. Darkness, in its own way has the power to absolve all the sins-
 - --darkness can absolve one of all sins.

(A Stray Bitch abandons her Litter at dusk.37)
(A Stray Bitch abandons her Litter at dusk.37)
6.19. It is not possible for the weak objects like wood, water and statement to resist steel, oil and counter respectively-How can wood stand up against steel, water against oil, statement against its counter?

(Felling a Tree.39)

6.20. To humiliate anybody when he is devoid of any defence weapon makes the humiliation more lethal-*Humiliation is lethal*

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

when the victim has no weapons for defence, when you have to carry your own cross and you are your own pyre-

fuel, flame and ashes (Felling a Tree.39)

6.21. We are sometimes quite helpless before destiny. There are certain compulsions which do not succumb to any degree of resistance-

One cannot always claim dominion over a candid sky

for compulsions have their own logic. Horoscopes are never governed by terrestrial laws.

(On Moving into a Complex of Apartments.40)

6.22. The parameters of darkness are set by darkness itself-Darkness has its own norms.

(Blackout.42)

- 6.23. Animals, according to Kumar, as they have been depicted in his works, have more evolved and broad-based powers of perception-If an animal does not articulate like a preacher or a soothsayer, it's because his eyes can laser through wood, iron, mortar, subterfuge or dissimulation; he can sniff the presence in the atmosphere of a spirit just risen from the flaming pyreor even of someone who has dipped his feet into the dark river to be ferried across to a land where sleeping or waking are the same where the truth is revealed to any one who can come back home after sleeping with a courtesan, or who is listless during day but vigilant at night to hear the sounds of silence lost to those who are trapped in dreams. (Sleep-walking.43)
- 6.24. We cannot shut our eyes and disassociate ourselves from our past as it can resurge any time, specifically during the moments of complacency-*You cannot dodge the past all the time; it resurges more sinisterly during moments of complacency reminding you that you may see your doom even in still waters.* (Shadow Lines.44)

6.25. The moment to enjoy sex relationship requires complete surrender with no thought at all. Simply making a material change is not going to help-

Mauji Ram- 13 To change a bed's locus-standi each autumn may not retrieve anything when the mind is still shadowed by the bat's wings. (Shadow Lines.44) Marital relationship made frequency requerements

6.26. Marital relationship needs frequent recurrences and revivals after perishing together in the debris of past-

May be it'd help if the ceiling could climb down the walls to smother the floor's crust since, often, the only way to union is to perish together in a rubble of mortar, wood and marital rancour. (Shadow Lines.44) **6.27.** Making a comment on the creation of a poem, the poet says that the process is quite intuitive, requiring complete freedom for recollection and creation-

In any case, writing a poem is like breaking a genie into doing a tantric ritual.

(To a Young Beautiful Woman Aspiring to be a Poet.48) 6.28. Evening and night are the times when sinful

- activities take place-Evening is always a carouser mimicking the orgy of ghosts under the moon till the cock's first crow proclaims the end. (End of the Party.49)
- **6.29.** Power does not lend to any kind of resistance and hence all the weak objects surrender quietly as they know that no effort to resist will ever succeed------To the wind's dirge a lamp-post bows its head, a tree drops a tear a stone lies stoically on the side-walk, knowing that all discourse must end in the silence of the moss, spawning in a dry well.

(The Ambulance.50)

- **6.30.** What appears to be the truth to the eyes may be a subterfuge while the reality is something else-Like a nun's retreat flatness can be a subterfuge for the breasts may grow inwards. The sculptor's hammer and file never reach the quarry's heart and that's where the soul dances under the iron-lid. (Norman, Oklahoma.54)
- **6.31.** Innuendoes can bring one to nowhere but to inquisition-

Innuendoes only bring one to inquisition.

(The Computer.55) 6.32. Natural instinctive calls can not be kept suppressed for a long time-Somewhere down the dark passage way, one has to redeem one's manliness.

(The Computer.55)

6.33. Language of love does not require any verbalisation or rhetoric; it has got its own language through which it can express itself in a very powerful way-*Each icon of love speaks its own language- husky cooing in a thistle- down bed, eye that seeks the meaning of pollen wafting from one blue-bell to another- and fingers that weave occult patterns around brown nipples,*

(Rape.61)

6.34. Virtue and merit can not be overtaken by vice and evil-How could virtue be sullied by a night's brief affair? (The Ring.62)

till even stone melts into benediction.

6.35. High spirits and mural is required for doing miracles-

---it's rider's swing through

space that works the miracle. (My Little Grandsonon his Rocking Chair.63)

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

6.36. All the mortals on the earth must suffer the stings of destiny; fantasies are meant for gods and goddesses------fantasies are only for the moon and stars, not for the mortals who are prone to chills and (Walking through the Woods.64) fevers. 6.37. For copulation and orgasm, both, physical, as well as mental strength, with hundred percent involvement is a must-But what can you do when the roots under the yellow soil are paralysed (Even at my Age.65) and will not stir up. 6.38 Old age and ripeness must bring sufferings and pains------ripeness is a cruel mentor. (Even at my Age.65) 6.39 To regain strength, rest and sleep are needed for a fresh start-But how can you confront the sun if you don't seek rebirth after each death? (Sunrise.67) It is the great people alone who enjoy the privileges; 6.40 the poor are destined to suffer and suffer alone-Marble graves are for the scion of royalty-roses and lilies-

not for the commoners who are swept off by history into a mass grave, where they lie for centuries till they become manure for the new-born.

(A Requiem for Autumn Leaves.71)

7. Thus Spake the Buddha

7.1. Kumar, depicting the death of a poet, describes his verses (his own verses) as jumble of ambiguities. The lines, he quotes to support his viewpoint are marvellous pieces of generalization-

that a flower's eye has a better perception than the human retina that even in the fraternity of stars there are feuds, but they close up their ranks when it comes to challenging the moon's suzerainty-----. (Death of a Poet.3)

- **7.2.** Desire, an unbridled stallion and body's appetite need restraint as-Body's appetite like a crocodile's belly,
- can hold rock, metal and a virgin's thigh. (Thus Spake the Buddha.5)
 7.3. Yearnings, if satiated, may sublimate-The way to satiate a yearning is to sublimate it. (Thus Spake the Buddha.5)
- **7.4**. All the mysteries cannot be revealed; even soothsayers can not unfold them-But darkness guards all mysteries even beyond the ken of a soothsayer.
 - (I was Old Before my Death.6)
- **7.5.** Any kind of hoarding is a sin while sharing it with others may lead to the emancipation of the soul-If hoarding is a sin, sharing emancipates the soul.

(Inside the Womb.10)

7.6. One can not remain confined and unnoticed for long; the laser of the sun must detect him one day-*How long can one remain fortified inside, unscathed by the sun?*

(Inside the Womb.10)

7.7.	Death is imminent and no safeguard is impregnable					
	for the man in mask-					
	there's no shield					
	(Putting an Old Sick Dog to Sleen 11)					
7.8 .	Waterfalls are the testimony to their invincible					
strength and hence the poet says-						
	water					
	is more potent than rock, more lethal than a woman's fangs					
	(Niagara Falls 25)					
7 . 9.	Any confession without penance is meaningless-					
	But if confession without penance					
	could work, a parrot would claim					
	rebirth as a bird of paradise.					
7 10	(A Temple atop a Hill.26)					
/.10.	scriptures can wreck havoc, if not controlled in					
	time-					
	Tempered in the oven of a sizzling					
	throat. even human teeth may grow					
7 1 1	into tusks, charging at giant windmills. (Anger.27)					
/.11.	of the celebration of a festival-					
	A happy Diwali is for those who had					
	an unblemished year-					
	no death in the family-					
7 1 2	of man, animal or sapling. (A Damp Diwali.31)					
7.12.	to the sustenance of a seed fruit and flower but					
	without love and care it is not at all possible-					
	Love, not the sun, is real					
	sustenance to seed, fruit flower					
= 10	and the soul. (The Himalayas.34)					
7 .13 .	One has to face the hard realities in life; no one can					
Surviv	How long can one live					
	on mere reflections?					
	(The Himalayas.35-36)					
7.14 .	There is no one-to-one relationship between desire					
	and consummation-					
	100 much of 100 unite, but never the scale between					
	desire and consummation.					
	(Lake Gandipet, Hyderabad.37)					
7.15.	Juxtapositions and paradoxes have two faces -					
	The way inside is the way out					
	to understanding- that each paradox carries two faces :					
	<i>fruit and worm, beginning and end.</i> (Meditation.44)					
7.16 .	Frequent occurring of the reminiscences from the					
	past are sure to destroy one's present and future-					
	Phantoms from the past, you know,					
	to ransom					
7.17 .	Pain is the inseparable part of life; it comes with the					
	birth and goes with death-					
	Painis born					
	in the mother's womb, and ends only					
	when the asnes are silenced- by a sprinkling of milk (Repunciation 56)					
7.18 .	With poise and passivity between body and mind.					
0.	intuition and reason, one can perform wonders-					
	It is possible even on					
	a slender branch if one can balance					

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

both body and mind.----- .

(Birds' Homecoming at Sunset.57)

7.19. The crude fact of life is that neighbours, friends, relatives, all change with the passage of time and we must reconcile to it and make continuous efforts to minimise the attachment which causes nothing but pain-

-----Neighbours of yesterday might have migrated to some other land. And no one from one's progeny ever returns home.

The kaleidoscope changes its pattern each evening to remind one that attachment generates only anguish.

(Birds' Homecoming at Sunset.57)

8. Losing My way

8.1. Offspring of words which lay eggs on paper, never die-

-----Only words which lay eggs on paper and whose offspring never die. (Hamlet.3)

- 8.2. There is nothing like purity of blood; it is only a myth which prevails in our society-Purity of blood the thin line that divides Bermuda grass from weeds is a myth created by those whose vision is impaired by jaundice. (Weeds.4)
- 8.3. Bidding of Adam to God unveils Kumar's views on God and the earth-We know the journey down to earth is fraught with danger. Nightmares, disease and death. Animals, birds and humans eating up their own progenitors. But, inspite of the enveloping gloom, we know your compassion would impel you to call us back someday. Because divine grace punishes to forgive and kills to regenerate. Doesn't sinning carry within its womb the seeds of redemption? (Adam to God.7)
- 8.4. To conclude the poem 'Vandana Weds Ramesh', the Indian father's promise never to forget her though she is going abroad, to a distant place, Kumar generalizes and writes-*Time and distance are only for unbelievers.* (Vandana Weds Ramesh.11)
- 8.5. The poet still can recall the visage of the river easily because-Faces don't change. Only lineaments deepen into grooves and the complexion turns sallow.
 It's the heartache that snaps the bond between fruit and branch. (Déjà Vu.14)
 8.6. Anonymity is perhaps the best camouflage-
- Anonymity is a chador that covers up all pimples on the soul.

(Two Strangers on a Train.17) Freedom is availed and enjoyed by a few chosen people in this world-

soul only impoverishes it. But freedom too is not meant for everyone.

8.7.

8.8.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Darkness has an ear for music while daylight is only for polemics.

(In Memory of Begum Akhtar.45)

8.18. To keep the spirits high in order to lead a full, vibrant life and get success is necessary-'*The way to live is not to crawl* or whimper, but charge into the stone wall.'

(Riding a horse.49)

- **8.20.** About the creation of a poem, the poet says-A poem is born when words wing down from the sky, chorusing like nightingales with holes in their throats. (Words.55)
- 8.21. Foresight has got its own limitations and it cannot help one to penetrate all the mystery-*There's no bourne between street and pavement, truth and perjury, gesture and intent. It's all the same. Your foresight can not carry you beyond the next step* (The Mist.56)
- **8.22**. Definitions of love and life, given by the poet, in the poem 'A Poets' Meet' carry the undertones of generalization-

------Love-----is a yellow creeper with ambrosia dripping from its poppy flowers.

---Life-----is a river that circles back to its origin, like a snake catching its own tail.

(A Poets' Meet.57)

- 8.23. It is victory alone which is celebrated; no one cares for the vanquished and defeated------No resurrection for the vanquished. (A Cock-fight.61)
- 8.24. The ways of temptation are sly and in order to catch a star, it is necessary to keep one's palm open-Sly are the ways of temptation. The way to catch a star

is to keep your palm open.

(Feeding the Pigeons.62)

Interpretation

As the above data clearly shows, Kumar's major focus is there on the dichotomy between intuition and reason and he stands for intuition's supremacy. That is why the maximum number of generalized statements (31) -1.4, 2.1, 2.2, 2.11, 3.2, 3.8, 4.13, 4.18, 5.1, 5.2, 5.5, 5.20, 5.23, 5.26, 5.30, 6.4, 6.13, 6.14, 6.24, 6.27, 6.30, 6.32, 6.33, 7.1, 7.3, 7.12, 7.18, 8.3, 8.8, 8.10, 8.17 dwell upon this juxtaposition. Eleven citations above - 2.4, 2.5, 4.7, 4.8, 4.20, 5.16, 5.17, 5.22, 6.19, 6.35 and 8.18 are based on the theme of the significance of devotion hard work and full blooded endeavour in order to perform a work successfully. It is also important that before taking up a task in hand one should be sure of one's competence and capacity to do it. Half-hearted endeavours always lead to failures. Further, the moments of love require total surrender to each other, with no hypocrisy, no verbalization, no arguments, and no discussion. Any rational, mathematical approach is sure to mar the total experience. The generalizations based on this

what is instinctive and intuitive, Kumar writes-Pain is born when the honeybee returns to the belly-button of the same flower, again and again. (Peacocks mating.28) 8.9. Experience for Kumar is more authentic even than divinity-Isn't the voice of experience more authentic than even divinity's, which often sounds like a matron's? (Bhishmpitamah to Yudhishter Dharmaraj.31) 8.10. Truth can only be perceived through the eyes of the pain, not through those of luxury and joy------it's only through pain's eyethat you can perceive truth------The way to see is to go blind, and the way to fly is to crawl on your belly. (Bhishmpitamah to Yudhishter Dharmaraj.33) 8.11. The poet's comment on window shopping subtly expands into a generalization-With no silver in hands, you may still look at the earth's treasures through the slits of a cloud. Distance shields on from the flame of touch. Inside the glass-house, images look larger than life. ---------glass windows are such stuff as dreams are made off. (Window-shopping.36) 8.12. Destinations are generally far away from reality-A destination is often a mirage. (Lying Low.P.40) 8.13. Describing street children as 'born of cyclone, earthquake and drought', Kumar generalizes and writes-Identity is for those who are lullabied in cradles, and fed on (Street Children.41) honey and dreams. 8.14. It does not matter whether it is burial or cremation, after death-Does it matter at the end of the day, it's burial or cremation? the dust eats it all up – bone, flesh and dreams. (Street Children.41) 8.15. What the underground man says to Lisa transcends the limits of time and space-In each soul there are corridors dark, wet, narrow and circuitous. But at every curve stands a Moses to lead one to Mount Sinai. (On Reading Dostoevesky's 'Notes from Underground'.42) 8.16. He further admits that though she is extremely beautiful yet all physical beauty is short-lived. What survives is only divine love -But beauty is a whiff of

(Whisperings of Immortality.18)

Commenting on the taboos regimented against all

lavender, a freak drizzle

on a broiling day. What will survive

beyond the tombstone is only divine love.

(On Reading Dostoevesky's 'Notes from

Underground'.42)

8.17. Darkness and music represent intuition while daylight, reason, and hence the poet says-

theme are - 4.1, 4.10, 5.1, 5.24, 6.25, and 6.37. The poet has also generalized the concept of recollections, specifically the painful ones and advises to keep oneself away from them. However it is these recollections which play a vital role in the creation of art. -1.3, 2.7, 3.4, 6.10, 7.13, 7.16. He also talks of hopefulness in 2.8, 3.6, and 5.13. Destiny plays a pivotal role in human life. Sometimes we are left in a fix in front of it. -4.12, 4.17, 5.11, 6.21, 6.36, 640, 8.13. Darkness and night in Kumar represent intuition, but it is also the time when crime and sin takes place. -6.18, 6.22, 6.28. He expresses his views on anonymity in 6.17, 7.6, 8.6, and on juxtapositions in 6.6 and 7.15. Death has been focussed in 6.3, 7.7, and 8.14 while 7.2 and 8.19 dwell upon desire and restraint. 7.4, and 8.21 talk of unlimited mysteries. True love does not surrender to the limits of time and space which are meant for unbelievers. - 8.4, 8.5. 4.4, and 5.6 focus on self-control while 4.5 and 8.7, on freedom.

Besides 1.1, dwells upon loneliness, 1.2, doubt, 2.3, perversion, 2.6, flux and immortality, 2.9, On positive attitude, 2.10, age factor, 2.11, crabwise movements, 3.1, silence, 3.3, self control, 3.5, live-in relationship and marriage, 3,7, affirmation, 4.6, children, 4.9, production, 4.10, good instincts in bad people, 4.14, women, 4.15, love letter, 4.16, hypocrisy in religion, 4.19, instinct, 4.21, depression, 5.3, memories, 5.4, doublemindedness, 5.7, joy and mirth, 5.8, convincing a raw hand or a new convert, 5.10, tears and solace, 5.12, night, 5.14, innocence and piousness of childhood, 5.15, ordinary woman and whore, 5.18, raw materials and art, 5.19, sin and punishment, 5.21, hunger, 5.25, generation gap, 5.27, destruction and reconstruction, 5.28, importance of axis, 5.27, downfall and indifference, 6.1, sanctity of pre-dawn hours, 6.2, debunking of religion, 6.5, embarrassment in courts, 6.7, significance of good beginning, 6.8, consistent struggle in life, 6.9, value of light, 6.11, labour and hard work for the poor during the day, 6.12, limitations of religion, 6.15, importance of time, 6.16, silence v/s expression of emotions, 6.19, weak defence and humiliation, 6.23, animals, 6.26, value of recurrences and revivals for the sustenance of marriage, 6.29, powerful v/s weak, 6.31, innuendoes and inquisitions, 6.34, virtue and good v/s vice and evil, 6.38, old age and suffering, 6.39, sleep rest and good start, 7.5, hoarding, 7.8, potency of water against rocks, 7.9, confession and penance, 7.10, anger and havoc, 7.11, causalities and celebrations, 7.17, pain as part of life, 7.19, change, attachments and reconciliations, 8.1, words art and immortality, 8.2, purity of blood as myth, 8.9, experiences and authenticity, 8.11, window-shopping, 8.12, destinations and mirages, 8.15, weaknesses, hopefulness and help from gods, 8.16, physical beauty v/s divine love, 8.20, creation of a poem, 8.22, definitions of love and life, 8.23, importance of victory and 8.24, temptations.

Conclusion – In this way, all the aforesaid proverbial statements and generalized remarks cover a wide range of thinking by the poet on human behaviour. He has pondered over modern life very deeply and presented his beautiful thoughts in the form a type of definitions. Almost all the aspects of internal and external behaviour of human beings along with so many instinctive urges and intuitive perceptions and expressions have been taken into account.

The poet has succeeded to comprehend an elaborate discussion on the predominating controversy between intuition and reason. Through different generalizations, he has also presented his views on love,

Asian Resonance

sex, marriage, and consummation, role of destiny, significance of hard work, labour and devotion, positive attitude, self control, freedom, anonymity, darknessand night, desire and restraint, mysteries of life and even on the creation of a poem etc. As a whole, these expressions, thus, give a candid glimpse of kumar's views on various topics and comprehend his thinking.

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Asian Resonance Sustainable Development with Optimizing Quantity of Soil Pollutants from Industries: A Goal Programming Approach

Abstract

Soil is a basic resource and plays a vital role in sustenance of all kinds of life on the planet. It is most valuable but unfortunately non renewable resource. If we will tame it wisely, it will provide a healthy and good life to us and if it is abused it will collapse and take life away with it. Now-a- days due to ignorance and selfish motives under the influence of ethics of development we are neglecting the maintenance of quality and life of our soil. This paper is trying to present a Weighted Goal Programming (WGP) model on six different soil pollutants coming from different type of industries. Also we are trying to optimize quantity of pollutants by treatment and the yield of industries to satisfy both ecosystem and development process. The model may be helpful to both environment planners and industrialists while facing soil pollution problems.

Key Words: Weighted Goal Programming (WGP), soil pollutant, treatment of pollutants, ecosystem and yield of industries.

Introduction

Soil is a sustainable resource which supports life of flora and fauna of each and every ecosystem of this planet. It is a very basic and non renewable resource. In this race of development we are continuously spoiling the natural quality of our soil by throwing xenobiotic chemicals into it. Today we are standing on the cross roads of development and ecological balance, so it becomes our humble duty to think on both the aspects of the problem.

Soil is mixture of both organic and inorganic components derived from transformation of rocks. The inorganic part is composed of rock fragments and very fine mineral particles. The organic part is composed of dead and decaying remains of plants and animals. Whenever there is any imbalance in quantity of these parts or some foreign material gets mixed into the soil, it leads to contamination or pollution of soil. Thus, the process of buildup of toxic compounds, chemicals, salts, radioactive materials, plastic, disease causing agents into the soil which alter the quality or composition of soil and further affects the growth of plants and health of human beings adversely is termed as soil pollution.

It is an issue of serious concern because it is the soil on which we live and get our food supply. It is not actually a result of a single human activity but it is a complex outcome of number of activities like mining, oil and fuels dumping, leaching, discharge of industrial waste, drainage of contaminated water and sewage sludge in soil, etc. During this process of soil pollution build up, the pollutants get accumulated in soil and further are absorbed by plants, micro and small organisms. The organisms get poisoned and die due to which the organic activities inside the soil gets obstructed and gradually soil loses its fertility. When these pollutants are absorbed by plants then they enter the food chain and adversely affect the animal metabolism. Some amount of pollutants are naturally disposed by micro-organisms but due to high industrialization the amount of pollutants has risen up to a critical level where natural agents become helpless so it has to be treated well before disposal. Apart from it yield of industries is an important aspect as we cannot ignore development.

Thus in this paper we are presenting a WGP model which can be helpful in reducing soil pollution with maintain the pace of development.

Goal Programming

Goal programming (GP) is an important analytical approach devised to solve many real world problems, where targets have been assigned to all attributes and where decision makers (DM) are interested in minimizing the non achievement the corresponding goal. [Chin Nung Laio]. GP was first introduced by Charnes and Cooper (1961) and further developed by Lee (1972), Ignizio (1976), Tamiz et.al. (1998), etc.

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Department of mathematics, H.N.B.Garhwal University, Pauri campus vivekmassive@gmail.com Generally GP minimizes undesired deviations from target values. In this method the DM can consider many goals simultaneously during the search for compromise solution and is supported by Mathematical Programming Optimization Potential (Martel and Aouni, 1998). GP is a powerful tool which draws upon the highly developed and tested techniques of LP but provides a simultaneous solution to a complex system of competing objectives (Banashri Sinha and N Sen, 2011).

GP is a mathematical programming technique which treats the constraints of linear programming problem as their goal. Linear programming as a goal in the objective function, optimization means coming as close as possible to achieve these goals in order of priority by the decision maker. Goal programming is applicable to single or multiple goal although it is a greater usefulness occurs when the multiple goal are conflicting and cannot satisfied simultaneously.

Weighted Goal Programming (WGP) is also known as Archimedean GP. Its achievement function consists of both the unwanted deviation variables associated with rigid constraints and flexible constraints each weighted according to priority. As long as the unwanted deviations are minimized, we achieve a satisfactory solution. The mathematical of a WGP model is as:

 $\begin{array}{l} \text{Minimize } \sum \left(\alpha_i \; d_i^{\; +} + \beta_i d_i^{\; -} \right), \; i = 1,2,3,\ldots.n. \\ \text{Subject to: } f_i \left(X \right) + d_i^{\; +} - d_i^{\; -} = g_i \; , \; i = 1,2,\ldots.,n. \\ d_i^{\; +} \; d_i^{\; -} \geq 0, \; i = 1,2,\ldots,n. \end{array}$

 $u_i, u_i \ge 0, 1 = 1, 2, ..., n.$ X ε F (F is a feasible set). [Chin Nung Laio, 2008]

Our Pollutants

In this paper we are considering six different pollutants namely red mud coming out from aluminum industries, lime sludge the byproduct of paper industry, basic slag produced by steel industry, press mud a waste from sugar industry, fly ash waste from thermal power plants and sewage sludge from municipal areas.

- Red mud: It is an alkali effluent which is discharged from alumina industry during the process of melting of bauxite. It makes soil alkaline, increases salt and metal content and vast area of land is unnecessarily consumed during disposal.
- Lime sludge: It is the main byproduct from paper industry which contains calcium carbonate and sodium. It makes soil alkaline and gets deposited in plants which affects adversely in large quantities.
- **3. Basic Slag:** It is the waste produced from steel and allied industries. It is largely lime stone or dolomite which has absorbed phosphate from the iron ore. It is highly alkaline in nature and phosphates in large quantity adversely affect plant and animal health.
- **4.** Fly ash: It is one of the residues generated in combustion of coal and wood. It is highly toxic and considerably increases the pH of soil. Also it causes accumulation of heavy metals in plants and animals causing serious diseases.
- **5. Press Mud:** It is one of the byproducts of sugar industry. Although it is a good fertilizer but its accumulation in large quantities leads to increased salinity of the soil. Also if used in large quantities causes introduction of metals in food chain which is harmful to human health.
- **6. Sewage Sludge:** It is a big problem as it is unavoidable waste of human and animals. It contains heavy metals like lead, cadmium, chromium, zinc and

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

mercury which can cause serious health hazards.[S.K.Sahu, K.C.Pradhan, D.Sarangi, 2004].

Goal Programming Model

 $\begin{array}{l} \mbox{Considering the minimization of the six pollutants and maximization of waste treatment along with industrial yield as our priority we can formulate the model as: \\ \mbox{Minimize } Z = W_R \ d_1^{\ +} + W_p \ d_2^{\ +} + W_{BS} \ d_3^{\ +} + W_{PM} \ d_4^{\ +} + W_R \ d_1^{\ +} + W_F \ d_5^{\ +} + W_{SS} \ d_6^{\ +} + W_T \ d_7^{\ -} + W_Y \ d_8^{\ -} \\ \mbox{Subject to:} \\ \mbox{Subject to:} \\ \mbox{\sum R_i \ x_a + d_1^{\ -} - d_1^{\ +} = \alpha$} \\ \mbox{$\sum$ L_i \ x_p + d_2^{\ -} - d_2^{\ +} = \beta$} \\ \mbox{$\sum$ B_i \ x_I + d_3^{\ -} - d_3^{\ +} = \gamma$} \\ \mbox{$\sum$ P_i \ x_s + d_4^{\ -} - d_4^{\ +} = \delta$} \\ \mbox{$\sum$ F_i \ x_t + d_5^{\ -} - d_5^{\ +} = \lambda$} \\ \mbox{$\sum$ S_i \ x_m + d_6^{\ -} - d_6^{\ +} = \mu$} \\ \mbox{$(\sum$ TR_{ij} + \sum$ TR_{ij} \) \ t_j + d_7^{\ -} - d_7^{\ +} \geq \sum \xi_j^{\ max}. \\ \mbox{$(\sum$ Y_i^A + \sum$ Y_i^P + \sum$ Y_i^I \ + \sum$ Y_i^S + \sum$ Y_i^T \ + \sum$ Y_i^M \) \ t_j + d_8^{\ -} - d_8^{\ +} \geq \sum \psi_j^{\ max}. \end{array}$

 $\geq \sum \Psi_j$...

(Flow Chart given on next page)



Flow Chart



Symbols and Notations

 \mathbf{R}_{i} = Unit amount of red mud from ith aluminum industry.

- $L_i =$ Unit amount of lime sludge from ith paper industry.
- $B_i = Unit$ amount of slag from ith iron and steel industry.
- $P_i = Unit$ amount of press mud from ith sugar industry.

 F_i = Unit amount of fly ash from ith thermal power plant.

- S_i = Unit amount of sewage sludge from ith municipal area.
- $x_a =$ number of aluminum industries in the area.

 $x_p =$ number of paper industries in the area.

 x_{I} = number of iron and steel industries in the area.

 $x_s =$ number of sugar industries in the area.

 x_t = number of thermal power plants in the area.

 $x_m =$ number of municipalities in the area.

 α , β , γ , δ , λ and μ = maximum amount of pollutant that can be accepted by a given soil.

 TR_{ii} = Amount of red mud from ith industry treated in jth plant per hour.

 TL_{ii} = Amount of lime sludge from ith industry treated in jth plant per hour.

 TB_{ij} = Amount of basic slag from ith industry treated in ith plant per hour.

 TP_{ii} = Amount of press mud from ith industry treated in jth plant per hour.

 TF_{ii} = Amount of fly ash from ith thermal power plant treated in jth plant per hour.

TS_{ii} = Amount of sewage sludge from ith municipality treated in jth plant per hour.

 $t_i =$ Number of working hours of jth treatment plant.

 $max_{j} = Maximum$ capacity of jth plant to treat waste.

Note: Values of j ranges from 1 to 6 as different treatment plants are required to treat different kind of waste.

 \dot{Y}_i^A = Yield of ith aluminum industry which gives profit.

 $Y_i = Yield of ith paper industry which gives profit.$ $<math>Y_i^P = Yield of ith paper industry which gives profit.$ $<math>Y_i^I = Yield of ith iron and steel industry which gives profit.$ $<math>Y_i^S = Yield of ith sugar industry which gives profit.$

 Y_i^T = Yield of ith thermal power plant which gives profit.

 Y_i^M = Yield of ith municipality which gives profit.

 t_i = Number of working hours of ith industry.

 $\psi_i^{\text{max}} = \text{maximum yield expected from } i^{\text{th}} \text{ industry.}$

W_R, W_P, W_{BS}, W_{PM}, W_F, W_{SS}, W_T, W_Y are weights associated with the deviational variables.

 d_i^+ , d_i^- are the deviational variables.

Conclusion

The model has been developed by taking both ecosystem conservation and industrial development into consideration. The priority has been given to different goals but it would be better option if priority is given according to nature of soil and industries present in the area of study. Data collected from various areas can be applied and solved using softwares like LINDO, LINGO, etc. It is quite possible that the decision variables presented in this study satisfy maximum possible factors responsible for changing the aspiration levels. Thus, this paper can be taken as a basic study and use of more constraints can bring improvement in it.

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VOL.-II, ISSUE-I, JANUARY-2013

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Asian Resonance Highly Geo-effective Solar Transients and Their associated Geomagnetic Activities



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Abstract

The solar Cycle 23 has shown some peculiar features, i.e. slow and prolonged decline phase. It is when combined with the ascending phase of Cycle 24, it provides us a long phase during which the overall magnetic activity was very low. During this interval the average sunspot number appeared on the solar disk were very low and signifies the weak polar magnetic fields, and solar wind streams mainly originating from coronal holes. The study investigate the relationship between magnetic structure of coronal holes and/or coronal mass ejection (CME) source region and their influence on Earth's geomagnetic field, i.e. storms and sub storms. Mainly considering very intense geomagnetic storms that occurred during Solar Cycle 23. The disturbance storm time index Dst is taken as an indicator of geomagnetic activity by setting a value of $Dst_{min} \leq -200$ nT as threshold. By examining halo CMEs that erupted between 2000 to 2008. We selected 07 events associated with M-class and X-class solar flares. Furthermore, as the geomagnetic field (B_{Geomag}) puts a lower cutoff rigidity (R_c) to the entry of cosmic particles in to the earth, depending upon the geomagnetic activity. Sometimes when this entry of charged particles exhibits very sudden sharp and short lived increases in cosmic ray intensities, registered by neutron monitor, it is termed as Ground-level enhancement (GLEs). These enhancements are known to take place during the result of powerful solar eruption. In this present investigation we also studied GLE events associated with solar flare and coronal mass ejection (CMEs). The spacecraft data acquired by STEREO mission and those provided by SOHO, ACE and geomagnetic stations like WDC-Kyoto are utilized in the study. It is found that the GLE's are well associated to X-class solar flares. The average speed (1674.2 Km/s) of GLE associated CME was much faster than the average speed (306.9 Km/s) of non GLE associated CMEs.

Introduction

One of the main objectives in space weather research is to predict the occurrence of geomagnetic storm based on real time solar observations. A severe geomagnetic storm may produce many harmful effects on earth, such as radiation hazards to humans, especially to astronauts, disruption of communication, navigation and satellite control systems, damage of electric power grid and so on [1]. Geo-magnetic storms generally occurred due to abnormal conditions in the interplanetary magnetic field (IMF) and solar wind plasma emissions caused due the various transient phenomenon occurring on the surface of Sun [2]. The occurrence of prominences and flares are also associated with varying phases of sunspot cycle leading to the geomagnetic storms. The strength of interplanetary magnetic field (IMF) and its fluctuations have also shown to be most important parameter affecting the geomagnetic field condition. It is now a well established fact that the southward direction of interplanetary magnetic field, allows sufficient energy transfer from the solar wind into the Earth's magnetosphere through the magnetic reconnection process [3-5].

A solar flare is a sudden brightening observed over the Sun surface or the solar limb, which is interpreted as a large energy release of up to 6×10^{25} joules of energy (about a sixth of the total energy output of the Sun each second). Solar flares affect all layers of the solar atmosphere (photosphere, chromosphere, and corona), when the medium plasma is heated to tens of millions of kelvins and electrons, protons, and heavier ions are accelerated to near the speed of light. They produce radiation across the electromagnetic spectrum at all wavelengths, from radio waves to gamma rays, although most of the energy goes to frequencies outside the visual range and for this reason the majority of the flares are not visible to the naked eye and must be observed with special instruments. Flares occur in active regions around sunspots, where intense magnetic fields penetrate the photosphere to link the corona to the solar interior. Flares are powered by the sudden (timescales of minutes to tens of minutes) release of magnetic energy stored in the corona. The same energy releases may produce coronal mass ejections (CME), although the relation between CMEs and flares is still not well established. The frequency of occurrence of solar flares varies, from several per day when the Sun is particularly "active" to less than one every week when the Sun is "quiet", following the 11-year cycle (the solar cycle). Large flares are less frequent than smaller ones. Solar activities vary with an 11-year cycle there are typically more sunspots on the sun, and hence more solar flare [16].

A coronal mass ejection (CME) is a massive burst of solar wind, other light isotope plasma, and magnetic fields rising above the solar corona or being released into space. Recent scientific research has shown that the phenomenon of magnetic reconnection is responsible for CME and solar flares. When the ejection is directed towards the Earth and reaches it as an interplanetary CME (ICME), the shock wave of the traveling mass of Solar Energetic Particles causes a geomagnetic storm that may disrupt the Earth's magnetosphere, compressing it on the day side and extending the night-side magnetic tail. When the magnetosphere reconnects on the nightside, it releases power on the order of terawatt scale, which is directed back toward the Earth's upper atmosphere [17]. The relationship between solar flares and Coronal Mass Ejections (CMEs) is a big issue in solar physics (e.g., Gosling 1993; Hudson et al. 1995). Both of these phenomena often occur in conjunction but the relationship is not one to one; the exact nature of the flare and CME triggers and the relationship between the cause and consequence is still open and quite puzzling. Kahler (1992) pointed out that if the CME is associated with a flare then the CME originates in the explosive phase of the flare and such flares are long-decay events (LDEs); but the relationship of CMEs with impulsive flares is still unknown[18].

Solar flare and CME's are produced in sporadic solar eruptions. Solar flares and CME are in the larger ones. The distinction between solar flare and CME is that a solar flare is a sudden flash of electromagnetic radiation, whereas a CME is a mass motion in the solar corona that can be seen in a coronagraph. The spatial relationship between flare and CME depend on the magnetic field configuration involved in the solar eruption process. Flares are perhaps photospheric and CME and CME are chromospheric [19]. The flares erupt from the intensely luminous area of the sun, whereas the CMEs are ejected from an incandescent and transparent layer of gas lying above and surrounding the photosphere. So flares can presumably trigger CMEs. However, there are also arguments that both phenomena might originate from the same active region of the solar disk even thought they have different manifestation. Detailed explanations can be found in several studies [e.g., Kahler et al., 2001; Dorman, 2004; Yashiro et al., 2008; Belov, 2009]. Intense solar flares and fast CMEs consisting of entrained magnetic fields have enough potential to create turmoil in the earth's atmosphere [e.g., Manchester et at., 2005; Wang and Wang, 2006]. Namely, electromagnetic emissions produced by solar flares penetrate the Earth's atmosphere and change particle environment on the Earth, consequently disrupting radio transmissions. X-ray flares and CMEs may also cause sharp rise in cosmic ray intensities in the Earth. So, a study on characteristics of GLE- associate SEPs, X-ray flares, and CMEs can be useful for the understanding of cosmic rays and space weather. This is our motivation to pursue this study [20]. In this paper the statistical study has been performed to analyze these geomagnetic storms recorded by various

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

geomagnetic observatories identified with the help of Disturbance storm time index (Dst). This Dst index is taken as an indicator of geomagnetically disturbed condition, as it represents the depressions in the ring current as a result of its interaction with the plasma signatures having their roots originated at solar surface or from some other exotic environment. We investigated various solar parameters/ interplanetary magnetic field components which were potentially geo- effective and occurred during the solar activity period of solar cycle-23.

II. Selection criteria and Data analysis

Disturbances in the geomagnetic field are caused by fluctuation in the solar wind impinging on the earth. The disturbances may be limited to the high-latitude polar region, unless the interplanetary magnetic field (IMF) carried by the solar wind has long periods (several hours or more) of southward component ($B_7 < 0$) with large magnitudes. The occurrence of such a period stresses the magnetosphere continuously, causing the magnetic field disturbance to reach the equatorial region. The degree of the equatorial magnetic field deviation is usually given by the Dst index. This is the hourly average of the deviation of H (horizontal) component of the magnetic field measured by several ground stations in mid to low-latitudes. Dst = 0 means no deviation from the quiet condition, and $Dst \leq -$ 50nT means magnetic storms. We have analyzed the events represented by maximum Dst decrease and selected by using the selection procedure of Loewe and Prolss (1997). A list of magnetic storms, based on the Dst indices had been compiled for this study for the period 2000-2008. The Disturbance storm time index (Dst) is provided by the World Data Center for Geomagnetism at University of the Kyoto, Japan database (http://www.swdc.kugi.kyoto-u.ac.jp/ dstdir). The study period refers to the interval solar cycle 23. We have used the Omni Web Data Results provided by the National (NSSDC) Space Science Data Center (http://www.omniweb.gsfc.nasa.gov/). Where the solar wind data have been compiled since 1963, using the observed data from 7 space satellites including the ACE, WIND and IMP. The Coronal Mass Ejection data used for the present study was adopted from the SOHO LASCO CME catalogue being maintained and provided by CDAW (http://cdaw.gsfc.nasa.gov/cme_list/halo/halo.html). The flares observed by PRL's "Solar X-ray Spectrometer (SOXS) were also used, the data of which is obtained from the SOXS's homepage website URL link at http:// www.prl.res.in/~soxs-data/ the link provide solar data of various activities, Earth's atmosphere and geo-space disturbances and data for other planets. The Solar X-ray Spectrometer provides solar flare observations in X-ray waveband in the energy range of 4-56 keV and it was launched onboard GSAT-2 Indian spacecraft in 2003 using GSLV-D2 rocket.

II. Observations

The fact that the solar activity is directly related to space weather and geomagnetic activity does rise and fall along with the solar activity. We study the period (2000-2008) of solar cycle 23, and find seven events associated with solar flare and coronal mass ejection. We selected 07 events associated with M-class and X-class solar flares. Ground-level enhancement (GLEs) is sudden sharp and short lived increases in cosmic ray intensities registered by neutron monitor. These enhancements are known to take place during powerful solar eruption. In this present investigation we also studied 02 GLE event associated with solar flare and coronal mass ejection (CMEs). Both the GLE are as a result of X-class solar flares. The average speed (1674.2 Km/s) of GLE associated CME was much faster than the average speed (306.9 Km/s) of non GLE associated CMEs. In which one GLE event occurred on 14 July and second occurred on 29 October. On July 14, 2000, an X5 class flare erupted on the Sun and a coronal mass ejection was launched directly at the Earth. A geomagnetic super storm occurred on July 15–17 which caused an S3

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

radiation storm on Earth fifteen minutes later as energetic protons bombarded the ionosphere. It was the biggest solar radiation event since 1989.^[24] The proton event was four times more intense than any previously recorded since the launches of SOHO in 1995 and ACE in 1997 [25]; the minimum of the Dst index was – 301 nT. Despite the strength of the geomagnetic storm, no electrical power distribution failures were reported. The Bastille Day event was observed by Voyager I and Voyager II, [20] thus it is the farthest out in the solar system that a solar storm has been observed.



Figure 1:This figure depicts the geomagnetic field variation profile and the respective variation of interplanetary magnetic field (IMF) parameters, i.e. Bx, By, Bz and Bt observed during the selected events. Here Dst index has been taken as an indicator of geomagnetic activities and its values has been obtained from the World Data Center, Kyoto, Japan. The 0 on the X-axis represents the event onset, while the negative and positive values indicate the preceding and onward values.

IV. Results & Discussion

It is suggested that geomagnetic, activity is related to variety of interplanetary plasma/ field parameters, e.g. Solar wind velocity V, interplanetary magnetic field (IMF) B and Bz [2]. Furthermore, the strong geomagnetic disturbance is associated with passage of magnetic cloud, which causes intense and sever geomagnetic storms [17, 21]. Recently, it is observed that geomagnetic activity during the declining phase of solar activity is highly related to high value of the product of solar wind velocity (V) and interplanetary magnetic field (IMF) strength B i.e., VxB leading to geomagnetic and corpuscular radiations produce extra ionization in the sunlit part of the Earth and produce geomagnetic disturbances are observed and represented by different geomagnetic indices ap, equatorial index, Dst and AE etc. Geomagnetic disturbances are driven by the interaction of solar wind with geomagnetosphere and the strength of this interaction depends on the solar wind parameters. AE measures primarily the variations in the auroral electrojets. It is based on 1-min values of the H-Component trace from auroral - zone observatories located around the world. The data of these observatories are plotted as a function of universal time. The upper and lower envelopes are defined as AU and AL indices, respectively, and are believed to represent the maximum eastward and westward electrojets currents. The sum of the absolute values of AL and AU is called AE. Introduced in 1964, the ring-current index Dst measures primarily the ring-current magnetic field. It is based on hourly averages of the H component recorded at four low-latitude observatories, subtracting the aver-age Sq and the permanent field from the disturbed magnetic field. Schwenn (2006) reviewed in details the solar processes associated with space weather phenomena Dameris and Pawson (2002) reviewed the effects of solar activity on the middle atmosphere and found controversial results since no clear physical mechanism existed to explain the interactions. Further, it is extremely difficult to isolate any solar-induced variability, since the dominant influence on the middle atmosphere appears to be tropospheric forcing. Experiments with two types of numerical model used to examine the atmospheric response to changes in solar forcing were reviewed by them. Firstly, mechanistic-model simulations of the solarinduced 27- and 13-day oscillations show that weak perturbations generated in the upper stratosphere can lead to detectable oscillations in the lower atmosphere. Secondly, a general circulation model shows that the modulation of the middle atmosphere dynamics by solar activity and the equatorial quasi-biennial oscillation is feasible. There are limitations to the studies. Thus, it is utmost important to improve our current understanding on the identifying the solar disturbances and their interaction with atmosphere as a function of altitude. This will lead to understand the coupling process among magnetosphere, ionosphere and thermosphere of the Earth.

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VOL.-II, ISSUE-I, JANUARY-2013

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Asian Resonance Identification of solar features causing GMSs during solar cycle 21-22.

Abstract

The effect of Ha, X-ray- solar flares, Active Prominences and Disappearing Filaments (APDFs), Coronal Intensity (CI) on geo sphere has been investigated for solar cycle 21-22. In all 176 geomagnetic storms (GMSs) of Severe (S), Moderately Severe (MS) and Moderate (M) type with $Ap \ge 20$ have been considered. It is observed that Ha and X-ray solar flare occurring over the western limb of the solar disk will cause the larger disturbances in magnetosphere leading to occurrence of S, M and Total (i.e., S + M + MS) GMSs; whereas, those solar flares which occur on the eastern limb of the solar disk will lead to occurrence of MS GMSs. Similarly the APDFs occurring over the western limb will cause S. M and Total GMSs where as APDFS occurring over the eastern limb will cause M GMSs. It is observed that maximum numbers of GMSs are associated with CI followed by individual Ha and X-ray solar flare events. However, when the accumulated effect of Ha and X-ray solar flare events are considered, in that case these solar flares become more dominant than CI to cause GMSs. It is observed that CI is found to posses a very good correlation with the occurrence of GMSs. It is observed that maximum numbers of GMSs are associated with importance of solar flares (SF) and closely associated with CI.

Keywords: GMSs, solar flares, APDFs, CI.

Introduction

PVP Geomagnetic disturbances are generally represented by geomagnetic storms. The geo space environment is dominated by disturbances directly by the Sun, such as solar flares, APDFs, and coronal mass ejections which are responsible for some large geomagnetic storms or else by disturbances, e.g. sub storm, occurring with in the magnetosphere that are ultimately caused by solar wind variations (Gonzalez et al., 1994; Kumar and Yadav, 2003). The intense disturbances in geomagnetic field are known as GMSs. The large variations in the geomagnetic field are mostly caused by the disturbances on the solar atmosphere, which reaches on the Earth in the form of plasma and field through interplanetary medium. There are many solar activities eg, solar flares, APDFs, coronal mass ejections etc in the solar atmosphere, so a unique solar source for these geomagnetic activities (Kumar and Yadav, 2002).

Solar activity phenomenon exhibits some form of spatial asymmetry, especially North-South (N-S) asymmetry. The spatial asymmetries of the solar flares and APDFs are investigated by many workers (Verma, 1987; Atac and Ozgue, 2001; Kumar and Yadav, 2002). Most of the papers reveal the existence of a N-S asymmetry; however, there are different outcomes if the evolution of the N-S asymmetry is correlated with the solar cycle.

The solar corona is the outermost layer of the sun's atmosphere-a very hot halo (millions of degrees) that, in the form of the solar wind, extends well past the Earth's orbit. Coronal holes are the darker regions of lower density and temperature than the rest of solar corona. Data spanning 21 years made it possible to recognize some of the coronal holes are almost permanently visible on solar poles, except at the time of the maximum of the solar cycle. Solar wind in the form of plasma embedded with the solar magnetic field, causes disturbances in the geospheric sporadic phenomenon have been observed on solar disk which affect the geospheric condition and cause geomagnetic disturbance. GMSs are more associated with coronal holes than solar flares (Hewish and Bravo, 1986). Data available from sky lab mission suggest that coronal holes, APDFs have causal link with solar activity and produces GMSs. The coronal intensities are given in millionths of intensity of the solar disk (coronal units) and converted to the photometrical scale of Lomnicky Stit Station at a height of 40" above the solar limb. The daily coronal intensity observations, with measurements taken every 5 degrees around the solar disk (counterclockwise).

In recent years, a number of investigations have been carried out to understand the solar-terrestrial relationship and to ascertain factors that are



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Department of P. G. Studies & Research in Physics and Electronics, R.D. University, Jabalpur (MP.) Email: *skumarl23@rediffmail.com* responsible for geomagnetic storms (Feynman et al., 2000; Plunkett et al., 2001; Kumar et al., 2002). In the present analysis, geomagnetic storm events are characterized by horizontal component of earth's magnetic field (H) with index Ap ≥ 20 during the period 1978-95. A storm is said to be Severe (S) if H ≥ 400 n T; Moderately Severe (MS) if $250 \le H \le 400$ n T) and Moderate (M) if H ≤ 250 n T.

2. Data Analysis

The Solar causes of geomagnetic storms with Ap \geq 20 during the period 1978-1995 total 176 GMSs have been investigated. For this solar wind plasma (SWP), Interplanetary magnetic field (IMF) data compiled by King and Couzens in different volumes of interplanetary medium data book from NSSDC and coronal intensity data provided by Dr. V. Rusin, Astronomical Institute, Slovak Academy of Sciences were used. For association of GMSs with solar features Solar Geophysical Data is being used (1978-1995).

3. Results and Discussion

The H α , X-ray- solar flares, APDFs, CI and accumulated solar features are associated with S (37). MS (48), M (91) and Total GMSs have been investigated from the period Jan 1978 to Dec 1995 of the solar cycle 21-22. The associations of S, MS, M and Total GMSs with different solar features have been plotted in Table 1. It is observed that maximum numbers of GMSs are associated with CI followed by individual H α and X-ray solar flare events. However, when the accumulated effect of H α and X-ray solar flare events are considered, in that case these solar flares become more dominant than CI to cause GMSs.

It is observed from the Figure 1. that 56%, 65% and 100% of Total GMSs are associated with H α solar flares, X-ray solar flares, APDFs and CI respectively.

Further, the correlation coefficient between the yearly occurrence of GMSs and solar features such as H α , X-ray solar flares, H α + X-ray solar flares, APDFs and CI has been calculated and found to be 0.82, 0.96, 0.94, 0.95 and 1.0. Further, it is observed that correlation is better in the case of Moderate GMSs followed by Moderately Severe and Severe GMSs. The solar coronal intensity is found to posses a very good correlation. It is observed from the Figure 2 and Figure 3 that no H α . X-ray- solar flares have occurred beyond 40⁰ N and 40⁰ S . Further, it is observed from the Figure 4 that APDFs have occurred within 30° N and 30° S heliolatitudes. These results are in agreement with Kumar and Yadav (2002).

For the entire period of investigation the Ha, Xray- solar flares and APDFs distribution in heliographic latitude for all types of GMSs have been observed and the results indicate that the Ha, X-ray- solar flares and APDFs in the northern hemisphere are more numerous than those in the southern hemisphere (except the H α solar flares causing S and M GMSs). Garcia and Dryer (1987) got the northern predominance of the solar flares in the 20 and 21 solar cycles. Temmer (2002) analyze the solar flares for the solar cycles 21 and 22 and reveals a slight (51.0%) and solar cycle 22 a distinct (56.2%) excess of flare events in the southern hemisphere. The longitude asymmetry of the Ha, X-ray-solar flares and APDFs distribution has also been investigated during the period under consideration. It is observed from the Figure 2 and Figure 3 that the distribution Ha, X-ray solar flares has been observed throughout from 0^0 to 90° East to 0^0 to 90^0 West. It is observed that Ha and X ray solar flare occurring over the western limb of the solar disk will cause the larger disturbances in magnetosphere leading to occurrence of S.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

M and Total GMSs; where as those solar flares which occur on the eastern limb of the solar disk will lead to occurrence of MS GMSs. Joshi (1995) using Ha solar flares found no E-W asymmetry for solar cycle 21 and a small asymmetry for the solar cycle 22. Temmer (2002) found slight eastern excess both for solar cycle 21(51.2%) and solar cycle 22 (50.8%). It is observed from the Figure 4 that APDFs observed to be more effective when located at the extreme heliolongitudinally i.e., 80° to 90° East and West. Further, it is observed that APDFs occurring over the western limb will cause S. M and Total GMSs; where as APDFS occurring over the eastern limb will cause M GMSs. It is observed from the Figure 5 that maximum number of GMSs are associated with importance of SF, SN, IN, IB of each H α and X-ray solar flares. Further, the importance of SB of X-ray solar flares cannot be ignored. It is observed that importance of SF is more associated with all kinds of GMSs.

The coronal intensities are given in millionths of intensity of the solar disk (coronal units) streaming towards the earth results in to striking the Earth's magnetic field and triggering the geomagnetic storms. It has been observed from the Figure 6 that CI and solar wind velocity do not possess better correlation. Further more, it is observed that there are many occasions when eruptive streams and shock are unaccompanied by flare of filament activity anywhere on the disk. Somehow, the CI is being observed during this interval. Thus, it is concluded that CI have much greater ability to produce GMSs. It has been observed that maximum number or GMSs occurred in the year 1989 during the entire period of considerations, i.e. 1978-95. Further, it is observed that cosmic ray intensity shows decrease, few hours earlier than the occurrence of GMSs. It is also observed that maximum number of coronal intensity events took place in between 60° to 70° PA.

Conclusions

- (1) It is observed that $H\alpha$ and X ray solar flare occurring over the western limb of the solar disk will cause the larger disturbances in magnetosphere leading to occurrence of S, M and Total GMSs; whereas, those solar flares which occur on the eastern limb of the solar disk will lead to occurrence of MS GMSs. Similarly the APDFs occurring over the western limb will cause S, M and Total GMSs; whereas APDFS occurring over the eastern limb will cause M GMSs.
- (2) It is observed that maximum numbers of GMSs are associated with coronal intensity followed by individual H α and X-ray solar flare events. However, when the accumulated effects of H α and X-ray solar flare events are considered, in that case these solar flares become more dominant than coronal intensity to cause GMSs.
- (3) The solar feature maximum coronal intensity is found to possess a very good correlation with the occurrence of GMSs.
- (4) No H α , X-ray solar flares have occurred beyond 40⁰ N and 40° S whereas, the distribution of H α , X ray Solar flares has been observed throughout from 0⁰ to 90° East to 0⁰ to 90° West.
- (5) H α , X-ray solar flares and APDFs in the northern hemisphere are more numerous than those in the southern hemisphere (except the H α solar flares causing S and M GMSs).
- (6) Maximum number of GMSs are associated with importance of SF.

- (7) GMSs of all kind are closely associated with CI.
- (8) Maximum number of Cl events took place in between 60° to 70^{0} PA.

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Table: Different solar origin and their association causing Severe (S), Moderately Severe (MS), Moderate M) and Total (S+MS+M) GMSs during the period 1978-1995.

S.No.	Solar Features	S (37)	MS (48)	(16) M	Total (S+MS+M)
1.	Hα Solar flares	28	30	56	114
2.	X-ray solar flares	22	29	47	98
3.	APDFs	29	30	91	127
4.	CI	37	48	30	176
5.	Ha, X-ray solar flares	20	20	103	70
6.	APDFs, CI	29	30	68	127
7.	Hα solar flares, CI	28	07	56	91
8.	Hα X-ray solar flares, CI	20	20	11	51
9.	Hα, X-ray solar flares, APDFs	17	17	24	58
10.	Hα, X-ray solar flares, APDFs, CI	17	17	24	58

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Figure 1. Occurrence frequency of Total (S + MS + M) type GMSs with their associated solar features such as H α -, X-ray- solar flares, APDFs, CI and their accumulated effects during the period 1978-95.



Figure 2. Occurrence frequency of H α solar flares (a) Helio-latitude and (b) Helio-longitude associated with Total (S + MS + M) type GMSs with their associated solar features during the period 1978-95.



Figure 3. Occurrence frequency of X-ray solar flares (a) Hello-latitude and (b) Helio-longitude associated with Total (S + MS + M) type GMSs with their associated solar features during the period 1978-95.



Figure 4. Occurrence frequency of APDFs (a) Hellolatitude and (b) Helio- longitude associated with Total (S + MS + M) type GMSs with their associated solar features during the period 1978-95.



Asian Resonance

Figure 5. Occurrence frequency of the importance of (a) H α solar flares (b) X-ray solar flares associated with Total (S + MS + M) type GMSs have been plotted histographically during the period 1978-95.



Figure 6. Plot for Vsw and CI for Severe, Moderately Severe and Moderate type GMSs during the period 1978-95.





Asian Resonance Solar Wind Transient Plasma Events and their Characteristics Features



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Abstract

A geomagnetic storm is a global disturbance in Earth's magnetic field usually occurred due to abnormal conditions in the interplanetary magnetic field (IMF) and solar wind plasma emissions caused by various solar phenomenon. Furthermore the magnitudes of these geomagnetic effects largely depend upon the configuration and strength of potentially geo-effective solar/interplanetary features. In the present study the identification of 220 geomagnetic storms associated with disturbance storm time (Dst) decrease of more than -50 nT to -300 nT, have been made, which are observed during 1996-2007, the time period spanning over solar cycle 23. The study is made statistically between the Dst strength (used as an indicator of the geomagnetic activity) and the peak value obtained by solar wind plasma parameters and IMF B as well as its components. We have used the hourly values of Dst index and the wind measurements taken by various satellites. Our results inferred that yearly occurrences of geomagnetic storms are strongly correlated with 11-year sunspot cycle. We observed that IMF B is highly geo-effective during the main phase of magnetic storms, while it more significant at the time of storm peak, which is further contributed by southward component of IMF Bz, substantiating earlier findings. The correlation between Dst and wind velocity is higher, as compared with IMF Bz and ion density. It has been verified that geomagnetic storm intensity is correlated well with the total magnetic field strength of IMF better than with its southward component.

Introduction

Geo-magnetic storms generally occurred due to abnormal conditions in the interplanetary magnetic field (IMF) and solar wind plasma emissions caused by various solar phenomenon [1,2]. The study of these worldwide disturbances of Earth's magnetic field are important in understanding the dynamics of solar-terrestrial environment and furthermore because such storms can cause life threatening power outrages, satellite damage, communication failure and navigational problems [2-4]. Since the beginning of the space age, the cause of geomagnetic activity has been sought in a number of correlative studies [1]. It is suggested that geomagnetic, activity is related to variety of interplanetary plasma/ field parameters, e.g. Solar wind velocity V, interplanetary magnetic field (IMF) B and Bz [1, 2, 4]. Furthermore, the strong geomagnetic disturbance is associated with passage of magnetic cloud [3, 4], which causes intense and sever geomagnetic storms [5, 6]. It is well established fact that solar wind is continuously emanating from the sun's outer corona and engulf the entire heliosphere. It mainly consists of hot electrons and protons flowing supersonically and caused due to extremely high coronal temperature helping ionized plasma to overcome the gravitation attraction of the Sun. The density and speed of this flow is highly variable and depends solely upon the conditions which has caused it to eject. The solar wind carries with it the magnetic field of Sun, which when enters to the interplanetary medium is termed as Interplanetary Magnetic Field (IMF). The strength and orientation of this magnetic field associated with solar wind depends up on its interaction between slow and fast solar wind originating from coronal holes and leads to create corotating interaction region (CIR) [1,5,7].

Geomagnetic disturbance are generally represented by geomagnetic storms and sudden ionosphere disturbance (SIDs). These are caused by the disturbances originated at solar atmosphere, interplanetary (IP) shocks and / or stream interfaces associated with high speed solar wind streams (HSSWS) [8, 9]. These are associated with Coronal holes, which occur in Polar Regions or higher latitude. Fast CME produce transient IP shocks, which cause storm sudden commencement at earth. Geomagnetic storms are associated with isolated disappearing filaments [3,10,11]. The occurrence of prominences and flares are also associated with varying phases of sunspot cycle leading to the geomagnetic storms. The strength of IMF and its fluctuations have also shown to be most important parameter affecting the geomagnetic field condition. South direction of IMF, allows sufficient energy transfer from the solar wind into the Earth magnetosphere through magnetic reconnection [12-14]. As a geomagnetic storm lasts usually a few to several days in duration. However, sometimes the recovery phase of a geomagnetic storm lasts one to two weeks or even for longer durations. These kind of longduration events were termed as High-Intensity Long-Duration Continuous AE Activity events (HILDCAA events). In a study of such events made by Tsurutani and Gonzalez (1987), it was suggested that continuous injections to the ring current take place during these events in such manner that the ring current does not, or cannot, decay rapidly [15-18]. Various studies have reported that these geo-effective events are further associated with CME's, solar flares, SEPs and also with other solar wind transients [19-22]. Which not only significantly produce the depressions in the earth's ring current but also modulates the cosmic ray intensity, causes Forbush decrease events, and produce ground level enhancement events too [23-24]. In this paper the statistical study has been performed to analyze these geomagnetic storms recorded by various geomagnetic observatories identified with the help of Disturbance storm time index (Dst). This Dst index is taken as an indicator of geomagnetically disturbed condition, as it represents the depressions in the ring current as a result of its interaction with the plasma signatures having their roots originated at solar surface or from some other exotic environment. We investigated various solar parameters/ interplanetary magnetic field components which were potentially geo- effective and occurred during the solar activity period of solar cycle-23.

Selection criteria and Data

The disturbances in the geomagnetic field are caused by fluctuation in the solar wind impinging on the earth. The disturbances may be limited to the high-latitude polar region, unless the interplanetary magnetic field (IMF) carried by the solar wind has long periods (several hours or more) of southward component $(B_z < 0)$ with large magnitudes [2-4]. The occurrence of such a period stresses the magnetosphere continuously, causing the magnetic field disturbance to reach the equatorial region. The degree of the equatorial magnetic field deviation is usually given by the Dst index. This is the hourly average of the deviation of H (horizontal) component of the magnetic field measured by several ground stations in mid to low-latitudes. Dst = 0means no deviation from the quiet condition, and $Dst \leq -$ 50nT means magnetic storms [3,4]. We have analyzed the events represented by maximum Dst decrease and selected by using the selection procedure of Loewe and Prolss [9]. A list of magnetic storms, based on the Dst indices provided by the World Data Center for Geomagnetism, Kyoto, Japan through its world wide web (and also from the Omni web data source maintained by National Geophysical Data Center (NGDC) : (http://www.ngdc.noaa.gov/ stp/SOLAR/ ftpsatenvir. html) is being compiled for this

Asian Resonance

study for the period 1996-2007. As the study period refers to the interval solar cycle 23. We have used the Omni Web Data Results (<u>www. omniweb.gsfc. nasa. gov</u>) [10- 12, 25-26].

We deal with the sudden, sharp and short-lived depressions in the magnetospheric ring current and simultaneous solar parameters to understand the relationship. It is known that the intensity of solar parameters (e.g., solar flare, SEP flux etc.) is registered by satellite at the geostationary orbit in the near Earth space whereas the magnetic field variation and ring current depressions are recorded by a network of observatories well located all over the world. The data beig compiled the world data center Kyoto and distributed to world scientific community. Ultimately, there is a time-delay between the registration of Dst and the registration of solar parameters. To find out the time-delay, we availed cross-correlation analysis. We used cross-correlation function because it shows correlations at different points of two waveforms thereby exhibiting all correlations between every two signals of the waveforms. The time-delay is then calculated as the time-length with respect to the specific wave point where the highest correlation is found. Cross-correlation analysis provides correlations between data of two time series or waveforms. The observations of one data series are correlated with the observations of another data series at various lags and leads. Cross-correlations help identify variables which are leading indicators of other variables or how much one variable is predicted to change in relation with the other variable. The cross-correlation test of two time-series data sets involves many calculations of the coefficient (r) by time-shifting the one data set relative to the other data set. Each shift is called a 'lag' and the lag time is simply the sampling period of the two time-series data sets. A typical cross-correlation graph shows enough lags in both negative and positive directions to show the cyclical relationship of the two sets of data. Detailed explanations on cross-correlation theorem, mathematical expressions and computation process can be studied in several books and papers e.g., Kuglin and Hines, 1975; Goshtasby et al., 1984; Mitra and Kaiser, 1993; Lewis, 1995; Qureshi, 2003 [32-36].

Result and Discussion

Electromagnetic fields and currents connect various regions of the Earth's near space environment extending up to the magnetopause. Realization of this fact has lead to the concept of Global Electric Circuit (GEC) to describe the electromagnetic environment of the Earth's atmosphere. Solar wind - magnetosphere - ionosphere coupling forms a vital component of GEC. Magnetospheric sub-storms represent a global interaction between the solar wind, the magnetosphere, and the ionosphere. Lakhina (1994) reviewed the solar wind - magnetosphereionosphere coupling processes with emphasis on the nonlinear particle dynamics in the magnetotail [3]. Those aspects of the sub-storm processes which involve the chaotic dynamics are highlighted. Various methods based on nonlinear particle dynamics, linear prediction filtering techniques, phase space reconstruction techniques, and dynamical analogue models of geomagnetic activity are reviewed. It is shown that the solar wind - magnetosphere ionosphere system behaves as a strongly coupled nonlinear dynamical system which could be driven from regular to chaotic behavior with low dimensionality when the solar wind forcing is strong enough. Figure 1 presents maximum
values reached by the solar wind speed V versus negative Dst (max.). The scatter is larger, with a wide range of velocities varying between 400 and 900 kms⁻¹. The more intense geomagnetic storms (peak Dst < -350 nT) are not associated with greater values of solar wind velocities. The

correlation coefficient between V and peak Dst has been found to be -0.39. Figure presents the Interplanetary magnetic field versus the maximum of negative Dst. Statistically, the occurrence of more intense geomagnetic storms (negative Dst magnitudes



Fig1. Presents maximum values reached by the solar wind speed V and Interplanetary magnetic field versus maximum of negative Dst.

~250 nT or less) is lower (~10% of the storms considered). In this figure, a linear correlation between B_{total} and Dst can be seen, that is, the strength of the geomagnetic storm is strongly dependent on the total magnetic field B_{total}. The correlation coefficient has been found to be reasonably high (-0.71). Figure 2 presents the maximum of interplanetary negative Bz (southward) versus the maximum of negative Dst. In this figure, a linear correlation between Bz and Dst can be seen, that is, according to previous studied the strength of the geomagnetic storm is strongly dependent on the southward component Bz. But in present study the correlation coefficient has been found to be low (0.24). This result may be obvious Solar wind Southward magnetic field component Bz has significant growth mainly during (or before) the initial phase of geomagnetic storm (not during the main phase, tested here). Absence of high linear correlation between density and Dst during the main phase does not mean that solar wind Southward magnetic field component Bz is not a geo-effective parameter, which is considered above. Studies shows the delay between the peak negative Dst and the negative Bz (at the time of Dst peak). Figure 2 shows the peak proton density versus the maximum Dst (negative). No definite relationship between both these parameters is found. It can be seen the greater intensity geomagnetic storms are not necessarily associated with greater values of solar wind density. This means that there is a high probability that intensity of a geomagnetic storm is not determined by the increased density. The correlation coefficient between both these parameters is -0.24. The maximum phase of solar cycle-23 has been measured during the year 2000 whereas the periods 1996-99 and 2001-07 are the periods of minimum phase of solar activity. Which clearly follow the phase of sunspots cycle. It is evident that in the year 1996 (solar minimum year) only 2 geomagnetic storm have occurred. It is also found that maximum number of geomagnetic storm have occurred in year 2002 while year 2000 is the maxima of the solar

cycle-23, the year 2007 represent minimum sunspot activity during the descending phase of solar cycle-23. The largest geomagnetic storm of solar cycle-23 occurred on 20 November 2003, with a Dst index of -472 nT and the large numbers of geomagnetic storm have occurred in the year 2003 and 2005, which do not exactly follow the phase of solar cycle and show complex behavior. It is believed that the majority of intense geomagnetic storm occur during the maximum phase of sunspot cycle because many solar active region appear during this time while a few of the geomagnetic storms are observed during the minimum phase of sunspot cycle, which do not exactly follow the phase of solar cycle and show complex behavior.

Summary and Results

The present paper has considered the peak values of the various parameters which are further correlated with the peak depression in the geo-magnetic perturbed conditions. It is widely recognized that the solar and interplanetary causes produce geomagnetic disturbances. In present study, a linear correlation between B_{total} and Dst can be seen, that is, the strength of the geomagnetic storm is strongly dependent on the total magnetic field B_{total}. The correlation coefficient has been found to be reasonably high (-0.71). According to previous studied the strength of the geomagnetic storm is strongly dependent on the southward component Bz. But in present study the correlation coefficient has been found to be low (0.24). This result may be obvious Solar wind Southward magnetic field component Bz has significant growth mainly during (or before) the initial phase of geomagnetic storm (not during the main phase, tested here). Thus, in this study period had something special which need to be understood, Bz is not essentially peak at the time of dst peak value. This shows time delay between Bz and Dst peak. It has been verified that geomagnetic storm intensity is correlated well with the total magnetic field of IMF better than southward

component Bz of the IMF, density and solar wind velocity. However, it is clear that present analysis should be considered preliminary, mainly because of the uncertainty

in time delay, which should be investigated in detail for prediction purposes.



Fig.2: It presents the maximum of interplanetary negative and peak proton density versus the Bz (southward) versus the maximum of negative Dst

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Asian Resonance Interplanetary Plasma Flows and Associated Forbush Decrease



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Abstract

In this study we discuss the behavior of cosmic rays during the phase of highly intense or ultra intense geomagnetic storms, as shocks driven by energetic coronal mass ejections (CME's) and other interplanetary (IP) transients are mainly responsible for initiating large and intense geomagnetic storms. Observational results indicate that galactic cosmic rays (CR) coming from deep surface interact with these abnormal solar and IP conditions and suffer modulation effects. In this paper a systematic study has been performed to analyze the CRI variation during super storms i.e. very intense geomagnetic storms with Dst index \geq -100 nT. The neutron monitor data of three stations Oulu (Rc = 0.77 GV), Climax (Rc = 2.97 GV) and Huancayo (Rc = 13.01 GV) well distributed over different latitudes and hourly values of IMF parameters derived from satellite observations near Earth IP medium from OMNI Data base is used for the period spanning over solar cycles 20, 21, 22 and 23. It is found that AP and AE indices show rise before the forward turnings of IMF, while the Dst index shows a classic storm time decrease. The analysis indicates that the magnitude of all the responses depends on BZ component of IMF being well correlated with solar maximum and minimum periods. Transient decrease in CRI with slow recovery is observed during the storm phase duration. Keywords: Coronal mass ejection, magnetic cloud, Forbush decrease.

Introduction

Geo The kind of interaction between solar wind and terrestrial magnetosphere depends up on the structures present in the solar wind. The magnetic cloud is a kind of large scale interplanetary structure resulted as a transient ejection of the solar plasma in the solar wind. Its characteristics were first time reported in 1981 by a group of scientists[1]. According to their studies performed on the basis of the systematic variation of interplanetary magnetic field component (IMF B) in a flow behind an interplanetary shock using the spacecraft data between 1 and 2 AU, it was reported that the magnetic field strength in the cloud was high while the intensity and the temperature were low. To investigate the relationship of these magnetic clouds with other parameters of the interplanetary medium, a number of classification schemes have been introduced. According to first classification scheme given in 1982 (a) clouds following shocks, (b) clouds preceding interaction regions and (c) clouds associated with cold magnetic enhancements [2]. During 1988 some investigators have given another classification considering the magnetic field direction as a primary discrimination, according to which a magnetic cloud is termed as a 'positive magnetic cloud' if at spacecraft onset, the magnetic field vector is rotating in a direction directed northward. If this direction of rotation is directed towards the south than such type of magnetic cloud are 'negative magnetic cloud'[3].

Magnetic clouds are ideal objects for solar- terrestrial studies because of their simplicity and extended intervals of southward and northward magnetic fields [4]. On the solar side the rope- like field configuration of the cloud generated interest to ascertain whether it would be the manifestation of a coronal mass ejection (CME) [5,6] or of a disappearing filament [7]. On the terrestrial side, the immersion of the Earth in to the cloud may provide a long lasting period with a southward interplanetary magnetic field that is favorable for the formation a strong geomagnetic storm [8]. As a magnetic cloud is a transient ejection of solar plasma in the solar wind defined by relatively strong and rotating magnetic field associated with them, where a large and smooth rotation of the magnetic field direction takes place over the distances of approximately 0.25 AU at 1 AU. These are further having a low proton temperature coefficient defined by plasma beta (β) [9]. Soon after the discovery of these magnetic clouds several studies have been performed to observe their association with geomagnetic activity. Large disturbances in geomagnetic field with arrival of a magnetic cloud have been noticed and a strong association between the initiation of geomagnetic storms and

the onset of magnetic cloud at earth was observed [1, 10]. This result was ascertained by a number of investigators [5, 11]. We have analyzed the influence of two types of magnetic clouds namely positive and negative, on geomagnetic activity, measured by Dst index and also on various interplanetary features solar wind velocity, temperature, density, B, Bx, By and Bz component of interplanetary magnetic field. We have listed both kinds of the magnetic clouds along with some of their coefficients studied during this research period in table 1 and 2 for positive and negative magnetic clouds respectively. These tables consists of estimated start and end times of the clouds based on the result of the magnetic field model given by Burlaga et al. which assumes that the field within the magnetic cloud is force free, i.e. the electrical current and the magnetic field are parallel and proportional in strength everywhere within its volume. [4]

Data and method of analysis

We have applied superposed epoch analysis to study the short-term effects of magnetic clouds with various solar and interplanetary features. By this statistical technique one can detect the periodic or recurrent, and non-periodic variation. In the present analysis data event position having special features are taken as zero position or zero epoch day. Then average value of each time interval is calculated and their deviations from average values of relevant day (zero epoch day) are also calculated. The value of deviation for each day is plotted against the column number of both sides of the zero epoch time and a curve is obtained. The curve depicts the expected variations in the values of a particular physical quantity with respect to time. In order to increase the number of epochs, we have identified 21 magnetic clouds on the basis of criteria adopted in earlier studies1 .We have taken the time period from Feb. 1995 to Nov. 1998. We have used the magnetic field and solar wind plasma measurements from IMP 8 and ISEE 3 spacecrafts provided by the National Space Science data Center [12, 13], and considered all the 34 possible magnetic clouds events during the above mentioned period.

Results and discussion

Relations between solar wind parameters and magnetic clouds are examined using superposed epoch analysis. In figure 3 the time dependent behavior of the bulk solar wind speed V, proton density, NP and proton temperature, TP for the intervals, believed to contain magnetic cloud at the spacecraft are compared. The error bars shown in the figures establish the quantitative nature of this study and also support our results in statistical framework. This figure is divided in to two panels for the two cases of clouds with southward directed magnetic field at spacecraft onset - a negative magnetic cloud (left panel) and the northward directed magnetic field at spacecraft onset – a positive magnetic cloud (right panel). Inspection of figure shows distinctly higher solar wind velocity than elsewhere in the vicinity of the negative magnetic cloud comparing to the case of positive magnetic clouds where velocity goes on increasing and reach its maximum after 24 hours of onset of the clouds. Furthermore, one can easily observe that average background density level is much higher for positive clouds than for negative clouds, while the velocity in this case (for negative clouds) remained higher and constant during and after the passage of clouds. The temperature is higher comparing to its surrounding in case of negative

Asian Resonance

clouds, where it starts decreasing and goes minimum after 12 hours of the onset of the clouds and later it remains higher. For positive clouds temperature is lower at the onset time, during the passage of cloud it shows some transients fluctuations.

Similar superposed analysis has been done for interplanetary magnetic field (IMF) B and all its three components BX, BY, BZ. It is seen from figure 4 that the variation of the magnetic field B for both positive and negative clouds is similar though the peak is shifted closer to the onset time of the magnetic clouds. For Bx and By components there is a little difference between the plots for two types of clouds. If we compare the BX and BYcurves with those in figure 3, there is no apparent evidence for any significance except the NP curve of the clouds. This appears to show a strong density enhancements associated with the positive clouds that contradicts previous studies, which associate lower densities with magnetic enhancements 3. In case of BZ component of IMF, as it is seen that the IMF BZ for negative clouds becomes more southward after the passage of the cloud and then becomes northward (after 12 hours) whereas in the case of positive clouds. IMF BZ, which is initially northward becomes weakly southward. Results obtained for negative clouds are found quiet different from the results of positive clouds. This behavior significantly indicates different interplanetary conditions during the passage of these two types of magnetic clouds substantiating the previous results [14, 15]. In an earlier theory it is said that the higher solar wind speed and the density is noted during the passage of the negative magnetic clouds, due to its association with interplanetary shocks.

However, the geomagnetic responses to magnetic clouds have been reported in earlier work [4]. In this contest further analysis has been done to observe the effects of these two types of clouds on earth's magnetosphere. We have taken Dst as a geomagnetic index assumed to be primarily due to the equatorial ring current in the earth's magnetosphere. Figure 5 depicts superposed epoch analysis plots of the Dst geomagnetic index that is shown in right and left panels respectively. For the negative clouds the Dst index decreased just after the onset time of clouds and further increased during the passage of the clouds, whereas, for the positive clouds maximum decrease is found after 24 hours of arrival of clouds. These results substantiate the hypothesis that predicts the fact that geomagnetic activity is greater when the magnetic field is southward rather than when it is northward [7, 16]. Speed of the solar wind to be well correlated with the geomagnetic activity, hence we observe minimum Dst values during the passage of negative magnetic clouds. From the figure 5, we see that minimum Dst was -80 nT for the negative clouds and -57 nT for positive clouds. It is noted that the difference cannot be attributed to the strength of the maximum southward component of the magnetic field, which was nearly the same for these two classes of the magnetic clouds. We know that all the clouds are not responsible for generating a geomagnetic storm, even though all clouds had a large southward component of the magnetic field at some point during their duration. Now it is proposed that the difference in *Dst* is related to the differences in the plasma parameters for the two classes of magnetic clouds. The average behavior of Dst and BZ for intervals of time containing

magnetic cloud is very suggestive that when a magnetic cloud has a southward BZ at earth, coupling between the magnetosphere and the solar wind occurs and energy enters the magnetosphere resulting in increased geomagnetic activity. When a cloud has a northern BZ at earth, coupling between the magnetosphere and the solar wind is inhibited and no energy enters the magnetosphere. In another mechanism it is stated that the solar wind streams interaction with the magnetic cloud may have directly discontinuous field arise [15]. The magnetic cloud stream interaction region is unusual and its nature is not likely to be determined fully from single spacecraft observations. Here we speculate several possibilities, one is a compound stream follows by the magnetic clouds and the two streams interfaces would correspond to the corresponding steams. Second possibility is this that corotating streams were interacting with the heliospheric plasma sheet in which the multiple directional discontinuities might represent crossing of the heliospheric current sheet. A third possibility is that a single corotating stream interacted with magnetic cloud and produced instabilities that formed a complex boundary. In 1990 occurrence of coronal mass ejections (CME's) in terms of ejecta are investigated as magnetic cloud related disturbance in interplanetary space[17]. Recently it has been explained that magnetic clouds are substructure of ejecta and the field structure observed depends upon where the ejecta is intercepted, the investigator also demonstrated close association between ejecta (as defined for example by regions of depressed solar wind proton temperature) and short -term particle decrease [18]. Ejecta are produced as the result of a gas dynamical explosion, in which magnetic field is carried positively. The radial speed gradient across the CME and the resulting expansion of the CME as it propagates antisunward s are viewed as a resulting dynamical effect in the interplanetary space and momentum exchange with ambient medium.

Conclusions

This study has inferred that negative magnetic clouds are more responsible for the depression in the *BZ* component of the interplanetary magnetic field, while the positive magnetic cloud produce large decrease in *BZ* component after the 24 hours of onset time of clouds. The decrease in Dst values show different variational pattern for positive and negative clouds, it is greater for clouds with higher speed than for clouds with lower speeds. As here, Negative clouds show large decrease just after arrival of clouds show maximum decrease in D_{st} values after 24 hours of onset with late recovery taking 72 hours of time span.



Figure 1 Distribution of the yearly occurrence rate of intense geomagnetic storms (Dst > 100nT) in relation to sun-spot numbers (shown by the solid line).

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance



Figure 2: Relation between D_{ST} index and $|VB_Z|$ values of the geoeffective CMEs. Where V is the initial speed of CME and B_Z is IMF.

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Asian Resonance Cosmic Rays during Intense Geomagnetic Conditions and Their Solar / Interplanetary Causes



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Abstract

The present study aim to analyze the cosmic ray intensity during the phase of intense geo-conditions. It is known that energetic coronal mass ejections and other transient interplanetary features are mainly responsible for large disturbances in geomagnetic field of earth and play a key role in producing a geomagnetic storm or substorms. As well as they are responsible to modulate the cosmic ray intensities. Identifying intense geomagnetic storms with Dst decrease more than or equal to 300 nT occurred during solar cycle 23, a correlative study has been performed to analyze the behavior of cosmic ray intensity and associated solar and interplanetary causes of these events using solar wind plasma, interplanetary magnetic field (IMF) and solar geophysical data. We have used neutron monitor the oulu cosmic ray data. It is observed statistically that 55% storms have occurred during solar maximum and 45% occurred during minimum phase of solar cycles. The correlative plots between various indices provide some interesting results being discussed in detailed paper. Further, study reveals that 97% intense storms are associated with coronal mass ejections (CME's), which confirms earlier findings. Sharp transient decreases in cosmic rays are evident for short term durations. Keywords: cosmic ray, geomagnetic storm, interplanetary magnetic field (IMF).

Introduction

Shocks driven by energetic coronal mass ejections (CME's) and other interplanetary (IP) transients are mainly responsible for initiating large and intense geomagnetic storms. Observational results indicate that galactic cosmic rays (GR) coming from deep surface interact with these abnormal solar and interplanetary conditions and suffer modulation effects.

Investigators have revealed that various activities taking place on Sun and other interplanetary proxies of coronal mass ejection's (CME's) lead to cosmic ray (CR) modulations at neutron monitor energies. This heliospheric modulation process reflects the dominant role played by solar wind parameters (bulk speed and the IMF intensity). Which further play the key role in initiating the various space weather activities involving variety of phenomena such as sub-storms, magnetic storms, acceleration of relativistic electrons etc.¹⁻² It is well known fact that solar wind velocity plays an important role to produce short-terms as well as long-terms modulation of cosmic rays and Forbush decreases (Fd's) are produced by perturbation in interplanetary conditions¹. These perturbations originate from shock waves, CME's, solar flares, high speed solar wind streams. As solar wind consists of various plasma and magnetic field characteristics, these plasma signatures in interplanetary medium produce disturbances in Earth's magnetic field whose intensity/ strength depending upon the nature of ejecta³⁻⁵. Interplanetary plasma data obtained from spacecraft's observations allowed rapid progress in relating cosmic rays variation with other solar and interplanetary characteristics. Investigators have reported two possible sources responsible for the decrease from high-speed plasma streams observed in ecliptic plane. One kind of which is associated with ejection of solar flares in solar active region while another depends up on the coronal holes. Furthermore, flare generated streams and coronal holeassociated streams have been defined⁴⁻

Data

We have analyzed the events represented by maximum Dst decrease. The study has been performed to analyze the cosmic ray intensity variation during this prescribed period 1996-2010. The neutron monitor data from Oulu stations

(Rc=0.77 GV). We have used hourly averaged IMF components and solar wind plasma data at 1 AU obtained from satellite observations provided by National Space Science Data Center (NSSDC) through its OMNIWEB (http://www.nssdc.gsfc.nasa/ominiweb.html)⁷⁻⁸. Introduced in 1964, the ring current index Dst measures primarily ring current magnetic field, using which one can investigate low latitude effects. Here Dst is used as an indicator of geomagnetic activity to derive the possible relationship between cosmic rays intensity with geomagnetic activity⁹.

Discussion

A geomagnetic storm is the response of the magnetosphere to the interplanetary phenomena arising as a sequence of activities taking place on the solar surface. The magnitude of these events further depends up on the nature of ejecta and the possible interplanetary circumstances present at the time of occurrence. Investigators have observed a common association between solar and interplanetary events assumed as interplanetary CME's, co-rotating interaction regions (CIR's)⁵⁻⁹⁻¹⁰. As the aim of this study is to analyze the events which are highly geoeffective and than to find possible correlation between geomagnetic indices and cosmic ray intensity variation; to perform the study hourly averaged values of solar and geomagnetic indices is obtained from NSSDC7-8-9. The results are shown in figure 1 and 2. Cosmic ray intensity is shown in the lower panel of figure 1, while the geomagnetic indices Dst shown in upper panels.



Figure 1.Shows cosmic ray intensity variation, Disturbance Storm Time (Dst) index during the event period.

Figure 2 represents the bulk speed, ion density and ion temperature in respective panels. On comparing the averaged behavior of parameters shown in figure 1, it is found that geomagnetic Dst index follows the same decrease pattern as that of cosmic ray particles. Dst index produce a significant decrease profile. As we know most of the storms have been associated with coronal mass ejections. These events are large-scale structure and become highly geoeffective while travelling towards Earth. As in the case of Halo- CME's, they are supposed to play the key role in originating the geomagnetic activities in the magnetosphere. In the ejecta magnetic field varies very slowly and the magnetic field strength increases. At the same time plasma proton's temperature and thermal pressure decrease, while the solar wind speed also decreases as the ejecta passes through the interplanetary medium. In some cases the ejecta also present smooth rotation of magnetic field vector, resulting in to the interaction of this compressed plasma high speed flow with preceding slow solar wind. As a consequence the proton

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

temperature, magnetic field strength increases while the solar wind speed rises ¹¹⁻¹². This is seen in figure 2 as immediately after the occurrence of event the bulk speed enhances. These compressed streams produce modulation effects in cosmic ray particles responsible for the significant decrease pattern as observed in figure 1. Observations indicate the strong association between super geomagnetic storms with CME's. Which is obvious as these solar events are large scale ejecta eruptions of solar wind plasma, that are further responsible for effectively modulating the cosmic ray intensity.



Figure 2. It shows the solar and interplanetary parameter corresponding to intense geomagnetic storms with Dst \leq - 300 nT. The geomagnetic Dst index and other feature are plotted on day to day basis.

In this paper we also correlated various interplanetary parameters with Dst indices less than 300 nT, intense geomagnetic storm.

S.	Date	Dst	В	Bz	V	Np
No.		nT	nT	nT	km/s	cm ⁻³
1	16 Jul 2000	-301	48.1	-3.7	1030	8.1
2	31 Mar 2001	-387	37.6	-12.7	644	17.5
3	30 Oct 2003	-383	25	-1.1	-	-
4	20 Nov 2003	-422	26.6	-18.5	553	15.6
5	08 Nov 2004	-373	25.6	-17.5	712	3.5

Table 1. Details of interplanetary plasma parameters.

In table 1 shows details of interplanetary plasma parameters. The peak values of the parameters were used at the onset time of corresponding peak value of Dst index. On the basis of values given in table 1 we calculate the correlation coefficients between Dst and various IMF parameter. The correlation between Dst and total magnetic field B, Southward component B_z and plasma velocity V are 0.79, 0.58 and 0.58 respectively. We have not found a significant correlation between Dst and plasma density N_p.

Conclusions

The relation of Dst index with interplanetary plasma parameters have been studied from 1996 to 2010 and the following conclusion have been drawn:

The occurrence of most of the events is dominant during the high value of total magnetic field B and southward turning of B_z component of IMF that leads to the

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

significant decrease in Dst index as well as in the cosmic ray intensity. Most of the events are associated with transient decreases in cosmic ray intensity. Intense storms are having their well defined solar origin as during solar maximum the occurrence rate is 55% while it is only 45% during solar minimum phase of solar cycle.

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Asian Resonance Synthesis, Spectral Characterization and Biological Evaluation of Schiff Base Metal Complexes derived from 5-Nitrosalicyaldehyde



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Abstract Two new series of Copper(II) and Nickel(II) complexes with two Schiff bases 2-(2,4-dimethylphenylimino)methyl)-4-nitrophenol and 2-(3,4difluorophenylimino)-methyl)-4-nitrophenol ligands have been prepared. The Schiff base ligands were synthesized by the condensation of 2-hydroxy-5nitrobenzaldehyde with 2,4-dimethylaniline or 3,4-difluoroaniline. The ligands and their metal complexes have been characterized by IR, ¹H NMR, mass, electronic spectra, TG analysis and magnetic moment. The Schiff base ligands and their metal complexes were tested for antimicrobial activity against Gram positive bacteria Staphylococcus aureus, Streptococcus pyogenes and Gram negative bacteria Escherichia coli, Pseudomonas aeruginosa and fungus Candida

Method. **Keywords:** 2-hydroxy-5-nitrobenzaldehyde, Schiff base metal complexes, Antimicrobial activity

albicans, Aspergillus niger and Aspergillus clavatus using Broth Dilution

Introduction

PVP The use of Schiff bases as ligands has enjoyed a very rich history with importance of metal complexes in a variety of industrial and biological applications ¹⁻³. Stereochemical flexibility is well documented among Schiff-base complexes arising from central metal, the source of the carbonyl function, the amine, as well as substituents on and steric bulkiness around the Schiff base. Schiff bases accommodate different metals with various coordination modes allowing synthesis of stable complexes with varied stereochemistry. Numerous Schiff bases and their transition metal complexes have been investigated by various techniques for different purposes ⁴⁻⁶. Schiff-base metal complexes have been widely studied because they have industrial, antifungal and biological applications. Chelating ligands containing O and N donor atoms show broad biological activity and are of special interest because of the variety of ways in which they are bonded to metal ions ⁷⁻¹⁰.

Experimental Materials

2-hydroxy-5-nitrobenzaldehyde was synthesized according to the method reported in literature ¹¹. Copper (II) and Nickel (II) were used as nitrate salts and were obtained from Rankem. All amines were used from merck, organic solvents EtOH, MeOH, DMF and DMSO were reagent grade.

Physical measurements

IR spectra (4000-400 cm⁻¹) of the ligands and metal complexes were obtained using KBr discs, on 8400 FT-IR SHIMADZU spectrometer. Mass spectra were recorded on QP 2010 SHIMADZU GCMS spectrometer. ¹H NMR spectra of ligands were recorded on Bruker Avance-II 400 MHz FT-NMR spectrometer using TMS as an internal standard and CDCl₃ as a solvent. Electronic spectra of the metal complexes in DMF were recorded on a Perkin Elmer Lambda 19 spectrophotometer, molar conductance of the metal complexes was determined on Systronics direct reading conductivity meter type CM-82T. A simultaneous TG/DTA was recorded on Perkin Elmer Pyris-1 model. DSC was carried out on Perkin Elmer Pyris-7 instrument. Elemental analysis (C, H and N) were carried out on elemental analyzer PERKIN ELMER 2400, while analysis of metal was also carried out by EDTA titration method, in which the metal complex first evaporate in conc. nitric acid and prepare a stock solution. This solution with ammonia then titrates against EDTA by using appropriate indicator. The M.P. of ligands was carried out by standard laboratory thermometer.

Preparation of Schiff base ligands

Synthesis of 2-(2,4-dimethylphenylimino)methyl)-4-nitrophenol [MPM]

Equimolar (10 mmol) ethanolic solution (50 mL) of 2-hydroxy-5-nitrobenzal dehyde and 2 ,4- dimethylaniline was refluxed for 6 h in round bottom flask. During the reflux a microcrystalline yellow compound was separated, which was isolated by filtration and dried in air and finally purified by crystallized in appropriate solvent. m.p.: 210°C and % of yield 91%

Synthesis of 2-(3,4-difluorophenylimino)-methyl)-4nitrophenol [FPM]

Equimolar (10 mmol) ethanolic solution (50 mL) of 2-hydroxy-5-nitrobenzaldehyde and 3,4-difluoroaniline was refluxed for 6 h in round bottom flask. During the reflux a microcrystalline yellow compound was separated, which was isolated by filtration and dried in air and finally purified by crystallized in appropriate solvent. m.p.: 180°C and % of yield: 87%

Preparation of metal complexes

All the metal complexes of Schiff base were prepared by the following method. The metal salt was dissolved in water and the solution was added to a hot ethanolic solution of the corresponding Schiff bases. After the complete addition little amount of ammonia was added and the mixture was refluxed for 4 h. A crystalline solid was obtained, which was isolated by filtration, washed with hot water and dried in air. % of yield: 80-85%. The general structure of the metal complexes can be summarized in Scheme-I.



R = 2,4-dimethyl for MPM and 3,4-difluoro for FPM M = Cu(II) and Ni(II)

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Antimicrobial screening

All newly synthesized compounds were tested for their antibacterial activities against Gram positive bacteria Staphylococcus aureus, Streptococcus pyogenes and Gram negative bacteria Escherichia coli, Pseudomonas aeruginosa and antifungal activity against Candida albicans, Aspergillus niger and Aspergillus clavatus. The method used to evaluate the antimicrobial activity was 'Broth Dilution Method'. It is one of the non-automated in vitro susceptibility tests. The MIC (minimal inhibitory concentration) of the control organism is read to check the accuracy of the drug concentrations. The lowest concentration inhibiting growth of the organism is recorded as the MIC. The MIC values of the newly synthesized compounds have been compared with the standard drugs ampicillin, chloramphenicol, nystatin and greseofulvin ¹⁶. (Table-2(a) & 2(b))

Results and Discussion

The Schiff base ligands, MPM and FPM were prepared by the condensation of 2-hydroxy-5nitrobenzaldehyde with 2,4-dimethylaniline and 3,4difluoroaniline in molar ratio 1:1. The formation of Schiff base and their metal complexes were confirmed by various analytical techniques such as IR, ¹H NMR, mass, electronic spectra, conductance and TG-DT-DSC analysis. Table-1 lists the physical and analytical data of the Schiff bases and their metal complexes. The antimicrobial activities of Schiff base ligands and metal complexes are listed in Table 2(a) & 2(b).

Scheme I: General structure of Schiff base metal complex

Table-1 Physical and Analytical data of Schiff Base ligands and their Metal Complexes

Licond on complex	Formula	M.W.	Elemental analysis, % Found/(Calcd.)						
Ligand of complex	Formula		С	Н	N	М			
MPM	$C_{15}H_{14}N_2O_3$	270	66.60 (66.66)	5.14 (5.22)	10.41 (10.36)	-			
FPM	$C_{13}H_8F_2N_2O_3$	278	56.19 (56.12)	2.87 (2.90)	10.02 (10.07)	-			
[Cu(MPM) ₂]	$C_{30}H_{26}CuN_4O_6$	602	59.76 (59.84)	4.30 (4.35)	9.37 (9.31)	10.63 (10.55)			
[Ni(MPM) ₂]	$C_{30}H_{26}N_4NiO_6$	597	60.39 (60.33)	4.41 (4.39)	9.31 (9.38)	9.90 (9.83)			
[Cu(FPM) ₂]	$\mathrm{C}_{26}\mathrm{H}_{14}\mathrm{CuF_4N_4O_6}$	617	50.49 (50.53)	2.30 (2.28)	9.12 (9.07)	10.33 (10.28)			
[Ni(FPM) ₂]	$C_{26}H_{14}F_4N_4NiO_6$	613	60.00 (50.93)	2.27 (2.30)	9.17 (9.14)	9.64 (9.57)			

Characterization of Schiff base ligands

The IR spectrum of the ligands shows a broad band at 3430-3460 cm⁻¹ due to the stretching vibrations of phenolic hydroxyl group. The broadness is due to intermolecular hydrogen bonding between the phenolic group and the azomethine group. The strong band observed at 1616 cm⁻¹ is assigned to the stretching vibrations of the azomethine group. Two moderately intense bands observed at 3046 and 2916 cm⁻¹, are due to aromatic and aliphatic ν (C–H), respectively ^{12,13}. An IR spectrum of the ligand is presented in Fig. 1.



The ¹H NMR spectra of ligands were recorded in CDCl₃. The proton NMR spectrum of one of the ligand is shown in Fig. 2. The signal due to methyl protons (Ligand MPM) appeared as singlet at δ 2.40 ppm. In the aromatic region, a few doublets and in few cases some overlapping doublets/multiplets are observed in the range δ 6.97-8.39 ppm. These signals are due to aryl protons of benzene rings, while the signal due to azomethine proton (-CH=N-) appeared as singlet at δ 8.66 ppm. Another singlet corresponding to one proton is observed in the range δ 14.00-14.92 ppm. This signal disappeared in the complexes 13,14



The mass spectra of ligands MPM & FPM revealed the molecular ion peak at m/e 270 for the former ligand and m/e 278 for the latter ligand, which are coincident with the formula weights and support the identity of the structures 15 . (Fig. 3)



Characterization of metal complexes

The IR spectra of metal complexes show sharp band in the range 1607-1603 cm⁻¹, which is shifted to lower frequency as compared to ligand, suggesting coordination of the azomethine nitrogen to the metal ion. The disappearance of ν (O–H) shows the deprotonation of the –OH group and its subsequent coordination to the central metal atom. Two new bands observed at 578–564 and 481-470 cm⁻¹ are characteristic of M–O and M–N absorptions, respectively ¹⁶.

The observed molar conductances of the metal (II) complexes in 10^{-3} molar DMF solution are in the range 19–27 Ω^{-1} cm² mol⁻¹. The molar conductance values are consistent with the non-electrolytic nature for all metal complexes ¹⁷.

Electronic spectra of all the complexes were recorded in dimethylformamide (DMF). For square planer Cu(II), the expected transitions are ${}^{2}B_{1g} \rightarrow {}^{2}A_{1g}$ and ${}^{2}B_{1g} \rightarrow {}^{2}Eg$ with respective absorptions at 505–520 and 665–650 nm. Due to Jahn–Teller (J-T) distortions, square planar Cu(II) complexes give a broad absorption between 600 and 700nm and the peak at 505–520nm merges with the broad band, and thus only one broad band is observed. The Ni(II) complexes showed one strong band at 550 nm, which is

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

assigned to the square planar ${}^{1}A_{1g} \rightarrow {}^{1}A_{2g}$ transition. This value lies within the range (600–450) nm region 6,15,18 .

Thermal analyses of all the complexes were carried out by the TG, DTA and DSC techniques. The experimental results revealed that the degradation occurred in multiple stages, following a complex mechanism (Fig. 4). For each stage the kinetic parameters and the thermo gravimetric characteristics have been estimated. Thermal behavior of all complexes explains as follows. The TG curve follows the decrease in sample mass with increase in temperature. In the present investigation heating rates were suitably controlled at 5°C min⁻¹ and mass loss followed up to 25-800°C. The complexes slowly started decomposition between 200-320°C. The first mass loss up to 312°C is attributed to the removal of two NO2 molecules. This process is accompanied by exothermic process at around 200-320°C in DTA curves of all complexes. The mass loss occurring at temperature 330-550°C corresponds to the decomposition of the ligand molecules. The final product of the thermal decomposition at 550-800°C, metal oxide was determined by elemental analysis ^{19,20}





Antimicrobial activities

The Minimal inhibitory concentration (MIC) against bacteria and fungi of Schiff base ligands and their metal complexes were compared with the MIC values of standard drugs. The results of the biological screening of the ligands and their metal complexes reveal that the antimicrobial activities of the chelated ligands are enhanced as compared to the free ligands ^{16,21}. (Table 2(a) & 2(b)).

TABLE 2(a): Antibacterial activity of Schiff bases and their metal complexes

MINIMAL INHIBITION CONCENTRATION (MIC) (µg/ml)										
Ligand/ Complex	E. Coli	P. Aeruginos a	S. Aureus	S. Pyogenu s						
complex	MTCC	MTCC-	MTCC	MTCC-						
	-443	441	-96	442						
MPM	250	250	250	250						
FPM	250	100	250	250						
[Cu(MPM) ₂]	50	100	150	100						
[Ni(MPM) ₂]	500	500	100	250						
[Cu(FPM) ₂]	125	250	250	100						
[Ni(FPM) ₂]	250	100	50	125						
Standard Drugs										
Ampicillin	100	100	250	100						
Chloramphenico 1	50	50	50	50						

Ligand/Complex	C. Albicans	A. Niger	A. Clavatus
Liganu/ Complex	MTCC-227	MTCC-282	MTCC-1323
MPM	1000	100	500
FPM	250	250	250
[Cu(MPM) ₂]	500	100	500
[Ni(MPM) ₂]	100	100	250
[Cu(FPM) ₂]	250	250	100
[Ni(FPM) ₂]	100	100	250
	Standard	Drugs	I
Nystatin	100	100	100
Greseofulvin	500	100	100

 TABLE 2(b): Antifungal activity of Schiff base ligands and their metal complexes

 Implementation of the second second

Conclusion

On the basis of above studies, the general structure of the metal complexes are proposed as shown in Scheme 1. The Schiff base ligands are behaving as O, N donor bi-dentate for Cu(II) and Ni(II) metal ions. The ligands and their metal complex screen for antimicrobial activity and results show good in comparison with standard drugs.

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Asian Resonance Pharmacokinetic Studies of Some Leading Anti-inflammatory Drugs

Abstract

The phenomenon of pharmacokinetics includes metabolism, excretion and the kinetics of elimination. The main function included in pharmaco kinetics is the response of body to the drug. It refers to the movement of the drug in the body and the alteration of drug by the body. Thus a pharmacokinetic study involves absorption, distribution, bio-transformation and excretion of the drug.

In the present study four non-steroidal drugs having anti-inflammatory and analgesic character have been selected. The pharmacokinetic studies conclude that such behavior of these drugs is a function of the nature of the medium (aqueous and non-aqueous) pH and the temperature.

Keywords: Solubilization period, anti-inflammatory, pharmaco kinetic studies.

Introduction

Anti-inflammatory drugs mostly consist of salicylates, salicylamide, aryl alkanoic acid and oxycoms. Out of these the drugs under study involving salicylates are quite common and very popular. Methacetin, phenacetin pertonal and aspirin are non-steroidal anti-inflammatory drugs in addition to antipyratic and analgesic in nature. All of these drugs exhibit analgetic, anti-inflammatory and antipyratic action but differ in degree of action under different conditions. These drugs have superiority over other traditional drugs such as morphin in the sense that they do not produce physical dependence. These drugs are moderately week analgesics. The path way of the action of these drugs take place as below:-

1. These drugs act primarily confined to the peripheral pain mechanism.

2. These drugs act on CNS to elevate the pain threshold value.

Due to these reasons such anti-inflammatory drugs are preferred over other based on the properties of these drugs. They are called non steroidal antiinflammatory drugs abbreviated as NSAID. Along with these drugs some inhibitors e.g. Cox-1 and Cox-2 have been used which play important role in the mechanism of action for the pharmacokinetic studies of these drugs the mechanism and rate of action is based on the property of these drugs called the solubilization period. The rate of drug action is inversely related to its solubilization period. Longer the solubilization period of a drug slower will be the rate of its action. On the other hand the rate of drug action is enhanced if the solubilization period is short. Thus for a drug expecting quick action the solubilization period must be reduced. The solubilization of poorly water soluble drugs has been increased by mixed solvency1⁻⁶ phenomenon. The drug interaction activity of different components have given interesting results. The solubilization behaviour⁷⁻¹³ has been studied for several drugs in common use. A part from biochemical uses the process and degree of solubilization finds innumerable applications¹⁴⁻²⁰. Some workers have focused special attention on salicylic acid²¹ for its solubilization behaviour and pharmaceutical applications²². The solubilization period of any drug depends on its composition, constitution, temperature, dielectric constant and pH of the medium. In this dissertation the effect of these factors on solubilization period of some methacetin type compounds have been studied.

Materials & Method

It involves two main steps.

- (I) The following compounds of the interest were obtained in the pure form (E. merk quality) and their purity was confirmed by the melting point method.
 - A. Salicylic acid
 - B. Methyl Salicylate
 - C. Phenyl Salicylate
 - D. Sodium Salicylate
 - E. Acetyl Salicylic acid

(II) Determination of solubilization period

In a clean beaker of 50 mL, 25 mL distilled water was taken. A weighed quality (100 mg) of every material (A, B, C, D, E) was dropped into the beaker at the desired temperature keeping the stirer on. The same was repeated by taking 25 mL ethanol in the beaker. Note down the time of complete solubilization for each compound respectively. The same observations were made by taking buffer

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solutions of desired pH in which the compounds under study were put & complete solubilization times under

identical situations were noted.

Effect of solvent on solubilization period: Table-1: Effect of the solvent [Aqueous (Water) & non-aqueous solvent (alcohol)] on solubilization period

S. No.	Compound	Solubili	ization p	eriod (a	t 20°C)	Structural Formula
		Wa	ter	Alc	ohol	
		min.	sec.	min.	sec.	
1	Salicylic acid (A)	3	27	1	05	СООН
2	Methyl salicylate (B)	3	56	1	50	COOCH3 OH
3	Phenyl salicylate (C)	4	21	1	31	COOC ₆ H ₅
4	Sodium salicylate (D)	2	15	3	40	COONa ⁺ OH
5	Acetyl salicylate (E) (Aspirin)	3	35	2	52	COOH OCOCH3

Table-2: Effect of temperature on solubilization period of A, B, C, D & E in water.

S.	Temperature	re Solubilization period of compounds									
INO.		Α		I	В		С		D		E
		min	sec	min	sec	min	sec	min	sec	min	sec
1	15	3	56	4	15	5	10	5	55	5	25
2	25	3	28	4	05	4	56	5	35	5	05
3	35	3	05	3	52	4	25	5	10	4	41
4	45	2	42	3	20	4	05	4	35	4	10
5	55	2	27	2	35	3	32	3	46	3	46
6	65	2	10	2	07	3	10	3	25	3	15
7	75	1	35	1	40	2	40	2	56	2	50
8	85	1	10	1	18	2	05	2	32	2	18

S.	pН		Solubilization period of compounds								
No.		A	1	I	B		С		D		C
		min	sec	min	sec	min	sec	min	sec	min	sec
1	3.5	6	52	6	15	6	40	2	25	3	45
2	5.5	6	40	6	05	6	28	2	01	3	32
3	6.0	6	10	5	45	6	02	1	03	3	08
4	7.0	5	20	5	15	5	45	1	21	2	46
5	8.5	4	45	4	46	5	30	1	01	2	27
6	9.5	4	10	4	02	5	1	0	0	2	06
7	18.5 not Possible	3	35	3	03	4	41	0	0	1	42

Table-3: Effect of pH on solubilization period of A, B, C, D, E.

Results and Discussion

For any drug its solubilization period plays a vital role during the treatment of the patient. Before digestion and assimilation of a drug by the body its solubilization is the basic step. The solubilization period depends upon the structure, conformation and the physicochemical properties of the drug. The effect of the nature of solvent, temperature and pH of the medium on solubilization period has been measured and computed in bar diagram (fig.1) and grphs (fig. 2 & 3). The results obtained from the experimental data and demonstrated by diagrams are discussed as below.











The bar diagram indicates that except for compound D the solubilization period of all the compounds is longer in aqueous medium as compared to the alcoholic one. For compound D the solubilization period in aqueous medium is shorter than that in alcoholic medium. The variation in solubilization period of these compounds is a function of its ionic character, degree of ionization and the molecular mass of the material. It has been demonstrated by the bar diagram. For compound having in significant or almost nil enthalpy of solution, the solublization period is anticipated to decrease with the rise of temperature of course as the temperature rises the solublization period of all the compounds under study shortens, though with varying magnitudes. This has been demonstrated by graph in fig.2 for all the compounds the variation is qualitatively alike but differs in quantity. This may be due to difference in the thermal nature of enthalpy of ionization enthalpy of hydration and the enthalpy of hydrolysis of compounds as pointed out.

The solubilization period of compounds A, B, C, D and E is effected by the acidic or alkaline nature of the medium. During solubilization due to hydrolysis the nature of the medium gets changed. In case of sodium salicylate due to hydrolysis alkalinity develops. Due to this fact the solubilization period of this compound shortens with the increase of pH. In other compounds the phenomenon is not

so significant. This has been shown with the help of graph in Fig.3.

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VOL.-1, ISSUE-V, JANUARY-2013

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Asian Resonance Synthesis, Characterization, antimicrobial study and Spectrophotometric determination of Mn (II) ion by Pyridine 2, 3 dicarboxylic acid.



A new spectrophotometric method is developed for the determination of Mn (II) in an aquous solution. The metal ion forms a pink coloured complex with pyridine 2, 3 dicarboxylic acid in acidic medium i.e. at pH 1.5 to 2.5. The complex shows maximum absorbance at 500 nm. Job's method for continuous variation and mole ratio method shows metal ligand ratio in the complex to be 1:2. The complex is stable after 20 minutes. The pink coloured complex obeys

the Beer's law in the concerntration range of 55 to 250 μgs of manganese. The molar absorptivity (E) is found to be 1.25 x 102 lmole-1cm-1. The method has been used for the determination of Mn+2 in synthetic samples. The complex was obtained from the aquous solution by slow evaporation for a weak. The FTIR study was carried out for structural determination. The antimicrobial activity of pyridine 2, 3 dicarboxylic acid and Mn – PDC complex have also been checked.

Introduction

PVP Pyridine 2, 3-, 2, 4-, 3, 4-, 2, 5-, 2, 6- dicarboxylic acids have proved to be interesting and important legends and may exhibit various co-ordination modes. Pyridine 2, 3- dicarboxylic acid can act as partly or fully deprotonated and shows diverse coordination modes. The complexes of Mn(II) with pyridine 2, 3- dicarboxylic acid have been prepared and characterized by spectroscopic, structural and thermogravimetric methods. These reports indicates that Pyridine 2, 3-dicarboxylic acid acts as monodicarboxylate N, O- chelating complex i.e. [Mn(H₂O)₆] [Mn (2, 3 pydcH)₃]₂ or a doubly deprotonated three-dentate – N, O, O dicarboxylate complex i.e. [Mn(H₂O)₃(2, 3 - pydc)]_n. In these complexes Mn is considered to have distorted octahedral geometry.¹

The complex of copper with pyridine 2, 3- dicarboxylic acid i.e. [Cu $(2, 3-pydcH)_2$] has been reported². It is a chain polymer. Two ligands occupy the equatorial plane of each tetragonally elongated Cu⁺² coordination sphere, chelating through the pyridine nitrogen and one oxygen of the deprotonated 2- carboxylic acid oxygen of adjacent Cu $(2, 3 PydcH)_2$ repeat unit. The coordination polymer of Mn with pyridine 2, 3 dicarboxylate has been synthesized and crystal structure has been proposed based on the experimental data³. According to this report Mn⁺² ion is coordinated in a distorted octahedral environment by the O atoms of two water molecules, one N and one O atoms of the chelating pyridine 2, 3- dicarboxylate (PDC) dianion, and two axial bridging carboxylate O atoms from two adjacent PDC ligands⁽³⁾.

The complexes of the type M (H-Quin)₂.2H₂O (M = Mn, Co, Ni and Zn) where $H_2 - Qin = Quinolinic acid i.e.$ Pyridine 2, 3 dicarboxylic acid have been prepared and characterized ⁽⁴⁾. All these reported complexes have octahedral distorted structure. The nickel atom in Ni(H-Quin)₂.2H₂O is octahedrally coordinated by two nitrogen atoms and two oxygen atoms belonging to the two H-Quin⁻ anions and two trans-aqua molecules⁽⁴⁾. The structure of Ni(II) with quinolinic acid can be represented as.





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The complex Mn (H-Quin)₂.2H₂O has been formulated as [Mn(H₂O)₆] [Mn(H-Quin)₃]₂. The octahedral $[Mn (H-Quin)_3]^-$ and, $[Mn(H_2O)_6]^{2+}$ units lie on different three fold axis.⁽⁴⁾ Lanthanide (III) quinolinate complexes have been prepared and reported and evidence is presented which indicates that these complexes may be sixcoordinated.⁽⁵⁾ calcium (II) complexes with pyridine 2, 3dicarboxylate (Quinolinic acid) has been synthesized and crystal structure has been reported (6). The complexes of uranium (IV) with quinolinic acid has been synthesized and reported⁽⁷⁾. Two types of complexes of cadmium with quinolinic acid has been synthesized and reported⁽⁸⁾. They are $[cd(2, 3 pydcH)_3][cd(H_2O)_6]$ and [cd (2, 3 pydc)] $(H_2O)_3$]n. The chromium (III) – quinolinato complexes $[Cr(quinH)_3]^{+3}$ $[Cr(QuinH)_2(H_2O)_2]^+$ and $[Cr(quinH)(H_2O)_4]^{2+}$ have been obtained and characterized in solution⁽⁹⁾.

The structure of some Cu(I), Ag(II) and Cu(II) compounds with quinolinic acid have been established based on X-ray crystallographic studies ¹⁰⁻¹² in each case, quin is bonded as a monoanion through pyridine nitrogen and carboxylate oxygen atoms forming the 5-membered chelate ring. The same coordination mode is postulated for other quin-complexes with Cr(III), cd(II), Fe(II) (13-16),though no structural studies were conducted. The spectrophotometric evaluation of iron (II) quinolinic acid complex (1:2) metal ligand system has been reported⁽¹⁷⁾. The complex of cobalt with quinolinic acid has been synthesized and structure has been reported⁽¹⁸⁾. The following structure of hydrated cobalt (II) complex of quinolinic acid has been reported⁽¹⁸⁾.



The complex formed by Mn(II) and pyridine 2, 5 ddicarboxylic acid has been synthesized and characterized by elemental analysis, IR, electronic spectra, thermogravimetric analysis and x-ray diffraction techniques⁽¹⁹⁾. The Mn(II) ion is coordinated by two water molecules and two chelated Pyridine 2, 5 dicarboxyliic ligands. Water molecules coordinate with Mn(II) ion in cis mode.



Literature survey shows that the solution studies and spectrophotometric studies of Mn(II) with quinolinic

Asian Resonance

acid has not been reported. Therefore, we have made an effort to study the solution properties.

Materials and Methods

An UV-VIS spectrophotometer-108 equipped with 1cm quartz cell was used for spectrophotometric measurements. The pH measurements were made with an Elico LI 120 pH meter.

The reagent used was pyridine 2, 3 dicarboxylic acid. The substance was dissolved in minimum amount of NaOH and its sodium salt solution was used.



A 0.01 M solution of the ligand was used.

Mn (II) solution :- A 0.01 M stock solution of MnCl₂. 4H₂O prepared by dissolving in distilled water and was made acidic by adding HCl. The pH was maintained by using dilute NaOH and dilute HCl.

Procedure : In each set of different 50 ml standard flasks, various volumes of Mn (II) and reagent solution were taken, the pH was maintained (1.5 to 2.5) and made up to the mark with distilled water. The absorbance was measured at 500 nm against the reagent blank. The calibration curve was prepared by plotting absorbance against the amount of Mn. (II)

Results and Discussions

1. Determination of λ max of the complex,

The absorption spectra of pink coloured complex solution were recorded in the wavelength region 400-900nm as shown in the fig. It was observed that the complex showed the maximum absorbance at 500 nm where as the reagent blank is coloureless solution and does not absorb in the visible region. The absorption spectra of

 $MnCl_2$. $4H_2O$ has also been recorded. The $\lambda \max$ of $MnCl_2$. $4H_2O$ occurs at 472 nm. The $\lambda \max$ of complex is shown in Fig 1.

2. Effect of pH

Studies on the effect of variation in pH shows that the complex has maximum absorption in the pH range.1.5 to 2.5 pH. This is shown in Fig -2.

2. Effect of time

The Manganese (II) – Pyridine 2, 3 dicarboxylate complex takes 20 minutes to complete the reaction and there after It is stable.

Effect of Temperature

The Mn (II) complex is stable in the temp. range of $30 - 70^{0}$ C Fig - 3.

The effect of the reagent concentration (PDC) on the complex.

It seems that the complex formation requires the double concentration of the ligand This is shown in Fig -4.

6. Job's Method

Composition of the complex as determined by the job's method and the mole ratio method was found to be 1:2. This is shown in Fig - 5.

7. The Beer's Law

The beer's law is obeyed in the concentration range 55 to 250 μ gms of Mn (II). The method that has been developed has moderate sensitivity. Calibration graph Fig – 6.

Solution studies of Mn(II) shows that it forms pink coloured complex in the acidic pH with pyridine 2, 3 dicarboxylic acid. The reaction is pH sensitive. The complex formed is stable for days. Pyridine 2, 3 dicarboxylic acid has proved to be interesting and versatile ligand and may exhibit various coordination modes. Pyridine 2, 3 dicarboxylic acid (2, 3 Pydc H₂), being a potential polydentate ligand, has aroused considerable interest of many groups and the literature cites numerous examples of different metal complexes. The Ligand can act as partly or fully deprotonated and shows diverse coordination modes such as monodentate or bridging. It may be due to this reason that contradictory reports for the crystal structure appears in the literature^{1, 3, 4, 19}. It is reported that Pyridine 2, 5 dicarboxylic acid forms 1:2 complex in solution¹⁹. Based on all such references following structure may be assigned in solution.



Synthasis of the complex

A 0.01 M Mncl₂.4H₂O solution was prepared Five ml of this solution was taken in a container. To this solution 10ml of 0.01 M quinolinic acid solution (prepared by dissolving the acid in minimum amount of NaOH) was added. The acidic pH of 1 - 5 to 2.5 was maintained Pink coloured complex is formed within few minutes. After 20 days pink coloured needle shaped crystals were obtained by slow evaporation. (Room temp $- 40^{0}$ C)

Antimicrobial studies

Quinolinic acid and Mn – quinolinate complex were screened for their antibacterial activity against *Bacillus Megatarium* with different dilution using cup-plate agar diffusion method. Both Quinolinicacid and Mn-Quin complex showed poor antibacterial activity.

The FTIR studies indicates the presence of metal- nitrogen and metal oxygen bonds. The respective frequencies are $420 \text{ and } 600 \text{ Cm}^{-1}$.

Effect of foreign ions in the spectrophotometric studies

The effect of various anions and cations on the determination of Mn(II) under optimum conditions was studied. It was noticed that Cu^{+2} , Fe^{+2} , Ni^{+2} and Ba^{+2}

VOL.-1, ISSUE-V, JANUARY-2013

Asian Resonance

interfere only when present in the same concerntration range. They do not interfere when present in ten fold less concentration then the analyte solution. Ions such as V^{+3} , Sn^{+2} , K^+ , Na^+ , NH_4^+ , Zn^{+2} , Cl^- , Br^- , SO_4^- , CO^{3--} , F^- does not interfere even when present in large excess. (i.e. ten fold excess)

Validity of the method

A number of synthetic samples were prepared for the analysis. Spectrophotometric determination was carried out by the proposed method. The results are given in the table.



0

2

4

PH

FIGURE-2:EFFECT OF pH

6



VOL.-1, ISSUE-V, JANUARY-2013

Asian Resonance

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Asian Resonance Study on Reproductive Performance, Survivality and Mortality of Lymnaea stagnalis by Plant Glycoside of Abrus precatorius

Abstract

Lymnaea stagnalis is the common pest of aquatic plants and also a prolific breeder. It is commonly known as pond snail. In the present investigation glycoside of *Abrus precatorius* was tested for lethal toxicity against Lymnaea stagnalis. In the present investigation has also been taken to study the effect of glycosides extracted from *Abrus precatorius* on the life cycle of Lymnaea stagnalis. It is very essential to control the fertility, hatchability, viability by increasing the rate of mortality and decline the rate of longevity of these snails, so this investigation was made to know about the intoxication of glycosides on the mortality and reproductive performance of this experimental pest snail.

Keywords: Lymnaea stagnalis, Abrus precatorius, Toxicity.

Introduction

Lymnaea stagnalis Is the pest of paddy crop, aquatic garden vegetation, coffee, tea, money and ornamental plants. Family Lymnaeidae is abundant in our lakes and ponds. They also happen to live in many garden ponds, as well as in aquarium tanks or troughs, where they were either introduced along with water plants or placed intentionally. Lymnaeids are distributed worldwide as observed by Godan (1983). They can be easily procured from any fresh water body. These pestiferous snails are also prolific breeders. Albeit their living in water, pond snails are lung breathers, they surface to breath fresh air.

The reproductive biology of *Lymnaea* has been well studied. It is a hermaphrodite but during mating behavior one individual acts as the male and the other female. The snail lays eggs in strips of troughs is transparent jelly on various surfaces under water. These are most often seen on the underside of floating vegetation such as water lily leaves.

These snails are harmful pests of various valuable crops and directly decline the productivity/acre (hectare) area and indirectly decline the economy of the country. Severe damage caused to standing crops resulted into scarcity of raw material and create serious problem of food scarcity in that particular area. To save our valuable crops from the disaster of these pestiferous snails it is very essential to control their fecundity and viability.

A lot of research work has been done on the neurons of *Lymnaea stagnails* by using plant glycosides but little attention has been on the development of pond snail *Lymnaea stagnalis* with the effect of plant glycosides. Therefore, different types of glycosides have been used in this investigation to control the progeny of *Lymnaea stagnalis*, the pest of aquatic plants. The glycoside have been extracted from the plants of *Abrus precatorius*.

Materials and Method

The materials and methods used in this present investigation are as follows:

Procurement of experimental plant seeds and extraction of glycoside by soxhlet method

Seeds of Abrus precatorious were procured from M/s. Shidh Seeds Sales Corporation, Dehradun, India.

The seeds (*Abrus precatorius*) were washed, shadow dried, mechanically grinded into coarse pieces weighed 100g and then extracted with petroleum ether (B.P. $60-80^{\circ}$ C, procured from B.D.H.) and methanol (B.P. $645-655^{\circ}$ C, procured from B.D.H.) by Soxhlet method (adopted after Sharma, 1988). After completion of 35 cycles in the Soxhlet, the extracts were filtered.

After evaporation of solvent the extracted antiferlity agents were weighed 4.0g in *Abrus precatorious* seed extraction. The colour of the extracts is Brownish colour semi-liquid is state after extracted from *Abrus precatorious* seeds.

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Assistant Professor Department of Zoology, Dr. H. S. Gour (Central) University, Sagar (M.P.) *Email:payalchitra@gmail.com* 1% stock solution was prepared in distilled water and kept in dark coloured tightly closed glass bottles and stored in refrigerator (at 4^{9} C).

The stock solution was further diluted and used at room temperature for the detection of LC values and after calculated the sublethal concentrating the experiments were done in triplicate.

Glycosides are a diverse group of compounds. Many of which are coloured fluorescent and others are chromogenic. They are very reactive and hydrolysed easily by enzymes, acids, base or undergo auto-hydrolysis at higher temperature to give aglycones and sugars. The aglycone are usually triterpenoids, steroids, phenols, aldehydes, alcohols, acids, anthraquinones or flavonoids and the sugars are pentoses or hexoses. Thus, the term 'glycosides' is often used to describe a compound which gives rise to one or more sugar units (glycones) along with aglycone unit on hydrolysis.

The seeds of *Abrus precatorious* have been analysed to find out the glycosides.

The defatted seed powder (100 gm) of each plant was extracted with 95% ethanol for 20 hrs separately in a Soxhlet apparatus. The ethanolic extract on concentration gave a brownish syrupy mass. It was then successively extracted with acetone. The process of dissolving and precipitation was repeated several times and finally through a bed of activated charcoal. On removal of the solvent a brownish mass of glycoside was obtained in an yield of 7.08%.

General Description of Abrus precatorius:

Vernacular Name: Rakti, Ratti, Eng - Crabs Eye

Family: Papilionaceae

Known Medical Use:Plant used in fever, rheumatism, skin diseases and eye diseases.

Decoction of fresh roots is used 3 times daily in abortion.Seed paste with water and salt applied on boils to

• Seed paste with water and salt applied on boils promate suppuration.

Useful Part: Root, leaf and seed.

Local Name Gunchi

Locality: Throughout India.

1. Procurement and rearing of Snail

Sexually mature *Lymnaea stagnails* were collected from Botanical garden of Dr. H.S. Gour University, Sagar and Sagar lake by net. They were reared in troughs and fed regularly with aquatic vegetation e.g. *Hydrilla* to avoid the stress of starvation. The collected snails were acclimatized for 7 days under laboratory conditions (Subbarao, 1989). The young ones hatched from egg masses of *Lymnaea stagnalis* were used for the experimental purpose. The young ones snails were introduced to different concentration of plant glycosides through media. Each group was in triplicate of 50 snails.

2. Experiments with different dosage of plant glycoside

Newly young *Lymnaea stagnalis* were introduced via media to different concentrations of plant glycoside and data was summarized in Table no.1 (Probit analysis method adopted after Finney, 1971).

Results

1. Behaviour in the control groups

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

In control groups after immersion in water the snails *Lymnaea stagnalis retracted* body inside the shell. After a lapse of 3.5 minutes they extended the foot and body and crawled along the bottom and the walls of the container. While crawling the foot was well expanded, probasis and epipodial as well as tentacles were completely protruded out of the shell. The snails in this condition showed the movement of radula for feeding and a current of water through epipodial lobe for respiratory purposes.

2. Behaviour in Experimental Groups

Marked behavioural changes were observed when adult snails were introduced to the higher concentration of the plant glycoside as follows.

- (i) After immersion the gastropods retracted the body in the shell.
- (ii) The snails slightly protruded foot.

The treated snails showed dullness throughout the experimental duration. They were apathetic during the experimental period.

3. Mortality

In the present investigation in the control groups mortality started on 25^{th} days and the percentage of mortality range from 8% to 12% in *Lymnaea stagnalis* but it was observed that mortality started on 5^{th} day in all treated groups.

4. Shell, Visceral Hump and Respiration

The control snails were found submerged while the treated snails showed only pulmonary respiration. The shell became thin, fragile and semi-transparent owing to decalcification.

5. Mating and Oviposition

There was no hard and fast rule regarding the start of mating. While in the control groups mating was started after 1 or 2 days and it range from 6-30 hrs. while it varied in mating snails treated with different concentration of the plant glycoside.

6. Ovulation, Egg Masses and Egg Capsules

Ovulation took place but the egg masses showed fewer egg capsules in treated groups in comparison to the control groups where the number of egg capsules was generally 50-60 in *Lymnaea stagnalis* with some amount of gelatinous substance.

7. Fecundity

The dose and duration of treatment dependent a decrease in the rate of fecundity was observed in case of all the treated groups.

8. Percentage Viability

Normally in the control group's percentage viability was 96-98% in *Lymnaea stagnalis* but it decreases with the increase in concentration of plant glycoside intoxication. The data on fecundity, viability and mortality was recorded and summarized in Table No. 2.

Discussion:

In the present investigation the snails were apathetic during the experimental period and shown the decline rate of growth as reported by Subbarao (1975) in - some pestiferous snails after some pesticides treatment and Joshi (1987) reported that the growth of *Lymnaea luteola* has been hampered significantly by more than 25% at 1 ppb and more than 50% at 5% and 1 ppb of DDT. The decline in growth has been executed by the thinning of shell as the

flesh weight did not differ significantly in the control and treated groups as also observed in the present investigation.

In the present investigation it was observed that, higher concentration of plant glycoside, resulted into the fecundity and viabiliting zero percent as also reported by Bhide (1998) in *Lymnaea stagnalis* after thiourea, nuvan, methyl parathion exposure, Jain (2007) in *Lymnaea* spp. and *Gyralulus* spp after molluscicides exposure and Mahobiya (2012) in *Lymnaea* spp. after antitubuline drug exposure respectively.

In the experimental snails *Lymnaea stagnalis* were observed with plant glycoside and toxicity proved to be antifertility agents which decrease the fecundity of the snails in the present investigation.

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VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

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S.No.	Name of the plant seed extract	Concentration of the plant seed extract	Duration (hrs.)	Mortality (%)	Lethal Conc. value
1.		0.5%	96	100%	LC ₁₀₀
2.		0.25%	96	50%	LC ₅₀
3.	Abrusprecatorius	0.13%	96	Nil	LC ₀
4.		0.12%	96	Nil	Sublethal concentration

Table1: Data on Toxicity of Abrus precatorious Plant glycoside on the Adult Specimen of Lymnaea stagnalis.

Result: 0.12% Concentration of seed extracts of *Abrus precatorius* was considered as sublethal concentration throughout the experiments.

Table-2: Developmental	data of	[:] Lymnaea	stagnalis	after	treatment	with	different	concentrations	of	seed
extract of Abrus precatoriou	lS									

Groups	Conc. Of the Plant seed extract	Total No. of egg capsule s	No. of Egg capsules completed cleavage	No. of Egg capsules completed blastula	No. of Egg capsules complete d gastrula	No. of trochop -hore formed	No. of veliger formed	No .of veliger complete d torsion	Total No. of young snails hatched	No .of young snails survived upto adulthood	Perce ntage surviv ality of young snails
Control	No. of trace of any plant seed extract	50	50	50	50	50	50	50	50	49±1	98- 100%
Experime ntal	1.0% (LC ₁₀₀)	50	14±1	12±1	10±1	8±1	6±1	4±1	3±1	None	0.00 %
groups treated	0.5% (LC ₅₀)	50	36±1	34±1	32±1	30±1	29±1	28±1	27±1	24±1	48- 50%
with seed extract of	0.28% (LC ₀)	50	49±1	49±1	49±1	19±1	49±1	49±1	49±1	49±1	96- 98%
Abrus precao- rious	0.26% Sublethal concentrati on	50	50	50	50	50	50	49±1	49±1	49±1	98- 100%

Asian Resonance Assessment of the Water Quality of Rihand Reservoir, Sonbhdra (U.P.), Using Selected Physico-Chemical Parameters

Abstract

Rihand reservoir, a largest inland reservoir of Asia located in district Sonbhdra (U.P.) and some part of Singrauli district (M.P.) is constructed over Rihand River, in the tributary of Sone River. The variations in selected physicochemical factors were investigated for two years to determine the water quality of Rihand Reservoir, for Industrial, Agricultural, and Drinking and fish production. Five stations were chosen on the reservoir to reflect the effect of human activities, lacustrine and lotic habitats. Temperature, transparency, pH, dissolved oxygen, nitrate, phosphate, biological oxygen demand, chemical oxygen demand, total alkalinity, Sulphate, were analyzed monthly between June 2008 and May 2009 using standard methods and procedures. Unacceptable, high levels of assessment parameters were observed in many cases for other Indian reservoirs except for turbidity, dissolve oxygen, Alkalinity, pH, nitrogen and phosphate which were found in higher concentration above freshwater limits. Runoff of nitro-phosphate and sulphate fertilizers from nearby farm lands and washing of domestic animals, dungs from the watershed into the reservoir were found to have caused cultural eutrophication in the reservoir. The eutrophication was pronounced at Sampling Station due to impact of human activities on the reservoir, and with time, it will affect the water quality and fish production in the reservoir. The study concludes that Rihand reservoir has excellent water quality, high ecological status and passes chemical status. Eutrophication which was noticed to be a threat to the water quality should be arrested at the nick of time through denitrification and nutrient control to halt the degradation of the water.

Key words: Eutrophication, Fertilizers, Ecology.

Introduction

Water is an elixir of life. It governs the evolution and function of the universe on the earth hence water 'mother of all living world'. Majority of water available on the earth is saline in nature; only small quantity is fresh water. Expanding human population brought about by the opportunities of good water supply, irrigation, fish production recreation and navigation offered by Reservoirs has put enormous pressure and stress on the quality of water impounded by the reservoir. The impact of human activities in and around the reservoir is felt on the unique physical and chemical properties of water on which the sustenance of fish that inhabit the reservoir is built as well as to the functions of the reservoir. Water quality is determined by the physical and chemical limnology of a reservoir (Sidnei *et al.*, 1992) and includes all physical, chemical and biological factors of water that influence the beneficial use of the water. Water quality is important in drinking water supply, irrigation, fish production, recreation and other purposes to which the water must have been impounded.

Water quality deterioration in reservoirs usually comes from excessive nutrient inputs, eutrophication, acidification, heavy metal contamination, organic pollution and obnoxious fishing practices. The effects of these "imports" into the reservoir do not only affect the socio-economic functions of the reservoir negatively, but also bring loss of structural biodiversity of the reservoir. Djukic *et al.* (1994) have used the physico-chemical properties of water to asses the water quality gives a good impression of the status, productivity and sustainability of such water body. The changes in physical characteristics like temperature, transparency and chemical elements of water such as dissolved oxygen, chemical oxygen demand, nitrate and phosphate provide valuable information on the quality of the water, the source of the variations and their impacts on the functions and biodiversity of the reservoir.

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Department of Zoology, Govt. S.K.N.(P.G.) College , Mauganj, Rewa (M.P.) Email:dr.devendranpandey@ymail.com This study aimed at assessing the water quality of Rihand reservoir for drinking and fish production using some selected physico-chemical properties. The results will form the baseline for monitoring and tracking changes in the water quality as a result of the reservoir's natural dynamics over time or impact of men's activities on the reservoir.

Materials and Methods

Description of the Study Site

The Rihand reservoir is located in between 24^{0} N, 83^{0} E and $24^{0}2^{2}$ N, $82^{0}48^{2}$ E, with a surface area having 30×15 km. with the maximum depth of 25 m. (Fig. No. 1). The area of present study belongs to the district of Sonbhadra of Utter Pradesh state. Sonbhadra is the largest district having an area of 6788 Sq.Km. It lies in the extreme south-east of the U.P. state and north east of M.P., and is bounded by Mirzapur district to the northwest, Chandoli district to the north, Bihar state to the northeast, Jharkhand state to the east, Chhattisgarh state to the south and Madhya Pradesh state to the west. The district head quarter is in the town of Robertsganj.

Stations and Sampling

Water samples were collected from the different selected sampling site from the June 2008 to May 2009. Samples were collected in the middle hours of the day. Some physical characteristics of the water have been analysed at the sampling site itself. For analysis of other physico-chemical characteristics such as pH, alkalinity, Turbidity, conductivity, T.D.S., T.S., T.S.S. calcium hardness, total hardness, magnesium, chlorides, sulphate, nitrate, phosphate, sodium, potassium, dissolved oxygen, COD, BOD, were analyzed in the laboratory.

Physico-chemical characteristics of the water samples were done in accordance with the procedures described in standard methods for the examination of water and waste water (APHA, 1985), practical methods in water ecology and environmental sciences (Trivedi et al., 1987).water quality in warm water fish pond (Boyd, 1981) and work book on limnology (Adoni et al., 1985 and Neeri 1979).

Statistical Analysis

The observation data of physico-chemical parameters during the entire period of the study were treated statistically to determine the significant levels of their seasonal and spatial variations. Results are presented as means \pm standard deviation (S.D.) and the one way ANOVA tests were used to evaluate differences between means (confidence interval=95%).

Stalking is a continuous process, consisting of a series of actions, each of which may be entirely legal in itself. Technology ethics professor Lambèr Royakkers writes that:

"Stalking is a form of mental assault, in which the perpetrator repeatedly, unwantedly, and disruptively breaks into the life-world of the victim, with whom he has no relationship (or no longer has), with motives that are directly or indirectly traceable to the affective sphere. Moreover, the separated acts that make up the intrusion

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

cannot by themselves cause the mental abuse, but do taken together (cumulative effect)." (5)

From the above, we can say that Cyber stalking is the use of the Internet or other electronic means to stalk or harass an individual, a group of individuals, or an organization. It may include false accusations, monitoring, making threats, identity theft, damage to data or equipment, the solicitation of minors for sex, or gathering information in order to harass. The definition of "harassment" must meet the criterion that a reasonable person, in possession of the same information, would regard it as sufficient to cause another reasonable person distress. (6)



Fig.No. 1 Rihand Dam Map and Around the Industries

The mean monthly variation in the surface water temperature of the five sampling stations is presented in Figure 2. The temperature ranged between the lowest values of 5.82±0.40°C obtained from mean values of five sampling Station in January 2009 and the highest of 31.56±0.92°C obtained from mean values of five sampling Station June, 2008. Dry season temperature was significantly higher (P<0.05) than the wet season. No significant difference was seen among the sampling station and in one year. Secchi disc transparency was the highest mean value of sampling station 85.88±1.49 c.m obtained in May 2009 and lowest mean value recorded 22.26±5.26 c.m. in August of 2008 (Figure 3). During the dry season, Station 2 and year 2009 not significantly higher transparency (p=0.965).

Dissolved oxygen fluctuated between the lowest monthly mean of sampling sites 6.98±0.90 mg/L obtained in May 2009 and the highest monthly mean of sampling sites 10.86±3.16 mg/L recorded in July 2008 from (Figure 4). Statistical difference at P<0.0001 was noticed in the dissolved oxygen concentration among the stations. Chemical oxygen demand (COD) varied between 12.60±2.41 mg/L and 45.40±7.40 mg/L COD was not significantly higher in the dry season with mean of Sampling Station recording (Figure 5). There was no statistical difference in COD between the one year of study. Total alkalinity fluctuated between the lowest monthly mean of sampling sites 69.40±4.04 mg/L obtained in December 2008 and the highest monthly mean of sampling sites 167.00±6.40 mg/L recorded in May 2009 from (Figure 6). Total alkalinity showed there is a not significant difference between sampling sites (p=0.997).







The Hydrogen ion concentration fluctuated between the lowest monthly mean of sampling sites 7.74 ± 0.19 mg/L obtained in January 2009 and the highest monthly mean of sampling sites 8.98 ± 1.21 mg/L recorded in April 2009 from (Figure 7). There was no significant difference in the concentration of hydrogen ions between sampling site and months of year.

The highest monthly mean concentration of nitrate recorded was 0.060 ± 0.01 mg/L which was obtained from mean of sampling stations at the peak of the cold seasons January 2009. A decrease was observed in the rainy season with the lowest concentration of 0.048 ± 0.02 mg/L recorded from mean of sampling sits in August 2009 (Figure 8). ANOVA at P=0.0001 shows significant difference in the nitrate concentration during the seasons and within the stations.

The highest monthly mean concentration of phosphate recorded was 0.33 ± 0.01 mg/L which was obtained from mean of sampling stations at the peak of the cold seasons. A decrease was observed in the rainy season

with the lowest concentration of 0.19 ± 0.08 mg/L recorded from mean of sampling sits in July 2008 (Figure 9). ANOVA at P=0.24 shows no significant difference in the phosphate concentration during the seasons and within the stations.

The highest monthly mean concentration of sulphate recorded was 33.80 ± 12.21 mg/L which was obtained from mean of sampling stations at the peak of the cold seasons. A decrease was observed in the rainy season with the lowest concentration of 19.20 ± 7.66 mg/L recorded from mean of sampling sits in July 2008 (Figure 10). ANOVA at(p=0.0001) shows significant difference in the sulphate concentration during the seasons and within the stations.







The highest monthly mean concentration of B.O.D. recorded was 9.12 ± 1.54 mg/L which was obtained from mean of sampling stations at the peak of the cold seasons. A decrease was observed in the rainy season with the lowest concentration of 6.22 ± 1.79 mg/L recorded from mean of sampling sits in August 2009 (Figure 11). ANOVA at P=0.0001 shows significant difference in the

B.O.D. concentration during the seasons and within the stations.











Discussion

The physical and chemical factors investigated in this research have been used to assess the water quality of some African reservoirs (Nhiwatiwa and Marshall, 2007). The surface water temperature range was similar and compares well with the ranges reported for other African reservoirs (Talling, 1969). Meteorological conditions such as trade winds, sunshine durations and absorption of the solar radiation by the shallow reservoir water body might be responsible for the monthly variations and significant differences seen between the seasons. The temperature variations in the reservoir were normal for metabolic activities of organisms such as fish as reported by Boyd and Lichtkoppler (1979) and will not affect the water quality for drinking or fish production.

Secchi disc transparency was low in the rainy season at sampling site. This could be due to the washing of silts, sediments, debris, organic and inorganic suspended particles into the reservoir of which Stations received the highest run-off of these particles. High flood water of 2008-09 which brought in more sediment may account for the significant difference in transparency of the two years. Gliwicz (1999) noted that increased turbidity is associated with rainy seasons that bring in clay and other particles from the water shed. Higher transparency in the dry season may be due to settling of the particles at the bottom of the reservoir, while the highest transparency recorded in sampling site could be attributed to the stations' transition state between lentic and lotic habitations. The range of secchi disc visibility, 14.5 c.m to 87.5 c.m, reflects the depth of light penetration and this is good for a shallow reservoir as plankton and fish will thrive in this pelagic region, thus making food available to fish.

Dissolved oxygen is an important indicator of water quality, ecological status, productivity and health of a reservoir. This is due to its importance as a respiratory gas, and its use in biological and chemical reactions. Higher dissolved oxygen recorded in the rains could be as a result of low temperature and increased mixing of water. Tepe and Mutlu (2005) linked increase in dissolved oxygen in a reservoir in India to high run-offs occurring during the rainy season. The highest dissolved oxygen concentration recorded at Station B was a good pointer to the fact that the station is the most productive, with the highest water quality parameters and will support diverse organisms. Significantly lower dissolved oxygen in 2009 might be due to higher turbidity and increased suspended materials which affected dissolution of oxygen. This occurred from the high flood water of 2009 which brought in so much sediment. Human activities and high rate of decomposition at Station A might be accountable for the low dissolved oxygen concentration of the station. High temperature coupled with high rate of decomposition in the dry season may explain the low dissolved oxygen concentration recorded in the dry season. The range of dissolved oxygen recorded 6.2 mg/L -14.5 mg/L shows the water to be of good quality and will support fish production. Boyd (1979) reported that dissolved oxygen concentration of 3 mg/L to 12 mg/L will promote the growth and survival of fish in reservoirs.

The mean range of chemical oxygen demand for (10 mg/L - 53 mg/L) fell within permissible level for drinking water and fish production (Hach, 2003). APHA (1995), however, recommended COD levels of <2 mg/L in drinking water. High COD has been linked with pollution (Tepe *et al.*, 2005). The high COD level at Station E and in the dry season could have occurred due to high rate of organic decomposition resulting from human activities on the dam water which produce sewage and agricultural runoffs into the reservoir and this have negative impact on the water quality.

The total alkalinity of the reservoir is a reflection of its carbonates and bicarbonate profiles (Wetzel, 2001) with the likelihood of silicates and phosphates contributing to it. This is so; because phenolphthalein alkalinity was absent in the reservoir (Campbell and Wildberger, 2001). Higher concentration of total alkalinity in the dry season and at Station A could be due to higher carbon dioxide concentration and release of bicarbonates ions by sediments. The mean range of the total alkalinity (65–175 mg/L) compared favorably well with the range given for lakes and reservoir by USEPA (1976), and is an indicator to the good quality of the reservoir water. Suguna (1995) reported that total alkalinity above 40 mg/L is indicative of high productivity. Thus the reservoir will support good fish production.

Effects of human activities on the reservoir are much reflected on the variations seen in nitrate, phosphate and possibly sulphate concentrations. The high concentration of nitrate (0.081 mg/L) and phosphate (0.025 mg/L) recorded in Station D&A and that of sulphate (6-70 mg/L) could have come from leaching and run-off of nitrophosphate and sulphate fertilizers from nearby farmlands. The concentrations of these ions were higher during the rainy season; because the period is usually the peak of agricultural activities around the reservoir. Washing of cow dungs and bathing and washing with phosphate based detergents and soaps into the reservoir could have also caused the high concentration of the ions. These events led to cultural eutrophication of the reservoir with subsequent bloom in algae and changes to the water quality. Carpenter et al. (1998) and Carignan et al. (2000) reported that nonpoint source nutrients inputs from watershed are leading cause of eutrophication and water quality problems while Armengol et al. (1999) implicated sulphate in the eutrophication of reservoirs. Eutrophication is more pronounced in this reservoir due to its shallowness (Ekholm et al., 1997). The eutrophication could affect the water quality of the reservoir by giving rise to unpleasant taste and odour, colours the water, and affects the dissolution of other gases, most especially dissolved oxygen as a result of algal bloom. The eutrophication could also pose threat to fish production in the reservoir, because it may destroy food web, decreases biodiversity at higher trophic levels (Hanson and Butler, 1994), lead to disappearance of population (Gliwicz and Warsaw, 1992) and induces changes in yield and species composition (Miranda, 2008).

The fluctuations in surface water pH indicate the buffering capacity of total alkalinity. The slight basic (pH=7.2) in the dry season may be due to high carbon occurring dioxide concentration from organic decomposition. High water volume, greater water retention and good buffering capacity of total alkalinity may have been the reason why pH was in neutral or moderate alkaline medium during the wet season and for most part of the study. Using the pH as a water quality index, the Rihand Reservoir has poor water quality with the pH range of 7.2-10.5, since most natural waters have pH between 6.5 and 8.5 (Tepe et al., 2005). The pH range will allow survival of fish and its use as drinking water.

The surface water quality of Rihand Reservoir could be classified as excellent under class 1 of Prati *et al.* (1971) index and its ecological status of the reservoir is high, while its chemical status could be described as pass using the recently proposed Environmental Quality Standards (EQS) (WWI, 2005). Station B was the most productive one and its water quality was very high while Station C showed very high chemical status but with high turbidity and low transparency. In all, the ranges of physico-chemical properties of Rihand Reservoir are comparable to those found in polluted Indian reservoirs,

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

and are within the allowable limits recognized by WHO (1997) for drinking water supply as well as fish production. The only visible threat to the water quality and fish production is cultural eutrophication which was more pronounced at Station A as a result of human activities on the site. There is an urgent need to arrest the problem of cultural eutrophication in this reservoir to protect the water body, maintain its water quality and enhance fish production. This could be done through denitrification and nutrient control, which is one of today's focuses on applied limnology.

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vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

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Asian Resonance In vitro adventitious shoots regeneration from in vitro raised hypocotyls in Aegle marmelos (L.) corr.

Abstract

An efficient mass propagation method for *Aegle marmelos* was developed from *in vitro* raised hypocotyls of *in vitro* grown seedlings. In the present investigation, multiple adventitious shoot buds could be induced directly from *Aegle marmelos* hypocotyls explants inoculated on Murashige and Skoog (MS) medium containing BAP and IAA alone or in combination. Highest number of adventitious shoots and better plant growth were obtained on MS medium supplemented with 2.21 μ M BAP + 11.41 μ M IAA in combination with 67.87 μ M ADS. The regenerated shoots were successfully rooted on MS ¹/₂ medium supplemented with 4.92 μ M IBA. The *in vitro* raised plantlets were successfully transplanted to soil with 93% survivability under *ex vitro* condition. **Key words:** Hypocotyls; *Aegle marmelos;* Murashige and Skoog; Propagation; Adventitious shoot, ADS.

Introduction

The genus *Aegle* (Rutaceae) is native to India and distributed in all over India, from sub Himalayan forests, Bengal, Central and in Burma (Nadkarani, 1927). *Aegle marmelos* is the only member of the monotypic genus *Aegle* (Swingle 1943). The tree commonly known as *bael* is an important fruit tree belonging to the family Rutaceae with extensive medicinal uses in the indigenous medicine systems of India. The leaves are astringent, febrifuge, expectorant, and are reported to have hypoglycaemic and antiasthmatic properties (Nambiar *et al*, 2000). Leaf extract of *A. marmelos* is used as an antispermatogenic (Sur and Pramani, 1999) to cure jaundice (Gupta and Sharma, 1999). It also enhances the wound healing activity (Jaswanth *et al*, 2001). The unripe and ripe fruits are useful for curing diarrhoea, dysentery, and stomachalgia (Warrier *et al*, 1996). *A. marmelos* root is one of the ingredients of the popular ayurvedic preparations such as *Dasamula* and *Vilvadi lehya*. Compounds purified from bael have been proven to be biologically active against several major diseases including cancer, diabetes and cardiovascular diseases (Maity *et al*, 2009).

A. marmelos, being essentially cross-pollinated and seed propagated. Seeds have short viability. Vegetative propagation is not known except by root suckers are very slow and difficult. The germination percentage of seed was very low under natural and controlled conditions so an *in vitro* regeneration system from adventitious shoot formation are considered most suitable for genetic transformation to obtain transgenic plants.

Here, we present an adventitious shoot regeneration system for producing large number of plants from *in vitro* hypocotyls of *Aegle marmelos*.

Materials and Method

Fresh seeds of *Aegle marmelos* were collected from a single ripe fruit obtained from a matured tree situated at Pushkar (Rajasthan). The hard shell of the fruit was broken and seeds taken out. They were washed thoroughly in running tap water for 15 minute to remove the mucilagenous sheath. Seeds were Surface sterilized with Mercuric chloride (HgCl₂) 0.1% (w/v) for 10 minutes and subsequently rinsed 4-5 times with autoclaved distilled water (Islam *et al*, 2010). After this, cut the seed coats of seeds with the help of sterilized scalpel blade, inoculated in media and then shifted in a culture room. After 30 days sterile hypocotyls were decapitated just below the first pair of cotyledonary leaves and above the tap root to serve as explants.

Murashige and Skoog's (1962) basal medium (MS medium) containing 3% sucrose and gelled with 0.8% agar was used for all experiments. The hypocotyls explants were inoculated aseptically on MS semisolid medium containing different concentration of BAP concentration ranging between 1.11 μ M to 4.43 μ M (Table 1) with control. The culture were maintained incubated in a culture room maintained at 25± 2°C under 16/8 h light/dark cycle, 2000-2500 lux or lower light generated by cool white flourescent tubes (Philips, Mumbai, India) with 55–60% RH. After establishment of explants aseptically in culture media



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Plant Biotechnology Laboratory, Botany Department, Government College, Ajmer (Rajasthan). chhabimittal@ymail.com these will be subcultures on optimum concentration of BAP, 67.87 μ M ADS with IAA in the concentration ranging between 0.57 μ M to 11.41 μ M (Table 1).

The regeneration of roots from micro-shoots was achieved on IBA in the concentration ranging between 0.49 µM to 14.76 µM was added in MS 1/2 medium (Table 2). The rooted plantlets were gently washed to remove the agar sticking to them. Transfer the rooted plantlets into culture bottles containing autoclaved soilriteTM. Keep them under standard culture room condition for 15 days and their caps were gradually opened. After 15 days, transfer plants in green house, where humidity and temperature are maintained by using cooling fan and pad system. Keep bottles initially under high humidity region and then gradually expose them to low humidity region. Finally after one month the hardened and acclimatization plantlets were transferred to the field. Each experiment was repeated at least twice. Statistical analysis was performed on the results of each experiment and data were compared using analysis of variance.

Result and Discussion

Histological study showed high frequency adventitious shoot regeneration in *Aegle marmelos* hypocotyls segments. Shoot buds grew as normal shoots on multiplication medium in the same manner as did shoots derived from axillary buds. Cytokinins especially BAP was necessary for shoot induction in *Aegle marmelos* explants lacking pre-existing meristem. The role of BAP in adventitious shoot bud differentiation has been demonstrated in a number of cases using a variety of explants (Dong *et al*; 1991, Hossain; 1992, Islam *et al*; 1994 and 2006). Effectiveness of BAP to induce adventitious meristem organogenesis has been well documented in some other plant species, for example *Citrus aurantifolia* and *C. reticulata* (Perez *et al.* 1997), cumin (Tawfik and Noga 2001).

The role of auxins incorporated in the medium individually or in combination with cytokinins for shoot bud induction has been reported in a number of cases (Caboni et al., 2002; Qu et al., 2002; Koroch et al., 2003). Multiple adventitious shoot buds could be induced directly from the hypocotyl explants in Aegle marmelos with a variety of treatments. Hypocotyl segments inoculated on MS medium without any growth regulator produced only two shoots in 63% of explants. The hypocotyl segments on primary culture medium supplemented with BAP alone remained green and showed enlargement during first week in culture and developed small protuberances in next week. Further these protuberances developed into adventitious shoots within 3-4 weeks. Hypocotyl segments inoculated on a concentration range of BAP and 85.9 ± 0.14 % explants showed shoot regeneration on BAP 2.21 µM and each explant produced 12.5 ± 0.35 shoots in 2-3 week incubation period (Table 1). On this medium regenerated shoots were strong but leaf curling is occurred during the incubation period. Hossain et al. (1995) reported the adventitious shoot development from hypocotyl on MS medium supplemented with BAP (1.5 mg/l) and IAA (0.2 mg/l) and 79 % of explants produced shoots. In our experiments we observed incorporation of cytokinin and auxin (BAP and IAA) with 67.87 µM ADS were more effective to enhance percentage response of explants for adventitious bud induction in vitro. It was found that 85.1 \pm 0.42 % explants showed adventitious bud regeneration on BAP $(2.21 \ \mu M)$ + IAA $(11.41 \ \mu M)$ and each explant

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

produced 27.1 ± 0.60 micro-shoots (Fig. 1) in 2-3 week incubation period (Table 1). Little to moderate callus also developed on cut ends of the explants but callus development did not hinder the development of shoots.



Fig. 1 Adventitious bud regeneration on MS medium + BAP (2.21 μ M) + IAA (11.41 μ M) + ADS (67.87 μ M)

Table 1. Effects of various concentrations and combinations of cytokinins and auxins on adventitious shoot regeneration from hypocoytl explants of *Aegle marmelos*.

PGR (µM/l)	% response of explants (Mean ± SD)	No. of adventitious bud/ explants (Mean ± SD)	Length of adventitious shoot (mm) (Mean ± SD)
BAP			
0.0	63.0 ± 0.39	2.3 ± 0.49	11.66 ± 0.09
1.11	66.1 ± 0.38	8.1 ± 0.59	13.33 ± 0.49
2.21	85.9 ± 0.14	12.5 ± 0.35	16.66 ± 0.24
3.32	76.8 ± 0.64	10.1 ± 0.59	15.0 ± 0.35
4.43	73.5 ± 0.57	8.1 ± 0.11	13.33 ± 0.21
BAP + IAA			
0.57	66.1 ± 0.38	12.3 ± 0.23	18.0 ± 0.14
1.42	69.2 ± 0.56	12.5 ± 0.40	21.0 ± 0.07
2.85	73.0 ± 0.26	13.1 ± 0.60	23.57 ± 0.24
8.56	78.2 ± 0.31	14.2 ± 0.19	24.78 ± 0.05
11.41	85.1 ± 0.42	27.1 ± 0.60	30.71 ± 0.19

Each	value	represents	Mean ±	SD o	of five	replicates.
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S. no.	IBA (µM)	IBA (mg)	Rooting % of shoots (Mean ± SD)
1.	0.1	0.49	39.37 ± 0.44
2.	0.5	2.46	24.77 ± 0.16
3.	1.0	4.92	81.73 ± 0.05
4.	1.5	7.38	29.14 ± 0.60
5.	2.0	9.84	21.13 ± 0.76
6.	2.5	12.30	10.55 ± 0.39
7.	3.0	14.76	9.55 ± 0.31

 TABLE 2. Effect of different concentrations of IBA in MS half medium on rooting of adventitious shoots raised from hypocotyls of *Aegle marmelos*.

Each value represents Mean \pm SD of five replicates.

Regenerated shoots excised 3 cm or more were cultured on MS $\frac{1}{2}$ medium supplemented with IBA in the concentration ranging between 0.49 μ M to 14.76 μ M (Table 2). The maximum percentage of root induction (81.73 \pm 0.05 %) was found in the MS $\frac{1}{2}$ medium supplemented with IBA 4.92 μ M (Fig 2). When all rooted plantlets were transferred into culture bottles containing autoclaved soilriteTM and plantlets were well established in the soil. The rooted micro-plants from all the combinations were transferred to field conditions and their survival status were recorded separately.

The micro-plants rooted on MS $\frac{1}{2}$ strength medium with IBA 4.92 μ M showed highest –survival under *in vitro* (95 to 96 %) and *ex vitro* hardening (93 to 94 %) stages. About 89% micro-plantlets successfully survived under field conditions.



Fig. 2 Rooting on MS $\frac{1}{2}$ + IBA 4.92 μ M.

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Asian Resonance Estimation of Air Pollution: A case study of Kanpur city in India



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Abstract

In the present study ,ambient air quality of Kanpur city was monitored by High volume sampler .The selected Parameters to judge the quality of air were sulphur dioxide (so₂), Nitrogen dioxide (No₂), Respirable suspended particulate (RSPM) and suspended particulate matters (SPM). Monthly air sampling was done for a period of 24 hours which gives a fair idea of pollution load carrier by the air. The monitoring data was collected from five sites randomly selected in Kanpur city.

Keywords : So₂, No₂, SPM, RSPM

Introduction

Air pollution is a common problem and has acquired great concern globally due to manifestation of technological and scientific innovations in various fields in addition to diverse activities of human beings for their sophistication. Every year large quantities of toxic waste are discharge into the Environment from the ever increasing production of goods and from the burning of fossil fuels to generate the energy needed to sustain Industrial and domestic activities .The unplanned growth development and vehicular boom have deteriorated the ambient air quality . Problem of vehicular pollution is rising due to increase in their number. Sulphur dioxide, Nitrogen dioxide and Suspended particulate matter is regarded as major air pollutant in India (Agarwal and Singh,2000).The urban population is mainly exposed to high levels of air pollution including metals because of high level of motor vehicles emissions, which is also the main source of fine and ultra fine particles (Sharma et al.,2006) ,which influence the air quality These particles can penetrate deep into respiratory system, and studies indicate that the smaller the particle, more severe the health impact (pope et al.,1995).

Kanpur is the largest and second most polluted city in the state of Uttar textiles , heavy in India. All the important industries such as Pradesh engineering, tanneries, fertilizer and leather are situated in the heart of the city .High industrial activity and the fleet of mixed vehicles are the two main contributing factors for urban air pollution in the city. Badly maintained roads, a mixed traffic pattern, and road encroachment aggravate the impact of vehicular pollution in the Kanpur. Diesel driven tempos are the major portion of the public transport system, causing heavy noise pollution as well as smoke emission in the city. Another source of air pollution in Kanpur is domestic fuel. Use of coal, wood, cow dung etc., in the slum settlements and low income group (LIG) colonies along the railway yard generate localized smoke problem, which effect visibility and cause eye irritation. Such situation needs continuous monitoring of ambient air quality and looking at the graveness of the situation the present study has been carried out.

Materials and Method

Five sampling sites were selected in Kanpur city on the basis of different direction

- **Jajmau** (located in the east of Kanpur)
- Bada chauraha (located in the centre of Kanpur)
- Kalyanpur (located in west of Kanpur)
- **Tilak Nagar** (located in the north of Kanpur)
- Kidwai Nagar (located in the south of Kanpur)

Sampling and Procedure

In the present study ambient air quality is monitored using high volume sampler was (packwill Multistage sampler) Eight hour daily for suspended particulate matter (SPM)and gaseous pollutant in winter, summer ,monsoon with frequency of once in a week. For suspended particulate matter, the ambient air was filtered through glass microbe filter paper GF/A(20.3x25.4cm). The SPM present in the air thus got deposited on the surface of filter paper. The filter paper was reweighed after sampling, which gives the amount of SPM in the air during that

time period and this concentration of particulate matter in ambient air was then computed on the net mass collected, divided by the volume of air sampled.

For gaseous pollutant (so₂ and No₂), sampling was done at an interval of four hr in a day. So₂ concentration was analyzed by modified west and gaeke method (1956) pararosaniline method. In this method so₂ was absorbed in absorbing solution of tetrachloromercurate solution and form a complex of dichlorosulphitomercurate. The complex was made to react with pararosaniline and formaldehyde to form intensely coloured pararosaniline methyl sulphonic acid .The absorbance of the solution is measured at wavelength of 560nm. No₂ concentration in ambient air was monitored by modified Jacobs and hochheiser method No₂ was absorbed in the absorbing solution of sodium hydroxide and sodium arsenite to form a stable solution of sodium nitrite and the absorbance of the solution is taken at 540nm.

Results and discussions

The study has shown variation in the pollutant levels during winter, summer, and monsoon season in the city ambient air quality.

Sulphur dioxide (So₂) :The mean value of so₂ at Jajmau, Bada chauraha, Kalyanpur, Tilak nagar and Kidwai nagar was 38.65,29.87,29.65,14.00,22.28 μ g m-³ in winter,32.23, 28.59, 22.76, 12.27, 18.18 μ g m-³ in summer,30.92, 25.62, 20.26, 11.25, 18.26 μ g m-³ in monsoon seasons respectively .According to NAAQS the permissible limit of So₂ is (80 μ g m⁻³) and data's of all sites shows that the average level of SO2 is below the prescribed limit.

Nitrogen dioxide (No₂): The mean value of No_2 at Jajmau , Bada chauraha, Kalyanpur, Tilak nagar, Kidwai nagar is 40.46, 41.72, 35.16, 44.50, 45.16 in winters, 41.4, 39.8, 38.3, 37.5, 38.1 in summers, 38.17, 37.02, 32.94, 37.36, 37.78 in monsoon seasons respectively

The average level of NO₂ was below the prescribed limit of NAAQS ($80\mu g m^{-3}$). The mean concentration of No₂was observed maximum in kidwai nagar in winters and minimum in Bada chauraha in monsoon.

Suspended particulate matter (SPM): The mean value of SPM at Jajmau, Badachauraha, kalyanpur, Tilaknagar, Kidwainagar is 493.69, 503.42, 469.01, 482.70, 492.61 in winters, 487.91, 497.67, 460.45, 472.90, 473.2 in summers, 439.5, 427.5, 432.17, 455.02, 464.89 in monsoon season respectively. SPM was found to be highest in Bada chauraha in winter and minimum in kalyanpur in monsoon season.

In the above study the concentration of SPM, NO_2 and So_2 was maximum in winter in comparison to summer and monsoon season. During winter season there is increased atmospheric stability, which in turn allows for less general circulation and thus more stagnant masses. It prevents an upward movement of air , hence atmospheric mixing is retarded and pollutants are trapped near the ground . Secondaly, cold starts in winter lead to longer period of incomplete combustion and longer warm up times for catalytic converter, which generates more pollution (Faiz et al., 1995).

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VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

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Asian Resonance Role of Wireless Technologies in ecommercialization of Indian Rural Market -A Hope for Rural Market



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Abstract

When discussing the impact of e-commercialization among Indian Rural Market there is a need to equally look at the process and the access issues. Access is related to machines, communication tools and technologies such as Win MAX, GSM, and IP because the e-commercialization is implemented with the help of these technologies. Process is about participant, communication and people and issues such as their needs, content and language and computer knowledge. In this paper we focused on the issues related to ecommercialization of Indian rural market as well as the technologies that are used in this implementation and also what is the role of these technologies in the progress of e-commercialization. There are lots of technical challenges are associated with the implementation of these technologies so how wireless technologies implemented in rural areas such that it can use in the ecommercialization of Indian rural market.

Keywords: e-commercialization, WI-FI, Spectrum, Rural market, Ze Big.

Introduction

Inclusiveness is a growth mantra for policy makers not in the India but all across the world. There are huge gap between Indian rural and urban markets. Elimination of this divide is needed so that to have balanced growth of country. "Rural commercialization" for the purposes of this symposium refers to a virtuous cycle in which rural Indian intensify their use of productivity-enhancing technologies on their farms, achieve greater output per unit of land and labor expended, produce greater farm surpluses (or transition from deficit to surplus producers), expand their participation in markets, and ultimately raise their incomes and living standards. This is the vision of commercialization explored in this paper. This paper examines multiple aspects of the linkages of Indian rural households to national and international markets and how to improve these linkages to sustain improved rural livelihoods. Supportive government investments and well-functioning private and public market institutions, together with foresight in the design of agricultural policies, are required to take advantage of market opportunities to sustain increased agricultural output and raise rural incomes. Our analysis supports a multi-dimensional agenda to address the constraints that keep markets from serving the rural population and to enhance their participation in the domestic and global economy. Key policy issues and research needs are identified for effective policy design of domestic infrastructure and institutional development and for the performance of international agricultural and food markets. Complementary analysis is also needed addressing a wider set of markets affecting the poor, particularly those for labor, credit and land. E-commercialization plays an important role in the development of the rural market.

1: e-commercialization in the Indian Context:

e-commerce has become a dynamic force changing all kinds of business operations worldwide. The related concepts and business practices not only influence communications, the routines of daily life, and personal relationships, they represent opportunities for initiating new international and domestic business ventures. But exploiting these opportunities challenges conventional notions of business management, because e-commerce changes the characteristics and rules of business competition through electronic flows of information and money. Organizations should seek and embrace these opportunities, employing effective strategies and scarce resources, along with technological and managerial expertise, to position themselves in the increasingly Internet-influenced world. Revolutionary changes had occurred in the agrarian property relations towards the end of the 18th century. This was over a period of time, followed by a commercial revolution in the agricultural sector. Commercialization of agriculture became prominent around 1860 A.D. This brought about a change from cultivation for home consumption to cultivation for the market. Cash transactions become the basis of exchange and largely replaced the barter system. A significant feature of commercialization of agriculture in India was the substitution of commercial non-food grains in place of food grains. George Byn records that between 1893-94 to 1945-46, the production of commercial crops increased by 85 percent and that of food crops fell by 7 percent. This had a devastating effect on the rural economy and often took the shape of famines. Coming to the impact of the commercialization of agriculture, normally speaking, it should have acted as a catalyst in increasing agricultural productivity. But, in reality this did not happen due to poor agricultural organization, obsolete technology, and lack of resources among most peasants. It was only the rich farmers; who benefited and this in turn, accentuated inequalities of income in the rural society. Further, increasing demand for some of the commercial crops in other foreign countries gave impetus to commercialization of agriculture.

2: Need of e-commercialization:

Mahatma Gandhi said "India lives in villages". Most of the people in village are depend on agriculture allied agriculture activities. Although agriculture contributes one fifth of the gross domestic product in India but in this age all the villagers cannot earn their livelihood from the agriculture. Other sources of employment are limited in Indian rural areas so e-commercialization provides new platform to the rural population for employment and reorganization in the global market.ICT can play an important role in the proper development of ecommercialization of rural market. The basic factors that generates the need of e-commercialization are given as-

- 1. About 70% people are living in 638588 villages in India but this rural population cannot match the fast pace of economic growth because of income disparities and continuing high level of poverty.
- Rural masses are information ally poor ecommercialization provides information at right time which enhances productivity and bring prosperity in rural areas of India.
- By providing latest information about the agriculture, market, education, and knowledge about various schemes and projects launched by the government for the welfare of rural areas social economic conditions of Indian rural areas can be improved.

3: Why this e-commercialization becomes popular:

A network infrastructure with pure connectivity alone is not enough to enhance the socio-economic class of a community. Therefore, simultaneous development of innovative applications and new service models are needed. As ubiquitous wireless technologies and services continue to expand, it is necessary to design new and appropriate applications. The social goal of ubiquitous connectivity is to provide increased access to information for all members of the community; its economic goal is to develop information as a commodity along with knowledge products and services ^[5]. The confluence of these two goals brings together people, information infrastructure, content, and applications India for long has been favorite destination for e-commercial centers over past several years. The various reasons behind it are explained below-

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

3.1: **More opportunities:** There are many opportunities in rural shoring, because of this fact the e commercial company are moving for rural shoring. It is because of the youth in the rural areas it offers great opportunities to serve in the rural area with better packages.

3.2: Low attrition rate: The second important factor behind the need of e- commercialization is its low attrition rate. This has encouraged many e- commerce centers to shifted towards the rural areas.

3.3: **Low infrastructure cost:** Because of cheap resources are available in rural areas it has becomes the important factor that generates the need of e-commercialization in Indian rural market.

3.4: Other factors: some other important factors are given as-

- a) Cost efficiency.
- b) Corporate social responsibility.
- c) Generate employment in rural areas.
- d) Skill development.
- e) Leverage talent of women of rural areas.
- f) Scalability.

4: Additional Challenges of Rural ecommercialization

Rural populations in most developing countries are mainly engaged in small-scale agriculture or Agriculture-related activities and are generally poorer than their urban counterparts. The characteristics of rural markets are largely determined by the spatial, temporal, and covariant nature of most rural economic settings, and include the following inherent impediments to efficient markets:

- Low population density, small average loans, and low household savings, which increase the transaction costs per monetary unit of financial intermediation.
- Lack of infrastructure (communications, electricity, transportation, etc.), limited social services (education, health, etc.), and low integration with complementary markets result in highly fragmented financial markets that involve high costs of overcoming information barriers and limit risk diversification opportunities.
- Seasonality of agricultural production and susceptibility to natural disasters (such as flood, drought and disease) heighten the probability of covariant risks (in prices and yields) affecting client incomes and add to the costs of rural financial intermediation.

The combination of these specificities leads to increased transaction costs and risks for any wireless service provide which wanting to serve rural clients. For these reasons, many e-commerce institutions have largely avoided serving rural areas.

5: Using ICTs More Strategically for Rural Market Development

According to India's first Social Development Report a large proportion of Indians are still below the poverty line: 26% or about 260 million (193 million in rural and 67 million in urban areas). The poverty is increasingly concentrated in a few geographical locations and among specific social groups. The incidence of poverty as per

Asian Resonance

2009-2010 figures, Punjab state has the lowest of 6.16%, followed by Haryana at 8.74% and Kerala at 12.72%. Orissa state has the highest incidence of poverty of 47.15%, followed by Bihar at 42.60% and Assam at 36.09%.

Though, poverty levels have shown a decline, there is huge disparity among social classes with percentage of the poor among Scheduled Tribes being 43.8, Scheduled Castes 36.2 and Other Backward Classes 21 (Dhar, 2010).

India/State/Union Territory*	Population			% Rural population
	Total	Rural	Urban	
India	1,027,015,247	741,660,293	285,354,954	72.22
Jammu & Kashmir	10,069,917	7,564,608	2,505,309 ¹	75.12
Punjab	24,289,296	16,043,730	8,245,566	66.05
Delhi*	13,782,976	963,215	12,819,761	6.99
Uttar Pradesh	166,052,859	131,540,230	34,512,629	79.22
Bihar	82,878,796	74,199,596	8,679,200	89.53
Assam	26,638,407	23,248,994	3,389,413	87.28
West Bengal	80,221,171	57,734,690	22,486,481	71.97
Orissa	36,706,920	31,210,602	5,496,318	85.03
Madhya Pradesh	60,385,118	44,282,528	16,102,590	73.33
Maharashtra	96,752,247	55,732,513	41,019,734	57.60
Andhra Pradesh	75,727,541	55,223,944	20,503,597	72.92
Karnataka	52,733,958	34,814,100	17,919,858	66.02
Kerala	31,838,619	23,571,484	8,267,135	74.03
Tamil Nadu	62,110,839	34,869,286	27,241,553	56.14
Pondicherry*	973,829	325,596	648,233	33.43

 Table 1: Rural-Urban Distribution of Population – India and Select States

¹ Global Information Technology Report (2010), Oxford University Press, Oxford. , pp. 58-59

India, over the past decade, has become a test bed for innovations in information and communication technologies (ICT) serving the rural user. Various reasons explain this emergence. The most obvious is the search for a solution to what has long been an intractable problem: that rural India has remained poor while the rest of the country has moved ahead. The hope that ICT can surmount at least some of rural India's social, political, and administrative challenges and create a viable technology for the provision of health, education, and other social services is thus ICT's strongest calling card. An additional expectation is that ICT can be used innovatively to improve access to the large, underserved market that rural India's 700 million people represent, especially considering that India has the resources to build an ICT infrastructure, i.e., its large, skilled, cost-efficient IT workforce.

6: Scope of e-commercialization

Rural markets in India constitute a wide and untapped market for many products and services which are being marketed for the urban masses. There is a demand for telecommunication services to be provided to in these areas. Till now it was government which was trying to reach the villages through various initiates, but the rural tele-density is very poor and can be improved only through the introduction of modern and suitable technology along with participation from the private operators. The paper here would like to make a strong case for the use of mobile technology for rural areas versus the land line, and that the initiative has to come from the private telecom operators rather than the government end. The various marketing issues related to marketing of telecommunication services in rural areas area seen through the 4 as framework and the experiences of other countries studied for learning ecommercialization permits the fast sharing of ideas and techniques through the means of information technology. A new product will only succeed if-

- 1. It satisfies a customer's needs, wants and desires.
- It can be economically produced and sold at the right price.
- delivered to the market through appropriate distribution channels within the window of market opportunity.
- 4. Satisfies applicable safety or performance criteria and delivers lasting values.

E-commercialization helps in sharing the ideas, innovations and market demand to manufactures and researchers who want to make reputation in market and earn profit by selling their basic ideas. However patents, copy writers and other standards limit their free flow use in market. New policies should be formed to make the feasibility of part copying the ideas for public interest.

7: Role of Wireless technologies in ecommercialization

The world of wireless telecommunications is rapidly evolving. Technologies under research and development promise to deliver more services to more users in less time and it helps the e-market in rural areas. The role of wireless technologies in the process of ecommercialization can be studied under following points-

• India has emerged as a significant force around the world fueled by its rapid growth last decade. The economic growth has taken place concurrent to its explosive growth in communication sector. The

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

wireless technologies play an important role in this economical development.

- The latest wireless technologies have capability required to get broadband to all villages so that e-commercialization rate can be increased and rural market of India will become the important part of global market.
- Some of the rural areas have small cottage industries which produce traditional handicrafts which often have a great demand in the other areas or sometimes in other countries. In our framework, the newer wireless technologies could be used for delivering the demands from outside and also the information about exporting these traditional goods. At the same time, information about other goods and products could be supplied to the rural areas. So, it could be a means of expanding ecommerce even in the rural areas.
- Farmers in India are perennially affected by fluctuations in the commodities market. However, the information needed to manage risk and track price updates and trends in commodity trading in the volatile global market were not available to them. Connectivity will help them check weather forecasts and register the prices of their agro-products at the nearest government market or futures exchange. Farmers can also purchase fertilizers, herbicides, and other raw materials for their agricultural work.

8. Issues Related to Implementation of Wireless Technology in Indian Rural areas

A. Accessibility

For most rural areas lack of access to advanced voice and data services is a barrier to network readiness. Within the next few years those who do not have access to the next generation of broadband-driven communication technologies, such as Voice-over Internet Protocol (VoIP), video telephony, and Internet protocol television (IPTV), will beat a great disadvantage. The Indian Government need to build a broadband communication infrastructure that is accessible to all, in order to encourage social service and e-government applications.

B. Availability

Wi-Fi has become the most common use of unlicensed bandwidth for so-called "hotspot" or "hot zone" or "hot city" type of coverage. This is because of the widespread availability of Wi-Fi radios that comply with IEEE 802.11b and the upcoming 802.11g/standards. Wi-Fi has 100% global recognition and has become the single networking standard for all developers, equipment manufacturers, service providers, and end users. The main advantage with Wi-Fi is that large-scale, service-level roaming between different Wi-Fi providers is possible, as Wi-Fi certification has become a de facto standard for IEEE 802.11-based products^[13].

C: Affordability

The benefit of using Wi-Fi in the last mile is that the client device is extremely inexpensive due to the large volume of production. Capital investment is also costeffective, providing greater flexibility than traditional wired communications, which in turn results in lower prices for Wi-Fi broadband services. Standardization and interoperability between different vendor products have lowered Wi-Fi prices and facilitated its rapid penetration from a niche to a mass market worldwide. For the next few years at least, Wi-Fi will proliferate rapidly as a last-mile option and deliver wireless broadband access at prices dramatically lower than Win MAX.

09: Technical Challenges

There are some operational and technical challenges for implementing e-commercialization in rural India that are summarized as-

- Primary installation costs might be a bit high for the developing countries to bear.
- Detailed planning is required to decide which areas should have kiosks, which areas should be chosen for deploying wireless sensors etc.
- Computer literate people are required at each village kiosk. So, some of the people should be trained for this.
- Some rural areas don't have good communication facilities. Roads are often not suitable for the movement of heavy vehicles like the wireless access point carrier buses or MAPs.
- In disastrous situations like, storm, heavy rainfall etc. the wireless technology might not come as useful

Conclusion

Any new system is often expensive and has some preliminary installation costs. But, once it is set up, it could run smoothly and serve for the greater benefits. As wireless technologies are growing rapidly to replace wired systems in many sectors and to make life easier, we believe that, our proposed framework could play a key role for the rural development by providing various e-services to the village inhabitants. In comparison with other existing systems, we believe that, this framework would be helpful to provide cost effective tele-medicine facilities to the people in the rural areas. To provide the best connectivity in a short period of time, the emerging wireless technologies should be positioned to reach every village, town, and city in India, thereby enabling a modern high-tech network infrastructure across the country. This kind of fully integrated, modern broadband wireless infrastructure throughout all tiers of the economy will foster equal and sustainable socio-economic development.

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VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

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Asian Resonance Need of Work-Life Balance to Manage Job Stress among Indian Women Professionals

Abstract

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India is a service destination for numerous global business firms and it is evident that the boom in her economy is a more recent phenomenon which puts the workforce in greater stress than ever before. The term work/life balance has become a buzz word of today's era. Most workers today, regardless of gender, have family responsibilities, and most married workers, regardless of gender, have an employed spouse. But jobs are still designed as if workers have no family responsibilities. Most of the Indian professionals find it difficult to cope with the stress levels as many of them are required to work in night-shifts, moreover the entry of a large percentage of women into the workforce is adding to the complexities in Indian Corporations. This article provides an insight on the need of work-life balance to manage stress among Indian women professionals, where their lives become a juggling act that included multiple responsibilities at work and daily routine responsibilities of life and home. This helps to illuminate the work-life imbalance of women employees and their role ambiguities. Work-life balance & stress management strategies if adopted will be valuable tool in this transformation.

KEYWORDS: Job stress, Work-life balance, Women professionals

Introduction

Work-life balance is the term used in the literature to refer to policies that strive to achieve a greater balance between work and home responsibilities. Increasingly, many employees and organizations nowadays are viewing work-life balance as an important issue. In today's world, where every individual has to balance conflicting responsibilities and commitments, work-life balance has emerged as a predominant issue in the workplace. In fact, the frustrating search for work life balance is a frequent topic of conversation among men and women alike. The term is especially significance for Indian women who face a complex set of demands on the roles played by them at different level and places. The Indian way of life is highly saturated with various cultural, religious and societal enigmas and demands, which when the most iron - willed and strong hearted women will find a change to defy. Work-life imbalance usually arises out of a lack of adequate time or support to manage work commitments as well as personal and family responsibilities. Meeting the competing demands of work and family is not only tiring but can be stressful and can lead to sickness and absenteeism. It inevitably affects productivity. Work-life balance, which is considered as a state of well being to handle multiple responsibilities, has become a critical factor for bringing individual and organizational success. Work-life balance is best achieved when an individual's right to a fulfilled life, both inside and outside paid work, is accepted and respected as the norm, to the mutual benefit of the individual, business, and society.

Fig 1. Women's progress in professional career involves personal sacrifice



Many people assume that job stress related to work hours, demands, pace and other pressures is on the rise. Stress and work-life conflict are intertwined, and the latter has been documented as both a cause and an outcome of job stress. Stress is one of the more commonly documented outcomes of demanding work. Job stress is increasingly recognized as a determinant of employee health and productivity.

2. Work Life Balance in the Indian Context

Research conducted by Rout, Lewis and Kagan (1999) finds that women in India experience ²considerable pressure, in the morning before going out to work and after work, to do all that is necessary for the family. Komarraju(1997) notes that the relative absence of an infrastructure that provides a reliable supply of electricity, water, and time-saving, modern-day kitchen and other appliances, renders the performance of domestic responsibilities a burden, particularly for women in dual career families. In addition, inflexible working hours and the absence of childcare facilities constitute impediments rather than sources of support for employed mothers (Bharat, 2001). Though in urban India, things have started improving, yet they are not adequate. For maintaining work-life balance, social support plays a very significant role for women managers. In societies, where there is low gender egalitarianism, such as in India, spousal support is extremely important for women (Rosenbaum and Cohen, 1999). But unfortunately, even though Indian husbands are supportive of their wives' participation in the workforce, they are yet to assume responsibility for sharing domestic chores (Ramu, 1989). In India, instrumental support for most working women come in the form of hired domestic helps or female members of extended families. Although hired domestic helps in urban areas of India have been noted to be expensive and unreliable, they still continue to be a major source of support for the growing number of nuclear families who live far from their relatives (Sekaran, 1992).

Fig 2:Top priority for women among the family, money, and career.



Although conflict between career and family roles can be a potential source of stress for both women and men managers, it affects women in India more than men because of many reasons. While social, legal and economic reforms have helped women to join the workforce in India, the continuing influence of normative attitudes and values have prevented them from altering the perceptions of the society as well as their own regarding their sex-roles. The expectation that women should give priority to their familyneeds leads to higher levels of personal role-overload for women than men.

² Knight , J (1994). "Motherhood and Management," in Morgan Tanton (Ed.), *Women in Management: A Developing Presence*, New York: Routledge

Asian Resonance

3. What is Work Life Balance?



2:Rout, U R; Lewis, S and Kagan, C (1999). "Work and Family Roles: Indian Career Workmen in India and the West," *Indian Journal of Gender Studies*, 6(1), 91-105.

WLB can be defined as "A state of equilibrium in which the demands of both a person's job and personal life are equal." Work Life balance is a phenomenon that occurs to those who are ³gainfully employed and have to manage their personal life.WLB does not mean an equal balance. Trying to schedule an equal number of hours for each of our various work and personal activities is usually unrewarding and unrealistic. We are all engaged in a number of roles everyday and we hold a number of roles throughout our life. Life conflict occurs when we are unable to give our "many roles" required time and energy as a result of which participation in one role is made increasingly difficult by participation in another. So, there is a need of Work life balance. Work-life balance is the daily Achievement and Enjoyment in all spheres of life namely work, family, friends, health and spirit. Best individual work- life balance will vary over time, often on a daily basis. The right balance for today will probably be different for tomorrow.

4. What is Stress?

The term stress is basically from physical science where it means the force placed upon an object to cause damage, bending, or breaking. In case of human beings stress is often used to describe the body's responses to demands placed upon it, whether these demands are favorable or unfavorable. Anything that causes stress is called a stressor.

5. Need for Balancing Work and Life

In today's world, where every individual has to balance conflicting responsibilities and commitments, work-life balance has emerged as a predominant issue in the workplace. Work-life imbalance usually arises out of a lack of adequate time and/or support to manage work commitments as well as personal and family responsibilities. Meeting competing demands of work and family is not only tiring but can be stressful and can lead to sickness and absenteeism. It inevitably affects productivity. Work-life balance, which is considered as a state of wellbeing to handle multiple responsibilities, has become a critical factor for bringing individual and organizational success. Work-life balance is best achieved when an individual's right to a fulfilled life, both inside and outside paid work, is accepted and respected as the norm, to the mutual benefit of the individual, business, and society. A balanced life conceives of work and family as mutually reinforcing. Organizations, aware of the positive implications of balanced life, have begun considering family experiences as part of what workers bring to their workplace to enrich their contributions to work and organizations and *vice versa*. When an employer adopts policies favourable to work-life balance, it is likely to be perceived by the employee as a huge incentive, which can motivate them as much. Past studies indicates that women seem to be more strongly affected by psychosocial stressors related to cardiovascular disease and depression as well as by direct and indirect effects of chronic stress compared to men. Successfully achieving work life balance while ultimately creates a more satisfied workforce that contributes to productivity and success in the workplace.

Asian Resonance

6. Role Overload

A woman plays a multitude of roles in Indian society such as spouse, parent, housekeeper, employee and entrepreneur. These roles come with their own set of expectations and commitments. Working women face more difficulties due to two jobs i.e. paid work outside the home and unpaid domestic labor and child-care inside the home, both of which may occupy many hours each day and energy – once a woman spends this on one role, she has that much less for the other roles. **This led to role overload, which ultimately lead to work life imbalance and finally stress.**



7. Management Of Stress By Women Professionals

Women who undergo periods of intense stress need to make sure they have sufficient recovery periods along the way to help replenish lost energy. During high stress periods, build in time for self-care. Take a wellness approach to life. This can be achieved through balancing and integrating different parts of life. Recognizing the connection between mind, body and emotions can also help women manage stress and give them healthy control over their lives. Women need to recognize their own unique makeup and tailor a stress management program with healthy coping skills. Here are some examples:

- **Physical**—regular exercise, relaxation, yoga, healthy eating, leisure time, adequate sleep
- Emotional—know/express emotions, positive emotions, healthy self-esteem
- Mental—positive outlook, realistic thinking, resilience attitude, creativity
- **Occupational**—prioritize, doable goals, home-work balance, limit setting
- **Social**—loving relationships, healthy boundaries, attentive listening
- **Spiritual**—meaning/purpose, gratitude, presentmoment focus, living life fully

Steps to Maintain a Good Work-Life Balance at Their Workplaces.

1) **Working from home: -** Not all companies in India offer generous work-life balance options yet, but quite a few surprisingly do. For instance, nearly 50,000 employees at IBM India and about 15,000 tech workers at HP India are taking advantage of their companies' work-life balance

and are allowed to work from home. Microsoft India too reimburses telephone and broadband usage to their employees for working from home and offers them a variety of flexible working options.

2) Plan work in a way that you can take the weekend off: - Unlike western countries a majority of the Indian workforce still functions on a 6 day week routine. However with certain MNCs taking the lead with 5 day work weeks, big corporate houses may very well be seen giving weekend offs to some of their employees.

3) Opting for split shifts: - For the uninitiated, a split shift is one of the latest work-life initiatives that India Inc has taken to. In split shifts, employees can work for a few hours in the morning, attend to their personal work during afternoons when business tend to be typically slack and return in the evening to close the day. Aegis, BPO Outsourcing Solutions Company and Apollo Hospitals in Bangalore implemented the Split Shift initiative

4) Making full use of the company's facilities:-Surprisingly many employees who work in corporate houses with sprawling campuses and innumerable facilities don't actually use it. Many big companies in India offer gym facilities, sport courts, crèches, grocery stores, banking facilities and cafes within their campus. Employees should try to use these facilities.

5) Optimization of time at work:-*"Work expands so as to fill the time available for its completion"* says Parkinson's Law. Taking a hint, employees should look at maximizing all available resources, including time, to

get work done. Pending personal calls, chatting with colleagues, personal errands and everything else that are not related to work can be finished once work is complete.

Conclusion

For working women, getting caught in the work/life balance trap will continue to be an ongoing challenge. In an increasingly hectic world, the work-life strategy seeks to find a balance between work and home. A sentence that brings the ideas of work life balance to the point is: "work to live. Don't live to work."One must also need to understand that the burden of managing career and family that women professionals face may result in negative mental and physiological health outcomes. In the competitive business environment, when the number of women professionals is steadily increasing, the employers can best utilize the potential of its women employees only if they are sensitive to these issues concerning work-life balance. It is a reality that though Indian organizations are a lot more open to the idea of having more women at their top and senior management levels, the talent pool of women candidates at the top level is very shallow. Indian organizations must understand that societal expectations and family responsibilities do come in the way of the women professionals and their career decisions. In this context, allowing them to manage their family responsibilities without seeking help from their organizations, is a very short-sighted approach. Organizations must ensure and declare that they are ready with various work-life balance provisions which would help the women professionals to balance their professional and family responsibilities. This will act as a competitive advantage for the organizations and also help them in establishing strong employer branding. It is suggested that employers need to come up with various work-life balancefriendly provisions which can help them in attracting and retaining female talent. It is the responsibility of the employers to be sensible while designing the human resource policies of their organizations to best utilize women's potential. In order to have a better work-life balance, the organizations as a whole must be sensitized at all levels to the work-life issues; this will definitely contribute to the larger cause of organizational effectiveness

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VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

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Asian Resonance Social Networking Sites : A Global Ground for Youth to connect with the World or a Deep Well



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Abstract

This paper is focused to find out the answer whether the social networking sites are boon or bane for today's society .No doubt these Social Networking sites(SNS) provides employment ,marketing personal growth ,sharing of information but the most prevalent danger through often involves online predators or individuals. These Social Networking Site (SNS) has great impact on youth of India. One can easily see the entry gate of these social networking sites but it is unable to find exit for these Social Networking sites (SNS). One side these sites provide to communicate with our dear ones on the other side it creates platform for many cyber crimes. Everyone should be understood that The SNS is a "child of" computing "by computing" but" for the society ". So we focused on the fact that how Social Networking sites (SNS) are implementing and used in an effective manner that is also beneficial for Indian society and what are the role of Indian youth .In this paper we focused on the positive as well as negative impact of these social networking sites on the Indian youth and what are the ethical responsibilities of the users of these sites.

Keywords-SNS(Social networking sites),internet,WI-FI, Telecommunication, IEEE standards, online ownership, online credibility.

Introduction

1: Evaluation of Social Networking Sites:

Boyd and Ellison (2007) define SNSs as: "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system"

Social networking sites have quickly become one of the most popular means of online communication. Users can quickly share photos, videos, and communicate to connections via a social networking site. Unlike most web pages, which are organized by content, *Social Networking sites* (SNS)'s are organized by user interest within minutes users can sign up and share thoughts, pictures, and videos with their connections (friends, family, co-workers, etc.) based on shared interests. Social network sites are based around Profiles, a form of individual (or, less frequently, group) home page, which offers a description of each member. In addition to text, images, and video created by the member, the social network site profile also contains comments from other members, and a public list of the people that one identifies as Friends within the network.

2: Popularity and Size of Social Networking Sites:

The popularity and size of the social networking sites are increased day by day by the recent collected report of Alexa.com that is an official website of measuring the traffic intensity of *Social Networking sites* (SNS) the following figures are find-

Website	URL	Number of Users	Ranking in Global Top Sites
Face book	http://www.facebook.com/	400,000,000	#2
Twitter	http://twitter.com/	75,000,000	#12
MySpace	http://www.myspace.com/	153,000,000	#17
LinkedIn	http://www.linkedin.com/	30,000,000	#29
Flicker	http://www.flickr.com/	32,000,000	#34
Vkontakte	http://vk.com/	63,000,000	#39

Finally, statistics such as the following which are available from Face book as of February 2011 were also an attraction to the author:

- Over 50% of its 400 million active users log on to Face book in any given day.
- More than 5 billion pieces of content (web links, news stories, blog posts, notes, photo albums, etc.) Shared each week.
- More than 20 million people become fans of Pages each day .

This would suggest that users of SNSs can range from young people attending secondary school, college and university, and right up to adults. It is common for SNSs to have a minimum age requirement such as Face book that advice users must be at least 13 years of age to create an account and become a member. The majority of SNSs researched such as Face book, MySpace, Twitter and others extended their services beyond creating profiles and connecting with friends, and have created a platform to allow third party developers to build their own applications and services to be linked to a user profile. So the popularity and size of social networking sites are increasing day by day in very vast manner.

3: Characteristics of Social Networking Sites

The basic characteristics of social networking sites can be explained with the help of following table-

 Table 2: Features of social networking sites

Features	Description
Externalization of data	The externalization of networks is possibly one of the first times online users have been able to view their own online social networks, and share them with friends and the general public. Some SNS also support applications which allow users to describe the relation between themselves and other members.
New ways for community formation	Though notions of virtual communities have existed since the beginning of online applications, SNS support new ways for people to connect between themselves. Users of these sites may choose to communicate through various digital objects, such as tags and in-built applications within the SNS, such as the 'visual shelf' application in Face book. Users may join a community of book readers; connecting through books they have liked.
Bottom-up activities	SNS provide the ideal platforms through which users with similar values and interests can come together to collaborate effectively and cheaply. For instance, doctors can share and double check rare medical cases on health SNS such as Within3, or activists can organize a protest through sites like Care2.
Ease of use	A major attribute of SNS' popularity is their simplicity. Anyone with basic internet skills can create and manage an online SNS presence. Prior to SNS, users gained an online presence by having a personal homepage. The drawbacks were that these homepages are not easy to create and development and hosting of the site often incur costs. In contrast, SNS are free of charge and open for anyone to join. Most of them require registration, while others limit membership through an invitation from members who are already members of the site.
Reorganization of Internet geography	SNS support new points of entry to the internet: people's personal worlds. Until recently, people spoke of the internet in metaphors of places (cities, addresses, and homepages).

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Taking all these characteristics together, we can observe significant changes in how users network and operate their social contacts according to different social environments. In particular, SNS seem to be influencing and shaping the way we communicate between ourselves and how we manage our social contacts.

4: Social Networking Sites in the Indian Context

During the last ten years, social networks have evolved from simple communication hubs to veritable agents of change; galvanizing thousands of people over political discourse, creating and changing industries, and all in all, transforming people's lives .A social networking site is a social structure comprised of individuals that are connected through a relationship, whether that is friendship, common interest, financial exchange, family, sexual relationship, religious belief or any other form of interdependent relationship. Now the youth of India faced the "Surprising Power of Our Social Networking sites" so the role of these social networking sites becomes more complicated because it has great impact on the life, career and other aspects of the youth ^[11] The social networking sites and social media has revolutionized the world, bringing us closer than ever before, making life easier than it ever was. We can exploit this and use it for a better life, a better tomorrow. It should be used to connect, stay in touch easily, share views and not waste time on. The populations of India that using these SNS can be understand by following graph-

Graph 1: Population using Social Networking sites by age group⁴



So it is important that these social networking sites must know their role and responsibilities towards the users, society and country. The role of these SNS can be summarized in following important points-

New opportunities tend to be associated with new risks. The India's Home Office (2010) identifies a series of risks to children's safety associated with social networking - bullying, harassment, and exposure to harmful content, theft of personal information, sexual grooming, violent behavior, encouragement to self-harm and racist attacks. So the SNS focus to minimize these types of illegal and harmful activities.

⁴ Alexa.com Information Technology Report (2012), Alexa University Press, pp. 48-49

- Children and youth worldwide have adopted social networking sites enthusiastically and the personal information of those users becomes public and available for a series of third party applications it so the role of SNS becomes more crucial in maintain security.
- Every few years, governments, the public and even technology providers are taken aback by the unexpected take up among young people of yet another innovation - email, chat rooms, texting, instant messaging, blogging and, rec⁵ently, social networking sites. Public policy aspirations quickly capitalize on these youthful enth⁶usiasms, seeking to revitalize agendas of informal education, health and lifestyle advice, and civic participation. So SNS have to make strong policies so the youth can use these sites in a beneficial way not as a destructive way.

Some 93% of teens in India use the internet, and more of them than ever are treating it as a venue for social interaction - a place where they can share creations, tell stories, and interact with others. We focused our attention in this research on social network sites because we wanted to understand the types of experiences teens are having there and how they are addressing negative behavior when they see it or experience it. As they navigate challenging social interactions online, who is influencing their sense of what it means to be a good or bad "digital citizen"? How often do they intervene to stand up for others? How often do they join in the mean behavior? So the role and responsibilities of social networking sites are also towards the teenagers. Social networking sites have morphed into a mainstream medium for teens and adults. These sites encourage and enable people to exchange information about themselves, share pictures and videos, and use blogs and private messaging to communicate with friends, others who share interests, and sometimes even the world-at-large. And that's why it's important to be aware of the possible pitfalls that come with networking online. Some social networking sites attract pre-teens — even kids as young as 5 or 6. These younger-focused sites don't allow the same kinds of communication that teens and adults have, but there are still things that parents can do to help young kids socialize safely online. The Children's Online Privacy Protection Act (COPPA) requires websites to obtain parental consent before collecting, using, or disclosing personal information from children under age 13[·] In considering the disadvantages, respondents identified a number of negative aspects of online social networking including:

- the time-consuming nature of online social networking sites, Indian youth admitting that they waste a lot of time on these sites.
- concern about access to personal information by others, with almost half of the youth worried that "non friends may see their personal information.
- 3. Concern that information posted may be used against them.

Asian Resonance

The waste timing percentage of Indian youth on Social networking sites can be explained with the following $\operatorname{graph}^{-1}$



The negative effects of a new technology are never fully visible in the initial stages due the hype and excitement involved. However with time we observe the more time we spend online the more connected we get hence the urge to not miss out on anything this induces an invisible layer of stress and pressure on the individuals. The very fabric of our societies is now beginning to take a new shape.

- Social networking websites are causing alarming changes in the brains of young users, an eminent scientist has warned. Sites such as Face book, Twitter and Bebo are said to shorten attention spans, encourage instant gratification and make young people more self-centered.
- 2. My fear is that these technologies are infantilizing the brain into the state of small children who are attracted by buzzing noises and bright lights, which have a small attention Span and who live for the moment.
- 3. A 2010 Case Western Reserve School of Medicine <u>study</u> showed hyper-networking (more than three hours on social networks per day) and hyper texting (more than 120 text messages per day) correlated with unhealthy behaviors in teens, including drinking, smoking and sexual activity. Hypernetworking was also associated with depression, substance abuse, poor sleep patterns, suicide and poor academic performance ^[14].
- 4. While the above studies show actual correlations between social networking and negative consequences, others argue that many other negative consequences may exist that have not yet been studied. Some of the harmful effects people suggest social networking has that have not yet yielded conclusive study results include:
- Encouraging poor grammar, usage, and spelling
- Allowing the spread of misinformation that may be perceived as fact even in light of evidence to the contrary.
- Exposing children to online predators
- Creating a culture in which a single mistake such as a racy picture or poorly thought-out comment can cause irreparable harm to your reputation

¹ Consumer Reports (2012). Social insecurity and social networking sites. pp. 48-49

- Decreasing productivity as workers habitually check social networking sites while they should be working.
- Providing information that increases the risk of identity theft.
- 5 Positive Impact of Social Networking Sites: Social networking isn't for everyone, but it's now such a massive part of all our lives, whether we embrace or reject the notion, that it can no longer be ignored. But are social networking sites such as Face book, Twitter, and Google+ a force for good or evil? As with most questions there are multiple angles to approach this quandary from. Having already looked at the negative impact of social networking sites on society, I thought it only fair to redress the balance. Every ying has its yang, after all. Using the previous article as a loose template it's clear to see that what some people would conceive as negatives can also be positives. I guess there are no hard and fast rules when it comes to the effect social networks are having on us all in this day and age. It has never been easier to make friends than it is right now, mainly thanks to social networking sites. Just a few decades ago it was pretty tough to connect with people, unless you were the overly outgoing type able to make conversation with anyone at a party. The rise of mobile phones helped change this, connecting people in a new way, but then social networks sprang up and the whole idea of friendship changed once more and forever. It's entirely possible to have hundreds of friends on Face book. They may not be friends you know on a personal level and spend time with in the real world on a weekly basis. But they're friends nevertheless [7]. There are several people I consider friends who I have never met indeed, I may never meet them - but that doesn't lessen the connection we have thanks to social networks. Other major positive impacts are given as-
- A. Speedy Communication: Our time is being stretched thinner and thinner by work and family commitments, but social networking sites offer a chance to communicate in a speedy and efficient manner. Writing an update for <u>Twitter</u> takes all of 20 seconds and with cross-posting over other social networks switched on, that update reaches everyone you want it to reach (and probably more besides) in an instant^[18]. Social networking sites allow you to live a life unhindered by small talk.
- **B.** In Touch with the world: It isn't just your inner circle of close friends and even closer family members that social networking sites allow you to communicate with easily and effectively, either. They open the world up to you, making it a smaller place than it has ever been before. So much so that I actually haven't a clue where many of my contacts reside. When it comes to social networks everyone is equal, regardless of location.

Family living abroad can be kept abreast of the latest happenings in your world as quickly as those living next door. Friends who you haven't seen since school, and who have since moved away, are able to keep in touch. Location-based services such as Foursquare and Gowalla emphasize your location but social networking as a whole means it has become a lot less important. Social networking sites have made the world a smaller place.

C. Building Relationships: There is no doubting that social networking sites can lead to the breaking up

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

of relationships. But there is another side to the tale, which is that people are moving onto other, perhaps better, relationships at the same time. Social networks can put you (back) in touch with those you have lots in common with, and that common ground is often the starting point for long-lasting relationships.

9. Health Related Issues

Wireless communications systems transmit and receive waves in the radio frequency (RF) part of the electromagnetic spectrum (WIRC 2004), and mainstream cell phones function anywhere from 800 MHz to 1.9 GHz (Foster 2000). It's safe to say that most other wireless communications systems operate in nearby frequency bands. The electromagnetic spectrum and indicates where different appliances and machines stand in comparison to wireless phones. In terms of energy transmittance, wireless appliances fall somewhere in between microwave ovens and television sets and into a region of the spectrum known as the non-ionizing frequency range.

Ionization is a process by which electrons are stripped from atoms and molecules, producing molecular changes that can effectuate biological tissue and DNA damage (FCC 2004). Non-ionizing energy is not strong enough to pull electrons from atoms and molecules; however, it is still capable of impairing genetic material and doing further damage. Dr. Herman Schwan of the University of Pennsylvania conducted tests on animals in the 1950s to demonstrate that non-ionizing energy, like microwaves and radio waves, does its damage by heating rather than ionizing biological tissue and the effects of heating are not to be underestimated though - cellular physiology is altered and there is a breakdown in the processes that serve to provide nutrients to cells and control cellular functions when tissue is heated. In other words, heating can cause mutations, harm to the immune system, and, like ionization, damage to biological tissue. Furthermore, evidence has suggested that low levels of non-ionizing radiation too weak to heat cells can yield non-thermal effects such as triggering the body's stress-response mechanism, in turn increasing the chance of heart attacks, strokes, and cancer by way of chronic stress.

Conclusion

No doubt that SNS has great impact on the Indian youth it has lot of challenges which we have to face .There are many questions arise when we think about the impact of these social networking sites that What does it mean to manage online privacy in an ethical manner? How do online spaces facilitate and undermine ethical thinking about privacy? How much personal information is reasonable to share online? Young people who share personal experiences online taking steps to protect their own and others' identities, and are these steps sufficient? Is it reasonable for young people to expect a certain measure of privacy when it comes to their online lives? Who is at fault when an unintended audience can read a young person's revealing blog or MySpace page? So we should focus on the ethical use of these SNS so that it serves our society in a right way and the youth can play an important role because SNS is a boob and curse both for the Indian society .In one hand it provides away to connect our dear ones on the other side it gives a platform that become danger for Indian heritage and culture.

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vol.-ii, issue-i, january-2013 Asian Resonance

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Abstract

Cement is an essential component of infrastructure development and most important input of construction industry, particularly in the government's infrastructure and housing programmes, which are necessary for the country's socio-economic growth and development. It is also the second most consumed material on the planet. The Indian cement industry is the second largest producer of cement in the world just behind China, but ahead of the United States and Japan. It is consented to be a core sector accounting for approximately 1.3% of GDP and employing over 0.14 million people. Also the industry is a significant contributor to the revenue collected by both the central and state governments through excise and sales tax.

Introduction

Cement Industry

The cement industry presents one of the most energy-intensive sectors within the Indian economy and is therefore of particular interest in the context of both local and global environmental discussions. Increases in productivity through the adoption of more efficient and cleaner technologies in the manufacturing sector will be effective in merging economic, environmental, and social development objectives. A historical examination of productivity growth in India's industries embedded into a broader analysis of structural composition and policy changes will help identify potential future development strategies that lead towards a more sustainable development path.

Cement Industry in India is on a roll at the moment. Driven by a booming real estate sector, global demand and increased activity in infrastructure development such as state and national highways, the cement industry has witnessed tremendous growth. Production capacity has gone up and top cement companies of the world are vying to enter the Indian market, thereby sparking off a spate of mergers and acquisitions. India, the world's second largest producer of cement, the recent boom in infrastructure and the housing market has only boosted its cement industry. Add to that an increasing global demand and a flurry of activity in infrastructure projects - highways roads, bridges, ports and houses - has sparked off a spate of mergers and acquisitions in the sector.

India is the second largest producer of cement on the globe after China. In total, India manufactures 251.2 Million Tons of cement per year. The cement industry in India has received a great impetus from a number of infrastructure projects taken up by the Government of India like road networks and housing facilities. While the Indian cement industry enjoys a phenomenal phase of growth, experts reveal that it is poised towards a highly prosperous future over the very recent years. Estimates state that the production in the sector will touch 262.61 MT in FY12. The cement industry in the subcontinent is dominated by around 20 companies. These major players alone account for about 70 percent of the total volume of cement produced in India. In the year 2009 alone, the Indian cement industry manufactured a total volume of 231 MT.

Rank	Country/Region	mil Tonnes
1	People's Republic of China	2,000
2	Lindia	210
3	Iran	72
4	United States	68.4
5	C Turkey	64

Prior to Independence

The first endeavor to manufacture cement dates back to 1889 when a Calcutta based company endeavored to manufacture cement from Argillaceous (kankar). But the first endeavor to manufacture cement in an organized way commenced in Madras. South India Industries Limited began manufacture of Portland cement in 1904.But the effort did not succeed and the company had to halt production. Finally it was in 1914 that the first licensed cement manufacturing unit was set up by India Cement Company Ltd at Porbandar, Gujarat with an available capacity of 10,000 tons and production of 1000 installed.

- It was in 1914, that the first commissioned cementmanufacturing unit in India was set up by India Cement Company Limited at Porbandar, Gujarat with an installed capacity of 10,000 tonnes and production of 1000 tonnes.
- The problem of supply outstripping demand was significant in early period of the industry. This led to a price war between the producers forcing many to sell below its production cost and also many into liquidation.
- Then the government of India intervened into the market and referred the cement industry to the Tariff Board. The board recommended protection by government and cooperation among existing cement units.
- These events resulted in formation of Indian Cement Manufacturers' Association in 1925 (the price regulator).
- In 1927, Concrete Association of India was formed whose two main objectives were to educate public about the use of cement and to play an active role in popularizing Indian cement.
- This was followed by the formation of Cement Marketing Company of India Limited in 1930 to promote and control the sale and distribution of cement at regulated prices.
- After all these initiatives, the sales increased along with the increase in the number of plants.
- In 1936, eleven companies, except Sone Valley Portland Cement Company Limited, merged to form Associated Cement Company Limited (ACC).
- In 1937, Dalmiya Jain Group set up five factories with installed capacity of 575000 tonnes and ACC added four more plants.
- The price and distribution control system on cement, implemented in 1956, aimed at ensuring fair prices to producers and consumers all over the country. Although due to slow growth in capacity expansion and rising cost in the industry, the government had to increase the fixed price several times.
- Growth was low due to inadequate retention price and lack of adequate financial resources to the existing companies.

It is considered as one of the core infrastructure industries. It is the second largest producer of cement in the world just behind China, with industry capacity of over 200 million tonnes. It is consented to be a core sector accounting for approximately 1.3% of GDP and employing over 0.14 million people. Also the industry is significant contributor to the revenue collected by both the central and state governments through excise and sales taxes The First World War gave the impetus to the cement industry still in

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

its initial stages. The following decade saw tremendous progress in terms of manufacturing units, installed capacity and production. This phase is also referred to as the Nascent Stage of Indian Cement Industry.

During the earlier years, production of cement exceeded the demand. Society had a biased opinion against the cement manufactured in India, which further led to reduction in demand. The government intervened by giving protection to the Industry and by encouraging cooperation among the manufacturers.

In 1927, the Concrete Association of India was formed with the twin goals of creating a positive awareness among the public of the utility of cement and to propagate cement consumption.

After Independence

The growth rate of cement was slow around the period after independence due to various factors like low prices, slow growth in additional capacity and rising cost. The government intervened several times to boost the industry, by increasing prices and providing financial incentives. But it had little impact on the industry. In 1956, the price and distribution control system was set up to ensure fair prices for both the manufacturers and consumers across the country and to reduce regional imbalances and reach self sufficiency.

Period of Restriction (1969-1982)

- The cement industry in India was severely restrained by the government during this period. Government hold over the industry was through both direct and indirect means. Government intervened directly by exercising authority over production, capacity and distribution of cement and it intervened indirectly through price control.
- In 1977 the government authorized higher prices for cement manufactured by new units or through capacity increase in existing units. But still the growth rate was below par.
- In 1979 the government introduced a three tier price system. Prices were different for cement produced in low, medium and high cost plants. However the price control did not have the desired effect. Rise in input cost, reduced profit margins meant the manufacturers could not allocate funds for increase in capacity. Direct control by government over production, capacity and distribution of cement.
- Indirect intervention took the form of price control.
- Due to maintained slow development, the uniform price imposed by the government was substituted by a three-tier price system in 1979. Different prices were assigned to cement produced in low, medium and high cost plants.
- Thus, controlled price did not reflect the true economic cost and profit margins reduced increasingly, preventing essential investments in capacity and production expansion.
- However, the system resulted in artificial shortages, extensive black marketing and corruption in the civil supply departments of the government.
- The system of price control was accompanied by a policy of freight pooling. The price control fixed a uniform price according to estimated production costs at which cement was required to be sold all over the country. This price contained a freight component that was averaged over the country as a whole*.

- It implied that producers had no incentive in locating production, such that transportation costs of cement would be minimized.
- As a result of non-optimal location of industries, average costs of production as well as demand for scarce railway capacity for transportation increased.

Partial Control (1982-1989)

- To give impetus to the cement industry, the Government of India introduced a quota system in 1982.A quota of 66.60% was imposed for sales to Government and small real estate developers.
- For new units and sick units a lower quota at 50% was affected. The remaining 33.40% was allowed to be sold in the open market.
- A ceiling price was set for sales in the open market.
- Freight pooling no longer covered non-levy cement.
- To sustain an accelerating course, the government in 1988 subsequently introduced the levy quota as low as 30% for units established before 1982 and the retention price had increased substantially.
- In 1987, the Cement Manufacturers' Association and the government decided that there was no further necessity for a maximum price ceiling.

These changes had a desired effect on the industry. Profitability of the manufacturers increased substantially, but the rising input cost was a cause for concern.

After Liberalization

- In 1989 the cement industry was given complete freedom, to gear it up to meet the challenges of free market In 1989, all price and distribution controls on sale of cement were withdrawn.
- Freight pooling was abandoned and a subsidy scheme to ensure availability of cement at reasonable prices in remote and hilly regions of the country was worked out.
- De-licensing under the policy of economic liberalization was done in 1991.
- Growth was seen from 91 plants and 43 million tonnes of production in 1989-90 boosting to 132 plants and 161.66 million tonnes production in 2006-07.
- Total capacity utilization for the industry has also increased from 78% to 91% during the same period.

This resulted in an accelerated growth for the industry and availability of state of the art technology for modernization. Most of the major players invested heavily for capacity expansion.

Against India's GDP growth of 7%, the experts have estimated the cement sector to grow by 9 to 10 % in the current financial year. Major Indian cement manufacturers and exporters have all made huge investments in the last few months to increase their production capability. This heralds an optimistic outlook for cement industry. The housing sector in India accounts for 50 % of the cement's demand. And the demand is expected to continue. With the constant effort made by cement manufacturers and exporters, India has become the second largest cement producer in the world. Madras Cement Ltd., Associated Cement Company Ltd (ACC), Ambuja Cements Ltd, Grasim Industries Ltd, and J.K Cement Ltd. are among few renowned names of the major Indian cement companies.

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

Top 10 cement companies in India (2011)

1.	ACC Limited
2.	Ambuja Cements Limited
3.	UltraTech Cement Limited
4.	India Cement Limited
5.	Shree Cement Limited
6.	Rain Cement Limited
7.	Prism Cement Limited
8.	Madras Cement Limited
9.	Birla Cement Limited
10.	JK Cement Limited
	The cement industry has continued its growt

The cement industry has continued its growth trajectory over the past seven years. Domestic cement demand growth has surpassed the economic growth rate of the country for the past couple of years. The growth rate of cement demand over the past five years at 8.37 % was higher than the rate of growth of supply at 4.84% as also the rate of growth of capacity addition during the same period. Demand for cement in the country is expected to continue its buoyant ride on the back of robust economic growth and infrastructure development in the country.

To maximize the opportunity available in the form of global markets, the industry laid greater focus on exports. The role of the government has been extremely crucial in the growth of the industry.

Cement industry in India is currently going through a consolidation phase. Some examples of consolidation in the Indian cement industry are: Gujarat Ambuja taking a stake of 14 per cent in ACC, and taking over DLF Cements and Mode Cement; ACC taking over IDCOL; India Cement taking over Raasi Cement and Sri Vishnu Cement; and Grasim's acquisition of the cement business of L&T, Indian Rayon's cement division, and Sri Digvijay Cements.

Domestic demand is one of the chief reasons for the rapid growth of cement manufacturing in India. One can say that the domestic demand for the commodity has in fact clearly overtaken the rate of economic growth in the country. It is estimated that the consumption of cement in the country is bound to rise more than 22% within the next two years. In terms of cement consumption, Maharashtra State leads the list with 12.18%, followed by Uttar Pradesh, whereas in terms of production, the State of Andhra Pradesh leads the table reporting 14.72% of production. The second place in the manufacturing is bagged by Rajasthan.

The cement manufacturing units are also motivated to take up their production rate owing to the rapidly increasing demand in the market. Most encouragingly, the cement companies witnessed a net profit growth rate of 85%. This huge success has further encouraged the firms in India to account for about 8% of India's economic development. Some of the regions where major clusters of cement industries located in India are Satna (Madhya Pradesh), Yerranguntla (Andhra Pradesh), Chandrapur (Maharashtra), Bilaspur (Chattisgarh), Gulbarga (Karnataka), Nalgonda (Andhra Pradesh), and Chandoria (Rajasthan).

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- 5. Cement Industry D.K.Mittal(2010)

Asian Resonance **Operational Aspects of Rajasthan Tourism Development Corporation: A Case Study**



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Abstract

This research paper discusses the operational aspects of Rajasthan Tourism Development Corporation evaluating its main objective to promote tourism in Rajasthan. Mostly RTDC hotels bear loss in past years. RTDC hotels had been in very bad shape in recent years with the government being blamed of ignoring them to let their profit fall as a ploy to sell them off to private sector. RTDC hotels and motels are recently renovated and upgraded to provide better facilities and services to the guests. New furnishings, furniture, linen, etc. are introduced. The hotels and motels are standardized for categorization in three to one three star and heritage category. Available facilities are such as bars, travel counters, shopping galleries, indoor and outdoor games for children and city sightseeing tours make the stay in RTDC hotel a complete experience. As a diversified activity, RTDC is a license holder of wholesale beer. The Corporation has run Beer shops in the state until 2004. The objectives of beer trade were generating profits for the Corporation.

Key Words: Rajasthan Tourism Development Corporation, Tourism

Introduction

Inclusiveness is The Rajasthan Tourism Development Corporation incorporated on 24 November 1978 having name Rajasthan Paryatan Vikash Nigam Limited that was changed on 8 Sep. 2000. The Corporation was incorporated under the Indian Companies Act 1956. At the time of inception, the Corporation inherited twenty units from the Department of Tourism. Over the last thirty-five years, the Corporation has increased its capacity. Now, the Corporation is having a well-managed dynamic team. Each member of the corporation is committed for the development and progression of tourism in Rajasthan. The quality of the services that are offered by the corporation is flourishing day by day. The "Culture of Customer Service" is an excellent one in the travel corporation. In fact, exceptional customer service is also a reason of the success and rapid growth of the corporation. The Corporation was incorporated as a wholly owned Government Corporation with the main objectives to carry on business of hotels, restaurants etc., to establish and manage transport units, and to attract tourists both Indian and foreign. Pursuant to its objectives, the activities of the Corporation are as under:

- Establishment, development and execution of projects and schemes to 1. accelerate development of tourism in the State
- 2. Acquisition, construction, and running of hotels, restaurants, cafeterias motels, etc., for providing boarding and lodging facilities to the tourists
- 3. Organizing cultural activities and festivals
- Acquiring, maintaining, and developing places of tourist interest. 4.
- Organizing package tours and rendering facilities for transportation, 5 entertainment, shopping, etc.
- Providing, distributing, and selling publicity materials for tourists. 6.
- 7. Providing accommodation, sightseeing, catering on Palace on Wheels, Heritage on Wheels, and newly launched Royal Rajasthan on Wheels - tourist trains run in joint venture with Indian Railways.

RTDC gives the opportunity to experience the charm of the most exotic destination of Rajasthan in most refined lodging and cuisine at budgeted price.

Objectives of the Study

The primary objective of this study is to examine operational aspects of Rajasthan Tourism Development Corporation in promotion tourism in Rajasthan. Methodology

The study is based on secondary data. Secondary sources include published and unpublished sources. Published sources are newspapers, reports of WTO, ITDC, and official publications of national and international tourism bodies including Central and State Governments. Unpublished sources viz., the records maintained by the Government and private hotels, studies undertaken by research

institutions, scholars, executives, and economists have served the purpose. The research has been based on a large number of information's sources. The inputs for the research collected from secondary information sources. The secondary data research aims firstly at defining the terms related to the research and secondly exposes the different points of view of experts about tourism.

Administrative officers of RTDC and Department of Tourism, Rajasthan were interacted to collect detailed information pertaining to research work. Secondary data were collected from sources like in house database: available published material and reports from the Department of Tourism, Rajasthan, Ministry of Tourism, India & other Government departments, agencies, associations, and internet search. We had to depend upon the secondary sources of data. The findings drawn out of this study are the obvious outcomes of the data and information collected from the study area.

Research Analysis and Results Operational Aspects of RTDC

The main motto of RTDC is to accelerate tourism in the state. It is promoting so many executed project and scheme, which facilitate nice tourism in Rajasthan. The corporation maintains and constructs ruined buildings especially the tourist's bungalows, cafeterias, restaurants, bars, and so on. The Corporation organizes various tour packages and festivals tours for the tourists. RTDC delivers important touring information by web portal and literature to the tourists. Such facilities help to get the information on various touring places according to the choice of the tourists.

The RTDC provides Railway service in collaboration with the Indian Railways to give the tourists a true experience of traveling in India. The tourists can experience nice travel in luxury coaches of the train. The Corporation also affords convenient booking facilities in its various offices all over the country. Tourists can avail the best booking service through the web portal and reliable agents, which have spread throughout the country. Global flows of people, money, technology, and even ideologies are diverse and complex. The Rajasthan Tourism Development Corporation plays major role in dominating these flows and pose challenges for local players.

The Corporation's main objectives are to establish, develop, and execute project and scheme that facilitate and accelerate tourism to the state. It also acquires, constructs, and maintains tourist bungalows, restaurants, cafeterias, motels, and bars to make facilities available to the tourists. To enhance tourist experience, the Corporation also organizes package tours, fairs and festivals, entertainment, shopping, and even transport. It also develops places of tourist interest and gives important tourist information by way literature and web portal. The RTDC has booking offices in the country. It offers bookings through its wide network of agent throughout the world and through web portal www.rajasthantourism.gov.in. This facility not only saves last minute hassle but also the inconvenience that a tourist may experience due to shortage of accommodation due to tourist rush.

Hospitality promotes brother-hood and holds a special significance for bringing people closer; love and kindness flows out of it. Traditional Hospitality is a living aspect of our culture, which is appreciated also by the foreign tourists. Hospitality binds people together in bonds

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

of love; it increases the circles of friendship and makes the atmosphere glowing with human warmth. Man is a social animal and hospitality is an intimate aspect of social intercourse in which Indians excel.

The percentages of bed occupancy and room occupancy in RTDC units are given in Table 3.1 and 3.2 respectively during 2001 to 2010. It is perceived that the percentage of bed occupancy remained between 29 to 46 percent. Figure 3.1 shows bed occupancy declined 7.71 percent from 40.93% in 2008-09 to 33.22% in 2009-10 due to swine flu and fire at Sitapura oil depo in Jaipur.

Table- 3.1: Bed Occupancy Percentage of RTDC

KIDU		
Year	Bed occupancy in %	
2000-01	34.00	
2001-02	29.48	
2002-03	29.85	
2003-04	30.91	
2004-05	33.57	
2005-06	38.67	
2006-07	39.51	
2007-08	39.58	
2008-09	40.93	
2009-10	33.22	

Source: Annual reports 2000-01 to 2010-11, RTDC

RTDC hotels had been in very bad shape in recent years with the government being blamed of ignoring them to let their profit fall as a ploy to sell them off to private sector. The occupancy and arrival registered a growth continuously after 2003 due to economy's buoyancy, the boom in aviation, and initiatives to improve infrastructure.



Figure-3.1

RTDC hotels and motels are recently renovated and upgraded to provide better facilities and services to the guests. New furnishings, furniture, linen, etc. are introduced. The hotels and motels are standardized for categorization in three to one three star and heritage category. Available facilities are such as bars, travel counters, shopping galleries, indoor and outdoor games for children and city sightseeing tours make the stay in RTDC hotel a complete experience.

Year	Room Occupancy in RTDC units in %
2000-01	36.40
2001-02	31.34
2002-03	32.09
2003-04	32.01
2004-05	34.50
2005-06	39.65
2006-07	41.50
2007-08	41.94
2008-09	42.61
2009-10	34.66

Table- 3.2: Room Occupancy of RTDC

Source: Annual reports 2000-01 to 2010-11, RTDC

Rajasthan Tourism Development Corporation provides clean, decent, and affordable accommodation in its chain of hotels spread all over the state. While in the year 2001-02 room occupancy was recorded 31.34% as lowest occupancy over ten years due to low utilization of modern marketing and publicity tools, inadequate facilititation services, and lack of concern for competitiveness, it has increased highest to 42.61% in the year 2008-09.



Figure-3.2

Rajasthan Tourism Development Corporation provides clean, decent, and affordable accommodation in its chain of hotels spread all over the state. While in the year 2001-02 room occupancy was recorded 31.34% as lowest occupancy over ten years due to low utilization of modern marketing and publicity tools, inadequate facilititation services, and lack of concern for competitiveness, it has increased highest to 42.61% in the year 2008-09 as seen in Figure 3.2.

26th January 1982 introduced a new chapter in the history of Indian tourism. It was the day when the iconic Palace on Wheels took its inaugural trip. RTDC operates the prestigious Palace on Wheels train in association with the Indian Railways. This train, which has 14 deluxe saloons with elegant interiors and modern amenities journeys through Delhi, Jaipur, Jaisalmer, Jodhpur, Sawai Madhopur, Chittaurgarh, Udaipur, Agra, and Bharatpur in the tour of 7 days. Annually, around 3500

Asian Resonance

tourists use the POW for touring around in the state as shown in Table 3.3.

Table 3.3:	Occupancy	of Palace on	Wheels
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Year	Number of Tourists Availed PoW
2000-01	2611
2001-02	1476
2002-03	1475
2003-04	2576
2004-05	3400
2005-06	3500
2006-07	3601
2007-08	3601
2008-09	3425
2009-10	2699

Source: Annual reports from 2000-01 to 2010-11, RTDC



Figure-3.3: Number of Tourists Availed POW

Table 3.3 shows numbers of tourist occupied Palace on Wheels during 2000 to 2010. The number of tourists increased from 1476 in the year 2001-02 to 3601 in the year 2007-08. The growth of number of tourists in Palace on Wheels has been phenomenal in last few years. The POW had been one of the cash cow (Source of income) for RTDC. However, after the 9/11 terror attacks in the US, luxury trains have been facing substantial losses due to cancellation of bookings by almost 50 per cent. Even as the state government has been making efforts to hard sell the POW, RTDC seems to be putting a spanner in the works.

Heritage on Wheels is the name of the luxury train that runs through some important tourist destinations in the state of Rajasthan. The train was launched 17 February 2006 after the success of luxury train 'Palace on Wheels.' This train avails opportunity to travel through the unexplored lands of Bikaner and Shekhawati. It has been designed to provide comfort and leisure with a bit of traditional touch.

Table- 3.4: Occupancy of Heritage on Wheels

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Year	Number of tourist
2006-07	760
2007-08	1085
2008-09(Dec.2008)	212

Source: Annual reports 2008-09, RTDC

Table 3.4 shows occupancy of Heritage on Wheels. The capacity utilisation remained very low ranging between 14.21 and 25.41 per cent. Thus, the Corporation suffered heavy financial losses of Rs 139.87 lakh (2006-07: Rs 75 lakh, 2007-08: Rs 37.03 lakh and 2008-09: Rs 27.84 lakh). During the first season (February 2006 to April 2006), the Corporation operated 11 tours carrying on an

average six passengers per tour utilising only 5.77 per cent of its total capacity and incurred loss of Rs 29.25 lakh. Thus, continuous operation of the train led to loss of Rs 1.40 crore due to incorrect assessment of financial viability at first place and non-review of the same subsequently. Now HOW has been discontinued from 31 December 2008 due to change of Railway line from meter gauge to broad gauge.The train was one in the lifetime experience of luxury railway tour. It was operated by RTDC and Indian Railway. Onboard this train had two restaurants named Maharaja and Maharani, well stocked bar cum lounge, well experienced staff in traditional uniform of Rajasthan ready to serve variety of cuisine including Rajasthani.

The Royal Rajasthan on Wheels went on its maiden journey in January 2009. The itinerary is same as that of the Palace on Wheels. Table 3.5 shows occupancy of Royal Rajasthan on Wheels. Occupancy analysis of this train revealed a growth in number of tourists during 2009-10. Continuously publicity in last year and provided facilities led to significant growth in number of tourists.

Table- 3.5: Occupancy of Royal Rajasthan on

Wheels

Year Number of tourists		
2008-09	126	
2009-10	708	
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Source: Annual reports 2010-11, RTDC

The revenue earned by running the Royal Rajasthan on Wheels by the RTDC is shared with the Railways. Rajasthan Tourism Development Corporation gets 44% of the income and Railways receives 56%. Since its inception, there have been a couple of alterations in the schedule of the Royal Rajasthan on Wheels. The haulage expenses of the Royal Rajasthan on Wheels would be paid by the Rajasthan Tourism Development Corporation. This is as per the policies that have been laid down by the Indian Railways concerning luxury trains that are now being launched in India. The Royal Rajasthan on Wheels has been equipped with the latest facilities so that the tourists have no reason for complaints.

Table- 3.6: Catering Facilities Available in Units of RTDC

Year	Number of units	
2000-01	41	
2001-02	41	
2002-03	43	
2003-04	43	
2004-05	43	
2005-06	43	
2006-07	43	
2007-08	45	
2008-09	46	
2009-10	46	

Source: Annual reports 2000-01 to 2010-11, RTDC

Catering facilities are available in 46 units of RTDC. Table 3.6 shows number of units of RTDC that provides catering facilities. It can be seen clearly the

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

catering facilities are increasing continuously in units of RTDC. This facility should be availed in all units. This step will increase number of tourist arrival in RTDC units.

As a diversified activity, RTDC is a license holder of wholesale beer from June 1987. The Corporation has run 65 Beer shops in the state until 2004. The objectives of beer trade were generating profits for the Corporation and controling & regulating beer prices. Variety of Indian Made Foreign Liquor (IMFL) and beer is provided at 29 units of RTDC. Table 3.7 presents number of units, which provide bar facilities. In the year 2000-01, the bar facilities were available in 22 units. Bar facilities was available in units 16 to 18 during the year 2002 to 2009. The number of RTDC units reached 29 units in 2010, which provides bar facilities. Figure 3.4 shows increasing trend in units of RTDC over ten years. The core business of RTDC is to provide to accommodate facilities and other tourism related facilities to the tourists who visit Rajasthan.

Table- 3.7: Bar Facilities Available in Units of

RTDC

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Year	Number of Units	
2000-01	22	
2001-02	22	
2002-03	18	
2003-04	18	
2004-05	18	
2005-06	17	
2006-07	17	
2007-08	18	
2008-09	16	
2009-10	29	

Source: Annual reports 2000-01 to 2010-11, RTDC,



Figure-3.4: Bar Facilities Available in Units of RTDC

The corporation is continuously trying to provide comfortable and convenient transport facilities to the tourists. RTDC provides transport facilities for the tourist visiting Rajasthan. It provides daily sightseeing and guide tour facility through luxury buses at important 'tourist hubs' like Jaipur, Jodhpur, Chittaurgarh, Jaisalmer, Sariska, Mount Abu, and Udaipur. Table 3.8 shows transport facilities available in RTDC units. It presents strong declines in number of transport facilities places during decade. It is important for policy-makers to know which factors are influencing decline in growth, although subsequent declines lead to questions about performance of transport facility available in units. Several factors are responsible for the inadequate growth of the transport facilities. Absence of consensus on role of transport facilities in tourism, lack of priority to transport facility because of unappreciated potential, low levels of rate of return on investment in transport facility, and lack of interest are some factors.

Table- 3.8: Transport Facilities Available in Units of RTDC

Year	Number of Places
2000-01	7
2001-02	7
2002-03	5
2003-04	5
2004-05	5
2005-06	5
2006-07	5
2007-08	5
2008-09	5
2009-10	3

Source: Annual reports 2000-01 to 2010-11, RTDC

The Jaipur bus service for city sightseeing started by the Rajasthan Tourism Development Corporation is proving costly not only for the State government but for all. Private contractors appointed by the RTDC are taking advantage by compelling tourists to purchase expensive handicrafts from showrooms instead of Rajasthali. Significantly, as per dealings with the private contractor it can avail shopping to tourists from the government-run Rajasthali only. The State government agrees with this fact that tourists traveling in RTDC buses are not visiting Rajasthali from past some time where artisans themselves sell their product. RTDC should have established shopping arcades in their properties and provide space for artisans to display and market their products so that tourists have direct access to artisans as envisaged in Tourism Policy 2001. It was observed that RTDC had not developed shopping arcades in any of its units until 2006. Now some units developed shopping arcades in its premises e.g. Moomal a unit of RTDC at Jaisalmer.

Table- 3.9: Number of Package Tours of RTDC

Year	Number of package tours from-			Total	
	Delhi	Jaipur	Udaipur	Ahmadabad	
2000-01	6	6	3		15
2001-02	6	6	3		15
2002-03	6	6	3		15
2003-04	6	6	5		17
2004-05	6	6	5		17
2005-06	6	6	5	4	21
2006-07	6	6	5	4	21
2007-08	6	6	5	4	21
2008-09	6	6	5	4	21
2009-10	6	6	5	4	21

Source: Annual reports 2000-01 to 2010-11, RTDC

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

RTDC operates daily and packaged tours to Jaipur, Bikaner, Bundi, Shekhawati, Udaipur, Mount abu, Ajmer, Jodhpur, Jaisalmer, and many more locations in Rajasthan. RTDC's tour to Palace on Wheels is the one of the most popular tours. Tours to the above locations in Rajasthan are also operated from Delhi, Agra, Ahmadabad, and other parts of the neighbouring states of Rajasthan. RTDC offers hotel bookings at an affordable rates compared to private tour operators. Table 3.9 gives a general view of number of package tours. RTDC not only operates package tours, train tours but also provides camping facilities to tourists. Facilities are provided for minimum fifty people at a place with special pricing and upon the requirement of tourist. RDTC facilitate tourist for camping on the banks of Gavdi Talab, Jhalawar, on the banks of the beautiful and romantic lakes of Udaipur, and at deep in the heart of the Jaisalmer desert.

Rajasthan offers a variety of adventure sports for the enthusiasts. The adventure tourism segment is fast growing. They include trekking, water sports, angling, Polo, Golf, parasailing, and horse, camel, and bike safaris. Horse Safari is organized by some private tour operators. The RTDC organizes a Safari on request, which starts from Jaipur. It is an expensive affair and is meant mainly for the foreigners. The camel safari is organized to take one through the golden sands of the vast Thar Desert and untamed countryside. The rolling landscape of the sand and shrub covered area is breathtakingly beautiful and the range of flora and fauna surprisingly large for desert area. RTDC arranges a camel safari on request from Delhi and Jaipur during Nagaur Fair and Desert Festival.

Boating facilities are provided by RTDC to tourist in Rajasthan. RTDC provides boating facilities at Siliserh (Alwar), Ramgarh (Jaipur), Amber (Jaipur), Kailana (Jodhpur), Udaipur, Gajner (Bikaner), and Bundi. The boats are either cruiser motorboats or paddleboats.

Year	Number of Places
2000-01	5
2001-02	5
2002-03	4
2003-04	4
2004-05	4
2005-06	5
2006-07	5
2007-08	4
2008-09	4
2009-10	3

Table- 3.10: Boating Facilities Available by RTDC

Source: Annual reports 2000-01 to 2010-11, RTDC

Regular boating is offered at several places in Rajasthan, whether on the lakes in Udaipur, or at places such as Siliserh near Alwar. Rajasthan Tourism Development Corporation has made paddleboats available at a number of lakes.

RTDC organizes the famous Pushkar Fair with an objective to promote cultural heritage and festivals. A tented village is setup by RTDC comprising of more than 500 tents and dormitories to provide accommodation and catering facilities for the tourists. For a week, Pushkar is transformed into a city of tents. In all shapes and sizes, with some even offering five-star comforts, the tents make for a unique experience for tourists who come to visit the colourful Pushkar camel fair. Every two to three kilometers, tourists could find camping sites where both the Rajasthan Tourism Development Corporation and Private Tourism Agencies had erected ordinary as well as luxurious tents. Table 3.11 shows accommodation facilities provided in fair & festivals.

Table- 3.11: Accommodation Facilities Provided in Fair & Festivals

Year	Number of tourists	Occupancy %
2000-01	1224	64.00(6 days)
2002-03	308	39.68(5 days)
2003-04	347	27.29(8 days)
2004-05	535	33.45(8 days)
2005-06	501	56.40(4 days)
2006-07	524	33.64(8 days)
2007-08	398	53.54(8 days)
2008-09	322	38.64(4 days)
2009-10	217	25.00(4 days)

Source: Annual reports 2000-01 to 2009-10, RTDC

The RTDC has pitched up tented accommodation near the fair ground. The RTDC Tourist Village has been specially designed to complement the natural beauty of the site. Even the high prices from Rs 2, 500 to over Rs 10, 000 per night failed to dampen the lure, especially among foreigners.



Figure-3.5: Occupancy Percentage in Fair & Festivals

The *Jagson* Airlines has tied up with RTDC for its flight handling and ticketing at Jodhpur and Jaisalmer for operations between Delhi, Jodhpur, and Jaisalmer in 1994. RTDC entered into MoUs on tourism with **Indian** Airlines in 2001, Pondicherry in 2001, and Gujarat in 2002. Besides, RTDC also makes use of the Airlines General Sales Agents in 16 countries to promote Rajasthan as an attractive tourist destination.

It has signed a Memorandum of Understanding with the **India Tourism Development Corporation** for promoting tourism and hotel management related services. The MoU avails of ITDC's expertise and resources in the areas of travel, tourist, engineering, hotel, and consultancy services. A division of ITDC markets RTDC's hotels and its various package tours for promoting Rajasthan as well as outbound and inbound tours from Rajasthan to other parts of the country and abroad. The MoU also includes marketing of RTDC's properties, conferences, festivals, destinations, and event management among other activities on a turnkey basis in India and abroad. RTDC signed a

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Memorandum of Understanding with **Uttarakhand**, to sell each other's tourism products and ensure visits of foreign and domestic tourists in both states all the year round at the Great Indian Travel Bazaar (GITB) - 2010 being organized in Jaipur.

RTDC has entered into partnership with the **DTH** major **Dish TV** to set up television screens in two iconic luxury trains, the Palace on Wheels and Royal Rajasthan on Wheels that will enable tourists to watch live television. The tourists aboard these trains would be able to watch around 110 satellite channels showing business news, current affairs, popular sitcoms, live sporting action, Hollywood and Bollywood movies, music, travel, and lifestyle. This is the first instance of streaming TV launched in a train in the country. Dish TV already provides its service in Kingfisher Airlines and has clientele among yachts and sports-utility vehicle users.

The Infrastructure Development and Management International signed an MoU with the Rajasthan Tourism Development Corporation. Infrastructure Development and Management International in association with the RTDC runs the Palace on air. Palace on air service has been operated from December 2002. It is covering New Delhi, Agra, Jaipur, Udaipur, Jodhpur, Jaisalmer, and Bikaner. RTDC works as the facilitation agency.

Rajasthan has entered into MoUs with various states with a need to coordinate their efforts for joint planning, marketing, and management of tourism products and services. RTDC and Punjab Tourism Development Corporation have decided to organize interstate package tours with the objective of promoting domestic tourism in both the states. The MoU provides for joint publicity campaigns, reservation for tourists in hotels, sightseeing, and conducting of package tours. Both the tourism bodies promote each other's products and make available relevant information to tourists to help them plan a hassle free visit to other state. RTDC also signed MoU with the state of Kerala for joint marketing and publicity of each other's tourism products particularly at international level. Under this MoU, both bodies will formulate joint packaging of complementary tourism products to provide a greater variety to the tourists. The two states will jointly strive for agreements with foreign and domestic airlines for direct connectivity between Kerala and Rajasthan. Tamil Nadu Government has signed a Memorandum of Understanding with Rajasthan Tourism Department to promote tourism.

RTDC midways usually provide amenities like a restaurant, communication facility, parking, washrooms, and occasionally also with accommodation facilities. Although there is a vast network of wayside facilities across the state, there are insufficient wayside facilities on some important routes for example, on the Udaipur-Chittaurgarh-Kota, Udaipur-Jagat-Jaisamand-Chawand-Rishabdeo routes in South Rajasthan, on the Osiyan-Phalodi and Phalodi-Bikaner routes in the Desert region, and on the Bikaner-Shekhawati route, etc. Although the facilities available are largely adequate in numbers but they lack in quality that an international traveler is used to and expects. Moreover, there are insufficient signboards indicating the availability of such wayside facility on most routes. This creates a lot of inconvenience to Free Independent Tourists, who have to depend on their drivers to get to a wayside facility. Table 3.12 shows midway facility provided by RTDC.

PlaceDistrictType/ Manag ementRoute catered toKishangar hAjmerMidway ementJaipur-Ajmer (NH8)TalbrikshAlwarWayside Facility Midway- MotelJaipur-Delhi (NH8)TalbrikshAlwarWayside Facility Midway- MotelJaipur-Delhi (NH8)DeegBharatpurMidway- MotelBharatpur-Deeg MotelGulabpura MeenalBhilwaraMidway- FacilityBhilwara-AjmerManagarhChuruMidway FacilityBikaner-Agra Highway (NH11)MahuwaDausaMidway Highway (NH11)MahuwaDausaMidway Highway (NH11)DholpurPholpur MidwayBombay-Agra Highway (NH3)Shahpura DuduJaipurMidway Highway (NH3)Shahpura PokaranJaisalmerWayside FacilityGadisar PokaranJaisalmerWayside FacilityBap Osiyan Phalodi DechuJodhpur FacilityJaisalmer-Bikaner RoadBap Osiyan PhalodiJodhpur Halodi HalodiJodhpur Jodhpur-JaisalmerMahudi PhalodiKTDC FacilityJaisalmer-Bikaner RoadBap Osiyan PhalodiJodhpur HalodiRTDC RoadMadua HalodiKTDC HalodiRTDC RoadMidway HalodiJodhpur-JaisalmerMaku HalodiKTDC HalodiMidway HighwayMatu HalodiKTDC HalodiMidway HalodiMatu HalodiJodhpur-Jaisalmer<
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Source: Department of tourism, Rajasthan

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Findings

The corporation's main objectives are to establish, develop, and execute project and scheme that facilitate and accelerate tourism to the state. It also acquires, constructs, and maintains tourist bungalows, restaurants, cafeterias, motels, and bars to make facilities available to the tourists. To enhance tourist experience, the Corporation also organizes package tours, fairs and festivals, entertainment, shopping, and even transport. It also develops places of tourist interest and gives important tourist information by way literature, and web portal.

It is found that organizational set-up of the corporation is bureaucratic than professional in structure. There is an immediate need to restructure the organization set-up of the RTDC to accommodate trained professional and experts in tourism industry so that the RTDC could come up to keep pace with the competitors and the changing environment.

The Corporation, now, is one of the recognized trademarks in the tourism industry. The RTDC has been successful attracting many tourists. It has assisted a lot in maintaining and improving the tourist's destinations of Rajasthan. The positive efforts are made by the Corporation helped the tourists to eliminate difficulties during the Rajasthan tour. It provides tourists the every opportunity to experience the charm of various fascinating and exotic destination of Rajasthan during the Rajasthan visit.

Suggestions

Analysis of research data and interaction with the officials of RTDC reveals a number of best hints that promote and develop the tourism in Rajasthan. The research work identified a range of tourism development approaches and teachings, which tend to be the most effective. Each brings its own unique response to a unique problem.

The RTDC will have to play an active role in aggressively promoting tourism whilst providing the basic infrastructure and services. The Corporation has not promoted Rajasthan aggressively to the world so far. It should participate in creating interest for **interstate coordination** through booking system of rooms in hotels, organizing package tours, marketing and publicity of each other's tourism products, cultural programmes, eco –tourism, and heritage centers. All the northwestern states should join hands for an integrated tourism development.

Country of the tourist's arrivals in RTDC hotels should be mapped for measuring demand potential. Then **international advertising campaigns** should be executed to attract prospective tourists.

RTDC should **highlight lesser-known fairs** and participate in these fairs. Such as *Baisakhi Poonam ka Mela* held alternately at Mount Abu around the Nakki Lake, *Gogameri Fair* held at *Nohar Tehsil* of Hanumangarh, two day *Chauth Ka Barwara Fair* held at Chauth Ka Barwara a minor station between Jaipur and Sawai Madhopur, and *Bhakarwasi Mela* held at *Bhakarwasi*, a small village of *Tehsil* Fatehpur Shekhawati.

Rajasthan Royals on Wheels has already been launched in beginning of the year 2009 and it has proved to be extremely popular with international tourists and NRIs. Efforts should be made to launch an economy version of luxurious Rajasthan Royals on Wheels for budget tourists.

The objectives and priorities of different departments having ownership of tourism assets and engaged implementing tourism projects in the state need **congruency with the overall objectives** of tourism development. Often there are conflicting issues, for example, the objectives of Forest Department and Archaeological Survey of India are to conserve their respective assets by restricting tourist's arrivals at the sites managed by them while RTDC objective is to increase tourist arrivals at these locations

Conclusion

The RTDC incorporated in November 1978 with the main objective of promoting tourism in the State. The Corporation is trading in beer and providing catering on 'Palace on Wheels' train. From the inception of palace on wheels in 1982, the well-heeled tourist got a wonderful new haunt in Rajasthan. Over the years, the response to this novel way of travelling was so encouraging that the RTDC launched a new train 'Royal Rajasthan on Wheels'.

What I came to understand as a result of my research so far is that there is a huge potential in the state for RTDC's hospitality business to take off in the future. A booming economy and a resurgent tourism sector augur well for the future of RTDC in this state. Tourism industry has become increasingly competitive in the global market with advancement in communication, efficient transportation linkages, en-route facilities, and other basic infrastructure. It is an outcome of the rapid industrialization, technological development, associated rising income, standard of living, changing world-view, and growing fascination towards a culture of leisure. It comprises many different sectors including transportation, lodging, and entertainment.

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VOL.-II, ISSUE-I, JANUARY-2013

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Asian Resonance ICT: A Pedagogical Tool For Teaching-Learning Process

Abstract

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ICT has been utilizing as a "diverse set of technological tools and resources to communication, create, disseminate, store and managing the information". ICT technologies include computers, the internet, broadcasting technologies (radio and television), and telephony. It has opened new avenues, like, online learning, e-learning, Virtual University, e-coaching, e-education, ejournal, etc. The effective integration of ICT into the educational system is a complex, multifaceted process that involves not just technology is the easiest part, but also curriculum and pedagogy, intuitional readiness, teacher competencies, and long- term financing, among others. The ICT can be used both at school and higher education levels in the following areas: Teaching, diagnostic testing, remedial teaching, evaluation, psychological testing, development of virtual laboratory, online tutoring, development of reasoning & thinking, instructional material development, value development. Present paper includes concept of ICT, the changing face of the classroom, modes of empowering teachers through ICT, ICT tools commonly used in education, and technology-pedagogy specific ICT input and its benefits.

Key Words: ICT, Pedagogy, Teaching-Learning.

Introduction

Some teachers are born but rests of them have to be given rigorous training so as to develop required competency to become a teacher. Teachers have been conscious about the quality of their teaching. To enhance the quality, some teachers use teaching aids, like, charts, models (static & working), specimen, slides, etc.

But later on it was realized, the need of improving quality of education through the use of Tape-Recorder, TV, VCR, wherein most competent teacher teaches the topic with the help of most appropriate teaching aids. Even the Video Instructional Materials were produced and made available to teachers; still majority of schools did not make use of them. Along with A-V Aids, the print media has to go a long way in improving the quality of teaching and learning. Researchers started thinking and using different Theories of Learning for developing Instructional Material. This gives birth to Programmed Learning Material based on Operant Conditioning Theory of Learning; Programmed Learning Materials (PLM) was compared with that of Lecture Method or Conventional Method. Programmed Learning Material alone as well as in combination with other methods for teaching different subjects was found to be effective in terms of achievement of students. The findings of researches were in favour of Programmed Learning Material (PLM). The PLMs are no more in use because the development of PLM is tedious as well as costly and time consuming. Consequently, Modules were developed in particular format. At present, the Print Instructional Materials used in different Programmes offered by Open Universities are in Module format. All above mention efforts could not improve the quality of teaching to the level of satisfaction of teachers, students, parents and other stakeholders. At present Information Communication Technology (ICT) has been utilizing by the teachers for the better teaching-learning process (Sansanwal, 2000).

Information Technology

Prior to IT, people were using only the print material for searching the information. It limited the search. This limitation has been overcome by the IT. It opens up a new source of information which increased the limitation of access to information. The Information Technology leads to development of Websites. Government, Corporate sector, educational institutions, etc. started uploading the information on their websites. It provides facilities for chat, e-mail, surfing, etc. Networking of computers gave birth to Information Technology. **UNESCO** considered Information Technology as "Scientific, technological and engineering disciplines and management techniques used in information handling and

processing, their application, computers and their interaction with men and machines, and associated social, economical and cultural matters". **OECD (1987)** treated Information Technology as "a term – used to cover technologies used in the collection, processing and transmission of information. It includes micro-electronic and info-electronic based technologies incorporated in many products and production processes and increasingly affecting the service sector. It covers inter alias computers, electronic office equipment, telecommunication, industrial robot and computer controlled machine, electronic components and software products". **Sansanwal (2000)** defined IT as the use of hardware and software for efficient management of information, i.e. storage, retrieval, processing, communication, diffusion and sharing of information for social, economical and cultural upliftment.

Information and Communication Technology (ICT)

Presently ICT has been utilizing as a "diverse set of technological tools and resources to communication, create, disseminate, store and managing the information". ICT technologies include computers, the internet, broadcasting technologies (radio and television), and telephony. Information and communication technologies (ICT) exemplified by the internet and interactive multimedia are obviously of great significance for education. It needs to be effectively integrated into the formal classroom teaching and learning conditions. It has been utilizing in teacher education program for better teaching-learning process in the following manner:

- It has opened new avenues, like, Online learning, elearning, Virtual University, e-coaching, e-education, e-journal, etc.
- Third Generation Mobiles are also part of ICT. Mobile is being used in imparting information fast and cost effective.
- It provides e-mail facility also. One can access it anywhere. It will be cost effective.
- The ICT brings more rich material in the classrooms and libraries for the teachers and students.
- It provides opportunity for the learner to use maximum senses to get the information.
- It has broken the monotony and provided variety in the teaching learning situation.
- ICT brings education to student's doorsteps, allowing them to study at their own pace and time.
- When used appropriately, different ICT are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by among others, helping to make teaching and learning into an engaging, active process connected to real life.
- The effective integration of ICT into the educational system is a complex, multifaceted process that involves not just technology is the easiest part! But also curriculum and pedagogy, intuitional readiness, teacher competencies, and long- term financing, among others (Sansanwal, 2006).

ICT Tools Commonly Used in Education

The singular technological feature, which is a turning point for ICTs around which ICTs are reorienting and growing, is the eminence of the Internet Protocol (IP) for communication. This versatile connectionless protocol is a method by which data is sent over the internet as

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

packets from one computer to another, each having a unique address. Different packets may be delivered to different routes to their destination, where they are rearranged by the Transmission Control Protocol (TCP) and put back in right order. The wide area Networks (WAN) which are identified as Internet (International Networks), Internets (corporate or inter-organizational networks) and Extranets (Extra-organizational networks) are all IP-based. IP has left imprint not only on Metropolitan Area Networks (MAN) and Local Area Networks (LAN), but also or equidistant such as the network computer, workstation, work group server, media server, web server, cable TV networks, wireless 'last mile link' to the customer premises, set –top- box and even a kiosk (Chandra,2007).

Digitization of many ICTs has made it possible to design, develop, deliver, manage and assess the learning and training process easily. It increases the efficiency of the system and makes it more powerful, etc. Latest digital technologies are evolving and conveying rapidly, some of these are:

- Multimedia PC, Laptop, Notebook; Digital Video/ Still Camera; n-line learning/ e- learning (Local Area Networking and other Networking/ Mobile Phone).
- www (world wide web); CD-ROM and DVD; Email and chat; Blended learning(combination of class room teaching, On-line learning and email, chat, web based training); Digital Libraries.
- Computer Mediated Conferencing-Video/Audio Conferencing; Virtual Reality; Application of software such as Word Processing, Spread sheets, Power Point and Simulation and Speech Recognition, etc (Dahiya, 2007).

Areas of ICT in Teaching–Learning Process

The ICT can be used both at school and higher education levels in the following areas:

- 1. Teaching
- 2. Diagnostic Testing
- 3. Remedial Teaching
- 4. Evaluation
- 5. Psychological Testing
- 6. Development of Virtual Laboratory
- 7. Online Tutoring
- 8. Development of Reasoning & Thinking
- 9. Instructional Material Development
- 10. Value development (Sansanwal, 2006)

Technology-Pedagogy Specific ICT Input

So far, the most obvious obstacle of access has not been dealt with in a systematic way. Educators, teachers and students access to computers is still poor. There are major differences from institution to institution. Mainly there is an overall lack of computers, of multi-media computers with internet access.

If we are to cope with the challenges of the rapidly changing society and make use of new opportunities offered by ICT, plans have to be realized by giving educators/teachers and students access to necessary equipments. The most important competence building in this field is the development of pedagogical methods/ strategy. That can happen only when long-term competency programmes can work along with real-life experiences where educators/ teachers and students are using ICT in their daily work and daily learning experiences (Kumar, 2010).

Asian Resonance

Technology strategy	Pedagogical strategy and	ICT Requirement	
	examples		
Lecturing/ demonstrating Tools and templates	 Audio visual presentation Support for lecture/ demonstration includes audio visual / multi media components. Recording for future use Individual or group projects by teacher 	 Multimedia PC/ laptop. Appropriate application software. Fixed projection. Digital video camera. Multimedia PC/ laptop (standlone or 	
	 /student Develop presentation models, simulations of course, content. Develop programming. Own web page or institution web page. 	network connected).Multimedia projector (LCD or DLP) to communicate large group.Digital video camera.	
Using simulations/ models	 Indivisual self- paced learning Enhancing course content (like text book) and other resources. Develop e- books Virtual laboratories Concept formulation by animations, flow, diagram and pictures. Develop multimedia aids 	 Multimedia PC/ laptop (standlone or network connected). Multimedia projector (LCD or DLP) to communicate large group. Digital video camera 	
Electronic mail	 Communication between teacher and student Access of staff Discussion and staff Feedback & advice Submission of assignment Notice & instruction 	 Multimedia PC/ laptop (standlone or network connected). Connected to network (accessible in institution or outside)institution maintain host mail server or ISP account 	
Hypermedia/ hypertext resources	 Course content resourses for self – paced , self – directed learning Develop corpus documents embedded hypertext links including multimedia (sound , video , animation ,& graphics) Developed CD- ROM , DVD or via the web 	 Multimedia PC/ laptop Connected to network (accessible in institution or outside) CD- ROM orDVD ROM 	
Video Conferencing/ Audio Conferencing	Reach to remote tutorial groupsInstitutional linkageUse to scattered small groups.	 Multimedia PC/ laptop with video card and web camera or digital video camera Connected to network / telecommunication Software for conferencing Multimedia projector (LCD or DLP) to communicate large group. 	
 For Individual Programming instruction Taxonomy of educational objectives 	 Tutorial Drill & practice Testing simulation 	 Multimedia PC/ laptop Computer managed instruction system Software for testing Digital video camera 	
 For group Taxonomy of educational objectives Reception learning theory Instructional design theory (e.g gange's) 	 Presentation Virtual lecturing Simulated demo 	 Multimedia PC/ laptop Connected to network / LAN Power point Virtual reality software Digital video camera 	
 For Individual Cognitive development theory Discovery learning theory Cognitive flexibility theory 	 Inquiry Case study Situation learning Problem – based learning 	 Multimedia pc/ laptop Hypertext /Hypermedia Internet & its tools Spreadsheet, word, power point Chat 	
For Group • Cooperative learning theory	 Computer supported collaborative learning Virtual learning comparisons Virtual learning community 	 Multimedia PC/Laptop Hypertext /Hypermedia Internet,its tools Database Virtual reality software Digital Video Camera 	
For Individual /Group System theory	Learning plan designevaluation	Learning Plan TemplatesLearning Management system	

Modes of Empowering Teachers through ICT

ICT can help educators/ teachers in the following ways:

- ICT enable to enhance the initial preparation by giving good teaching and/ or training materials; to use simulators, recording and feedback practices for teaching and microteaching; other training institution experiences and working, introducing trainees with resource and support on cyber space.
- Access to colleagues, institutions and universities, centre of expertise, rich resources at cyber space and national organizations like UGC, NCTE, NCERT, and NAAC etc.
- Interaction with students over a physical distance.
- Access to on-line libraries, journals and research to enable individuals learning.
- Didactic Software/Courseware and Intelligent Tutoring stems can dramatically reduce the cost of teacher training.
- Providing lifelong and professionally developed courses at a virtual situation, training on demand; orientation and refresher courses through video conferencing or on-line.

The Changing Face of the Classroom

ICT is entering into almost all subjects. It is supposed to be used as a tool where and when considered useful. Actions are taken or planned to make sure that ICT will be real part of the curriculum by supporting software development, by integrating ICT into standard learning material, by offering ICT module cases and by integrating the use of ICT in the different subject areas. The face of the classrooms is changing. The teacher education institutions should prepare in-service teachers to keep up with the technology utility in the classroom. It is generally known that the overhead projectors and video players do make their impact, though little, on teaching style. But computers are different from any previous technologies because multimedia and hypertext give educators/teachers access to new ways of thinking through dynamic images, simulations and models. The internet provides access to a huge array of previously untapped information to make the classroom computer savvy and smart (Kumar, 2010).

Emerging themes in the review of literature provide further identified benefits of embedding ICT: By allowing students to learn collaboratively, to control the learning process, to see the results of their actions, enables them to learn how to explain things to others, encourages them to reflect on their own work, and to challenge conceptual understanding (Cox et al., 2003b).

Impact of ICT on students' learning related to value aided areas are:

• Extending learning time	Access for minorities
 Increasing communication 	• More information
 Improving accessibility 	channels
 Increasing motivation 	• Brain centered
• Re-balancing teacher-	learning
mediation and	• Publishing and
autonomous learning	audience
• Introducing scale-ability	• Management and
and consistent	recording.
applicability	

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

ICT help students in various ways like:

- Improves the accuracy of their work
- Raises their confidence
- Helps them to link ideas more effectively;
- Provides them with a sense of audience
- Clarifies their thinking
- Aids collaborative working
- Helps them to view information as not just linear
- Gives them a framework within which to write for a purpose
- Makes them more concerned to complete work
- Helps students to acquire deep knowledge about a particular topic
- Provides students with motivation for tasks
- Engages students in sustained involvement
- Allows students to reflect on learning process
- Facilitates creativity (Broadie 2003; Watson, Proctor, and Finger, 2004).

Full integration of ICT in education is still far from the desired, particularly in teacher education. Highly interactive multimedia or hypermedia is not yet widely used. On-line activities used are limited but should be given special emphasis on the use and integration of on-line resources. The effective and efficient use of ICT depends largely on technical competency of teachers. They should be able to appreciate the potential of ICT and have positive attitude towards ICT. They should operate computer and use basic software for word processing, spreadsheets, and PowerPoint etc; evaluate the use of computers and related ICT tools for training and education of teachers; evaluate educational software/ courseware; search on internet for resources and use of e-mail, chat; include new instructional principles, research and appropriate assessment practices; create effective multimedia-based presentations to support teaching learning; integrate ICT tools into learning activities throughout the curriculum; create hypertext documents; demonstrate knowledge of ethics and equity issues related to ICT; and lastly keep up-to-date as far as educational technology is concerned (Kumar, 2010).

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vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

Asian Resonance Value Based Education- A Need of Today



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Abstract

Education is really the process of removing the ignorance that is covering our inner knowledge, which is absolute, which is perfect, which is eternal, which is supreme.

The values are those factors which can improve the relations among family members and strengthen social bondage. And the values also contribute for patriotic vision and mission. In the past education was imparted by the rishis, who knew the past (from knowledge they gained), present(through their own spiritual experience) and the future(through the vision of distant future).

But now in education there has been a holistic approach and an imbalanced growth of knowledge is provided which deals only with external world around us and not related to the inner self of the individual. This misdirected educational system is all about money making and not man making.

What needs to be done is to change from what we have become to what we are. National Education Policy of Government insists on establishing a centre of value education in all universities and institutes with the sole purpose of imbibing human values. NCERT had launched a "National Programme for Strengthening Value Education" during 2002. The focus of the program is on generating awareness, teacher training, promotion of research and innovations in the area of education of human values and development of guidelines for value education in the school system.

Family is the first school of the child from which he learns political, social and moral values. It is the duty of the parents to inspire individuals to choose their own positive personal, social, moral and spiritual values.

Teacher is someone who gives direction to life. He is the one who guides humanity, and carries morality and character to generations. The teacher's role is to fill the brains of youth with science and the hearts with values.Watch your thoughts, they become words; words, they become action; actions, they become habits; habits, they become character; character, they become destiny.

Introduction

Shri Sathya Sai Baba has beautifully quoted, "If human values take root in the educational system, the emerging individuals will want peace and justice in a world that acknowledges the rule of law in which no nation or individual need live in fear; freedom and self reliance to be available to all; the dignity and work of every person to be recognized and safeguarded; all people to be given an opportunity to achieve their best in life; and they will seek equality before the law and equality of opportunity for all."

Education thus brings out all that is unique in the individual helping him to establish the right relationship with not only the life, mind and soul of the nation to which he belongs but with the larger life, mind and soul of humanity of which he is a unit. It also gives the knowledge of social conduct, strength, character and self respect.

Value based education is a tool which not only provides us a profession which we can pursue but also a purpose in life. The core idea behind value education is to cultivate essential values in the students so that the civilization that teaches us to manage complexities can be sustained and further developed. The elements of a value-based education can be found but in the learning styles which are employed, the scheduling of the classroom, extracurricular activities, and parental involvement.

Values are either innate or acquired. Innate values are our inborn divine virtues such as love, peace, happiness, mercy and compassion as well as the positive moral qualities such as respect, humility, tolerance, responsibility, cooperation, honesty and simplicity. Acquired values are those external values adopted at your "place of birth" or "place of growth" and are influenced by the immediate environment.

"What we are today is the result of what we valued yesterday.....what we will be tomorrow will be the result of what we valued today...." Swami Vivekanand

Need & Importance of Value Education

According to Gandhi ji, "There is a part of a child's soul that has always been unknown but which must be known. With a spirit of sacrifice and enthusiasm we must go in search like those who travel to foreign lands and tear up mountains in their search for hidden gold. This is what the adults must do who seeks the unknown factor that lies hidden in the depths of a child's soul."

We all know that the greatest gift education has given us is the knowledge of unconditional love and a set of values. These values include the simple difference between right and wrong, a belief in God, the importance of hard work and self respect. Moral values have been declined in the present youth due to lack of proper communication between the parents and the child; Harsh Treatment shown to the youngsters in public; peer pressure and also to a certain extent due to media.

We are making our new generation, who are studying in thousands of schools across India, engage in nothing but crude cramming. I am appalled at the state of affairs every subject seems to have been reduced to. Be it Economics, History, Sociology or Political Science, they can be best described as-

> "Lick an enormous set of text books along with other supplementary readers the whole year and vomit the answers on the answer sheets at the end of the year".

This was done to score marks and that too in abundance. The main purpose is to bring up a child whose real target is associated with the universal and moral values. It is a great investment to pursuit new generations who are devoted to national and universal values.

There are subjects that often have practical purposes in our lives, but have been rendered useless by the impractical approach held by the respective universities and schools we study in. Answers must be such that are intelligent, creative and gives a subtle introduction and an impression of the person who writes it.

"The real difficulty is that people have no idea of what education truly is. We assess the value of education in the same manner as we assess the value of land or of shares in the stock-exchange market. We want to provide only such education as would enable the student to earn more. The girls, we say, do not have to earn; so why should they be educated? As long as such ideas persist there is no hope of our ever knowing the true value of education". – Gandhi The main causes of moral degeneration are:

- Lack of respect for the sanctity of human life.
- Breakdown of parental control of children in families
- Crime and corruption
- Abuse of alcohol and drugs
- Abuse of women and children, and other vulnerable members of society.

The Value Based Education is therefore organized so as to secure the fullest possible development of body, mind and heart; and a fruitful channelization of the life-energy in pursuits that contribute to the growth of both internal and external personality. It ultimately provides the requisite help, through a powerful spiritual atmosphere, for the soul to come forward and gradually begin to govern a balanced, peaceful and spiritually awakened life. Therefore, value based-education is instrumental to unfold and nurture the ideals of life.

India, a place of rich diversity and culture was the residence of wise mahatmas, the gurus and the rishi munis.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

They passed on their culture to their students and so began the never ending tradition of passing the heritage of values and ethics through the generations. But as the time passed, this rich and the firm bond between the gurus and their disciple fadened and no longer they shared the same values and thoughts. With the shocking attitude of the modern youth, it seems that this is the most apt time to revive the sanity of this relationship.

The objective of education in a country like India, which has a glorious heritage and can boast of diversity in geography, culture, values and beliefs very rarely seen in this wide world, should be to educate a student of the value system which is indispensable to live a successful life.

Our educational system needs to evaluate its priority and understand that learning should not be coordinated with cramming. We take pride that our educational system is far more advanced and progressive in terms of academic standards in comparison with the U.S.A. or U.K. But in terms of creativity, independent study and an objective approach towards a subject we feel inadequate in experience.

Facts about imparting value education

Education of nurturing values has been a matter of concerns, since independence. A number of education commissions and committees set up by Government of India have made recommendations about the need for formulation of programmes on education in human values in schools. The preamble to the constitution, the Fundamental Duties enshrined in the constitution and National Policy of Education 1986 and the S.B.Chavan

Committee Report (1999) submitted to the Indian Parliament, had emphasized the need to nurture core universal values.

The department related Parliamentary Standing Committee in its 81st Report under Shri S.B.Chavan has also recommended that Education should highlight multifaceted development of human beings and the programme of education in human values should be built around core universal human values like truth, love, peace, righteous conduct and non-violence. The focus of value education should be more at primary stage, and folk songs, skits, flip charts, scouts and guides need to be promoted.

Many institutes today conduct various value education programmes that are addressed to rising problems of the modern society. These programmes concentrate on the development of the children, young adults etc. focusing on areas like happiness, humanity, cooperation, honesty, simplicity, love, unity, peace etc.

NCERT is functioning as National Resource Centre for the programme of Education in Human Values. CBSE, NCTE National Institute of Educational Planning and Administration (NIEPA), UGC, AICTE, IIT, IIM, IGNOU, National Institute of Open Schooling (NIOS) and other institutions collaborated with and assisted NCERT in development of the National Resource Centre. NCERT had launched a"National Programme for Strengthening Value Education" during 2002. The program has been visualized as a national level initiative to sensitize parents, teachers, educators, educational administrators, policy makers and community agencies etc. for promotion of value oriented education. The focus of the program is on generating awareness, material development, teacher training, promotion of research and innovations in the area of education of human values and development of guidelines for value education in the school system.

Instilling Values through Education

For development of sound character among the member of teaching community of society, acquisition of humanity based and morality oriented values may be considered as inevitable through use of appropriate teaching methods. Academic or value education both are equally important. Without formal education, you will not be able to read or write. Without these skills, you cannot get a good job or manage even simple things of daily living. Value education is equally important. If a highly qualified, well employed person does not know how to behave properly, all that he or she does has little meaning and will not serve him or her well. Fruitful education is the kind used for our welfare as well as of others. This can only happen only when you have both academic and value education. Through education we can change the world.

- By giving a place for moral values in the curriculum.
- Moral values can be explained through stories, poetry and illustrations.
- Educate students through posters, advertisements and dramatizations; those are all a part in the curriculum.
- By introducing a course on moral values as a part of its Master Degree in Developmental Administration.
- Giving course training to students to develop moral values in the society.
- By educating citizen through direct contact by setting up local offices across the religion.
- First of all educate women in the society. Mother is the first teacher. Motivate every woman to know about moral values through special course like "Gandhian Studies".

Role of Family

Every family wants its child to get the best education and find a better place in this world, but this is not the main aim. The main aim of education is: To help the family think about and reflect upon positive universal values and the practical implications of expressing them in relation to themselves, others, the community and the world and to inspire individuals to choose their own positive personal, social, moral and spiritual values and be aware of ways for developing and deepening them as world citizens.

Family is the first school of the child where he learns appropriate behaviour from his parents and behaves accordingly. He socializes firstly by his family from which he learns political, social and moral values. The young child's attitudes towards people, things and life in general are patterned by his home life. From what the parents says the child learns new values and attitudes and discovers what behaviour is socially acceptable or unacceptable. So behaviour of family members should be good and value based. It is not possible for the parents to preach all the moral values, instead they have to be practiced by themselves and set good examples to the children. This is the first basic teaching which must be provided for further enrichment of moral values. Child is like a soil and parents are architect who can model him in any way desirable to them. Value based stories must be told which will make him aware of the different values present in human beings. Home is the place to which one brings the everyday run of social experience, to evaluate, to appraise, to understand or to be twisted, to fester, to be magnified or ignored as the case may be. Social development is taking place rapidly

Asian Resonance

and the child quickly passes from the self centred, selfish individuals, to the point where he is a co-operative, well adjusted member.

Role of Teachers

The main purpose of education is to bring up a child whose real target is associated with the universal and moral values; this is possible only by the help of rightly and virtuous teachers. Teacher is someone who gives direction to life. He is the one who guides humanity, and carries morality and character to generations. When we consider the reality, it is again teachers who give direction to mothers, fathers and the society. In the hands of a real teacher, coal will turn into a diamond.

"The teaching profession prepares the leaders of the future.... The statesman, the industrialist, the lawyers, the newspapermen...all the leaders of tomorrow are in schools today."

"The psychological foundations for wider loyalties must be laid. Teach those attitudes which will result ultimately in the creation of a world citizenship and world government... we can and should teach those skills and attitudes which will help to create a society in which world citizenship is possible, Professor Benjamin Bloom proclaimed: "The purpose of education and the schools is to change the thoughts, feelings, and actions of students."

The researchers observed that teachers would be more effective if they balance love and care more judiciously while interacting with students. While firmness is necessary, love must play a dominant role in handling students; love and sub-values like sympathy and kindness must get precedence over maintaining silence and order in the class.

Desired human values should circulate in the community of learners through the process of education and percolate to the other members of the society through behavioural integration and internalization to make it progressive as in a progressive society, social reconstruction through upward mobility is inevitable and therefore development of good moral character is considered as essential through education for the sake of humanity and to ensure sustainable or bearable development.

Values are acknowledged to be at the heart of leadership by Teachers. We can never be value free so the process of self-evaluation is crucial if we are to appreciate the effect that our values have on the life of the students. At the core of values-based education lies an agreed set of principles, deeply held convictions, that underpin all aspects of a teachers' life and work. The process is holistic and developmental, demanding a great deal from teacher. However, the demands have a tremendous return in terms of improved pupil behaviour, relationships quality of his work

Schools can be considered as laboratories where solutions are being sought,

lectures are the pills, and the teachers are the masters of this cure center. If the school and the teacher fulfill what is expected from them, it will be a serious movement for the solution of the problems.

Teacher should show the best and safe way, and the real aim for his young brains. He should always be ready at everywhere and every time to fulfill his task and to teach the truth. This is because students always follow what they learn from their teachers. So, they should not only learn and carry the knowledge, but try to use it to uncover

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

what is good and fine, and also to shape their own lives. Otherwise, surrounding conditions will shape it. Teaching of science should get humanized...for ex in the lessons of human biology, heart and brain should be studied not simply as pumping stations and memory control towers but as seats of love, feelings, emotions, conscience - the qualities that mankind is characterised by.

If the brains of youth are filled with science and the hearts with values, then it proves that we achieved something for the sake of future. These generations are able to resist all obstacles they face.

Conclusion

Right education should cater to an individual's intellectual, social, physical, emotional, spiritual development. Education should help him/her evolve into a person with holistic vision and growth, culminating for an integrated mankind. With these beginnings, we can help in the fulfilment of the aim of regenerated, revitalised, spiritualised youth which alone can lead India in the consortium of nations in this world.

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Asian Resonance Emotional Intelligence: With Reference to Job Performance

Abstract

This theoretical paper highlights the concepts of emotional intelligence. Emotional intelligence refers to the ability to set a goal in life, work towards achieving it, negotiate it and feel empathetic towards others. It is an learned process. A key set of characteristics makes up emotional intelligence, such as self-motivation and persistence in the face of frustrations the ability to control impulse, to regulate moods and to empathise. An individual's success at work is eithty percent dependent on Emotional Intelligence and twenty percent dependent on Intelligence Quotient. With high Intelligence Quotient one can be an efficient professional or manager, but with a high emotional Intelligence is necessary for promotion.

Introduction

Emotions are reactions consisting of physiological reactions, subjective cognitive states and expressive behaviours. Emotions influence the way we think, i.e. how we process information about ourselves or the external world. Smith and Shaffer (1991) findings suggest that persons in a good mood are able to process information effectively, but they are less constructively, they enhance intellectual performance. Rosenthal (1991) has shown that when the subjects are treated warmly while being administered Intelligence Quotient (IQ) tests, they scored higher as compared to when they were treated harshly.

Emotional intelligence is not based on logic or reason, structure or system. It is a skill set developed on experience. The emotional experience individual develops through trial and error, values and feelings. Chatterton feels that leaders spend much of their time in communicating and creating an environment which inspires people of the organization. Leaders achieve results for their organizations through the work of others. They cannot create and sustain a successful organization. Hubert (1999) found that successful senior leaders have a strong combination of emotional and cognitive abilities.

Ever since the publication of Daniel Goleman's first book on the topic in 1995. Emotional intelligence has become one of the buzzword in the field of behavioral research. It created interest amongst behavioral researchers that new kind of intelligence involving emotions can relate to organization-members. Emotional intelligence in the last decade has gained considerable importance including the corporate work field.

Mayer and Salovey16 (2002) in their emotional intelligence test MSCEIT have identified four branches of emotional intelligence :

- Perceiving Emotions : The ability to perceive emotions in oneself and other as well as in objects, art, stories, music and other stimuli.
- Facilitating Thought : The ability to generate, use and feel emotion as necessary to communicate feelings or employ them in other cognitive processes.
- Understanding Emotions: The ability to understand emotional information to understand how emotions combine and progress through relationship transitions, and to appreciate such emotional meanings.
- Managing Emotions : The ability to be open to feelings, and to modulate them in oneself and others so as to promote personal understanding and growth.

Above mentioned dimensions of state that knowing own emotions and those of others is not sufficient to become an emotionally intelligent, but managing emotions appropriately is necessary. People who know how to manage their emotions can also channel is useful ways. It is an important aspect for leadership qualities. People who excel in managing, it can bounce back far more quickly from life's setbacks.

Self-motivation skill is necessary for emotional intelligence. Numbers of people are motivated by external factors such as status in an organization or



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achievement motivation. People having high achievement motive remain optimistic under unfavorable conditions too. People having this skill tend to be more productive.

Empathy is an ability to 'feel for' other people. Persons who are empathic in nature consider other's feelings along with related factors in the process of making intelligence decisions. People who have empathy are better in caring professions, teaching, sales and management. They have also a deep understanding of the importance of cultural and ethnic differences.

Social skill or the ability to handle the emotions of other people is essential aspect of emotional intelligence. Much of the art of relationship is 'emotional interactivity'. It is a skill to interact with other people effectively. People who excel in such type of skills do well in anything that depends on interaction with others and become a social star.

Salovey (1990) developed a definition of emotional intelligence which involves five characteristics of self-awareness or knowing one's own emotions, the ability to manage one's emotions and impulses, selfmotivation skills, empathy or the ability to sense how other are feeling and finally, social skills or the ability to handle the emotions of other people.

Again in 1997, Mayer & Salovey15, define emotional intelligence is a set of abilities that includes the abilities to perceive emotions in the self and in others, use emotions to facilitate performance, understand emotions and emotional knowledge, and regulate emotions in the self and in others. Ashkanasy & daus 1(2002) noted that the concept of emotions has had an unusually important impact on managerial practice. Several organizations have incorporated emotional intelligence into their employee development programs (Fast Company9, 2000); Boyatizis et al5 (2002) noted that some business schools have added the training of emotional competencies to their curriculums and the appeal of emotional intelligence may reflect the idea that success is not simply determined by well known abilities, such as verbal and quantitative abilities, but also by abilities pertaining to emotions. The work in the field of EI especially in the area of work place has increased considerable as such researches has given a very encouraging outcomes as of yet.

Deshpande8 (2009) in his very interesting study conclude that Emotionally intelligent ethical behavior of peers and of manager shed a significant positive impact on ethical behavior of employees. Thus, organizations can expect employees with EI skills to be more likely to make ethical decisions. These are skills that can be tested for during the hiring process, maintained via training and development programs, and reinforced during performance appraisals. Overall, the findings imply that EI could create a better learning, working, and caring environment. Boyatzis et al4 (2009) found that both emotional and social competencies are significant predictors of job performance. Cote and associates7 (2003) assessed that emotional intelligence is an important predictor of task performance because of its interactive effect with cognitive intelligence. Their results also reveal that using cognitive intelligence

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

tests alone to predict performance entails risk, because employees with low cognitive intelligence can perform effectively if they have high emotional intelligence.

Augustine 2(1992) found that the degree to which employees like their job is influenced by a combination of personality variables. Chiva & Alegre6 (2008) in their research said that emotionally intelligent individuals are more likely to experience high level of job satisfaction. Howard12 (2006) found evidence of positive relationship between emotional intelligence, Trust and job satisfaction. Guleryuz et al.10 (in press) in their research study reviled that emotional intelligence was significantly and positively related to job satisfaction. Kafetsios & Zampetakis13 (2008) concluded that positive and negative affects at work substantially mediate the relationship between emotional intelligence and job satisfaction with positive affect exerting a stronger influence.

On the basis of above description we can say that knowledge of person's own emotion is the basic element of emotional intelligence. If people cannot be able to recognize his emotions, it leaves him at other people's mercy and create the feelings of distress. Persons having the quality of self-awareness know about their limitations and strengths and allow him to exercise self-control. It permits people to develop coping mechanisms during the time of intense emotional state. Self-aware people have high degree of self-confidence and also have a knowledge of their abilities.

The discourse of this study establishes a positive effect of emotional intelligence on employees job performance and job satisfaction. Despite the popular interest, there is a paucity of studies on how emotional intelligence is effecting in the field of teaching and teacher learning situations. A classroom situation is always full of high emotions as there is an interaction with a number of individuals at the same time with varying individual differences. This is indeed a situation that requires perceiving, assessing and managing emotions of one's and that of the others. Though there is work in progress in this field it is necessary to make adequate provisions for developing tools to increase emotional intelligence among teachers and teacher trainees as a very important aspect of emotional intelligence is that it can be developed. Research in training and development, psychology, and behavior change suggests that it is possible to develop and enhance emotional intelligence. Hence it is felt that there is need to develop more tools and techniques in the field emotional intelligence in teaching-learning situations.

Thus, it can be concluded that Emotional intelligence is vital to business. The top performers in business exhibited high levels of emotional intelligence. When managers understand the emotional intelligence skills of their teams, they become more aware of the team's strengths and weaknesses and can make better decisions about how work is done. Business organizations are concerned about the ability of the people to know, manage and monitor their emotions, i.e. emotional intelligence. In Asian Resonance

VOL.-II, ISSUE-I, JANUARY-2013

other words it can be concluded that with high emotional intelligence one can get promoted can emotional intelligence can be increased throughout life. The higher the rank of a person considered to be a star performer, the more emotional intelligence capability is responsible for his effectiveness.

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Abstract

Accountability is required in all the activities which require the feeling of responsibility or showing concern. Education is one such field which requites the accountability of the personnel involved in it. Mostly the teachers are expected to be accountable for student academic achievement values, their behaviors and for all educational outcomes, besides teachers are also accountable for various aspects like keeping the students alert throughout their class, fulfilling the future behavior, job requirements, participation in cultural activities, literary events, sports etc, for which they have no direct concern. Teacher is a pivot of the education system for the transformation of intellectual and technical skills from one generation to next. The growth and development of any nation depends upon education system. The most important factor in the educational development is the teacher who is professionally equipped with various skills, competencies, determination and accountability to give his best to the individual as well as society. Thus a teacher should be committed and accountable towards student's overall development, community, profession and nation for his own as well as nation's growth.

Introduction

A teacher is one who teaches. The work 'teach' has been derived from the Anglo Saxon work "Taecon" which means 'to impart', 'to instruct', 'to train' and 'to make aware of'. The teacher acts as pivot of any educational system for the transmission of intellectual and technical skills from one generation to next. The teacher is the key man on whom the future of children and mankind depends. He plays an important role in shaping and moulding the personality of the individual. A successful teacher is one who is able to foster creative thinking, develop skills and instills a desire for lifelong learning among students. In any society a teacher has a very important and respectable place because teaching is a noble profession. Teaching as a profession is different from other professions because of its multitude of dimensions. Teachers are the largest professional group engaged in human development activities.

As the teachers are torch bearers of a learning society, so they have to aware the learner to face the challenges in this era of Globalization, Privatization and Liberalization along with the technical advancements in educational sector. Therefore a teacher has to be realistic and to forgo the transmission model of teaching, and the reflective, committed and accountable to the profession and have to multidimensional.

Concept and Meaning of Accountability : Several terms are synonymous with the term "accountability". Among them the words like "Obligation", "Responsibilities" and "Entitlement" are highly relevant to any accountability relationship and several factors influences the nature and efficacy of such relationship.

The subject 'accountability' is very interesting because it is such a pervasive feature in many of the human relationships. Leedwig Wittgensteing (1965) observed that the usage of the term 'accountable' is quite extensive. The word accountability includes a) giving an account of and b) being answerable.

Thus the concept of accountability and its implications are quite complex from both theoretical and practical point of view. This complexity may be partly due to the term's origin and a review of its variation in its meaning. So 'accountable' meant literally "to reckon, count, count up or calculate". The definition "to render an account of to explain and to answer for "came into use between the late 1600s and early 1700s.

Accountability in Education : Lessinger (1971), a leading proponent of accountability called attention to the problems during the seventies. Lessinger's comment pointed to a new trend in the movement the frequent use of modern business as an ideal model for school management and accountability. Teachers should be accountable f or 'result'. Their primary concern is with the actual



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outcomes of education as evidence by student performance. Of the various forms of accountability proposed for education, the concept of performance contracting is often cited as the most effective strategy to assure 'accountability for results'. The crucial factor in all these is that their determinate quality generally refers to the practices in which teacher's performance is evaluated in terms of student's performance and rewarded. Mostly educational outcomes are translated into behavioural terms, observed and measured for purpose of accountability. What is expected is the degree of personal direction one may have in meeting these expectations.

Teacher Accountability : Demand for greater accountability in education and the proposals that accompany them are often directed at teachers. The functions of evaluating and reporting students progress are necessary in teaching students' learning. There are four elements in the performance approach to accountability.

- 1. Establishing a fairly definite set of performance or learning objectives.
- **2.** Evaluating or measuring student's progress towards those objectives over a period to time.
- 3. Reporting student's progress as measured.
- **4.** Either assigning or with holding rewards on the basis of such performance.

Teachers should formulate learning and performance objectives for their students. Teachers can develop appropriate objectives and establish a sensible plan for teaching. They must be knowledgeable about skill development and the skill levels at which their student are functioning.

Therefore, a teacher should get all essential knowledge to take-up the issues and find appropriate solutions.

Area of teacher's accountability : Every profession has a set of ethics principles, guidance, responsibilities and norms to guide the conduct and behavior of its profession. Accordingly in teaching as a profession there are various guidelines, principles, norms of morality, accountability which a teacher has to follow in teaching profession while dealing with students, stakeholders, and community. Every teacher need to follow these principles and should be accountable for his profession.

- (i) Accountability towards the learner : Student is the most important pillar in the education system. Today, teacher has to concern himself with the total development of child's personality. To achieve the optimal learning of the child the teacher should take care of the student's progress according to their capacity. Hence the motto of the teachers should be always for the benefits of their students because the success of the students depends essentially upon the competencies of teachers, their sense of dedication and accountability.
- (ii) Accountability towards Stake Holders/Parents : Parents are the most important stakeholders because they invest a lot for the education and development of their children. Therefore, not only the students, parents of the students also seek indulgence of teachers in achieving their desired goad. Therefore, a teacher must develop more time in public relation, parent counseling and behavioural therapy to fulfill the global societal needs.
- (iii) Accountability towards community : A teacher must be accountable towards the community to which he

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

belongs. He should co-ordinate different activities of the community and should motivate the deprived and weaker sections of the community to get education. A teacher should work as a bridge between the school and community.

- (iv) Accountability towards Profession : It is the duty of a teacher to think about various ways and means to help the students in acquiring knowledge and skills and shaping their future. So he has to devote more time and energy to direct the students for self learning. Through self learning one can achieve professional enrichment and excellence which will be a great help to the nation in future.
- (v) Accountability towards Humanity and Values : A teacher should believe in human values such as truth, beauty, goodness, honesty, love, equality, regularity, punctuality etc. Because when a teacher inculcates these values through his behavior then his students will automatically accept them. Hence, a teacher should believe in these values and exhibit the same in his behavior and instructional system for the betterment of humanity.
- (vi) Accountability towards Nation : A teacher must organize his research activities as per the needs of the country. It means that research process in education should be such that these solve various problems from different angles.

Other Factors in teachers accountability : The problem of teachers accountability is much deeper by involving other criteria and principles. They relate directly to the problem of establishing causal responsibility for learning and raise questions concerning the expectational responsibilities associated with teaching. There are forms of accountability that may be more productive throughout all levels of education in dealing with the problems of students performance. Achieving better results in education is certainly desirable. In different roles as students, as adults, youth must contend with a complex society and the welfare depends on their competency, values and kind of people they becomes as adults in future.

Research in education showed that since the variable assisting or impeding educational strategies are numerous, varied only partially and are not as easily understood or controlled. Whatever may be the mode of teaching, the alterations to be made are not in some tangible material, but in the attitudes, beliefs, perceptions and judgment of the learner, behavioural factors are for more remote and complex. School inputs and resources can serve as a reliable index of either the quality or value of school programmes. Greater emphasis is on results, meaning student learning and performance. The difference in school achievement can be largely accounted for by differences in school inputs, teachers, school facilities, size of the library, laboratories etc. But school resources and inputs cannot serve as an exclusive measure of the value of school programmes or the ultimate effectiveness of the school to promote student learning,. The responsibilities and actions of students, their parents, school administrators, school committee and the community, and the teachers have an exclusive influence in determining what students learn, how they perform and what they achieve. It presents a major obstacle to the improvement of student performance, and to the achievement of many outcomes in education. At the same time differences in student achievement from school to school are due to differences in the students

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

family background and their fellow students than the differences in the quality of schools.

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Asian Resonance Swami Vivekananda as an Educationist

Abstract

Vivekanand says that all types of knowledge, whether spiritual or secular, exists in the mind of man. Man explores the pro-existing knowledge within himself and displays it. He considers education of his times as merely negative. According to him, the education which does not help the common mass of people to equip of character is not true education. In this paper, Swami Vivekananda's educational philosophy has been manifested by throwing light of his educational beliefs.

Introduction Meaning of Education

Vivekananda gave the meaning of Education within these words, "Education is the manifestation of the perfection already in man. Vivekananda says that all types of knowledge, whether spiritual or secular, exists in the mind of man. Man explores the pre-existing knowledge within himself and displays it. He further explained that no knowledge comes from outside, it is all inside. All knowledge that the world has ever received comes from the mind; the infinite library of the universe is in your own mind. The external world is simply the suggestion, the occasion, which sets you to study your own mind, but the object of your study is always your own mind.

Swami Vivekananda gives the examples of law of gravitation and a piece of flint in support of his ideas. He says, "The falling of an apple gave the suggestion to Neuton, and he studied his own mind. He rearranged all the previous links of thought in his mind and discovered a new link among them, which we call the law of gravitation. He gives the second example, "Like fire in a piece of flint, knowledge exists in the mind; suggestion in the friction which brings it out." Thus Vivekananda concludes that all knowledge, secular or spiritual is in the human mind.

Aims of Education: Attainment of Perfection

According to Vivekananda, the main aim of education is to attain the perfection which already exists in man. All knowledge is inherent in man. No knowledge comes from outside, it is in the human mind. He considers that the human mind is the source of the infinite library of the universe. All education, therefore, is the manifestation of the perfection which already exists in man. He says, "All knowledge, therefore, secular or spiritual, is in the human mind." In many cases it is not discovered, but remains covered and when the covering is being slowly taken off, we say, we are learning and the advance of knowledge is made by this process of uncovering.

Character Formation

According to Vivekananda, "The Character of any man is but the aggregate of his tendencies, the sum total of the bent of his mind." Man's thoughts and actions form the character of a man. The dominance of good impressions make the character good and the dominance of bad impressions make it bad. He remarks, "Every work that we do, every movement of the body, every thought that we think leave such an impression on the mind-stuff, and even when such impressions are not obvious on the surface, they are sufficiently strong to work beneath the surface, subconsciously. What we are every moment is determined by the sum total of these impressions. If good impressions prevail, the character becomes good, if bad, it becomes bad.

Physical Development

Vivekananda is against that education which gives stress on the mental development of man alone. He attaches equal importance to the proper cure of the body and healthy development of one's physique. He urges, "Be strong, my young friends, that is my advice to you. You will be nearer to Heaven through football that through the study of the Gita. You will understand the mighty genius and the



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mighty strength of Krishna better with a little strong blood in you. You will understand the Upnishads better and the glory of the Atman, when your body stands firm on your feet and you feel yourselves as men." Present educational system of India attaches equal importance to physical and mental development for all sound development of children. He would rather vote for trumpets and kettle drums, damru and hom so as to raise the deep and martial notes than to have effeminate forms of music.

Development of Mind

Vivekananda says, "we want that education by which ... strength of mind is increased ...". If the mind is weak, the Atman cannot be realized. He explains, "If there is no strength in body and mind, the Atman cannot be realized. You must retain great strength in your mind and words, "I am low", "I am low", repeating these ideas in mind, man belittles and degrades himself." Briefly he said that "The mind has to become the master of its thoughts and caption of its deeds."

Attainment of self-reliance

According to Vivekananda, "we want that education ... by which one can stand on one's own feet", the famous, the acquiring of technical education by the people because this will help them in earning their livelihood. He comments, "It would be better if the people got a little technical education so that they might find work and earn their bread instead of dawdling about and crying for service."

Increasing the Productivity

Vivekananda believes that the goal of education should not be producing the clerk, lawyers and magistrates. It should rather be increasing the production of food. He remarks, "What is the goal of your education? Either a clerkship or being a roughish lawyer, or at the most a Deputy Magistracy, which is another form of clerkship is not that all? What good will it do you or the country at large? Open eyes and what a piteous cry for food is rising in the land of Bharata; Today the hike in the prices of essential commodities reminds everyone of the idea given by Vivekananda to increase the productivity.

Religious Development

Vivekananda holds that education should aim at religious development of man, religion is within man. He remarks, "If religion and life depend upon books or upon the existence of any prophet whatsoever, then perish all religion and books. Religion is in us, no books or teachers can do more than help us to find it and even without them, we can get all truth within.

According to Vivekananda, education should enable man to discover and develop the religious seed already present in him and thus find the absolute truth. To him, each individual should be able to search out and develop the religious seed embedded in him and this find the absolute truth of reality. Hence, he advocated the training of feelings and emotions so that the whole life is purified and sublimated. Swami Vivekananda's views regarding aims of education were, "Education should lead to the development of character and morality."

Philosophy of Education

The Philosophy of Vedanta and Upanishads is the basis of Swami Vivekananda's philosophy of education. He believes that all knowledge, worldly or spiritual, is in the human mind. It lies hidden and inactive covered with a curtain of darkness and ignorance. It is the function of

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

education to remove this curtain of darkness and ignorance. All kinds of learning are self learning. The role of the teacher is only to motivate and encourage the students in searching out the hidden treasure of knowledge which is lying inactive in their minds.

Vivekananda considers the education of his times as merely negative. The education which does not help the common mass of people to equip themselves for the struggle of life, which does not bring out strength of character, a spirit of philanthropy, and the courage of a lion – is it worth the name. He holds the view that education must develop character, mental power, and intelligence and inculcate self confidence and self reliance in men.

Thus, Vivekananda is an idealist by heart. First of all, he gives stress on spiritual development, then on material prosperity, after that on safety of life and lastly on solving the problems of fooding and clothing of the people. Dr. R.S. Mani observed, "His life's mission was to advocate that people should be possesses of Shraddha (faith), of Virya (courage) and attain to the knowledge of the Atman and sacrifice their lives for the good of others. This was his wish and blessing.

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- 1. Theory and Principles of Education, p. 205.
- 2. The Complete works of Swami Vivekananda, Vol. 1, p. 28.
- 3. Educational ideas of Eminent Indians, pp. 396-97.
- 4. Seven Indian Educationists, p. 43.
- 5. Principles of Education, p. 345.
- 6. Philosophical Approach to Education, p. 256.

Asian Resonance Nuts and spices: Potent antioxidant sources and their application in food



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Abstract

Plant food constitutes a significant part of our diet providing various important nutrients required by body for adequate growth and development. Aside from the nutritional value, there has been an increasing interest in nonnutrient components, because they have been found to protect the body against chronic degenerative diseases. Nuts and spices have been identified as the concentrated and promising sources of natural antioxidants and though in lesser quantity can contribute significantly to the total intake of plant antioxidants. According to researches and reviews, it can be observed that combination of nuts and spices in the form of mixes are not being used among people. The population could thus be encouraged to consume nuts and spices in combination so that they can obtain the benefits of both.

Keywords: Plant foods, Nuts, Spices, Natural antioxidants, Mixes

Introduction

Food is the cornerstone of human existence. Man derives all important nutrients by virtue of food he eats in his daily diet. It could be summed up as any plant or animal material consumed for nutrition and sustenance. A significant part of our diet providing various important nutrients required by the body for adequate growth and development is constituted from plant food. Aside from the nutritional value, there has been an increasing interest in non-nutrient components, as mounting research links diet/ food components to disease prevention and treatment (Farmakalidis, 1999). Thus there are increasing evidences, for physiological and patho-physiological reasons, that food needs to be considered as such and not only as nutrients. These observations have led to continuing research aimed at identifying specific bioactive components, as food antioxidants.

In a normal diet, nuts and spices have been identified as the concentrated and promising sources of natural antioxidants and though in lesser quantity can contribute significantly to the total intake of plant antioxidants than many other food groups like vegetables, fruits and cereals (Dragland *et. al*, 2003; Tapsell *et. al*, 2006). Numerous studies have shown the physiological effects of antioxidants from nuts and spices which strongly indicate that many active principles of nuts and spices work as excellent nutraceuticals.

Nuts and Spices

Botanically, nuts can be described as 'one seeded indehiscent fruits'. They are obtained from trees and have a specific taste and flavour corresponding to each nut. They are either fruits or seeds and consist of an edible fat containing kernel surrounded by a hard or brittle shell (Srilakshmi, 2002; Janick and Paull, 2008). Spices are potent plant foods that possess a wide range of nutrient bioactive compounds that contribute to improve health, while adding variety, colour, flavour and aroma to daily diet. It is a dried seed, fruit, root, bark, leaf or vegetative substance used in nutritionally insignificant quantities as food additives or as preservatives that kills harmful bacteria or prevent their growth (Baghurst *et. al*, 2006). According to Tapsell *et. al* (2006) herbs and spices have a traditional history of use, with strong roles in cultural heritage, and in the appreciation of food and its links to health. Spices are known to improve digestion, reduce cholesterol, improve blood glucose levels, and have anti-inflammatory, antibacterial, antioxidant, antimutagens and anticancer properties (Gyamfi *et. al*, 2002; Srinivasan, 2005; Hossain *et. al*, 2008; Zahin *et. al*, 2009; Sultana *et. al*, 2010).

An Indian Kitchen is a jewel house for such wonder herbs which are used in daily diets mostly for flavoring and aroma but apparently having the therapeutic and medicinal potential (Kumar, 2012). Few of the examples in this series are Fenugreek (*Methi*), Cumin seeds (*Jeera*), Asfoetida (*Hing*), Curcumin (*Haldi*), Black Pepper (*Kali Mirch*), Coriander (*Dhaniya*), Curry patta, Cinnamon (*Dalchini*), Cardamon (*Elaichi*), Garlic (*Lahsun*), etc.

Methodology

The present survey was undertaken in different areas within the municipal limits of Udaipur City. Hundred homemakers willing to participate were selected for gaining information about use of nuts and spices in household. A questionnaire was developed and information gathered by face to face interview. The information collected was tabulated and analyzed using frequency distribution and percentages of variables studied.

Results

A total of hundred respondents were interviewed regarding the use of nuts and spices together and as mixes in household. Majority of respondents selected (34 per cent) were in the age range of 41-50 years, followed by 25 per cent in 31-40 years of age range. Ninety eight per cent of the families were followers of Hindu religion. Most of the selected respondents were reported to be having vegetarian food habits (83 per cent).

Modern consumers use both nuts and spices to enhance the flavour and healthfulness of foods. The results of survey indicated that sixty two per cent of respondents agreed that they use nuts and aromatic spices together in preparation of certain recipes, whereas 38 per cent did not use nuts and spices together in preparation of food (table 1). It was observed that, desserts (23.65 per cent), followed by rice (21.62 per cent) and beverages (14.19 per cent) were the most preferred food items in which nuts and spices were added together.

Nuts function as ingredients in various recipes in fresh, raw, roasted, boiled, salted or fried forms. They function as thickening agents in preparation of gravies, used in chutney and sweet preparations, in beverages and for garnishing. Nuts are favoured as ingredients in salads and in stuffing for poultry. They are preserved in sugar syrup or crystallized as ingredients of puddings, cakes, biscuits and sweetmeats of all kinds, nuts are in universal use. Nut butter is also made by grinding roasted kernels and addition of salt, thus finding manifold uses in chocolate manufacture. Large quantities of nuts are used in ice cream. Processed foods, made out of nut flour, are rich in protein and are used as a weaning food for children. Spices from all over the world are widely available and are sold whole, crushed, powdered, dry, or fresh to provide a variety of flavours. Spices can be added whole (tied in a cheesecloth, nylon net or muslin bag) or crushed and ground to provide more flavour (Sharma et. al, 1989; Belitz et. al, 2007). Addition of nuts and spices improves taste and hence the acceptability of the product among consumers. It could be

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

concluded for the given studies that products with added nuts and spices in recipe ingredients have wider acceptability. Also, these are usually consumed in powdered form singly or as mixes.

Though a majority of people consume these spices and thus deriving their medicinal benefits, the population lacks awareness regarding the fact. India has a rich heritage of spices which have been proved to be a pool of antioxidants with numerous health benefits. Therefore, measures need to be taken to inform or make aware the public at ground level about the antioxidant richness leading to therapeutic benefits of spices (Avinash and Sankhla, 2012).

Spice mixes

Spice mixes are blended spices or herbs. When a certain combination of herbs or spices is called for in different recipes (or in one recipe that is used frequently), it is convenient to blend these ingredients beforehand (Anon., 2012). In Indian cuisine, spices are mixed in specific amounts to make spice mixtures (Rathore and Shekhawat, 2008), for example, chilli powder (red pepper, cumin, oregano, salt and garlic powder), Curry powder (coriander, turmeric, cumin, fenugreek seed, white pepper, allspice, yellow mustard, red pepper and ginger), Poultry seasoning (white pepper, sage, thyme, marjoram, savoury, ginger, allspice and nutmeg), Pumpkin pie spice (cinnamon, ginger, nutmeg, allspice and cloves). Mixed spice powder is widely used in food preparations, both on domestic and industrial levels. The major reason behind the rapid increase in mixed spice powder consumption is the increase in production of processed foods, some of which depend on spice mixes for their characteristic properties (Rtmitchell, 2003; Bazaraa et. al, 2007).

The survey results about consuming spice mixes showed that 69.41 per cent subjects preferred to purchase these mixes from the market, 20 per cent prepared these mixes at home and 10.59 per cent used both homemade and purchased mixes (table 2). A total of six different mixes could be listed from the responses of subjects which were prepared at home. Garam masala (26.92 per cent), followed by chai masala (21.15 per cent) and chat masala (19.23) were among the most common mixes prepared at home (table 3). The respondents were also enquired about the commonly purchased spice mixes from market. Table 4 enlists sixteen mixes purchased by respondents. It could be inferred from the results that the most commonly purchased spices mix was garam masala (22.71 per cent), followed by channa masala and pao bhaji masala (13.55 and 13.15 per cent respectively).

Aside from the existing and very popular spice mixes available in markets, researchers have been working towards developing newer blends with wider acceptability. The work by Guine *et. al* (2010) included the development of a spicy strawberry syrup, with formulation, processing and industrialization aspects, chemical and sensorial analyses as well as a consumer study. The sensorial evaluation was performed with a panel of 25 tasters, of which 17 were women and 8 men. The parameters evaluated using hedonic scale were: visual aspect, colour, consistence, brightness, sweetness, strawberry taste, spicy taste, global appreciation. In all characteristics evaluated in the sensorial analysis the medium punctuation was 4 (in a scale from 0 to 5), corresponding to Good. Despite the product being considered quite spicy, its acceptance was very good.

Middha and Goyal (2009) developed a Chat spice premix which was standardized and analyzed for its sensory, nutritional and shelf life qualities. The mean scores for overall acceptability of the spice premix were 8.34 against the control premix (7.52) on nine point hedonic rating scale. Protein, fiber, ash and carbohydrate contents were found to be significantly higher in case of experimental spice premix as compared to control sample. Standard plate count also revealed satisfactory quality of the premix even at the end of two months storage period. Mogra and Midha (2007) also obtained high acceptability scores (8 to 9) for the instant spice premix developed by them. Another work by Middha and Goyal (2011) on development of *dahi vada* spice premix, obtained overall means sensory scores of 8.18 on the Hedonic scale, thus found highly acceptable.

In a work by Dzimba et. al (2007) different formulations of biltong, a traditional meat product widely consumed in South Africa, were prepared using either traditional spices (salt, sugar, nitrite, pepper, allspice, aniseed, garlic, onion, coriander and, or, pineapple juice) and was sensory evaluated. The appearance acceptability of the alternative formulations was judged as being more accepted then the traditional one, possibly due their lighter colour. There were no statistical differences (P ≤ 0.05) among them with respect to flavour. The main reason cited by consumers for liking the flavour of biltong was their pleasant seasoning. The product, in general, was described as being hard, but readily softened by the saliva when chewed. Overall, the results suggested that, with a little adaptation of its original formula, it would be possible to introduce biltong as an acceptable snack or delicatessen in Brazil and different South American markets.

Modi et. al (2006) prepared a spice mix formulation using wet and dry spice and condiments. The spice mix formulation prepared was concluded to be useful in the preparation of varieties of vegetarian and nonvegetarian ready-to-serve products such as dhal fry, fry, gobi chicken aloo masala, mattar. mattar mushroom, kheema mattar, Mutton chilly fry, etc. Considering the scope of utilization of processed chicken in convenient form, a study was undertaken by Deogade et. al (2008) to optimize the levels of spice mixture salt and commercial chicken masala in a spice formulation to be used for preparation of chicken curry. The sensory quality of ready to eat chicken curry added with hot spice mixture containing salt and chicken masala, revealed that the flavour, juiciness, texture and overall palatability scores of chicken curry improved significantly.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

In a study, breads were prepared by incorporating functional ingredients like wheat bran, finger millet, ginger and garlic at different levels and spice mix at 3, 6 and 9% levels. Incorporation of 3% spice mix was found most acceptable in breads. Incorporation of functional ingredients did not alter the softness of bread but interfered with gluten formation (Shalini and Devi, 2005)

An interesting research was conducted by Bell (2009), to determine if spices (a blend of cinnamon, ginger, nutmeg, and cloves) that have high antioxidant properties evoke/change emotions in consumers. The carrier food, an extruded apple-based cereal-like product, was selected because cereals are convenient and consumed by many. Three cereal-like products containing 0, 4, or a 5% spice blend were extruded. Four consumer tests, one day of hedonic and just-about-right evaluations (n= 100), followed by three days of emotion testing were carried out. For the emotion tests, 25 consumers saw the control sample three times, 25 consumers saw the 4% blend sample three times, 25 consumers saw the 5% blend sample three times, and 25 consumers saw all three samples once. In a clinical trial (n=10), total antioxidant capacity and blood glucose levels were determined from two samples (control and the 4% blend). The data were subjected to analysis of variance and principal components analysis to determine significant effects and trends in the data, respectively. 'Calm' was the only emotion that was significantly different in all three samples, which decreased over time (pre-consumption to 1hour post consumption). The emotion 'Satisfied' increased significantly in the 5% blend showing that there might have been an effect because of the higher spice content. The PCAs showed that for the 4% and 5% blends, the movement of the consumers was towards emotions such as active, energetic, and enthusiastic. There were no trends for the control. For the clinical trial, the 4% blend was significantly higher (P < 0.05) in total antioxidant capacity than the baseline, although the differences in absolute terms are debatable. Blood glucose levels were not significantly different. Future research needs to be done to better understand how individual emotions affect overall liking and product acceptance.

Conclusion

Since both nuts and spices have been identified as the potential sources of antioxidants and many other health benefiting factors which prevent as well as cure a number of degenerative diseases like cancer, CVD, atherosclerosis, diabetes, cataract and accelerated ageing, their use in daily diet is recommended and should be promoted. Though, spice mixes have long been used in cookery, but researchers continue to develop newer blends with wider acceptability. Also, it can be inferred that combination of nuts and spices in the form of mixes are not being used among people. Thus the population could be encouraged to consume nuts and spices in combination so that they can obtain the benefits of both.

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VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

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Proparations	Yes	No
i reparations	62.00	38.00
Bakery	4.73	-
Beverages	14.19	-
Curry	12.16	-
Desserts	23.65	-
Non-Veg.	6.08	-
Pulses	1.35	-
Rice	21.62	-
Snacks	12.84	-
Vegetables	3.38	-

Table 1: Consumption of nuts and spices together in food items

Table 2: Consumption of spice mixes by respondents

Consuming spice mix	No. of Subjects
Purchase mix from market	69.41
Prepare mix at home	20.00
Both	10.59

Table 3: Spice mix commonly prepared at home

S.No.	Mix	Percentage
1	Sambhar Masala	17.31
2	Garam Masala	26.92
3	Chai Masala	21.15
4	Chat Masala	19.23
5	Thandai Masala	13.46
6	Vada Pao Masala	1.92

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

 Table 4: Spice mixes purchased by respondents

 from market

S.No.	Mix	Percent
	Any/ All	1.59
2	Achar Masala	0.40
3	Biryani Masala	5.58
4	Chai Masala	1.20
5	Channa Masala	13.55
6	Chat Masala	9.96
7	Chiken Masala	3.19
8	Chutney Masala	0.40
9	Garam Masala	22.71
10	Jeeravan	0.40
11	Kitchen King Masala	9.96
12	Pao Bhaji Masala	13.15
13	Rajma Masala	5.58
14	Sambhar Masala	9.96
15	Shahi Paneer Masala	0.80
16	Thandai Masala	1.59

Asian Resonance Counseling Psychology

Abstract

Counseling psychology is a psychological specialty that encompasses research and applied work in several broad domains: counseling process and outcome; supervision and training; career development and counseling; and prevention and health. Some unifying themes among counseling psychologists include a focus on assets and strengths, person–environment interactions, educational and career development, brief interactions, and a focus on intact personalities. In the United States, the premier scholarly journals of the profession are the Journal of Counseling Psychology and The Counseling Psychologist.

Counseling psychologists are employed in a variety of settings depending on the services they provide and the client populations they serve. Some are employed in colleges and universities as teachers, supervisors, researchers, and service providers. Others are employed in independent practice providing counseling, psychotherapy; assessment; and consultation services to individuals, couples/families, groups, and organizations. Additional settings in which counseling psychologists practice include community mental health centers, Veterans Administration Medical Centers and other facilities, family services, health maintenance organizations, rehabilitation agencies, business and industrial organizations and consulting within firms.

Introduction

Counseling psychology as a psychological specialty facilitates personal and interpersonal functioning across the life span with a focus on emotional, social, vocational, educational, health-related, developmental, and organizational concerns. Through the integration of theory, research, and practice, and with a sensitivity to multicultural issues, this specialty encompasses a broad range of practices that help people improve their well-being, alleviate distress and maladjustment, resolve crises, and increase their ability to live more highly functioning lives. Counseling psychology is unique in its attention both to normal developmental issues and to problems associated with physical, emotional, and mental disorders.

This is important for accurate interpretation of assessment results. Our professionally trained and certified counselor's create a personalized career portfolio, helping you understand yourself and choose an appropriate career. The counselor also suggests strategies to reach your goal. The focus of counseling is to empower you to make choices and career decisions base on understanding the science behind the whole process. In addition we understand that career choices are influenced by several other factors as well, such as financial status, family, external and internal factors etc. Our counselors take personal approach to suggest the career options matching to our background and assessment results

Counseling is not the same as giving advice. It is quite different from the general opinion held by people. Going for a counseling session in no way indicates that you are helpless or incapable of solving your problems. By talking about your problems or concerns with a counselor you will deepen your understanding of your problem and develop the means to deal with them. We are happy to talk over any of your problems and with your agreement may refer you to other sources that might be able to help better such as psychiatrists or doctors.

Counseling Psychologists do so many things it is hard to give a synopsis. Generally speaking, a counseling psychologist can consult with a variety of agencies teach at the college level do research, therapy, hold academic administrative positions etc.

Objective

Skills of Counseling Psychologists:

According to Koder et al. (2008) counseling psychologists should have knowledge and skills in the following areas which are mention below:

• Manage stress and conflict at home and work



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- Deal with grief, loss and trauma
- Overcome feelings of depression, anxiety and fear
- Increase self-esteem and confidence
- Enhance personal relationships
- Deal with problems related to alcohol and drug use
- Manage chronic pain related to somatization
- Manage depression
- Recover from eating disorders
- Manage obsessions and compulsions
- Deal with sexual concerns
- Manage anger or violence

Skills of Educational and Developmental Psychologists

Educational and developmental psychologists have knowledge and skills in the following areas:

- Identifying and clarifying problems
- Diagnosing disabilities and disorders such as Autism Spectrum Disorders
- Assessing developmental, learning and behavioural difficulties
- Designing effective treatment programs
- Counselling
- Consulting with individuals or groups
- Designing training programs
- Evaluating programs and interventions
- Designing professional development programs.

Personal Counselling

According to Whiston and Rahardja (2008) Personal counseling is a one-to-one interaction between counselor and counselee. It's a handholding session where the counselor expertly guides the counselee in finding a solution – whether it's a problem in his personal life, professional life or social life. Our counselor applies certain skills to introduce and sustain in the counselee the learning process of self-exploration leading to self-understanding and action, so that the counselee changes his behavior and eventually solves his problem.

It is a working relationship in which you are helped to explore and manage what is happening in your life. The overall aim of personal counseling is to provide an opportunity for you to work towards a more satisfying and resourceful experience of life. Naturally, each person's needs are different.

Personal Counselling is usually concerned with:

- Personal development issues
- Addressing and resolving specific problems
- Making decisions
- Coping with individual or family crisis/ stress/ anxiety/ psychological trauma
- Developing personal insight and knowledge
- Working through feelings of inner conflict
- Improving relationships with others

Constantine (2007) categorised Personal Counselling as follows:

Individual Counseling

Counseling approaches are tailored to fit the student's individual needs. Treatment modalities typically cover the range of supportive, cognitive-behavioral, and psychodynamic approaches. Generally, counseling tends to be short-term focused on stabilization and assisting students to return to their normal functioning.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Couples Counseling

Relationships are important to all of us and add fulfillment and exhilaration to life. Sometimes, however, relationships go through difficult times, bringing stress, sadness, and challenge. All relationships go through cycles and changes as they grow and develop over time. Couples may need support as they navigate the developmental challenges that are a natural part of a growing relationship.

Group Counseling

Each Semester, the Counseling Center offers a variety of groups. There are groups that focus on a wide range of personal and academic issues including - disseration support, KBO, coming out, LGBT concerns, students in recovery, recovery from sexual assault/abuse, stress management.

><u>Psychiatric Evaluation and Services</u>

Psychiatric Services is one of the treatment options available to you as a NCSU Student through the Counseling Center. There are psychiatrists on staff which serve as consultants to the Professional Staff and the students. Students wishing to consider medication or students needing medication management will first need to be seen by a Counselor. The Counselor will then arrange for the evaluation by the Psychiatrist.

Career Counseling

According to Swanson (1995) counseling psychology is a <u>psychological</u> specialty that encompasses research and applied work in several broad domains: counseling process and outcome; supervision and training; career development and counseling; and prevention and health. Some unifying themes among counseling psychologists include a focus on assets and strengths, person–environment interactions, educational and career development, brief interactions, and a focus on intact personalities. In the <u>United States</u>, the premier scholarly journals of the profession are the Journal of Counseling Psychology and The Counseling Psychologist.

Career counseling and <u>career</u> coaching are similar in nature to traditional <u>counseling</u>. However, the focus is generally on issues such as career exploration, career change, personal career development and other career related issues. Typically when people come for career counseling they know exactly what they want to get out of the process, but are unsure about how it may work. In the <u>UK</u>, career counseling would usually be referred to as careers advice or guidance.

It is the process of helping the candidates to select a course of study that may help them to get into job or make them employable. A career counselor helps candidates to get into a career that is suited to their <u>aptitude</u>, <u>personality</u>, <u>interest</u> and <u>skills</u>. So it is the process of making an effective correlation between the internal psychology of a candidate with the external factors of employability and courses.

Career counselors work with people from various walks of life, such as <u>adolescents</u> seeking to explore career options, or experienced professionals contemplating a career change. Career counselors typically have a background in vocational psychology or industrial/ organizational psychology.

The approach of career counseling varies, but will generally include the completion of one or more assessments. These assessments typically include cognitive ability tests, and personality assessments. Two commonly used assessments are the <u>Strong Interest Inventory</u> and the <u>MBTI</u>. It is necessary to develop a life-career plan, with a focus on the definition of the worker role and how that role interacts with other life roles

► Need for career counseling

Career Counseling is helpful for people of all ages and in different stages of life as a fresh graduate counseling is required to inform him about the career choices available to him. Also all those who want to change their job the counseling will help. A career counselor can suggest a change in career of only change in job for the persons who are stuck in the mid of their career.

Advantage of career counseling

Counselling is an excellent method for engaging in anxiety recovery. The primary benefit of counselling is that it gives a person a safe and secure place to talk to another person, and counsellors are trained to be able to listen to and understand anything, no matter how strange or unusual it may seem at first. All human beings need a safe and secure place where they can talk open and freely to another person without fear of being judged, and most people, let alone anxiety-sufferers, have nowhere like this to go.

Conclusion

Counselling psychologists practice in a number of different settings and provide a vast array of services. A high percentage of counselling psychologists operate at the university level by providing direct counselling services to students. Roles and functions have evolved over the course of time to meet changing needs of the clients served. Today's counselling psychologists must be prepared to work with students experiencing severe psychological disturbances in addition to those experiencing normal developmental difficulties and vocational concerns.

Limited resources and increased demands require practitioners to balance a busy schedule, become more efficient, and utilize brief forms of treatment. Just as they have in the past, campus clinics must continue to be flexible in adapting to with the changing dynamics of the student population and society at large.

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vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

Asian Resonance Conception of Socialism and Development in India : A Nehruvian Perspective

Abstract

Jawaharlal Nehru is widely known as one of the architects of modern India. His towering personality was an unusual combination of an intellectual and a practical leader. Nehru viewed socialism as a panacea for India's poverty, degradation and socio-economic inequality. His socialism was linked with democracy to become economic democracy. To Nehru, the good things of life must be available to more and more people and inequalities must be removed from society.

He favored the use of democratic methods for the establishment of socialistic society in India. He wanted socialism with a human face and was against a violent overthrow of the existing system. Nehru's socialism did not only imply change in society. It also involved changes in social structure in the ways of thinking and in the ways of living ! Nehru's socialism was based on a pragmatic approach. Thus Nehru's idea on socialism were shaped by a practical problems of wealth, foo,. clothing and housing for the masses which India was facing rather than by abstract theories. He viewed socialism as the key to the solution of the world's problems and of India's problems. Nehru's socialism was influenced by the compulsions of a backward economy.

Introduction

The genus Nehru's vision infatuation and conception of socialism was profound and all embracing and he wanted to infuse and instil the fervour of socialism in to the Indian soil. Nehru wanted the country to accept the goal of socialism for free India. Socialism is a term, which is very much talked about and debated in our time. It should be admitted that though socialism is a universal phenomena in contemporary ideological thinking, ambiguity remains regarding the meaning of socialism¹. Nehru's acceptance of socialism as the guiding philosophy of life was born out of his awareness of the poverty of India as well as development of socialism all over the world. Nehru did not like to define socialism in precise and rigid terms, He once said, "What I want is that all individuals in India should have equal opportunities of growth, from birth upwards and equal opportunities for work according to their capacity²." He viewed socialism as the key to the solution of the world's problems and of India's problems³.

Nehru's concept of socialism developed in a response to a situational context comprising multiple factors, subjective and objective, determinate and determinate. These were the by - products of Indian national movement, conditions existing in the independent India and the international scene. It could be said that his socialism was in loose terms, a progressive socialism⁴. In this backdrop our chief concern in the present paper will be on the conception of socialism and development in India. Pt. Nehru was a pioneer in socialist thinking. He seemed to have been attracted to socialism during his college days in London (1910-12) when he came in contact with socialistic thinkers and attended lectures of progressive intellectuals like George Bernard Shaw, Bertrand Russel and J.M. Keynes. He was also influenced by the progressive ideas of Marxism and Russian revolution of 1917. In 1926, he was associated with a group of radical thinkers in his own province of U.P., and together they drew up a programme of agrarian socialism but It was confined to some demands against the feudal elements of zamindari and taluqdari systems of land tenure which were very oppressive for the farmers.

During 1926-27, he was in Europe and there he imbibed more redical ideas of socialism and economic emancipation. He participated in the meeting of the league Against Imperialism in Brussels also. He became a pioneer of socialist ideas in India, made socialism a respectable creed with the middle class nationalist intelligentsia and led the Congress Party towards accepting 'Democractic Socialism' as its cherished and ultimate goal. Under the spell of Gandhi's influence Pt. Nehru engaged his attention towards the rural India. He was greatly moved by the misery and plight of the people in rural areas. He himself had observed the problems which socialism at solving⁵.



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Nehru's ideas on socialism began to take a new shape after the developed sympathy towards communism in the 1920s. When he came in to contact with many socialists during his visit to Europe in 1926-27, and attended the congress of oppressed Nationalities in Brussels as representative of Indian National Congress, his vague ideas on socialism began to assume a new turn. He was attracted towards Marxism as a result of this new exposure. It becomes clear from his Autobiography where he wrote that the communist philosophy of life gave him comfort and hope. It attempted to explain the past and offered hope for the future⁶. Nehru had no difficulty in accepting most of the tenets of Marxist Philosophy, such as monism and nonduality of mind and matter, the dynamics of matter and the dialectic of continuous change by evolution as well as a leap, through action and interaction, cause and effect, thesis, anti thesis and synthesis7. The scientific, anti theological and anti-superstitious orientations of the Marxist Philosophy of history had great appeal for him. But the communism in Russia and elsewhere appeared to him as full of dogma. Since he was against any kind of dogma, hence even though accepting many elements of Marxism, he could not become a thorough going Marxist⁸.

Pt. Nehru participated in the Congress of Oppressed Nationalities held at Brussels in February 1927 which had proved the turning point in Nehru's mental development. From here he not only received a grounding in Marxism but he came into contact with several exponents of socialist thought as were as the communists. His visit to Soviet Union in November 1927, on the other hand, aroused his curiosity about the first Marxist Socialist experiment where old values had changed utterly and the old standards had given place to the new one's⁹. Addressing the U.P. Political Conference on October 27, 1928 he said, "Our economic programme must aim at the removal of all economic inequalities and an equitable distribution of wealth¹⁰." He ever presided over the Annual Conference of the Indian Trade Union Congress and Indian National Congress in 1929. He was, no doubt, fully dedicated to the ethical, sentimental and emotional aspect of socialism as a philosophy of compensation for the suppressed classes and declared that he was deeply involved with socialism as an economic theory of state ownership and control of the basic means of production and distribution¹¹. By 1936, Pt. Nehru seemed to have been completely converted to socialism. He believed in ethical socialism. He regarded socialism as a philosophy of life and not merely as a formula for economic reconstruction. He wanted the congress to declare socialism as its goal. In his Presidential Address at the Lucknow Congress in April 1936 while expressing his deep faith in the ultimate success of socialism¹²

Pt. Nehru clarified his position pertaining to his socialist leaning in the following words :

I am temperamentally and by training an individualist and intellectually a socialist I hope that socialism does not kill or suppress individuality. Indeed, I am attracted to it because it will release innumerable individuals from economic and cultural bondage¹³.

He sought to replace the motive of private profit in society by a spirit of social service, competition by cooperation and conflict and violence by a more enduring and peaceful system from which the roots of violence have been removed, and where hatred shrivels up and yields place to nobler feelings. All this he called socialism.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

According to him that type of socialism would lead to a society which could claim to be democratic and egalitarian having no great inequalities or disparities¹⁴. In a statement issued to the press on February 22, 1939, Pt. Nehru further clarified his approach to be used for establishment of a socialist society in India. He said :

I have been and am a convinced socialist and a believer in democracy, and have at the same time accepted whole-heartedly the peaceful technique of non-violence action which Gandhiji practiced so successfully during the past twenty years. I am convinced that strength can come to us from the masses, but that strength either for struggle on for the great work of building a new world must be a disciplined and orderly strength¹⁵.

He then explained the objectives of socialism in the following words :

Our ideal is that every man, woman and child in India should have equal opportunities and that big disparities should go^{16} .

We may say that Nehruvian socialism is three dimensional involving Gandhian ethics, Marxian Economics and democratic politics¹⁷. The main sign posts in his socialist thinking were the creation of a mixed economy as first industrial policy in 1948. The establishment of a National Planning Commission in 1950 and the Publication of the draft outlines of the first Five Year Plan (1951-56) in July 1951 with targets for both the public and private sectors, his declaration at the National Development Council on Nov. 9, 1954 that India should be a socialist pattern of society which was neither socialist, communist nor capitalist; adoption of a resolution for setting up socialistic pattern of society at AICC session of 1955 at Avadi; adoption of a second Industrial Policy resolution in 1956 with its goal to bring social changes¹⁸.

Pt. Nehru also stressed that socialism did not merely imply change in the economic relations in society. It involved fundamental changes in the social structure in the ways of thinking and in the ways of living. Caste and Class would have no place in a socialist state. Mere material prosperity would not make life rich and meaningful. Along with economic development, ethical and spiritual values should be fostered. Then alone there would be full development of the individual. When this takes place, the present day acquisitive society would be replaced by a socialist one. In an interview with R.K. Karanjia in 1960 he stressed, "I have believed in socialism for the past fifty years and until somebody convinces me to the contrary, I shall continue to believe in and work for socialism...... that should be the ideal of every sensible nation or society or individual. Modern thinking all over the world is increasingly becoming socialist and only people who have lost touch completely with contemporary trends can think otherwise19.1

The cumulative effect of his visit to Europe was that his outlook of Nationalism too go broadened. Nationalism as being practiced in India, began to appear to him to be too narrow a creed. His decision to link concept of nationalism with socialism further broadened the former. That is why he combined the national struggle for political freedom and the mass struggle for social and economic freedom. He considered it essential for laying the foundation of a free and egalitarian society in India. For realising this goal, he reiterated the need of establishment of socialism in India. His commitment to socialism is testified by his statement; Socialism is for me not merely an economic doctrine which I favour; it is a vital creed which I hold with all my head and heart²⁰."

Nehru believed that the inequality in the society arising from the exploitation of one class by another leads to poverty in the society. He regarded poverty as the worst enemy of mankind. Nehru wanted to eradicate inequality to the extent that it bred poverty. According to him, "Our immediate problem is to attack the appalling poverty and unemployment of India and to raise the standards of our people. That means vastly greater production which must be allied to just and more equitable distribution, so that the increased wealth may spread out among the people the resources of India are vast and if wisely used should yield rich results in the near future²¹."

He favoured the use of democratic methods for the establishment of socialistic society in India. He was confident that gradually people will be able to capture the power in India due to the logic of universal adult franchise. This in turn will culminate in democratic socialism he was opposed to the use of force for this purpose. Nehru developed a new model of socialism by blending capitalism and communism because he wanted to strike a balance between individual liberty and equality. For this purpose he adopted some principles of capitalist system but modified them according to the needs of Indian society. On the other hand, he also adopted some methods of communism like planned economic development. But also modified those in accordance with the requirements of Indian situation²².

While concluding I may point out that Nehru's socialism was not only democratic, but it was pragmatic also. His ideas on socialism were shaped by the practical problems of distribution of wealth, food, clothing and housing for the masses which India was facing rather than on abstract theories. Jawahar Lal Nehru's patient, serious search for a viable solution to the problems of twentieth century society in the nuclear age has to be continued by his successors with the same sincerity and firmness purpose.

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VOL.-II, ISSUE-I, JANUARY-2013

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Asian Resonance Intellectual Property Rights in Plant Varieties: an overview of Concept and Development

Abstract

The proficiency of breeding artistry in the agriculture in maturing new or improved varieties of plants is one form of Intellectual Property Rights (IPRs). Although these rights as a form of intellectual property are lately recognized and thus, are not coercively perceived by the nations like other forms of IPRs. But in order to hasten the progress of agriculture by breeding newfangled varieties of plants obligates that the investment of time, knowledge, or other resources in evolving new or improved plant varieties must be rewarded and this can be done through granting exclusive rights to breeders and farmers in the use of the techniques developed by them for new and improved varieties of plants. Efforts in this direction led to the development of Plant Varieties Rights (PVP). PVP confers same protection to the plant breeders as is conferred by the patents, copyrights, and trademarks to their respective owners. The history of development of Plant Breeders' Rights (PBRs) includes a diversity of Multilateral and Bilateral Agreements, international organizations, Regional Conventions and International Instruments.

Introduction

PVP is one type of IPR, alongside other like patents, copyright and trademarks. PVP is specifically designed for plant varieties, and grants breeders exclusive rights on propagating material (such as seeds) of new plant varieties that they have developed. It is intended as an incentive for research and development by enabling breeders to recoup the costs of researching and developing improvements to pre-existing biological resources. In the absence of such exclusive rights, third parties could freely use breeders' innovations, because their plant genetic material is naturally self-replicating, and so easily susceptible to unauthorized exploitation.

The development in this area dates to the seed wars of the 1960s on the development of new varieties of plants and crops through the crossbreeding of seeds. At the risk of oversimplification, the seed wars saw, on the one side, communal farmers, usually in developing countries, asserting farmer's rights i.e., the rights of farmers to continue using seeds for free, and on the other side, commercial plant breeders, often in developed countries, asserting breeder's rights i.e. the right to benefit commercially from the scientific breeding and large scale productions of seeds. The opening salvo in the arena came in 1961 when the first International Union for the Protection of New Varieties of Plants (UPOV) was negotiated. The convention allowed a plant breeder who has developed a variety of seed that if 'new, distinct, uniform, and stable' to apply for a breeder's right to that seed. This right extended to the subsequent production, reproduction, sale, marketing, and trade of the variety. The plant breeders' rights that the convention granted virtually amounted to a form of patenting, although without the legal status of patent, and they were opposed by developing countries, many of which, two decades later, successfully negotiated within the Food and Agriculture Organization (FAO) the International Undertaking on Plant Genetic Resources (IUPGR) in 1983, stressing upon strong farmers' right regime. This can be seen as a developing country antidote to the pro-business emphasis of the UPOV Convention.

Two further layers of international law relevant to the ownership of plant generic resources were agreed during the 1990s. The first is *Convention on Biological* (CBD), 1992and the second layer of international law is the TRIPS Agreement, which forms part of the single undertaking agreed during the Uruguay Round Negotiations that created the WTO. The single undertaking means that TRIPS applies to all WTO members, and its provisions are subject to the integrated WTO dispute settlement procedures. The migration of IPRs into the WTO is significant, given that previously the sole relevant international organization handling IPRs was the WIPO.

Significance of PGR

For centuries, PGR have provided the basis of civilization and agriculture, of life, health, and prosperity around the globe. Knowledge and

Harsh Pratap Singh

experience have been passed from generation to generation by custom. Whereas seeds in themselves were the primary object of earlier trade, dissemination and exchange more recently PGR have also come to be addressed in terms of rights to genetic information and their appropriation. PGR are also the backbone of agriculture which plays a positive and unique role in the development of new cultivars including the restructuring of existing ones. The importance of PGR for agriculture to human welfare and the world economy is incalculable. They provide the foundation of all food production, and the key to feeding unprecedented numbers of people in times of climate and other environmental change, and therefore comprise perhaps the most important category of biological resources. One of the major objectives of conservation of PGR is to make genetic diversity available for immediate or future use. Abundant evidence exists showing that it is necessary to preserve a wide range of diversity in order to meet the crop improvement needs. However, it is also evident that the widest possible range of genetic diversity has to be conserved in order to meet future, as yet unknown, needs.

Plant varieties have traditionally been developed and nurtured by a variety of actors. Smallholder farmers. herders, and artisanal fisher folk have often played the most crucial role in conserving and enhancing agro-biodiversity. They have, for instance, developed crop varieties specifically suited to their diverse local environments. In recent times, the development of new varieties has been undertaken on a larger scale and has become a major industrial activity. In all cases, plant varieties of interest in the context of agriculture have been tended by humans and do not correspond to varieties found in nature. World population continues to grow and it is necessary to find ways of increasing output through higher yields and less wastage, thereby minimizing the use of land and other resources, all of which are becoming scarcer. But plant breeding has wider economic and environmental benefits than just increasing food production, including for developing countries. The development of new improved varieties with, for e.g. higher quality increases the value and marketability of crops in the global market of the twenty-first century. In addition, breeding programs for ornamental plants can be of substantial economic importance for an exporting country. The breeding and exploitation of new varieties is a decisive factor in improving rural income and overall economic development. Furthermore, the development of breeding programs for certain species can remove the threat to the survival of the species in the wild.

Rational for Granting Protection to Plant Varieties under IPR Regime

For a long time in history no notion of ownership, property rights, or sovereign rights over genetic and plant resources existed. What contributed to the emergence of property rights in plant varieties was the need to exploit the potential, particularly from the genetically rich global South, for commercial benefits in this area. The scope of patentable subject matter expanded, slowly and incrementally until it covered plants. In outlining the history of intellectual property and biotechnology, the French barrister and Philosopher, Bernard Edelman indicates a move from a strict prohibition against the patenting of nature towards a range of recent decisions allowing the patenting of living matter. He argues that there has been a progressive accommodation of biotechnology

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

within the legal system, and summarizes the stages of this passage as follows:

"Life has been integrated into the markets as easily as could be imagined because it has been a progressive process. It started with something that was symbolically far removed from most rudimentary forms of animal life, like the oyster. The whole of the animal kingdom is now targeted and we are on the verge of the human, weighed down with precedents which ensure the closure of the system and make any resistance difficult. The work of man which must be remunerated, claims repayment from the whole realm of nature which has traditionally been free of any property claims".

Perhaps, the policy goals of granting IPRs to varieties are grounded principally on an plant instrumentalist approach to IPRs. Under this instrumentalist approach, new plant varieties are afforded legal protection to encourage commercial plant breeders to invest the resources, labour and time needed to improve existing plant varieties by ensuring that breeders receive adequate remuneration when they market the propagating material of those improved varieties. In the absence of a grant of exclusive rights to breeders, the dangers of free riding by third parties would be considerable. This is because the genetic material within plants that specifies their distinctive and commercially valuable features is naturally selfreplicating, for example by reproduction of seeds or other propagating material. Self-replication makes innovations incorporating biological material particularly susceptible to exploitation by parties other than the innovator. The protection of plant varieties by means of intellectual property rights has been a subject of increasing importance in the aftermath of the adoption of the TRIPS.

IPRs in plant varieties thus provide some assurance to breeders that they will be able to recoup the risks and costs of a value-added innovation that is based upon an underlying biological resource. Ultimately, the grant of exclusive rights to plant breeders is designed to benefit the society granting the rights. It provides an incentive for private research and development into new breeding techniques, thereby reducing the need for government funding to subsidize these activities. It encourages the development of new and beneficial plant varieties for use by farmers and consumers. And it furthers the society's development of agriculture, horticulture, and forestry.

Plant Variety Rights in Concept

Plant variety protection, also called a 'plant breeder's right' (PBR) or PVR, is a form of intellectual property right granted to the breeder of a new plant variety. According to this right, certain facts concerning the exploitation of the protected variety require the prior authorization of the breeder. Plant variety protection is an independent sui generis form of protection, tailored to protect new plant varieties and has certain features in common with other intellectual property rights. PVR protects newly bred varieties of plants. They enable the breeders of successful varieties to control their reproduction and by licensing to obtain a return on the substantial investments of time and resources needed to produce them. The rights are specifically adapted to the needs of breeders and farmers, but coexist easily with patent rights on genetic inventions.

These laws typically grant the plant breeder control of the seed of a new variety and the right to collect

royalties for a number of years. This guarantees income for the breeder to cover the costs of research and development. The purchase of protected varieties gives farmers the benefits of superior varieties. In return, farmers are expected to pay a small royalty, including in the purchase price, and not sell the seed that seed that they produce. Farmers may store the production in their own bins for their own use a seed, but further sales for propagation purposes are not allowed without the written approval of the breeder. PBR contain a wider array of exceptions than the general regime of patent law. Commonly, there is a defense for farm-saved seed. However, this does not necessarily extend to brown-bag sales of seed. There is also a breeders' exemption in respect of research and experimentation on new varieties of plants. There is also scope for compulsory licensing to allow public access to new varieties.

Any person who creates, or discovers and develops, a plant variety may apply for PBR. Once the PBR has been granted to the breeder, it means in practice that the title holder is the owner of the variety and anyone else who wants to commercialize that protected variety requires the authorization of the holder of the PBR. This authorization is normally in the form of a license agreement between the titleholder and those who sell the variety.

PBR are the most common type of intellectual property rights to PGR, which have been enacted in most industrial and an increasing number of developing countries. These systems have been established to provide incentives to plant breeders to come up with improved crop varieties that are novel, distinct, genetically uniform, and stable. The scope and coverage of the rights differ, as, consequently, does the way in which they restrict access. What they have in common is the exclusive rights of breeders to produce for commercial marketing the crop variety they have developed. Most of the PBR are oriented towards, or are in compliance with, the provisions of the UPOV. As the Convention was revised in 1972, 1978, and 1991 the main difference that exist between the latest and the earlier versions is that farmers are no longer entitled freely to exchange a and sell seeds they harvest from varieties protected by the respective plant breeders' right. In addition, breeders are required to obtain authorization from the rights holder for the commercial marketing of a new variety if it is essentially derived from a protected variety, whereas there was earlier an unrestricted 'breeder's exemption' to encourage further breeding.

PBR do not stop farmers from using their traditional varieties, and did not usually stop them from using protected varieties in their traditional ways either. Protected varieties could be employed as an input to strengthen and improve own varieties, allowing parts of the harvest to be used for sowing, exchange, and sometimes sale, without paying royalties to the rights holders. Under the UPOV, 1991 governments may permit farmers to use protected varieties for propagating purposes on their own landholdings, but not to exchange or sell the seeds or harvest thereof. As the number of varieties protected by stricter plant breeders' rights increases and the number of traditional varieties falls, the total number of varieties available for traditional use by farmers over time obviously declines, affecting their ability to maintain yields and resistance of their own crop varieties.

Asian Resonance

Farmers' Proprietary Claims in Agriculture

The concept of farmers' rights was developed in the context of extension of IPRs in agriculture. It was argued that the two concerned international agreements, UPOV and the TRIPS, 1991 which had been set up to give crop plant breeders' exclusive rights over the varieties they develop disregard the traditional rights of indigenous and farming communities to their genetic resources and associated knowledge. However the UPOV and TRIPS Agreement left the farmers, outside the domain of IPRs in agro bio-resources and associated knowledge. It was this omission that spawned the debate and the movement for a formal recognition and institutionalization of farmers' rights.

As breeders, conservers, and protectors of agricultural genetic resources for centuries, farmers never had any defined rights over their knowledge, or the genetic resources that they held. Commercial breeding furled by biotechnological innovations in agriculture, transformed these farmers from owners of their gene pool to donors, who then received the commercially bred plant varieties and their seeds at a fee. Many of the most successful varieties available commercially are derived from stocks which have been carefully bred by farmers, especially so in the global South. But instead of being rewarded for their important contribution, both for developing the genes for desirable traits and the knowledge and skill required to use these, they may be required to pay the companies to use the products. The inequity and exploitative implications of IPRs in agriculture, whether PBR or patents, led into a recognition that farmers have a prior right to be adequately compensated for the resource they hold, in terms of both their knowledge and genetic pool and that there is a need to devise and institute fair and equitable benefit-sharing mechanisms which would make farmers partners in biotechnological developments in agriculture, forestry, etc. there was also a growing understanding that patenting will seriously limit the access that farmers, poor farmers in particular, have to the genetic resources on which their livelihoods depend.

One of the first attempts to acknowledge farmers' rights was in the Agenda 21, adopted in RIO de Janeiro in 1992 at the UN Conference on Environment and Development (UNCED), and CBD, which was to serve as an instrument for the conservation and sustainable use of PGR and the fair and equitable sharing of the benefits arising from the use of such resources.

The Food and Agricultural Organization Global System on Plant Genetic Resources, which was prepared by FAO as a result of Agenda 21's commitment to the conservation of agricultural biodiversity includes continued commitment to the implementation of farmers' rights. These inclusions were in order to broaden the scope of farmers' right and to assess it in the conservation of biodiversity. The inequitable treatment between the owners of germplasm and the owners of technology spawned a debate these international forums. The result was the institutionalization of farmers' right in the form of two main instruments:

i. The 1983, the demand for farmers' rights formally got incorporated by the FAO as an *International Undertaking on Plant Genetic Resources* (IUPGR). The FAO as the central UN body dealing with agriculture has played an important role in setting the legal frame work for various activities linked with the agriculture. The resolutions passed in 1989 under this international undertaking were negotiated by Commission on Plant and Genetic Resources and were unanimously approved by more than 160 countries in the FAO Conferences in 1989 and 1991. The resolutions recognized the 'enormous contribution that farmers of all regions have made to the conservation and development of PGR, which constitute the basis for the concept of Farmers' Right'.

ii. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was drafted in November 2001. The ITPGFRA incorporated the new orientation given by the CBD and The FAO Conference (November 2001), and established legally binding rules to secure facilitated access to and exchange of plant and genetic resources within a multilateral system. To conform to the CBD, it also has effective provisions for benefit-sharing, including articles on funding and farmer's rights to benefit small farmers who have been the traditional custodians of PGRFA, particularly in developing countries.

The evolution of both the treaties reflects the journey that policy changes have made at the international level with regard to use of PGR for food and agriculture and with respect to the location of farmers' rights within the matrix of rights associated with the use of plant genetic material.

International Legal Regime for the Protection of Plant Varieties

The political debate of the last years over ownership of genetic resources and the benefits derived from them has resulted in the appearance of national and international laws regulating access to these resources and intellectual property rights. Present national and international trends for the protection of plant genetic resources are primarily the result of various global conventions and treaties. The development in this area dates to the seed wars of the 1960s on the development of new varieties of plants and crops through the crossbreeding of seeds. At the risk of oversimplification, the seed wars saw, on the one side, communal farmers, usually in developing countries, asserting farmer's rights i.e., the rights of farmers to continue using seeds for free, and on the other side, commercial plant breeders, often in developed countries, asserting breeder's rights i.e. the right to benefit commercially from the scientific breeding and large scale productions of seeds. Prior to the mid 1960s, only a few countries (such as Germany and the United States) gave any IP protection to plant varieties. Because of pressure from their plant breeding industries, 10 western European countries entered into a diplomatic process in the early 1960s which eventually culminated in the formation of UPOV and the signing of a convention (the 1961 UPOV Convention). It provided protection to breeders of new plant varieties who belong to member countries. These breeder's rights' were amended in 1972, 1978, and 1991. UPOV provides a framework for the implementation of effective sui generis system of plant variety protection at national level through international synchronization. UPOV apparently makes no mention of farmers' rights. It overlooked the crucial role which the farmers have played as breeders, conservers, and protectors of agricultural genetic resources for centuries. In response to this, developing countries in 1983 negotiated IUPGR. Since the

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

adoption of CBD in 1992, the law of PGR and the legal status of traditional knowledge (TK) have attracted further attention in international flora, governments, nongovernmental organizations, and academic research. Further the TRIPS, a part of the WTO Agreement, requires all member-countries of the WTO to establish an effective system of plant variety protection within a specified time frame. It permits the WTO members to protect plant varieties with either patents or a sui generis system or by any combination thereof. TRIPS do not specify what kind of breeders or farmers rights and it does not say what else a member state can put in its law. It is a flexible system leaving a lot to the discretion of member countries. TRIPS has given a strong impetus for the universalization of plant variety protection regimes with common standards of protection across countries. Apart from these global initiatives there are various other international instruments, institutions, and intergovernmental organizations regulating intellectual property rights in plant varieties and plant genetic resources.

Till the early 1990s, PVP remained almost exclusively a feature of developed countries. While developing countries recognized the importance of variety improvement for agricultural productivity growth, they generally relied on research by public sector institutions at the national and international level for the development of new varieties. PVP or other forms of IPRs for plant varieties were not seriously considered as policy options for encouraging plant variety innovations. However, international efforts to harmonize IPR regimes across countries following from the international trade negotiations in the Uruguay Round have accelerated the spread of PVP systems across a whole range of countries.

USA was the first country to institute IP protection for plant varieties. In 1930, The US introduced the Plant Patent Act and protected new plant varieties that were asexually reproduced and non-tuber propagated. In the first half of the 20th century, the fact that plants may not reproduced 'true to type' was seen as an important constraint in extending patents to plant varieties. By confining itself to asexually reproducing varieties, the USA Plant Patents Act, 1930 avoided this difficult question. In 1970, US passed its Plant Variety Protection Act, 1970 and became a member of UPOV in 1981 and thus extended protection to agricultural and other species based on the criteria of "Distinctness, Uniformity, and Stability". Further US also provide utility patents for plants through the Patent Act of 1952 (for utility patents). Utility patent may be secured to protect everything ranging from genetically modified seeds and genetically modified plants, to plant transformation. Very often grant of patents to plant related inventions turned out to be perplexing issue in the light of several anti-patent arguments. US Supreme Court's pronouncement in Diamond v. Chakrabarty made the scenario very clear in this regard. In this case US Supreme Court clearly held that patents could be granted for inventions involving living organisms. The 2001 landmark decision in the case of JEM Ag Supply, Inc v. Hi-Bred International Inc. further established that utility patents could be granted to plant related innovations.

To protect the rights of the breeders and farmers, Government of India has enacted the *Plant Varieties Protection and Farmers Rights Act*, 2001 and effective from January, 2006. The Act has been legislated in India under the obligation of Article 27.3(b) of the TRIPS Agreement. India chose to opt for a *sui generis* system for protection of plant and plant varieties. The major objectives of the Act were to stimulate research and private plant breeding, enhance technology transfer, foreign investment, and trade, promoting conservation of agro biodiversity and sustained use of varieties and facilitating access to genetic resources and sharing benefits. Indian law recognizes the farmer not just as a cultivator but also as a conserver of the agricultural gene pool and a breeder who has bred several successful varieties. Indian *PPVFR Act* 2001 is harmonious with TRIPS, CBD and UPOV.

Conclusion

PGR have played a vital role in the development of mankind. There are farmers and breeders who have invested their time, knowledge, resources and efforts in the development of PGRFA. Long opinion oriented disputation over the IPRs relating to PGR has resulted in the negotiation of different legal declarations in different international institutions. The development of breeders' right encompasses of a complex regime which involves various set of multilateral arrangements, international organizations, and conventions. Different states have inclined towards different international institutions and instruments, reckoning on which, they consider will best promote their interests. The resulting incoherence in international law on PGR, with different legal instruments stipulating different provisions, symbolizes one of the central struggles of age i.e. who wins and who loses in the politics of natural resource use.

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VOL.-II, ISSUE-I, JANUARY-2013

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5-8602 VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance Cyber Stalking: A Nightmare



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Abstract

Little did she know that usual net surfing would turn into a nightmare when emails started coming in asking for money and threatening to put her morphed pictures on sex websites. Such incidents are on a rise these days, making a common man worried about his security. The transformation of technology has brought a rise in another form of stalking: cyberstalking. The very nature of online crimes means that we have little information regarding the harassers, as most victims either don't know their harasser or do not know enough information about them. But you always want to make sure you are protected from stalkers regardless of what form they might use to stalk you. This Article deals with the meaning, methods and identification of cyber stalking. Further it makes you aware about the ways to guard against cyber stalking and dealing with it.

Introduction

The information superhighway is undergoing rapid growth in this new millennium. The Internet and other telecommunication technologies are promoting advances in virtually every aspect of society and every corner of the globe: fostering commerce, improving education and health care, promoting participatory democracy in the developed and developing countries, and facilitating communications among family and friends, whether across the street or around the world. Unfortunately, many of the attributes of this technology – low cost, ease of use, and anonymous nature, among others – make it an attractive medium for fraudulent scams, child sexual exploitation, and increasing, a new concern known as "cyber stalking". (I)

Harassment on the Internet can take a variety of guises.(2) A direct form of Internet harassment may involve the sending of unwanted e-mails which are abusive, threatening or obscene from one person to another.(3) It may involve electronic sabotage, in the form of sending the victim hundreds or thousands of junk e-mail messages (the activity known as "spamming") or sending computer viruses. Indirect forms of harassment may involve a cyber stalker impersonating his or her victim on-line and sending abusive e-mails or fraudulent spams in the victim's name.(4) Victims may be subscribed without their permission to a number of mailing lists with the result that they receive hundreds of unwanted e-mails every day.

Cyber Stalking: Meaning

Cyber stalking basically implies threatening behavior or unwanted advances directed at another using the Internet and other forms of online and computer communications. It is a relatively new phenomenon. With the decreasing expense and thereby increased availability of computers and online services, more individuals are purchasing computers and "logging onto" the Internet, making this form of communication vulnerable to abuse by stalkers.

Stalking is a continuous process, consisting of a series of actions, each of which may be entirely legal in itself. Technology ethics professor Lambèr Royakkers writes that:

"Stalking is a form of mental assault, in which the perpetrator repeatedly, unwantedly, and disruptively breaks into the life-world of the victim, with whom he has no relationship (or no longer has), with motives that are directly or indirectly traceable to the affective sphere. Moreover, the separated acts that make up the intrusion cannot by themselves cause the mental abuse, but do taken together (cumulative effect)." (5)

From the above, we can say that Cyber stalking is the use of the Internet or other electronic means to stalk or harass an individual, a group of individuals, or an organization. It may include false accusations, monitoring, making threats, identity theft, damage to data or equipment, the solicitation of minors for sex, or gathering information in order to harass. The definition of "harassment" must meet the criterion that a reasonable person, in possession of the same information, would regard it as sufficient to cause another reasonable person distress. (6)

Cyber Stalking Vs. Physical Stalking

Cyber stalking is different from spatial or offline stalking. However, it sometimes leads to it, or is accompanied by it. (7) There is a common misperception that Cyber stalking is less dangerous than offline stalking because it does not involve physical contact.(8) However, the opposite is true. While a potential stalker may be unwilling to personally confront the victim, the anonymity of the Internet allows individuals, who may not otherwise engage in offline stalking, to send harassing or threatening electronic communication. (9)

In 2012, Cyber stalking is more common than physical harassment, according to the researchers at Bedford University in England. (10) Imbalanced individuals who obsess over others now have dozens of convenient online means by which to follow and attack their prey. Using email, sexting, Facebook, Twitter, FourSquare, and other social hubs, cyber stalkers can track someone's personal life quite easily. Cyber stalking is a sad and disturbing part of modern society, and things will only get worse before they get better.

Cyber Stalkers on a Rise

WHOA (Working to Halt Online Abuse), an online organization dedicated to the Cyber stalking problem, reported that in 2001 58% of Cyber stalkers were male and 32% female (presumably in some cases the perpetrator's gender is unknown). In a variation known as *corporate cyber stalking*, an organization stalks an individual. Corporate cyber stalking (which is not the same thing as corporate monitoring of e-mail) is usually initiated by a high-ranking company official with a grudge, but may be conducted by any number of employees within the organization. Less frequently, corporate cyber stalking involves an individual stalking a corporation.

WHOA reported that, in 2001, Cyber stalking began with e-mail messages most often, followed by message boards and forums messages, and less frequently with chat. In some cases, Cyber stalking develops from a real-world stalking incident and continues over the Internet. However, Cyber stalking is also sometimes followed by stalking in the physical world, with all its attendant dangers. According to former U.S. Attorney General Janet Reno, Cyber stalking is often "a prelude to more serious behavior, including physical violence." In 1999, a New Hampshire woman was murdered by the Cyber stalker who had threatened her in e-mail messages and posted on his Web site that he would kill her.

Identification of Cyber Stalking

When identifying cyber stalking, particularly, when considering whether to report it to any kind of legal authority, the following features or combination of features can be considered to characterize a true stalking situation: malice, premeditation, repetition, distress, obsession, vendetta, no legitimate purpose, personally directed, disregarded warnings to stop, harassment, and threats.

Methods of Cyber stalking vary, which means that no case is identical to any other, though there may be similarities. The precise methods of Cyber stalking will depend on whether or not the victim and harasser know one another. Some incidents of Cyber stalking occur because the victim is prominent online (such as through a blog) or because two individuals happen to "meet" in a chat room. There is no physical connection and therefore the Cyber

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

stalker only knows what he or she has been able to discern online. In other cases, the victim and cyber stalker know one another in person, but the harasser has chosen the Internet as his or her medium because it is more anonymous. Cyber stalkers know that they are less likely to be caught if they remain hidden behind screen names and untraceable IP addresses. Once the Cyber stalker has fixated on a victim, the methods of Cyber stalking may escalate.

Unfortunately, regardless of what methods of Cyber stalking are used, this problem can affect many different aspects of the victim's life. The stalker might discover where his or her victim works and send messages to the victim's boss. He or she might harass friends or acquaintances of the victim or even family members. Eventually, some Internet stalking cases escalate beyond the web. Emboldened by his or her success online, the stalker might find out where his or her victim lives and begin "traditional" stalking methods. Some of these cases unfortunately culminate in physical violence.

Safeguards And Remedies Against Cyber Stalking

There are a number of simple ways to guard against cyber stalking. One of the most useful precautions is to stay anonymous yourself, rather than having an identifiable online presence. Use your primary e-mail account only for communicating with people you trust and set up an anonymous e-mail account, such as Yahoo or Hotmail, to use for all your other communications. Set your e-mail program's filtering options to prevent delivery of unwanted messages. Further, the person should not share personal information in public spaces anywhere online, nor give it to strangers, including in e-mail or chat rooms, never use their real name or nickname as their screen name or user ID. When choosing an online name, make it different from your name and gender-neutral. The person should be extremely cautious about meeting online acquaintances in person. If you choose to meet, do so in a public place and take along a friend. If a situation online becomes hostile, log off or surf elsewhere, or if a situation places you in fear, contact a local law enforcement agency.

Further, make sure that your *Internet Service Provider* (ISP) and Internet Relay Chat (IRC) network have an acceptable use policy that prohibits cyber stalking. So, if you become the victim of a cyber stalker, the most effective course of action is to report the offender to their Internet Service Provider (<u>ISP</u>). And if your network fails to respond to your complaints, consider switching to a provider that is more responsive to user complaints.

The Victim should save all communications for evidence, which must not be edited or altered in any way. Also, keep a record of your contacts with Internet system administrators. If harassment continues even after the victim has asked the cyber stalker to stop and reported the matter to Internet Service Provider (ISP), the victim should not neglect the issue and contact the local police department immediately, informing them of the situation in as much detail as possible.

There are a couple of reported cases, which speak of the position of the cyber stalking in India. The recent being the case of Manish Kathuria who was recently arrested by the New Delhi Police. He was stalking an Indian lady, Ms Ritu Kohli by illegally chatting on the Web site MIRC using her name. He used obscene and obnoxious language, and distributed her residence telephone number, inviting people to chat with her on the phone. As a result of which, Ritu kept getting obscene calls from everywhere, and people promptly talked dirty with her. In a state of shock, she called the Delhi police and reported the matter. For once, the police department did not waste time swinging into action, traced the culprit and slammed a case under Section 509 of the Indian Penal Code, 1860 for outraging the modesty of Ms Ritu Kohli. Section 509 IPC reads as follows:

"Word, gesture or act intended to insult the modesty of a woman – Whoever, intending to insult the modesty of any woman, utters any word, makes any sound or gesture, or exhibits any object, intending that such word or sound shall be heard, or that such gesture or object shall be seen, by such woman, or intrudes upon the privacy of such woman, shall be punished with simple imprisonment for a term which may extend to one year, or with fine or with both."

A perusal of the entire section shows that the said section does not cover cyber stalking. The important ingredients of the said section includes that a word must be uttered or a sound or gesture must be made or any object must be exhibited. When a person chats on the Net for the purpose of the cyber stalking, he is neither uttering a word in the sense of the law nor making a sound or gesture nor exhibiting any object. The word chatting has been brought into coinage basically to describe a process by means of which various net users are simultaneously exchanging their views on the Internet with the help of technology. The net user is only working on his computer while chatting and that activity would not come within the ambit of Section 509 IPC even with the most liberal interpretation. Another issue is if no word has been uttered in the eyes of law or no sound or gesture has been made or object exhibited, then the question of intention behind the same would be very difficult to establish in a court of law, more so when the case relates to Cyberspace. Further, how would law enforcing agencies and the courts of law be able to find out about the intention to insult the modesty of any woman in cyberspace. It will be equally difficult to apply the other condition which talks about intruding upon the privacy of such woman, stipulated in Section 509 IPC to cyber stalking. How would the courts adjudicate upon the intrusion of privacy of any woman in Cyberspace when cyberspace is a free, boundary less medium where privacy itself is at the center stage of controversy?

In another case, an engineering and management graduate, facing prosecution in a dowry harassment case, was arrested by Delhi police for sending obscene e-mails in his wife's name to several persons. In June 2000, a man was arrested by the Delhi police for assuming the identity of his ex-employer's wife in a chat channel and encouraging others to telephone her. The victim who was getting obscene telephone calls at night from stranger made a complaint to the police. The accused was then located "on line" in the chat room under the identity of the victim and later traced through the telephone number used by him to access the internet.

In recent years, our government has passed laws in the field of Information technology. However, the Indian Information technology Act 2008 (amended) does not directly address cyber stalking. But the problem is dealt more as an "intrusion on to the privacy of individual" than as regular cyber offences which are discussed in the IT Act 2008. **Hence the most used provision for regulating**

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

cyber stalking in India is Section 72 of the Indian Information Technology Act (Amended), 2008 which runs as follows;

"Section 72: Breach of confidentiality and privacy: Save as otherwise provided in this Act or any other law for the time being in force, any person who, in pursuant of any of the powers conferred under this Act, rules or regulations made there under, has secured access to any electronic record, book, register, correspondence, information, document or other material without the consent of the person concerned discloses such electronic record, book, register, correspondence, information, document or other material to any other person shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both."

In practice, this provision is often read with section 441 of the Indian Penal Code, which deals with offences related to Criminal trespass and runs as follows:

"Whoever enters into or upon property in the possession of another with intent to commit an offence or to intimidate, insult or annoy any person in possession of such property, or having lawfully entered into or upon such property, unlawfully remains there with intent thereby to intimidate, insult or annoy any such person, or with an intent to commit an offence, is said to commit criminal trespass."

If cyber stalking is done only to annoy the victim and is not resulted into serious offences like severe defamation, sexual crimes, identity theft or even grave crimes like terrorism, it is treated as a bailable offence.

However, even when laws exist to punish perpetrators, finding the stalkers is often more difficult than with "traditional" stalking. Internet stalking is not limited to one jurisdiction. A man in California, for example, can easily stalk a woman in India via the Internet, and multijurisdictional cases are much more difficult to both investigate and prosecute. With that said, victims should not avoid reporting incidents of cyber stalking. The key to these types of cases is establishing a paper trail. If victims record all methods of cyber stalking for the police and file reports, stalkers are much more likely to face the consequences of their actions.

Conclusion

Cyber stalking is a persisting international evil that transcends national boundaries in a manner that renders this form of serious crime a global concern. It has been seen that amongst the major reasons that facilitate the perpetration of this crime is the anonymity of this medium. It is also note worthy that most people who receive threats online imagine their harasser to be large and powerful. But in fact the threat may come from a child who does not really have any means of carrying out the physical threats made. So, there is no need to panic, but is equally important to carry out the safety measures, and contact the law enforcement agencies if need arises.

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vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

⁵⁰² VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance Buddhism and Human Life



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Abstract

The Buddha's message as a religious way of life: "Keeping away from all evil deeds, cultivation of life by doing good deeds and purification of mine from mental impurities". For our proposes, religion may be defined in a very broad sense as a body of moral and philosophical teachings and the acceptance with confidence of such teachings. In this sense, Buddhism is a religion. Buddhism however does not neatly fit into the general categories outlined earlier because it does not share common features with other existing religions in many ways. To consider this matter further let us first of all briefly examine how religion could have come into being

Introduction

Why did religion originate? You might have heard that the origins of religion lie in man's fear, suspicion and insecurity. In the days before organized religions began, people did not have adequate knowledge and they could not understand the real nature of this life and what would happen to them after their deaths. They could not understand even the causes of natural phenomena of natural occurrences. According to their limited understanding, they suspected there must be certain unknown forces, which created all these pleasant or unpleasant things. Eventually, they began to notice that there is energy behind the forces of nature, which they called 'shakti'. They experienced an inexplicable sense of awe and dread towards these powers, which they felt, could harm them in some way. They therefore felt that these powers must be placated and used to protect or at least to leave them alone. Not trusting their ability to "talk" to these forces in ordinary language, they thought it would be more effective to mine their messages. Finally the actions to enlist the favor of these forces became ritualized into form of worship. Some people were identified as having special powers to communicate with these forces and they enjoyed great power in the group.

After worshipping and praying, early men thought they could control the undesirable occurrences and at the same time ensure a degree of protection as reward from these unseen forces or energies. To help them better visualize what they were trying to communicate with, they gave each force a name and a form - either conceiving it in human or in grotesque non-human form, but always evoking a sense of awe and fear. As time went by, they forgot the original significance of these representations and took them for real and eventually accepted them as deities.

Different cultures translated ideas and concepts into physical form and developed particular rituals to honor and worship these images as gods. Later as early urban settlements began and social control became necessary certain practices were used as the bases to develop moral behavior and to guide citizens in the correct path to ensure the well being of the community. Thus developed concepts such humanism, human responsibilities and human values such as honesty, kindness, compassion, patience, tolerance, devotion, unity and harmony. To ensure that these qualities would be further enhanced, the leaders instilled fear in the believers, threatening them with punishment by the gods in the life hereafter if they did not behave in an accepted manner. Religion was the result of the fusion of moral behavior and belief in the supernatural.

Concept of God

This is how imagination and humanism eventually fused together to become religion. Some people say that it is difficult to believe that any god created religion. Perhaps we could say that man created religion and later introduced the concept of a god into religion. An American philosopher, Prof. Whitehead, once stated that originally man created god and later god created man. What he meant was that the concept of god was created by man and later this concept was transformed into divinity. On the other hand, a French philosopher, Anatole France said that if the concept of god did not exist, some how or other, man would have created one because it is very important for his psyche. A divine power is necessary to allay our innate fear, suspicious, worries, disturbances, anxiety and craving. To avoid problems we depend on an external force to give us solace. In this sense we are just like the children. When a small baby is crying and the mother is too busy to carry it, what she does is to put a teat in its mouth to comfort it. That will stop the baby from crying. The concept of god helps many people in this manner. To stop their worries and dry their tears they develop various pacifiers in the form of religious beliefs and practices.

It was in a religious climate such as this that the Buddha appeared. As a prince living in the lap of luxury he started to think very deeply on why living beings suffer in this world. What is the cause of this suffering? He asked. One day while he was setting under a tree as a young boy, he saw a snake suddenly appear and catch a frog. As the snake and the frog were struggling, an eagle swooped down from the sky and took away the snake with the frog still in its mouth. That incident was the turning point for the young prince to renounce the worldly life. He began to think about how living beings on the earth and in the water survive by preving on each other. One life form tries to grab and the other tries to escape and this eternal battle continue as long as the world exist. This never-ending process of hunting, and self preservation is the basis of our unhappiness. It is the source of all suffering. The Prince decided that he would discover the means to end this suffering.

He studied under various religious teachers and learnt everything they had to teach but was unable to discover how to end suffering. He spent many years pondering this question. Finally at the age of 29 he seriously contemplated on old age, sickness, death and freedom through renunciation, and decided that without giving up the worldly preoccupations and his responsibilities and pleasures it would be impossible for him to find the answer. That is why he had to leave the palace in what is known as "The Great Renunciation". After struggling for six years, which represented the culmination of endless life circle of cultivation and struggle for spiritual development, he finally gained enlightenment and understood the secret of our suffering. This was the beginning of another "religions system". But it was a religion like nothing anyone had known in the past. In fact many people today do not even like to call Buddhism a religion because the word 'religion' evokes a great many negative emotions in their minds.

Beliefs and Practices

There was no reason at all for the Buddha to introduce another religion because at that time 2600 years ago there were already 62 religions cults in India alone. Since the existing religions during his time could not provide the answers to his questions he decided not to use the ingredients or concepts of these religions to introduce what he himself had realized.

What was the religious thinking in India at this time?

"God created everybody; God is responsible for everything; God will reward; god can forgive all our sins; and God is responsible for our lives after our deaths; God will send us to heaven or he will send us to hell".

These are the basic ingredients of all religions even today. At the same time there were certain other religions also in India, which taught that it was necessary for believers to torture their physical bodies, thinking that they could wash away all their sins during their lifetimes so they could go to heaven after death. Another religious group encouraged religious rites and rituals and ceremonies

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

and animal sacrifices to please their gods. This group believed that through these practices they could go to heaven. Some others again introduced prayer and worship and asked forgiveness for the sins committed. The Buddha did not recognize the efficacy at all these practices.

Did The Buddha make any Promise?

The Buddha did not promise heavenly bliss and rewards to those who called themselves his followers nor did he promise salvation to those who had faith in him. To him religion was not a bargain but a noble way of life to gain enlightenment and salvation. The Buddha did not want followers with blind faith; he wanted human beings to think and understand. Buddhism is a noble path for living where humanism, equality, justice and peace reign supreme. Revengefulness, animosity, condemnation and resentment are alien to the Teaching. The world is indebted to the Buddha for the rise of rationalism as a protest against the superstitions of religion, Is it he who emancipated man from the thralldom of the priests? Is it he who first showed the way to free man from the coils of hypocrisy and religious dictatorship? During the Buddha's time no religious practice was considered higher than the rites, rituals and sacrifice of living beings to the gods; but to the Buddha no practice could be more humiliating or degrading to man. A sacrifice is nothing more than bribery; and salvation won by bribery and corruption is not a salvation, which any self-respecting man would care to get.

But in introducing his doctrine, the Buddha did use the existing religious terms current in India at the time because in this way he would be on familiar ground with his listeners. They would grasp what he was alluding to and then he could proceed to develop his original ideas from this common ground. **Dharmas, Karma, Nirvana, Moksha, Niraya, Samsara, Atma** are some words, which were common to all religious groups during his time. But in his teaching the Buddha gave very rational and unique meanings and interpretations to those existing religious terms.

Dharma

Let us take a look at the word dharma (or dhamma) for example. The ancient interpretation given to the word Dharma is that it is a law given by the god. According to ancient belief the god promised to appear from time to time to protect this dharma by taking different incarnations. The Buddha did not accept that any god could have given doctrines and commandments and religious laws. The Buddha used the word Dharma to describe his entire teaching. Dharma means that which hold up, upholds, supports.

The Buddha taught the dharma to help us escape the suffering caused by existence and to prevent us from degrading human dignity and descending into lower states such as hell, animal, the spirit of ghost or devil realms. The dharma introduced by the Buddha holds and supports us, and free us from the misery of these realms. It also means that if we follow the methods he advocates we will never get into such unfortunate circumstances as being born blind, crippled, deaf, dumb or mad. So in the Buddha's usage, Dharma is the advice given to support us in our struggle to be free from suffering and also to upgrade human values. Western philosophers describe Buddhism as a noble way of life or as "a religion of freedom and reason". The Dharma is not an extraordinary law create by or given by anyone. Our body itself is Dharma. Our mind itself is Dharma; the whole universe is Dharma. By understanding the nature of the physical body and the nature of the mind and worldly conditions we realize the Dharma. The Buddha taught us to understand the nature of our existence rationally in a realistic way. It concerns the life, here and now of each sentient being and thus interrelated of ail existence.

Usually when people talk about religion they ask, "What is your Faith?" They use the word "faith" in an absolute sense, although it can be useful in the preliminary stages of one's religion development. The danger of relying on faith alone without analytical knowledge is that it can make us into religious fanatics. Those who allow faith to crystallize in their minds cannot see other people point of view because they have already established in their minds that what they believe is alone the truth. The Buddha insisted that one must not accept even his own Teachings on the basis of faith alone. One must gain knowledge and then develop understanding through study, discussion meditation and finally contemplation. Knowledge is one thing; understanding is another. If there is understanding one can adjust one's life according to changing circumstances based on the knowledge one has. We may have met learned people who know many things but are not realistic because their egoism, their selfishness, their anger, their hatred do not allow them to go unbiased mental attitudes and peace of mind.

When it is necessary to tolerate, we must know how to tolerate. When it is necessary to stand firm, we must stand firm, with dignity.

Karma

Let us take another example, the world Karma. It simply means action. If a person commits a bad karma it will be impossible for that person to escape from its bad effect. Somehow or other he or she must face the consequences that will follow. According to ancient belief there is a god to operate the effect of this karma. God punishes according one's bad karma; god rewards according to one's good karma. The Buddha did not accept this belief. He said there is no being or force that handles the operation of the effects of karma. Karma itself will yield the result, as a neutral operation of the law of cause and effect. He said we could avoid and in some cases, even overcome the effect of karma if we act wisely. He said we must never surrender ourselves fatalistically thinking that once we have done bad action there can be no more hope. Other religions teach that god can negate the effect of karma through forgiveness if the followers worship and pray and sacrifice. But the Buddha teaches that we have to effect our salvation by our own effort and mental purity.

"The Buddha can tell you what to do but he cannot do the work for you". You have to do the work of salvation yourself. The Buddha has clearly stated that no one can do anything for another for salvation except show the way. Therefore we must not depend on god, and not even depend on the Buddha. We must know what are the qualities, duties, and responsibilities of being a human being. He said that if we have committed certain bad karma, we should not waste precious energy by being frustrated or disappointed in our effort to put it right.

"The path that the Buddha showed us is, I believe, the only path humanity must tread if it is to escape disaster". Jawaharlal Nehru

Nirvana

The Buddha never claimed to have created the Dharma. What he discovered was the universal truth of the

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

real nature of existence. In fact some religious terms were already well known in India at that time. But the Buddha's uniqueness is that he took existing concepts and gave them very refined meanings and much deeper significance. For example, before the Buddha's time, *"Nirvana"* simply meant peace or extinction. But he gave it entirely new dimensions of meaning. NIR means "no" and VANA means "craving": no more craving, no more attachment and no more selfishness. We cannot experience Nirvana because we have craving, attachment and selfishness. When we get rid of these defilements we can experience Nirvana bliss.

Develop the Mind

The Buddha's advice is that we should be free from these distractions if we want to experience bliss. This release must however be obtained by our own effort and come from within ourselves. We cannot gain salvation from god or the Buddha or from heaven. We cannot get ultimate freedom through external agents. Supernatural beings cannot help us to gain wisdom and final liberation no matter how much we worship them or praise them through penances, charms, mantras, incantations and invocations and animal sacrifices.

The Buddha advised his followers to cultivate and develop the latent power within them and showed them how to make the best use of their will-power and intelligence without being slaves to an unknown being to find eternal happiness.

Without blaming anybody else, Buddhism also teaches that man is responsible for his own action. Man should face the facts of life, and shoulder the responsibilities of life by fulfilling his duties and obligations to himself as well to others. His pain and pleasure are created by himself and he has the ability to get rid of his sufferings and maintain peace and happiness by understanding his weaknesses and using his own effort to overcome them. Man's untrained mind is responsible for all the troubles, calamities, disturbances, unfavorable, circumstances and even the changes of elements and matter. Conversely man's mind can change unfortunate situations in the world and also can make it a peaceful prosperous and happy place for all to live. This can be done only through the purification of mental energy.

The Buddha's Method

The Buddha's technique of teaching was different from that of the others. He never gave prepare "public talks" or "lectures". He always decided on a topic based on an immediate incident or observation. One of the marks of the Buddha's genius and his skill as a teacher was his welltried pedagogical practice of proceeding from the "known to the unknown". For example, on one occasion as he and his followers were walking along a river bank, he noticed a piece of wood floating downstream. He stopped and asked, "What do you think of that piece of wood? What will happen to it?" One disciple answered, "It may land on an island in the middle of the river "; others said, "It may get saturated with water and sink"; "People will take it and cut it up for firewood" and "It will complete its journey to the sea," Now who is correct? Who can accurately predict the fate of the piece of wood? The Buddha then explained that our life is just like a piece of wood floating downstream, full of uncertainly. No one can say what will happen to us the next day or the next month. His method was to take lessons from everyday life so that his teachings were always rooted in the here and now and totally relevant to

human experience. In this way, he gave due credit to human beings to think freely, by using their common sense. He did not introduce a religion to be practiced slavishly out of fear and craving for any worldly gain. According to the Buddha, a beautiful thought and word, which is not followed by corresponding action, is like a bright flower that has no scent and will bear no fruit. The eightfold path introduced by the Buddha is a planned course of inward culture and progress. By merely resorting to external worship, ceremonies and prayers, one can never make progress in righteousness and inner development. Mere prayer for salvation, the Buddha says, is like " asking the farther bank of a river to come over so that one may get to the other side without personal effort." moderation, without violating moral principles, without becoming slaves lo them but with the understanding that this must not hinder spiritual development.

Husbands and wives, parents and children develop strong attachments to each other. This is perfectly natural. It is important for them in order to lead a worldly life. At the same time however, we must face the fact that this same attachment is the source of enormous pain and suffering. It can even lead to suicide. To eradicate problems, attachments must be allowed to develop with understanding. It is one's duty to develop affections by knowing that one day there will be separation. Under that condition one will know how to cope with separation when it happens. One will avoid madness and suicide simply has trained one's mind.

What the Buddha contributed to mankind was to console us by helping us to realize how all our problems arise and how to face them. Praying to external forces may lead to temporary solutions and provide transient moments of peace.

But it is just like taking two painkillers when you have a headache. After three hours the pain will come back because the headache is not the sickness but merely its symptom. Painkillers are not the medicine for sickness. Those who understand are in a position to remove the cause of suffering. The Buddha's teaching gives us that understanding.

I hope this introduction has shown you how Buddhism stands alone as a system of religious practice. The Buddha was a great and effective Teacher and Physician. He constantly reminded his followers that his only aim as to teach people how to understand the nature of suffering or unsatisfactoriness and how to eradicate it. He promises happiness in this very life for those who follow his noble method with determination and right understanding.

It is very unfortunate that in many existing religions the followers are not encouraged to respect the leaders of another religion. They arc warned that if they do so they would be committing a sin and even worse, the) would go to hell for it. The Buddha clearly tells us that we must respect those who are worthy of respect. Although we may not agree with certain religious points of view they hold, if they are sincere in their efforts to serve humanity and uplift it, we must respect them for it. There arc noble people in every religion.

The Buddha did not advise his disciples to go and convert people who would otherwise go to hell. Rather he advised them to show the world what is right and what is wrong and to be good and to do good, to encourage men to come and see for themselves the truth that he taught. He

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

and his followers do not condemn the followers of other religionists as "**sinners**" who are doomed to spend an eternity hell. According 10 Buddhists, even those who have no "religion" but who live in dignity, with compassion and goodwill "can go to heaven", that is, experience happiness. When we are happy and contented we are in "*heaven*". When we suffer physically or mentally we are in "*hell*". There is no need to wait to die to experience either of these states. Buddhism is unique because we can talk about this "*religion*" even without any reference to heaven or hell. I am sure that others cannot talk about religion in this way. The Buddha's message of goodwill and understanding to all beings is a universal message. The world today needs this noble message more than ever before in the history of humankind.

Buddhism as a religion is the unique exposition of the absolute truth, which will show man how to live in peace and harmony with his fellow beings.

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Asian Resonance A Prologue to Intaglio Printmaking Technique

Abstract

"Print is unique among artistic media." The word 'Print', for modern readers might suggest mechanically produced commercial products, such as: books, newspapers etc. However the Print refers to the original creation of an artist; who has chosen printmaking tools to express himself, instead of the paint brush and the chisel.

Printmaking is defined as the process of transfer of ink from a prepared surface to a piece of paper. Printmaking is an overall term used for various techniques which include: Relief Printing, Intaglio Printing, Planographic Printing and Serigraphy.

In this paper we are discussing about the introduction of Intaglio Printmaking Technique, methods and materials required and the printing process. The image is incised into a surface which holds the ink. In Intaglio printing there are acid and non-acid techniques. The technique that utilizes acid in the process of making a plate is called *Etching*. It can be done by using various grounds like: hard ground, soft ground, aquatint, sugar lift and spit bite. *Engraving*, *Dry point* and *Mezzotint* are the Intaglio techniques where acid is not used.

Key words: Print, Intaglio Technique, Etching, Engraving, Dry point, Mezzotint.

Introduction

Value **"Print** is unique among artistic media." The word 'Print', for modern readers might suggest mechanically produced commercial products, such as: books, newspapers etc. However the Print refers to the original creation of an artist; who has chosen printmaking tools to express himself, instead of the paint brush and the chisel.

Printmaking is defined as the process of transfer of ink from a prepared surface to a piece of paper. Printmaking is an overall term used for various techniques which include: Relief Printing, Intaglio Printing, Planographic Printing and Serigraphy.

Here we will discuss about the introduction of Intaglio Printmaking Technique, methods and materials required and the printing process.

Intaglio is a printmaking technique in which the image is incised into a surface, and the sunken area holds the ink. The word Intaglio is derived from the Italian verb 'intagliare' which means 'to cut'. The design is cut, scratched or etched into the printing surface or matrix.

In intaglio printing there are acid and non-acid techniques.



Etching on paper by Haren Das

Amita Raj Goyal

Sr. Asstt. Professor. Department of Visual Arts The IIS University, Jaipur

Garima Jain Research Scholar. The technique that utilizes acid in the process of making a plate is called **Etching**. The grooves over the plate are made chemically by acid. It is done by coating the plate with ground⁷ on which an image is drawn with a needle so that the metal is exposed underneath. The plate is then immersed in a bath of acid which eats into the exposed metal. When the desired depth has been obtained the ground is cleaned off for printing.

Hard ground is made by mixing two parts Bees wax, two parts Syrian bitumen or Aspheltum and one part powdered resin. It is good for line work, enables finer detail and more control. Various effects can be achieved, similar to pen and ink and also for pointillism or make marks and scratches.



Hard ground technique

Soft ground remains soft after application to the plate. It is made by adding one part grease to three parts hard ground. It should be carefully handled as the slightest pressure with the fingers will remove the ground.



Soft ground technique

Aquatint is used for obtaining tonal areas on a print. A very fine layer of either resin or bitumen dust is sprinkled on the clean plate. When heated this dust melts and becomes fixed to the plate and can resist acid. When

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

the metal plate is etched only the bare metal areas around each particle etches



Aquatinted copper plate

Sugar lift^{δ} is a syrupy solution of sugar, painted on the plate surface before being coated with ground. Then the plate is placed in hot water where the sugar dissolves and lifts off leaving the image. The plate can then be etched.



Sugar lift technique

Spit bite is another technique in which a mixture of nitric acid and Gum Arabic is spattered or painted on the metal surface. A great variety of tones and subtleties can be achieved by varying the time and strength of the acid application.



8 Mixture of karo syrup (a concentrated solution of glucose and other sugars derived from corn starch), Indian ink mixed with black poster paint, and pink hand soap or a little detergent.

⁷ Ground: It is an acid-resistant substance used to cover and protect those parts of the plate which we don't want to be bitten by the acid.

Engraving, Dry point and *Mezzotint* are the Intaglio techniques where acid is not used. No grounds are used in the printing process.



Engraving

Engraving is the technique in which the metal is removed from the plate in narrow grooves by the burin or graver.

Drypoint is the most direct and straight forward intaglio technique. The method simply involves making a mark on the plate by scratching it with a sharp needle. A drypoint print has a most spontaneous look about it, similar to a pencil drawing.



Drypoint

Mezzotint produces a tonal print which is made mechanically and not by etching. Good mezzotints look similar to black & white photographs. A plate is prepared to print in all over black by producing minute little dents and burs with a special tool called a rocker. The tool is rocked over the plate in many different directions for roughening the complete surface. The image is created by working backward from black to white, using scraper and burnisher.



901

Tools

degree.

Material used



Gouge is a form of chisel used to cut U-shaped crevices / lines in a plate.

Etching/dry point needle is a sharp pointed needle to carve lines into the metal. It is a tool for scratching or drawing on the plate.

Roulette is a tool for Mezzotint; having a textured, hardened-steel roller used to make lines or areas of dots in a plate. They are directly used on the bare metal plate as a means of quickly creating a texture.



Rocker is a multi-toothed steel tool whose serrated edge is used to produce a rough ink-holding surface on a mezzotint plate. It is used in a crisscross manner to create a dense texture on the plate's surface.



⁹ Copper and zinc are the most popular metal plates used.

¹⁰ A fast-drying alternative to asphaltum, made by mixing one part resin and three part alcohol. It is used to protect portions of the plate from acid.
 ¹¹ A corrosive agent used to bite intaglio plates. The most

¹² Lozenge: rhombus or diamond shape.

Mezzotint

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Metal plate9, file, emery paper, steel wool, cotton

Burin is an engraving tool that cuts lines in the

rags, turpentine, benzene, ammonia and chalk white, hotplate, leather roller, brushes, stop out varnish¹⁰, hard and soft ground, carbon paper, resin, acids¹¹, fiberglass or plastic photographic developing dishes, printing ink, paper.

plate. It is a small, thin steel rod with a square or lozenge¹² shape face. Its end has been sliced off at an angle of 45

¹¹ A corrosive agent used to bite intaglio plates. The most frequently used acids are Nitric Acid, Dutch Mordant and Ferric Chloride.

Burnisher is a highly-polished, curved metal tool used to polish the plate and to correct mistakes. It is often employed to create highlights in an intaglio print--to lighten tones in an aquatint or mezzotint.



Scraper: A triangular-bladed tool. The three sharp edges are used to scrap and carve an intaglio plate; for image correction or for image and mark making. The sharp tip can be used for dry point as well as drawing into hard or soft ground. It is frequently used to modify and grade the tonal structures produced by aquatint, mezzotint and deep-bite.



Printing process Plate preparation

Bevel the edges of the plate and clean and smooth the tiniest scratch on the plate. Heat the plate to apply ground on it. Once cool, the plate is ready to receive the image either by direct needling or by using tracing paper. Now immerse the plate in a bath of nitric acid. The longer the plate sits in the bath, the deeper the exposed area will be bitten. After few minutes take the plate out of the acid and rinse it under running water and clean it.

Preparing the paper

Dip the sheets of paper in a plastic dish of clean water. When soaked, remove the sheets and place them one on other on a flat surface between two sheets of blotting paper. Lastly a sheet of glass is added and a heavy weight is put on top of it.

Inking the plate

Put the plate on the hot plate and apply the ink over the surface and work with the dabber¹³ in circular motions forcing the ink into the intaglio. Remove the plate from the hot plate and wipe off the excess ink.

VOL.-II, ISSUE-I, JANUARY-2013

Asian Resonance

Printing

Put the plate on the intaglio press¹⁴ bed, place the sheet of paper carefully over the plate and then felt blanket on paper. Run it through the press. Lift the print carefully from the plate and place it in between two blotting papers under heavy weight for drying.

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¹³ A cushion like article used for applying ink, as by printers and engravers.

¹⁴ An intaglio press is very simple in design, consisting of two heavy rollers one above the other, with a sheet of rigid metal in between which acts as the bed.
VOL.-II, ISSUE-I, JANUARY-2013 Asian Resonance The Religious Philosophy of Raja Ram **Mohan Roy**

Abstract

At the time of Ram Mohan Roy there was nothing called morality or religion in the true sense. In place there were only a few rites which were meaningless, some childish superstitions and discussions which bore no fruit. Virtue and vice were simply a matter of performing a few overt acts alone and had no bearing whatsoever to the integrity of conduct or personal purity. "A trifling present made to a Brahman, commonly called 'prayaschit' with the performance of a few idol ceremonies are held as a sufficient atonement for all those crimes; and the delinquent is at once freed from all temporal inconvenience, as well as dread of future retribution." Rabindra nath Tagore draws a very clear picture of the continent in the following words: "Ram Mohan was born at a time when our country, having lost its link with the inmost truth of its being, struggled under a crushing load of unreason, in abject slavery to circumstances. In social usage, in politics, in the realm of religion and art, we had entered the zone of uncreative habits of decadent tradition and ceased to exercise our humanity." The Hindus at that time had no knowledge of the real teachings of their ancient scriptures. They had their illiterate priests as their guide in matters of religion. The result was that meaningless religious customs like 'Charak Puja', drowning the first born at the' Ganga Sagar', Sutee system, throwing oneself under the wheels of Lord Jagannath came into vogue. Forgetting the existence of God, people worshipped a large number of idolatrous deities. The idols were not taken as representation of God but as Gods themselves. To head these evils, there was the worst form of caste systems and the vice of 'untouchability' reigned supreme. Ram Mohan doesnot make distinction between the ultimate reality and God. This lead by him has been followed by most of the contemporary Indian thinkers. The one ultimate reality for Ram Mohan is One and at the same time the God of religion.

Introduction

Raja Ram Mohan Roy was a great reformer. He was born in the year 1774 in an old fashioned Brahmin family of Bengal. He died in 1833. During this period India was under the rule of the East India Company. Christian missionaries had established their churches in different parts of the company. India came into contact with the religion of Christianity during this time. He was highly educated. He is known as a great linguistic. He knew Bengali, Sanskrit, Urdu, English, Latin, Arabic, and Hebrew and Greek, He had read Koran in the original Arabic. He had made a deep study of the Upanishads which forms the real basis of Hinduism. He published translations of some important Upanishads in English and Bengali. It is to be noted that he was the first to translate Upanishads into the English language. He purposely learnt Hebrew, Greek and Latin to study the original Bible and dug deep to explore the Hebrew sources of Christianity. He was able to perceive the unity of religions with confidence and as an expert.

At the time of Ram Mohan Roy there was nothing called morality or religion in the true sense. In place there were only a few rites which were meaningless, some childish superstitions and discussions which bore no fruit. Virtue and vice were simply a matter of performing a few overt acts alone and had no bearing whatsoever to the integrity of conduct or personal purity. "A trifling present made to a Brahman, commonly called 'prayaschit' with the performance of a few idol ceremonies are held as a sufficient atonement for all those crimes; and the delinquent is at once freed from all temporal inconvenience, as well as dread of future retribution." ¹ Rabindra nath Tagore draws a very clear picture of the continent in the following words: "Ram Mohan was born at a time when our country, having lost its link with the inmost truth of its being, struggled under a crushing load of unreason, in abject slavery to circumstances. In social usage, in politics, in the realm of religion and art, we had entered the zone of uncreative habits of decadent tradition and ceased to exercise our humanity."² The



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Hindus at that time had no knowledge of the real teachings of their ancient scriptures. They had their illiterate priests as their guide in matters of religion. The result was that meaningless religious customs like 'Charak Puja', drowning the first born at the' Ganga Sagar', Sutee system, throwing oneself under the wheels of Lord Jagannath came into vogue. Forgetting the existence of God, people worshipped a large number of idolatrous deities. The idols were not taken as representation of God but as Gods themselves. To head these evils, there was the worst form of caste systems and the vice of 'untouchability' reigned supreme. The Christian missionaries began to make thunderous attacks on Hinduism. Their mission in exposing the defects of the Hindu system was to win the Hindus in favour of their religion. Their criticism fell like sledgehammer blows on the Hindu religion. In a bid to save Hinduism from the onslaughts of Christianity and from the prevailing corruptions, Ram Mohan made a deep study of the original sources of Hinduism. As a result, he developed a religious philosophy, free from the existing puerilities relying on true interpretation of the scriptures. His religious thought was influenced by the Islam, Christianity, the Tantras and Buddhism. His discussions with the Hindu Pundits and Christian missionaries also influenced his thinking. Also, there was influence of family and his training on him.

Raja Rammohan Roy was essentially a religious thinker. He was not a philosopher in the academic sense of the term. We do not find him solving the knotty problems of philosophy. His concern was religion." If I were to settle with my family in Europe" he said," I would never introduce them to any but religious persons, among them I find such kindness and friendship, that I feel as if surrounded by my own kindred." ³ Ram Mohan Roy was, therefore, a religious personality. His religious views, however, were from a particular philosophical point of view. He has openly admitted his allegiance to Sankara. His philosophical position, therefore comes very near to Sankara. Like Sankara, he believed in one ultimate reality. He was therefore a monist. But, he did not regard the world to be illusory like Sankara. For him the world was real. He approached the world and also religion from the common sense point of view. Ram Mohan's religion is essentially theistic. It centres around the concept of God. With regard to the existence of God, he has appealed to common sense. He says," to read the existence of the Almighty Being in his work of nature, is not, I will dare to say, so difficult to the mind of a man possessed of common sense, and unfettered by prejudice."⁴ The belief in God demands the worship of God. Ram Mohan did not find any inconsistency between the knowledge derived by common sense and what our scriptures enjoined. He says," they will embrace the rational worship of the God of nature, as enjoined by the Vedas and confirmed by the dictates of common sense." 5

Ram Mohan doesnot make distinction between the ultimate reality and God. This lead by him has been followed by most of the contemporary Indian thinkers. The one ultimate reality for Ram Mohan is One and at the same time the God of religion. God is also the ultimate worldground i.e., whatever we find in this universe and the universe itself, owe their existence to God. Many religious thinkers shared the same view. The world has no independent status of its own. God is the all-inclusive-

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

reality; what is the status of this world? Sankara regards the world to be unreal or 'Maya'. Ram Mohan also makes use of the term 'Maya'. But, he does not understand the world to be illusory. He takes the world to be totally dependent upon God. The world is real, not illusory, if one conceives of it to be grounded in God who is the all- inclusive-reality. But if one regards the world to be independent of God then he is under an illusion. Maya for Ram Mohan is the power of God. He says," The term Maya implies, primarily the power of creation, and secondarily, its effect, which is the universe." ⁶ Maya, therefore, is the power of God through which the universe came into existence. 'Maya' is external. Maya has a separate existence from God. It will be wrong to think that if God works under the influence of Maya, He becomes inferior to Maya. By admitting God to be the cause of the world and considering Him to be possessed of a power through which He creates it, one is not entitled to conclude that God is subordinate to such a power. Maya is not something over and above God and so the question of subordinate does not arise.

Raja Ram Mohan Roy's religion is essentially theistic. God is the centre of his theistic religion. Ram Mohan has proclaimed his allegiance to the philosophy of Advaita Vedanta of Sankara. But such an allegiance is not congenial to theism. Brahman is taken to be impersonal Absolute by Sankara. Although Ram Mohan maintains the indeterminate character of God like the Absolute of Sankara, he does not uphold the impersonal nature of God. What Ram Mohan insists is that human beings cannot comprehend the nature of God. Such an apprehension only initiates him into the belief in the existence of God. God remains unknown to him. This incomprehensible nature of God is not something new to the religion. The Koran and the Bible as also the Upanishads repeatedly insist on the incomprehensibility of Godhead. But this description does not mean that God's nature has something in him which is incomprehensible. It simply means the limited character of human knowledge. This also does not mean that man can never comprehend the nature of God. Man should rather make an honest effort to know the nature of God. Human knowledge is provisional, incomplete and always subject to correction. By insisting on the incomprehensible character of God, Ram Mohan emphasizes these very things.

Popularly God is conceived to be a person. But Ram Mohan has conceived of God as personal and not as a person. God is the author and the controller of the whole universe. He cannot be said to be endowed with a form, much less a body. When he talks of God to be personal he means that God is not IT in relation to man, but always the highest and transcendent Thou. To describe God as personal means that God is a self-conscious spirit - a Being whose existence is to be conscious, to experience, to think, to will to love and to control the ongoing of the universe. The law and order in the universe indicate that a personal mind is at work in the universe. All evidence for purpose, adaptation of means to end in nature is an evidence of a personal God. God's inconceivability remains intact when we regard him to be personal. Thus, what He is, we do not know, but as He stands to us, we can know Him to be personal. He describes God in personal terms,"...nothing bears real existence except by the volition of God ..."

".....my motives are acceptable to that Being who beholds in secret and compensates openly" ⁸ are statements which impute volition and personality to God.

vol.-II, ISSUE-I, JANUARY-2013 Asian Resonance

The personality of God is not like the human personality of God.

Religion is essentially a human endeavour. Just as religion presupposes a definite conception of God, it presupposes a definite conception of man also. Ram Mohan describes his religion in the following words: " In conformity with the percepts of our ancient religion, contained in the Holy Vedants, though disregarded by the generality of moderns, we look up to ONE BEING as the animating and regulating principle of the whole collective body of the Universe, and as the origin of all individual souls which in a manner somewhat similar, vivify and govern their particular bodies, and we reject idolatry in every form and under whatsoever veil of sophistry it may be practiced, either in adoration of an artificial, a natural, or an imaginary object. The divine home which we offer, consists solely in practice of Daya or benevolence towards each other, and not in a fanciful faith or in certain motions of the feet, legs, arms, head, tongue or other bodily organs, in pulpit or before a temple." 9

Ram Mohan Roy was a religious reformer rather than a precursor of any new religion. In his prefaces to the various works connected with religion, he repeatedly insists that his mission is simply to free the Hindu religion from the corruptions that have crept into it. His approach to the scriptures is not devotional but rational. He wants revival of the ancient religious tradition in its pristine form unspoiled by the innovation made by the cunning priests. As such he rejects idolatry and recommends worship of 'the incomprehensible' 'unknowable' and 'formless' God. Ram Mohan's approach to the scriptures is characterized by reason and common sense. In his view, what is against reason and what is repulsive must be rejected. Ram Mohan never suggested that man should become 'other worldly' for pursuing a religion. The aspirer is not permitted to neglect his social and other obligations of life. His ideal in religion is a 'Brahminist Grihasta' i.e. a householder devoted to God. His religious philosophy aims at securing happiness here and hereafter. Ram Mohan was the first thinker on Indian soil to have thought about religion from a rational angle.

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