

Anvesha

Vol. : II

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Women Awareness Cell, Bijni College, Bijni
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EDITORIAL

In many ways, 21st century is considerably different from the previous centuries. With the advancement of science and technology there is an explosion of knowledge everywhere. People of this century need to assimilate knowledge, evaluate and apply the available information and resources accordingly. Earlier people had to focus only in one specific discipline. It is a fact that we cannot compartmentalize the knowledge into watertight compartment. Knowledge is flowless and connected to each other. Sharing the knowledge and ideas helps in developing one's interchangeable skills, develop better outlook. Keeping these in mind and to bring the young researchers, academicians and thinkers of diverse disciplines and perspectives into a same academic pursuit, the Women Awareness Cell, Bijni College in collaboration with Publication Cell, IQAC, Bijni College, Bijni take this initiative to publish the multi-disciplinary, multi-lingual edited book named 'Anwasha' Vol. II. Authors from different disciplines and languages have contributed papers with their diverse perspectives. We plan to encourage the spirit of young hidden talents of each of the authors.

For convenience of the readers, diverse articles from humanities and social science, language & culture as well as science have been covered in this publications.

Hope, our sincere and humble attempt would be useful to academicians, researchers, thinkers, policy makers etc. and open up a

new platform for dialogue. Moreover, we honestly welcome the suggestions from the readers which will help us in improving our future publications.

Lastly, we are indebted to those people who are directly and indirectly give us mental support and encouragement in the process of completion of this publication.

Editors

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Understanding the History of Northeast India : A Study of Bodos

Dr. Kalidash Brahma*

Introduction:

Understanding the history of ancient Assam has been a difficult task for the historians as well as the conscious intellectual since long. It has been so for there is dearth of historical remnants or monument of the past Kingdoms or the civilizations. Sir Edward Gait has rightly remarked that 'the science of history was unknown to the early inhabitants of Assam, and it is not till the Ahom invasion in 1228A.D. that we obtain anything at all approaching a connected account of the people and their rulers. For several hundred years previously some scatter fact may be gleaned from a few ancient inscriptions and from the observations of a Chinese traveler. Before then nothing definite is known, and our only information consist of some dubious and fragmentary references in the Mahabharat, and in the Purans and Tantras and other similar records.'¹ This paper makes an attempt to understand the history of the Bodos with the help of the toponomy of the entire north and north east India for it will help us to reduce some of the controversies regarding the original inhabitants of the entire region.

During the time of Ramayana and Mahabharata, Bodos were not known by this term. They were known as Danavas, Asuras, Kiratas and Mlechhas. Dr S. K. Chatterjee used the term 'Indo-mongoloid' as

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During the time of Ramayana and Mahabharata, Bodos were not known by this term. They were known as Danavas, Asuras, Kiratas and Mlechhas. Dr S. K. Chatterjee used the term 'Indo-mongoloid' as

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synonymous to Kiratas. They were known to be the people who shaped the history of Assam, the then Pragjyotishpur or Kamrupa. Rev. Sydney Endle referred Bodos as Kacharis. In the Ahom Buranjis also, they were known as Kacharis. The term Bodo as a generic name was, for the first time, used by Hodgson in 1846 while he was writing about the Meches of Darjeeling District. In the pre-Vedic period, the land or the country western wards of china and north-eastern of Himalaya was known as 'Bod' (the home land) and accordingly, the name of the people inhabiting the land was also known as 'Bod'.² Hence, it can be assumed that the term 'Bodo' might have been borrowed from 'Bod'. It gives us a hint why Hodgson used the term even though no explanation was given him in this regard. G.A. Grierson used the term Bodo in his Linguistic Survey of India.³ He included Meches, Sonowals, Boros, Tripuris, Deuris and Koches within the term Bodo who were once upon a time known as Kiratas, Mlecchhas, Danavas and Asuras and ruled the north (some pockets) and north east India for many centuries.

History says that the Bodos, known as Kiratas, Asuras, Danavas and Mlecchhas in the ancient period of time, were the earliest inhabitants of the Northeastern region of India. However, it has been challenged by many scholars. This paper makes an attempt to look into the history of the Bodos in India especially in its Northeastern region. Here, the term Bodo will be used to include all Bodo group of languages such as Meches, Sonowals, Boros, Dimasas, Tripuris, Deuris and Koches within the term Bodo who were once upon a time known as Kiratas, Mlecchhas, Danavas and Asuras. Some of the nomenclatures of the place and rivers in ancient India (i.e. its North and Northeastern Part) are explained for our understanding.

1. **Barak River (Assam):** This Valley/River exists in the southern part of the present state of Assam which was a part of the ancient Kamrup Kingdom.⁴ In later part, several Kachari kings ruled this region. This Kachari Kingdom came to an end in the year 1854 in this Valley. If we analyse the term 'Barak' it can be assumed that

the term has been derived from the word 'Bara' or 'Boro', the original inhabitants of the region. In Kok Borok, another group of the Bodo races the word 'Barak' means man. Perhaps because of the manly attitude of the river it was named as or became popular as Barak (Man) in the region.

2. **Dinajpur (West Bengal):** Dinaspur exists in the present West Bengal. Once upon a time the region was under the Kingdom of Mahipal-i, descendent of Asura dynasty. The term 'Dinajpur' can be explained as Di+na+pur i.e. Di= River or Water; Na=fish; and pur=Land or Place.⁵ Thus the complete meaning is Land of fish cultivation or abode of fishes. The land is identified with Matsyadesha (i.e. land of fishes or fishermen) in the epic era.⁶
3. **Dimapur (Nagaland):** Dimapur exists in the present state of Nagaland. Once upon a time it was the Capital of the Kacharis (i.e. the Bodos). They ruled there up to 1536 and then sifted their capital to Maibong or Maibang. The term can be explained in Bodo (Dimasa) as: Di= river; ma= big; and pur= place. The complete meaning is, Place of a big river. To be true, this place exists near the river Brahmaputra, the longest river of Assam. The Dimasas, a section of the great Bodos are known as the son of this big river. (i.e. Di= water; ma=big and sa=son).
4. **Dipu: (Karbi Anglong, Assam):** This place exists in the Karbi Anglong district of Assam. The term without any doubt is of Bodo origin. In Bodo, the term Dipu means flowing river with much current (i.e. Di= river; pu= flowing with much current).
5. **Haflong:** Haflong is a town and headquarters of North Cachar Hills district of Assam. It was part of Kachari Kingdom of Maibang. The term Haflong perhaps derived from the Bodo word 'Hafulung' which means fertile land.
6. **Habung:** The earliest reference to Habung comes in the 10th century copper plate grant of Ratnapala of the Pala dynasty, when it was a principality of the Kamarupa Kingdom. After the downfall of the Kamarupa Kingdom it became a dependency of the Chutiya

kingdom. The region was finally annexed by the Ahom king Suhungmung in 1512.⁷ In Bodo 'Ha' means land and 'bung' means filled.

7. **Dikrang:** Dikrang is the name of a river which was the eastern boundary of ancient Kamrupa dynasty. The western boundary of the kingdom was Karatoya River, which exists in the Jolpaiguri district of present North Bengal. In Bodo language, 'Di' means river and 'krang' means strong or current. Hence, 'dikrang' stance for a strong or Current River.
8. **Laoti/ Dilao:** The river Brahmaputra was earlier known as Dilao or Laoti⁸. In Bodo language, the term Dilao or Laoti means long river i.e. Di or Ti= river and Lao= long. The complete meaning is the long river. The Brahmaputra River is the longest river in Assam. Banikanta Kakati stated that in Ahom Buranji also the river Brahmaputra is very frequently referred to as Tilao.⁹ In many of the instances like in the manuscript 36 f. No. 4(a), Department of Historical and Antiquarian studies, Guwahati, Assam, the river is also referred to as Luit or Louhita.¹⁰
9. **Kashpur:** Kashpur is the last kingdom of the Bodos in Assam. It lasted upto 1854. King Gabinda Chandra, the last king of the Bodos in Assam died in the year 1830. However, after the death of the king some portion of the kingdom was ruled by Tularam senapati and his two sons up to 1854. This place exists in the Cachar district of Assam.
10. **Maibang:** The Kacharis shifted their kingdom from Dimapur to Maibang after the defeat and death of Detsung in the hands of the Ahoms in the year 1536.¹¹ This land exists in the North Cachar Hills of present Assam. In Bodo language, the term 'Maibang' means 'much Paddy' (i.e. Mai=Paddy; Bang=Much).
11. **Dispur:** Dispur is the capital of present state of Assam. For many decades the Bodos were living in this region. This area was created as South Kamrup Tribal Belt (Gauhati) by Govt. order RD/74/46/172 dated 27/02/50 which comprised 7,72,454 B-

0K-0L of land area. However, 1,229,202B- 0K-0L of land were deconstituted under Govt. order No RSD/26/64/PI/38 dated 30/07/69 from the total land area for construction of the State's Capital complex.¹² In Bodo language, Dispur means land of river i.e. Di= River; Pur= land or Place.

12. **Mairang:** Mairang is a name of the place near Guahati city (Six Miles). The land came to be known as Mairang because once upon a time a Bodo king named Mairang Raja (later Sanskritised as Mahiranga Danava) better known as Danava was ruling the entire region.
13. **Dhansiri Dima:** This River exists in the present Dimapur. Here the word Dima means big river (e.g. Dimapur=Land of Big River).

Above discussion makes it clear that the Bodo word 'Di' or 'Dwi' or 'Doi' or 'Ti' which stance for water forms the first syllable of the most of the river names of ancient Assam. It also became clear that the term 'pur' which stance for land or place are found in many places of the region. This seems that the Bodos had a long historical relationship with the rivers and the lands of the entire region. Here a list of few more rivers (with meaning) of north east India is given below.

- ◆ Dihong: Wide River.
- ◆ Dichang: River with much water.
- ◆ Dikrong: (Arunachal and Assam) River with high edges lying waterbed too below.
- ◆ Dibrugarh: (Dibrugarh, Assam) River with shallow water.
- ◆ Dikhou: River with much sound.
- ◆ Tihu: (Bhaksa district of Assam) River with much water.
- ◆ Mongoldoi: It exists in Darang (Dirang) district of Assam (Present Odalguri district of Bodoland Territorial Council).
- ◆ Barnadi: (Barnaidi) River like mad i.e. River with much water and current.
- ◆ Dirang (Darang): River of Joy (In Bodo 'rang' means joy e.g.

- Rangjali Bwisagu).
- ◆ Dibang (Arunachal Pradesh): River with much storage of water.
 - ◆ Gomoti: (South Tripura) Yellow River (In Bodo language, 'Gomo' means yellow whereas 'ti' means river).
 - ◆ Sadiya: (Eastern Assam) River with Shallow water. Eastern Boundary of proposed Bodoland demand.
 - ◆ Dihing: This name is found in manuscript 36 f. No. 4(a).¹³
 - ◆ Tista: It flows from Sikkim through Darjeeling district of Bengal.

Conclusions:

Edward Gait in his book 'A History of Assam' said, 'It is indeed not at all unlikely that the people known to us as Kacharis and to themselves as Bada (Bara), were in earliest days the dominant race in Assam; and as such they would seem to have left traces of this domination in the nomenclature of some of the physical features of the country. e.g., the Kachari word for water (di;doi) apparently forms the first syllable of the names of many of the chief rivers of the province, such as Diputa, Dibong, Dibong, Dibru, Dihing, Dimu, Desang, Diku (cf. *Khu Tista*), &c., and to these may be added Dikrang, Diphu, Digaru, &c., all near Sadiya, the earliest known centre of Chutiya (Kachari) power and civilization'.¹⁴

The Ahoms ruled Assam for about 600 years (i.e. from 1228 to 1826), yet their word for water i.e. Nam has found in very few numbers of places or river names. But, we find many river names in India, particularly in North and Northeast India which begins or ends with di or ti, the Bodo word for water.¹⁵ From this, it can be assumed that the Bodos ruled Assam much longer than that of the Ahoms.

In this regard Dr. S K Chatterji said, '...their area of occupation extended to Cachar district (particularly in the North Cachar Hills) and into Sylhet, and from Cachar and Sylhet they moved further to south, to Tripura state where there is still a Bodo-speaking bloc in the shape of the Tipra tribe which founded the state; and from Tripura they spread into Comilla and possibly also Naokali district: and thus they occupied the mouths of Ganges by the eastern sea. With

the exception of the isolated Khasi and Jaintia Hills, the whole of Assam (barring the eastern parts inhabited by the Nagas and the south eastern parts inhabited by the Kuki-chins) and North and East Bengal was the country of the great Bodo people'.¹⁶

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4. Gaid, E. (2005). *A History of Assam*. LBS Publications, Guahati (Assam), (Reprint).
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8. Machahary, P. (2004). *Socio-Political Life of the Boros in Karbi Anglong Districts of Assam*. Moulana Offset Press.
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Endnotes:

- ¹ Edwar Gaid, 'A History of Assam', LBS Publications, Guahati (Assam), 2005 (Reprint), p-1.
- ² P. Machahary, 'Socio-Political Life of the Boros in Karbi Anglong Districts of Assam' Moulana Offset Press, 2004, P-52.
- ³ *Linguistic Survey of India*, Voll no-iii, 1903.
- ⁴ Kamrupa is the earliest Bodo/Kirata Kingdom.
- ⁵ In Dimasa language 'Di' means River.
- ⁶ Binoy Kumar Brahma, "Social Mobility: From Tribalism to Indianism:

- 7 *The Bodos*", Onsumoi Printers and Publishers, 2008, p-200.
- 7 Amalendu Guha, *Pre-Abom Roots and the Medieval State in Assam: A Reply*, Social Scientist Vol 12, No. 6, 1984, p73. & The Manuscript 36 f. No. 4(a), Department of Historical and Antiquarian studies, Guahati, Assam.
- 8 Sarat Kumar Phukan, *op. cit.*, p-159.
- 9 Binoy Kumar Brahma, *op. cit.*, pp-16-17.
- 10 Sarat Kumar Phukan, *op. cit.*, photo plate no ix.
- 11 Sir Edward Gait, *op. cit.* p-238.
- 12 Binoy Kumar Brahma, *op.cit.*p-265.
- 13 Sarat Kumar Phukan, *op. cit.*, Photo Plate no-1.
- 14 S. Endle, "*The Kacharis*", Low Price Publications, Delhi-110052, 1997 (Reprint), p-4.
- 15 Edward Gait, *op. cit.* p-6.
- 16 SK Chatterjee, '*Kirata Jana Kriti*', The Asiatic Society, Kolkata, 2007(Reprint) p-46.

Devadasi Dance and Assam: A study

Mahanta Talukdar*

Abstract :

The dance is an important element of the entertainment of the human being. In India from the ancient period various types of dances were prevalent. Amongst those Devadasi dance is the most noteworthy. It was not played in the stage, theatre and the court of the king etc. It was confined to the temples of ancient India. Generally, Devadasi, 'Deva' means God 'dasi' means slave, meaning 'servant of God'. Devadasi was a woman who was dedicated to worship and serve a deity or a temple for the rest of her life. It is a religious practice whereby parents marry a daughter to a deity or a temple and the marriage occurs before the girl reaches puberty. Throughout the ancient and medieval Assam such type of dance was prevalent who were called Nati in local language. But due to the lack of royal patronage and socio-economic causes, the Devadasi dance was demised in course of time. Thus, this form of dance once the important dance in the temples of Assam viz. the Natis is disappeared is a significant event in the history of Assam. Therefore, it is a noble effort to know about the Devadasi system of Assam.

Key words : Dance, Devadasi, Deity, Girls, Puberity, Assam.

Introduction :

Devadasi is a dance form of ancient India by a woman dedicated

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to worship and serve a deity or a temple for the rest of her life. After becoming Devadasis, young women would spend their time learning religious rites, rituals and dances. They had their children with high officials or the priests who instructed them in music and dancing.

The origin of Devadasi is unknown. During the time of Buddha there was a girl named Amrapali who was declared Nagarabadhu by the king was Devadasi. The tradition of dancing girls in temples is said to have developed during the 3rd century A.D. A reference of dancing girls is found in Meghduta of Kalidasa. Other sources include the works of the authors such as Hiuen-tsang, a Chinese traveller and Kalhana, a Kashmiri historian. In addition, the inscriptions also refer to the Devadasi in Tanjore temple of south India and Someswar temple of Gujrat. Between 6th and 13th centuries, devadasi had a high rank and dignity in society and were exceptionally affluent as they were seen as protectors of music and dance. During this period royal patrons provided them with gifts of land, property and jewellery. (Ruspini, Elisabetta, Bonifacio, Glenda Tibe, Corradi Consuelo, eds. (2018). *Divine Shadows, women and Religion: contemporary and future challenges in the Global Era*. (1 ed.), Bristol University press, pp 79-92.)

This system was prevalent in the Chola empire who were known as "Devar -Adigalar" (Dev means Divine and Adigalar means 'Servants' i.e. 'Servants of the Divine'). Both Male and Female Devadasi were dedicated to the services of the temples and its deities. ("Temple Run: The sacred structures of the Chola dynasty in Tamilnadu" Natgeotraveller. In. Retrieved 20 November, 2018). In Andhrapradesh it is confined to the Natavalollu community. In Odisha Devadasis known as Maharis who were attached to the Jagannath temple complex. In Karnataka the Devadasi system was practiced and attached to the Yellamma cult.

In south India, Sadanku or Puberty ceremony was held where Devadasi initiate her marriage with an emblem of the God borrowed from the temple as stand in bridegroom. From then onward, the Devadasi was considered as a Nritya Sumangali, a woman eternally free from adversity of widowhood. She then performs her ritual and

artistic duties in temple. The puberty ceremonies were not only a religious occasion, but also a community feast and celebration in which the local elites also participated.

A Devadasi is believed to be immune from widowhood and was called Akhanda Saubhagyabati (woman never separated from good fortune). Since she was supposed to be one of the especially welcome guests at weddings and was barer of good fortune. The presence of a Devadasi on any religious occasion in the house of upper caste member was regarded as sacred and she was treated with due respect and was presented with gifts. (*Devadasis, Wikipedia*)

In Assam also the Deadasis or temple girls were attached to the temples from ancient time. They learned Music and Dance and as many as 64 types of arts. They also used to dance and sing in the temples to satisfy the Gods and in front of Royalty and earn gold and other rewards. Thus the Devadasi dance played a significant role in cultural horizon of Assam.

Review of Literature :

Many studies were already been made on Devadasis in National as well as Regional level.

i) *Asamar Devadasi Nrityakala- a critical study of devadasi art of Assam* by Bardoloi Paban, Prabhat prakashan, Guwahati, 2004.

In this book the author discussed about the Devadasi dance, its arts and makes a critical analysis of the dance form in ancient Assam.

But my work will highlight the nature of devadasi dance, its origin, end and efforts to revive the system in the days to come.

ii) *Women of Pride: The Devadasi Heritage* by Lakshmi Viswanathan (2008).

The author is a renowned Bharatnatyam dance researcher has provided an interesting account of life history of Devadasis, emphasizing on their significance in south Indian societies and temples and their roles in the major institutions of religion, kinship,

economy and polity. Divided into eight chapters, the book enlightens readers on the Devadasi way of life.

But my work is on the Devadasi system prevalent in Assam and their role in the temples of Assam.

- iii) *Status of women in the period of pre-Ahom Assam: A study in a historical perspective*, an article written by Binita Nath, published in International Research Journal of Interdisciplinary & Multidisciplinary Studies (IRJIMS), a Peer Reviewed

Monthly Research Journal. In the article the author likes to highlight the position of women in ancient Assam, status of women in family life as well as society.

But my work will confine with the position of Devadasis prevailed in the temples and society of ancient and medieval Assam.

- iv) *'Devadasis' Padams: 'From Temples to the concert stage'* Chawla (2015) writes in International Journal of English Language, Literature and Humanities. He writes that Devadasis initially used to perform in the temples but the Indian Nationalists and English colonialists began to question their presence in the Indian social and cultural scenario. Consequently, they lost their position as trained artists and were seen as nothing more than prostitutes and with their downfall their art forms were threatened too. Fortunately, these art forms were revived, transformed and moved from temple to the concert stage.

But my work also touches the causes of the fall of the Devadasis in Assam and efforts to revive the dance form from the temple to stage.

- v) *'Devadasi practice: Historical Developments'* an article written by Badiger and Hiremath (2013) in Indian Streams Research Journal. In the article the author described the historical significance of Devadasi during the rule of the Mughals, Vijayanagar, the Nizam and mentioned the introduction of welfare schemes and programmes by the Government to restrict Devadasi practice and rehabilitation of Devadasis.

But my work touches the significance of the Devadasi during ancient and medieval Assam and efforts to revive the same as a measure of preservation of this important classical dance of Assam.

Research Questions :

The study raises the important research questions such as-

- i) What are the circumstances that led to the initiation of the Devadasi system in the Temples of Assam?
- ii) Who are the people that belong to this Devadasi Dance?
- iii) What are the socio-economic factors related to the system?
- iv) What is its impact on the contemporary society?

All these are the important research questions and all are to be answered in a scientific Way.

Objectives of the Study :

The study is completely in the context of Assam only. The greater objectives of the study are-

- i) To know the nature of the Dancers related to the Temples.
- ii) To know the primary works and requirement of Devadasis in the Temples.
- iii) To know how far it is justify saying as recognized prostitution in the name of religion?

Methodology :

The study depends upon the various methods. The primary data will be collected through the questionnaires to the related surviving communities attached to the Temples of Assam. Moreover, the field visit to the Temples where it was prevalent, its authorities will be an added tool to procure more information relating to the system.

The secondary data will be collected from the Review of related Literature, Journals, articles and various Research papers etc.

Analysis of the study :

Devadasi dance was prevalent in Assam from the ancient time. In Assam, the women dedicated to temple service were known as Nati and Daluhangana. According to B.K. Kakati, New Indian Antiquary, IV, p.390, Daluhangana is an Austric formation from daluha (temple) and angana (women) is derived. Epigraphs and literature depicts the life of city damsels, courtesans and devadasis or temple girls. Banamala in his Tezpur grant made gifts of women to the temple of Hatakeswar Siva. The same grant refers to vesyas (prostitutes). (*A Comprehensive History of Assam, Dr. S.L.Baruah, Munshiram Manoharlal Publishers Pvt. Ltd., 1985, p.155.*)

Ancient literary texts like Kalika purana and Joginitantara carry references to this ritualistic dance. The Siva temple at Viswanathghat in Darrang District, Dergaon in Sivsagar District and Dubi in Kamrup District had Devadasis as did the Hayagriva Madhav Mandir at Hajo in Kamrup District. The Porihareswar Siva temple at Dubi was endowed with Natis. They were also required to perform outside temple during annual rituals and festivals like Durga puja, Chaitra Samkranti, and Pausha Samkranti. The Devadasis who were known as natis in local language used to remain unmarried while living with their families and attending temple services. (*The Hindu, Dance, Revival of a glorious tradition, Devadasi dance by Arun Jyoti Kalita*)

In the temples, dances like Nati, Deodhani and Devadasi were performed usually by a class of professional dancers called Nats, which also included women. Queen Phuleswari was originally such a dancer attached to the Siva temple at Dergaon. (*A Comprehensive History of the Assam, Dr. S.L.Baruah, Munshiram Manoharlal Publishers Pvt., 1985, p.424.*)

Thus during the Ahom period particularly in the reign of Siva singha there was prevalent of the Devadasi Dance in the various temples of Assam. His queen Phuleswari was originally a dancer attached to the Siva temple at Dergaon. Siva singha captivated at the beauty of Phuleswari, married her. Thus from Barman dynasty to the

Ahom dynasty there were prevalent of the Devadasi dance across the temples of Assam.

Findings :

Firstly the Devadasis were under the control of the priests of the temples. Later on under the patronage of the kings they were the state slave and when the royal control and patronage receded the sacred girls of the temples were gradually forced into prostitution for survival. During the British Rule the Reformation Movement begun and by the 20th century, the British outlawed the Devadasi dance as part of on-going Social Reformation in India. The Govt. of India outlawed it in all of India in 1988.

Though it was outlawed, Ratnakanta Talukdar of Pathsala who did not belong to the temple tradition or the families of the Devadasis but a visionary artists himself ventured to revive the almost forgotten Nati dance tradition under Kalaguru Vishnu Rabha, the iconic cultural personality of Assam, he spotted out the last surviving two old Devadasis-Kaushalya Devi and Royabala Devi with the help of few old musicians who were aware of the Music and rhythmic patterns of the bygone devadasi tradition. The team could achieve the reconstruction of a dance number limiting to just 10 minutes. It revolved round the Snana- Prasadhana (bath and dressing up) of the Lord that had been part of the noon-time dance ritual.

With Ratnakanta Talukdar passing away in 1980, the revival mission received a jolt. At this, his disciple Dilip Kakati took over the responsibility. Like Pankaj Charan Das of odissa who succeeded in reviving the lost Mahari (devadasi) dance tradition, the dedicated devotee like Dilip Kakati and a kalakshetra trained educated dance exponent like Prateesha Suresh are left no stone unturned to revive such an ancient traditional dance of Assam. (*The Hindu, Dance, Revival of a glorious tradition, Devadasi dance by Arun Jyoti Kalita*)

Conclusion :

Thus Devadasi dance was an important dance attached to the

temples of Assam. They used to entertain the people in the temples through their dance and music. Firstly they were regarded as holy and under the control of the priests. Under the patronage of the royalty they became the State slave. During the British period under the influence of the wealthy sections of the society they transformed from the temple dancers to prostitute. Even though in some of the temples of Assam, particularly in Dubi porihareswar Siva temple it is survived up to the days of Independence. Efforts have been made personally by one or more distinguished personalities to revive such ancient traditional dance which will now be totally dependent on the patronage of the Government.

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Inclusive Education

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Abstract:

Inclusive education is relatively a new concept. It means the inclusion of students with disabilities, regardless of ability, in to the same school and classroom with peers who are not considered to have disabilities. It is the inclusion of all children in the same school without any discrimination. In the present study an attempt has been made to discuss about inclusive education, its principles objectives, need and important of inclusive education with descriptive analysis method of study.

Introduction:

More than 93 million children of the World live with disabilities. Like normal children, children with disabilities have ambitions and dreams for their futures. Like all children, they need quality education to develop their skills and realize their full potential. Nearly 50 per cent of children with disabilities are not in school. Besides their right to learn, children with disabilities are often denied the chance to take part in their communities, the workforce and the decisions that most affect them.

Getting all children in school and learning Inclusive education is the most effective way to give all children a fair chance to go to

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school, learn and develop the skills they need to live. Inclusive education is relatively anew concept in the Indian sub continent. It means all children in the same classrooms, in the same schools without any discrimination.

Objective of the study:

The main objective of the present study is to discuss about inclusive education, its principles, objectives etc.

Methodology:

The descriptive analytical method is used in the present study. Entire study is based on secondary data collected from different books, journals and various web-sites.

Analysis and interpretation of data:

In the present study an attempt has been made to analyzed and interpret inclusive education as follows-

Meaning of Inclusive Education:

Inclusive Education is defined as a learning environment that promotes the full personal, academic and professional development of all learners irrespective of race, class, colour, gender, disability, sexual preference, learning styles and language." Inclusive education means all children in the same classrooms, in the same schools along with the normal children. It means real learning opportunities for groups who have traditionally been excluded – not only children with disabilities, but speakers of minority languages too. It brings all students together in one class room and community regardless of their strength or weakness in any area and seeks to maximize the potential of all students. It is a process of strengthening the the capacity of the education system to reach out the all learners.

Objectives of inclusive education

The objectives of inclusive education are-

1. To give education to all children irrespective of their differences,
2. To protect the right of education.
3. To identify their different skills. Different categories student means different abilities and skills.
4. To develop social consciousness about the importance of inclusive education.
5. To prepare the students for new challenges
6. To develop brotherhood
7. To improve quality of education

Beliefs and Principles of inclusive education

- ◆ All children can learn
- ◆ All children attend age appropriate regular classrooms in their local schools
- ◆ All children receive appropriate educational programs
- ◆ All children receive a curriculum relevant to their needs
- ◆ All children participate in co-curricular and extracurricular activities
- ◆ All children benefit from cooperation, collaboration among home, among school, among community

The Benefits of Inclusive Education

Over the years, the benefits of providing an inclusive education to all children have been shown. Inclusive education (when practiced well) is very important because:

- ◆ All children are able to be part of their community and develop a sense of belonging and become better prepared for life in the community as children and adults.
- ◆ It provides better opportunities for learning. Children with varying abilities are often better motivated when they learn in classes surrounded by other children.
- ◆ The expectations of all the children are higher. Successful inclusion

- attempts to develop an individual's strengths and gifts.
- ◆ It allows children to work on individual goals while being with other students their own age.
- ◆ It encourages the involvement of parents in the education of their children and the activities of their local schools.
- ◆ It fosters a culture of respect and belonging. It also provides the opportunity to learn about and accept individual differences.
- ◆ It provides all children with opportunities to develop friendships with one another. Friendships provide role models and opportunities for growth.

CONCLUSION

Education is the birth right and constitutional right of every one and Inclusive education is the most effective way to give all children a fair chance to go to school, learn and develop the skills they need to thrive without discriminating their limitations or strength and weakness. This approach of education will help to identify the variety of talent of those children who are neglected due to their physical challenges and short comings.

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Teachers and Peace Education

Dr. Nandeswari Boro*

Abstract:

“Peace should be in our body and soul, our feelings and instincts, our flesh and its affections”- Dr. Sarvepalli Radhakrishnan. Peace is a state of mind. It is this state of mind which is claimed to be moulded by education. Peace education is concerned with helping learners to develop an awareness of the processes and skills that are necessary for achieving understanding, tolerance and good will in the world of today. The aim of peace education is to incorporate into the education process a knowledge of the danger posed to human life and human social life by war, violence, poverty and oppression. Peace education is an essential component of quality basic education.

Development of peace and security through corporation is essential for the prosperity and progress of the modern society. Teachers have a great role in laying the foundation of peace for co-existence and harmony in the world. Teachers can change the mindset of student and promote understanding and tolerance. A teacher is the builder of the world. Teacher's skills of positivity, interpersonal skills, problem solving, conflict resolution, critical thinking and positive attitude are the important skills that teachers need for peace building among students. The present paper highlights on Teachers and Peace Education.

Key words: Peace, Peace Education, Quality Education, Student,

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Teacher

Introduction:

Education is one of the most powerful tools of social change. Education helps to know the past and present history of the national life of a nation. It helps to plan in an orderly manner to bring changes to all parts of society. It helps to develop the human potentialities according to the needs of the life of people and society as well. Education encourages to remain united for the overall growth and development of national life of a nation. It helps to spread the spirit of nationalism among the citizens. The spirit of brotherhood, co-operation, correlation and oneness have specific significance for the establishment of peace and harmony in social life.

In the words of Tagore, “ Education means enabling the mind to find out that ultimate truth which emancipate us from the bondage of the dust and gives us the wealth, not of things but of inner light, not of power but of love, making this truth its own and giving – expression to it.”

Education has been considered as an effective means for bringing change in the attitude, skill and behaviour of people. Education helps to grow the personality. With the help of personality growth human individual realize the value of life and its significance for the growth of social life. Education encourages to realize the value of inner selves of men and women. With the help of the realization of the values of the inner selves human individuals understand the need of good qualities for the progress of life and society.

Review of Related Studies

The significance of Peace education and values as well as role of values in the development of individual and society can be analysed from the studies quoted below:

Saraf (2000) observed that the teachers play a pivotal role and also act as a kingpin so far as the teacher- parent cooperation is concerned. He also emphasized that the media contributes significantly

in the promotion of values. Singh and Nath (2008) emphasized that value education inculcates in a child higher moral and social ideals together with spiritual values so that he is able to form a strong character useful to his own self and the society of which he is an integral part.¹

Rajput (2000) points out that education needs to promote the culture of peace, cohesion and collaboration that is in consonance with the socio-cultural ethos of India. Value emphasis in school must form a part of every unit and activity. Stories from epics, mythology and history would generate awareness about the cultural heritage and practices, community, respect for religions, language etc. Sahoo J. (2003) studied adolescents' conception of peace, violence and strategies to attain peace in relation to some psycho social variables and academic achievement. Devi, Kh. E. (2008) in her article on Muslim women of Manipur and peacemaking tried to analyze and observe the spatial conundrum of Manipuri Muslim women in their march towards socio-political upliftment and bringing peace in trouble torn society of Manipur. Chinara, B. (2010) in his article Promoting Peace for Quality School Education: A challenge for Teachers has discussed the need of peace education during schooling. He has also discussed how people perceive teachers' potential for promoting a culture of peace. Mishra L. (2011) in his study on Pre-service Teacher Training for Peace education has stressed that in order for peace education to become a regular inclusion and curriculum expectation within schools, nations and worldwide, teachers must be prepared to teach issues that are often socially uncomfortable and conflicting in order to combat the stigma, conflict and inequality that peace education seeks to diminish.²

Need of the Study

Education for harmony and peace depends upon the positive concept of peace. A desire for peace has to be generated in the minds of the people at large. In fact, various approaches may be made available not only for resolution of conflicts but also for creating a climate for peace and understanding. The UNESCO has very aptly

observed in the Preamble, "Since war begins in the minds of men, it is in the minds of men that the defences of peace be constructed." Education is the best means of constructing defences of peace in the minds of growing children. Education in every sense of the term can be employed for promotion of human living and functioning. In this regard the teachers can play an important role in moulding and shaping the attitudes, habits, manners, character and personality of the students. The present paper would throw light on "Teachers and Peace Education".

Statement of the Problem:

Teachers and Peace Education

Objective of the Study:

To Study the Role of Teachers in Promoting Peace Education.

Methodology and Data Collection

The present study is based on secondary data collected for conducting a descriptive study on teachers and peace education. The secondary data is collected from different sources like books, journals and internet.

Meaning of Peace

The term 'peace' means the absence of conflict or war or the ability to cope with them. Peace is a discipline, it should be practiced in the life of every human being. According to Albert Einstein, "Peace cannot be kept by force. It can only be achieved by understanding. It is essential that the student acquires an understanding of and a lively feeling for values. He must acquire a vivid sense of the beautiful and of the normally good. The school should always have as its aim that the young man learns it as a harmonious personality". Pandit Jawaharlal Nehru says, "Peace cannot suddenly be descended from the heavens. It can only come when the root cause of trouble are removed." The National Curriculum Framework (2005) states that, "Peace is a contextually appropriate and

pedagogically gainful point of coherence for values.”

Peace Education:

Peace Education is an attempt to bring about changes in the values, attitudes and behaviours of the children. It is a remedial measures to protect children from falling into the ways of violence in society. Peace Education is concerned with helping learners to develop an awareness of the processes and skills that are necessary for achieving understanding, tolerance and good will in the world of today. The aim of peace education is to incorporate into the education process a knowledge of the dangers posed to human life and human social life by war, violence, poverty and oppression. Peace education should built the capacities of individuals to become peaceful persons by thinking positively and thinking critically.

Dr. S. Radhakrishnan states that “Education for peace should encourage the exercise of these qualities- adventure in the world of spirit, the tradition of tolerance, the instinct of live and let live, these are deeply ingrained in us. Men are born for love and friendship and not hatred and war... It is the task of education, to create in us a love for the new world of peace and fellowship.” According to the National Curriculum Framework prepared by NCERT (2005) “The space for peace education within the framework of National School Curriculum document is compellingly clear in the light of escalating trends of, and taste for, violence globally, nationally and locally. Education is a significant dimension of the long term process of building up peace, tolerance, justice, intercultural understanding and civic responsibility.”

Teacher Education: A Prerequisite for Quality Education

Teacher education is needed to kindle the imagination of the teacher and to remove the evils of the ‘hit and miss’ process, to accord a professional status to the teaching profession and above all to make the optimum use of the time and energy of the teacher and the taught. The Education Commission (1964-66) said, “A sound programme of professional education of teachers is essential for the qualitative

improvement of education. Investment in teacher education can yield very rich dividends because the financial resources required are small when measured against the resulting improvements in the education of millions.”

Dictionary of Education- C.V. Good (1973), defines teacher education as “All formal and informal activities and experiences that help to qualify a person to assume the responsibility as a member of the educational profession or to discharge his responsibility most effectively.” The objective of teacher education is to give training to the potential teachers to understand the student better and can face the class with confident. Through training, the future teacher becomes familiar with the methodology of teaching and with all that is latest in education. A trained teacher can be a great help in improving the quality of education and also in checking wastage.

National Council for Teacher Education (NCTE) has recommended including peace education in teacher training curriculum as the values of peace and harmony are all the more relevant and significant in present world. NCTE teacher curriculum states, “Education for peace is education for life, not merely training for a livelihood.” Through teacher training the idea of peace education can be transmitted to the future generation.

Role of Teachers in Promoting Peace Education

The human beings thought and action depend on their education. If their education is right, their thought and actions are fulfilling or otherwise they are not. To enable the student a happy life – harmony with family, society and nature are needed. Educational experiences presumably promote the intellectual, openness, flexibility and breadth of perspective essential for self-direction values. (Kohn & Schooler 1983). The erosion of values in practically every aspect of human life is a matter of universal anxiety and concern. Negligence of ethical and moral aspects of life by the people has caused severe imbalances in society. This is not desirable because in the absence of values, people

have no principle or foundation on the basis of which they can face life situations, make choices and decision. A life without proper values will become chaotic and disastrous. It will be like a boat without a rudder. To guide our life in the right path and to embellish our behaviour with good qualities, we need values. The role of a teacher is very important in the field of value and peace education.

When a teacher presents an idea, it becomes easy for a student to assimilate the value. But for this, a teacher will have to cultivate his readiness for value. The value instruction becomes meaningful only if the teacher himself assimilates and practices the values he teaches. The ideal teacher guides his students to the source of knowledge and learning. So, the task of teacher is to providing value clarification and by exercising their life style to the ideals he preaches. They can play a crucial role in promoting value and peace among the students.

Teachers should motivate the learners to manifest their own potentialities and help them to find out ways and means for the development of such potentialities. Teachers are to make learning joyful so that students do not hesitate to express their problems in a more natural way. Instead of imparting readymade bunch of knowledge students should get the chance to satisfy their curiosity and develop knowledge as per their own capabilities. Students or learners are to be helped to know about the changing situations, problems and opportunities and the avenues to reach their goals.

The teacher are torch bearers of any move to bring about enlightenment and peace in society. We need a sound knowledge base, appropriate skills and methods to transcribe a blue print for human values into action. This stupendous task requires us to build up a culture which epitomizes humanistic values both intrinsic and extrinsic. Teacher must give instruction in this to all the students at all times, both by example and by precept.

Audio-visual aids in favour of Peace and Harmony should be provided to students to develop better understanding of national and international cultures, historical facts and world's progress for which

certain specific measures need to be adopted by teachers such as —

- a. Books and films for children and adolescents should be carefully prepared, selected and scrutinized before giving to their pupils for developing awareness of peace.
- b. Care should be taken that there must be no wrong informations about other nations or other cultures and countries or misdirective ideas against peace.
- c. Radio and television programmes should be selected so that students may realize the value of peace and harmony. Peace programmes must have scope for vitality, wide imagination and perpetual vigilance; need of fellowship, common ideals and definite purpose of human peace.³

Indian culture always encourages the spirit of oneness. The socio-cultural traditions of Indian society have always been encouraging the spirit of oneness among different groups of people living in different parts of the country. Love, goodwill and compassion these are the qualities which have well been respected and treated important to lead a peaceful life. In a sense from a remote past Indian culture has been preaching the spirit of globalization to lead life without any discriminatory feeling. The teachers are to help the younger generation and the society as a whole to learn to live together, learn to know, learn to do and learn to be the members of a civil society.

Curricular and co-curricular activities should be directed properly by the teachers because students learn more through such activities than books. The teachers by organizing curricular and co-curricular activities can enrich values like brotherhood, living together, co-operation, goodwill, tolerance and peaceful, co-existence and civic-sense like duties of citizens good citizenship, importance of discipline, cleanliness etc. So the organization should not be formal but real and creative. The teachers can organize the following activities such as-

- ◆ Celebration of social days for heroes of peace and great men of all nation.
- ◆ Enact plays to show the horrors of war and exhibition of paintings

on the value of peace.

- ◆ Encourage students to collect stamps, pen-friendships between the children of different countries.
- ◆ Debate, lectures and discussions on peace and its effect on human progress.
- ◆ Seminars and workshops on Peace and Harmony.

The value of working together to gain the common goal should be developed by the teacher in the mind of the students by providing the proper opportunities of living and working together in and outside the institution. Students should be made to understand mutual dependence of moral, local, national and international level so that they may understand the need for co-operative efforts. Undoubtedly this work should be done with care so that the teaching of self dependence, individualism, competition which are equally important may not be endangered.

Every teacher, institutions and system create value situation from which students attitudes are shaped. Teaching should aim continually on keeping the minimum of values be kept alive and keep on growing where students can learn lessons for life. So as to become materially rich and fine to the possible extent. Thus, Teachers are to play multi dimensional roles to help the student and society advance and to make its future safe. For this, teachers are to clarify their own attitudes towards themselves, their conscious of themselves as teachers and help the student and society to increase its trust on them as the most important class for future safety.

In conclusion we can say that education without vision is waste, education without value is crime and education without mission is life burden. It is natural that for establishing peace the feeling of love for peace be created in the minds of the people. Just as a war is first visualized in mind, similarly peace should also be first visualized in mind. For this it is necessary to keep oneself away from hatred, envy, anger and other cruel acts. A nation with atomic power is not a strong nation but a nation with people with strong character is indeed a

strong nation. Therefore, for the sustainable human development as well as for the social growth, there is a need of peace based education, value education, spiritual education, ethical education as well as need based education and teacher as the only factor who take the responsibility of spreading education in a very systematic way can help to find out the remedial measures for the solution of all problems of life.

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Empowering Learners in Digital Learning in Higher Education

Kusum Brahma*

Introduction

The emergence of high-speed internet connection and improvement of technology has brought drastic transformation everywhere. Education is not exception in this process. The transformation happens so fast that now from administration and management of educational institution to teaching learning process, all the activities are linked to digitization process. Digitization means conversion of any process from manual or paper based to digital or computer readable format. Record keeping, record dissemination, conduct of examination, evaluation, declaration of result, issue and delivery of certificates, teaching and learning all are driven to be done in a digital process because it can make the whole process more transparent than the manual process. Moreover, drive to digitization around the world has been seen because of simplicity, applicability, affordability, time saving and good learning outcomes. Today's students are exposed to a technological era in which they are engulfed with an array of mobile technology and learning tools to include ipads, computers, iPhone, interactive audio or videoconferencing, webcasts, instructional videos via CD-ROMs or DVDs and computer-based systems transmitted through the Internet

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(The National Center for Education Statistics, 2011). Today cloud technology is being explored by the students by which the learning become livelier and more enjoyable for them. Now they can submit their assignment, review their progress through this technology. The government of India has launched Digital India Campaign to provide digital connectivity to all over India. Many digital learning platform has already started in an inter-departmental way in collaboration with Department of Electronics and Information Technology to boost innovation culture and research. The Ministry of Human Resource Development has introduced many digital platform like SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), Swayam Prabha, MOOCs, e-PG Pathshala Virtual Labs etc. for higher education and interactive learning and training. MHRD has also introduced like National Digital Library of India (NDLI), to provide content from school students to higher education and Ph.D. level, E-Shodh Sindhu, ShodhGanga, ShodhGangotri, E-acharya, SAKSHAT: A One Stop Education Portal, OSCAR (Open Source Courseware Animations Repository) National Programme on Technology Enhanced Learning (NPTEL) for depository purpose. Through these platforms the learners can verify authenticity of the data also. However, the digital transformation is so sudden that despite getting these opportunities only a few educational institutions and the learners have paid attention to avail these opportunities. Keeping in view of these aspects, the present paper set the following objective—

Objective of the study

To study the ways through which we can empower the learners in digital learning in higher education.

Sources of Data

Data is mainly based on secondary sources.

Importance of empowering students in a Digital Learning

Today's era is called age of knowledge and technology. Advancement of technology has open up many new platforms to

explore more and more knowledge and expand the competitive market in the field of education globally. Now the process of digitization has linked to formal education and particularly in teaching learning process. Currently, many educational institutions and their teaching faculties are already adopted the digitization process not only in administration and management of educational activities but also in teaching - learning process. Incorporating of the ICT into education system can increase the quality of education (UNESCO, 2007). Educational institutions are responsible to provide quality education to learners along with empowering students in digital learning process so that they can become efficient and competent in digital world. Technology is bringing many new innovations particularly in higher education. Digital forms of education and participation impose students' active engagement in teaching learning process and provide a platform for higher level of exposure. Students can shift the paradigm of learning from looking to seeking, from mugging up to learning, from copying-pasting to exploring and inventing, from less participatory learning to experiencing and creating (Chaudhry, 2020). The engagement with and manipulation of content using a digital device allow students to express their level of learning and understanding that may never be explored using traditional pedagogical practices (Paul et al, 2020). They now have greater autonomy at directing their learning towards their specific needs rather than approaching it circuitously (Cooley & Johnston, 2001). This process will keep the students in the center of learning process and helps learners to be self-confident and self-reliant. Each student gets contact with world class education, can interact with teachers and students of all over the world which is not possible in traditional method of education and instruction. Hence, learners should be empowered in the digital learning. In an educational institution the authority and faculties should create digital learning environment. An empowered learner can effectively learn and get benefit in a digital learning process by carrying out his or her activities without any threat in an autonomous way. When they are empowered,

their intrinsic desire to engage in the digital learning process will be more energetic.

How to empower the students in Digital Learning?

For empowerment of the learners in digital learning process, a strategic plan, constructive academic setting and practice of supporting the learners in digital learning from the part of the authority and teaching faculties is prime importance. Higher education institutions have been funding teaching-with- technology initiatives for years, yet adoption of technology in the college curriculum has not met expectations (Weimer, 2013). Educational institutions should start to provide the need of basic infrastructure for carrying out activities in a digital process. If the learners have to be empowered in digital learning process, action must be taken not only to bring digital infrastructure but also create standard digital culture. To enhance digital learning culture among the learners, educational institutions should develop partnership with private companies. In that case, institution should not tie up knot immediately when they get proposal from different technological and software companies. Authority should accept such technology and software which are affordable, user friendly and support multi-modal learning. On the other hand, software and technology have no values without high speed internet connection facility. Educational institutions should make provision to improve wireless internet connection so that learners can access online services to support their learning. This will ensure the learners and teachers to connect their own personal digital devices to the Wi-Fi without restriction in teaching and learning process. Digital delivery of some content of curriculum should be part of the teaching learning process so that students become familiar with digital system and earned associated digital skills. While teaching, the teachers should share some related links which are related with their delivered topics with the students so that they can access the e-resources to enrich their knowledge. Teachers should use to give homework in a digital process and give the students to submit in a

same process. Along with digital delivery of some content of curriculum, assessment and evaluation process should be an integral part of the digital learning system. These will help learners in sustaining their interest in digital way of learning. Besides, they can concentrate on their weak points where they need improvement. However, before introducing any digital technology for teaching and learning purpose in the institutions, authority should arrange orientation programme both for the teachers and the learners. We sometimes see that without prior orientation with the technology and proper training about the software, teachers and students are compelled to use new digital technology for which results are not as per the expectations. All the new technology proves irrelevant to teachers and students in this respect. Furthermore, authority should adopt liberal policy in digital teaching and learning. He should give options to select right tools and software so that they can better align with the need of the subject and the learners. This will ensure the whole teaching - learning process enjoyable, interesting and motivating. In addition to adopting technology in teaching method, teachers should create group of learners' community in different digital platforms like- facebook, twitter, wikis, whatsapp, blogs for sharing information and knowledge. Simultaneously, students should be encouraged to participate in various online programme and competitions which are organized in a various digital platform.

Challenges and prospects of digital learning:

a) Challenges:

Digital learning in higher education in India, due to its recent entry, has been confronting with a number of challenges. Few of them are discussed below.

- ◆ **Adaptability /Resistance to change**

One of the most important challenges of digital learning is the challenge posed by the lack of knowledge of the teachers. Most of these senior teachers in higher education lack technical knowledge

or lack interest in the recent development of Technology. As digital learning is technologically empowered learning, it becomes difficult to implement digital learning if the working force is not technically empowered. This problem of technological inefficiency is not only the problem of senior teachers. Even the newly created teachers, and students have been facing such difficulties.

- ◆ **Challenges to cyber security**

Cyber security concern is one of the prime challenges in digital learning. Because of cyber bullying, fraud and insecurity learners and parents community are reluctant to accept digital learning process which hampers students' in digital learning development.

- ◆ **Connectivity Issues**

Another challenge of digital learning is the problem of internet facility. Internet plays the most important role in digital learning for most of the digital content is available and accessible only through internet connectivity. But this internet connectivity is not available to all. Though India provides the cheapest internet facilities, majority of the population of this country cannot afford the luxury of this facility. This hinders in effective implementation of digital learning. Moreover, internet connection is available only in the urban localities. Students living in the rural areas cannot access digital content or lecture or Digital video materials. Due to poor internet connections efforts of the teachers and educators go in vain.

- ◆ **Reasonable and Reliable Platform**

Problem of reasonable and reliable learning management system (LMS) and digital platform is another challenge of digital learning in India. Either because of the financial burden or the absence of reasonable and reliable digital platform, institutions are using free Learning Management System applications. This hinders the full access of the wide variety of opportunities provided by digital learning.

- ◆ **Challenges concerning Drawing Attention of the students**

Drawing of students' attention is one of the most important elements of teaching learning process. It requires a very delicate care to draw the attention of the students for learning. Due to poor internet connectivity or distance learning drawing of students' attention in digital learning becomes difficult. This results in ineffectiveness in teaching learning process (Dua, S., Wadhawan, S., Gupta, S., 2016). Moreover, despite the many advantages that technological tools produced, there are also negative effects on students such as distraction caused by surfing websites that are not related to the lesson, checking and sending e-mail, social networking and playing attractive games (Kraushaar, J. M. and D.C. Novak, 2010; Gehlen – Baum and Weinberger, 2012)

♦ **Quality Concern**

Delivering quality content is another challenge of digital learning. Digital learning in India though initiated before, in true sense has been a result of recent outbreak of covid-19 pandemic. Hence, it is likely to take time to create quality content for Digital learning.

♦ **Monitoring of the Learners**

For effective teaching learning process active participation of the students is utmost important. Without the active participation of the learners efforts of the educator or teachers goes in vain. In online teaching, monitoring of participation of the learners is challenging due to a number of factors such as ineffective learning management system, inefficiency of the teachers and lack of interest on the part of the learners or poor internet connectivity.

b) **Prospects:**

Digital learning in large scale is recent development in India. In fact, this development was compelled by the COVID-19 pandemic which is still a major health and security concern for the humanity. Prior to this, only few people in India were aware of it. Even though many academicians, educators, teachers and students are using digital content, there was little discourse on it. But this recent development in the form of pandemic has revolutionized people's

way of life. Several changes are brought in the field of health, sanitation and food habits of the people. Similarly, a drastic change is noticed in the field of education. As a part of the government response to the pandemic, schools, colleges, universities were closed and alternative approach was looked upon. Instead of Face to Face learning, digital learning was encouraged. In fact, digital based learning is the result of compulsion. Hence, there is bound to see some challenges. It could have been avoided if it was an evolution.

But these problems are not permanent. Challenges that India facing today can be resolved if sufficient care is taken. Training of the teachers for online teaching, creating quality digital content, and expansion of high-speed internet facility to both rural and urban areas may be great help in this regard. In post pandemic period also teaching and learning in digital way should be incorporated along with the conventional method of education. This will develop confidence in the mind of teachers and the learners in engaging themselves in digital learning process. It is noticed that most of the teachers and the students are not aware of the contents and courses available online in the form of massive open online courses (MOOCs). In this connection, a massive awareness programmes on digital content and online courses by the government is necessary. Furthermore, hands on training on cyber security is one of the topmost priority, otherwise we cannot expect fruitful result. In order to ensure students in digital learning government, authority of educational institution, teaching faculties should work together from providing facilities to wider accessibility so that every individual learner can access to the opportunities of digital learning.

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A Glimpse of Women Nobel Laureates in the Field of Achievement Till This Year 2020

Dr. Sewali Pathak*

Introduction

The Nobel Prize is awarded for the greatest benefit to mankind and it recognize as a prestigious achievement of a person. A person or organization awarded the Nobel Prize is called Nobel Laureate. The word “laureate” refers to being signified by the laurel wreath. In ancient Greece, laurel wreaths were awarded to victors as a sign of honour. In the world history, the Nobel Prize started from 1901 in the Memory of Alfred Nobel, founder of the Nobel Prize. The Nobel Prize is an international award administered by the Nobel Foundation in Stockholm, Sweden, and based on the fortune of Alfred Nobel, Swedish inventor and entrepreneur. Each prize consists of a medal, a personal diploma, and a cash award and it is categorized into six different sections.

Marie Curie, was the first women who won the Nobel Prize in Physics in 1903 with her husband, Pierre Curie, and Henri Becquerel. Curie is also the only woman to have won multiple Nobel Prizes; in 1911, she won the Nobel Prize in Chemistry. Curie’s daughter, Irène Joliot-Curie, won the Nobel Prize in Chemistry in 1935, making the two the only mother-daughter pair to have won

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Nobel Prizes. The most Nobel Prizes awarded to women in a single year was in 2009, when five women became laureates in four categories. The most recent Nobel Prize awarded women were Esther Duflo in Economic Science in 2019 and Louise Gluck in literature, Andrea M. Ghez in Physics, Jennifer A. & Doudna Emmanuelle Charpentier jointly in Chemistry in 2020.

Till today, between 1901 and 2020, the Nobel Prizes were awarded 592 times to 961 people and organizations. And out of these, 57 women achieved the Nobel Prizes representing a value of significant intellectuality of woman empowerment. As per record, 2009 is a glorified era for women with achieving five Nobel Prizes in four different categories at a time and repeating this proud gain in 2020 by achieving four Nobel Prizes in three different categories at a time. No doubt, women equally walking with men towards their necessity of invention and try to focus her abilities along with domestic activities although few are able to shine occupying the high peak in different category. But yet it has been waiting for uplifting the women empowerment and the gender equity to make golden democracy in the world. We could justify the status of women at present by honored and triumph but can't deny the part of molesting or deprivation in parallel. Some kind of political issues hosting in patriarchal society which ruin victory of women in the society.

What is the prospective of Nobel Prizes achievement?

The prospective of the women Nobel laureates in the field of achievements is to highlight the status of women's intellectuality. To account the women's potential in different dimensions as a model inspiration of women empowerment it can be projected the women Nobel laureates. If it measures statistically to portraying the dynamic flow of women's status that certainly conveying the great message to the society would be the inspiration upon itself.

The list of women Nobel Prize winners are collected from e-

resources and summarized herefor analysis the strategy of achievements. Since, 1901 it started the list of women Nobel Prize winners accounted from the main list of Nobel Prize winners. The list of women Nobel Prize winners is contained the name, year, category and theme (list of women Nobel Prize winners attached herewith). The distribution of female Nobel Laureates is shown below category wise.

- ◆ Seventeen women have won the Nobel Prize in Peace,
- ◆ Fifteen have won the Nobel Prize in Literature,
- ◆ Twelve have won the Nobel Prize in Physiology or Medicine,
- ◆ Seven have won the Nobel Prize in Chemistry,
- ◆ Four have won the Nobel Prize in Physics,
- ◆ Two have won the Nobel Prize in Economic Sciences.

Simply the frequency of women Nobel Prize winners into six category wise distributions are seen as 17 Peace > 15 Literature > 12 Physiology or Medicine > 7 Chemistry > 4 Physics > 2 Economic Sciences

Out of 592 times only 39 times or out of 961 people and organizations only 57 women were awarded the Nobel Prize which is very less in comparison to men winners. The women could not run equally as men as in the achievements of Nobel Prize during the period. Hope, it will take time in future to walk equally then women would be proud to be a part of democracy. Comparatively more women have won the Nobel Prize in Peace following Literature, Physiology or Medicine, Chemistry, Physics and Economic science respectively according to the list of women Nobel Prize winners. The current tally of female laureates in the Economic science category is the lowest among the total six categories in the Nobel Prize achievements.

Female Nobel Prize Winners from 1901 to 2020

Sl. no.	Year	Nobel Laureate	Country	Category	Rationale
01	1931	Marie Skłodowska Curie (shared with Pierre Curie and Henri Becquerel)	Poland and France	Physics	"in recognition of the extraordinary services they have rendered by their joint researches on the radiation phenomena discovered by Professor Henri Becquerel"
02	1905	Bertha von Suttner	Austria-Hungary	Peace	Honorary President of Permanent International Peace Bureau, Bern, Switzerland; Author of Lay Down Your Arms.
03	1909	Selma Lagerlöf	Sweden	Literature	"in appreciation of the lofty idealism, vivid imagination and spiritual perception that characterize her writings"
04	1911	Marie Skłodowska Curie	Poland and France	Chemistry	"for her discovery of radium and polonium"
05	1926	Grazia Deledda	Italy	Literature	"for her idealistically inspired writings which with plastic clarity picture the life on her native island and with depth and sympathy deal with human problems in general"
06	1928	Sigrid Undset	Norway	Literature	"principally for her powerful descriptions of Northern life during the Middle Ages"
07	1931	Jane Addams (shared with Nicholas Murray Butler)	United States	Peace	Sociologist; International President, Women's International League for Peace and Freedom.
08	1935	Irène Joliot-Curie (shared with Frédéric Joliot-Curie)	France	Chemistry	"for their synthesis of new radioactive elements"
09	1938	Pearl S. Buck	United States	Literature	"for her rich and truly epic descriptions of peasant life in

					China and for her biographical masterpieces"
10	1945	Gabriela Mistral	Chile	Literature	"for her lyric poetry which, inspired by powerful emotions, has made her name a symbol of the idealistic aspirations of the entire Latin American world"
11	1946	Emily Greene Balch (shared With John Raleigh Mott)	United States	Peace	Formerly Professor of History and Sociology; Honorary International President, Women's International League for Peace and Freedom.
12	1947	Gerty Theresa Cori (shared with Carl Ferdinand Cori and Bernardo Houssay)	United States	Physiology or Medicine	"for their discovery of the course of the catalytic conversion of glycogen"
13	1963	Maria Goeppert-Mayer (shared with J. Hans D. Jensen and Eugene Wigner)	United States	Physics	"for their discoveries concerning nuclear shell structure"
14	1964	Dorothy Crowfoot Hodgkin	United Kingdom	Chemistry	"for her determinations by X-ray techniques of the structures of important biochemical substances"
15	1966	Nelly Sachs (shared with Samuel Agnon)	Sweden and Germany	Literature	"for her outstanding lyrical and dramatic writing, which interprets Israel's destiny with touching strength"
16	1976	Betty Williams	United Kingdom	Peace	Founder of the Northern Ireland Peace Movement (later renamed Community of Peace People)
17	1976	Mairead Maguire			
18	1977	Rosalyn Sussman Yalow (shared with Roger Guillemin and Andrew Schally)	United States	Physiology or Medicine	"for the development of radioimmunoassay of peptide hormones"
19	1979	Mother Teresa	India and Yugoslavia	Peace	Leader of Missionaries of Charity, Calcutta.

20	1982	Alva Myrdal (shared with Alfonso Garcia Robles)	Sweden	Peace	Former Cabinet Minister; Diplomat; Writer.
21	1983	Barbara McCintock	United States	Physiology or Medicine	"for her discovery of mobile genetic elements"
22	1986	Rita Levi Montalcini (shared with Stanley Cohen)	Italy and United States	Physiology or Medicine	"for their discoveries of growth factors"
23	1988	Gertrude B. Elion (shared with James W. Black and George H. Hitchings)	United States	Physiology or Medicine	"for their discoveries of growth factors"
24	1991	Nadine Gordimer	South Africa	Literature	"who through her magnificent epic writing has - in the words of Alfred Nobel - been of very great benefit to humanity"
25	1991	Aung San Suu Kyi	Burma	Peace	"for her non-violent struggle for democracy and human rights"
26	1992	Rigoberta Menchú	Guatemala	Peace	"in recognition of her work for social justice and ethno-cultural reconciliation based on respect for the rights of indigenous peoples"
27	1993	Toni Morrison	United States	Literature	"who in novels characterized by visionary force and poetic import, gives life to an essential aspect of American reality"
28	1995	Christiane Nüsslein-Volhard (shared with Edward B. Lewis and Eric F. Wieschaus)	Germany	Physiology or Medicine	"for their discoveries concerning the genetic control of early embryonic development"
29	1996	Wisława Szymborska	Poland	Literature	"for poetry that with ironic precision allows the historical

					and biological context to come to light in fragments of human reality"
30	1997	Jody Williams (shared with the International Campaign to Ban Landmines)	United States	Peace	"for their work for the banning and clearing of anti-personnel mines"
31	2003	Shirin Ebadi	Iran	Peace	"for her efforts for democracy and human rights. She has focused especially on the struggle for the rights of women and children"
32	2004	Elfriede Jelinek	Austria	Literature	"for her musical flow of voices and counter-voices in novels and plays that with extraordinary linguistic zeal reveal the absurdity of society's clichés and their subjugating power"
33	2004	Wangari Maathai	Kenya	Peace	"for her contribution to sustainable development, democracy and peace"
34	2004	Linda B. Buck (shared with Richard Axel)	United States	Physiology or Medicine	"for their discoveries of odorant receptors and the organization of the olfactory system"
35	2007	Doris Lessing	United Kingdom	Literature	"that epicist of the female experience, who with scepticism, fire and visionary power has subjected a divided civilisation to scrutiny"
36	2008	Françoise Barré- Sinoussi (shared with Harald zur Hausen and Luc Montagnier)	France	Physiology or Medicine	"for their discovery of HIV, human immunodeficiency virus"
37	2009	Elizabeth Blackburn (shared with Jack W. Szostak)	Australia a nd United States	Physiology or Medicine	"for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase"

38	2009	Carol W. Greider (shared with Jack W. Szostak)	United States		
39	2009	Ada E. Yonath (shared with Venkatraman Ramakrishnan and Thomas A. Steitz)	Israel	Chemistry	"for studies of the structure and function of the ribosome"
40	2009	Herta Müller	Germany and Romania	Literature	"who, with the concentration of poetry and the frankness of prose, depicts the landscape of the dispossessed"
41	2009	Elinor Ostrom (shared with Oliver E. Williamson)	United States	Economic Sciences	"for her analysis of economic governance, especially the commons"
42	2011	Ellen Johnson Sirleaf	Liberia	Peace	"For their non-violent struggle for the safety of women and for women's rights to full participation in peace-building work"
43	2011	Leymah Gbowee	Liberia		
44	2011	Tawakkol Karman	Yemen		
45	2013	Alice Munro	Canada	Literature	"master of the contemporary short story"
46	2014	May-Britt Moser (shared with Edvard Moser and John O'Keefe)	Norway	Physiology or Medicine	"for their discoveries of cells that constitute a positioning system in the brain"
47	2014	Malala Yousafzai (shared with Kailash Satyarthi)	Pakistan and India	Peace	"for their struggle against the suppression of children and young people and for the right of all children to education"
48	2015	Tu Youyou (shared with William C. Campbell and Satoshi Ōmura)	China	Physiology or Medicine	"for her discoveries concerning a novel therapy against Malaria"
49	2015	Svetlana Alexievich	Belarus	Literature	"for her polyphonic writings, a monument to suffering and courage in our time"
50	2018	Donna Strickland	Canada	Physics	"for their method of

		(shared with Gérard Mourou and Arthur Ashkin)			generating high-intensity, ultra-short optical pulses"
51	2018	Frances Arnold (shared with Gregory Winter and George Smith)	United States	Chemistry	"for the directed evolution of enzymes"
52	2018	Nadia Murad (shared with Denis Mukwege)	Iraq	Peace	"for their efforts to end the use of sexual violence as a weapon of war and armed conflict"
53	2019	Esther Duflo (shared with Abhijit Banerjee and Michael Kremer)	USA	Economic Sciences	"for their experimental approach to alleviating global poverty"
54	2020	Louise Glück	USA	Literature	For her unmistakable poetic voice that with austere beauty makes individual existence universal
55	2020	Dr. Andrea M. Ghez (shared with Dr. Roger Penrose and Dr. Reinhard Genzel)	USA	Physics	The most convincing evidence yet of a supermassive black hole at the center of the Milky way.
56	2020	Jennifer A. Doudna	USA	Chemistry	A new genetic editing method called Crispr-Cas9, which can be applied to experimental treatments for sickle cell disease and cancer therapies
57	2020	Emmanuelle Charpentier	French		

What is the logic behind it?

The strength of women potential can be considered high or low in the field of achievement category. The more achievement means the more potential power remain with women category. The knowledge and disseminate power highlight the superiority of women which could reserve the significant role to the next generation. The achievement of Nobel Prize in the peace category is the highest numbers indicating the peace of woman or generosity of woman comparatively far above the ground by nature. Women have the great power of control against the violent to make peaceful life in society and hence

the talent explore mostly towards peace category. The inner intellectuality and creativity are also seen in the literature category by achieving second highest Nobel Prize. Literature reflects the art of knowledge and art of life thus encouraging woman empowerment with social responsibility towards the society and something have the intensity of thinking moral value. The achievement of Nobel Prize in the category of physiology or medicine is the third highest means the women deeply involves acquiring the knowledge of health and its relevant subject and thus have the responsibility to extract the vital of life towards the society. The achievement of Nobel Prize in the category of Chemistry and Physics though comparatively low but women have the power of chemistry and physics relevant technology. It seems the tendency of deep study to reach certain goal in this category. Knowledge of instrument with depth technology may be the super power of leading the society above the expectation where women need to cross thousand miles in this regard. Economics is the backbone of society but the optimism involved in this field and contributions are very negligible which means the woman empowerment still lagging behind to stand upright democratically. It is the main cause of society for which woman could not be fully empowered economically and lacking keen interest in all sectors of economy. The results of achievements reflect clearly on women in this category and hence women expect to be sinking in patriarchic constitution or dominating by the male society.

Conclusion

The achievement of women Nobel Prize is a simple example to justify the women's status at global outlook. It does not mean the women's status are diminishing globally rather than exploring the talent and potentiality. Still women are shining with glamour in the global aspect. The gender equity, women empowerment etc. are the common slogan in the society which must be overcome near future. If knowledge is the power and ruler then women surely may exercise to think ahead

till to reach destination for gifting a generous society to the world. Several outreach activities of women inspire generation and disseminate knowledge like Nobel prize achievement.

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Origin, Causes and Prevention of Covid-19 in Assam

Dr. Subhash Talukdar*

Abstract

Covid-19 (Corona virus) is a tremendous disease in the recent time. This disease was outbreak in Wuhan, Hubei province, China. Gradually this disease spread out whole world. The world Health Organization (WHO) have been declared that Covid-19 pandemic as global health emergency. A corona virus is a virus. It was found in animals and rarely can be transmitted from animals to humans and after spread person to person. SARS-COV-2 is the viruses of COVID-19. It is one of the positive sense single-standard RNA (+ssRNA) viruses, with a single linear RNA segment. The first case of COVID-19 pandemic of Assam reported on 31 March, 2020. The first COVID-19 patient of Assam was Nizamuddin Markaz who attended the conference of the Tabligh Jamaat religious organization. This disease affected badly all sphere of society such as, health sector, education sector, agriculture sector, financial sector, business sector, tourism sector, labour market etc. The virus easily spread out among people. It spread from person to person among those in close contact with coughs, sneezes or talks. Moreover, it also spread if a person touches a surface with the virus on it and then touches his or her mouth, nose or eyes. In this paper an attempt has been made to study origin, causes

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and protection of COVID-19 in Assam.

Key words : COVID-19, disease, causes, protection, outbreak, pandemic.

Introduction :

COVID-19 is a disease, strain of corona virus. "CO" stands for corona, "VI" for virus, and "D" for disease. Therefore this disease referred as "2019 novel corona virus" or "2019- nCOV". The World Health Organization (WHO) mentioned the name of COVID-19 on Feb. 11, 2020. It started in Wuhan, China in 2019. On Dec. 31, 2019, a new pneumonia reported to the Chinese WHO country office. These cases originally appeared in Wuhan, a city in the Hubei province of China. This disease was officially named by WHO in the International Classification of Disease (ICD). Some organizations such as WHO, the World Organization for Animal Health, and the Food and Agriculture Organization of the United Nations named as COVID-19. On 1 April, 2020 the total numbers of tested positive of coronavirus in Assam were 13. Out of 13, coronavirus patients four were from Jagoirad, one from Nalbari and eight more patients were from Golaghat. All of these were attended the Nizamuddin Markaz event (Delhi). But now corona patients were increasing day by day. On 22 July, 2020 the Government of Assam reported 972 COVID-19 positive cases. Out of, 972 COVID positive cases 354 from Guwahati.

Research Questions :

The research questions have been formulated in consistent with the objectives of the study:

- i. What was the background of covid-19 ?
- ii. What are the causes of covid-19 ?
- iii. what are the causes for protection of covid-19?

Methodology :

The study has been conducted based on both primary and secondary sources of data. Primary sources of data have been collected from the field study. Interview has been conducted the patients of COVID-19, who were now discharged from the different hospitals of Assam. A total of 33 sample respondents have been selected purposively through sample random sampling method and interviewed them with the help of interview Schedules. 33 sample respondents have been selected because now there are 33 Districts of Assam and each of districts there is only one sample respondent.

Besides, Secondary sources of data have been collected from published books, journals, articles, magazines, newspapers etc. The descriptive and analytical methods have been used for in analyzing and interpretation of data.

Result and Discussion:

Data analysis is an important part of COVID-19 of Assam. The level of structure also has a major influence on the kind of data collected. Interview schedule can reach a large sample. A representative sample is possible and results can be used to make statements. Interview schedule and group discussion has some merits for collection of data because question are structured and asked in the same way so that respondent's answers can be more easily. After collecting data from different sources it can be shown in the following as-

TABLE : 01

Distribution of respondent's opinion regarding first outbreak of COVID-19 .

COVID-19 is one of the diseases, which spread out all over the world. There are various respondents regarding outbreak of Covid-19.

Outbreak of COVID-19.	Number of respondents	Percentage.
NR	02	6.06
China	27	81.81
America	03	9.09
Vanuatu	01	3.03
Total	33	100

Source: Data collected during interview for the sample respondents.

From the table (01), it is clear that the first COVID-19 outbreak in China, which was the highest 27(81.81%) according to field study report and lowest in Vanuath 01(3.03%) expressed and 02 (6.06%) did not express their views and became non-respondents and 03(9.09%) expressed their views in America according to field study report.

TABLE : 02

Distribution of respondent's opinion regarding vaccine of COVID-19

Vaccine of covid-19	No. of respondents.	Percentage.
Yes	03	9.09
No	26	78.78
NR	04	12.12
Total	33	100

Source: Field study.

From the sample study it is revealed that out of 33 respondents 26(78.78%) expressed that there is no vaccine of covid-19 which is the highest percentage of field study report and 04 (12.12%) did not expressed their views and became non-respondents.

TABLE :03

Distribution of respondent's opinion regarding risk of developing

severe illness

Risk of developing severe illness	No. of respondents	Percentage.
Children	02	6.06
Older persons	30	90.90
Youth	01	3.03
Total	33	100

Source: Field study report.

From the table (03) it is revealed that out of 33 respondents 30(90.90%) expressed their views that older persons are more risk of developing severe illness according to field study report which is the highest percentage and youth is the lowest 01(3.03%) according to field study report.

TABLE: 04

Distribution of respondent's regarding common symptoms of covid-19

Symptoms of covid-19	No. of respondents	Percentage
A fever	02	6.06
Breathlessness	01	3.03
A cough	02	6.06
All the above	28	84.84
Total	33	100

Source: Field study report.

As regards the question of the common symptoms of covid-19, as shown in the table (04) it is revealed that 28(84.84%) express that all the above which including (a fever, breathlessness, a cough) which is the highest percentage of field study report and breathlessness is the lowest 01(3,03%) says according to field study report.

TABLE : 05

Distribution of respondent's opinion regarding causes for the protection of covid-19

Protection of covid-19	Respondents	Percentage
Practice social distancing	02	6.06
Wash our hands	01	3.03
Wear a mask	02	6.06
All of the above	28	84.84
Total	33	100

Source: Data collected from field survey.

From the table (05) have clearly shown that the majority respondents express regarding causes for the protection of covid-19 all of the above including (practice of social distancing, wash our hands, wear a mask) 28(84.84%) and 01(3.03%) says wash our hands, 02(6.06%) says practice social distancing and wear a mask according to field study report.

TABLE: 06

Distribution of respondent's opinion regarding causes of covid-19

Causes of covid - 19	No. of respondents	Percentage
SARS-COV-2	02	6.06
RNA(+ssRNA)	01	3.03
NR	01	3.03
All of the above.	29	87.87
Total	33	100

Source: Data collected from the field study.

As regard the causes of covid - 19 as shown in the table (06) it is revealed that out of 33 respondents all of the above 29(87.87%) is the highest percentage of field study report and 01(3.03%) did not expressed their views and became non-respondents.

Tips to prevent coronavirus: People have needed to take certain steps to reduce the coronavirus. Some of them are mentioned below-

1. Regular hand- washing is one of the main causes for prevention of coronavirus. People wash their hands for at least 20 seconds after travelling on public transport, being a public place etc.
2. Another way to prevent coronavirus is people should reduce touching their eyes, mouth and nose with their hands after they were unwashed.
3. People should avoid close contact with others especially those who were older or have symptoms of virus.
4. When people have symptoms of covid 19, they can self- isolate at home and reduced close contact with others.
5. Those who are suffering from fever, cough or difficulty breathing in an area with a covid-19, should seek medical advice.
6. People should not travel some places such as China, Iran, Europe, America because in such places a large number of people are suffering from covid-19.
7. The household is keeping all surfaces clean to reduce covid-19. People should clean all surfaces such as light switches, door handles and countertops etc.
8. People should wear a face mask in public when it is not maintain at least 1 meter distance from others.

From the above discussion it is clear that people should prevent the spread of coronavirus and help to protect themselves with others.

Findings of the study:

The findings of the study noted down as follows.

In 1965, scientists and researchers first identified a human coronavirus. The cause of it was common cold. After, researchers and scientists found a group of similar human and animal virus. Seven coronaviruses spread out in humans. The SARS emerged in China in 2002 and spread out 28 other countries. On July 2003, more than 8,000 people were infected and 774 died. Research question No. 01, has been examined and verified that there were various factors responsible for the origin of covid-19. Out of 33 respondents,

27(81.81%) expressed that it was originated in China. Thus it is proved that the first covid-19 originated in China.

Research question No. ii, has been examined and verified and proved on the basis of the findings of the study that there are various causes for the emergence of covid-19 in Assam. Out of 33 respondents 29(87.87%) expressed all the above which includes SARS -COV-2 and RNA(+ssRNA). Thus it is proved that all of the above is the highest percentage in the field study report.

Research question No. iii has been examined and verified that the causes for the protection of covid-19, out of 33 respondents 28(84.84%) says all the above (practice social distancing, wash our hands, wear a mask) are the causes for the protection of covid-19 which is the highest percentage of field study report.

Thus, the study can be summed up that we must be ready for protection of covid-19. On 22 Dec. 2020, total covid-19 cases are 84,317. Out of 84,317 cases, 23,753 are active cases, recovered cases are 60,348 and deaths are 221. Therefore, we can say the covid-19 cases are increasing day by day. We must be awareness of covid-19.

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মামণি ৰয়ছম গোস্বামীৰ উপন্যাসত নিষ্পেষিতা আৰু
পতিতা নাৰী : 'দেৱীপীঠৰ তেজ' আৰু 'মামৰে ধৰা
তৰোৱাল' উপন্যাসৰ বিশেষ উল্লিখনসহ

প্ৰশান্ত কুমাৰ বৰ্মণ*

০.০.০ অৱতৰণিকা : লৰু প্ৰতিষ্ঠা ঔপন্যাসিক, জ্ঞানপীঠ বঁটা বিজয়ী মামণি ৰয়ছম গোস্বামী অসমীয়া সাহিত্যৰ এক উজ্জ্বল নক্ষত্ৰ। তেওঁৰ উপন্যাসকৃতিসমূহ হ'ল— চেনাবোৰ সোঁত (১৯৭১), নীলকণ্ঠী ব্ৰজ (১৯৭৬), অহিৰণ (১৯৮০), মামৰে ধৰা তৰোৱাল (১৯৮০), বুদ্ধসাগৰ ধূসৰ গাইসা আৰু মহম্মদ মুছা (১৯৮৮), উদয়ভানুৰ চৰিত্ৰ (১৯৮৬), দঁতাল হাতীৰ উঁয়ে খোৱা হাওদা (১৯৮৮), আধা লেখা দস্তাবেজ (১৯৮৮), জখমী যাত্ৰী (১৯৯০) তেজ আৰু ধূলিৰে ধূসৰিত পৃষ্ঠা (১৯৯৪), দেৱী পীঠৰ তেজ, দাশৰথীৰ খোজ (২০০৪), নাঙঠ-চহৰ (মামৰে ধৰা তৰোৱালৰ লগত প্ৰকাশিত), সাপৰ ছালৰ জোতা (উদয়ভানুৰ চৰিত্ৰ লগত প্ৰকাশিত), ভিক্ষাৰ পাত্ৰ ভাঙি। উল্লেখযোগ্য যে, মালয়ালম উপন্যাস 'Ananazhikaneram' 'আধা ঘণ্টা সময়' নামেৰে তেওঁ অসমীয়ালৈ অনুবাদ কৰি উলিয়ায়।

তেওঁৰ প্ৰতিখন উপন্যাসৰ মাজেদি লাঞ্চিত, প্ৰতাৰিত, শোষিত নাৰীৰ মৰ্মবেদনা, দুখ-কাৰুণ্য, জৈৱিক কামনা বাসনাৰ চিত্ৰ প্ৰস্ফুটিত হৈছে। "মামৰে ধৰা তৰোৱাল", "দঁতাল হাতীৰ উঁয়ে খোৱা হাওদা", "অহিৰণ", "চেনাবৰ সোঁত", "নীলকণ্ঠী ব্ৰজ" আদি বহু পঠিত উপন্যাসবোৰত নাৰীয়ে ধৰ্মীয় আৰু সামাজিক নিয়ম কানুনৰ বলি হৈ জীয়াই থকাৰ তাড়নাত হাহকাৰ কৰি থকাৰ চিত্ৰ ফুটি উঠিছে। একেই চিত্ৰ তেওঁৰ "দেৱীপীঠৰ তেজ", "ভিক্ষাৰ পাত্ৰ ভাঙি", "দাশৰথীৰ খোজ" আদি উপন্যাসতো বিৰাজমান। স্থান, কালৰ পৰিধি নেওচি একেই নাৰীৰ যন্ত্ৰণা, ক্ষোভ আৰু হতাশাৰ চিত্ৰ প্ৰকাশি উঠিছে।

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১.০.০ অধ্যয়নৰ উদ্দেশ্য, পদ্ধতি, সমল :

অসমীয়া সাহিত্য জগতত মামণি ৰয়ছম গোস্বামীৰ উপন্যাসত পাঠক মাত্ৰেই অনুভৱ কৰিব পাৰিব সমাজৰ বিভিন্ন স্তৰৰ মানুহৰ আশা অংকাক্ষা, কামনা বাসনা, পোৰা-নোপোৰা, ঘাট-প্ৰতিঘাত, দ্বন্দ্ব সংঘাত আদিৰ জীয়া ছবি। তেখেতৰ উপন্যাসবোৰৰ ভিতৰত 'চেনাবোৰ সোঁত', 'নীলকণ্ঠী ব্ৰজ', 'দঁতাল হাতীৰ উঁয়ে খোৱা হাওদা', 'দেৱীপীঠৰ তেজ', 'মামৰে ধৰা তৰোৱাল' আৰু 'অহিৰণ'ত প্ৰকাশিত নাৰী মনৰ বৈচিত্ৰতাৰ চিত্ৰ অতি সাহসিকতাৰে দাঙি ধৰিছে। এই দৃষ্টিৰে তেখেতৰ উপন্যাসসমূহ পাঠক সমাজৰ বাবে ৰুচিকৰ বা পুষ্টিকৰ হৈছে তাৰ বাস্তবিক সাৰ্থকতা বিচাৰ এই অধ্যয়নৰ প্ৰধান দিশ।

আমাৰ অধ্যয়নৰ উপস্থাপন শৈলী মুখ্যত বৰ্ণনাত্মক আৰু আংশিকভাৱে বিশ্লেষণাত্মক পদ্ধতিৰ হ'ব।

অধ্যয়ন কৰ্মৰ সমলস্বৰূপে বিভিন্ন বাতৰি কাতত প্ৰকাশিত সৰু-বৰ প্ৰবন্ধৰাজি, আৰু বিভিন্ন পুথি আদিৰ পৰা তথ্যৰাজিৰ আলমলৈ লিখা হৈছে।

২.০.০ বিষয় প্ৰবেশ :

আলোচ্য উপন্যাস "দেৱীপীঠৰ তেজ"ৰ কাহিনীভাগৰ সময় ১৯৩০ চন আৰু স্থান অসমৰ জনপ্ৰিয় শক্তিপীঠ কামাখ্যা। কামাখ্যাধামৰ দাঁতিকাষৰত অঘোৰ দেৱ ভাগৱতীয়ে সপৰিয়ালে বসবাস কৰিছিল। ভাগৱতীৰ বিবাহিতা কিন্তু স্বামী পৰিত্যক্তা কন্যা পদ্মাপ্ৰিয়াক তাইৰ পিঠিত থকা ধৱলৰ দাগটোৰ বাবে পতি ভূৱনেশ্বৰে পিতৃগৃহত এৰি থৈ আহিছে। তেতিয়াৰ পৰা বন্ধ কুঠৰীৰ আবেষ্টনীৰ মাজত পদ্মাপ্ৰিয়াই নিজক আৱদ্ধ কৰি ৰখা হ'ল। আত্মপীড়নবাদৰ তাগিদাত পৰি বাৰ বাৰ সেই মসৃণ ঠাইখিনি খুঁটিবলৈ আৰম্ভ কৰে। বিয়াৰ আগেয়ে পদ্মাপ্ৰিয়া আৰু দলৈৰ ছোৱালী লাৱণ্যই খিলখিলীয়া হাঁহি মাৰি কোৱা "বেণীৰ ফুলৰ মালা মেৰুৱাই থ... এতিয়াই পিছলৈতো সময় নেপাবি?" এনেবোৰ কথাই পদ্মাপ্ৰিয়াক আমনি কৰাত তাই চিৎকাৰ খাই উঠি পৰে। মনলৈ অহা কামনাৰ উদগীৰণ আৰু সমাজত লাভ কৰা বঞ্চনাৰ ফলত ভূৱনেশ্বৰৰ প্ৰতি প্ৰতিশোধৰ ভাৱ জাগি উঠে। ফলত নায়িকা পদ্মাপ্ৰিয়াই কুন্দ ফুল বিচাৰি বলিকটা শব্দুদেৱৰ ওচৰত আত্ম সমৰ্পণ কৰে।

পুৰুষশাসিত সমাজত নাৰী ভোগৰ সামগ্ৰী। নাৰীক জৈৱিক ক্ষুধা নিবাৰণৰ আহিলা হিচাপে সমাজত পুৰুষে গণ্য কৰে। এই ধাৰণাৰে মামণি ৰয়ছম গোস্বামীৰ উপন্যাসৰ মূল বিষয় গঠিত হৈছে। "দেৱীপীঠৰ তেজ"ৰ নায়িকা পদ্মাপ্ৰিয়াক বিবাহৰ পাছতেই স্বামী ভূৱনেশ্বৰে তাইৰ পিতৃগৃহত এৰি থৈ আহিছে, তাইৰ পিঠিত থকা ধৱলৰ দাগটোৰ

বাবে। ভূৱনেশ্বৰৰ দৃষ্টিত তাই অস্পৃশ্য, সমাজ পৰিতোজ্য, কাৰণ তাইৰ পিঠিৰ সেই ধৱলৰ দাগটো বগা দাগ নহয়, ভূৱনেশ্বৰৰ দৃষ্টিত তাইৰ কুষ্ঠ হৈছে আৰু সি এজনী কুষ্ঠ ৰোগীৰ লগত সংসাৰ কৰিবলৈ অপাৰগ। সদ্যবিবাহিতা পদ্মাপ্ৰিয়াই ব্ৰাহ্মণ পিতৃ অঘোৰ দেৱ ভাগৱতী আৰু মাতৃৰ মাজতেই জীৱন-যাপন কৰিবলৈ ধৰিলে যদিও এটা বন্ধ কুঠৰীৰ অন্ধকাৰৰ মাজত তাই থাকি ভাল পোৱা হ'ল। ধৱলৰ বগা দাগটোৰ প্ৰতি আক্ৰোশভাৱ জাগি উঠে।

—“সেই মসৃণ ঠাইখিনি? কেতিয়াবা কেতিয়াবা তাই নখেৰে আচুৰিবলৈ আৰম্ভ কৰে —তেজ বিৰিঙি উঠে ৰঙা তেজ।”^২

পদ্মাপ্ৰিয়াৰ এই মানসিক স্থিতিটোক চাই তাইক Masochism বা আত্মপীড়নবাদৰ চিকাৰ বুলি ক'ব পাৰি। আত্মপীড়নবাদ মানসিক অস্থিৰতাৰ এনে এটা স্তৰ, য'ত ব্যক্তিয়ে নিজৰ অতৃপ্ত বাসনাক নিজক অত্যাচাৰ কৰি বা পীড়া দি প্ৰশমিত কৰিব বিচাৰে। তেওঁ তেওঁৰ অতৃপ্ততাৰ বাবে নিজৰ দৈহিক বা মানসিক অৱস্থিতিক দায়ী কৰে আৰু সেই অৱস্থিতিত জ্ঞাত বা অজ্ঞাত আঘাত কৰে। বিবাহৰ পাছত নাৰীৰ স্বভাৱজাত কামনা বাসনাৰে স্বামীগৃহত থাকি স্বামীৰ সৈতে এখন সুখৰ সংসাৰ পাতি জীয়াই থাকিব বিচাৰে। কিবা কাৰণত এই ইচ্ছা অপূৰ্ণ হ'লে সেই নাৰীয়ে পদ্মাপ্ৰিয়াৰ দৰে মানসিক অস্থিৰতাত ভোগে আৰু বহু সময়ত যি কাৰণত ইচ্ছা অপূৰ্ণ হয়, সেই কাৰণত আঘাত কৰি মনৰ অতৃপ্ততাক দমন কৰে। পদ্মাপ্ৰিয়াৰ ধৱলৰ দাগটো তাইৰ স্বামীৰ সৈতে বিচ্ছেদিত হোৱাৰ কাৰণ আৰু সেয়ে তাই দাগটোত আচুৰি নিজক শাস্ত কৰিবলৈ ধৰে।

“আনদিনাৰ দৰে তাই পিঠিখন পিহিবলৈ ধৰিলে- তাৰ পাছত আকুহিবলৈ ধৰিলে। ...তাৰ পাছত যন্ত্ৰণাত ছটফটাই তাই বিছনাত পৰি থাকিল।”^৩

Stefan Boldisor য়ে এঠাইত কৈছে- "Masochism is a condition of perverted pain"। এক বিকৃত যন্ত্ৰণাৰ স্থিতিয়েই আত্মপীড়নবাদ। পদ্মাপ্ৰিয়াৰ ক্ষেত্ৰত এই যন্ত্ৰণাই আত্মপীড়নবাদৰ নাম লৈছে। “এক মূহূৰ্তৰ ভিতৰত এনে লাগিল কাপোৰ-কানি নোহোৱাকৈ মানুহজনী নাঙঠ হৈছে যেন সিহঁতৰ সন্মুখত থিয় হৈ আছে। সিহঁতে খুঁটি খুঁটি যেন তাইৰ সেই বগা দাগটো শৰীৰৰ কোনখিনিত আছে চাবলৈ বিচাৰিছে। ...হয় হয় সিহঁতে বগা দাগটোকে চাব বিচাৰিছে।”^৪

এফালে তাই বগা দাগৰ পৰা ৰঙা তেজ বাহিৰ কৰি দিছে আনফালে বলিৰ ৰঙা তেজ দেখি তাই চিৎকাৰ কৰি উঠিছে -

“...গাৰো গাঁৱৰ মানুহ কেইটামানে বলি দিয়া ম'হটো কাটিকুটি ভাৰ বান্ধি নিয়াৰ বন্দোৱাস্ত কৰিছে। ঘাঁহ-বন সকলোতে এয়া তেজৰ ছিটিকনি ...কাষত সোঁৱা লেতু -

সেতু হৈ পৰি আছে ... তাৰ ভৰিৰ খুৰা ।”^{৭৬}

মামনি ৰয়ছম গোস্বামীৰ নাৰী চৰিত্ৰবোৰে পুৰুষৰ হাতত বা পুৰুষ প্ৰধান সমাজৰ হাতত নিৰ্মিত। সমাজে বান্ধি দিয়া নীতি নিয়মৰ মাজত তেওঁলোকৰ জীৱন পৰিচালিত হয়। নিত্য প্ৰয়োজনীয় খাদ্য গ্ৰহণৰ পৰা আৰম্ভ কৰি সমাজত খোজ দিয়ালৈকে সকলোলৈকে পুৰুষৰ ছত্ৰছায়াত থাকিব লগা হয়। পৰিস্থিতিয়ে কেতিয়াবা এনে পৰ্যায় পায়গৈ যে নাৰী উপন্যাসখনত খাদ্য আৰু পুৰুষ খাদকৰ ভূমিকাত অৱতীৰ্ণ হয়। পাশ্চাত্যৰ এই ধাৰণাটোকে Cannibalism বোলা হৈছে। University of Pennsylvania ৰ নৃতত্ত্ব বিজ্ঞানৰ অধ্যাপক Peggy Reeves Sanday যে কৈছে যে ৰীতিগত Cannibalism ৰ অৰ্থ হ'ল সমাজৰ সামাজিক আৰু মনোবৈজ্ঞানিক স্তৰবোৰৰ নিয়ন্ত্ৰণ বা তাৰ সমাজৰ ক্ষমতাৰ ভাৰসামেয় সংযমত ৰখা। Cannibalism is about power and control. তেওঁৰ মতে "Cannibalism is never just about eating but is primarily a medium for nongustatory messages - messages having to do with the maintenance, regeneration, and, in some cases, the foundation of cultural order" বহু সময়ত এই নৰখাদকবাদৰ ধাৰণাটো সমাজৰ প্ৰচলিত ৰীতি-নীতিৰ মাজত সোমাই এখন স্থায়ী আসন গ্ৰহণ কৰে আৰু তাৰ সন্মুখত ডিঙি পাতি ৰৈ থাকে সমাজৰ দুৰ্বল মহিলা শ্ৰেণীটোৱে। এই প্ৰসংগত লাৱণ্যই পদ্মাপ্ৰিয়াক কোৱা কথাষাৰ প্ৰণিধানযোগ্য।

“তোৰ এই হাত-ভৰি... তোৰ এই টল-মল কৰি থকা বুকু। অনেক মানুহ কুকুৰনেচীয়া বাঘৰ দৰে। এবাৰ কোনোবাই যদি তোৰ এই মাংসৰ সোৱাদ পায় সি নৰখাদকৰ দৰে হ'বই। তই জান নহয় নৰখাদকে চিকাৰীৰ তেজ লগা কানি-কাপোৰ পৰ্যন্ত চোৱাই শেষ কৰি পেলায়।”^{৭৭}

মামনি ৰয়ছমৰ উপন্যাসত খাদ্যৰ লগত এই জৈৱিক সংঘাত প্ৰায় প্ৰতিখন উপন্যাসতেই স্পষ্ট। তেওঁৰ ধাৰণাত খাদ্যগ্ৰহণৰ লগত ক্ষমতা আহৰণৰ এক সুসম্পৰ্ক আছে। ক্ষমতাবানে খাদ্যগ্ৰহণৰ দ্বাৰা তেওঁলোকৰ ক্ষমতাক তুলি ধৰে আৰু দুৰ্বলীবোৰে অনাহাৰে বা এৰেহা খাই নিজৰ দুৰ্বলতাৰ চিনাকি দিয়ে। এই প্ৰেক্ষাপটতেই শাসন আৰু শোষণৰ মাজৰ দৃশ্যপট তৈয়াৰী হয়। দুৰ্বলীৰ অনাহাৰে থকাৰ বা সাধাৰণ খাদ্য গ্ৰহণৰ মনটোৱে উৎকৃষ্ট খাদ্য গ্ৰহণ কৰিব বিচাৰে। জানোচা, শোষণ আৰু শাসনৰ মাজৰ সীমাৰেখাডাল টুটি আহে। “দঁতাল হাতীৰ উয়ে খোৱা হাওদা”ত বামুণৰ বিধৱা গিৰিবালাই ইচ্ছা আৰু হেপাঁহ তথা সুপ্ত প্ৰতিবাদৰ ভাষাৰে উপন্যাসখনত টেংখালৰ কোণৰ মাংসৰ খালিটোৰ ওচৰত থিয় হ'ল। তাৰ পাছত—

“কলপাত আঁতৰাই তাই কাণ্ডজ্ঞান হেৰুৱাই এগৰাহ মাংস মুখলৈ নিলে। বিধৱা হোৱাৰ পিছত সুদীৰ্ঘ কাল তাই ‘হবিষীয়া’ ভাত খাই আছিল। সাদ-সোৱাদ নোহোৱা সিদ্ধ শাক-পাচলিবোৰ খাই খাই তাই একপ্ৰকাৰ ওকালিয়াব আৰম্ভ কৰিছিল।”^{৭৮}

কিন্তু তাইৰ ভোগৰ লালসাৰ এই জুই নুমাৰলৈ নাপালে। পুৰুষশাসিত সমাজত তাইক ভোগ কৰিবলৈ দিয়া নহয় বৰং ভোগৰ প্ৰতীক হিচাপেহে গণ্য কৰা হয়।

‘দঁতাল হাতীৰ উয়ে খোৱা হাওদা’ উপন্যাসৰ দৰে ‘দেৱীপীঠৰ তেজ’ত যন্ত্ৰণা-ক্ষোভৰ প্ৰতিবাদ কাহিনীৰ বিভিন্ন দ্বন্দ্বৰ সংঘাতৰ জৰিয়তে প্ৰকাশ কৰা হৈছে। নাৰীৰ মনোভাৱক অপমান কৰা পুৰুষৰ প্ৰতি নায়িকা পদ্মাপ্ৰিয়াৰ বিশ্বাস নোহোৱা আছিল। ভূৱনেশ্বৰৰ প্ৰতি উমি উমি জ্বলি থকা প্ৰতিশোধৰ জুইকুৰাৰ ভয়ংকৰ ৰূপ দিবৰ বাবে কুন্দ ফুল বুটলাৰ ছলেৰে বলিকটা শম্বুদেৱৰ কাষ চাপিলে।

“দেও! মই নিজৰ শৰীৰৰ ৰক্ত দি দেৱীক পূজা কৰিব খুজিছোঁ ...। মোৰ মনত দুটা কামনা আছে ...।”^{৭৯}

আমাৰ সমাজত নাৰীৰ ক্ষেত্ৰত বিবাহ বৰ্হিভূত যৌন সম্পৰ্কক এটা ডাঙৰ অপৰাধ হিচাপে গণ্য কৰা হয়। পুৰুষতান্ত্ৰিক সমাজ ব্যৱস্থাৰ বলি হোৱা নায়িকা পদ্মাপ্ৰিয়াই বিবাহিত হৈও বৈধব্যদশা বৰণ কৰিবলৈ বাধ্য হোৱা নাৰীগৰাকীয়ে ‘অবৈধ অভিসাৰে’ প্ৰতিশোধ লোৱাৰ প্ৰতিযোগিতাত নামি পৰে। ‘দেৱীপীঠৰ তেজ’ত পদ্মাপ্ৰিয়া চৰিত্ৰত কলংকৰ দাগ থাকিলেও তেওঁৰ চৰিত্ৰৰ বৈচিত্ৰ্যই সেই দাগ ধুই-মুচি তাইক উজ্জ্বল কৰি তোলাত মামনি ৰয়ছম গোস্বামী সফল হৈছে।

মামনি ৰয়ছম গোস্বামীৰ যি কেইখন উপন্যাসত নিষ্পেষিতা আৰু পতিতা নাৰীৰ দুখভাৰা জীৱন গাঁথাৰ যি এক বলিষ্ঠ প্ৰকাশ ঘটিছে তাৰ ভিতৰত “মামৰে ধৰা তৰোৱাল” নিঃসন্দেহে শ্ৰেষ্ঠ। উপন্যাসখনৰ বিষয় উত্তৰ প্ৰদেশৰ ৰায়বেৰেলী জিলাৰ সাই নদীৰ একুৱেডাক্ট” নিৰ্মাণকাৰ্যত জড়িত শ্ৰমিকসকলৰ এটি ধৰ্মঘট। উপন্যাসখনত একোটি নিটোল কাহিনী পোৱা নাযায় যদিও শ্ৰমিক জীৱনৰ দুখ-দুৰ্দশা যন্ত্ৰণা, আশা-আংকাফা, হতাশাগ্ৰস্ততা সপোন ভঙাৰ যন্ত্ৰণা আদি দেখুওৱা হৈছে। আনহাতে নাৰায়ণী, পাৰ্বতী, বসুমতী বুঢ়ী, ভূগু জামাদাৰৰ গাভৰু জীয়েক আদিৰ দৰিদ্ৰতা আৰু জীৱন যুঁজৰ যাতনাই নাৰীৰ সমস্যা স্পষ্ট হৈ দেখা দিছে।

‘মামৰে ধৰা তৰোৱাল’-ত হৰিজন তিৰোতা নাৰায়ণী দুখৰ বোজাৰে এক বৈচিত্ৰপূৰ্ণ নাৰী। নাৰায়ণী কষ্টসহিষ্ণু, মাতৃৰূপা, স্বামী অনুৰক্তা, প্ৰতিবাদী, বিদ্ৰোহী, পৰিশোধপৰায়ণা, শোষিত তথা প্ৰৰঞ্চিতা, পতিতা নাৰী। উপন্যাসখনৰ আৰম্ভণিৰ পৰা শেষলৈকে তাইৰ দুখ ভাৰা জীৱন কাহিনীয়ে পাঠকৰ মন-মস্তিষ্ক জোকাৰি দিয়ে। এসময়ৰ বৰ বাংলালী

আৰু কল্পনাবিলাসিনী হৰিজন সম্প্ৰদায়ৰ ৰূপহী গাভৰু নাৰায়ণীয়ে চাৰেংখেৰাত থাকোতে কোম্পানীৰ মেনেজাৰ চাহাবৰ ভায়েক ডেকা ইঞ্জিনিয়াৰ এজনৰ সৈতে অবৈধ সম্পৰ্ক গঢ়ি তুলিছিল। সপোন দেখিছিল ভগ্ন জুপুৰীৰ পৰা ৰাজমহললৈ ৰাজকুমাৰী হৈ যোৱা। শেষত ইঞ্জিনিয়াৰে নাৰায়ণীক 'কুঁহিয়াৰৰ মিঠাৰ দৰে' চোবাই এৰিলে। তাৰ পাছত যক্ষ্মাৰোগী শিবু ধাছনৰ লগত তাইৰ বিবাহ হ'ল। তাৰ পিছতেই নাৰায়ণীৰ বুকুতো এক কৰ্কশ বিদ্ৰোহৰ ভাৱে একপ্ৰকাৰ নিগাজিকৈ ঠাই ল'লে। বিয়াৰ পাছত চাৰেংখেলাৰ পৰা তাই আহিব লগা হৈছিল ভোজ নামৰ চহৰৰ নতুন ব্ৰাঞ্চলৈ কাম বিচাৰি। কাৰণ 'মেন হোল' পৰিষ্কাৰৰ কাম কৰা শিবু ধাছলাৰ নাছিল চুইপাৰৰ স্থায়ী চাকৰি। অভাৱত পৰি ব্ৰহ্মণ সম্প্ৰদায়ৰ বৃদ্ধ যক্ষ্মা ৰোগীৰ তেজ পূজৰো কাপোৰ ধুই অৱশেষত নিজেই সেই ৰোগত আক্ৰান্ত হৈ কষ্টকৰ, যন্ত্ৰণাময় জীৱন কটাবলগীয়া হোৱা শিবু ধাছলাৰ বৰ্ণনা দিছে এনেদৰে -

“ধাছলাৰ অৱস্থা নৈৰ পাৰৰ লেছকা গছৰ দৰে আছিল।”

দুৰ্বল, নিশকটীয়া, পঙ্গু গিৰিয়েকৰ লগত নাৰায়ণীয়ে কটাব লগা হ'ল এক কদৰ্শময় জীৱন। কোম্পানীৰ চাহাবৰ নৰ্দমা পৰিষ্কাৰৰ কাম কৰা হৰিজন শ্ৰমিক সম্প্ৰদায়ৰ নাৰায়ণীৰ জীৱন হৈ পৰিল চুবানিৰ কুকুৰসদৃশ। তাইৰ এটাই আশা শ্ৰমিক ইউনিয়নৰ নতুন লীডাৰ হৰিজন সম্প্ৰদায়ৰ যশোবন্তৰ প্ৰচেষ্টাত অন্য শ্ৰমিকবোৰৰ দৰে তাইৰ আৰু গিৰিয়েকৰো চুইপাৰৰ চাকৰি 'পাৰমেনাণ্ট' হ'ব। কিন্তু ভবামতে সেয়া নহ'ল। 'ডানকান কনষ্ট্ৰাকচন কোম্পানী'ৰ কতৃপক্ষই সাই একুৱেডা"ত কাম কৰা শ্ৰমিকসকলৰ 'চাৰ্ভিচ চিকিউৰিটি' মানি নল'লে। আৰম্ভ হ'ল শ্ৰমিক মজদুৰৰ অনিদ্দিষ্টকালীন ধৰ্মঘট। শ্ৰমিকসকলৰ দৈনিক হাজিৰা বন্ধ হ'ল। নাৰায়ণীৰ মনত পৰিল চাৰেংখেৰা ব্ৰাঞ্চত চুইপাৰবোৰক খেদি দিয়াৰ পাছত ব্ৰাণ্চে-ব্ৰাণ্চে ঘূৰি ফুৰোতে আৰ্থিক অভাৱ আৰু এক প্ৰকাৰ নিৰাশ্ৰয় অৱস্থাৰ বাবেই তাইৰ পাঁচ বছৰীয়া পুতেকটো কিদৰে মৰিছিল। এতিয়া ছয়মহীয়া কোলাৰ কেঁচুৱা আৰু ৰুগ্ন গিৰিয়েককলৈ ক'লৈ কাম বিচাৰি যাব তাই। অনাকাঙ্ক্ষিত ভৱিষ্যতৰ আশংকাত যক্ষ্মাৰোগত আক্ৰান্ত গিৰিয়েকৰ চিন্তাত তাই ভাৰাক্ৰান্ত হৈ পৰিছে -

“চৰকাৰী হাস্পাতালৰ বাৰাণ্ডাতো তাক পৰি থাকিবলৈ নিদিব। ইয়াত কেম্প ভঙাৰ কাম আৰম্ভ হ'ব। কেনেকৈ মই এই মানুহটোক সাঙী বান্দি লৈ ফুৰাওঁ ? তদুপৰি বুকুৰ গাখীৰ খোৱা কেঁচুৱা এটা আছে। আমি মৰিম। মই ভালকৈ জানো আমি মৰিম।”^৭

ইতিমধ্যে হৰিজন বস্ত্ৰৰ গাভৰু ছোৱালীৰ দুই এজনীয়ে পেটৰ ক্ষুধাত পতিতা বৃত্তি গ্ৰহণ কৰিবলৈ লৈছে। বৃদ্ধ ভৃগু জামাদাৰৰ পাঁচজনী গাভৰু জীয়েকে পাঁচজন পাঞ্জাবী

খালাচীৰ সৈতে ৰাতি পলাই গৈছে পতিতা হ'বলৈ। বস্ত্ৰৰ 'পাৰ্বতী' নামৰ গাভৰুজনীয়ে ইতিমধ্যে কোম্পানীৰ 'বাবু'সকলৰ সৈতে অনৈতিক কামত লিপ্ত হৈছে। পেটৰ ক্ষুধাৰ আগত জানো নৈতিকতাৰ কিবা মূল্য থাকে ? ভৃগু জামাদাৰৰ মাক বৃদ্ধা বসুমতীৰ গোটেই গাত ধৰল কুঠৰ দাগ; উদং দেহত মেৰুৱাই লোৱা শৰীৰ শতচ্ছিন্ন টুকুৰা। খাদ্যৰ অভাৱত অখাদ্যৰে পেটৰ ভোক নিৰাময় কৰিব লগা হৈছে।

লাহে-লাহে নাৰায়ণীৰ গিৰিয়েক শিবু ধাছলাই শোৱাপাটী ল'লে। হৃদয়ৱান যশোবন্তই বেমাৰত কংকালসাৰ হৈ হৈ পৰা শিবু ধাছলাৰ শুশ্ৰূষা কৰিবলৈ কুঠবোধে নকৰিলে। কিন্তু কিমান দিনলৈ যশোবন্তই আগবাঢ়ি আহি নাৰায়ণীলৈ সহায়ৰ হাত আগবঢ়াব। অৱশেষত বেমাৰী গিৰিয়েক, কোলাৰ কেচুৱাৰ খাতিৰত তাই চাহাবৰ ওচৰত দেহদান কৰিব লগা হ'ল।

এদিন দেহ বিক্ৰী কৰি থকা অৱস্থাত তাই ধৰা পৰিল সিহঁতৰ মাজেৰে বনুৱা পহৰাদাৰৰ হাতত। এই বনুৱা পহৰাদাৰ চৰকাৰৰ দ্বাৰা নিযুক্তও নহয়, নিৰ্মাণ কোম্পানীৰ দ্বাৰা নিযুক্তও নহয়। বনুৱা পহৰাদাৰ নিযুক্ত কৰিছে ধৰ্মঘটকাৰীসকলৰ নেতাসকলেই কোম্পানীৰ পক্ষৰ লোকক নাৰায়ণীয়ে লোৱা উপায়ে কোনো তিৰোতাই সহায় কৰিছে নেকি চাবলৈ। নাৰায়ণীয়ে ধৰা পৰিল; কিন্তু তাই যে ধৰ্মঘটকাৰী সকলে জানিব খোজা কাৰণত নহয় যদিও সিহঁতে সৃষ্টি কৰা সংকটৰ অৱস্থাৰ বাবে নিজৰ আৰু ৰুগ্ন স্বামীৰ বাবেহে তেনে কৰিবলগীয়া হ'ল। তাই তেতিয়া ভয়ংকৰ ৰূপ ধাৰণ কৰি সিহঁতক কৈছিল :-

“ধাছলাৰ বেমাৰৰ সময়ত মই নিমখৰ বস্তাৰ দৰে পেটটো লৈ ঘূৰি ফুৰোঁতে তহঁতে মোক এটা পইচা দি সহায় কৰিছিল নে ? এতিয়া ধৰ্মঘট কৰি তহঁতে পেটৰ ভাতমুঠি কাঢ়ি লোৱা নাই নে ছালাহঁত ...। মোৰ খুচী মই ৰাঙীগিৰি কৰি খাম।”^{১০}

এফালে ধৰ্মঘট আনফালে পেটৰ তাড়নাত তাই-ঠাকুৰ চাহাবৰ ওচৰ চাপে। কিন্তু ঠাকুৰ চাহাবৰ প্ৰবঞ্চনাত তাই অস্তঃসত্ত্বা হয় আৰু শেষত ৰাক্ষসী মূৰ্তি ধৰি কাপেট কোম্পানীৰ তন্তুত চাহাবক হত্যা কৰে। জীৱনৰ গ্লানিৰ পৰা হাত সৰাব, নিজক হেৰুওৱাৰ বেদনাত বিধস্ত হোৱাৰ প্ৰতিবাদত যেন এই হত্যা। মনৰ মাজত জ্বলি থকা প্ৰচণ্ড ক্ষোভৰ উদ্গীৰণ নাৰায়ণীৰ দ্বাৰা সংকচিত হোৱা এই হত্যা। নাৰায়ণী চৰিত্ৰৰ মাজেদি পৰিস্ফুট হৈছে নাৰীৰ চৰম প্ৰতিশোধ ল'ব পৰা শক্তি।

নাৰায়ণীৰ অন্তৰ্ৰহই চৰিত্ৰটিক মাজে মাজে জুৰুলা জুৰুলা কৰিছে। ভয়, হতাশা, নতুন সংকলন নানান অনুভৱ অনুভূতিয়ে হেঁচা মাৰি আহে তাইৰ জীৱনলৈ। সাই নদীত গাঁ ধুবলৈ নামি তাই অনুভৱ কৰে : “পানী, এয়া বুকুৰ ওচৰলৈ পানী ?”

প্ৰথম যৌৱনত লগ পোৱা ইঞ্জিনিয়াৰ চাহাবজনে তাইক অস্তঃসত্ত্বা কৰি গুচি যোৱাৰ

পিছত তাই সাই নদীত নামি আত্মহত্যাৰ কথা ভাবিছিল। কিন্তু -

‘হঠাৎ ফেঁটী সাপৰ দৰে ফোচ কৰি উঠিল তাইৰ এই চুলিটাৰিয়ে।’

নাৰীৰ সতীত্বক অপমান কৰা পুৰুষৰ প্ৰতি তাইৰ বিশ্বাস নোহোৱা হৈছিল। নাৰায়ণীয়ে এঠাইত কোৱা - ভিতৰত যেতিয়া সকলো উলংগ, বাহিৰত চাফা কাপোৰৰ প্ৰয়োজনেই বা কি, কথাষাৰৰ যোগে তাইৰ অন্তৰৰ বেদনা প্ৰকট হৈ উঠিছে। এনে মৰ্মস্পৰ্শী বৰ্ণনাৰে ‘মামৰে ধৰা তৰোৱাল’ উপন্যাসত নিষ্পেষিতা আৰু পতিতা নাৰীৰ এক ভয়াবহ নিষ্ঠুৰ চিত্ৰ ৰূপায়িত হৈছে।

৩.০.০ উপসংহাৰ :

দেখা যায়, দুয়োখন উপন্যাসতে নাৰী চৰিত্ৰই এক বাস্তৱ আৰু জীৱন্ত ৰূপত অৱতীৰ্ণ হৈছে। এইবোৰ নাৰী চৰিত্ৰ কোনোবাটো শ্ৰমিক তথা পতিতা নাৰী, কোনোবাটো নিষ্পেষিতা নাৰী, কোনোবাটো অৱহেলিতা নাৰী। লেখিকাই ভিন্ন চৰিত্ৰৰ নাৰী মৰ্মবেদনা আৰু অসহনীয় নিপীড়ন তুলি ধৰিছে অতি প্ৰাণস্পৰ্শী ৰূপত। অসমীয়া উপন্যাস সাহিত্যত সমাজৰ ৰক্ষণশীলতা, কুসংস্কাৰ আৰু দৰিদ্ৰতাই পীড়া কৰা এইসকল নাৰীৰ ইমান হৃদয়স্পৰ্শী বৰ্ণনা খুব কম উপন্যাসত দেখিবলৈ পোৱা যায়।

পাদটীকা :

১. উপন্যাস-সমগ্ৰ (আধা লেখা দস্তাবেজ আৰু অন্যান্য), পৃ. ৮৭৫
২. পূৰ্বোল্লিখিত গ্ৰন্থ, পৃ. ৮৭৪
৩. পূৰ্বোল্লিখিত গ্ৰন্থ, পৃ. ৮৮২
৪. পূৰ্বোল্লিখিত গ্ৰন্থ, পৃ. ৮৭৪-৮৭৫
৫. পূৰ্বোল্লিখিত গ্ৰন্থ, পৃ. ৮৮১
৬. পূৰ্বোল্লিখিত গ্ৰন্থ, পৃ. ৮৭৭
৭. দাঁতাল হাতীৰ উয়ে খোৱা হাওদা, পৃ. ৮৭৭
৮. উপন্যাস-সমগ্ৰ (আধা লেখা দস্তাবেজ আৰু অন্যান্য), পৃ. ৮৮৩
৯. ওপৰোক্ত গ্ৰন্থ, পৃ : ৩৭৬
১০. ওপৰোক্ত গ্ৰন্থ, পৃ : ৩৫৪

সহায়ক গ্ৰন্থপঞ্জী :

১. মামণি ৰয়ছম গোস্বামীৰ উপন্যাস সমগ্ৰ (আধালেখা দস্তাবেজ আৰু অন্যান্য)

ষ্টুডেণ্টচ্ ষ্টৰচ্, চতুৰ্থ প্ৰকাশন, ২০১১

২. ঠাকুৰ, নগেন (সম্পাদনা) এশ বছৰৰ অসমীয়া উপন্যাস, (জ্যোতি প্ৰকাশন, দ্বিতীয় প্ৰকাশ, ২০১২)
৩. দাস, অমল চন্দ্ৰ (সম্পাদনা) অসমীয়া উপন্যাস পৰিক্ৰমা, (বনলতা, প্ৰথম সংৰক্ষণ, ২০১২)
৪. শৰ্মা, গোবিন্দ প্ৰসাদ (সম্পাদনা) নাৰীবাদ আৰু অসমীয়া উপন্যাস, (অসম প্ৰকাশন পৰিষদ, ২০১১, দ্বিতীয় সংৰক্ষণ)
৫. (স্মৃতিগ্ৰন্থ) ধুবুৰী অসম সাহিত্য সভাৰ শতবৰ্ষৰ সামৰণি অনুষ্ঠান, ধুবুৰী।
৬. ভূঞা, গোবিন্দ প্ৰসাদ (সংকলন আৰু সম্পাদনা) সাহিত্য অনুৰূপা, বাণী প্ৰকাশ মন্দিৰ, প্ৰথম প্ৰকাশ, ২০১৩।

শংকৰদেৱ আৰু আধুনিক অসমীয়া সাহিত্য

ড° হৰিশ দাস *

অৱতৰণিকা :

মধ্যযুগৰ সাহিত্যৰ জৰিয়তে আধুনিক অসমীয়া ভাষা-সাহিত্য আৰু জাতীয়তাৰ প্ৰাণ প্ৰতিষ্ঠাতাকৰূপে মহাপুৰুষ শংকৰদেৱৰ অৱদান আৰু প্ৰভাৱ অসমীয়া সমাজত বিশেষকৈ বিদ্যায়তনিক, বৌদ্ধিক আৰু সাংস্কৃতিক দিশত দিনক দিনে বৃদ্ধি হোৱাটো অসমীয়া মানুহৰ অনুৰাগ আৰু সচেতনতাৰে পৰিচায়ক। জাতীয় জীৱনৰ এই গৰাকী মহান পুৰুষৰ অসমীয়া ভাষা-সাহিত্যলৈ অৱদান আছিল বিশাল, বৈচিত্ৰ্য আৰু গভীৰ। গীত, পদ, নাট, ধৰ্মতত্ত্ব, সাহিত্যতত্ত্ব আদি সকলো বিভাগতে তেওঁৰ পৰিচয়। অসমৰ ধৰ্ম, সমাজ, সুকুমাৰ কলা আৰু সাহিত্যৰ ক্ষেত্ৰত মহাপুৰুষ শংকৰদেৱে যি দান দি গ'ল তাৰ তুলনা পাবলৈ নাই। একেধাৰে কবি, সমাজ সংস্কাৰক, ধৰ্ম প্ৰবৰ্তক, নাট্যকাৰ, সংগীতজ্ঞ আৰু পৰমভক্ত। বহু দেৱতাৰ ঠাইত এক দেৱতাৰ উপাসনা আৰু নানা ধৰ্মমতৰ সলনি বিশুদ্ধ ভাগৱতী ধৰ্ম প্ৰবৰ্তন কৰা। সংস্কৃত গ্ৰন্থ সমূহক বৈষ্ণৱ কৰণ কৰি জনসাধাৰণৰ ভাষাত ৰচনা কৰে আৰু আনকো এই কামত সংযুক্ত কৰায়। ধৰ্ম আৰু সাহিত্যৰ ক্ষেত্ৰত তেওঁ এক নৱজাগৰণৰ সূত্ৰপাত ঘটায়।

গৱেষণাৰ উদ্দেশ্য :

সাহিত্য সমাজৰ দাপোণ স্বৰূপ। ই সমাজৰ এখনক প্ৰতিনিধিত্ব কৰে। সাহিত্যৰ এক অংশ হিচাপে মধ্যযুগৰ সাহিত্যও ইয়াৰ বিপৰীত নহয়। ভাষা, সাহিত্য আৰু সংস্কৃতিৰ ভেটি শক্তিশালী কৰাত মধ্যযুগৰ সাহিত্যৰ অৱদানো লেখত ল'বলগীয়া। এই ক্ষেত্ৰত মধ্যযুগৰ সাহিত্যৰ অন্তৰ্গত শংকৰী যুগৰ সাহিত্যৰ উল্লেখনীয় অৱদান আছে। শংকৰদেৱে আধুনিক অসমীয়া ভাষা সাহিত্যলৈ উল্লেখযোগ্য অৱদান আগবঢ়াই গৈছে। আধুনিক

* সহকাৰী অধ্যাপক, শালবাৰী কলেজ

অসমীয়া সাহিত্যত শংকৰদেৱৰ কিমান অৱদান, কিমান জনপ্ৰিয়তা সেই বিষয়ে আমাৰ এই আলোচনাত দাঙি ধৰাৰ চেষ্টা কৰা হ'ব।

গৱেষণাৰ প্ৰয়োজনীয়তা :

অসমীয়া জাতিৰ দাপোণ স্বৰূপ মধ্যযুগৰ সাহিত্য অধ্যয়নৰ প্ৰয়োজনীয়তা অধিক। ভাষা, সাহিত্য আৰু সংস্কৃতিৰ পৰিপুষ্টিত মধ্যযুগৰ সাহিত্যৰ মূল্যও অপৰিসীম। আমাৰ গৱেষণাত মধ্যযুগৰ সাহিত্যৰ অন্তৰ্গত শংকৰীযুগৰ ভাষা, সাহিত্য আৰু সংস্কৃতিৰ বিষয়ে বৌদ্ধিক মহলক অৱগত কৰাৰ চেষ্টা কৰা হ'ব। সাহিত্যিক গুণৰ দিশেৰে মধ্যযুগৰ সাহিত্যত ভাষা, সাহিত্য আৰু সংস্কৃতিৰ বিকাশত বিদ্যায়তনিক দিশতো গুৰুত্বপূৰ্ণ। সেয়ে উক্ত বিষয়টো গৱেষণা কৰাৰ যথেষ্ট প্ৰাসংগিকতা আছে বুলি আমাৰ মনেৰে ভাবোঁ।

গৱেষণাৰ পদ্ধতি :

গৱেষণাৰ পদ্ধতি হিচাপে আমাৰ গৱেষণাত বৰ্ণনাত্মক আৰু বিশ্লেষণাত্মক দুয়োটা পদ্ধতিকে লোৱা হ'ব। উল্লেখিত বিষয়টো বৰ্ণনাত্মক পদ্ধতি আৰু বিশ্লেষণাত্মক পদ্ধতিৰে বিচাৰ কৰা হ'ব। সময় সাপেক্ষে ঐতিহাসিক পদ্ধতিৰ সহায়ত লোৱা হ'ব।

গৱেষণাৰ সমল :

গৱেষণাৰ সমল হিচাপে মুখ্য সমল আৰু গৌণ সমল দুয়োটাৰে সহায় লোৱা হ'ব। মুখ্য সমল হিচাপে কিছুমান আলোচনী, বাতৰি কাকত আদি সংগ্ৰহ কৰা হৈছে।

গৱেষণাৰ সীমাবদ্ধতা :

অসমীয়া মধ্যযুগৰ সাহিত্যৰ পৰিসৰ বৰ ব্যাপক। আমাৰ এই ক্ষুদ্ৰ গৱেষণাত ইয়াৰ সকলো দিশ আলোচনা কৰা সম্ভৱ নহয়। গৱেষণা পত্ৰ সীমাবদ্ধতালৈ লক্ষ্য ৰাখি আমাৰ গৱেষণাত অন্যান্য দিশ আলোচনাৰ পৰা বিৰত থাকি মধ্যযুগৰ সাহিত্যৰ অন্তৰ্গত শংকৰদেৱৰ আধুনিক অসমীয়া সাহিত্যলৈ অৱদান শীৰ্ষক কেন্দ্ৰ কৰি এই গৱেষণা কৰা হ'ব।

শংকৰদেৱ আৰু অসমীয়া সাহিত্য :

আধুনিক অসমীয়া সাহিত্যই শংকৰদেৱক কি ধৰণেৰে গ্ৰহণ কৰিছে বা আদৰণি জনাইছে সেই কথা নিৰ্ণয় কৰিবলৈ আধুনিক অসমীয়া সাহিত্য আৰু ধৰ্মৰ সম্পৰ্কটো বিচাৰ কৰা দৰকাৰ। পশ্চিমীয়া শিক্ষা সংস্কৃতিৰে শিক্ষিত অসমীয়া লোকক আমাৰ নিজৰ পৰম্পৰাৰ কাষ চপাই দিলে আৰু অসমীয়া সাহিত্য সংস্কৃতিৰ পৰম্পৰাক শংকৰদেৱে অতি গভীৰভাবে প্ৰভাৱিত কৰি ৰাখিছে। শংকৰদেৱে অসমীয়া ভাষা সাহিত্য সংস্কৃতিৰ বৰভেটি বান্ধি থৈ গৈছে, কিন্তু তেওঁৰ গীত-মাত, নৃত্য, নাটক, ভাওনা, নামঘৰ, কীৰ্তন, দশম ভাগৱত আদি সকলোৰে কেন্দ্ৰত আছে ঈশ্বৰ বিশ্বাস আৰু আধুনিক মানুহে ঈশ্বৰৰ ওপৰত বিশ্বাস বহুখিনি হেৰুৱাই পেলালে। সেইবাবেই শংকৰদেৱৰ প্ৰভাৱ

পোনপটীয়াকৈ আধুনিক সাহিত্যত বিচাৰি উলিয়াবলৈ অসুবিধা হৈ পৰিছে। ধৰ্ম আৰু বিশ্বাস কথা থকা সাহিত্য আধুনিক সাহিত্য হ'ব নোৱাৰে। শংকৰদেৱৰ ঈশ্বৰ বিশ্বাসে আধুনিক অসমীয়া সাহিত্যত পোনপটীয়াকৈ ঠাই নেপালেও শংকৰদেৱৰ আধুনিক অসমীয়া সাহিত্যত অনুপস্থিত নহয়।

আধুনিক সাহিত্যও এক পৰম্পৰা আৰু এই সাহিত্য পৰম্পৰা শংকৰ-মাধৱৰ প্ৰভাৱৰ পৰা মুক্ত হ'ব পাৰে, কিন্তু অসমৰ জনজীৱনত শংকৰ-মাধৱৰ একশৰণ-নামধৰ্ম, সাহিত্য, সংগীত, নৃত্যকলা, ভাওনা আদিৰ ব্যাপক প্ৰভাৱ আছে আৰু সাহিত্যই যদি জনজীৱনৰ পৰা সমল সংগ্ৰহ কৰে, আধুনিক অসমীয়া সাহিত্যতো শংকৰদেৱৰ উপস্থিতি।

‘নৱবৈষ্ণৱ সাহিত্য বিস্তাৰ : সত্ৰীয়া সমাজৰ সাহিত্য’ শীৰ্ষক এক অধ্যায়ত মহেশ্বৰ নেওগদেৱে উল্লেখ কৰিছে: ‘শংকৰদেৱ-মাধৱদেৱ বৈষ্ণৱ ধৰ্ম আৰু সংস্কৃতিয়ে কামৰূপ-অসম ছানি পেলোৱা আৰু সত্ৰ অনুষ্ঠানৰ সংখ্যা বৃদ্ধি পোৱাৰ লগে লগে তেওঁলোকৰ সাহিত্যিক আদৰ্শত অসমৰ সাহিত্যক্ষেত্ৰ প্ৰায় সম্পূৰ্ণৰূপে দখল কৰি পেলালে। শংকৰদেৱৰ সম্প্ৰদায়বোৰৰ পৰা ফাট খাই ওলোৱা ব্ৰহ্ম সংহতি, পুৰুষ সংহতি, নিকা সংহতি আৰু কাল সংহতিৰ মহন্ত সকলৰ মাজত নাট, গীত আৰু ঘোষা ৰচনা কৰাটো সত্ৰীয়া গুৰু সকলৰ অৱশ্য কৰ্তব্যৰূপে পৰিগণিত হৈছিল। এই প্ৰথাই অগণন নাট, গীত আৰু ঘোষাৰ উদ্ভৱস্থল হৈ পৰিছিল। নৱবৈষ্ণৱ সাহিত্যৰ বিস্তাৰৰ সময়ত তাৰ ওপৰৰি সুফল স্বৰূপে চৰিত সাহিত্যৰ উদ্ভৱ হয়, কিন্তু চৰিত সত্ৰীয়া মহলৰ মাজিত শৈলীত গদ্যত লিখিত হ'বলৈ ধৰাত এক অপূৰ্ব গদ্য সাহিত্যৰ জন্ম হয়। এই গদ্য ভট্টদেৱৰ গদ্যতকৈ অধিকভাৱে কথিত ভাষাৰ ওচৰ চাপি আহে।’’^{১৬} মহেশ্বৰ নেওগে দেখুৱাইছে যে সত্ৰীয়া সমাজৰ সাহিত্য কোনো বিশ্বাসৰ সংকটত পৰা নাছিল, কিন্তু আধুনিক সাহিত্য বিশ্বাসৰ সংকটত পৰিল।

পশ্চিমীয়া শিক্ষা সংস্কৃতিয়ে আধুনিক অসমীয়া সাহিত্যলৈ বিশ্বাভিমুখী কৰিলে। ইউৰোপীয় সাহিত্যলৈ অহা সংকটে অসমীয়া সাহিত্যকো প্ৰভাৱিত কৰিছিল। প্ৰথম মহাসমৰৰ পিছৰ পৰাই সাহিত্য জগতলৈ অভূতপূৰ্ব দ্ৰুততাৰে পৰিৱৰ্তন আহিছিল। মহাসমৰে কঢ়িয়াই অনা দুৰ্বোৰ্গে পশ্চিমীয়া সভ্যতাৰ ওপৰত মানুহৰ বিশ্বাস ধ্বংস কৰিলে। পৰম্পৰাগত সাহিত্য শিল্পৰ ৰূপত যুদ্ধোত্তৰ যুগৰ কৰ্কশ আৰু নিৰ্মম বাস্তৱক প্ৰকাশ কৰিব পৰা হ'বনে নহয় তাকলৈ শিল্পী-সাহিত্যিক সকলৰ মাজত সন্দেহ উপজিছিল।

আধুনিকতাবাদী সাহিত্যৰ কথা ক'বলৈ হ'লে অসম প্ৰসংগতো ব্যক্তিৰ নিঃসংগতা, বিষয়তা আদিৰ কথা ক'ব লাগিব। আধুনিকতাবাদী লেখক সকলে মন কৰিছিল যে গোষ্ঠী অথবা সামূহিক জীৱন প্ৰবাহ নিস্তৰংগ হৈছে আৰু মানুহৰ পৰা মানুহ বিচ্ছিন্ন হৈ পৰিছে। মানুহৰ প্ৰতি মানুহৰ প্ৰেম, ভালপোৱা, বিশ্বাস আৰু আগ্ৰহৰ ঠাই অনাগ্ৰহ আৰু

অনীহা বৃদ্ধি পাইছে। যুদ্ধোত্তৰ যুগৰ মানুহে সকলো সামাজিক আচাৰ অনুষ্ঠান, মূল্যবোধ আৰু কৰ্তব্যৰ প্ৰতি সন্দেহান হৈ পৰিছিল। বিভিন্ন ক্ষেত্ৰত মানুহৰ অধ্যয়ন আৰু জ্ঞানে নৈতিক অস্বস্তিক শক্তিশালী আৰু সুদৃঢ় কৰিছিল। পশ্চিমীয়া দেশৰ মানুহৰ আচৰণ বিধিৰ শুদ্ধতা প্ৰশ্নৰ সন্মুখীন হ'ল। আধুনিক ইংৰাজী সাহিত্যত ফুটি উঠা এই প্ৰণয়তাবোৰে আধুনিক অসমীয়া সাহিত্যক প্ৰভাৱিত কৰিলে আৰু এই নতুন সাহিত্য ঈশ্বৰ আৰু ধৰ্মীয় বিশ্বাসৰ পৰা মুক্ত হৈ ব'ল।

আধুনিক অসমীয়া সাহিত্যত শংকৰদেৱৰ অৱদান :

আধুনিক অসমীয়া কবিতা, গল্প, উপন্যাস, নাটক আদিৰ বাবে শংকৰদেৱ আৰু তেওঁৰ সাহিত্যকৃতি আদৰ্শ অথবা অনুপ্ৰেৰণাৰ উৎস নহ'লেও বিশ্বাস অসমীয়া জনজীৱনত শংকৰদেৱৰ অসমীয়া আৰু সাংস্কৃতিক প্ৰভাৱত থাকিল। অসমৰ গাৰে-ভূঞা নামঘৰ সমূহেই সংস্কৃতি চৰ্চাৰ কেন্দ্ৰ হৈ আছিল আৰু সেই সংস্কৃতি আছিল মূলতে শংকৰদেৱে দি যোৱা সংস্কৃতি।

আধুনিক অসমীয়া সাহিত্যৰ সমালোচনাৰ সূঁতিটো কিন্তু শংকৰদেৱ আৰু বৈষ্ণৱকেন্দ্ৰিক। সৃজনীশীল সাহিত্যৰ ভঁৰালটো টনকিয়াল হ'লেহে সমালোচনাই গা কৰি উঠিব পাৰে। আধুনিক অসমীয়া সাহিত্য চালুকীয়া অৱস্থাত থাকোতে স্বাভাৱিকতে আধুনিক অসমীয়া সাহিত্যত শংকৰদেৱ আৰু বৈষ্ণৱ যুগৰ সাহিত্য অধ্যয়ন, মূল্যায়ন আদিয়ে অসমীয়া জাতিক গৌৰৱান্বিত কৰিলে। এই ক্ষেত্ৰত আমি পোনতে সাহিত্যৰথী লক্ষ্মীনাথ বেজবৰুৱাৰ নাম ল'ব পাৰোঁ। বেজবৰুৱাই শংকৰদেৱ-মাধৱদেৱক নামঘৰৰ পৰা জগতসভালৈ উলিয়াই আনিলে। শংকৰদেৱ আৰু মাধৱদেৱৰ জীৱন আৰু কৃতি বিষয়ে বেজবৰুৱাই বিপুল পৰিমাণৰ ৰচনা আধুনিক অসমীয়া সাহিত্যক দি গৈছে। ইয়াৰ ভিতৰত ‘শ্ৰীশ্ৰীশংকৰদেৱ’, ‘মহাপুৰুষ শ্ৰীশংকৰদেৱ আৰু শ্ৰীমাধৱদেৱ’ বিশেষভাৱে উল্লেখযোগ্য। শংকৰদেৱে অসমীয়া জাতিক দি যোৱা ধৰ্ম, সাহিত্য, সংস্কৃতি আৰু মানৱতাবাদী চিন্তাই জাতিকটোক নামা সংকটৰ মাজেদি নিজৰ পৰিচয় ৰক্ষা কৰি পাব হৈ অহাত সহায় কৰিলে। আধুনিক অসমীয়া সাহিত্যত হোৱা শংকৰদেৱৰ অধ্যয়নে তেওঁৰ বহুমুখী প্ৰতিভাৰ বিভিন্ন দিশ পোহৰাই পেলাইছে। বেজবৰুৱাদেৱে সম্পাদনা কৰা ‘বাঁহী’ আলোচনীয়ে শংকৰদেৱ অধ্যয়নত বিশেষ ভূমিকা পালন কৰিছিল। শংকৰদেৱৰ সাহিত্য, সংস্কৃতি আৰু চিন্তাক বেজবৰুৱাই ৰাইজৰ মাজলৈ উলিয়াই অনাত ড° বাণীকান্ত কাকতি, কালিৰাম মেধি, কনকলাল বৰুৱা আদি প্ৰখ্যাত পণ্ডিতসকলে সহযোগিতা আগবঢ়াই গৈছে।

প্ৰখ্যাত পণ্ডিত সমালোচক ড° মহেশ্বৰ নেওগে ‘সংস্কৃতি সাহিত্যত শংকৰী প্ৰভাৱ’

নতুন দৃষ্টিকোণেৰে ৰাইজৰ আগত দাঙি ধৰিবৰ চেষ্টা কৰিছে। শংকৰদেৱৰ কৃতি আৰু কৃতিত্বৰ লিখক ড° শিৱনাথ বৰ্মন, কীৰ্ত্তন পুথিৰ ৰস বিচাৰৰ লিখক ড° হীৰেণ গৌহাইৰ দৰে পণ্ডিতে শংকৰদেৱৰ জীৱন আৰু কৃতিক নতুন পোহৰত চাবলৈ নতুন পুৰুষক অনুপ্রাণিত কৰিছে। একালত সত্ৰ আৰু নামঘৰ শংকৰদেৱৰ চৰ্চাৰ কেন্দ্ৰ আছিল যদিও কুৰি শতিকাৰ পৰা অসমৰ বিশ্ববিদ্যালয় সমূহতো শংকৰদেৱৰ বিষয়ে অধ্যয়ন আৰু গৱেষণা হৈ আছে। এই গৱেষণাৰ ফচল আধুনিক অসমীয়া সাহিত্যত সোমাইছে।

শংকৰদেৱৰ একশৰণ নামধৰ্মই আজিৰ নতুন পুৰুষক যি ধৰণে আকৰ্ষণ কৰিব লাগিছিল তেনেদৰে আকৰ্ষণ কৰা দেখা নাই, কিন্তু এই নতুন পুৰুষো শংকৰদেৱৰ মানৱতাবাদী চিন্তা আৰু তেওঁ দি যোৱা সংস্কৃতিৰ দ্বাৰা গভীৰভাৱে প্ৰভাৱিত হৈ আছে। বৰ্তমান শংকৰদেৱৰ চৰ্চাই এই দিশবোৰক আগচোতাললৈ আনিছে। পশ্চিমীয়া শিক্ষা সংস্কৃতিৰ পৰা অহা মানৱতাবাদী চিন্তাৰ বহু আগৰ পৰাই অসমৰ সমাজ জীৱনক শংকৰদেৱৰ মানৱতাবাদে প্ৰভাৱিত কৰি আহিছে। লোকাচাৰবাদী কেন্দ্ৰিকতাৰ মাজতো অসমৰ সমাজ জীৱনত মানৱতাবাদী অপৰিৱৰ্তনীয় সাৰ ভাগ এটা সদায় উপস্থিত আছেই। আধুনিক অসমীয়া সাহিত্যত সি বিভিন্ন ৰূপত প্ৰতিফলিত হৈ আছে।

পাদটীকা :

১. ড° মহেশ্বৰ নেওগ, অসমীয়া সাহিত্যৰ ৰূপৰেখা, পৃষ্ঠা- ১৫২
২. ড° নগেন শইকীয়া, সম্পাদনা, বনলতা, বেজবৰুৱা ৰচনাৱলী, দ্বিতীয় খণ্ড, পৃষ্ঠা ৫১, ৫৩
৩. ড° নগেন শইকীয়া, সম্পাদনা, মহেশ্বৰ নেওগৰ ৰচনাৱলী, সপ্তম খণ্ড, পৃষ্ঠা ৫৪৮

গ্ৰন্থপঞ্জী :

১. শৰ্মা ড° সতেন্দ্ৰ নাথ : অসমীয়া সাহিত্যৰ ইতিবৃত্ত, চতুৰ্থ প্ৰকাশ ১৯৫৬ ইং চন।
২. বৰুৱা, হেম : আধুনিক সাহিত্য, ১৯৫০ চন।
৩. নেওগ, মহেশ্বৰ : অসমীয়া সাহিত্যৰ ৰূপৰেখা, ডিব্ৰুগড় : বাণীমন্দিৰ ১৯৮৬ চন।
৪. নেওগ, মহেশ্বৰ : শ্ৰীশ্ৰী শংকৰদেৱ, গুৱাহাটী, চন্দ্ৰ প্ৰকাশ, ১৯৯৯ চন।
৫. গোস্বামী, যতীন্দ্ৰনাথ : অসমীয়া সাহিত্যৰ চমু বুৰঞ্জী, মণি-মাণিক প্ৰকাশ, পাণবজাৰ, গুৱাহাটী ১৯৯৪ চন।
৬. কটকী, প্ৰফুল্ল : সাহিত্য-সংজ্ঞা কোষ, জ্যোতি প্ৰকাশ, পাণবজাৰ, গুৱাহাটী, ২০০৫ চন।

শীৰ্ষক প্ৰবন্ধক লিখিছে শংকৰী ৰচনাৱলী অসমীয়া সাহিত্যৰ শিৰোভূষণস্বৰূপ। “শংকৰী গীতপদৰ আৰ্হিৰে পিছৰ যুগত অলেখ গীত মাত ৰচনা হৈছিল আৰু অসমৰ গাঁও-ভূঁই তাৰেই মুখৰ হৈ উঠিল।”^২ অসম গাঁও-ভূঁই শংকৰী সংস্কৃতি আৰু গীত মাতেৰে আজিও মুখৰ হৈ আছে বুলি কব পাৰি। জনজীৱনে শংকৰদেৱক আন্তৰিকতাৰে গ্ৰহণ কৰিছে।

ড° কাকতিৰ সমালোচনাৰ ভাষা আৰু উপমাই এই কথাকে প্ৰমাণ কৰে যে শংকৰদেৱক নামঘৰৰ চাৰিবেৰৰ মাজত আৱদ্ধ কৰি ৰাখিব নোৱাৰে। ড° মহেশ্বৰ নেওগৰ “শ্ৰীশ্ৰী শংকৰদেৱ গ্ৰন্থ”ৰ পৰা দুটামান উদাহৰণ দাঙি ধৰিব পাৰিঃ ‘গুণমালা বাৰস্কন্ধ ভাগৱতৰ’ পকেট এডিচন’ অৰ্থাৎ চোলাৰ মোনাত লৈ ফুৰিব পৰা তাৰ্ঙ্গৰণ। ইংৰাজ কবি হেৰিকেও কেতবোৰ আধ্যাত্মিক ভাৱৰ কবিতা ৰচনা কৰি সেইবোৰৰ নাম দিছিল Noble numbers। ড° কাকতিদেৱেও বৰগীতবোৰক Noble numbers বুলিছে।^৩ শংকৰদেৱক তেওঁৰ যুগত এটা ধৰ্মৰ প্ৰতিষ্ঠাপক বুলি স্বীকাৰ কৰা হৈছে। আধুনিক অসমীয়া সমালোচনা সাহিত্যই তেওঁক অসমীয়া জাতিৰ প্ৰধান সাংস্কৃতিক নেতা হিচাপে প্ৰতিষ্ঠা কৰিছে। এই প্ৰসংগত ড° নেওগৰ এটা উদ্ধৃতি দিব পাৰি ‘মহাপুৰুষ শংকৰদেৱৰ নামটো অসমীয়া সংস্কৃতিৰ নামৰ সমাৰ্থক। শংকৰদেৱে দেশত বিশেষকৈ এটা ধৰ্মপ্ৰচাৰ কৰিবৰ বাবে প্ৰয়াস কৰিছিল। কিন্তু সেই প্ৰয়াসৰ লগতে অসমৰ সমাজ, অসমৰ সংগীত, নৃত্য অভিনয় কলা আদিৰ-আপোনা আপুনি যেন এক সমন্বয় সাধিত হৈছিল। শংকৰদেৱৰ সাংস্কৃতিক দান আজি বিশেষকৈ অসমীয়া সাহিত্য, অসমীয়া ভাষা, অসমীয়া সংগীত, অসমীয়া নৃত্য, অসমীয়া অভিনয়- এই বিলাকতে পৰ্যবসিত হৈছে।’

আধুনিক অসমীয়া সাহিত্যই শংকৰদেৱক কিদৰে গ্ৰহণ কৰিছে সেই কথা কওঁতে মহাপুৰুষ গৰাকীৰ জীৱন ভিত্তিক উপন্যাসৰ কথা ক’ব লাগিব। চৈয়দ আব্দুল মালিকৰ ‘ধন্য নৰতুন ভাল’ আৰু ড° লক্ষ্মীনন্দন বৰাৰ ‘যাকেৰি নাইকে উপাম’ আদি উপন্যাসে শংকৰদেৱৰ জীৱন আৰু কৃতিৰ বিষয়ে আধুনিক মানুহৰ আৰু শিল্পী সাহিত্যিকৰ নতুন আগ্ৰহ আৰু কৌতূহল। আধুনিক যুগত বিদ্বৎ সমাজে আৰম্ভ কৰা শংকৰদেৱৰ অধ্যয়নৰ ফলস্বৰূপেই সৃষ্টিশীল লেখকেও শংকৰদেৱৰ জীৱন ভিত্তিক উপন্যাস লিখিবলৈ প্ৰেৰণা পাইছিল বুলি ক’ব পাৰি।

আধুনিক অসমীয়া সাহিত্যত শংকৰদেৱৰ জীৱন কৃতিক সামৰি হোৱা আলোচনাই গুৰুজনৰ কীৰ্ত্তন, গুণমালা, ভক্তিৰত্নাৰ আদি গ্ৰন্থক ইংৰাজী আৰু আন ভাৰতীয় ভাষালৈ অনুবাদ কৰিবলৈ পণ্ডিত সমালোচক আৰু কবি সাহিত্যিকক অনুপ্রাণিত কৰিছে।

সামৰণিঃ

সাম্প্ৰতিক কালৰ শিল্পী, সাহিত্যিক, বুদ্ধিজীৱী সকলে শংকৰদেৱৰ মহাপ্ৰতিভাক

মিচিং সংস্কৃতিত লোকবাদ্য

ডঃ কুশল টাইদ *

প্ৰস্তাৱনা :

অসমখন বিভিন্ন জনজাতিৰ বসতিভূমি। এই বিভিন্ন জাতি-জনজাতিৰ সু-সম্বন্ধয়ৰ মাজতে গঢ়ি উঠিছে অসমৰ সাংস্কৃতিক স্তম্ভ। অসমৰে এটা প্ৰধান মঙ্গোলীয় জনজাতি হৈছে মিচিংসকল। উজনি অসমৰ ব্ৰহ্মপুত্ৰকে আদি কৰি বহু নদী-উপনদীৰ পাৰৰ বিভিন্ন অঞ্চলত বসবাস কৰা মিচিংসকল মূলতঃ কৃষিজীৱি। সাধাৰণতে বাঁহ-বেত, খেৰেৰে নিৰ্মিত দহতৰপৰীয়া চাংঘৰত বসবাস কৰা মিচিংসকল নিজকে দঃঐঃপঃলৰ (চন্দ্ৰ-সূৰ্যৰ) সন্তানৰূপে পৰিচয় দিয়ে। আপেক্ষিকভাৱে তেওঁলোকৰ আৰ্থ-সামাজিক, শিক্ষা, ৰাজনৈতিক আদিৰ ক্ষেত্ৰত পিছপৰা যদিও কালক্ৰমত বৰ্তমানে বিভিন্ন দিশত জাতীয় চেতনাৰে আগবাঢ়ি যোৱা পৰিলক্ষিত হৈছে। তেওঁলোকৰ স্বকীয় বাবেবৰণীয়া ভাষা-সাহিত্য, কৃষ্টি-সংস্কৃতি আৰু ইতিহাসেৰে সমৃদ্ধ হৈ বৰ্তমান বৰ্ণাঢ্য অসমীয়া জাতি তথা ভাষা-সাহিত্য-সংস্কৃতিৰ শ্ৰীবৃদ্ধিত বিশেষভাৱে অৰিহণা যোগাই আহিছে।

তথ্য আৰু পদ্ধতি :

আমাৰ এই আলোচনাৰ বিষয়ৰ সৈতে সংশ্লিষ্ট তথ্যসমূহ বৈশিষ্ট্যগতভাৱে গৌণ। মিচিংসকলৰ পৰম্পৰাগত লোকবাদ্যসমূহৰ সৈতে সম্পৰ্কিত বিভিন্ন গ্ৰন্থ আৰু আলোচনীত প্ৰকাশ পোৱা প্ৰবন্ধ আদিৰ পৰা প্ৰয়োজনীয় তথ্যসমূহ আহৰণ কৰা হৈছে। সংগৃহীত প্ৰয়োজনীয় তথ্যসমূহৰ বিশ্লেষণ আৰু ব্যাখ্যাৰে এই গৱেষণা প্ৰত্নন সমৃদ্ধ কৰাৰ প্ৰয়াস কৰা হৈছে।

বিষয়মন্ত্ৰৰ বিশ্লেষণঃ

লোকসংস্কৃতিয়ে সামগ্ৰিকভাৱে এটা জাতিৰ সামাজিক ৰীতি-নীতি, পৰম্পৰাগত

* সহকাৰী অধ্যাপক, কামপুৰ মহাবিদ্যালয়, নগাঁও

ধৰ্মীয় বিশ্বাস, আচাৰ-ব্যৱহাৰ, উৎসৱ-পাৰ্বণ, সাধু কথা, প্ৰবাদ-প্ৰবচন, লোক-গীত, লোক-কথা, লোক-বিশ্বাস, লোকনৃত্য, লোক ক'লা, লোকবাদ্য, লোক-উৎসৱ আদি আটাইবোৰকে সামৰি লয়।^১ তদুপৰি লোকসংস্কৃতিয়ে জাতি এটাৰ সামগ্ৰিক চিন্তা-চেতনা, আচাৰ-ব্যৱহাৰ, ধ্যান-ধাৰণা, সামাজিক মনস্তত্ত্বৰ কথাৰে ঘাইকৈ প্ৰতিফলিত কৰে। সেয়ে লোকসংস্কৃতিক লোক জীৱনৰ সংবাদ বুলিব পাৰি। আন আন জনগোষ্ঠীৰ দৰে মিচিংসকলৰ লোকসংস্কৃতিও এক বৈচিত্ৰপূৰ্ণ। মিচিংসকলৰ কৃষ্টি-সংস্কৃতি আৰু ভাষা-সাহিত্যৰ বিচিত্ৰতাই অসমীয়া সাহিত্য-সংস্কৃতিৰ বহল ক্ষেত্ৰখনলৈ এগছি বস্তু আগবঢ়াইছে। মিচিং লোকসংস্কৃতি তেওঁলোকৰ স্বকীয় সমাজ ব্যৱস্থা, ৰীতি-নীতি, উৎসৱ-অনুষ্ঠান, সাজপাৰ, আ-অলংকাৰ, লোকগীত, ধৰ্মীয় পৰম্পৰা আদি স্বমহিমাৰে জিলিকি আছে। মিচিংসকলৰ লৌকিক আৰু ধৰ্মীয় আচাৰ-অনুষ্ঠান, লোকউৎসৱ সমূহত অতীজৰে পৰাই নৃত্য-গীতৰ প্ৰচলন হৈ আহিছে। সেই লোকগীত বা লোকনৃত্যৰ আনুসংগিক ৰূপে আমোদ প্ৰিয়। মিচিংসকলে বিভিন্ন লোকবাদ্য যন্ত্ৰৰ নিৰ্মাণ কৰি আনন্দোৎসৱত এইবোৰ বাদ্যযন্ত্ৰ ব্যৱহাৰ কৰি আহিছে। এই বাদ্যযন্ত্ৰবোৰো মিচিং লোকসংস্কৃতিৰ এক অবিচ্ছেদ্য অংগ। লোকসংস্কৃতিৰ অন্যতম অঙ্গ হৈছে উৎসৱ-অনুষ্ঠানবোৰ। যিহেতু উৎসৱ-অনুষ্ঠানৰ অধ্যয়ন অবিহনে লোকসংস্কৃতি অধ্যয়ন অসম্পূৰ্ণ। কাৰণ উৎসৱ-অনুষ্ঠানৰ সৈতে পৰম্পৰাগত পোছাক-পৰিচ্ছদ, গীত-মাত, বাদ্য-নৃত্য আদি জড়িত হৈ আছে। সিবোৰৰ অধ্যয়নেহে লোকসংস্কৃতি অধ্যয়নত অধিক সমল যোগান ধৰিব পাৰে। আমাৰ এই আলোচনাত মিচিংসকলৰ উৎসৱ-অনুষ্ঠান সমূহৰ গীত-মাতত ব্যৱহৃত পৰম্পৰাগত লোকবাদ্য বা বাদ্যযন্ত্ৰৰ বজোৱা কৌশল প্ৰাণালী তথা পৰিবেশন শৈলী, বাদ্য নিৰ্মাণ আৰু প্ৰায়োগিক বৈশিষ্ট্য সম্পৰ্কে সামগ্ৰিক মূল্যায়ন তথা আলোচনাৰ প্ৰয়াস কৰা হৈছে।

লোকবাদ্যসমূহৰ শ্ৰেণী বিভাজন :

মিচিংসকল বৰ আমোদ প্ৰিয়। অন্যান্য জনজাতিৰ দৰে তেওঁলোকেও বিবিধ বাদ্যযন্ত্ৰ সজ্জত কৰি লোকগীত চৰ্চা কৰা দেখা যায়। মিচিংসকলৰ লৌকিক আৰু ধৰ্মীয় আচাৰ-অনুষ্ঠানসমূহ অধ্যয়ন কৰি ইবিলাকৰ প্ৰাচীনতাৰ বিষয়ে অনুসন্ধান কৰিলে দেখা যায় যে তেওঁলোকে অতীজৰে পৰাই সহজ-সৰল আৰু ধৰ্ম প্ৰাণ প্ৰকৃতিৰ লোক। অতীত কালত পাহাৰত বসবাস কৰি থকা অৱস্থাৰ পৰাই তেওঁলোকৰ মিৱ দাগনাম (দেওপূজা) ৰ লগতে উৎসৱ-অনুষ্ঠানবোৰত এই লোকবাদ্যসমূহ জড়িত হৈ আহিছে। গতিকে পাহাৰত থকা দিনৰ পৰাই তেওঁলোকৰ উৎসৱ-অনুষ্ঠান আদিত নৃত্য-গীতৰো প্ৰচলন হৈ আহিছে। সেই নৃত্য-গীতৰ আনুষঙ্গিকৰূপে তেওঁলোকৰ মাজত নানান বাদ্যযন্ত্ৰৰ নিৰ্মাণ কৰি আনন্দোৎসৱ পালন কৰি আহিছে। ধাতৰ পদাৰ্থৰ সীমিত বাদ্যযন্ত্ৰৰ ব্যৱহাৰৰ বাহিৰেও কাঁহ, নল, খাগৰি, বনৰীয়া লাউ বাদ্যযন্ত্ৰ সাজি উলিয়ায়। মিচিংসকলৰ পৰম্পৰাগত

লোকবাদ্য সমূহৰ ভিতৰত ঢোল (দুমদুম), গগনা (শুংগাং) বাঁহী (মুৰুলী বা কুৰুলী), পেঁপা (পেম্পা), লাউ পেঁপা, কেঃকুং (বীণ), ঢুলুকি (ঢুলুকি), তাপুং, দেনদুন, দুম্পাগ, য়ক্চা, কঃৰেগ আদি লোকবাদ্য অন্যতম। ইয়াৰ নিৰ্মাণ আৰু বজোৱা পদ্ধতিৰো নিজস্ব বিশেষত্ব আছে। মিচিং গীত-নৃত্যত ব্যৱহাৰ কৰা লোকবাদ্যবোৰক তলত দিয়া ধৰণে শ্ৰেণী বিভাজন কৰি আলোচনা কৰিব পাৰি। যেনে—

১) সুষিৰ বা ফুদি বজোৱা বাদ্য :

ক) তাপুং-এজুগ তাপুং, পুমচুগ, কুৰুলী বা মুৰুলী, দীৰকি, তঃতগ্

খ) পিঃলিঃ (গছৰ পাত বা ধানৰ কেঁচা নৰাৰে তৈয়াৰ কৰা বাদ্য)

গ) জেগৰেং তাপুং বা পেম্পা (পেঁপা)

ঘ) শুংগাং বা গগনাং (গগনা)

ঙ) তক্ তগ্ বা কক্ তেৰ (টকা)

চ) বাইকঃৰীং বা কঃৰেগ (কাঠ বা বাঁহ এছটাত কাটি সৰু কাঠিৰে সৃষ্টি হোৱা শব্দ)

২) অৱনদ্ধ বা কোবাই বজোৱা বাদ্যযন্ত্ৰ :

ক) দুমদুম (ঢোল)

খ) দেনদুন (এবিধ ডাঙৰ বাঁহৰ চুঙা)

গ) দুম্পাগ

ঘ) দেনতুগ

ঙ) কেঃকুং (বীণ)

চ) ঢুলুকি (ঢুলুকি)

ছ) টোকাৰী বা দোতাৰা আদি।

৩) ঘনবাদ্য বাদ্যযন্ত্ৰ :

ক) য়ক্চা (তৰোৱাল)

খ) লুঃপি (তাল)

গ) লীনং-মাৰবাং বা বাৰবাং (বৰকাঁহ)।

লোকবাদ্যসমূহৰ নিৰ্মাণ পদ্ধতি, বজোৱা কৌশল তথা ইয়াৰ প্ৰায়োগিক বৈশিষ্ট্য : মিচিংসকলৰ লোকবাদ্য সমূহৰ নিৰ্মাণ কৌশল মন কৰিবলগীয়া। তেওঁলোকে নানান ধৰণৰ বস্তুক মূল আহিলা হিচাপে লৈ বাদ্য নিৰ্মাণ কৰা দেখা যায়। যেনে—

১। বনৰীয়া লাউ : এজুগ তাপুং, পুমচু তাপুং আদি।

২। বাঁহৰ বাদ্য : দীৰকি বা মুৰুলি, তুঃতগ্, দেনদুন, শুংগাং, পিঃলি, দেনতুগ্, তক্ তক্ আদি।

৩। ধাতৱ পদাৰ্থ : য়ক্চা, লুঃপি, লীনং-মাৰবাং আদি।

৪। জীৱ-জন্তুৰ ছালেৰে নিৰ্মিত বাদ্যযন্ত্ৰ : দুমদুম, ঢুলুকি, টোকাৰী বা দোতাৰা, পেম্পা (ম'হৰ শিঙেৰে সজা), কেঃকুং (বীণ) ইত্যাদি।

অসমীয়া ভাষাত দুমদুম (ঢোল), শুংগাং (গগনা), মুৰুলী বা বাংচি (বাঁহী), পেম্পা আদি কিছুমান বাদ্য বাদ্যযন্ত্ৰ অসমীয়া সমাজৰ বাদ্যযন্ত্ৰৰ সৈতে মিল থকাৰ উপৰিও য়ক্চা, লীনং-মাৰবাং আদি সঁজুলিবোৰৰ ধাৰণা আৰু নিৰ্মাণ পদ্ধতি অৱশ্যে সম্পূৰ্ণ সুকীয়া। মিচিংসকলৰ প্ৰধান লোকবাদ্য সমূহৰ প্ৰায়োগিক, বজোৱা পদ্ধতি আদি সম্পৰ্কে তলত আলোচনা কৰাৰ প্ৰয়াস কৰা হ'ল—

১. য়ক্চা : মিচিংসকলৰ মাজত মিবু বা পুৰোহিতৰ হাথিয়াৰ হিচাপে ব্যৱহাৰ কৰা এবিধ আহিলা হৈছে য়ক্চা। মূলতঃ ধৰ্মীয় অনুষ্ঠান আদিত ব্যৱহাৰ কৰা এই বাদ্যবিধ মিচিংসকলে নৃত্য-গীতৰ সময়তো ব্যৱহাৰ কৰে। য়ক্চা হৈছে তৰোৱাল জাতীয় এবিধ লোহাৰে নিৰ্মিত বাদ্য। গাঁৱৰ অপায়-অমংগলৰ সময়ত মিবু বা দেওধাই গৰাকীয়ে মংগল চাওঁতে এই বাদ্য বিধক প্ৰধান আহিলা হিচাপে ব্যৱহাৰ কৰে। য়ক্চাখনৰ নালৰ ফালে চাপেৰে অৰ্থাৎ লোহাৰ বা পিতলৰ খাৰু লগোৱা থাকে। মিবু দাগনাম অনুষ্ঠানত মিবুৱে গীতৰ তালে তালে চিৰিং চিৰিং বা চেৰেং চেৰেং এটি বিশেষ ধৰণৰ শব্দ সৃষ্টি হয়। তেওঁলোকৰ লোকবিশ্বাস অনুসৰি য়ক্চাখন লগত থাকিলে দেও-ভূতে লজ্জিৰ নোৱাৰে। তদুপৰি গাঁৱৰ মানুহৰ ঘৰত বেমাৰ-আজাৰ, অপায়-অমংগল হ'লে মিবুৱে মংগল চাই প্ৰতিকাৰৰ বিধান দিব পাৰে বুলি বিশ্বাস কৰে। সেয়ে এই বাদ্য বা আহিলাক মিচিংসকলে পৱিত্ৰ জ্ঞান কৰি আহিছে।
২. দুম্পাগ : মিচিং সমাজত কেঁচা আগলি বাঁহৰ পাব কাটি শুকাবলৈ দি এটা মুৰত গাঁঠি ৰাখি প্ৰায় এফুটমান দীঘলকৈ কাটি টান বাকলি গুচাই ভিতৰত থকা পাতল বগা অংশ ৰাখি তাৰে এঠাইত সৰুকৈ এটা আঁহ বীণাৰ তাঁৰৰ দৰে ঠেকা দি ৰাখে। ইয়াৰ পাচত খোলা মুৰটো প্ৰয়োজন অনুসৰি বাদকৰ পেটত সংযোগ কৰি আঁহ ডালৰ কোমল অংশত সৰু মাৰি এছটাৰে আঘাত কৰিলে 'দুম্পাগ' শব্দ সৃষ্টি হয়। মিচিংসকলে এই বাদ্যটোত হোৱা শব্দানুযায়ী বাদ্যটোৰ নাম দুম্পাগ ৰখা হৈছে। সাধাৰণতে এই বাদ্যবিধ গৰখীয়া ল'ৰাই পথাৰত আনন্দ কৰিব নিমিত্তে বজায়। এই দুম্পাগ বাদ্যটোৰেই হেনো মিচিংসকলে পাহাৰত থাকোতেই গুমৰাগ নৃত্য কৰিছিল। কিন্তু ভৈয়ামত আহি যেতিয়া তেওঁলোকৰ ঢোলৰ ছেও দুম্পাগতকৈয়ো সুন্দৰ ৰূপত ফুটাই তুলিব পাৰিলে তেতিয়াৰ পৰাই দুম্পাগ বাদ্যৰ গুৰুত্ব কিছু কমি আহিল।
৩. লীনং : মিচিংসকলে পুৰণি কাঁহ জাতীয় বাদ্যক লীনং বুলি কোৱা হয়। লীনং মিচিংসকলৰ মাজত অতি জনপ্ৰিয় লোকবাদ্য। এই বাদ্যবিধ লোহা জাতীয় ধাতু গলাই লৈ নিৰ্দিষ্ট আকাৰৰ পাত্ৰত বাকি দি ঠাণ্ডা কৰি নিৰ্মাণ কৰা হয়। লীনং দেখিবলৈ

ডেকা ল'ৰাই পথাৰ বা দলনিত ম'হ ৰাখোতে এই বাদ্যবিধ বজায়। অৱশ্যে বিহু, চঃমান, লুগাং চঃমান আদি উৎসৱ-অনুষ্ঠানতো পেম্পা বা জেগৰেং তাপুং বাদ্য বজোৱা দেখা যায়।

৯. কক্‌তেৰ বা টকা : এইবিধ বাদ্য মিচিংসকলৰ মাজত প্ৰচলিত অন্য এবিধ ঘনবাদ্য। কেঁচা পাতল জাতি বাঁহৰ দীঘল পাবেৰে বাদ্যবিধ সাজে। জাতি বাঁহৰ দীঘল পাবৰ (দুয়োফালে গাঁঠি থকা) এটা মূৰৰ কাষত বাঁহখিনি উঠা-নমা কৰিব পৰাকৈ চাঁচি দি এখন হাতেৰে এটা ফালে ধৰি আনটো ফালত আঘাত কৰি বজাব পাৰি। মিচিং ডেকা-গাভৰুৱে এইবাদ্য বিধক অইনিংতম গাই বিহু মাৰোতে ব্যৱহাৰ কৰে। হাত চাপৰিৰ উন্নত সংস্কৰণেই সাধাৰণতে টকা বা কক্‌তেৰ।
১০. মুৰুলী বা কুৰুলী : দীঘলীয়া সৰু বাঁহৰ ছটাকৈ সৰু ছিদ্ৰ কৰি সুৰ উলিওৱা বাদ্যযন্ত্ৰ হৈছে কুৰুলী বা বাঁহী। কুৰুলী পথালিকৈ আৰু থিয়কৈ ৰাখি ফুঁ দি বজোৱা হয়। ইয়াক ক্ৰমে কীতপং আৰু তুঃতক কুৰুলী বা মুৰুলী বোলে। কুৰুলীৰ ছটা বিন্দুৰ প্ৰতিটোতেই সুকীয়া সুকীয়া মাতৰ সৃষ্টি হয় আৰু এই বাঁহীৰ সুৰ বৰ কৰণ। অইনিংতম বা কাবানৰ সুৰকেই মিচিং ডেকাই বাঁহীত সুৰ তোলে। গাভৰুৱে গগনাৰে অন্তৰৰ বাৰ্তা যেনেকৈ দিয়ে, তেনেকৈ ডেকায়ো নিশা গাঁৱত ফুৰিবলৈ যাওঁতে বাঁহীৰ কৰণ সুৰ তুলি মৰমীজনীক আগমনৰ বাৰ্তা দিয়ে।
১১. দেনদুন : দেনদুন এবিধ টোকাৰী বা বীণ জাতীয় বাদ্য। অতীজত মিচিংসকলৰ মাজত টোকাৰী বা বীণৰ প্ৰচলন নাছিল। বীণ বা টোকাৰী মিচিংসকলৰ নিজা বস্তু নাছিল। অতীজত ডেকাসকলে দীঘল বাঁহৰ পৰা টোকাৰীৰ নিচিনাকৈ এবিধ বাদ্য তৈয়াৰ কৰি বজাইছিল, তাকে দেনদুন বুলিছিল। একেলগে ছয় সাতটা দেনদুন বজালে বহু দূৰৈ পৰা ইয়াৰ শব্দ শুনিবলৈ পোৱা যায়। মিচিংসকলে বিশেষকৈ শৰৎ কালৰ (আমৰাগ) জোনাক নিশা লতা চঃমান অনুষ্ঠানত দেনদুন বজাই ৰং বহুইচ কৰে।
১২. বাৰবাং বা মাৰবাং : মাৰবাং বাদ্যৰ আকৃতি লীনং বাদ্যতকৈ কিছু সৰু। ইয়াৰ পিঠিফাল সমান। মাৰবাং দেখাত কাঁহীৰ দৰে। এই দেওঘণ্টা নামৰ বাদ্যযন্ত্ৰটিক ৰছীৰে বিন্ধা কৰি ওলমাই এডাল মাৰিৰে কোবায়। মিচিংসকলে এই বাদ্যবিধকো মাংগলিক সামগ্ৰী বুলি গণ্য কৰে। লীনঙৰ দৰে মাৰবাং নিৰ্মাণ কৌশল একেই। জনশ্ৰুতি অনুসৰি এইবাদ্যবিধ মিচিংসকলে তিব্বত, ব্ৰহ্মদেশ আদিৰ পৰা সংগ্ৰহ কৰিছিল বুলি জনা যায়। মিচিংসকলে দলগতভাৱে আলি-আঃয়ে-লুগাং, উৰম পচুম, কুঃচাক আদি অনুষ্ঠানৰ নৃত্যত ঢোল-তালৰ সৈতে এই বাদ্যবিধো বজোৱা হয়।
১৩. পুঃই বা কেঃকু : পুঃই বা কেঃকু বেহেলা আৰু তানপুৰাৰ আৰ্হিৰে নিৰ্মাণ কৰা হয়।

অতীজৰে পৰা প্ৰচলিত হৈ অহা এইবিধ অৱনদ্ধবাদ্য। নাৰিকলৰ কোৰোকা, কাঠ বা কাঁহৰ চুঙা, শুকান লাউৰ খোলাত গুঁইছাল দি এৰী সূতাৰে গুঁইছাল টুকুৰাৰ মাজ ভাগত কিছু বিন্ধা কৰি ৰছীডাল টানকৈ সিটো মূৰৰ এডাল পথালি মাৰিত বান্ধি দিয়া হয়। মাৰিডাল প্ৰয়োজন অনুসৰি টানি ঢিলা কৰিব পৰাকৈ ৰাখে। ধেনু আকৃতিৰ এছটা বাঁহত ঘোঁৰাৰ নেজৰ চুলি বা বেতৰ ৰছী টানকৈ বান্ধি গুঁইছালৰ ওপৰ অংশত ঘৰ্মা মাৰিৰে কেঃকু কেঃকু শব্দৰ সৃষ্টি হয়। এই বাদ্যবিধ আদহীয়া মিচিং লোকে বন্ধু-বান্ধুৱৰ সৈতে আজৰি সময়ত বজায়।

১৪. কঃৰেগ : কঃৰেগ বাদ্যৰ দীৰ্ঘ দুই বা আঢ়ৈ ফুট আৰু প্ৰায় এক-ডেৰ ইঞ্চি বহল। পুৰঠ টান হোৱা চেউৱা কাঠেৰে জখলাৰ দৰে খাপ কাটি কাঠ টুকুৰীৰ দুই মূৰে হাতেৰে ধৰিব পৰাকৈ কিছু অংশ ৰাখি এই বাদ্যবিধ সজা হয়। খাপ খাপকৈ খলপা কৰি কটা কাঠ টুকুৰাত গাহৰিৰ দাঁত বা অন্য জন্তুৰ দাঁতেৰে ঠেলি ঠেলি শব্দ উলিওৱা হয়। মিচিং ভকতসকলে নাম-প্ৰসংগ কৰোঁতে বাদ্যবিধ বজোৱা দেখা যায়। এইবিধ বাদ্য গীতৰ তাল-মান ৰক্ষাৰ বাবে সংগত কৰা হয়।
১৫. দুম্পে : এই বাদ্যবিধ এবিধ জোপোহা গছৰ পাতৰ পৰা বিশেষ পদ্ধতিৰে মেৰিয়াই মুখেৰে ফুঁ দি শব্দ উলিওৱা হয়। তদুপৰি এই বাদ্যবিধ কোনো কোনো অঞ্চলত দুৰবুম অৰ্থাৎ নল আৰু চাপাক অৰ্থাৎ টঙা-তৃণ জাতীয় গছৰ পৰা সাজি উলিয়ায়। অতীতত এই দুম্পে বাদ্যৰে পেঁ পেঁ শব্দ আৰু মাত সৃষ্টি কৰি সাধাৰণতে মিচিং চিকাৰীসকলে অৰণ্যত সুগৰী পছ চিকাৰ কৰিছিল। উল্লেখ্য যে এই বাদ্যটোৰ সুৰৰ সৈতে সুগৰী পছৰ মাত প্ৰায় একে। সেই বাবে বাদ্যটোৰ শব্দ শুনাৰ লগে লগে পছবোৰে চিঞৰি দিয়ে আৰু চিকাৰীয়ে অৰণ্যত সুগৰী পছ থকাৰ উমান লাভ কৰে। আজিকালি মিচিং ডেকা-গাভৰুৱে এই দুম্পে বাদ্যৰে কাবান, অইনিংতমৰ সুৰত বজোৱা দেখা যায়।
১৬. দেনতুগ : দেনতুগ বাঁহেৰে নিৰ্মাণ কৰা এবিধ লঘু তত বাদ্য। এটুকুৰা পাবদীৰ্ঘ শকত জাতি বাঁহ (দুই মূৰে গাঁঠি থকা) কাটি এটা ফাল প্ৰায় এক-ডেৰ ইঞ্চি বহলকৈ ৰাখি ওপৰৰ ফালে বাকলি গুচাই লৈ বাকলি গুচোৱা ফালটোৰ দুয়োকাষে দুডাল ৰছীৰ দৰে আঁহ উলিয়াই দুয়োটা মূৰত গোটা মাৰি সুমুৱাই টান কৰিব পৰাকৈ সাজি লোৱা হয়। তাৰ পাছত বাকলি গুচোৱা অংশৰ মাজ ভাগত প্ৰায় এক বৰ্গ ইঞ্চি জোখত এটা ফুটা কৰি এছটা চেপেটা কাঁহ ফুটাটোৰ জোখত দুডাল তাঁত সদৃশ ৰছীৰে বান্ধি লৈ মাৰিৰে কোৱালে এক সুন্দৰ শব্দৰ সৃষ্টি হয়। মিচিং ডেকাই এই দেনতুগ বজাই ঘৰে ঘৰে অইনিংতম, কাবান আদি গীত গাই নাচে।

সামৰণি :

ওপৰত উল্লেখ কৰা মিচিং লোকবাদ্যবোৰৰ উচ্চাংশ সংগীতত সঙ্গত কৰিবৰ কাৰণে উপযুক্ত হোৱা যেন নালাগিলেও সেইবোৰ যে সৰল মিচিং লোকশিল্পীসকলৰ আপুৰুগীয়া সম্পদ তাক অস্বীকাৰ কৰিব নোৱাৰি। অৱশ্যে সেইবিলাকৰ লোকবাদ্য যন্ত্ৰৰ বহুখিনি আজিৰ মিচিং সমাজত প্ৰচলন হৈ থকা নাই। কাৰণ আধুনিক সমাজৰ ৰং চঙীয়া ঢঙত লোকবাদ্যবোৰৰ ব্যৱহাৰ দিনে দিনে নোহোৱাৰ উপক্ৰম ঘটিছে। বৰ্তমান মিচিং যুৱক-যুৱতীসকলৰ মাজত আধুনিক বাদ্যযন্ত্ৰসমূহে সমাদৰ লাভ কৰা দেখা গৈছে। বিভিন্ন প্ৰান্তত হাৰমনিয়াম, তবলাৰ লগতে আধুনিক যুগৰ বিভিন্ন বাদ্যযন্ত্ৰ সমূহ ব্যৱহাৰ কৰা দেখা যায়।

মিচিংসকলৰ লোকবাদ্যৰ বিষয়ে আমাৰ এই গৱেষণা পত্ৰত যুগুতোৱা প্ৰবন্ধই অৱশ্যে যথোপযুক্ত নহয়। সাম্প্ৰতিক সময়ত মিচিংসকলৰ লোকবাদ্য সমূহৰ বিস্তৃত ক্ষেত্ৰখনৰ বিষয়ে গ্ৰন্থ-আলোচনীত সচেতন লেখকে লেখা-মেলা কৰিছে যদিও এইবোৰৰ আৰু অধিক বৈজ্ঞানিক দৃষ্টিভংগীৰে, গৱেষণাধৰ্মী পৰীক্ষা-নিৰীক্ষাৰ যথেষ্ট প্ৰয়োজনীয়তা আছে। লোকবাদ্য সমূহৰ সুপৰিবেশন আৰু সংৰক্ষণৰ ক্ষেত্ৰত মিচিং সাংস্কৃতিক গোষ্ঠী আৰু চৰকাৰেখনেও কিছু গুৰুত্ব প্ৰদান কৰিব পাৰে। ক্ৰমান্বয়ে হেৰাই যাব খোজা এই আপুৰুগীয়া লোকবাদ্যসমূহৰ অনুসন্ধানমূলক কাৰ্যত নৱপ্ৰজন্মই আৰু অধিক আগবঢ়া উচিত। অন্যথা মিচিং লোকবাদ্যসমূহ এদিন কালৰ বুকুৰ পৰা হেৰাই যাব।

পাদটীকা:

১. চেতীয়া, উমেশ : অসমৰ লোক-সংস্কৃতিৰ ৰূপৰেখা, পৃষ্ঠা ১
২. কাগয়ুঙ, ভৃগুমুণি (সম্পাঃ) : মিচিং সংস্কৃতিৰ আলোচ্য, পৃষ্ঠা ২১৮

প্ৰসংগ পুথি :

১. কাগয়ুঙ, ভৃগুমুণি (সম্পাঃ) : মিচিং সংস্কৃতিৰ আলোচ্য, লয়াৰ্ছ বুকষ্টল, গুৱাহাটী, ১৯৮৯।
২. কুলি, জৱাহৰ জ্যোতি : মিচিং সংস্কৃতি, কৌস্তভ প্ৰকাশন, ডিব্ৰুগড়, ২০০৩।
৩. চেতীয়া, উমেশ : অসমৰ লোকসংস্কৃতি ৰূপৰেখা, কিৰণ প্ৰকাশন, ধেমাজি, ২০০৮।
৪. বৰুৱা, পৰন কুমাৰ (সম্পাঃ) : ভৃগুমুণি কাগয়ুঙৰ মিচিং জনজীৱনঃ চিন্তা বিচিত্ৰা, অসম অনুসূচিত জাতি আৰু জনজাতি গৱেষণা প্ৰতিষ্ঠান, গুৱাহাটী, ২০০২।
৫. তালুকদাৰ, ধ্ৰুবকুমাৰ : অসমৰ বিভিন্ন জনগোষ্ঠীৰ লোক-উৎসৱ, বনলতা, গুৱাহাটী, ২০০৮।

৬. পাদুন, নাহেদ্র : মিচিং সংস্কৃতিৰ পটভূমি, মিচিং আগম কীবাং, ধেমাজি, ২০১৭।
৭. শেখ, গনেশ : মিচিং জনসংস্কৃতিৰ আঁহে আঁহে, ধেমাজি বুক ষ্টল, ধেমাজি, ২০০৮।
৮. দলে, বসন্ত কুমাৰ : মিচিং সমাজ-সংস্কৃতিৰ সমীক্ষা, চন্দ্ৰ প্ৰকাশ, গুৱাহাটী, ২০০৮।
৯. বৰদলৈ, ৰজনীকান্ত : মিচিং সংস্কৃতিত লোকবাদ্য, অসমীয়া প্ৰতিদিন শনিবৰীয়া এনাৰ্জীত প্ৰকাশিত, ২০০৮।
১০. শৰ্মা, নবীন চন্দ্ৰ, চক্ৰৱৰ্তী, মুকুল আৰু চহৰীয়া, কনক চন্দ্ৰ (সম্পাঃ) : অসমৰ সংস্কৃতি সমীক্ষা, গুৱাহাটী বিশ্ববিদ্যালয়ৰ অসমীয়া বিভাগৰ সোণালী জয়ন্তী প্ৰকাশন, চন্দ্ৰ প্ৰকাশ, গুৱাহাটী, ২০০০।

সংবাদ দাতা:

১. মুলানাথ টাইদ, (৪০), শিল্পী তথা সমাজকৰ্মী, মাজবৰ্ষামুখ গাঁও, লখিমপুৰ।
২. লালা পায়ং (৪২), ঢুলীয়া, চল্লিচুক গাঁও, যুগাসূতি, লখিমপুৰ।

A Philosophical Study of Srimanta Sankardeva's Neo-Vaishnavism

Bibha Talukdar*

1. Introduction:

Srimanta Sankardeva (1449- 1569) was a man of abundant qualities as a nation builder. He was not only a pioneer of Vaishnavism but also equally well versed in the sphere of arts, culture and literature. His versatile activities in the field of philosophy and religion attract many people. But the people of this land were curled in the wreaths of Tantricism, illiteracy, caste discrimination, socio-political segregation and conflicts. The differences regarding faith, culture, society among people were very difficult to build a greater integrated nation. Sankardeva wanted to enrich the people of Assam socially, culturally, morally and spiritually through his Bhakti movement. The scenario of Assam was very unpleasant condition before Vaisnavite period. The spirituality of religion was not high standard and socio-political fighting situation give the worsened condition of the people. Such type of low ebb condition of society create hamper to build a strong future nation. The vision of greater Assam was unclear vision. But Sankardeva's new-vaishnavism movement give a new life to the Assamese people. The devotees of Lord Vishnu are called Vaishnavism.

2. Objective:

The main objective of this paper was—

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- i. To focus the role of Sankardeva's neo-vaishnavism in reconstruction the Assamese people.
- ii. This paper also focuses the condition of Assam before and after Sankardeva.

3. Methodology:

The study of the role of Sankardeva's neo-Vaishnavism was based on normative methods. Again, here, mainly adopts analytical and descriptive methods. The role of his Vaishnavism in construction of society and other require information's are collected from secondary sources like books, research journals, internet etc. In such case the method applied was empirical.

4. Finding and Discussion:

Assam is situated in Brahmaputra valley and in this land live both Aryan and Non-Aryan. So, the people in this land were having diversity in its faith and spirituality. Vaishnavism is both Trantic and Puranic. Mass people could not involve themselves directly in way of the major three religious believe — Saktism, Saivism and Vaishnavism, without the intermediary service of Brahmin priests. The worship of Shiva was the main cult in religion but the change of time the interest of worshipping shiva was surrounded in Tantric practices. The Shakti worship was an inhumane condition. The Shakti worshipis seen in the Kamakhya temple in the Nilachal, Kamakhya of Hatimura and Tameswari. In these worship offered live of animals in front of the deity Sir Edward gait describe clearly about the practice of human sacrifice in Temreswari temple. A Bhagi was a man selected to sacrifice to the God, who was given free access to have sexual contentment with any female of the society. The Bhagi and the practice of the Devdasi were the patriarchal approaches to consider women as objects for male.

The ordinary ignorant people could not derive the pleasure in religious participation. Sankardeva in his new creed of Neo-vaishnavism introduced in the early decades of the 16th century. He facilitated directly

participation in worshipping and religious festivities. So, Neo-vaishnavism arose for the purity the mind of people in Hinduism. The forces of Aryan civilization seem to have been spent up in Assam. There arose bloody sacrifice in religion from which even human beings were not escape. In this regard especially Bhogis were voluntarily victims.

The Vajrayan which is the system of latter Buddhism was also related with rituals and sorcery. In this respect, Vajrayan was against religion and morality. There was a complete distraction of morality in society. The religion was avoided of purity and spirituality in actual sense. Again, caste-system were vehemently rooted that it was the foundation of society. The Brahmin priest would secure king's sympathy and they manage themselves for high power in their position, so that they did everything in the society. All people in the Ahom kingdom were required to follow caste system and do everything according to their caste. The people who goes against the rules will punish by the Ahom king and were rejected by their own people.

In such situation it was very difficult for Sankardeva to stand against such an order of things and against priest craft. Many people were uneducated at that time and a few are literate and as a result, conflict arises between literate few and illiterate many. At that time Brahmin's takes an important place in prohibiting the lower strata from studying the religious texts. Thus, Brahmans are most nearer or close to religion and they take important rights over religion. This type of differences exaggerated in political between various tribes.

The neo-vaishnavic movement did not have a smooth sailing history in Assam. A part of Brahmins frequently opposed Sankardeva's activities related to the Neo-vaishnavism also due to the hostility of the Ahom king towards his creed, he faces many problems. He shifted to patbausi and lastly spent his life in Cooch Bihar. Here he met Koch king Naranarayana and got favour of the king. As a result, Neo-vaishnavism become the most popular religion of the entire valley.

Sankardeva's philosophy was influenced by Vedanta philosophy. There is a close relation between philosophy and religion in Vedanta. But regarding the path in receiving God, Sankardeva give importance in the path of Bhakti. The Advaitic Sankaracharya believed in Ahang Brahmami, but Sankardeva say only 'Brahmami' Again, Sankardeva relied mostly on the 'Bhagavata' and the 'Bhagavata-Gita'. Thus, Sankardeva's religion is based on the 'Bhagavata-Purana'.

A strictly monotheistic religion, the only form of worship prescribed by this religion is uttering the name of God, who is worshiped in the form of Krishna. According to Bhagavata-Purana God is the ultimate reality known as Brahman, paratmatam. For Sankardeva's Brahman is the material and efficient cause in this universe. Sankardeva writes,

"Tumisatya brahma tomarprokaxa
jogotetoananta
Jogototmatrotumiheprokaxa
antorjamivogobonto"¹ 157

Krishna in his message to the woman of Vraja says, "I create myself out of myself. I preserve pure and dissolve myself through the agency of my own maya. I am absolutely pure (paramavisuddha), indeterminate (nirguna) atman, having consciousness as my essence (jnana-rupa). The world exists in me but I transcend this world (jagatavyatireka)".² 157

Narayana is sometimes used synonymously with Vishnu, the gods Vishnu, Brahma and Shiva are considered of lower divinity.³

Sankardeva postulated God as an impersonal super entity being the creator, sustainer and destroyer of the universe. In Sankardeva's philosophy three concepts of God are seen — the absolute (Brahman), the perfect creator, sustainer and destroyer. One as a God who can be intimate and become source of inspiration and courage. Sankardeva described god more or less in human form.

"Xomasto kashthote ogni asonto biyapi

Ghorisana bine tangkone dekhe kodapi
 Xehimote asa Krishna xoware hiyat
 Bhokoti bihin ekoutonuhike xakhyat"⁴

In Sankardeva's philosophy believed the theory of incarnation. Krishna is the greatest incarnate of all and he is the sagunasakar aspect of Brahman. Brahman Himself takes the form of incarnation to establish religion and protect the whole universe. So, there is no difference between Krishna and Brahman. God is the Brahmarupinitya narayana. He is the cause of all incarnations.

"Prathamepranamo Braharupi Sanatana
 Sarbaavatarakaran Narayan"⁵

Here, it is clear that Krishna is the ultimate Being and he is the creator of the universe. He is known as Narayana, Vasudeva, Vishnu etc.

Maya plays an important role in Sankardeva's philosophy. This Maya is inseparable power of god and is responsible for this manifold universe of world appearance. All living beings are but parts of god.

"Otharajibanadhanjoubonjaya
 Bhokotibirodhi sob maya
 Krishna kingkara ohisankaravana
 Bine Hari bhakti taraninahi ana"⁶

According to Sankardeva, life, wealth all are only impermanent and maya. Pray to Krishna's (bhakti) is the only way for eliminating maya. Maya is the power of God who conceals object and exposes non-object in its place. Maya conceals God and holds the objects of attachment unto individual self. God is both the transcendental and the immanent reality. Due to maya, changes appear as real and the world and the individual souls appear as real.

So, ignorance is the cause of bondage and when one conscious of the existence of Jivatma and Paramatma, then liberation is possible like Buddha. Sankardeva also pointed out that to attain liberation; one need not give up the world. One can attain liberation through Bhakti

Marga.

Sankardeva wanted to build the society through humanity. He tried to remove the prejudices dogmas. According to him, Krishna-Vishnu is similar in Bhakti marga. The Bhakti in which there is the love of Isvara is known as Bhakti marga. The self-conscious Devotee will feel the existence of God by his pure heart. In this regard Dr. S. Radhakrishnan said, 'God is in us and we have to turn within to realise the truth' There is no necessity of worship, ritual activity in Sankardeva's religion. In Sankaracharya's pure Bhakti marga it is not helpful for general people. And here the place of Bhakti is secondary. So, various Vaishnava philosopher and profane express the view of Bhakti from philosophical point of view"⁷

The main ideal of Sankardeva's Neo-vaishnavism is to build a society where there is no differences in caste, creed, language, habitation, poor or rich people etc. so, his ideology is based on three main principles — liberty, equality and fraternity. These three are the main motto for social improvement. At the time of Sankardeva, the caste barriers are the main problem in the society and therefore, Sankardeva wanted to eliminate such a problem of the society. He said,

"nahi bhakti jatijati bichar

Hari bhakti samastare adhikar

According to Sankardeva there is no difference among men for reciting 'Krishna-nama' because as a man there are no differences between Brahman and Chandala. Every one is the part of God and consciousness and pure heart is essential for Bhakti-dharma. God consisted in every one heart. So, St. John said, "The Kingdom of Heaven is the highest state attainable by man. It is within us"⁸ The first step of Sankardeva to bring equality among people, he built temple (Naamghar). Naamghar is a great platform of society which provided all to come nearer to each other. According to Sankardeva, there is no distinction among men for Vishnu and vaishnava. Sankardeva propagated equality through his 'Ea-Saran-Nama-dharma'. The

essence of Ek-Saran-Nama-dharma is "Brahma Satya Jagat Mithya". He says, "Eka Deva Eka Sava, Eka Bine nahi keba".⁹ There is only one god and he is the Deva, he is the Sava and there is nothing else. All pleasure in this universe is impermanent. So, the main aim of life is to reach the Absolute Brahma. Radhakrishnan said 'God is in us and we have to turn within to realise the truth'.¹⁰ The aim of life is the gradual revelation in our human existence of the eternal in us¹⁰

According to Sankardeva's Neo-vaishnavism, devotion to Lord Krishna is the main path for liberation. Payer may be performed through songs, dance, drama, adoration, sravana, kirtana etc. but among all, he gives more importance upon sravana and kirtana. Sankardeva pointed out sravana (hearing the holy name of Vishnu) and kirtana (chanting the holy name of Krishna) are the best forms to attain salvation.

"Jdyapi bhakti nababidhmadhabar
Sraanakirtanatomaha sesthatar"¹¹

Sankardeva considers sravana and kirtana as the best form of Bhakti. Sravana and kirtana of Hari-katha, sravan creates an interest in Hari katha. In Sankardeva's Neo-vaishnavism gives importance for avoidance of attachment and avarice. Liberation is the summum bonum of human life which is possible through devotion.

"Vic gumay dekhe jitu samasta jagate
Jivanta mukuta howea chir kalate"¹²

Sankardeva published some parts of Sri-Madbha-Bhagavata Gita and translated the book where the test of Bhakti and Vishnu's quality are expressed. The main aim of Sankardeva's publishing was to usher the human and democratic approach to faith of Bhakti-Dharma. He wanted to bring all people to this Bhakti-Dharma. But this is not an easy task to bring unity and too introduced with the sacred books. Because before Sankardeva many of the sacred books are not written in Brajaboli language, which is difficult to understand by common

people. So, Sankardeva translated the Bhagavate and the Gita, so that illiterate and common people will understand the main essence of those sacred books. Bhakti is the main cause of mukti and knowledge is only effect. So, through the Bhakti one can understand his self-conscious and by the Mercy of Krishna one can attain mukti from the bondage of life.

Before Sankardeva the literature comprised of different scriptures of Tantricism and Shakti cult. Madhab Kandali, Hem Saraswati and some other translated Ramayana and some ancient verses. But these are not sufficient for resurgence of faith. Sankardeva used Brajaboli language. He wrote 'Kirtan Ghosa' which is the basis of 'Ek-saran-Nama-dharma' and full of Bhakti dharma. He also wrote 'Gunamala' which is a simplified version of Srimadbhagawata. He also contributed 'Bhakti Pradip', 'Bhakti Ratnakar', 'Anadipatan', 'Nimish Navasidha Sangbad' etc. these are religious books which help people to believe Neo-vaishnavism of Sankardeva.

Sankardeva first introduced 'Ankiyabhaona' in which Sankardeva used various characters to express religious feeling among common people. He collected these for 'Ankiya Bhaona' from Sanskrit dramatists such as Sutracharya, sloka, bhakti etc. He also wrote some other drama such as Patni Prasad, Kalia Daman, Keli Gopal, Rukmini Haran, Parijat Haran which are full of acting and music. He initiated this dramatic journey with 'Sinha Jatra'. Another dramatic act performed by Sankardeva was 'ojapali' and 'Puppet dance'. The purpose of Sankardeva's creation of this kind of drama was to spread the message of god among the common people. Sankardeva created his drama with dance, music and songs so that common people will be attracted. The attraction eventually indicated the essence of bhakti and common mass merged into such rasas.

Sankardeva's another creation was 'Borgits' which touched the spiritual cord of the mass. This Git helps Sankardeva in spreading Neo-Vaishnavism. Kaliram Medhi called Borgits as great songs. These

Bor Gits are compositions of high literary value. Bor Gits have a definite style of presentation which is different from other types of devotional music like ghosa, kirtana, bhatima, prasanga etc. introduced by sankardeva and still sung regularly in satras.¹³ Bhatima was also another creation of Sankatdeva. In this way, Sankardeva enriched the basis of Assamese nation.

5. Conclusion:

From the above discussion it is clear that Sankardeva in his multifaceted talent he redefined Assamese society in a new way. He made the Assamese people to be kind-hearted, tolerant and sympathy. He was a saviour for Assamese society. Sankardeva with his hard effort was succeeding to reconstruct Assamese society in a new way. This will clear that he was a national hero who spread his Neo-vaishnavism in Assam.

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Impact of Globalisation on the Traditional Bodo Society as Reflected in Bodo Literature

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The development in the field of science and technology culminated in the great event of the industrial revolution. The industrial revolution brought the various developments woven around it, revolutionizes' human life in several respects. The tempo of the technological changes has not vanished. Technology and technological changes continue to affect in the social life of the Bodos and traditional oriented society. The impact of the technological change on the social order may be analysed as bellow.

1. Modernization

a. **Foods:** The science and technology has impact in the traditional food items & drinking system of the Bodos. Due to impact of it, the modernization of food and drinking system has taken place in the Bodo society. Now the Bodo people don't boil the food. In the early time most of the vegetables are boiled without using the cosmetic oil and Mosola- Mosli (spices), fash puran-garam mosola no any fried system, just simply boil by using the salt and Karai (home prepared alcohol) in any item but not items¹. So he is expressing in his prose literature-*Boro hinjaopra songnai khaonaiyaobw akha pakhatar. Khardwiyannw boro hinjaophwrni wngkebrai songnaini gubai muyamwn. bidinnw, sobai wngkebrai,*

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narjai wngkebrai ,lapha mwidru songnaiphwrao jebw thao mosla hwnai nunw muna (i.e. The Boro women are expert in cooking, the base was the main goods of it. like that, in the preparing of verities curry did not see the using of spices)². The Bodos didn't used to drink the milk accept tea. Most of the people used to drink the salt tea but did not use the sugar, few families used the sugar when some guests is come. Actually there was two parts of people i.e. Kamrup and Goalpara. During the time generally the Kamrupian (the people of Kamrup district) were used to take the tea of salt. The Kamrupian used the sugar for honouring the Golpakari guest (the people of Goalpara district). But the Goalparia Bodo generally used the sugar only less people used the salt tea by using **Kurai gadra** (bigger size plate). Bodo people did not know about the using of foreign liquor in the society except home prepared liquor i.e. Jou Gisi Arw Gwran.

But today people use the Mosla- Mosli (spicy) and oil for preparing the curry or any food items. Hence, Indramalaty Narzary has said in his prose literature. He said that-*Bwi somao songnai khaonaiiphwrao dinaini mugani Thao mosla -moslini bahainai gaiyamwn (i.e. earlier did not used the spices in the curry like today)³.* The people forgave to prepare boiling system of any curry. Instead of that fried system is come up in the society. Use to drink milk, sugarcane tea, coffee in the place of salt by using the cup plate. The people are using the foreign liquor i.e. Varieties type of red vodka wine, bear in the place of homemade liquor i.e. Jou Gwran and Gisi in any social function or ceremony. So, this change has come up in the traditional oriented society by the impact of the science & technology in the society.

b. **Music & Art:** Traditionally the Bodos used some musical instrument during fair and festivals i.e. Kham (dram), Jhota (symbal), Siphung (flute), Sherja (Wooden violin of Bodo), Gonggona (Gogona in Assamese) and Thoraka (Bamboo musical instrument). These all items of musical instruments are the most favourite of the Bodos in any items of singing, dancing and these were used in the religious festivals also. Like, these instruments also are used in the Bwisagu

songs or any folk songs and in the prayer songs of the "Bathou" religion of the Bodos. That is why Indramalati Narzary is expressing in his prose. He expresses- *Borophwrni damgra degra hwnwbla thiyainw jwngni gwsu dorkhongyao nujathy phaiyw kham, sifbung, jotbaarw gongona* ((so to say musical instrument of the Bodos directly big dram , fluid and Gogona is come in mine)⁴.

But now days Bodos use the Diana Tobola, Harmonium, and Guitar, Keyboard, Dram Sate, Karnack except the traditional musical instruments in the society. Hence at present Bodos use the modern instrument in the folk song in the place of traditional instruments in the society. Due to these reason, young generations forget their originality of music & Art in the society. On the other side, *pupil are become to forget how to use and tune of the traditional instrument in the fair and festival in the society*⁵. And today's generation use the scientific musical instruments and play the readymade music in the traditional folk songs in the society. In this regard, Dr. Anil Boro has said in his **prose literature**. He said that, *gwdan electronics mugayao audio keshet, video, cedi, T.V. cinemani gwbbm gwglabai jwngni harimuyao in (i.e. the audio, video. Cede and TV of electronics age is influence to the Bodo culture*⁶).

c. Material culture: There is some materials culture among Bodos which traditionally coming from generation to generation and used in the society. These material cultures are of deferent items and its use is also item wise at the domestic life of the Bodos. Most of the materials are home made by the wood and bamboo. Generally the materials can be classified in to the some type i.e. **a. The materials or tools of the producing crops** of the Bodos are-Nanggwl (plough), Mwi (leader), Beda, Hashinibari (rake), Hatura, Junggal, Huken (a hooked of bamboo stick), Hungkur (equipments of the agriculture materials which most of the goods are made by the bamboo) and so on. **b. The materials of the hunting & Fishing are-** Bwrla (bow), Thir (arrow), Jhe (net of Jute rob) these are hunting materials for the jungle, Shen (big and small) Koka, Jekai, Khobai and Pholo, Chili etc. are the hunting materials for watery place for fishes. Generally the

women use Jekai and Kobai (fishing equipment i.e. Jakoi and Kolai in Assamese), they are hunting in the watery place for the fishes. **c. The materials of the Handlooms** are- Swrkhi, Phogai, Dangwnata, Boudanggi, Shal Khunta, Shal Gandai, Gonchi, Thaokri and Tat shal (handloom equipment). Most of the tools are made of the Bamboo. *During the early time Bodos used the Shal wood for the Sal Gandai and Tat Shal for preparing the cloth in the society*⁷. Relating to this matter there is one song in the Bodo literature i.e.

Porbojhora jaharao dongphang dannw tangbwla tangbwla
Sal jhora maku jhora labw naggwn gumai Laru Bandaru
Labw labw naggwn gumai Laru bandaru⁸

(i.e. when go for cutting wood in the Porbojhora jungle, Brother in-low laru Bandaru should bring the twine of Sal Jora Makhu jora, Should bring brother in-low Laru Bandaru)

d. The commonly used materials of the Bodos: are-Sandri, Songgrai, Sandanga, Darha (mate), Janta (can having meshed bottom for filtering rice bear)⁹, Mwigong Khada (open basket made of bamboo which things is used for taking vegetable), Gwbwr Khada (same as maigong Khada which things is used for taking or for throwing cow dang) and Maijli Kho (a bamboo basket for keeping seed of rice for the next season)¹⁰ which all are made from the Bamboo. Uwal, Gaihen, Khamplai (a low wooden seat with or without legs) and Thousi (a mortar of wood or iron in which things are pounded with pestle) which are wooden made most important of the Bodos in the society. *The Gambari Khamplai (a low wooden seat without leg) has the special place in the Bodo society which made from the Gambari wooden*¹¹.

But today, transition has taken place on the traditionally oriented materials due to the impact of the science & technology in Bodo society. Hence, today the Bodo farmers use the ironical Nanggwl (plough), Nangal in Assamese) instead of the wooden Nanggwl (plough) to plough and Hasinibari (rake) to clear up the jungle of the crop fields. The Bodo cultivators also use the tractor and power tillers to plough more fields in a short time and also use the Power pump

machine and borings to gate available water in the paddy field for producing crops easily. The Bodo farmers also use the govt supplied deferent means of fertilizer in the place of traditional used cow dang and powder of fire wood.

In the areas of Hunting and Fishing, most of the Bodo man now do not use their own hand made materials. Now they use the powerful automatic Gun, Rifles in the jungle, and the Power pump machine (minimising the water for fishing), Jhe, Langgi, Thela Jhe (modern fishing equipment which is made by the readymade plastic Nate), Jhong (another large size of ironical arrow for using to attack animals and for fishing in the river) and also used the dangerous liquate poisonous and bomb in the river to collect fishes easily in the society.

The Bodo women now use the machine for Handloom in the society. Due to the impact of globalization and mode of commercialization most of the Bodo women likely used the traditional methods as well as materials for handloom and some names of the materials becomes milieu and machine along with the synthesis name of design, colour and scientific uncommon peculiar design of textile is also take place in the society.

There were some common traditional materials to use in domestic live of the Bodo in the society. But due to impact of the science and technology Bodos now use plastic made Songrai (winning pan), Sandri (like a winning pan), Balting (bucket), Thousi (ironic/aluminium maker of pickle). Now Bodos use the plastic bag or plastic palatine to keep the rich seed and dried jut leaf, salt and any other goods for preserving long time.

During the time the Bodo people used the one king of three leave for preserving (songkrai biphang) the salt long time in the society. The Uwal¹² (mortar) is also going to eliminate along with using of Kopri (bamboo made hat used as umbrella which is call Japhi in Assamese) in the society which is made by the Doombu Caosra Bifhang (a type of tree). The Uwal was special position in the society i.e. when guest comes then honouring take to site in the Uwal. The

Bodo farmer now use the umbrella in the place of Kopri (handmade bamboo umbrella). The Copri (saphy in Assamese) was two types i.e. (a) Tiya Copri and (b) Muphur Copri .These copri is now rare to see in the Bodo society.

In the place of Uwal and Gaihen (mortar and pastel), now comes the rich machine in the society. In the early moment Bodo women used the Uwal and Gaihen to make powder of rich, chilli, turmeric and any other goods in the society. The Uwal and Gaihen are important and essential goods for Bodo family as well as in the society. Generally, both the Uwal and Gaihen have been made by the Dumbru and Sal tree. Hence, in connection with it there is one folk son in the Bodo literature i.e.

*Sal sirini Gaihenjwng*¹³

Dumbru kaosani Uwaljwng

Domdum damdam bibari sanajwng

soulaidwng bonai soulaigwng Along mwnba

soulaidwng bonai along mwnba.

(i.e. with the mortar of Dumbru caosra, Pestle of sal siri, Dumdum damdam two step wife are, Alongs are beating among them, Alongs are beating among them)

But today instead of that the Bodos use the Electronic automatic grander machine for making rice Powder and used the rice machine for preparing rice which is now available in the Bodo family as well in the society.

d. Living style: The science and technology also have its impact in the living style of the Bodos. Due to the impact of the technology the living style of the Bodo has changed in the society. But Now days, most of the Bodo people don't want to follow the traditional method of constructing houses. Traditionally Bodos were constructing the houses trough honouring the system of the society. Accordingly, the main house in the north was constructed side which is calling "Noma No"(main house of the family). This Noma (main house of the house) no is constructing in to the tree part i.e. *Ishing, Okhong and Kopra*¹⁴. The

paddy store house i. e. "Bakti" (granary or paddy store house) in the west side. The cow shed i. e. Mwsou Goli (cow shed) is constructed in the south side. Most of the constructed houses are simple with the 'Thuri Jigab' (straw or thatch)'.

But today we don't see the house of straw as well as the "Ishing, Okhong and Copra" is exactly not seen in the society. Now can see, the houses are separately built by selecting the side of the family according to the capacity and as per possibilities in the society. Most of the Bodos don't want to follow the traditional system in the society. For the impact of the science and technology they are now building, Pucca, RCC, both room, latrine, and urinal water tank along with the running water and designed houses have come in the society in the place of traditionally constructed standard houses to live in the society. So Dr. Anil Boro has said in his prose *Boroni Harimu*. He said that, *Athikhalao thwri arw jigab ouwani nowa gaibangliyasai, bini jaigakhou aougriphaibai assam type arw RCC nowa¹⁵ (i.e. at present rarely have too seen the house of straw and bamboo, instead of that, arrived the Assam type and RCC).*

On the other side, now Bodos use comfortable mechanical materials in their living that is- fan (ceiling and table), Freezer, T.V and radio, varieties of musical system, electrical iron, washing machine, water boiling machine, pressure cooker, grinder, hot case, juice machine, stand steel dies, bati and glass, tea prepare machine, design cup plate cooking gas and using cosmetic shop, oil, pump machine to collect water easily in the place of well and tiff well etc in the society. Now Bodos are also using the readymade plastic made goods to make comfortable live in the society.

e. Folk Beliefs: *There are Folk beliefs in the Bodo society which closely attach with the social life of Bodos in the society. This Belief was coming from the forefather in the society. There were many folk belief systems among the Bodos. These beliefs are different which the Bodos believed in the every step in the life from morning to evening. So to say, the Bodos are dependence on the folk belief for conducting in his everyday life in the society. They used it in the birth to death ceremony of the*

society and also used it regarding the function of Agriculture, Hunting, and Fishing. On the other side they also used it to conduct life in the society. These belief systems are popular almost more or less on among the Bodos from the early time till now through the folk beliefs Bodos social life was maintained.

But today's Bodos don't want to follow on the folk belief relating to the social function in their life. Today's people are due to the impact of the science and technology developed as well as their, ideologies having become high. Hence people now want to know the practical result what he is going to do in the place of supposition in the social life. Because of that, in which belief there is no any practical result or scientific reason that beliefs are to be eliminated in the society except where there is scientific reasons. Like that, the Bodos also have become the theoretical and scientific in the society in every step of social task. So Brajendr Kr. Brahma has said in his prose *Bigiyan arw Boro somaj*. He said that, *LeKha phora gwrung Boroni Onjimaya lasai lasai bangsindung arw bigiyanni shorsha khalamdung (i.e. the education is increasing among the Bodos and analysing the science)*. As for example—before selecting the homestead most of the Bodo family now have selected without the village astrologer as earlier. Like that, no section day for beginning of plough for agriculture,

f. Games and Sports: The Bodo had been own traditional games which derived from the early time and ran generation to generation among Bodos in the society. The games are generally played in the field and water bodies, these are of three types i.e. 1. *Hinjaophwrni (game for girls)* 2. *Houwaphwrni (games for boys)*. 3. *Games of both i.e. Games for the boys & girls which is some of games are forceful and some of the games are easily can play without forcefully¹⁶*. The games are like-Gila Galenai (boys or man), Bata gelenai (boys), Kikor gelenai (both boys & girls) which game is play in the Hakor (a game which playing on ground holes) Mwsa gelenai (both boys & girls), Hou gudu-gudu (girls), Golla gelenai (both boys & girls), which game is played by both boys and girls in the open field Jong kubainai gelenai (boys), komlainai or bwlw sunainai

gelenai (wrestling for boys), redy gelenal (both boys & girls etc.

But under the present impact of the globalization, the modern techniques of games and sports have replaced the traditional games. On the other side, due to impact of the science and technology the old or the traditional system of games has lost importance among the Bodo and some of the games has not been liked in the society. Alternately in the place of traditional games now Cricket is popularised in the place of Bata Kela/Bata gelenai (Bata Game for the boy which played in the field) the chase is has taken in the place of Mwsa Kela/Mwsa gelenai, Ludu has come up in place of the kikor kela/Kikor gelenai and also come up foot ball and volley ball games instead of traditional games. But some games like Gila gelenai, Hou Gudu Gudu, Golla gelenai, Jong kubainai, komlainai or Bwlw Sunainai (wrestling), redy gelenai, Daola soulainai (Kock fighting) games etc are completely not seen in the society which were most popularised games is the early of society. Dr. Indira Boro has mentioned this in his prose *Borophwrni dwrwngyarigelenai arw gelenayao rwjabnai methai*. She mentioned that, *Jikiyanw jayamanw dinai dwrwngyary gelenai phwra jwbur mirou jirou, manwna dinai gubunari gelenai phwrni sabidaya jeraibadi jaiga laphaigasinnw tadwng bebadiyao dwrwngyari khelani thangnanai thanaiya jwbur sannw gwnag jadwng (i.e. anyhow today the traditional game is looser because today other modern game is influencing in the place traditional games)*¹⁷

2. Industrialisation

a. Agriculture: *The Bodo people are agriculturist*¹⁸. *Agriculture is the main way of living for the Bodos in the society. They produced some varieties of crops in the summer and winter session trough their own methods.* Traditionally the Bodo used the wooden Nanggwl (plough) and two Oxen to plough the soil for producing crops. The wooden Nanggwl, Junggal, Mai (leader), Beda, Hasinibari (rake) and Hatura are the main tools for producing crops¹⁹ of the Bodos except the Ox in the society. On the other side, the Bodo farmers used the home prepared fertiliser to grow the seasonal crops which is mostly naturally prepared from the Cow dung and Dust of the Fire woods. The seeds are also traditional

not the highbred nor govt. supplied. Even they did not know the new method.

But today, the Bodos are adopting the scientific method. By the influence of the science and technology, they tried to forget the traditional methods and used the scientific methods and tools for growing crops. Now the Bodo farmers are using the iron Nanggwl (plough), Hasinibary, Hatura, instead of the wooden tools along with tractor of higher power and power tiller for more better result.

There is cannel system to provide water in the field. But instead of that, now they use the borings and power pump machine to provide water easily in the field. The seeds are also used govt. certified in the place of traditional seeds or highbred seeds by using the govt. fertilizer. The Bodos now use the rice mill to gate rice from the paddy in the society instead of the wooden Uwal and Gaihen and Dingky (dhikhi in Assamese). As for example- there is now mills have been establishing and have to be seen the rice mill in many Bodo villages. So Janil Kr. Brahma has expressed in his story Uwal. He explained that, *gaiya mai sougra Mill, T.V. arw gas gaiyabla raobw ruyathikounnw tanw ngira (i.e. no without the rich mill, TV and gas there is problem to gate women servant)*²⁰. Impact of that, no Uwal and Gaihen or there is rare to gate the traditional Uwal, Gaihen and dingky (dikhi). For the rice now any Bodo family use the tractor and for producing crops as well in the field and easily useable readymade iron things for the agricultural matter in the society.

b. Handloom & Textile: The waiving system also has changed in the Bodo society. The Bodo women are expert in the Handloom and textile. They produce their needed dresses and also produce men needed Gamsa (man wear dress and famously product the Indi- Muga Dokna and Pasra. The women are used the traditional tools i.e. *Sal-Gandai and Sal Khunta(handloom equipment)*²¹ for producing Dokna and pasra Indi Sea (indi cloth) along with the Indi Muga see which is traditionally famous in the Bodo society.

But today due to the impact of the globalization, the Bodos now

use the machine made instrument to produce the needed dresses in the short period. On the other hand many women don't want to produce themselves and buy the dresses in the market. Due to impact of modernisation the design of the Dokhna and colours as well are changed. Due to impact of the science some design and colours are changed completely and are eliminated from the society and many uncommon peculiar designs along with the colours find place in the society. Many women cannot make Dokhna and Pasra but buy in the market. Now Bodo women are wanting easy and comfort dresses. Hence now wear the shallower kumis, long pent and other peculiar dresses accept the traditional dress. Like Rabin Narzary is expressing in his story *Bihamjw Haibrid*, He expresses that, *Mugani sansrijwng gwrumpha langnw najanaikhou unaohalagai nunw mwndwngmwn adwi lojenni nokhorao (i.e at the last have seen that, the family of Lajen is assimilating with the modernization)*²²

c. Communication: Another main impact of the science & technology is impact in to the traditionally oriented Communication of the Bodos. During the time Bodo people communicated on foot from one place to another place or shopping, carry the goods by shoulder himself, marketing roaming in daily live. On the other hand through water communicate by the boat. The rich Bodo family used the *Horse along with elephant* to communicate distance place to place. In the marriage time is also used the *Mwsou gary (bullock cart)* to carry the Bright and Bridegroom, loges, goods of marketing and the riches man used the Horse and the *Elephant* to communicate for long distance as their communication in the society. So Nilkamal Brahma is expressing in his story *Back Bancher*. He explains that, *Aboni phisajla duesina mwsou gari lananai angkhou stationao nephaigwn (i.e. my nephew by taking the bullock car will wait in the station in the station).*²³ The rich family also used the hoses and elephant as messenger of the communication in the society. During the time when the village society call a meeting then the nominated 'Halmaji (a village messenger)' was calling the men southing loudly by biting or ringing the ironical goods neither by

drumming for giving notification about emergency meeting in the society²⁴. As for example where Bodo dramatise draw the exact picture in their drama. Like-so Binay Kr. Brahma has mentioned in his prose *Boro Harini Somajary Ayen*. He mentioned that, *Boro barini gamiphwrao danbantha hwnanai sapha halmaji lakhnai jayw. Halmajiya melmithingphwrkhou nokhor nokhor boinwbw kbintayw (i.e. in the Boro village there is a remunerated village Peon. He inform the meeting by moving home to home)*²⁵

But today's industrialization era People have forgotten the traditional type of communication system hold up the productions of science and technology in lieu of the old system i.e. Microphone and Music sound system Bicycle, Motor cycle, rickshaw So, Nilkamal Brahma is expressing in his story *Taibeng Khaji*. He explains that, *Rail gariyao third class gailiya. Gwdwni third class khounw second class kehalamnai jabai (i.e. At present no third class system in the train but that third class has made the second class)*²⁶. The rich Bodo families use the valuable costly car and communicate one from place to another place as their will dictates in the present Bodo society. Now the Bodos carry the groom and the bridegroom by motor vehicles as per the possibility. The Mobile is also now usable and one another scientific goods in the society for communicating to each other and the Mike Sound system is also used to inform loudly on any emergency cases or happened in the society for confirming the scheduled meeting immediately in the village where other cast is also used the system in the society. Just like so, now can see in some of village committee is keep storage the sound system for using in the meeting or any function of the village.

3. Urbanisation

During the early time, the Bodo people were only living in the backward rural area²⁷. They didn't like to stay near about the town and inside the front of road. Instead of that, the like the place of jungle or deep forest land and like to establish in the silent remote backward places. They thought that, if stayed near the road then disturbance will affect in the family, Impact of that, the people needed

to face with many problems in maintaining their family. They needed to face with the scarcity and with many problems to maintain life. Even they are deprived from the govt, allotted grant facilities and rights. They are deprived from the offering of any govt facilities like schools for education, good condition of road for communicating system, Hospital and health centre or any scams of development opportunities. They also deprived from the opportunity of government jobs in any department.

In that time there was no distinct road and bridge system over the river. As well the road was completely full of muddy. Hence Chittaranjan Muchahary is expressing in his novel **Khiter** through the character of Malaya. He is expressing that, *Malaya bara gwjan tabailangnw hayakbisai. Nubai biyw Gao thabai langnaggou lamya Gobda gobdi habrugwja (Malaya could not go more distance. he has sown that, his the road is jig jag and fully muddy)*²⁸. He completely draws the backwardness of the Village. Here he draw the backward a Bodo village where no any distinct perfect road for communication, no school for education, no Hospital or the health centre in the mention village of the novel .

The people are now becoming urbanized. After the development of the science and technology, the mind of the people is materialised and changed. Like ideology, thinking has enlarged, developed and enriched among the people. Infect of that, the style of living standard has changed in the mind. And they like comfortable life without hard work or troubles in the living. In this regard Bikram has expressed in his poem **Ward number Five**. He expresses that,

Phainaisai cowboy, Phainaisai drain pipe
sophainaisai Boronaobw high living high thinking
nupherai khwnapherai philosophy²⁹

(i.e. arrived cowboy ,arrived drain pipe , arrived high living high thinking among the Bodos rarely seen and hearing Philosophy). Next come into the value of time or maintaining time like to come and pro in a short period for gating the facilities in maintaining life. That is why the present conscious, forwarded Bodo people are thinking about

easiness, facilities by the influence of science and become urbanise.

4. Development of the means of Transport and communication

Due to impact of the science & technology the transport and communication system have improved from the traditionally oriented system. The roads have become black taking in the place of **Kassa and Sand Gravel road**. In the earlier time no any cannel system beside the road to pass the over flooded time of the road. In the first time Bodos used the **Saikong and Zenlab** (both the temporary bamboo bridge to cross over the river) and wooden Bridge for crossing the water. In those cases Gabinda Basumatary has explained in his story **Haraoni Saikhel** (*bicycle of Harao*). He expresses that, *Somaj khungnai, Rao harimu, dhurwm, phurwb phalinaiphrao Saothal boro, Judajudablabw be mwnnai gamikhou orjab hwdwng bai dwi gwsuwsajwng lunai ouwani Saikhongya(i.e. the Boro and Santali are the two separate nation but the temporary bamboo bridged is keeping relation with them)*.³⁰ After then came the wooden bridge where have been mostly used the Sal (Sal wood). after that come up the concrete RCC bridge and also come up the cull part system in the village as well as the society. The vehicle is also developed. During the period most of the Bodo people communicated on food or travelled distant places. At the moment some rich people were using the horse for their communication purposes. And then cycle and gradually come up the motor cycle, four wheeler cars has come up in the society where is now can see bicycle in any Bodo family along with cars in the rice family. The temporary boating system is i.e. Talir Dinggra (made by the banana tree) was also one another mentionable communication system of Bodo for the watery places and to crosses the river. But presently this communication is rare to see in the society where the temporary **Dinggra** (*temporary boat made of banana three*) is completely eliminated from the society. But now some where lastly the electronic machine connected boating system has come among the Bodos.

5. Transformation in the Economy and the evaluation of the New Social Classes

In the early time Bodos did not know the value of economy. Hence they did not think about the earning money through any kind of business to better maintain the family in the society. They were essence the goods whenever needs. If the foods or any vegetables are surpluses excess then the family gift to another neighbouring family or relatives. Because of that, they faced with so many problems or economically backward in the society. So they could not raise the family or couldn't make slandered society. Like, don't sale system the surplus goods, Fishes, Cow or Buffalos and cannot engage in the Barber activities. The people are become economy and change into the economy for maintaining the live in the society.

According to the early social system of the Bodos there was a class of titles i.e. Basumatary Goyary Daimary, Narzary, Kakhlary, Owary, Swargiary, Chainary Boro Sompramhary, Mahilary, Karzy, Muchahary, Hazowary, Kerkatary³¹. There is no division of class among the Bodos³². But though according to the believing system of the society the duty of work has divided classes' wise among the people for their living. The people must have to be going in their ways and needed to participate in the social function otherwise all system was meaningless. Hence every one cannot over take each other or no exchange work in the every way of life and also in the social functions of the society. Like, the Goyay group cutting the battle nut and role of the Bwirati in the marriage. The Daimary group is collecting the water and fishes. The Narzary do the work as the priest and so on.

6. Changes in values

Industrialisation, Urbanisation, development in the means of transport and communication, the progress of democracy, introduction of secular education, birth of new organisation political and economic etc. have profound effects on the beliefs, ideals tendencies and thought of the people. This has led to a vast transformation in the value of life.

The Bodos are agriculturists. The agriculture is the main way of life in the society. As agriculturists the Bodos produced seasonally

different type of crops through the traditional method of ways by using the some domestic instrument, tools and the home made fertilizer. The Bodos are depending on agriculture and maintain their life through the agriculture.

But today due to the impact of the science & technology, the technique of the living style is changed in to the modern from the traditional. The people become easiest don't want to trouble for their existence or living. The people become fast and try to think up about the value of time. Impact of that, people wanted more in a short period. People wanted more benefit by less troubling.

7. Changes in Social Institution

Technology has profoundly altered our modes of life and also thought. Technology has not spared the social institution of its effects. The institutions of family, religion, morality, marriage, estate property etc. have been altered and transitioning due to impact of the science and technology among the Bodo society.

A. Family: During the time most of the Bodo families were *the Join Family which was called the Jaokary (relative more family are living together' which is call Jakary in Assamese)*³³. The one family was also the big and more members. Like ten to twelve brothers sisters are together living along with retime of servants, and maintain the family gorgeously up to parent death. The land and land property, garden and orchards were also available and huge without any crisis which is now can be seen in the Assamese society.

But today by the influence of science and technology the family is now completely opposite i.e. smaller than the past. After the influence of the science and technology the people ideology has change and materialistic. The people are economist and thought about the standardisation or maintaining for sweet family. Technically some time maintaining problems are arising in the join family. Infected of that, no one is responsibility. Due to impact of science today men don't want adamant in the join family. Hence today, the Bodo family is also followed the other family and become materialistic. Hence, today

there is small family instead of join family in the Bodo society.

B. Religion: The Bathou is the traditional religion of the Bodos and majorities are the Bathou religious in the Bodo society. The Bathou is the holly and sacred place of the Bodo Bathou religious in the society. The Bathou Bwrai is the chief god of the Bathou. The Sijou three is the symbolic powerful holy tree of the Bathou religion which is plan in the place of the Bathou. *The Bathou religion of the Bodo is how and when come and birth among the Bodos, it is out of record, according to the writers it was suppose to be come from ancient time of forefathers and inter among the Bodos*³⁴. Originally the Bathou was alike of the Hinduism, but after the independence of India Bathou adjusted with the Hindu system and still to going on among the Bodos. But the belief is deference. The Bathou religion is relating to the system of the society, folk belief, custom and tradition of the Bodo.

But after the influence of the science & technology in the Bodo society, the ideology and philosophy on the religion has changed. The people are diverted from the traditional belief and try to reform the believing of supposition in the society and turn to the scientific related religion in the society. On the other side, some Bodos begin to dislike the system of belief of the Bathou religion. As per Example, assassinating the animal, pigeon, cock, goat etc. and the Brahma religion has come into existence among the Bodos which religion is related to the Hindu system and is attached with science. After that, serially come the Jangkrao, Lengta, Rupha religion among the Bodos. Because of that, recently now the Bathou has split into the two part i.e. Bwrly Bathou (traditionally who offer the blood of animal in the name of religion) and The Biber Bathou (who are against blood sad and prayed by offering the flower). At a same time the influence and other foreign religions like Christian, Joy guru, Shankari (Shankar guru) are sat up among the Bodo. Like that, now Bodos believe and worship the Biswakarma, Durga, Kali and Laksmi in the society. So Brajendra kr Brahma has mentioned in his prose *Bigiyan arw Boro Somaj*. He mentioned that, Gwdwniprainw takhanai dwrwngyary Mwdaiphwrni

ongayai Borophwra Biswakorma mwdaikhou phuji peramwn. Nathai motor gari lanw rwngnainiphrai be mwdaikhou phujigra jabai (i.e. earlier accept the traditional religion, Bodos didn't worship the other but now after having the motor vehicle learned to worship the Biswkorma).³⁵ On the other side, some are creating personally new religion through own ideology and try to enlarge the Bodos in the era of science and technology.

C. Morality: Naturally as per the character, Bodos are simple and mild in the society. No cunning behaviour and bluffing character are found among them. They are helpful for others and accept each other along with simple thinking and simple ideology without confliction mentality in their living. That is why during the early time most of the Bodo families were joint families. So he said in his prose *Boro somajni nokhor danai arw swmwndw*³⁶. He said that- *Borophwrni nokhor danai khoub juthum nokhor danai khounw nunw mwnw* (i.e. the family system of Bodos call joint family). The people Saori – Badali (group of work without remuneration), Haba Hukha (marriage & festivals) Naha Mwiha Thangnai (occasionally hunting) work together and also publicly participated in any social work of the society. As for example, during the summer session the villager are halving each other to produce paddy crops in the field. Even some family if could not finish planting the crops then people co-operate with them. On the other hand if some family fall in crisis then there was halving system in the Bodo society that give loan without interest on money or goods. So to say not any formal loan system but if any family has capacity they can return without interest, where if a family cannot be able to return then no need to return the same.

But today this halving system is completely missing in the Bodo society. Today's people don't want to help each other as well as in any social function and occasion. People's ideology and mentalities are changing. People become busy and self interested and think or work not for others. The people become selfish and materialistic in the society. The people are diverted from the well wish for others. In

place of that, the labour or remuneration system has come in the place of freely helping system. The Saori Badali (Socially group working without remuneration) is eliminated but change to remunerations system has deeply rotted the society. Now become no remuneration no works is the way in the society.

D. Marriage: Hatasuni Haba is the traditional marriage system of the Bodo society. During the early century the Hatasuni marriage system was only the system where no other alternative system of marriage among the Bodos in the society. During early time all were for arrange marriage in the society and completed the marriage through the Hatasuni system. Traditionally the arrange marriage is very lengthy and according to the system Hatasuni, the marriage must follow the religion. But after that, the Brahma religion come into existence among the Bodos and religious followers do the marriages through the Brahma Biva in the society. Impact of that after the arrival of the Brahma religion, the Bodos are neither Hatasuni nor Joygya Ahuty done in the Bodo society.

But today due to the impact of the globalization as per the ideology the new and short cut marriage system has come in the place of the traditional system of marriage. People have become money minded and giving the value of time and dislike the trouble. Impact of that, today's Bodo do marry in the any temple of Hindu by the Pujary (priest) and arrange in the day time for saving the more cost and to control the more troubling. So Jnil Kr. Brahma has said in his short story *Khwmisi Golini Andwyao* through the character of Dorle. He said that- *Dani mugayao makbase subungphra somajni ultayai mondir Masjidphrao siriyai juli lalaigasinnw dong (i.e. presently some people are gating marriage eluting in the temple and masjid obstructing the society)*³⁷. On the other side, someone after finishing the marriage in the temple, give the gorgeous party in the hotel where is no any system of the society. Someone completely finish the marriage in hotel and arrange the big party. Now a day there are many Biva Bhubon near about city and town. In the *Mandir* Bodos are complete the marriage which is influence

of the globalization in the society.

E. Estate property: Bodo family have own property. The properties are cultivating land, Bari- Bagan (Garden orchards) and the domestic animals. Their occupation is agriculture and plants of the beetle nut, coconut in the orchards, and farm of the cow. Bodos are enough rich from their land and earn sufficient money from the domestic orchards and collect the edible milk from the cow. Hence, Bodos are rich with their own land and domestic orchard in the society. So we can see that, the identification of any rich Bodo family was more land along with two or three paddy store house, enough bigger & long cow shade and big one domestic orchard along with some riches had a Mwsou Bathwn and Mwisw Bathwn (cow and buffalo firm) which was kept about far distant of home like i.e. near the jungle and maintained by Laoukhar (Cow hard) and Guwal (guard of the cow & buffalo firm)³⁸. In connection with this Indramalaty Narzary has said in his prose *Borophwrni Rangkhanti Jouganyao Junar Phisinai*. He said that, *Boro somajao swlibai tanai mwunse gidir batraya jadwng -Borophra mwshou golikhbou lanainnw nokhorni rangkhantiyari tathaikehhou sannanai laym.binikhainw gwdwni dinao haba hukhayao rangkhantiary tataikhhou phwrmainw takhai mwshou goliyanw gongnai-gongtham hwnnanai rajjlaywmwn*³⁹ (i.e. continue one thing of the society is that, the cow set was the identity of rich in the society). But now the cow hard is countable and rare to gate in the society. At that time keeping of Cow hard was connecting with the estate property. He also said in his prose that, *Boropra maiswbw phiywmwn. gwdw gwbang Borophwrniyao maisw bathwn dongmwn. Gamini mahajwnphwrniyao maisw bathwn taywmwn*⁴⁰ (i.e. Bodos were keeping cow along with the Buffalo, earlier there were group Buffalo among the Bodos there were group of Buffolo each rich people in the society).

During the early time the rich Bodo family didn't know regarding the investment or deposited to the bank for earning money for future maintenance. They kept the money with own self, some riches used *Sinduc* (Ironical box) and kept in the big drum by holing under the earth where some mother or father tell regarding the keeping of money in the

hold to son or daughter during the end of life.

But today due to impact of the science & technology the transition has come among the rich Bodo family. Today rich family have enough own land to produce varieties crops for maintaining the family without any hesitation. But today Bodos have changed technique for producing crops. They are malty purposes' not single one. Now they plant varieties except the paddy crops in the land in the summer time. Now they plant Banana, tea, lemon garden, Sigun, Sisu, Gambary, Coconut firm and bamboo in the domestic land. Their ideology is earning more money or property in a short period easily. Today's rich Bodo family don't keep more paddy store, don't keep more cows or group of Buffalo. So Indramalati Narzary has said in his Prose *Borophwrni Rangkhanti jounayao junar phisinai*. He said that, *nathai daniya mwisw bathwnkhou nunwnw thanglia (i.e. but presently have not seen the group of Buffalo)*⁴¹. Today people don't keep the property with own self. But instead of that, every riches are keeping in the bank or invests in any finance company. Today rich people's identify is unseen, not seen to all. All are malty conscious and malty occupied.

Conclusion:

After the above discussion it has known that, the impact of Globalisation on the Bodo society is the cause transition of the Bodo society. The discussed tools of globalisation are –the modernization, industrialization, urbanization, Development of the means of transport & communication, transformation in the economy and the evaluation of the new social classes, changes in value and the change of religious institution. Due to the good opportunities of the science technology Bodos are like and accepting eagerly it in the society in their daily life as the comfort against traditional life and the transition has come in the society which as reflected in the Bodo literature.

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Textile and Silk Worm Tradition of the Bodos

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1.0 Introduction:

With the passage of time, the basic need for clothing led to the development of textiles as early as the Neolithic or New Stone Age. According to Herskovits manufacturing of textile required in the first place the fibrous substance which would yield long thread. The yarns spun from fibred, either animal or vegetable, could be converted into fabrics through the process of weaving.¹ In this context, the introduction of handloom and textile made significant impact in the growth of human civilization. Loom is the next most important element required for textile industry and use of true loom goes back to the Neolithic times. In the course of time some Neolithic period wearing become a part and parcel of human culture as a cottage industry.

In Indian context the handloom and textiles have occupied an important place in the culture and civilization of India since ancient times. The life and culture of various tribal and non-tribal ethnic stocks have contributed towards the growth and development to the society and culture of the people of Assam through the ages.

According to T.C. Sarma, the greatest contribution of the Indo-Mongoloid people who made a reservoir in Assam is that the brought

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into N.E. India, the technique of food production by plant cultivation and domestication of animals. They are in all likelihood the first cultivation of rice in India. They had introduced for the first time in India the art of rearing silk worm as well as spinning and weaving of silk clothes² R.M. Nath says, 'The word silk is derived from the original Mongolian-Sirkek, Karean-Sir, Chinese-Ssi, Greek-Ser, Latin-Sericum.' The word 'Sari' wearing cloth of Indian ladies is derived from Ser. The dealer in Silk was called the Sers or the Seyrites. The word Seyrite, Cirrhadae, and Kirata appears to have had originally referred to dealers in silk.

Silk was originally produced in China and it was catered by merchants of Turkestan through Tibetan intermediaries of India and Assam.³ Further he said that, it is therefore, clear that in ancient times traders from different parts of Tibet, central Asia and China flocked to Assam through various routes, and as they traded mostly in silk, they were generally called Seres-cirrhadae (in modern sense serek-cloth walls) of syrites-Cirate-Kirata. The word Kirata therefore, is a general term referring to the people of the Mongolian origin and it refers specially to the Bodos. It is they who first introduced the cultivation of silk of different varieties in Assam in those, ancient times, and Assam has therefore, been famous for her silk from time immemorial.⁴ Scroff, on the basis of the Periplus, contents that the silk industry originated in China and travelled from there to Assam and other parts of India.⁵ K.L. Barua Said, 'silk comes for the manufacture of various Muga and silk clothes seem to have been an indigenous culture of the Bodos, which had been being maintained since the pre-historic time. Many centuries ago that the vedic Aryans came to the North East India. The forefathers of the Bodos seemed to have been rearing silk-worms profoundly in this region.'⁶

Again he write that the Bodos are very much fond of the *Endi* (eri) and till now the use this cloth to a large extent. They rear the silk worms on the *Eri* plants (the castor oil plant). It may be noted that the valley of the Brahmaputra of Assam was famous not for the

silken cloths primarily, but the *eri* cloths by about 400 B.C⁷

1.1 Aim and objectives:

This is an attempt to bring out an analyze the traditional textile and rearing of silk worm. The Bodos have no rich written history of their own. They have rich culture in their society with distinct customs and traditions. They have been maintaining their well organized traditional culture in rural areas.

1.2 Methodology:

This study is primarily based on both primary and secondary data. The primary data is collected through observation and from a few informants and secondary data is collected from relative literary books and journals, magazines, publications etc.

1.3 Textile Tradition:

Handloom and textile is another major craft industry of the Bodos. The handloom weaving as a folk art having age old feature forms an integral part of the culture and tradition of the Bodos. The traditional hand woven products of them are widely known for the glorious heritage, artistry and time workmanship with its beauty as well as simplicity. These products unfold the skill and creativity of the indigenous weavers. In this regard, along with handloom weaving and textile, Bodos has a glorious tradition in silk culture, especially *endi* silk worm (*philosomia ricini*) and some extent muga (*Antheraea assama*).

Since the time immemorial the Bod women were very expert in weaving. Spinning and weaving are still to be found in the village as well as a few in town life also. The cottage industries, the hand-loom industry was always occupied an important place in every Bodo household, which probably contained as now a hand-loom, besides other articles for weaving and spinning, cotton shrubs were grown for the manufacture of cotton clothes.

Handloom weaving as an indigenous craft plays an important role in the socio-cultural and economic life of the Bodos like other tribal communities. It is an important aspect of Bodo culture of

Let us weave the butterfly
That gathers floral honey sweet
Flying bird on the sky
Let us weave and make design
On our cloth and display to all.

There is another folk song expressing the affirmation in women folk's expertise in spinning and weaving which are the chief arts of Bodo women which run thus:

*dwi jiri jiri shamo kbinkbiri
shonani zinjiri agwi shonani zinjiri
olwi agwi danw rwnga rwnga hwnnaia
lunw rwnga rwnga hwnnaia
mushra gorshejungnw dalaibay
endi shi gangsbe.⁹*

English rendering:

People say,
You are ignorant
Of spinning and weaving,
I have seen you however
Weave one whole endi shawl
Without breaking a strand
Like garland of small snail of stream
Looks like chain of gold.

The skill of weaving comes naturally to the Bodo girl. In fact, it is the first criterion for recognizing the girl in the society. Before selecting bride the parents of a boy usually procured information about the skill of the bride would be on weaving. She must be able to weave varieties of embroideries, flowers, patterns etc. A Bodo girl always tries to bring out the beauties of nature at her handloom. For a Bodo maiden weaving itself is a passion. *Thang-khalhang* goes the strike of the hand-shuttle with the frame of separator strips.

It is worth mentionable that even to this day, many of the Bodo families in rural areas have been saved from economic hardship by

communities of Assam as well as North-East India, handloom and textile production is typically a feminine activity In Bodo society. Essentially a famine craft, it is customary for the girls among the Bodos to learn the art of wearing from a tender age. In fact, there was a time, till recent past, when every Bodo girls was expected to know the art of weaving make herself fit to be a bride. As for example the young girls were played with *sudam danai* (the toy looms) imitating their mother, elder sister, sister-in-law etc. in loom they are also encouraged by the elders to play such games through which the girls acquire an orientation and commitment to weaving and maintain the initiative throughout their lives. Such continuity of weaving at home as a living art has made the weavers ever more skilled. It is considered as one of the strength of the textile tradition of Bodo community in particular contributing towards the persistence of handloom weaving. Any way every Bodo women in the village is skilled in weaving of clothes in the loom, in spinning of threads from the cocoons with the *thaokhri* (rotary), a kind of reel for winding thread and in rearing of silk worms on the leaves of the castor oil plants.

There are some folk songs related to the weaving among the Bodos. The following song expresses the "quality and fineness" of the yarn, the design woven and the standard of cloth in the process of production. The song related to the weaving trade gives a picture of the weaving skill of Bodo maidens which is run thus:

*dehay lwgw bima burwini
danay-lunai agor ernai khwu shwlvngdini
shikhri bidwi shwbnai
okhrangao dao birnai
agor erwi erwi boinibw shigangao
kхинthani lwgw kхинthani.⁸*

English rendering:

Come friend let us learn weaving
And to make the design
Of our mother old,

the skill of their womenfolk in the craft of weaving. It has great cultural and economic relevance for the Bodo people. The Bodo people depend greatly on the products of their own looms especially for women's attire. In spite of womenfolk, a few men folk are also expert in traditional weaving in hand looms.

1.4 Rearing of silk worms:

The rearing of the silk worms are done in the household is one of the industrial activities of the Bodos in their village life, where castor oil plant (*ricinus communis*) grows abundantly around the house. It is an indigenous culture of the Bodos which had been maintaining since the pre-historic time known as *endi emphwu* and the manufacture of the *endi* cloth. Tending of the silk worms generally women of the family are involved which is round the year affair. There are normally three broods in a year-autumn, winter and spring. Of the three broods, the spring cocoons are the most numerous and yield the most silk.

Culture of rearing of *endi* silk worm (*philosamia ricini*) is related to knowledge of its life-cycle. Any way I would like to start from cocoon, i.e. larva stage of a silk worm to discuss the life cycle of it. As their expertise Bodo womenfolk select male-female larva observing its shape and size of cocoon. Mrs. Banshri Basumatary (informant) informed me that the cocoon of female *endi* silk worm is slide shorter and larger than a cocoon of male one. Male worm cocoon is slide smaller and longer than female worm cocoon one.¹⁰

They select some cocoons of male and female silk worm and makes like a garland with thread and hung it on the wall or under the roof of a house. It is also taken care that it must be free from smoke. In this condition the cocoons remain for some sixteen to eighteen days in summer season and nineteen to twenty one days in winter season, at the end of which period the insects make their appearance in the butterfly stage. It is observed that the females, distinguished by their larger body, broader and flatter abdomen. Before they are able to fly away, they are collected with care and placed in a suitable place, commonly on a small piece of cloth which hung on wall along with

together and attached themselves and at the end of three or four days eggs resembling make their appearance on same cloth in great numbers.

It is observed that one female butterfly can on an average produce from eighty to one hundred such eggs, or even more. Then the eggs are collected carefully and loosely tied with a thin cloth and after another six or seven days the eggs are duly hatched and produce the new born insect being at first almost black. The producing time from the egg is called *shonamukhi* and next stage is called *wngkhamphrum*, the cooked rice like which is placed on *khanli* or other such wicker openly. In this stage the tender leaves of castor oil plant is given as fed. After three days from which colour it passes to brown which stage is known as *akhay miji* and then become white, which stage is known as *akhay bima* and *bima* at intervals of three or four days and at each change of colour the worm is said to cast its skin in snake-like fashion which is known as *gurgonai* or *gursblainai*. Some other four days after the last stage is reached, i.e., about fifteen days (18-19 days in winter) after being hatched, the insect may be expected to set about the formation of its cocoon. In this stage the colour of insects are of white, black and white and some extent it may be green. During these periods leaves of castor oil plants are usually fed with small bundles which are hung up on the bamboo poles about 6-7 feet in length and generally of three layers. It is known as *khasha alaynay*. But sometimes instead of castor oil leaves, the *gambari* (*gamari*) and *tha shumli* (tapioca) leaves are also used as feed for silk worm. But the castor oil leaves is better feed for said worm.

When a *endi* worm become matured, leave to eat fed and search for place to form of its cocoon. This stage is called *gumwn* (ripen) and to assist it in this work, small bundles of plantain, mango leaves, jack fruit leaves, *laru bandararu* (a kind of tree) leaves, shaddock thorn leaves etc. are loosely tied together and placed within broad wicker or on bamboo platforms. But before ripen its act of excretion is done completely and become slide weak which stage is known as *lumnai* or *shinai* (which means fever). The insects are then carefully placed within

these bundles and under favourable condition the cocoons should be fully formed in about twenty four hours. Cocoons are generally red coloured, but some extent it may be white. The white insect became yellow after forming cocoon. The actual formation of the cocoon is proceeded by certain signs, very significant to the Bodos, i.e. the insect itself avoid food for a short time before hand and becomes of a light, brilliant colour; and on handing it gently, a soft, rustling sound, proceeding from the insect itself, can be distinctly heard. The first stage of ripen insects are known as *oja*, in which stage the insect is ripen a few of number. The next group or ripen on next day is called *thandwi* and the 3rd group is called *bohor*, in which group almost insects are ripen. So to say it is the last group. But a few number of insects remains left to ripen which ripen on next day and it is known as *dodro* or *lanjay* (last stage). But this group is not able to form cocoon properly or in good condition.

1.5 Production of Silk:

After 3-4 days the pupa of *endi* worm is extracted from cocoon opening at one end (front side) which Bodos are consume as food. After extraction of larva or pupa the cocoons are preserved for future use, i.e., for spinning up to several years. Before spinning of thread the cocoons are boiled about 1 to 1½ hour for softening the cocoons and then kept minimum 3 days packing in plantain leaves pressing with a heavy substance to separate the water from it. After three days from such activities they took in a spun. At the time of spinning the boiled empty cocoons are placed or soak in a bowl containing water. A small stick of bamboo and *thaokhri* (rotary) is used for spinning of thread from cocoon. Each boiled and placed in water empty cocoon is placed both the end of a bamboo stick and then the silk is drawn off in a coarse thread through a *thaokhri* (rotary or a spinning implement).

1.6 Conclusion:

Once, the Bodos predominate in the commercial production of silk and *endi* cocoons and finished products from *endi* yarn. In fact

spinning of *endi* yarn and weaving was household industry and every Bodo woman was expected to excel in the finer art handloom craftsmanship. But the production of *endi* thread reeling themselves from *endi* cocoon is decreasing unbelievably. Now they purchase their needy threads from market. In spite of *endi*, *pat*, *Muga* there are Synthetic, Polyesters, Rolex yarns are now among the Bodos. The demand of modern living especially educational pursuit has snatched away the time of Bodo girls from their handlooms. The school going girls, government job employees' depends on commercial production.

The quality became better one but the productive function is going to the other hand. Perhaps, the industry made clothes occupy the market in every nock and corner. The most of the Bodo craftsmen have failed to keep pace with them.

Rearing of silk worm was a traditional industry of the Bodos. The traditional *endi* thread production was predominant in the commercial production of silk and *endi* cocoons finished products from *endi* yarn. In fact spinning of *endi* yarn and weaving is a household industry and every Bodo woman was expected to excel in the finer art of handloom craftsmanship. But in course of time these cultural industries are decreasing among the Bodos. We must think to developed these industries through science and technology for better future.

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Disruption and Turmoil Scenario in Indian Economy

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Abstract

The unexpected and unwelcome emergence of covid-19 provided a severe blow to the already ailing Indian Economy. Besides, unfavorable international environments like US-China trade war, Britain exit from European Union, impact of Indo-China Galwan standoff etc. the repeated lockdowns imposed by Indian central and state governments almost crippled Indian economy. The recessionary trend is visible in almost all the economic variables like output, growth rate, and unemployment rate. Though the government of India as well state governments took several measures but as per experts it might take long time for Indian economy to overcome the same. However, government's initiative of self-reliant Indian economy is a welcome measure which should be meaningfully implemented besides ensuring large scale employment and removing the poverty supplying financial benefits to the downtrodden sections of Indian society.

Keyword : covid-19, Economy, international environments, lockdowns, recessionary, self-reliant.

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I. Introduction

The outbreak of covid-19 has shaken the economy of all the countries. India is not an exception of its impact. This pandemic has given a severe blow to the already weakened Indian economy. The world economy already has been showing a downward trend because of many factors like US-China trade war, Britain exit from European Union and oil price war between Russia and Saudi Arabia and its severe impact was also felt by the Indian economy which further deteriorated the condition. After this, the advent of covid-19 has added tremendous shock to the Indian economy. Even the most developed countries are finding it very difficult to cope up with this situation. As a result of this pandemic, economies of all the countries has been witnessing a recessionary trend as all the economic variables like output, growth rate, unemployment rate etc. moving to a downward direction. The lockdown in India informally started from 22nd march i.e. Janata curfew. Thereafter, the government of India announced a full lockdown of 40 days from 24th march, 2020 which affected badly the migrant workers or the daily wage earners.

II. Pre-Pandemic Situation

The Indian economy was witnessing severe slowdown since 2016-17. In 2016-17 India's GDP was 8.3% that fell to 7% in 2017-18, 6.1% in 2018-19 and 4.2% in 2019-20. According to the world bank, the current pandemic has added more stress to the pre-existing fragile economy (Hindustan Times, June 01, 2020). The government policy response until 2019-20 was largely a supply side response like slashing corporate tax rates. This move was expected to generate investment and boost the economy. RBI has more or less reduced interest rates which was expected to reduce the cost of capital and promote investment. Capital utilization levels in industry have been significantly lower since the last decade. Investment follows capacity utilization levels. Firm will only invest if they can utilize the existing capacity. Demand did not grow and capacity utilization downgraded further. Consumer sentiment seems to be weakening dragging down demand.

RBI's consumer confident survey shows that current perceptions on income and non-essential spending have collapsed in the recent period. (Hindustan Times, June 01, 2020).

All these suggest that the Indian economy was likely facing a demand-driven, perhaps even structural, slowdown before the pandemic. The policy responses most likely misjudged it for a cyclical supply side problem. RBI's monetary policy committee realized weak demand as a problem. The only possible tool seems to be available to the policy makers is interest rates cut and slashing direct tax rates that may boost demand.

III. During the Pandemic Situation

The various repercussions of this pandemic have made the Indian economy more disruptive and its impacts are being felt more or less by all the sectors of the economy. Though the severe impact of this pandemic is mainly on the manufacturing sector, we all know that agriculture sector is the backbone of Indian economy. Around 70% population of India are engaged on this primary sector. But this pandemic has destroyed the hope of many farmers as it has been a peak kharif season and India needs to have 250 lakh quintals of raw materials (Marwah, 2020). But due to the global trade turbulence, the Indian farmers are facing a shortage of various agricultural inputs. Moreover, farmers are unable to transport and sell their agricultural production due to the imposition of lockdown. The Indian economy is not only hit by this pandemic but also by so many disasters like Amphan, locust attack, earthquakes etc. which also added misery to this sector.

Manufacturing sector is the key to any economy as this sector generates ample of employment opportunities and it contributes around 20% of GDP (Jayaraman, 2020). MSME has immense contribution in the economic growth of a country in terms of production, export and especially employment. But MSME of India was already facing a huge slowdown, firstly, because of demonetization and secondly, due to improper implementation of GST and finally the consequences of Covid-19 have added further stress in this sector.

Indian MSMEs are heavily dependent on Chinese cheap raw materials. But imposition of trade restriction between India and China resulted in various problems such as halting production process as India do not have enough raw materials to meet the required demand and decline in export and import, unavailability of manpower. As a result of the lockdown many workers employed in different sectors of the economy have lost their jobs and they are facing a huge uncertainty about their future. Thousands of them had to return home on foot with no means of transportation due to the lockdown. More than 300 migrant workers died due to this lockdown with many reasons like suicide, rail accident, starvation, police brutality, etc. However, like all other sectors the Indian Pharma sector has also been affected by this ongoing pandemic though it has a few positive impacts as well. Pharmaceutical industries exported essential medicines like Hydroxychloroquine, Remdesivir etc. and attained the title "World's Pharmacy".

The impact of covid -19 pandemic on Indian service sector has not been fully realized yet, as Joe Hayes, Economist at IHS Markit, says that "The survey data collection (March 12-27, 2020) was inconclusive as prime minister Narendra Modi ordered a complete lockdown of the country'. But many economists have argued that the impact on this sector has been mixed. Some sectors have witnessed tremendous losses whereas there are some sectors which have achieved tremendous growth rate. Based on recent studies, many economists have claimed that there is a job loss of 40 million people (MRD report) in the country, mostly in the unorganized sectors. Many service sectors have opted the policy of 'Work from Home'.

Tourism sector also came to a standstill due the imposition of lockdown and around 38 million people who are associated in this industry have lost their job. (Radhakrishnan,2020). On the other hand, the closure of educational institutions has affected the studies of the students though most of the institutions have adopted mode of online teaching. But in rural areas, there exist a problem of digital device due to which students

in those areas are unable to access the online classroom teachings.

IV. Demand Side Shock

Tourism, Hospitality and Aviation are among the worst affected sectors due to this present condition. Shutdown of malls, cinema halls, restaurants etc. affected the retail sector badly by impacting consumption of both essential and non-essential items. Joblessness and decline in the income level has reduced the ability of consumption of the working population. Greater uncertainty about the future has reduced the confidence level of the consumers leading to the postponement of their purchasing decisions (FICCI,2020). Hotel aviation and travel sector together is expected to incur a loss of 85 billion rupees as per KPMG (Radhakrishnan,2020).

V. Supply Side Shock

This pandemic has affected the production of many manufacturing sectors in India as they are facing a shortage of raw materials. India is very much dependent on China for its raw materials. But the imposition of lockdown and many issues related to Indo-China Galwan standoff has disrupted the supply chain. This happens to be a great opportunity to boost the productivity of Indian industries but due to lack of required resources they are unable to reap the benefits of the situation.

VI. Impact on International Trade

The trade impact of this pandemic for India is estimated to be about \$348 million. According to the report published by the UNCTAD, there is a decrease in exports of about \$50 billion due to slowdown in Chinese manufacturing as a result of covid-19 (The Hindu, 05 March,2020). India also plays a major role by exporting sea food, petrochemicals, gems and jewelry to China. The outbreak of covid-19 has reduced the export of these items to china. India exports 34% of its petrochemicals to China (FICCI, 2020). Though this pandemic has slowed down the trade between India and the rest of the world but eventually will come to an end. But this pandemic has given us a window of opportunity to strengthen our existing policies and infrastructure so that India can become a net exporter in the coming times.

VII. Various Policy Measures Taken by RBI

On April 17, 2020, the RBI governor announced several measures to tackle the economic crisis arising out of covid-19.

- RBI announced that it was cutting repo rate by 75 basic points to 4.4 to ease the credit lending in the economy.
- RBI also announced that it would cut the reverse repo rate by 90 basic points to 4%.
- The RBI also announced that it will reduce the CRR by 100 basic points to 3% and would inject 1.37 lakh crore into the system.
- RBI also announced that lenders could give a moratorium of 3 months on term loans.
- Long term repo operations will be carried out by RBI to inject liquidity to the tune of Rs.1 lakh crore.
- A three-month interest moratorium shall also be permitted to all lending institutions.
- Accommodation under Marginal Standing Facility to be increased from 2% to 3% of SLR. This will release Rs.1.37 Lakh crore into the system.
- The cumulative liquidity boost provided by RBI through above measures amounts to Rs.3.74 lakh crore.

Source (The Economic Times, 27 March, 2020)

VIII. 20 Lakh Crore Package of Govt to Revive the Economy

The Prime Minister of India announced a special economic package of 20 lakh crores which is equivalent to 10% of India's GDP. The main aim of this scheme is to make India a self-reliant nation. He also added that this package will meet the various sections including MSMEs, cottage industries, labourers, middle class, liquidity, laws etc. The Prime Minister also said that several reforms in various sections are required to make the country self-dependent so that the economy can be uplifted from this crisis. These reforms comprise of supply chain reforms for agriculture, rational tax system, simple and clear laws, capable human resource and a strong financial system. These reforms will also promote business, attract investment, and further

strengthen Make in India.

IX. Conclusion

To be sure, the impact of covid-19 hampered the economy towards the end of 2019-20. No doubt this pandemic will come to an end but it will take lot of time to bring the economy in a better position though several policy measures are being taken by the government. The severe impact of this pandemic is mainly on the downtrodden section therefore these poor people should be ensured with minimum basic income which will help to increase the demand in the economy. Financial inclusion should be the first priority to make India a self-reliant economy. An economy is said to be a self-reliant economy only when its citizens are self-reliant. Self-reliance does not mean an isolation from the world economy, rather, it means capacity building of some sectors of the economy so that these sectors can deal easily at the most vulnerable times. Without inclusive growth, an economy can never be a self-reliant. The government of India should give more focus on employment generation.

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रिंसार बिगियान आरो बेनि बाहागोफोर (Phonetics and Its Parts)

Asha Rani Brahma*

राव बुडेब्ला जौ गोसोनि साननाय हनायखौ फोरमायनाय बिजौखौनो बुजियो। सुबुं समाजा गाव गावनि गोसोनि खोथाफोरखौ रावनि गेजेरजौ फोरमायलायो। गुबुन फारसे बे रावखौनो जेब्ला बिगियाननि नोजोरजौ खान्थि बायदियै नायबिजिरो बेखौनो राव बिगियान (Linguistics) बुंनाय जायो। बे आयदायाव रावखान्थि, बाभ्राखान्थि आरो रिंसार होग्रा अंगफोरनि सायाव समाज, हारिमु, जारिमिन, राजखान्थि आयदायाव गोहोम गोग्लैनायखौबो नायबिजिरो।

रिंसार बिगियान (Phonetics) होनना बुंडेब्ला जौ बिगियाननि नोजोरनि रिंसार होग्रा अंगफोर आरो रिंसार दिहुनजानाय, गुबुननो खोनाहोनाय, खोनासनाय आरो लिरनो हानायखौनो बुजियो। थौंजोडै रिंसार होग्रा अंगफोरनि सायाव फरायसनाय। बे आयदायाव मोनसेल' रावनि सायाव नायबिजिरो, बेयो बुहुमनि गासैबो रावनि सायाव नायबिजिरो। बेयो राव बिगियान (Linguistics) निनो मोनसे दालाय।

रिंसारआ जेब्लाबो बुंनायजौ सोमोन्दो गोनां। जौ माबा मोनसे सोदोब बुडेब्ला बे सोदोबनि फिसा फिसा खोन्दो एबा दुइसिनथार खोन्दोखौ जौ खोनानो मोनो। बेफोर खोन्दोयानो रिंसार। बेयो जेब्लाबो जौनि रिंसार होग्रा अंग जैरै- खुगा बिजौनिफ्राय लानानै गोदोनासिम अंगफोरजौ दिहुनजानाय। बे एखे खान्थिखौनो जेब्ला बिगियाननि नोजोरजौ फरायसनाय जायो अब्ला बेखौनो रिंसार बिगियान (Phonetics) बुडे।

Phonetics सोदोबखौ गिबियै 1820-30 मायथाइयाव बाहायजेन्दोमोन। गिबियाव New Latin सोदोब Phōnēticus बेनिफ्राय Greek सोदोब Phōnētikōs ओंथिया गारां (Vocal) आरोबाव Phōnēt (o's) ओंथिया बुंजानाय एबा

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रायज्जायजानाय (to be spoken) बे बायदियै दानि Phonetics महरा मोनदौ। (www.dictionary.com>browse>phonetic)

रिंसार बिगियान (Phonetics) नि सायाव गोबां रावबिगियानगिरि आरो लिरगिरिफोर गोबां गावबा गाव बिबुंथि होलांदौ। गाहायाव सानैसो बिजाबाव लिरनानै गालानायखौ दैखानानै होनाय जाबाय-

T. Balasubramaniam या एरै बुंलादौ "Linguistics is a systematic study of language. Phonetics is a branch of linguistics and it is the branch dealing with the medium of speech. It deals with the production, transmission and reception of the sounds of human speech."

R.L. Varshney या गावनि An Introductory Text Book of Linguistics and Phonetics बिजाबाव एरै बुंलादौ- "Phonetics is the scientific study of the production, transmission and reception of speech sounds. It studies the medium of spoken language."

रिंसार बिगियान (Phonetics) खौ गासै मोन्थाम बाहागोआव रान्नो हायो। जैरै-

1. गारां सोमजिनाय रिंसार बिगियान (Articulatory/production phonetics)
2. रिंसारखारथाय रिंसार बिगियान (Acoustic/transmission phonetics)
3. खोनानाय रिंसार बिगियान (Auditory/perception phonetics)

1. गारां सोमजिनाय रिंसार बिगियान (Articulatory/production phonetics):

गारां सोमजिनाय रिंसार बिगियानाव गारां सोमजिहोग्रा अंगफोरनि सोमोन्दै सावरायनाय जायो। बेयाव थामहिनबा रिंसार होग्रा अंग (speech organs) फोर मावनानै एबा सुबुंजौ लोरसोर खालामजानानै माबोरै रिंसार सोमजिखाडे बेखौ सावरायो। मानसिनि खुगा बिजौनिफ्राय जागायना गोदोनासिम अंगफोरनि सायाव गाहायै सावरायो। मोनसे अंगया मोनसे अंगखौ रिंसार सोमजिहोनायाव मा बायदि हेफाजाब होलायो बेखौ सावरायो। थोजोडै रिंसार बिगियाननि बे आयदाया रिंसार सोमजिनायखौ एबा ओंखारनायखौनो सावरायो।

सुबुंनि रिंसार होग्रा अंगफोर जाबाय खुगा बिजौनिफ्राय जागायना जैरै- गाहाय आरो गोजौ गुस्थि, हाथाय गुदि आरो गोजौ, सालाय (मोखां, बिजौ, गेजेर, गुदि) गोर आरो गुरै थालो, खुगा दन्दर, गन्थं दन्दर, गारामा नाला, गारामा खुगा सफा, आलजिबा, आदार नाला गारां बिखं जरा आरो गारां दाजेम। गाहायाव मानसिनि रिंसार अंग (Speech organs) फोरखौ सावगारिनि गेजेरजौ होनाय जाबाय-

रिसार सोमजिहोनायाव जौनि रिसारहोग्रा अंगफोरनि लोर सोर जानायखौ नायनाई मोननै बाहागोआव रान्ते हायो। जैरै- सोमावहाग्रा अंग (Active organs) आरो सोमाव हायै अंग (Passive organs)।

सोमाव हाग्रा अंग (Active organs) : जाय अंगफोरा रिसार होनाय समाव गाव गावनि असे जायगानिफ्राय लोर सोर खालामो एबा थांलाय फैलाय खालामो बेखौ सोमावहाग्रा अंग बुडे। जैरै- गाहाय गुस्थि, सालाय आरो गारां बिखुं जरा। बे अंगफोरा सोमावहायै अंगजौ लोगोसे जाना रिसार सोमजिहोयो।

सोमाव हायै अंग (Passive organs) : जाय अंगफोरा रिसार होनाय समाव लोर सोर खालामा एबा दाबसे जायगायावनो थाबाय थायो आरो गुबुन सोमाव हाग्रा अंगनि हेफाजाब लायो बेखौनो सोमावहायै अंग बुडे। जैरै- गोजौ गुस्थि, गोजौ हाथाय, खुगानि गोजौ बाहागो, गारामा नाला आरो गारामा बिखुं।

गुस्थि : मानसिनि मोननैबो गुस्थिया रिसार सोमजिनायाव गाहाय फाव लायो। बे गुस्थिफोरा गावजौ गाव आरो हाथाय गुदिजौ नांजाबलायनानै रिसार सोमजिहोयो।

सालाय : रिसार सोमजिनायाव सालायाबो बिफाव लायो। सालायनि बाहागो रान्नायखौ जौ गुबुन गुबुन राव बिगियानगिरि (Linguist) आरो लिरिगिरिफोरनिखौ आलादा मोन्दौ। खायसे मोनथाम खायसे मोनब्रै बाहागोयाव रन्दौ। रिसार होनाय समाव बेयो बयनिखुइबो लोर सोर खालामनो हाग्रासिन अंग। गारां हांखो आरो खौरां हांखो मोननैबो रिसारथिफोरखौ बेयो रिसार होयो। खुगा दन्दर, गन्थं बाहागो, आल जिबा, थालो बेफोर अंगफोराबो खुगा आरो गन्थंफोरजौ बार थांलाय फैलाय खालामहोना गारां सोमजिनायाव मदद होयो। सालाया थालोनि गुबुन गुबुन जायगायाव नांजाबना रिसार सोमजिहोयो। बे बायदिनो गुबुन गुबुन अंग गारां दाजेम, गारां खुगा, गारां बिखुं आरो खायसे अंगफोराबो गोबां नडाब्लाबो खमैब्लाबो खामानि मावो।

2. रिसार खारथाय रिसार बिगियान (Acoustic/transmission phonetics) :

रिसार खारनाय रिसार बिगियानाव रिसारआ बारआव खारनायखौ नायो। R.L. Vashney नि गावनि बिजाबाव बुंनय बायदियै- Acoustic phoneticians analyse the speech waves with the help of instruments they attempt to describe the physical properties of the stream of sound that issues forth from the mouth of a speaker.

सुबुनि रयज्जलायनाया खुगानिफ्राय गलानानै बारजौ बौरै बिरलानानै सासेनि खोमायाव हाबहैयो बेखौनो बे आयदायाव सावरायनाय जायो।

3. खोनानाय रिसार बिगियान (Auditory/perception phonetics) :

बे रोखोम रिसार बिगियानाव खोनाग्रा सुबुं एबा audience नि सायाव सोनारो। बे बिथिडव बुंग्रा आरो खोनाग्रानि सायाव लामा नायो। बुंग्राया बेसेबां जैरै एबा बोलो होना बुंदौ आरो खोनाग्रया मा बायदि खोनादौ बेखौ नायबिजिरो। खोनानाय रिसार बिगियाननि सायाव Jaydeep Sarangi या गावनि A Text Book of Linguistics and Phonetics याव बुंनय बादिब्ला "Which deals with the reception of speech sounds by the internal diaphragm fitted in the ear cavity".

खोमाया खोनानाय आरो गावनि सोरगिदिं जेखि सोदोब मोना बे सोदोबफोरखौ बुथुमो एबा खोनायो। बिथां Sarangi या गावनि बिजाबाव बे खोनानाय एबा खोमायाव हाबनायनि सोमोन्दै एरै बुंदौ- "The outer ear collects the sound, the middle ear amities them and passes them to the inner ear. The sounds are smeared across each other".

बे रिसार खान्थियाव रिंखानाय एबा थेरखानाय (Pitch level) खौ नायनो थाखाय माखासे दाजेमनि गोनांथिबो जायो। थौंजोडै बे खान्थिया खोनानाय एबा खोमायाव गुबुननि बुंनय रिसार माबौरै फैयो एबा बेखौ खोनासंनानै जौ बुजिनो हायो आरो बेनि सायाव फिनन्नाय होनो हायो।

गोजौआव सावरायनानै नुनो मोनबाय दि- रिसार बिगियान (Phonetics) या राव बिगियान (Linguistics) नि मोनसे गोनांथार बाहागो। राव आरो राव बिगियान बुडेब्लानो सुबुंनि रावनि सायाव सोनारो। बे रावखौ सावरायनो एबा बेनि सायाव बिगियाननि नोजोरजौ बिजिनोब्ला सुबुंनि रिसार होग्रा अंग (Speech organs) फोरनि सायाव नायनो गोनां जायो आरो बे रिसारहोग्रा अंगफोरनि सायावनो रिसार बिगियान (Phonetics) या नायबिजिरो। सावरायनायनि सिगाडवनो बुंनय बायदि बेयो जेब्लाबो बुंनय आरो खोनानायनि सायाव सोनारो। दानि मुगायाव बे राव बिगियान (Linguistics) आरो रिसार बिगियान (Phonetics) आयदाया गोबां गोनांथि होजानाय आयदाफोर आरो बेनि सायाव फरायसंनया दानि दिनाव बांबोनो हमदौ। बेफोर आयदाफोरखौ कलेज आरो इउनिभारसिटिफोरा आलादा आयदा महरैबो फसंदौ आरो गोबां सोलौंसालिफोराव बेनि सायाव गोथौवै नायबिजिनो थाखाय बायदिसिना Laboratory फोरखौ गायसंबोदौ। जैरै- Bengaluru नि CIIL (Central Institute of Indian Languages)। बेनि खायनो जौबो बर' रावखौ बिगियाननि नोजोरजौ फारि फारि खान्थि बायदियै नायबिजिनंगौ आरो जौगा होना बुहुमनि गुबुन हरिनि

रावजों समान मान दान्दा खालामनो नाजानांगौ आरो बुहुमनि गुबुन गुबुन रावबिगियानगिरि (Linguist) फोरखौ रावनि सायाव नायबिजिरनो बाद्य खालामनांगौ ।

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Feminine Gender in Literature: A Comparative study of 'A Passage to India' and 'Heart of Darkness'

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Abstract

One of the common attacks on imperial literature is that in the course of the narrative, women figures are silenced due to their gender. They don't get equal treatment like the male characters. It seems as if women don't have any significant role to play in the maintenance of the colony. This domain belongs exclusively to the male characters of the British society. Another criticism is that even though women do not enjoy an equal footing with the men and belong to the lower strata of society; still British women seem to enjoy a better position as compared to the colonised women. In this article an attempt has been made to show how both these criticisms hold true of Foster's representation of Indian and English women in his '*A Passage to India*' and Conrad's representation of African and English women in '*Heart of Darkness*'.

Keywords: imperial literature, gender, British women, colonised women.

Introduction-the issue:

In '*A Passage to India*' there are women both from western world and from India. Adela, Mrs. Moore, Mrs. Turton belong to the first

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group of women and Hamidullah and Aziz's wives belong to the second group. In the same way 'Heart of Darkness' is also inhabited by women from Africa as well as from England. In both these novels women are not so much active participants in the upkeep of the empire. They are just decorative figures in the narrative. But, there is a stark difference in the portrayal of the colonised women and that of the British women. In 'Passage to India' British woman represented by Adela is not as silent as Indian woman and in 'Heart of Darkness', the Intended, representative of the British women is rational, an ideal woman.

Forster's women figures:

Indian women:

Forster's Indian women are in 'Purdah'. These women are silent in most of the time during the course of the novel. In the Bridge party Adela and Mrs. Moore attempt to initiate conversations with the Indian women but the latter remain silent. The women folk remain behind the purdah with 'nothing but empty words at her command'. Hamidullah's wife tells Aziz about the horrors awaiting women who do not marry and also urges Aziz to remarry. But Aziz took his leave saying 'perhaps...but later...' His invariable reply to such an appeal shows that though he is worried by this tale but he has the power to act or not act. Hamidullah notices worried Aziz and 'wiped out any impression that his wife might have made'.

Almost all the Indian women characters are nameless and invisible. The narrator comments very significantly on this during the events that occurred at the times of Aziz's trial. At that time, 'a number of Mohammedan ladies had sworn to take no food until the prisoner was acquitted; their death would make little differences, indeed, being invisible, they seemed dead already, nevertheless it was disquieting'.

Being invisible and nameless they don't have a voice to raise against the society, against men like Aziz who objectifies them. Aziz in his attempt to seal his intimacy with Mr. Fielding comments unabashedly that Adela 'was not beautiful. She has practically no breast'. Aziz not

only objectifies women but also treats them as objects of exchange. In order to cement his bonding with Fielding Aziz shows him the photograph of his dead wife. He gives Fielding the honour to view his wife's photo, not because she is important as she is 'nothing, she was not a highly educated women or even beautiful', but simply because showing the sister-in-law is the duty of one brother to another. The action of showing takes on a greater importance than the substance shown as it allows Aziz to reveal his love for and trust in Fielding. At this point Fielding regrets that he does not have either a woman or even a story of a woman to offer in exchange. At the end of the novel when the misunderstanding between Aziz and Fielding is cleared up, Fielding again uses woman as object of exchange. He tries to recapture his previous closeness with Aziz by 'forcing himself to speak intimately about his wife', by evoking the sexual discourse that had united them before.

The photograph of Aziz's wife becomes emblematic of women both as object of exchange and also as object of violation. When McBryde finds the photograph of her in Aziz's table drawer, Fielding at once recognises her and says, 'That's his wife'. But in response to Fielding's identification of the photograph, McBryde 'gave a faint, incredulous smile, and started rummaging in the drawer. His face became inquisitive and slightly bestial. 'Wife indeed, I know those wives!' he was thinking'. According to Silver, he 'knows' her, is a metaphor that suggests clearly the relationship between knowledge, sexuality, and power-including power to define the truth. Thus the photograph becomes the object of violation, violated by the way McBryde says he 'know' her. So, this is how the Indian women's situation was. English women though enjoyed a better position also suffered at the hands of male members of the society.

English women:

Fielding shows that there is a mismatch between women and India when he states: 'He had discovered that it is possible to keep in with Indians and Englishmen, but that he who would also keep in

with Englishwomen must drop the Indians. The two wouldn't combine. Useless to blame either party, useless to blame them for blaming one another. It was just so, and one had to choose'. There is no explanation given to this statement in the text; it is simply asserted as a fact.

The Indian characters seem likewise aware of this 'fact' that British women and Indians cannot coexist, for when Aziz and Fielding are talking about whether they like Englishwomen, Aziz states 'Hamidullah liked them in England. Here we never look at them. Oh no, much too careful. Let's talk of something else'.

Although, the Anglo-Indian men are cruel to the Indians, most of the blame for cruelty falls upon women, who are seen more often than not, as forces separating the men of the two races. For example, the Indians in the novel agree that 'granted the exceptions ...all the Englishwomen are haughty and venal'. Major Callendar thinks, 'After all, it's our women who make everything more difficult out here'.

In the novel Mrs. Moore and Adela are placed in an unusual position. It is due to the fact of they being elite (as members of ruling class) and also subordinate (as their roles are relatively marginal on account of their gender) at the same time. Since they belong to the subordinate group they can have their critical view point on the elite class. But their identities as Ronny's fiancée and mother prevent them from voicing their opinion loud.

Mrs. Moore has an alternative to the British vision that the Empire should be based on force. She believed that Christian principle, God is love-should be the basis of Empire. But her son Ronny dismisses her critique. He considers her vision is only the delusion of a sick old woman who is inclined to foolish spirituality. Like other marginalised characters Mrs. Moore is also silenced in the novel.

In the novel, Adela is characterised by her cry 'I want to see the real India'. But Ronny corrects her perceptions and language, and limits her actions. Fielding calls her a 'prig' and questions her sincerity; and Aziz, although he treats her as if she were a man, defines her by

her lack of beauty. According to Maria M. Davidis, Adela is unique among the characters in the novel in that she maintains both Victorian and modern aspects in herself and therefore disrupts both elements of Anglo-Indian society rather than fitting in. Some are of the view that after the caves, lying passively in bed with her body full of cactus spines, while they are drawn out one by one, Adela literally becomes a spilt being forced by the pain both to see and experience herself as a physical object, a vulnerable body.

Not many readers get the measure of Adela's heroism. Plain, dry, earnest, she does not arouse Fielding's interest when they first meet. She strikes him as a rather pathetic example of modern education. But when she admits her mistake in the court and takes back the charges against Aziz, Fielding is roused to a reluctant, wondering admiration. As he later persuades Aziz to take a proper view of her character and role:

'But she is perfectly genuine and very brave. When she saw she was wrong, she pulled herself up with a jerk and said so. I want you to realise what that means'.

This is heroism. Aziz never really understands with his emotional nature. He forgives her in the end, but does not understand her. This is also another way, employed by the author, to show the courage and mental strength of British women, which is shown to be lacking in Indian women.

Conrad's women figures:

'Heart of Darkness' includes women belonging to Europe as well as Africa. But like the women in 'Passage to India', they also have not got a strong position in the narrative. These women are Marlow's Aunt, the two women knitting with black wool, the portrait of the blindfolded woman, the Intended and the African mistress. The Intended and the African mistress are two imposing figures of the novel. We can discuss about the portrayal of white woman and black woman from two points of view and can see how the two portrayals are different.

We can consider the African mistress of Kurtz as representative of African women and his Intended as representative of European women. Conrad depicts Kurtz's mistress as 'a wild and gorgeous apparition of a woman'. She is 'savage and superb, wild eyed and magnificent'. There is something 'ominous and stately in her deliberate progress'. She embodies the wild, untamed land of Africa, its savagery and wildness. She is, in effect, the soul of the wilderness. Her aloofness and savage nature add to the portrayal of her as evil.

On the other hand, Kurtz's Intended who lives in Europe has 'fair hair', 'pale visage' and 'pure brow'. Her glance is 'guileless. Profound, confident and trustful.' she is the ideal woman who will uphold the memory of Kurtz and be faithful. There is nothing evil about her, only naive good intentions and unquestioning loyalty.

The mistress who is depicted as 'savage and superb' is also shown as someone who is unwavering. When Kurtz is being carried away 'she stood looking at us without a stir, and like the wilderness itself, with an air of brooding over an inscrutable purpose'. In contrast to her stands Kurtz's Intended, a figure of unblemished purity and devotion. Unlike the African woman, she hangs her head in sorrow. She has been mourning since Kurtz's death more than a year ago.

Regarding the different kind of portrayal for these two women Chinua Achebe is of the view that Conrad endows one with language and the other without; one's status is of a lover and the other's is of a mistress. He thinks that the African woman 'fulfills a structural requirement of the story: a savage counterpart to refined, European woman who will step forth to end the story'.

In the foregoing discussion we have seen that the mistress and the Intended are having various differences. Conrad is trying to make the Intended somewhat superior (or rationale) in behavior to the African mistress. This is how he is showing his imperialist attitude of considering the Britishers as rationale being and the Africans as barbarous savage.

If we discuss these women figures under the light of feminist perspective then the differences between the mistress and the Intended

fade away. One critic has rightly remarked that both the mistress and the Intended function as 'blank slates upon which the values and the wealth of their respective societies can be displayed'. In his letter to his publisher Conrad has written, 'It is a story of the Congo. There is no love in it and no woman- only incidentally'. Marlow echoes this attitude of Conrad in his thought regarding women,

'They live in a world of their own, and there had never been anything like it, and can never be.'

According to Nina Pelikan Straus, Marlow has been favored by many male critics as he 'brings truth to men by virtue of bringing falsehood to women'. Marlow is of the view that 'They-the women I mean -are out of it. We must help them to away in that beautiful world of their own- lest ours get worse'. Due to his such kind of viewpoint he tells the Intended that the last word Kurtz pronounced was her name, which we reader know as a lie. Kurtz's last words are 'The horror! The horror!' But Marlow cannot tell this to the Intended because she wants something to live with. Kurtz started realizing the horror of the wilderness and of Africa only when he was distanced from his African mistress who 'swallowed up' Kurtz. Now, if Marlow narrates the truth then he will have to disclose about the African mistress also and this will lead to the destruction of the Intended's 'beautiful world'. Because then she will come to know that Kurtz had a mistress in Africa.

At one place, Marlow says that the African mistress had the 'value of several elephant tusks upon her'. Here we can say that this woman is compared with commodity. We also notice Kurtz referring to the Intended as a possession. She is referred to as some material possessions like 'my ivory', 'my station', 'my intended', 'my career'.

We have seen that women are objectified in both the novels. In 'Passage to India', they are treated by men as token of showing their trust on one another. In 'Heart of Darkness', the African woman has 'value of several elephant tusks upon her'. The Intended is Kurtz's 'Ivory', his 'station'. Major Callendar thinks, 'After all, it's our women

who make everything more difficult out here'. And due to such thought even Marlow believes that women 'live in a world of their own' and 'we must help them to away in that beautiful world of their own-lest our gets worse'. Even though, all the women are treated as inferior being but there is difference in the representation of colonized women and British women. Indian women are in purdah, they are silent, nameless figure. The African mistress is 'wild', 'savage'. She is 'the embodiment of primitive darkness', whereas the Intended is a figure of unblemished purity and devotion who has been mourning since Kurtz's death more than a year ago. She is 'the embodiment of light'. In the same way, Adela is also perfectly genuine and very brave'. She has the courage enough to go against the Anglo-Indian society she lives in. Therefore, here we have come to the conclusion that it is true that imperial literature is patriarchal in the sense that it does not give equal status to woman and this literature is also racist, which can be seen in their giving privileged position to British women.

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ভারতীয় সাহিত্যতত্ত্বের ভূমিকা

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সাহিত্য কি? কোন গুণে একটি লেখা সাহিত্যপদবাচ্য হয়ে ওঠে, এ নিয়ে লেখালেখি প্রাচ্য ও প্রতীচ্যে নেহাত কম হয় নি। প্লেটো, এরিস্টটলের হাত ধরে যেমন প্রতীচ্যের সাহিত্যতাত্ত্বিক জিজ্ঞাসা প্রতিষ্ঠা পায়, এদেশে সাহিত্যতত্ত্ব জিজ্ঞাসার সূচনা ধরা হয় ভারতের নাট্যশাস্ত্র থেকে। ভারতীয় সাহিত্যতত্ত্ব আলোচনার পথিকৃত ভারতকে 'মুনি' আখ্যা দেওয়া হয়েছে। ভারতমুনির পর থেকে বহু শতাব্দী ধরে বিভিন্ন যুক্তি-প্রতিযুক্তির মাধ্যমে গড়ে উঠেছে ভারতীয় সাহিত্যতত্ত্বদর্শন বা অলংকারশাস্ত্র। অর্থাৎ সুবিশাল ভারতীয় অলংকারশাস্ত্র বহু বিচিত্র মতবাদের সমষ্টি। ভারতমুনির নাট্যশাস্ত্র থেকে যে জিজ্ঞাসার সূত্রপাত, ভামহের অলংকারপ্রস্থান, বামনের রীতিপ্রস্থান, কুস্তকের বক্রোক্তিপ্রস্থান, ক্ষেমেন্দ্রের ঔচিত্যবাদ, আনন্দবর্ধনের ধ্বনিবাদ হয়ে মন্মটের 'কাব্যপ্রকাশ' এ যে প্রস্থানসমষ্টির ঘটতে দেখা যায়, তাতে রসধ্বনি প্রাধান্য পেয়েছে। এই নিবন্ধে বহু মতবাদের সমষ্টি সুবিশাল এই অলংকারশাস্ত্রের প্রধান প্রবণতাগুলো অতি সংক্ষেপে আলোচনা করার চেষ্টা করা হবে, আর অলংকারশাস্ত্র যেহেতু প্রায় বিশ্ববিদ্যালয়ের স্নাতক স্তরের পাঠক্রমে সন্নিবিষ্ট আছে, তাই মূলত ছাত্র-ছাত্রীদের বোধের উপযোগিতার প্রতি লক্ষ রেখে যতটা সম্ভব সহজ ভাবে বিষয়টির উপর আলোকপাতের চেষ্টা করা হবে।

ভারতমুনির নাট্যশাস্ত্র থেকে ভারতীয় সাহিত্যতত্ত্বদর্শনের সূচনা এবং অলংকারবাদ, রীতিবাদ, ধ্বনিবাদ, রসবাদ প্রভৃতি বিভিন্ন মতবাদের সন্মিলনে ভারতীয় কাব্যজিজ্ঞাসা বা কাব্যতত্ত্ব গড়ে উঠলেও সমগ্র শাস্ত্রটিকেই অলংকারশাস্ত্র বলা হয় এবং সকল তাত্ত্বিকদেরই আলংকারিক অভিধায় অভিহিত করা হয়। অর্থাৎ আলংকারিক শব্দটির আভিধানিক অর্থ কাব্যতত্ত্বে কেবল অলংকারবাদের সমর্থক হলেও অলংকারবাদী ভামহ, রীতিবাদী

বামন বা ধ্বনিবাদী অভিনবগুপ্ত সকলকেই আলংকারিক বলা হয়।

ভরতের নাট্যশাস্ত্র ভারতীয় সাহিত্যতত্ত্বের একেবারে আদি গ্রন্থ। এই গ্রন্থ থেকেই এই বিদ্যাচর্চার সূত্রপাত। নাট্যশাস্ত্রের রচনাকাল নিয়ে নানা মত থাকলেও গবেষকদের মতে এর রচনাকাল খ্রীঃ পূঃ দ্বিতীয় শতক থেকে তৃতীয় খ্রিষ্টাব্দের মধ্যে। নাট্যশাস্ত্রকার ভরত ৩৭ টি অধ্যায়ে বিন্যস্ত নাট্যশাস্ত্রে মুখ্যত নাট্য ও আনুষঙ্গিক বস্তু নিয়ে আলোচনা করলেও নাটকে প্রযুক্ত বাক্যবিন্যাসের দোষ-গুণ-অলংকার-লক্ষণ প্রভৃতির তাত্ত্বিক আলোচনা করেছেন, যা পরবর্তীকালে কাব্যতত্ত্বের আলোচনায় আলংকারিকদের মূল উপজীব্য হয়ে উঠেছে। বিশেষ করে রসাধ্যায় ও ভাবাধ্যায় নামে পরিচিত ষষ্ঠ ও সপ্তম অধ্যায়ে রসাভিব্যক্তিই মূলত আলোচিত হয়েছে। সর্বোপরি ভরতমুনি 'বিভাবানুভাবব্যভিচারসংযোগাদ্ রসনিষ্পত্তি' বলে সাহিত্যজিজ্ঞাসায় যে সূত্র উপস্থাপন করেছিলেন, প্রায় হাজার বছর পর অভিনবগুপ্তের রসভাষ্যে তা যেন পূর্ণতা পেয়েছে।

ভরতের দীর্ঘকাল পর ভামহ (ষষ্ঠ/সপ্তম শতাব্দী) সর্বপ্রথম কাব্যের সংজ্ঞা নির্দেশ করেছেন। তিনিই প্রথম বলেছেন - 'শব্দার্থো সাহিতৌ কাব্যম্', অর্থাৎ শব্দ ও অর্থের মিলনই হচ্ছে কাব্য। ভামহ তাঁর ছয় অধ্যায়ের 'কাব্যালঙ্কার' গ্রন্থে কাব্যশরীর, অলংকার, দোষ, ন্যায় ও শব্দশুদ্ধি বিষয়ে আলোচনা করেছেন। তিনি শব্দ ও অর্থকে সমান গুরুত্ব দেওয়ায় শব্দালংকার ও অর্থালংকার দুটিই সমান গুরুত্বপূর্ণ হয়ে উঠলেও 'বক্রোক্তি' কে সমস্ত অলংকারের মূল এবং সমস্ত অলংকার বক্রোক্তির প্রকারভেদ বলে মত পোষণ করেছেন। রসকে তিনি অলংকারের ওপর নির্ভরশীল ভেবেছেন।

ভামহের পর খ্রিষ্টীয় অষ্টম/নবম শতাব্দীতে রীতিবাদী বামনের আবির্ভাব। পাঁচ অধ্যায়ে লেখা তাঁর 'কাব্যালংকারসূত্র' গ্রন্থে বামন রীতিবাদ সমর্থন করে বলেছেন - 'বিশিষ্ট পদরচনা রীতিঃ' এবং 'রীতিরাত্মা কাব্যস্য'। অর্থাৎ রীতি হল বিশেষ বিশেষ ভঙ্গিতে পদ সন্নিবেশ এবং এই রীতিই হল কাব্যের আত্মা। অবশ্যে ইতিপূর্বে সপ্তম শতকে আচার্য দণ্ডী চার অধ্যায়ে লেখা তাঁর 'কাব্যাদর্শ'তে বিশিষ্ট পদরচনা বা বাক্যকেই কাব্য বলে প্রতিপন্ন করতে চেয়ে ভারতীয় অলংকারশাস্ত্রে রীতিপ্রস্থানের প্রবর্তন করলেও আচার্য বামনকেই রীতিবাদের শ্রেষ্ঠ আচার্য বলে স্বীকার করা হয়। আচার্য দণ্ডী রীতিপ্রস্থান ছাড়াও অলংকারশাস্ত্রে 'গুণতত্ত্ব' এরও প্রবক্তা। পরবর্তীতে বামন গুণ ও অলংকারের আপেক্ষিক গুরুত্ব নিরূপণ করেছেন। আচার্য বাম যদিও 'কাব্যং গ্রাহ্যমলংকারাৎ' অর্থাৎ অলংকারের জন্যই কাব্য গ্রাহ্য হয়, 'সৌন্দর্যমলংকারঃ' অর্থাৎ সৌন্দর্যই অলংকার, 'কাব্যশোভায়াঃ কর্তারো ধর্মা গুণাঃ' অর্থাৎ কাব্যশোভাকারক মূল উপাদান হল গুণ - প্রভৃতি উক্তিগুলি করে অলংকারতত্ত্ব ও গুণতত্ত্বের পোষক করলেও শেষপর্যন্ত রীতির মধ্যেই অলংকার ও গুণের প্রচ্ছন্ন উপস্থিতি লক্ষ করে 'রীতিরাত্মা কাব্যস্য' বলে সিদ্ধান্তে

উপনিত হয়েছেন। লক্ষ্মণীয়, ভারতীয় অলংকারশাস্ত্রে বামনই প্রথম আলংকারিক, যিনি কাব্যের 'আত্মা'র কথা উপস্থাপন করেছেন, অর্থাৎ মানবশরীরে যেমন আত্মা থাকে, যা মানুষের মূল চালিকাশক্তি, কাব্যশরীরেও তমনি আত্মা থাকে এবং সেই আত্মাই কাব্যের মূল। তবে মজার ব্যাপার হল, বামন 'রীতিরাত্মা কাব্যস্য' বলে প্রথম কাব্যের আত্মার কথা তুললেও তিনি কিন্তু প্রকৃত কাব্যাত্মার সন্ধান পান নি। কেন পান নি, সেকথায় পরে আসছি।

কাব্যের আত্মা কি, এ নিয়ে মতভেদ থাকলেও একথা অনস্বীকার্য যে শব্দ ও শব্দ দ্বারা সৃষ্ট অর্থপূর্ণ বাক্য কাব্যের প্রাথমিক ও মূল উপাদান। এই অর্থপূর্ণ বাক্যই কাব্যের শরীর বা দেহ। এতক্ষণ যে যে আলংকারিকদের কথা আলোচনা করলাম, এঁরা যেহেতু সকলেই কোনো না কোনো ভাবে বাক্যের শব্দ ও অর্থের মধ্যে বা পদরচনার বিশিষ্ট রীতির মধ্যে অর্থাৎ এক কথায় কাব্যশরীরের মধ্যে কাব্যের আত্মার সন্ধান করেছেন, তাই অলংকারশাস্ত্রে এঁদের দেহাত্মবাদী বলা হয়ে থাকে। এঁদের মতে 'বাক্যের শব্দ আর অর্থকে আটপৌরে না রেখে সাজসজ্জায় সাজিয়ে দিলেই বাক্য কাব্য হয়ে ওঠে। এই সাজসজ্জায় নাম অলংকার। শব্দকে অলংকারে যেমন অনুপ্রাসে, সাজিয়ে সুন্দর করা যায়, অর্থকে উপমা, রূপক, উৎপ্রেক্ষা নানা অলংকারে চারুত্ব দান করা যায়। কাব্য যে মানুষের উপাদেয় সে এই অলংকারের জন্য। (১৪০৩, পৃঃ ১০)

একটু বিশদ করা যাক। কাব্যে যেসব অলংকার ব্যবহৃত হয় তাদের সাধারণত দু-টি শ্রেণীতে বিভক্ত করা হয়, শব্দালঙ্কার এবং অর্থালঙ্কার। শব্দ বা ধ্বনিকে আশ্রয় করে যে অলংকার সৃষ্টি হয়, তাকে শব্দালঙ্কার বলা হয়। যেমন -

‘গুরু গুরু মেঘ গুমরি গুমরি
গরজে গগনে গরনে
গরজে গগনে।’

এখানে 'গ' শব্দটি বারবার ব্যবহৃত হয়ে একধরনের শ্রুতিমাধুর্য সৃষ্টি করেছে। এই শ্রুতিমাধুর্য সৃষ্টির সমস্ত প্রক্রিয়াটি যেহেতু শব্দের ধ্বনির মধ্যেই সীমাবদ্ধ, তাই একে শব্দালঙ্কার বলা হয়। আর শব্দালঙ্কারে শব্দের ধ্বনিগত বিন্যাস যেহেতু বাক্যকে শ্রুতিমধুর করে তোলে, তাই এখানে শব্দের বিশিষ্ট প্রয়োগ ও বিন্যাসই মূল। আরও একটি উদাহরণ দেওয়া যাক -

‘চল চপলার চকিত চমকে
করিছে চরণ বিচরণ।’

এই বাক্যে 'চ' ধ্বনিটি ছয় বার ব্যবহৃত হয়ে যে বিশেষ ধ্বনিমাধুর্য সৃষ্টি করেছে, অলংকারশাস্ত্র অনুযায়ী তা বৃত্ত্যানুপ্রাস নামক শব্দালঙ্কার। অনুপ্রাস, যমক, শ্লেষ প্রভৃতি

শব্দালঙ্কারের বিভিন্ন শ্রেণীবিভাগ।

অপরদিকে শব্দের অর্থের উপর ভিত্তি করে যে অলংকার গড়ে ওঠে, তাকে বলে অর্থালঙ্কার। যেমন -

‘এমন মানবজমিন রইল পতিত
আবাদ করলে ফলতো সোনা।’

এখানে চাষাবাদ ত্রিনয়াটি মানুষের জীবনাচরণের ক্ষেত্রে আরোপিত হয়েছে। স্বর্ণ বা সোনা তো আর কৃষিজাত ফসল নয়, সোণা এখানে ঐশ্বর্যের প্রতীক। অর্থাৎ, সঠিক জীবনাচরণ জীবনে ঐশ্বর্য নিয়ে আসে। একটি বস্তুর রূপকে অন্য কোনো বিষয় ব্যক্ত হওয়ায় এটি রূপক অলংকার। সাদৃশ্যমূলক (উপমা, উৎপ্রেক্ষা, রূপক, সন্দেহ, প্রভৃতি), বিরোধমূলক (বিরোধাভাস, বিষম, বিভাবনা প্রভৃতি), গুণার্থ, প্রতীতি প্রভৃতি অর্থালঙ্কারের কয়েকটি শ্রেণীবিভাগ। লক্ষণীয়, অর্থালঙ্কার শব্দের অর্থের উপর নির্ভরশীল হওয়ার জন্য এক্ষেত্রে একটি শব্দের জায়গায় সমার্থক অন্য অন্য কোনো শব্দ বসালেও অলংকার একই থাকে। যেমন - 'চাঁদের মতো মুখ', এই বাক্যটিকে 'চন্দের ন্যায় বদন' বললেও 'উপমা' নামক অর্থালঙ্কারই থাকে, ভিন্ন শ্রেণীর অলংকার হয়ে যায় না। শব্দালঙ্কারের ক্ষেত্রে অবশ্য এমনটা করার সুযোগ নেই। এক্ষেত্রে কোনো শব্দের জায়গায় সমার্থক অন্য কোনো শব্দ বসালে শব্দালঙ্কার সৃষ্টি হয় না। 'শব্দালঙ্কার শব্দ পরিবর্তন সইতে পরে না, অর্থালঙ্কার পারে।' প্রসঙ্গত বলা ভালো, অলংকারকে শব্দালঙ্কার ও অর্থালঙ্কার দুটো পৃথক শ্রেণীতে ভাগ করা হলেও কোনো বাক্যে শব্দালঙ্কার থাকলে অর্থালঙ্কার থাকবে না, বা অর্থালঙ্কার থাকলে শব্দালঙ্কার থাকবে না এমন কোনো বাধ্যবাধকতা নেই। বরং অনেক শ্রেষ্ঠ কাব্যে একই বাক্যে এই দুই শ্রেণীর অলংকারের সহাবস্থান লক্ষ করা যায়। যেমন -

‘চুল তার কবেকার অন্ধকার বিদিশার নিশা,
মুখ তার শ্রাবস্তীর কারুকার্য.....।’ (বনলতা সেন, জীবনানন্দ দাশ)

এখানে 'র' ধ্বনিটি পুনরাবৃত্ত হয়ে যে শ্রুতিমাধুর্য এনেছে তা শব্দালঙ্কার, আবার চুলের সাথে বিদিশার নিশা, মুখের সাথে শ্রাবস্তীর কারুকার্যের যে রূপক কল্পিত হয়েছে তা অর্থালঙ্কার।

তাহলে দেখা যাচ্ছে 'কাব্যে গ্রাহ্যমলংকারাৎ' অর্থাৎ অলংকারের জন্যই কাব্য গ্রাহ্য হয়, দেহাত্মবাদী আলংকারিকদের এহেন মন্তব্য একদম উড়িয়ে দেওয়া যায় না। এটা সত্য যে বাক্যকে অলংকারে সাজিয়ে তুললে তা কাব্যপদবাচ্য হয়ে ওঠে। কাব্যে অলংকারের প্রয়োজনীয়তা স্বয়ং রবীন্দ্রনাথও স্বীকার করেছেন, '...সাহিত্যও আপন চেষ্টাকে সফল করিবার জন্য অলংকারের, রূপকের, ছন্দের, আভাসের, ইঙ্গিতের আশ্রয় গ্রহণ

করে। দর্শন-বিজ্ঞানের মতো নিরলংকার হইলে তাহার চলে না।' (১৩৯৩, পৃঃ ৩৪০) প্রসঙ্গত রীতিবাদের কথাও এসে যায়। বিশেষ বিশেষ ভঙ্গিতে পদ সন্নিবেশ করলে বক্তব্য কাব্য হয়ে ওঠে, রীতিবাদীদের এহেন বক্তব্য একদম অসার নয়। মধ্যযুগের ভারতচন্দ্র থেকে শুরু করে একালের জীবনানন্দ দাশ, সুধীন্দ্রনাথ দত্ত থেকে হালের জয় গোস্বামী - এদের সকলের কাব্যই রীতিবাদকে সমর্থন করে।

এখন প্রশ্ন হল, কেবল অলংকার বা রীতির আশ্রয়েই কি বাক্য কাব্য হয়ে উঠতে পারে? বিষয়টি বোঝার জন্য কয়েকটি স্তবক উদ্ধৃত করছি -

১। 'এত ভঙ্গ বঙ্গদেশ

তবু রঞ্জে ভরা।' (ঈশ্বর গুপ্ত) - অনুপ্রাস অলংকার।

২। তখন কেবল ভরিছে গগন নূতন মেঘে,

কদম কোরক দুলিছে বাদল বাতাস লেগে।' (সত্যেন্দ্রনাথ দত্ত) - অন্যানুপ্রাস।

৩। 'জীবে দয়া তব পরম ধর্ম জীবে দয়া তব কই। (কালিদাস রায়) - যমক অলংকার। এখানে প্রথম জীব অর্থ প্রাণী, দ্বিতীয় জীব অর্থ শ্রীজীব গোস্বামী।

৪। 'কে বলে শারদ শশী সে মুখের তুলা।

পদ নখে পড়ে আছে তার কতগুলা।' (ভরতচন্দ্র) - ব্যতিরেক অলংকার।

এই বাক্য বা স্তবকগুলি কি সত্যিই কাব্যপদবাচ্য? স্তবকগুলি শ্রুতিমধুর ও বর্ণনাকৌশলে মনোহরী হলেও কোনো কাব্যরসিকই এগুলোকে কাব্য বলে স্বীকার করবে না। অথচ এই সবগুলিই অলংকৃত বাক্য। আরও একটি উদাহরণ পেশ করি; তারাসঙ্কর বন্দ্যোপাধ্যায়ের 'কবি' উপন্যাসে নিতাই গান বেঁধেছে -

'কালো যদি মন্দ তবে কেশ পাকিলে কাঁদ কেনে?

কালো কেশে রাঙা কুসুম হেরেছ কি নয়নে?' (২০১৬, পৃঃ ৪০) কিংবা

'বৃন্দে তুমি নিন্দে আমার কর অকারণ,

নয় অকারণ - কারণ খেয়ে মত্ত তোমার মন।' (কারণ-হেতু, কারণ-সুরা)

(২০১৬, পৃঃ ১০৩)

এই দু-টি স্তবক অলংকারে সজ্জিত হলেও এগুলি কাব্যের স্তরে উন্নীত হতে পারে নি। আবার বসন্তের মৃত্যুর পর এই নিতাই ই যখন উপলব্ধি করে -

'মরণ তোমার হার হল যে মনের কাছে

ভাবলে যাকে কেড়ে নিলে সে যে দেখি মনেই আছে

মনের মাঝেই বসে আছে।' (২০১৬, পৃঃ ১৫১)

তখন অনলংকৃত ও নিরাভরণ এই বাক্যটি অসম্ভব কাব্যগুণে সমৃদ্ধ হয়ে ওঠে। অর্থাৎ, দেখা যাচ্ছে বহুক্ষেত্রে অলংকৃত বাক্য কাব্য হয়ে ওঠে না, অপরদিকে অনলংকৃত

বাক্যও কাব্য হয়ে ওঠে। অর্থাৎ অলংকার থাকলেই বাক্য কাব্যপদবাচ্য হবে এমন কোনো কথা নেই। তার মানে অলংকার কাব্যের আত্মা নয়। আবার আচার্য বামনের মতো রীতিবাদীরা রীতি বা (Style) এর মধ্যে কাব্যের আত্মার সন্ধান করলেও বিরুদ্ধবাদীরা বলেছেন 'রমণীদেহের লাভণ্য যেমন অবয়বসংস্থানের অতিরিক্ত অন্য জিনিস, তেমনি মহাকবিদের বাণীতে এমন বস্তু আছে যা শব্দ, অর্থ, রচনাভঙ্গি (Style) এ সবার অতিরিক্ত আরও কিছু। এই অতিরিক্ত বস্তুই কাব্যের আত্মা।' (১৪০৩, পৃঃ ১৩) একারণেই আচার্য বামন প্রথম কাব্যাত্মার প্রসঙ্গ উপস্থাপন করলেও তিনি অলংকার ও শব্দার্থনির্ভর গুণাশ্রিত রীতির মধ্যে কাব্যাত্মার সন্ধান করায় এবং এই রীতি একান্তভাবে কাব্যশরীরনির্ভর হওয়ায়, তিনি কাব্যাত্মার প্রকৃত সন্ধান পান নি।

তবে কাব্যের আত্মা কি? কোন গুণে বাক্য কাব্য হয়ে ওঠে। দেহাত্মবাদী আলংকারিকদের এ সংক্রান্ত মতের প্রত্যুত্তরে গড়ে উঠেছে তাৎপর্যতত্ত্ব বা বাচ্যতত্ত্ব। এদের মতে শ্রেষ্ঠ কাব্যে সবসময়ই শব্দ তার আভিধানিক অর্থ ত্যাগ করে অন্য কোনো অর্থের দ্যোতনা আনে। আর এই যে শব্দার্থ অতিরিক্ত দ্যোতনা, তাই কাব্যের আত্মা। আনন্দবর্ধন তাঁর ধ্বনিতত্ত্বে ও অভিনবগুপ্ত তাঁর রসাভিব্যক্তিতত্ত্বে কাব্যের আত্মার সন্ধান দিয়েছেন। সেই আত্মার নাম ধ্বনি ও রস, যা পূর্ণতা পেয়েছে 'রসধ্বনি'তে।

নবম শতকের আনন্দবর্ধনই সর্বপ্রথম কাব্যের বহিঃস্ব বিচারকে নস্যৎ করে অন্তঃস্বের বিচারকেই প্রধান রূপে প্রতিষ্ঠা করেন। দেহাত্মবাদী আলংকারিকদের অলংকার, গুণ, রীতি প্রভৃতি বহিঃস্বিক লক্ষণের পরিবর্তে 'ধ্বনি'কে কাব্যত্বের প্রধান লক্ষণ রূপে তুলে ধরেন। আনন্দবর্ধন তাঁর 'ধ্বন্যালোক' গ্রন্থের বৃত্তি অংশে ধ্বনিবাদ মতটিকে বিশদ করেছেন। 'যত্রার্থঃ শব্দো বা তমর্থমুপসর্জনীকৃতস্বার্থো।

ব্যঙ্ক্তঃ কাব্যবিশেষঃ স ধ্বনিরিত্তি সুরিভিঃ কথিতঃ।'

অর্থাৎ যেখানে কাব্যের শব্দ তার নিজস্ব নির্দিষ্ট অর্থ পরিত্যাগ করে অন্যকোনো ব্যঞ্জিত অর্থকে প্রকাশ করে, তাকেই ধ্বনি বলা হয়। এই ব্যঞ্জিত অর্থকে বলা হয় 'ব্যঙ্গ্য' বা 'ব্যঙ্গ্যার্থ'। ধ্বনিবাদীদের মতে এই 'ব্যঙ্গ্য' বা 'ব্যঙ্গ্যার্থ'ই হচ্ছে কাব্যের আত্মা। এক্ষেত্রে মনে রাখতে হবে সমাসোক্তি, সংকরালংকার প্রভৃতি অলংকারেও ব্যঞ্জনা থাকে, তবে তা ধ্বনিবাদীদের কথিত ব্যঞ্জনা থেকে পৃথক। 'সমাসোক্তিতে যে ব্যঞ্জনা, তা হচ্ছে এক বস্তুর বর্ণনা দিয়ে অন্য বস্তুর ব্যঞ্জনা। সুতরাং যেখানে শব্দার্থ কেবলমাত্র বস্তু বা অলংকারের ব্যঞ্জনা করে, সে ব্যঞ্জনা শ্রেষ্ঠ কাব্যের 'ধ্বনি' বা ব্যঞ্জনা নয়। যে 'ধ্বনি' কাব্যের আত্মা, তার ব্যঞ্জনা কাব্যের বাচ্যার্থকে বস্তু ও অলংকারে অতীত এক ভিন্ন লোকে পৌঁছে দেয়।' (১৪০৩, পৃঃ ১৮) বিষয়টি বোঝার জন্য অতুলচন্দ্র গুপ্ত তাঁর 'কাব্যজিজ্ঞাসা' গ্রন্থে মহাকবি কালিদাসের 'কুমারসম্ভব' থেকে একটি স্তবক উদ্ধৃত করেছেন। যেখানে

অঙ্গিরা হিমালয়ের কাছে পার্বতীর সাথে মহাদেবের বিবাহপ্রস্তাব পেশ করলে -

‘এবংবাদিনি দেবর্ষো পার্শ্বে পিতুরধোমুখী।

লীলাকমলপত্রাণি গণয়ামাস পার্বতী।’

পার্বতী আধোবদনে পদ্মের পাপড়ি গুণনা করতে লাগলো। ‘ধ্বনিবাদীরা বলেন, স্পষ্টই দেখা যাচ্ছে, এ কবিতার শব্দার্থ, লীলাকমলের পত্রগণনা - তার বাচ্যার্থ ছাড়িয়ে অর্থান্তরের - পূর্বরাগের লজ্জাকে ব্যঞ্জনা করছে; এবং সেইখানেই এর কাব্যত্ব।’ (১৪০৩, পৃঃ ২০) রবীন্দ্রনাথ ঞ্চিকা কাব্যগ্রন্থের ‘নববর্ষা’ কবিতায় যখন লেখেন -

‘সুদূর গগনে কাহারে সে চায় ?

ঘাট ছেড়ে ঘট কোথা ভেসে যায়

নব মালতীর কচিদলগুলি

আনমনে কাটে দশনে।’

তখন শব্দগুলির আভিধানিক অর্থ নয়, বরং এর ব্যাঙ্গার্থই আমাদের আকৃষ্ট করে। সুদূর গগনে এক মনে চেয়ে থাকা, আনমনে দাঁত দিয়ে নবমালতীর কচি দলগুলি দংশন করা - এগুলি সন্মিলিত ভাবে এক বিরহিণী বধূর চিত্র নিপুণ ভাবে তুলে ধরেছে। এই বিরহিণী এতটাই আত্মমগ্ন যে, তার কলসী ভেসে গেলেও সেদিকে খেয়াল থাকে না।

এযাবৎ আলোচনায় এটুকু অন্তত বোঝা গেল যে, কাব্যের আত্মা বাচ্য নয়, ‘ব্যঞ্জনা’, কথা বা শব্দ কাব্যের প্রাথমিক ও প্রধান উপাদান হলেও তার আত্মা হল ‘ধ্বনি’। এখন প্রশ্ন হল, এই ‘ধ্বনি’ বা ‘ব্যঞ্জনা’র কাজ কি? অর্থাৎ কাব্যের ধ্বনি কাব্যপাঠকের মনে কিভাবে কাজ করে। এক কথায় বলতে গেলে, কাব্যের ধ্বনি ‘সহৃদয়সহৃদয়সংবাদী’ কাব্যপাঠকের মনে রসের সঞ্চার করে। যেমন দুঃখের কোনো কাহিনী পড়লে আমাদের মনে যে দুঃখের ভাব জাগে, সেটাকে বলা হয় করুণ রস, আবার হাসির কোনো কাহিনী পাঠ করলে আমাদের মধ্যে যে ভাব জাগে, তাকে বলা হয় হাস্যরস। পাঠকের মনে এই যে ইমোশন বা ভাবের সৃষ্টি হয়, তার বাহ্যিক কারণ হল ধ্বনি বা ব্যঞ্জনা। “কাব্যের ‘ধ্বনি’ হচ্ছে রসের ধ্বনি। ...অর্থাৎ কাব্যের আত্মা ‘ধ্বনি’ বলে যাঁরা আরম্ভ করেছেন, কাব্যের আত্মা রস বলে তাঁরা উপসংহার করেছেন। বাক্যৎ রসাত্মকং কাব্যম্। কাব্য হচ্ছে সেই বাক্য, ‘রস’ যার আত্মা।” (১৪০৩, পৃঃ ২৩) এ জন্যেই অতুলচন্দ্র গুপ্ত মন্তব্য করেছেন - ‘কাব্যের আত্মা ‘রস’ যাতে নেই, তাই হচ্ছে ‘অকাব্য’। আলংকারিকেরা এ শ্রেণীর রচনার নাম দিয়েছেন ‘চিত্রকাব্য’। চিত্র যেমন বস্তুর অনুকরণ, কিন্তু বস্তু নয়, এও তেমনি কাব্যের অনুকরণ, কিন্তু কাব্য নয়।’ (১৪০৩, পৃঃ ৬০)

এখন দেখা যাক, সাহিত্য কিভাবে পাঠকের মনে রসের উন্মেষ ঘটায়। ধাতুগত বা ব্যুৎপত্তিগত অর্থ ধরলে যা আত্মাদ্য তা-ই হচ্ছে ‘রস’। সাহিত্যের ক্ষেত্রে যা আত্মাদ্য,

সেটাই হল সাহিত্যের রস। ভরতমুনি রসসূত্রে বলেছেন - ‘বিভাবানুভাবব্যভিচারসংযোগাদ্ রসনিষ্পত্তি’, অর্থাৎ বিভাব অনুভাব এবং ব্যভিচারী ভাবের বিশেষ যোগাযোগে রসনিষ্পত্তি ঘটে। তাহলে দেখা যাচ্ছে রসনিষ্পত্তির ক্ষেত্রে কয়েকটি শর্ত রয়েছে। শর্তগুলো হল, বিভাব, অনুভাব ও ব্যভিচারী ভাবের বিশেষ সংযোগ সাধন। তাই, প্রথমে এই বিষয়গুলো সম্পর্কে ধ্যান-ধারণা পরিষ্কার করে নেওয়া প্রয়োজন।

‘ভাব’কে ভরতমুনি দু-ভাগে ভাগ করেছেন - স্থায়ী ও সঞ্চারী। স্থায়ী ভাবের সংখ্যা হল অট-টি, কেউ কেউ ‘নির্বেদ’কে এর অন্তর্গত করে নিয়ে বলেছেন নয়-টি। এই স্থায়ী ভাবগুলো হল, রতি, শোক, ক্রোধ, ভয়, উৎসাহ, বিস্ময়, জুগুপ্সা, হাস ও শম বা নির্বেদ। এই ভাবগুলি আমাদের প্রত্যেকের মধ্যে আছে। আমাদের প্রত্যেকের মধ্যে থাকা এই ভাবগুলি উপযুক্ত কারণ পেলে ক্রিয়া করে। যেমন আমাদের মধ্যে শোক বা হাস ভাব থাকলেও আমরা সবসময় কাঁদি না বা হাসতে থাকি না। কেবল শোকাবহ বা দুঃখজনক ঘটনা ঘটলে আমরা দুঃখ পাই বা দুঃখে কেঁদে উঠি, অনুরূপ ভাবে কোনো মজার ঘটনা ঘটলে আমরা হেসেফেলি। তার মানে উপযুক্ত ঘটনা ঘটলে আমাদের মনের সেই নির্দিষ্ট স্থায়ী ভাবটি জেগে ওঠে বা কার্যকরী হয়ে ওঠে। বাস্তবে এই ঘটনাগুলোর সন্মুখীন না হয়েও সাহিত্য-শিল্পের মধ্যদিয়ে যখন আমরা এই ঘটনাগুলোর সন্মুখীন হই তখন আমাদের চিত্তে রসের সঞ্চার ঘটে। যেমন বাস্তবে শোকাবহ বা দুঃখজনক ঘটনা ঘটলে আমরা দুঃখ পাই বা দুঃখে কেঁদে উঠি সাহিত্যে এমন কোনো দুঃখজনক ঘটনা পড়লে আমাদের মনের শোক নামক স্থায়ী ভাবটি মনকে করুণ রসে অভিষিক্ত করে তোলে। এই স্থায়ী ভাবগুলির আনুষঙ্গিক ‘রস’গুলো হল - শৃঙ্গার (রতি ভাব থেকে জাত), করুণ (শোক ভাবে থেকে জাত), রৌদ্র (ক্রোধ ভাব থেকে জাত), ভয়নাক (ভয় ভাব থেকে জাত), বীর (উৎসাহ ভাব থেকে জাত), অদ্ভুত (বিস্ময় ভাব থেকে জাত), বীভৎস (জুগুপ্সা ভাব থেকে জাত), হাস্য (হাস ভাব থেকে জাত) এবং শান্ত (নির্বেদ ভাব থেকে জাত)। সঞ্চারী ভাব তেত্রিশ-টি - নির্বেদ, আবেগ, দৈন্য, শ্রম, মদ, জড়তা, উগ্রতা, মোহ, বিরোধ, স্বপ্ন, অপস্মার, গর্ব, মরণ, অলসতা, অমর্ষ, নিদ্রা, অবহিতা, ঔৎসুক্য, উন্মাদ, শঙ্কা, স্মৃতি, মতি, ব্যাধি, সন্ত্রাস, লজ্জা, হর্ষ, অসূয়া, বিবাদ, ধৃতি, চপলতা, গ্লানি, চিন্তা ও বিতর্ক। স্থায়ী ও সঞ্চারী দুটো ভাবই সব মানুষের মধ্যে আছে। স্থায়ীভাবেকে ইংরেজিতে বলা হয় Permanent states of mind আর সঞ্চারী ভাবকে বলা হয় Transient state of mind. এ দুটি প্রাক্তন সংস্কার। তবু দুয়ের মধ্যে সূক্ষ্ম পার্থক্য আছে। এই পার্থক্য নির্দেশ করে অভিনবগুপ্ত বলেছেন, স্থায়ীভাবগুলো কোনোদিনই নিশ্চিহ্ন হয় না, অনভিব্যক্ত অবস্থায় থেকেই যায়, আবার পাত্রভেদে তার অভিব্যক্তির প্রকারভেদ ঘটতে পারে। অপরদিকে সঞ্চারী ভাবগুলো উপযুক্ত কারণ ছাড়া আমাদের

চিত্তে উদ্ভুদ্ধ হয় না, এবং সে কারণটি সরিয়ে নিলে ভাবটিও লুপ্ত হয়ে যায়, এমনকি অনভিব্যক্ত অবস্থাতেও থাকে না। এমনও হতে পারে, কোনো একনজ মানুষ কার্য-কারণ সম্পর্ক না ঘটায় সারাজীবনে কোনো একটি বা দুটি সঞ্চরীভাব আত্মদনই করলেন না। সঞ্চরীভাবকে স্থায়ীভাবের পরিজনসদৃশ বলা হয়। স্থায়ীভাবকে রসত্ব প্রাপ্তির ক্ষেত্রে সহায়তা করে, কিন্তু নিজেবো কখনও রস হয়ে ওঠে না।

স্থায়ী ও সঞ্চরী ভাবের উদ্বোধক কারণকে বলে বিভাব। বিভাব চরকম, আলম্বন বিভাব ও উদ্দিপন বিভাব। নামেই বেশ বোঝা যায় এদের স্বরূপ কি। যাকে আশ্রয় বা অবলম্বন করে ভাবটি জেগে ওঠে তাকে আলম্বন বিভাব বলে, আর সে সমস্ত পরিস্থিতি বা বিষয়গুলো ভাবকে জাগিয়ে তোলে, তাকে উদ্দিপন বিভাব বলে। উদ্দিপন বিভাব ভাবকে জোড়ালো করে তোলে। নায়ক ও নায়িকার মনে পরস্পরকে অবলম্বন করে ও আরও পাঁচটি বস্তুর যোগাযোগে যে ভাবের উদয় হল, তা বুঝব কেমন করে? এটা আমাদের সাধারণ অভিজ্ঞতা। মনে কোনো ভাব জাগলে বাইরের আচরণে তা প্রকাশ পায়। যেমন কেউ রেগে গেলে তা বোঝা যায় রক্তচক্ষু, কর্কশ বচন, হাত-পা ছোড়া ইত্যাদি দেখে। ভাবের উদয়ে এই যে জৈব মানসিক প্রতিক্রিয়া, তাকে বলে 'অনুভাব'। একটা উদাহরণ দেওয়া যাক -

‘দ্বিধায় জড়িত পদে কম্প্রবক্ষে নম্র নেত্রপাতে
স্মিতহাস্যে নাহি চল সলজ্জিত বাসরশয্যাতে
স্কন্ধ অর্ধরাতে।’ - ‘উর্বশী’, রবীন্দ্রনাথ ঠাকুর।

এখানে আলম্বন বিভাব - নব বিবাহিত বর। উদ্দিপন বিভাব - বাসর সজ্জা, স্কন্ধ অর্ধরাতে। অনুভাব - দ্বিধায় জড়িত পদ, কম্প্রবক্ষ, স্মিতহাস্য ও সলজ্জিত। ব্যভিচারীভাব - ব্রীড়া (লজ্জা), অবহিতা, হর্ষ। স্থায়ীভাব - রতি। রস - শৃঙ্গার।

এই নিবন্ধে যতটা সম্ভব সংক্ষেপে বিশাল ও বিচিত্র ভারতীয় কাব্যতত্ত্বের মূল প্রবণতাগুলির উল্লেখ করা হল। বিভিন্ন সময় বিভিন্ন তাত্ত্বিকের ভিন্ন ভিন্ন মতাদর্শ ভারতীয় কব্যাশাস্ত্রকে একদিকে যেমন সমৃদ্ধ করেছে, অপরদিকে তেমনি এর ফলে বিতর্কের ক্ষেত্রও প্রসারিত হয়েছে, যে ধারা আজও বহমান। অবশ্য যে কোন বিদ্যায়তনিক চর্চায় বহুতবাদ ও তৎসজ্জাত বিতর্ক সংশ্লিষ্ট শাস্ত্রের পক্ষে শুভ। বর্তমান আলোচনায় আমরা সচেতন ভাবেই সেই বিতর্কিত ক্ষেত্রগুলি এড়িয়ে চলেছি।

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লাগছে বাস্তবে, তবে সেই শ্রেণীর মানুষের সংখ্যা কম। নিমগাছের পাতাগুলি সুন্দর বলে তা না ছিড়ে শুধুমাত্র সৌন্দর্য উপভোগ করলেন। গল্প এখানে কাব্যের ব্যঞ্জনা লাভ করেছে—

“বাঃ কি সুন্দর পাতাগুলি কী রূপা! থোকা থোকা ফুলেরই বা কি! বাহার... একঝাঁক নক্ষত্র নেমে! এসেছে যেন নীল আকাশ থেকে! সবুজ সায়েরে বাঃ—”

গল্পের শেষাংশে আছে যে, নিমগাছের ইচ্ছে করল সেই যারা তাকে এভাবে কোন কিছুর বিনিময়ে ভালো না বাসে অর্থাৎ নিমগাছকে যে মর্যাদা দিয়েছে সেই শ্রেণীর মানুষের সঙ্গে চলে যেতে। কিন্তু সম্ভব নয়, কারন শিকড় বহু দূর বিস্তৃত হয়েছে, মাটির নিচে সেখানে সমস্ত কিছু সহ্য করে কি ভাবে থেকে যেতে হয় সেই শ্রেণীর নারীর কথাই উল্লেখ করতে চেয়েছেন। নিমগাছের রূপকে গল্পের চমক একেবারে শেষ লাইনে—

“ওদের বাড়ির গৃহকর্ম-নিপুণা লক্ষ্মী বউটার ঠিক এই দশা।”

এই একটিমাত্র বাক্যে কিভাবে সমগ্র গল্পের ভাববস্তু নিহিত হয়ে রয়েছে তা লক্ষ্যনীয়। গল্পটি যেন পূর্ণাঙ্গমাত্রা পায়। লক্ষ্মী বউটির করুণ পরিণতি বর্ণিত হয়েছে। নারী জীবনে কি ধরনের অপমান, অবমাননা সহ্য করতে হয় তারই প্রত্যক্ষ প্রমাণ আলাোচ্য গল্পটি। প্রসঙ্গত শ্রী ভূদেব চৌধুরীর মন্তব্য প্রণিধানযোগ্য—

“বস্তুত বনফুলের রচনায় মুগ্ধতার উপকার যতটুকু, তার অনেকটাই ঐ অনির্মোচনীয় বিস্ময় চমকে গড়া।”^১

গল্পটি বিশ্লেষণ করলে দেখা যায় যে ‘নিমগাছ’ গল্পটিতে গল্পকার বনফুল কোন বিশেষ চরিত্র উপস্থাপন করেননি। যেন সমগ্র নারী জাতির বর্ণনা তুলে ধরেছেন। কয়েকটি লাইনে যদিও গল্পটি সমাপ্ত তথাপি প্রতিটি লাইনে যে বিষয়বস্তু বর্ণিত তা যেন থেমে যায় না। প্রসঙ্গত বীরেন্দ্র দত্তের মন্তব্য—

“বনফুল তাঁর গল্পে তুচ্ছ বিষয়কেই নিলেও কৌতূহল দিয়ে তাকে অন্য স্বাদ দিয়েছেন, বনফুলের গল্পের প্রথম থেকে শেষ পর্যন্ত কৌতূহল বজায় থাকে, সে কৌতূহল গল্পের ‘ফর্ম’ থেকে ক্রমশ Content এর অভ্যন্তরে প্রবেশ করে এমন ব্যঞ্জনা আনে — যাতে পাঠকদের মনে ওৎসুক্য থাকে এই অর্থে — “শেষ হয়ে না হইল শেষ।”^২

সুতরাং লক্ষ্যনীয় গল্পটি ছোটপারিসরে সমাপ্ত, তবে বিষয়বস্তুর মধ্যে দেখা যায় যে একশ্রেণীর মানুষ নিমগাছকে ব্যবহার করেই চলেছে আর আরেক শ্রেণীর মানুষ যদিও সংখ্যায় কম, তবুও তারা শুধু নিমগাছের সৌন্দর্য উপভোগের মাধ্যমে মর্যাদা দিচ্ছে। পাঠক প্রতিক্রিয়া তত্ত্ব প্রয়োগ করলে দেখা যায় যে, নিমগাছকে দেখার এই যে ভিন্নতা সেই কারণে নিমগাছের স্থান আলাদা মর্যাদা পেল। আরো বলা যায় যে, নিমগাছের ব্যবহারের বিভিন্ন দিককে বিভিন্ন দৃষ্টিভঙ্গিতে দেখতে সাহায্য করে। আসলে নিমগাছের

রূপকে নারীকে মূল্য এক শ্রেণীর মানুষ কিভাবে দিচ্ছে আর তার প্রতিক্রিয়া বর্ণিত হয়েছে। তাই বলা যায়, যে যেই স্থানই থাকুক না কেন তার নিজস্ব মূল্য অবশ্যই থাকে তা যদি পায় তবে সমাজ আরো বেশি অগ্রসর হবে বলা যায়।

পাদটীকা

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উল্লেখপঞ্জি

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Biodiversity Conservation : India's National Action Plan

1. Mr. Basanta Kumar Sahariah*

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"If we pollute the air, Water and soil that keep us alive and well,
and destroy the biodiversity that allows natural systems to function,
no amount of money will save us"

—David Suzuki

Introduction:

Simply stated, biodiversity is the variety and variability of live forms found on earth i.e. All over the biosphere. Biodiversity is typically a measure of variation at the genetic, species and ecosystem level. A definition of biodiversity that is all together simple, comprehensive and fully operational is unlikely to be found, (Noss 1990). Diversity can be stated as the number of different items and their relative frequency. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the chemical structure that is the molecular basis of heredity. So this term relates with different ecosystems, Species, genes, and their relative abundance. On the other hand the natural diversity has the meanings in different directions as-

- I) The number of different native species and habitat or geographical area in the earth.

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II) The variety of different habitats in particular area.

III) The range of genetic variation among individuals within a species (Jones and Stokes, 1987)

The terrestrial biodiversity is usually greater near the equator, which is the result of the warm climate and high primary productivity. Biodiversity is not distributed evenly on earth, and is richer in the tropics. These tropical forest ecosystem covers less than 10% of earth surface and contain about 90% of the world species. In case of marine biodiversity, it is usually higher along coasts in the western pacific's where sea surface temperature is highest, and in the mid-latitudinal band in all oceans. There are latitudinal gradients in species diversity. Biodiversity generally tends to cluster in hotspots, and has been increasing through time. The rapid environmental changes typically cause mass extinction. Estimates on the number of Earths current species range from 10 million to 14 million of which about 1.2 million have been documented and over 86 percent have not yet been described. The total amount of related DNA pairs on earth is estimated at 5.0×10^{37} weighs 50 billion tonnes. In comparison, the total mass of the biosphere has been estimated to be as much as 4 TTC (Trillion tonnes of Carbon). Biodiversity policies promotes the protection, conservation and sustainable use of biodiversity divers ecosystems and habitats. In doing so, they create significant public benefits and contribute to social well being.

In this article the overview of biodiversity status, its importance, threats to it and various approaches for biodiversity conservation, action plan and current status have been discussed.

Biodiversity in India:

India displays significant biodiversity. India has a fortieth of the world geographical area. It is home to 7.6 percent of all mammalian, 12.6 % of all avian, 6.2 % of all reptilian, 4.4% of all amphibian, 11.7% of all fish and 6.0% of all flowering plant species. The Trans-Himalaya region is heavily influenced by summer monsoons that cause major seasonal changes in Vegetation and habitat. India forms a large

part of Indo Malayan bio-geographical zone and many of the floral and faunal forms shows Malayan affinities with only a few taxa being unique to the Indian region. The unique form includes the snakes family Uropeltidae found only in the Western-Ghat and Sri Lanka. The cretaceous fauna include reptiles, amphibians and fishes and an extant species demonstrating phylogeographical link is the purple frog. The Himalayas consist of the youngest and loftiest mountain chains in the world. Oak chestnut, conifer, ash, pine, deodar are abundant in Himalayas. Chief species includes wild sheep, mountain goats, shrew, panda and royal Bengal tiger. In the North West desert region, the climate is characterised by very hot and dry summer and cold winter. Here rainfall is less than 70cms. The plants are mostly Xerophytes, babul, Kikar plant, wild palm grows in areas of moderate rainfall. North-East India is one of the richest flora regions in the country and biodiversity hotspot. Many species of primates and birds, the great one horned rhino and gaur are found here. India has a coastline extending over approximately 5,700kms. The west coast a narrow except around the Gulf of Cambay and Gulf of Kutch, Major parts of coastal plains are covered by fertile soils on which different crops are grown. Rice is the main crop of these areas. Coconut trees grow all along the coast.

Threats to Biodiversity:

After studying it is clear that today one vertebrate species disappears in every 10 months and rate of extinction may be between 35 to 100 species per day. Conservation and management of biodiversity in India is currently facing complex major challenges that are both ecological and social in nature (Mathur 2012)

Major threats to Biodiversities are:

- ♦ Deforestation
- ♦ Habitat loss and nature degradation
- ♦ Air pollution
- ♦ Water Pollution
- ♦ Soil Pollution

- ♦ Climate change
- ♦ Increasing human-wildlife conflicts.
- ♦ Poaching and illegal trade in wildlife parts and products etc.

The fifth National Report to the convention on Biodiversity (CBD) which was created before the CBD's strategic plan for biodiversity 2011-2020 has pointed out that how nature's bounty is being ignored and destroyed in the name of urbanization. India has had a tremendous rate of Industrial development and urbanization over the year. Although development is essential for the nation's growth, it has often been at the cost of some environmental detriment without the consideration that development and environment can work hand in hand. So massive urbanization, Industrialization, monoculture agriculture are causing pollution in air, water and soil. According to Dr. Sejal Worah, the programme director of the organization world wide fund for nature (WWF), India unit at a press released briefing on 10th sep, 2020 that "In India over 12% wild mammals and 3 % bird species face the threat of extinction, While 19% amphibians are threatened or critically endangered." The climate change led to two cyclones with unusually heavy rainfall in the southern Arabian Peninsula. It created a breeding ground for locusts which then invaded parts of India. The biggest threat of biodiversity in the Asia Pacific, consistent with global trends, was change in land use (According for 45% of the threat) followed by species over exploitations (26.9%) and invasive species and disease (14%), the report added. Motorised hunting, deforestation, resource intensive cash cropping and the global population boom are some of the outcomes of the industrial revolution which cause depletion of biodiversity and threaten the very existence of man on the living planet. So loss of biodiversity occurs when either habitat essential for the survival of the species is destroyed or particular species are destroyed.

Extinction of species may also be due to environmental factors like ecological substitutions biological factors and pathological causes which can be caused by nature or man.

Objectives of biodiversity conservation:

Conservation of biological diversity is essential for the survival of the human race. Conserving biodiversity outside the areas where they naturally occur is known as ex-situ conservation. Here animals and plants are reared or cultivated areas like Zoological or Botanical parks. The seed banks, botanical, horticultural and recreational gardens are important for ex-situ conservation.

The conserving animals and plants in their natural habitats are known as in-situ conservation which includes the establishment of the followings.

- ♦ National Parks and sanctuaries.
- ♦ Nature reserves.
- ♦ Bio-sphere reserves
- ♦ Preservation plots.
- ♦ Reserved forests etc.

The aim of the convention on biological diversity is the conservation of Biological diversity for sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, which targeted the followings:

- ♦ Establish Training and research.
- ♦ Develop national strategies for the conservation and sustainable use of biological resources.
- ♦ Establish protected Areas and degraded ecosystems, control alien species and establish ex-situ conservation facilities.
- ♦ Promote public education and awareness of the conservation of sustainable use of biodiversity and so on.

As mention above, the objectives and advantages of biodiversity conservation are -

- ♦ The genetic diversity of the plants and animals is preserved.
- ♦ Conservation of biological diversity leads to conservation of essential ecological diversity to preserve the continuity of food chains.
- ♦ It ensures the sustainable utilization of the support system on earth.

- ♦ Biodiversity conservation serves as an insurance policy for the future.
- ♦ It provides a vast knowledge of potential use to the scientific community etc.

Biodiversity protection: Action plan of Indian Government

India is a signatory to several major international conventions relating to conservation and management of wild life. Some of these are conservation of biological diversity, conservation of international trade in engagement species of wild fauna and Flora (CITES) convention on the conservation of migratory species of wild animals etc.

Indian Government has taken various biodiversity protection steps. Some of importance measures include:

- ♦ The central Government has enacted the wildlife protection Act, 1972. The Act provides for the creation of protected areas for protection of wildlife.
- ♦ Wetland (conservation and management) Rules, 2010 have been framed for the protection of wetland in the states.
- ♦ The Centrally sponsored scheme of national plane for conservation of Aquatic ecosystems.
- ♦ Wildlife Control Bureau has been established for control of illegal trade in wildlife including endangered species.
- ♦ Establishment of wildlife institute of India as "Bombay Natural History society" and "Salim Ali Centre for Ornithology and Natural History" for research on conservation of wildlife.
- ♦ Financial and technical assistance is extended to the State Governments under various centrally sponsored schemes includes "Project Tiger" and "Project Elephant" for providing better protection and conservation of wildlife.
- ♦ Under the "Recovery of Endangered species" component of the centrally sponsored schemes "Integrated Development of Wildlife Habitats" for the recovery of endangered species viz.

Air Pollution : Its Causes, Consequences and Control

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ABSTRACT

Air pollution is the release of pollutants such as gases, particles and biological molecules etc. in the air from both man-made and natural sources that is harmful to human health and the environment. Air pollution threatens human's health and the other living beings in the globe. It reduces the ozone layer concentration, creates acid rain, different diseases such as respiratory problems, cancer, fungal infection and contributes to global warming. At present, air pollution cannot be stopped completely but different steps can be taken to reduce it (using 3 R's). At individual level, air pollution can be reduced by using different practices.

Keywords: Pollutants, Global warming, Acid Rain, Ozone layer depletion.

Introduction:

Air pollution is the contamination of air due to the presence of harmful substances which has a poisonous effect. These harmful substances are called pollutants. Pollutants can be natural or created by human activity. Pollutants are of two types, primary and secondary. Primary pollutants are emitted directly from a process such as ash

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from volcanic eruption, carbon-monoxide from motor vehicle exhaust or sulphur-dioxide released from factories. Secondary pollutants are not directly emitted from source. These are formed in the lower atmosphere by chemical reactions.

Discussion:

Major primary pollutants include nitrogen oxides (NO_x), sulphur oxides (SO_x), carbon-dioxide (CO_2), carbon-monoxide (CO), volatile organic matter (VOC), particulate matter (PM), chlorofluorocarbons (CFC), ammonia, toxic metals such as Pb, Hg and their compounds.

- ♦ NO_x gases are emitted by vehicles as well as industrial sources such as power plant, industrial boilers, cement kilns and turbines.
- ♦ SO_x , sulphur dioxide is the most common form in the lower atmosphere. Sulphur oxide gases are emitted from coal burning power plants, roasting of sulphide ores, vehicles and volcanic eruption.
- ♦ CO_2 gases are emitted from burning of fossil fuels, deforestation, cement production, forest fire etc.
- ♦ Many sources of carbon-monoxide gases are furnaces, gas water heaters, wood stoves and other fuel-burning appliances, volcanic eruption, forest fire. Industry is also a major contributor to CO emission.
- ♦ VOCs sources include petroleum use, evaporation of industrial chemicals.
- ♦ Some PM are emitted directly from source such as unpaved roads, construction sites, fields, smoke stacks or fires. Most particulate matter formed in the atmosphere as a complex reaction of chemicals such as SO_x and NO_x .
- ♦ CFC's are responsible for depletion of ozone layer. Secondary pollutants include ground level ozone (O_3) are formed from VOC's and NO_x .
- ♦ Particulates are produced from gaseous primary pollutants and compounds in a photochemical smog, Secondary pollutants also combine with primary emissions to form photo chemical smog.

Factors causing air pollution:

Air pollution can result from both human activities and natural actions.

Human activities:

- ♦ *Burning of fossil fuels:* Sulphur dioxide emitted from the combustion of fossil fuels like petroleum, coal in power plant. Vehicle run on road with the help of burning gasoline and diesel which produces lots of PM, NO_x, CO, organic compounds and lead.
- ♦ *Agricultural activities:* Ammonia is the most hazardous gas produced as by product of agricultural- related activities. The use of insecticides, pesticides, fungicides and fertilizers in agricultural activities emit harmful chemicals into the atmosphere. The burning of old crops to clean fields by farmers produce lots of smoke, dust and finally in the air smog.
- ♦ *Waste in landfills:* Waste dumped in landfills produces methane gas which is very harmful to human in different ways.
- ♦ *Exhaust from industries and factories:* Factories and industries release a large amount of CO, CO₂, hydrocarbons, organic compounds and chemicals into the atmosphere and degrade the quality of air. In 2nd December 1984, methylisocyanate (MIC) split out from Union carbide India Limited, a pesticide factory. In this disaster more than 15,000 people were died and about 6,00,000 people were affected. In the month of May, 2020 the Baghjan oil well fire (Assam) results two deaths, large scale local evacuations and environmental damage to the nearby Dibru-Saikhowa National Park.
- ♦ *Mining Operations:* During the mining process, dust and chemicals are released in the air causing massive air pollution. This is one of the reasons which are responsible for the deteriorating health condition of workers and nearby residents.
- ♦ *Indoor air pollution:* Several sources of indoor air pollution are- Fuel burning combustion appliances, Tobacco products, Building

material and furnishings, Furniture made of certain pressed wood products, Products for household cleaning and maintenance, central heating and cooling system and Product like air refreshers etc.

- ♦ *Open burning of garbage waste:* Open burning of garbage is much more harmful to human health and the environment. It can pose serious health risk including cancer, liver issues, impairment of immune system, reproductive functions and also affect the developing nervous system.

Natural actions:

- ♦ *Dust and wildfire:* In large areas of open land that have little or no vegetation and dry due to the lack of rain wind can create dust storms. This produces PM and affects the environment as well as human health. Wildfires occur in wooded areas when prolonged dry periods occur. The smoke, CO and CO₂ increase the carbon levels in the atmosphere create a green house effect. The 2020 Brazil rainforest wildfires are a series of forest fires that are affecting Brazil, with 44,013 outbreaks of fires registered between January and August in the Amazonas and Pantanal.
- ♦ *Animals and vegetation:* Animal digestion is leading to the release of methane and another greenhouse gases. Vegetations such as black gum, poplar, oak and willow trees release significant amounts of VOCs on warmer days.
- ♦ *Volcanic activity:* Volcanic eruptions are a major source of air pollution. During the volcanic eruptions tremendous amount of CO₂, SO₂, H₂S and ash products are released and mixed with the atmosphere which is more harmful to human, animals and agriculture.
- ♦ *Microbial decaying process:* Microorganism have a major role in natural decaying processes of living organisms and environmental contaminants, results the natural release of methane gas.
- ♦ *Radioactive decay process:* Radon gas is emitted due to natural decay

processes of earth's crust which is accumulated in enclosed spaces such as basement.

Consequences of air pollution:

- ♦ *Ozone layer depletion:* Several ozone depleting substances are released in the atmosphere from different sources. Chlorofluorocarbon from refrigerators, air conditioners, solvents, dry cleaning agents etc; halons from fire extinguisher; carbon tetra chloride from fire extinguishers, solvents etc. The human will be directly exposed to the harmful UV radiations of the sun due to the depletion of ozone layer that result serious health issues among humans, cataract and weaken the immune System. Strong UV rays may lead to minimal growth, flowering and photosynthesis in plants.
- ♦ *Global warming:* It is a gradual increase in the earth's temperature due to the presence of greenhouse gases and other pollutants in the atmosphere. Major effect of global warming are-
- ♦ *Rise in temperature:* The rise in earth's temperature results the melting of glaciers which lead to an increase in the sea level.
- ♦ *Climate change:* Global warming has lead to a change in climatic conditions.
- ♦ *Threats to the ecosystem:* Global warming has affected the coral reefs that lead to a loss of plant and animal lives.
- ♦ *Loss of natural habitat:* A global shift in the climate leads to the loss of habitats of several plant and animals.
- ♦ *Acid rain:* Acid rain is formed in the atmosphere when NO_x , SO_x reacts with oxygen, water vapour etc. There are several effects of acid rain.
- ♦ *Effect on aquatic environment:* The aquatic plants and animals need a particular P^{H} level of about 4.8 to survive. If the P^{H} value falls below that the conditions become hostile for the survival of aquatic life.
- ♦ *Effect on forest:* It makes trees vulnerable to disease, extreme weather and insects by destroying their leaves damaging the bark and retards their growth. Forest damage due to acid rain is most evident in

Eastern Europe.

- ♦ *Effect on architecture and buildings:* Acid rain on buildings, specially those constructed with limestone, reacts with the minerals and corrode them away. This leaves the building weak and susceptible to decay. The effects are commonly seen on statues, old gravestone and historic monuments.
- ♦ *Effect on human health:* Pollution can cause respiratory illness and allergies ranging from coughs to asthma, cancer. Inhalation of toxic agents directly affects the lungs and other organs that make the respiratory system. The skin cancer in many cases develops from the direct incidence of UV rays on the skin. It is feared that lung cancer is caused mainly due to polluted air because carcinogens are found in it.

Ways to reduce air pollution:

- ♦ *Using public transports:* Using public transport is a short way of contributing to less air pollution as it provides with less and energy, even carpools contribute to it.
- ♦ *Turn off the lights when not in use:* The energy that the light produce also contributes to air pollution. Use energy saving light to help the environment.
- ♦ *Using the concept of 3R's:* The concept of reduce, recycle and reuse is helpful for air pollution as it helps in reducing pollutants emission. The recycled products also take less power to make other products.
- ♦ *No to plastic/ polythene bags:* The use of plastic and polythene bags are very harmful to the environment because it takes long time to decompose. Burning of plastic and polythene products also release harmful gases to the environment.
- ♦ *Reduction of forest fires and smoking:* The collection of garbage and getting it on fire in dry seasons or dry leaves catching fires is a huge factor for causing air pollution.
- ♦ *Use filters for chimneys:* The gas that emitted from fireplaces in homes and factories are extremely dangerous for air pollution. The use

A Review on Golden Langur in its Distribution Range Dr. Anindita Chakravarty*

Introduction

Golden langur (*Trachypithecus geei*; Khajuria, 1956) is one of the most endangered species of Asia and endemic to Assam plains and eastern Himalayan region (Chetry et al., 2017). It is a rich golden to creamy buff coloured langur, having neck, shoulder and hindquarters brighter than rest of the body (Figure 1 & 2). An ill developed half whorl present on forehead, with hairs radiating backward and sideways. Face colour is black with whiskers. Tail is long with tassel at the tip is larger in male than the female (Khajuria, 1956; Gee, 1961). Infant coat colour is an "apricot colour" that is distinctly different from the adult parent (Khajuria, 1978). Males are comparatively larger than females and body weight ranges from 9.5 to 10.8 kg. Head and body length ranges between 50-75 cm, and tail length ranges from 70-100 cm (Gurung & Singh, 1996; Nigam et al., 2014). It is locally known as "dhola bandar" or "sonali bandar" in Assam and in Bhutan it is known as "Raksha" in Khemgha language. It is a monophyletic species belongs to the family Cercopithecidae, sub family Colobinae under order-Primates (Groves, 2001). The golden langur was first discovered by E. P. Geei in the year 1953 from Jamduar forest under the present Kokrajhar district of Assam. Its Indian distribution ranges restricted

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of filters will help to reduce the effect of harmful gases absorbing in the air.

- ♦ *Avoid usage of crackers:* The use of crackers during festivals and weddings is one of the biggest contributors to air pollution, leading to a layer of smog which is extremely harmful to health. So, practice of no crackers should be implemented.
- ♦ *Avoid using of products with chemicals:* Products that use the chemicals in their usage or smell strongly, like paints or perfumes should be used less or outside the house.
- ♦ *Implement Afforestation:* Plant and grow as many trees as possible. The practice of planting trees provides a lot of benefits to the environment and helps with the release of oxygen.

Conclusion:

Air pollution is a major environment related health threat to children and a risk factor for both acute and chronic respiratory diseases. Air pollution can be prevented only if we stop using toxic substances that cause air pollution. Governments have to increase the awareness among people.

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- <https://www.intechopen.com>
- <https://www.aqi.in/blog>

to present Bongaigoan, Dhubri and Kokrajhar District of Assam (Coordinates: 26°15'N - 26°33'N and 89°47'E - 92°55'E) with an estimated forested areas of 900 km², bounded by the rivers Sankosh in the west and Manas in the east and Brahmaputra on the south (Gee, 1961; Choudhury, 2002; Srivastava, 2006). Bhutan population is restricted in the foot hills of black mountains within forested areas of 1400 km² (Lhendup *et al.*, 2018). The estimated existing population sizes of golden langur in their range areas are > 1,500 individuals in India and roughly 4,000 individuals in Bhutan with comprising < 2,555 mature individuals of globally threatened langur species (Srivastava, 2006; Das *et al.*, 2008). Deforestation and fragmentation of habitat were considered as the threat to golden langur population (Choudhury, 2002; Biswas *et al.*, 2006; Srivastava, 2006; Horwich *et al.*, 2013). Nearly 30% of golden langur's habitat was lost during 1988-1998 owing to severe habitat fragmentation (Srivastava *et al.*, 2001b). In this article, discussion was done on the published information about the present status of the species in its distributional range.



Figure 1. Golden langur



Figure 2. A troop of golden langur

Habitat and distribution of golden langur

The distribution of the species is restricted in foot hills of Indo-Bhutan border. Present global distribution range of golden langur is defined by four river system viz. Chamkhar river in the north, Brahmaputra river in the south, Manas river in the east and Sankosh river in the west (Srivastava, 2001b). E. P. Gee (1961) studied the

distribution of golden langur between the river Sankosh and Manas up to Raimona range of present Kokrajhar district and foothills of Bhutan. Mukherjee & Saha (1974) ascertained that the distribution of golden langur along the Indo- Bhutan border and in Bokuamari forest of Dhubri district in Assam. Saha (1980) reported the range of distribution of golden langur in the forests of black mountain range of central Bhutan. Saikia *et al.* (1987) reported golden langur in Chakrashilla wildlife sanctuary, apart from the earlier known distribution site as mentioned by Khajuria (1978). In Assam, golden langur was previously distributed from Chandardinga hills through Chapor-salkocha- Srigrum reserve forest complex and up to Chakrasila hills (now Chakrasila wildlife sanctuary) (Saikia *et al.* 1987), but the present distribution range in Assam is restricted to 19 isolated areas that exists within the past distributional range (Choudhury, 2002). Author also described the golden langur's distribution in south- central Bhutan. Srivastava *et al.* (2001a; 2001b) reported the habitat of golden langur in low land evergreen, semi- evergreen and riparian moist deciduous and sal- dominated as well as fragmented, degraded forests with secondary growth in Assam. Habitat of golden langur was also studied and ascertained IUCN status by Das *et al.* in 2008. Biswas (2004) in his study in different habitat of golden langur in Assam narrated it as an arboreal species (Khajuria, 1978) but found to compromise with low canopy coverage by coming down and crossing the canopy gap by ground running. Author also described that golden langur inhabited in dense tropical deciduous forests with Sal (*Shorea robusta*) as dominant tree as well as in low land areas of Assam. Bose (1997) recorded golden langur in the Kakoijana reserve forest, Assam (Figure 2).

Golden langur mainly lives in sub-tropical moist mixed deciduous and semi-evergreen forest of Assam as well as temperate broad-leaved forest Bhutan. Moreover, they are also lived in sal-dominated deciduous forest, degraded forests with bamboo patches and secondary growth (Srivastava *et al.*, 2001a; Choudhury, 2002; Das *et*

al., 2008).

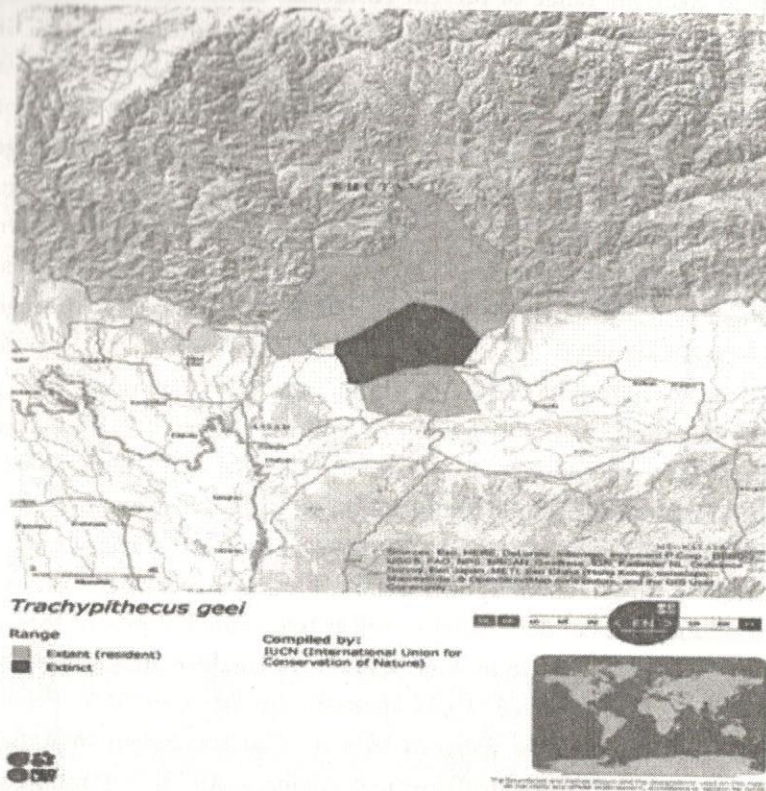


Figure 2

Distribution map of golden langur (Source: The IUCN Red List of Threatened Species: *Trachypithecus geei*- published in 2008).
<http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T22037A9348940.en>

Population status

Gee (1961) studied population status of golden langur in Jamduar, Raimona and Manas area ($n = 544$ individuals) in India. In 2001, the Indian population was enumerated as less than 1500 individuals (Srivastava, 2006). Wangchuk et al. (2003) estimated Bhutan population was 6,637 individuals. An isolated population of golden langur was

studied by Medhi *et al.* (2004) in anthropogenic altered habitat of Abhaya rubber plantation area. Ghosh (2009) and Horwich *et al.* (2010) directly sighted 5,141 golden langurs in 566 troops in Assam (India). Chetry *et al.* (2010) studied population status of golden langur in Chakrashila wildlife sanctuary with a count of 474 individuals of golden langur in 64 troops. Horwich *et al.* (2013) estimated total population of golden langur in India and Bhutan under the golden langur Conservation Project (2008- 2012) as 5,500 individuals in India and over 6,600 individuals in Bhutan population with a total population estimated over 12,000 individuals. Lhendup *et al.* (2018) recently estimated Bhutan population (433 individuals in 46 troops) of golden langur in Royal Manas National Park, Bhutan. Thinley et al. (2019) has reported a total $2516 \pm SE 363$ individuals and $236 \pm SE 9$ groups of golden langurs in Bhutan which is much lower than the current IUCN estimate of Bhutan population. In a recent population study of golden langur in and around Kakoiijana reserve forest was estimated a total population size of 489 individuals in 45 troops (Chakravarty et al., 2020).

Golden langurs live in troops of three to twenty individuals; single male/ multi-female organization was the most common structure. Two male- multi-female troops, multi male- multi female troops as well as all male troops were also common type of social system with strong social bonding (Biswas, 2004; Chetry *et al.*, 2010). In Bhutan population, troop size varied from two to thirty-five individuals with a mean of $11 \pm SD 0.34$ individuals (Thinley et al., 2019).

Day path length and Annual Home range

Biswas (2004) studied annual home range and daily path length of golden langur in its primary habitat of Ultapani reserve forest of Assam and annual home range was recorded 25 ha to 58 ha with day path length of 434 meters to 513 meters.

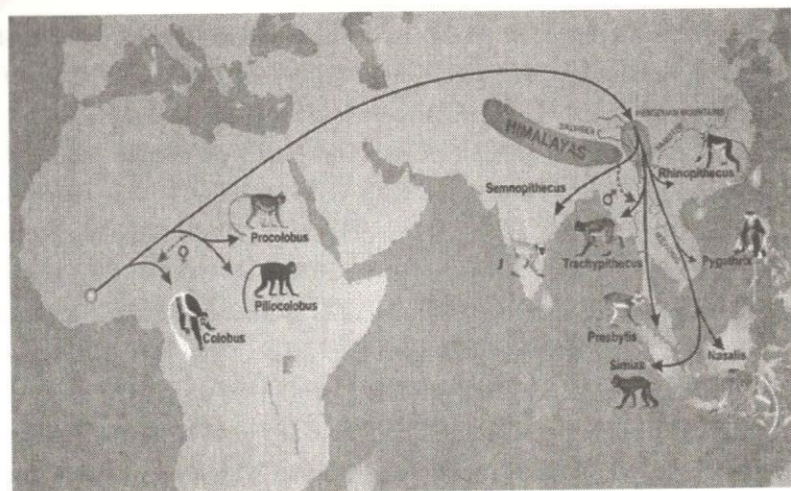


Figure 4.

Dispersal scenario of colobine monkey (After Roos et al., 2011, Figure-available via license: Creative Commons Attribution 2.0 Generic).

Evolution and Genetic study

Wangchuk *et al.* (2003) documented a new sub species of golden langur depending upon ecological, morphological and phylogenetic study of northern Bhutan population and named as *Trachypithecus geei bhutanensis* along with *Trachypithecus geei geei* in its normal distributional range. He showed divergence of *Trachypithecus geei* and *Trachypithecus pileatus* and documented that *Trachypithecus geei* was speciated out from *Trachypithecus pileatus*. Karanth (2008) suggested a reticulate evolution and described that capped- golden lineage was evolved where the distribution of *Semnopithecus* and *Trachypithecus* overlapped was dates back 7.1 to 3.4 million years ago. Choudhury (2008) reported 'natural hybrid' of *Trachypithecus geei* and *Trachypithecus peliatus* in Dozongkhag of Zhemgang (Bhutan). Roos *et al.* (2011) explained the evolution and divergence of Asian Colobines from its ancestral African stock (Figure 4). Wang *et al.* (2013) referred Asian Colobines as langurs and their categorization into genera was done. Ram *et al.* (2016) studied genetic diversity and structure of nine isolated troops of golden langur

in Assam and reported it as a monophyletic group but expressed possibilities of hybridization with *Trachypithecus peliatus* in the wild.

Activity pattern and feeding ecology

Major behavioural activities recorded in case of golden langur were feeding, resting, monitoring, travelling, grooming and others including playing, aggression, vocalization, urination and defecation, copulation etc. Thick canopy trees were favoured for resting in summer and tall, exposed to sun trees are used for resting in winter (Mukherjee, 2000). Ghosh & Biswas (1976) reported movement of golden langur and stated that, golden langur preferred tall trees for movement. Dutta (1992) studied some aspects of eco- biology of golden Langur in Manas National Park and reported different behavioural patterns specially in Mathanguri Range. Mukherjee (2000) also studied on the ecology and behaviour of golden langur in western Assam, India and described grooming in the form of self grooming as well as allo-grooming seen during mid-day rest. Gupta & Chivers (2000) studied on activity pattern of introduced troop of golden langur in Sepahijala National Park in Tripura. Medhi *et al.* (2004) documented activity pattern in a fragmented habitat of Abhaya Rubber Garden, western Assam. Wangchuk (2005) described change of activity pattern with weather and narrated that on cloudy days troops were found active in their normal resting period. Biswas (2004) studied comparative behavioural patterns of golden langur and their flexibility to adopt on available resources in both primary habitat (Ultapani, Chirang reserve forest) and fragmented secondary habitat (Kakojiana Reserve Forest) in western Assam. Chetry & Chetry (2009) also studied movement of golden langur in Assam, India. Chetry *et al.* (2010) have recorded different activity pattern and social organization of golden langur in different habitat area.

Golden langur is folivorous and leaves (young and mature leaves) constitute 60% or more of their daily diet. Fruits, flowers and flower buds, seeds and seedpods, bamboo shoots etc. are also included in

their daily diet. A varied group of plants including trees, shrubs, and climbers were used by golden langur as their food. Foraging trees were mainly deciduous trees but shrubs were also used. Plantation species were commonly used for foraging village areas. Feeding started at dawn at about 4.30 hours in the morning in summer and around 5.30 hours in winter (Gupta & Chiver, 2000). Feeding habit of golden langur was studied by Gee (1961) along its original distribution range areas of Jamduar area and on the west bank of Manas river. Khajuria (1978) has reported that, golden Langur obtained water mainly from their foliage diet, but, drinking of water from the ground was also noticed in summer season. Although arboreal, the golden langur occasionally comes down to the ground for drinking, salt licking or crossing canopy gap was reported by a number of scientists in its distributional range of Assam and Bhutan (Gee, 1961; Wangchuk, 2005; Biswas, 2004). Wayre (1968) has reported that, flowers and flower buds were the preferred food items of the golden langur troops in Manas wildlife sanctuary (now, Manas National Park). Ghosh & Biswas (1976) have described feeding of certain plant species and their parts in Bhutan part of Manas Sanctuary. Subba (1989) has studied feeding ecology of Golden Langur in Royal Manas National Park (Bhutan). Gupta & Chivers (2000) in Sepahijala Wildlife Sanctuary, West Tripura recorded numbers of food plant species for the golden langur (although it is an introduced species) along with the parts eaten in different seasons of the year. Mukherjee (2000) also recorded the folivorous nature of golden langur in its distributional range of western Assam. Biswas (2004) has studied feeding ecology of golden langur in Ultapani reserve forest as well as also in Kakoijana reserve Forest of Assam. Medhi *et al.* (2005) have documented numbers of cultivated plant species as a consumed food for golden langur by the village troops in four distinct areas of Assam namely, Chakrashila wildlife sanctuary, Nayakgaon rubber plantation, Kakoijana proposed wildlife sanctuary and Manas tiger reserve. Biswas (2004) reported 206 food plant species of golden langur in its distributional range.

Das *et al.*, (2013) have recorded good numbers of food plant species (n=91) of golden langur along with parts eaten in Chirang reserve forest. Chakravarty & Saikia (2017) has reported unusual feeding habit in the form of fern feeding in Kakoijana reserve forest, Assam.

Reproductive Biology

Reproductive and breeding behaviour of golden langur was less studied and was observed that, golden langurs are cooperative breeders. It gives birth to a single offspring with no specific breeding season and gestation period was recorded to be six months as recorded in the Royal Manas National Park, Bhutan (Subba, 1989; Ghosh & Biswas, 1976). Dutta (1992) described reproductive behaviour as well as breeding season of golden langur in Mathanguri areas of Manas National Park, Assam. Author also narrated the breeding process in captivity in Assam state zoo. Biswas (2004) documented reproductive behaviour of golden langur in primary contiguous habitat of Chirang reserve forest. Socio- sexual activities like mounting, solicitation, copulation, aggression were recorded higher in monsoon and retreating monsoon season (Dutta, 1992; Biswas, 2004).

Conservation threats and measures

Srivastava *et al.* (2001a,b) studied threats to the species and based on satellite images, documented 50% habitat loss for the species in India. Choudhury (2002) documented habitat fragmentation and degradation as one of the primary threats to the Indian population of golden langur and tabulated the status of the fragmented habitats. Molur *et al.* (2003) enlisted high juvenile mortality and inbreeding as major threats for the species. Medhi *et al.* (2004) also narrated that habitat fragmentation is the major threat to the well being of the species in India. Srivastava (2006) assessed the conservation threats and blamed political unrest and ethnic violence for large-scale destruction and encroachment on the primary forest habitat of the species. Chetry *et al.* (2010) documented lots of threats to the village

population of the species during his study in Chakrashila wild life sanctuary. Pathak (2011) pointed out the possibilities of insecticide poisoning to the troops residing in or near the plantation areas.

Conclusion

As golden langur population is diminishing in its primary habitat, fragmented and isolated habitats like Kakoijana reserve forest through ray of hope with a very high population. The immediate threat for the species was the forest destruction for fire wood collection, logging as well as grazing of life stock. The high degree of human and golden langur resource overlap in village areas is another serious issue. Based on present study, a few recommendations are made.

For conservation of this species the government should start a golden langur project throughout the entire distribution range of the species to determine the present global distribution, population status with threat evaluation. This will supply baseline information to formulate area specific action plan. Rehabilitation of the village troops to the primary habitat is needed immediately otherwise there may be genetic drift of the species. For proper management, the forest can be upgraded as community forest with surrounding villages as model villages with socio-cultural as well as economic development of the ethnic people residing in those villages and engaged the youths in the management process. Nearby isolated habitat should be joined by building corridors to improve the home range as well as to establish a viable population by genetic exchange among the troops. We hope that, with all these actions, this charismatic real gold of nature will improve its population in a better habitat conditions.

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Cosmology - Issues and Problems

Syed Jawahar Hussain*

Abstract

Cosmology is the study of the origin and evolution of the universe. It has made incredible strides in the past century. We understand the basic evolution of the universe from extremely early times to the present day, as well as large scale structures formed in the universe. However we are inevitably running into a series of limits due to nature of the subject. This chapter will look at some of these fundamental problems for cosmology and consider some fundamental issues relating to the nature of the topic.

Keywords: Cosmology, Galaxy, Astronomy

Introduction:

Universe is vast and unimaginably large. So we cannot have the proper tools to observe or to exactly measure the various factors related to the universe. We are dependent on theories and laws of physics and astronomical observations. But there are certain issues and limits which cannot be ignored for proper study of the universe and to explain various astronomical phenomenon.

Limits of Laws of Physics:

There is uncertainty about what is or is not a law of physics in the context of the evolution of the universe itself. One topic where this

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plays out is as regards the nature of constants of physics, which are crucial to all physical laws. When we look at them in the cosmological context, involving physical behaviour over vast distances and times, are they in fact constants – a foundational part of the laws themselves – or are they rather more ephemeral quantities that are environmentally dependent? The present day tendency is towards the latter view: that many of the constants of physics are in fact contingent, depending on context.

Limits of Laws of Nature:

If we try to present some kind of physical theory for the creation of the universe, then we are assuming the laws of physics pre-existed the universe: they somehow were there before space, time, matter, or anything else physical existed. So what kind of existence is proposed for these laws? Do they live in some kind of eternal Platonic space? If not, where or how did they exist? This kind of claims make major philosophical assumptions about what precedes or underlies the existence of the universe, and implicitly about in what way these supposed entities may be said to pre-exist physical existence.

Limits of testing: We cannot test the relevant laws of physics that determine what happened in the early universe – or at least we cannot test them under the kinds of conditions that then held. The point is that each of our knowledge experimentally determined the laws of physics come with a domain of applicability: it holds under some conditions and not under others. We cannot reproduce on Earth the conditions that occurred very early on the hot big bang era, because we cannot reach the relevant energies for both technological and economic reasons. Hence in studying these eras, we will always be assuming we know the nature of physics that we cannot test.

Limits of observation:

The universe is very large compared to human size and life span, we can effectively only see the universe on one single past light cone. Because the universe has expanded for a finite time since it first became transparent to light at the time of decoupling of matter and radiation,

about 4000,000 years after the start of the hot big bang era, what we can see is limited by a visual horizon. This is an exceptional case; we could live in a small universe, which is spatially closed on such a small scale that we have seen right round the universe. This is a testable proposition, but so far there is no solid evidence it indeed the case. Assuming it is not true, what we can determine observationally about the universe is highly restricted: we have no information whatever about what lies beyond the visual horizon and will never have such information.

Limits of logic:

Cosmology - and particularly multiverse proposals - involves infinities of entities: stars, galaxies, even universes. There are two major problems with any such claims. The first is that it is conceptually problematic: the point is that infinity is not just a very big number, or an ordinary entity: rather it is a quantity that can never be attained, that is forever out of reach. And this leads to the second problem: even if it were to exist, quite apart from the existence of horizons preventing us from seeing all the entities that would then exist, we could never count them even if we could see them - for to do so would take an infinite time, and so would never be completed. Thus there is absolutely no way we can ever prove this claim to be true.

Limits of scope:

It has become apparent that if one considers the set of all possible cosmologies, those that admit any complex physical structures, such as living beings, are highly restricted: they are very special within the family of all possible cosmologies. To put it more controversially, on the face of it, it seems that the universe is fine-tuned to allow life to exist. This applies to both the laws of physics that apply in the universe, and to the specific initial conditions that lead to the universe we know, on the basis of those laws.

Limits of Data: If one wishes to investigate whether it is sensible direction to go or not, a key issue is the limits to the kind of data one allows in pursuing the investigation of cosmology: what kind of data

will be taken into account? One will of course have to take into account the experimental data that is the concern of theoretical physics as well as observations of astronomers. But if one is to investigate the deep nature of all the existence that is permitted by and contained in the physical universe, should one not perhaps admit also an evidence issues of truth and beauty, of good and evil, justice and injustice, of morality and meaning? This is a crucial issue for the study of cosmology in the long term.

Conclusion:

There is much more in the universe than galaxies and stars and planets: theoretical physics as predicted today captures some aspects of reality but omits many others. Its maturity may expand to recognize these limitations, and develop a broader understanding of the nature of existence.

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Global Warming: Causes, Effects and Solutions

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Introduction:

Global warming is a process in which the earth's temperature keeps increasing constantly. It is a great problem for the earth and its habitants. The higher levels of greenhouse gases contribute to it. Six main greenhouse gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and three fluorinated industrial gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). Water vapour is also considered a greenhouse gas. Natural events and human influences are believed to be top contributors towards the increase in average temperature.

Global warming has changed various life forms on the earth. Not only human, but any other form of life, be it flora or, fauna face a threat in the face of global warming. Earth's surface temperature has increased more than one degree Fahrenheit since 1900. The year 1990 was the hottest year in the last century. Together with 1991, the years of 1983, 1987, 1988 and 1989 have been measured to be the warmest six years in the last hundred years. The year 1991 was the second warmest year of the past century.

Average global surface temperature are projected to increase by 1.5 to 5.8p C by 2100 (Houghton, 1996). The present temperature is

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0.3 – 0.6°C warmer than it was 100 years before (Melillo, 2014). Carbon dioxide (CO_2), one of the most prevalent greenhouse gases found in the atmosphere, has two major anthropogenic sources: the combustion of fossil fuels and changes in land use (Van den Bossche, 2017). Since record keeping began in 1895, the hottest year on record worldwide was 2016, according to NOAA (National Oceanic and Atmospheric Administration) and NASA data. That year earth's surface temperature was 1.78p F (0.99°C) warmer than the average across the entire 20th century. Since the start of the 21st century, the annual global temperature record has been broken five times (2005, 2010, 2014, 2015 and 2016).

Earth's warming trend continued in 2019, making it the second-hottest year in NOAA's 140-year climate record just behind 2016.

The average temperature across the globe in 2019 was 1.71p F (0.95p C) above the 20th century average and just 0.07 of a degree F (0.04 of a degree C) cooler than the 2016 record.

NASA scientists, who conducted a separate but similar analysis, concurred with NOAA's ranking. NASA also found that 2010-2019 was the hottest decade ever recorded. Scientists from the United Kingdom Met Office determined that 2019 was one of the top three hottest years on record and the WMO (World Meteorological Organization) also ranked 2019 second warmest year for the globe.

The year 2020 is set to be among the three warmest years on record, according to the latest State of the Global Climate provisional report by WMO on December 1, 2020. Also, the decade 2011-2020 would be the warmest ever. The global mean surface temperature for January-October was 1.2p C higher than the pre-industrial baseline (1850-1900). For that period, 2020 is the second-warmest year on record.

Objective:

The objective of this paper is to make the people aware about the causes and effects of global warming so that our generation can take care of the earth with immediate effect to safeguard future generations.

Methodology:

The paper is based on secondary data which is collected from various journals, magazines, internet etc.

Natural causes of global warming:

The climate has been continuously changing for centuries. One natural cause of global warming is greenhouse gases. Greenhouse gases such as CO_2 absorb heat (infrared radiation) emitted from earth's surface. Increase in the atmospheric concentrations of these gases cause earth to warm by trapping more of this heat.

Volcanic eruptions are another reason for global warming. A single volcanic eruption can release a great amount of CO_2 and ash to the atmosphere. Increased CO_2 leads to a rise in the temperature of Earth.

Methane gas is another contributor to global warming. Global methane concentrations rose from 722 parts per billion (ppb) in pre-industrial times to 1875 ppb by 2019, an increase by a factor of 2.5 and the highest value in at least 800,000 years. Methane is twenty times more effective in trapping heat in the atmosphere than CO_2 . Usually, methane gas is released from many areas like animal waste, landfill, natural gas and others.

Natural forest fires, especially large scale ones over long periods, can have an impact on the global temperature. When the vegetation burns, there is release of stored carbon and an increase in greenhouse gases like CO_2 into the atmosphere. These greenhouse gases then trap solar energy inevitably leading to the warming of the atmosphere.

Human influences on global warming:

Human influence has been a very serious issue now as it is contributing more than natural causes of global warming. Since human evolution, the earth has been changing for many years until now and it is still changing because of our modern lifestyle.

According to widely cited research, more than 97% climate scientists agree that the planet has been warming during the past several decades and that the warming is overwhelmingly the result of human activities. Human activities include industrial production, burning of

fossil fuel, mining of minerals, cattle rearing and deforestation.

Industries, transportation as cars, buses, trucks burn fuel to power the machines, which eventually, releases CO_2 and carbon monoxide (CO) from the exhaust, leading to an increase in a temperature rise of earth's atmosphere.

Another contributor is mining. During the process of mining, the methane gas trapped below the earth escapes. Rearing cattle also causes the release of methane from manure. Another cause is the most common but most dangerous – deforestation.

Deforestation is a human influence because human have been cutting down trees to produce paper, wood, build houses and more. Trees can absorb CO_2 from the atmosphere and their absence can lead to the higher concentration of such gases. Thus CO_2 is most commonly produced by human activities and it is responsible for 64% of manmade global warming. Its concentration in the atmosphere is currently 40% higher than it was when industrialization began, from approximately 280 parts per million (ppm) in the 18th century to over 400 ppm in present. In 2018, CO_2 accounted for about 81.3% of all U.S. greenhouse gas emissions from human activities.

Other greenhouse gases are emitted in small quantities, but they trap heat far more effectively than CO_2 and in some cases are thousands of times stronger. Methane is responsible for 19% of manmade global warming, nitrous oxide for 6%. In 2018, nitrous oxide accounted for about 6.5% and methane accounted for about 9.5% of all U.S. greenhouse gas emissions from human activities. Human activities such as agriculture, fuel combustion, waste water management and industrial processes are increasing the amount of N_2O in the atmosphere. One pound of N_2O warms the atmosphere about 300 times the amount that one pound of CO_2 does over a 100 year timescale. Carbon dioxide, methane and nitrous oxide comprises 92% of total greenhouse gases.

Fluorinated gases (F-gases) produce a very strong warming effect, upto 23000 times greater than CO_2 . But these are released in small

quantities. Industrial processes, refrigeration and the use of a variety of consumer products contribute to emissions of F-gases. F-gases are responsible for 11% of manmade global warming.

The current global average temperature is 0.85p C higher than it was in the late 19th century. Each of the past three decades has been warmer than any preceding decade since records began in 1850.

An increase of 2p C compared to the temperature in pre-industrial times is seen by scientists as the threshold beyond which there is a much higher risk that dangerous and possibly catastrophic changes in the global environment will occur. For this reason, the international community has recognized the need to keep warming below 2°C.

The effects of global warming:

The impact that global warming is causing on Earth is extremely serious. There are many hazardous effects that will happen in the future if global warming continues. The WMO Greenhouse Gas Bulletin showed that globally average concentrations of CO₂ reached 407.8ppm in 2018 up from 405.5 ppm in 2017.

The increase in CO₂ from 2017 to 2018 was very close to that observed from 2016 to 2017 and just above the average over the last decade. Global levels of CO₂ crossed the symbolic and significant 400 ppm benchmark in 2015. CO₂ remains in the atmosphere for centuries and in the oceans for even longer. The global average atmospheric CO₂ in 2019 was 409.8 ppm, with a range of uncertainty of plus or minus 0.1 ppm.

Methane (CH₄) is the second most important long-lived greenhouse gas and contributes about 17% of radiative forcing. Radiative forcing is the difference between solar irradiance (sunlight) absorbed by the earth and energy radiated back to space. Approximately 40% of methane is emitted into the atmosphere by natural sources (e.g. wetlands and termites) and about 60% comes from human activities like cattle breeding, rice agriculture, fossil fuel exploitation, landfills and biomass burning.

Atmospheric methane reached a new high of about 1875 ppb in

2019 from 1866 ppb in 2018 according to a new preliminary estimate released by the NOAA and is now 259% of the pre-industrial level. For methane, the increase from 2017 (1850 ppb) to 2018 (1866 ppb) was higher than that observed from 2016 to 2017 and the average over the last decade.

Nitrous oxide (N₂O) is emitted into the atmosphere from both natural (about 60%) and anthropogenic sources (approximately 40%) including oceans, soil biomass burning, fertilizer use and various industrial processes. Its atmospheric concentration in 2018 was 331.1 ppb. This is 123% of pre-industrial levels. The increase from 2017 to 2018 was also higher than

that observed from 2016 to 2017 and the average growth rate over the past 10 years. N₂O also plays an important role in the destruction of the stratospheric ozone layer which protect us from the harmful ultraviolet rays of the sun. It accounts for about 6% of radiative forcing by long lived greenhouse gases.

There are numerous effects of global warming. Some of the effects of global warming observed across the world are -

(i) Rise in sea levels:

Due to rise in temperature, the Glaciers present in Polar Regions are melting rapidly as a result there is sufficient rise in sea level. Scientists have determined that global sea level has been steadily rising since 1900 at a rate of at least 0.04 to 0.1 inches per year. A recent review of the literature suggests that 30% of sea level rise since 1993 is due to thermal expansion of sea water and 55% due to continental ice melt, both resulting from global warming.

The International Panel on Climate Change (IPCC) Fifth Assessment Report estimates that the upper ocean (surface to 750m deep) has warmed by 0.09p C to 0.13p C per decade over the past 40 years. Greenland and Antarctica's ice sheets could together contribute more than 38 centimeters to global sea level rise by 2100, if greenhouse gas emissions continue, according to a study led by NASA. By 2050, sea levels are predicted to rise between one and 2.3 feet as glaciers

melt.

(ii) Droughts and Floods:

Higher temperature leads to faster evaporation of water and leads to drought in one part and heavy rainfall causes flooding in other part of the world. Experts have estimated that, drought conditions might be increasing by at least 66% in upcoming years.

NASA satellite data and ground measurements support research into long-term changes to water distribution. One of those efforts is the U.S. National Climate Assessment, which studies climate change and its potential impacts in each region of the country. Among those changes, for example, is an observed increase in very heavy precipitation events across the United States. From 1958 to 2016 heavy rainfall events have increased in the northeastern states by 55%, midwestern states by 42% and southeastern states by 27%. The western states have also seen modest increase in heavy rain events that can overwhelm the local watershed's capacity to absorb excessive water.

(iii) Effects on Biodiversity:

Wildlife researchers have noticed some of the strong species migrating to the poles, far north and far south to maintain their needed habitat. For example, the red fox normally an inhabitant of North America is now seen living in the Arctic. Also it has been noticed that loss of species and endangerment is rising along with the global temperature.

IPCC report lists the species which will be under threat as a result of climate change and global warming which includes the mountain gorilla in Africa, amphibians that only live in the cloud forests of the neo-tropics, forest birds of Tanzania, Bengal tiger and other species in the Sundarban Wetland, rainfall sensitive plants found only in the Cape Floral Kingdom of South Africa, polar bears, penguins etc.

Rising sea levels will also cause changes to ocean temperatures and perhaps even currents. Such changes would have a strong impact on zooplankton, an essential part of the food chain in the ocean. In addition, increased CO₂ causes acidification of the ocean, affecting

creatures and plants that are sensitive to pH imbalances.

If global warming continues, more hurricanes, cyclonic storms, heat waves, drought and extreme rainfall will occur causing disaster to humankind.

The solution to stop global warming:

We humans need to work together towards the prevention of global warming. To reduce global warming we can contribute by reducing the production and concentration of greenhouse gases in the atmosphere. We need to curb usage of gasoline, electricity and other activities including mining and industrialization that cause global warming.

Another way to reduce global warming is through recycling. Recycling can help reduce open burning of garbage by reusing plastic bags, bottles, papers or, glass. We need to stop open burning dry leaves or, burning garbage. It contributes to releasing CO₂ and toxins.

We should plant more and more trees as they absorb CO₂ and give off oxygen. They are an integral part of the natural atmospheric exchange cycle here on earth.

We can save energy by replacing regular light bulbs with LED light bulbs, because LED light bulbs use 90% less energy than a typical incandescent light bulbs. Also LED light bulbs last 20 times longer than incandescent bulbs and give off 70% less heat.

We can save electricity and reduce global warming by turning off lights, television, computer and many other electrical appliances, when not in use. To reduce global warming we need to curb the usage of gasoline mean we have a choice to choose a hybrid car that reduce using gasoline. Besides, petrol price is increasing. If a person everyday drives to work they need to pump petrol after 3 days and causes CO₂. Another way to reduce gasoline is to take public transport or, carpool to work. It can help reduce CO₂ and save cost.

The use of nitrogen fertilizers should be minimized since the major N₂O emission occurs from these fertilizers. The use of bio-fertilizers should be encouraged.

Conclusion:

Global warming is a worldwide issue that needs to be controlled to save the earth from imminent danger. The existence of human civilization on this earth depends on the health of this earth. The health of this earth is deteriorating due to global warming. Thus it must be controlled by us to save us and the earth as well.

In order to control global warming at first, we the people of this globe need to be conscious. People cannot do anything to nature-made global warming. But we can try to reduce the emissions of greenhouse gases into the atmosphere. People should also arrange different awareness programs among the unaware people to control global warming.

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Contribution of Aryabhata in Mathematics

Mahizur Rahman*

The man who brought new ideas, theories and deductions in mathematics and astronomy was Aryabhata. He had great contribution to the mathematics which is unparalleled and can never be forgotten. He was the only mathematician to deduce the approximate value of pi which he found it to be 3.14 .

Aryabhata was also an extraordinary scholar and teacher having profound knowledge of both mathematics and astronomy. The heliocentric theory which proved that the sun is located in the centre of the solar system and all the planets revolve around it was given by him. This observation and discovery was made by him much before Copernicus did it in the west.

Aryabhata was born in Kerala and lived from 476 AD to 550 AD. He completed his education from the ancient university of Nalanda and later he moved to Bihar and continued his study in the great centre of learning located in close proximity to Kusumapura in Bihar in the late 5th and early 6th century.

Aryabhata's contribution to the astronomy:

Despite having no modern equipment or instrument at that time, the calculations and deductions done by Aryabhata was quite

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remarkable. He had a very sharp brain and he achieved solutions various mysteries of the solar system through his passion, commitment and hard work. The fact that the earth is round in shape and rotates along its own axis and that is why we have day and night was deduced by him. He also said that the moon shines not because of its own light but because it reflects the light from sun. He was also instrumental in proving the belief that the eclipse is caused because of the shadows formed by the shadows cast by the earth and the moon wrong. Aryabhata used epicycles in a similar manner to the Greek philosopher Ptolemy to illustrate the inconsistent movement of some planets. The famous treatise 'Aryabhatia' that was based on astronomy was written by him in 499 AD. This treatise was acknowledged as a masterpiece. In honour of this excellent work Aryabhata was made head of the Nalanda University by the Gupta ruler Buddhagupta.

Aryabhatiya- a treatise that solved various mysteries related to astronomy:

The various facts related to the Hindu mathematics and astronomy that appeared during those times was included in Aryabhatia. Four chapters of the treatise were related to the sine tables and astronomical constants. The treatise also dealt with rules to calculate the longitudes of the planets by utilizing epicycles and eccentrics and also the rules related to trigonometry and calculation of eclipses. The ganita section in the Aryabhatiya included various innovative methods for calculating the lengths of the chords of circles by using the half chord method unlike the Greeks who used the full chord method.

Aryabhata's role in the place value system:

He also played a very major role in determining the place value system and discovering the zero. He also worked on the summation series of square roots and cube roots. He is also regarded as the first to use zero in the place value system. He also calculated the sidereal rotation, which is the rotation of the earth in relation to the fixed

starts. His theories and deductions formed the base of the trigonometry and algebra. For his extraordinary works and contributions to mathematics and astronomy, India's first satellite was named as Aryabhata. Aryabhata research institute of observational sciences near Nainital and the Aryabhata knowledge university in Patna in India are also named after him.

Reference:

www.topper.com

Dark Energy and Expansion of the Universe

Sanjita Ray*

Abstract:

In 1929 Hubble announced that the universe is expanding. He observed that the red shift (Redshift is that when the source of light moving away proportional to the increase of wavelength i.e shifting to the red end of the spectrum.) of the galaxies was directly proportional to the distance of the galaxy from the earth. This means that, as the objects are more distance from the earth, move faster and so he concluded that the universe is expanding. So there must be a force that pushing the galaxies away i.e. a opposite force of gravity. This is dark energy.

Objectives:

1. To study about the empty space of the universe.
2. To study the cause of expansion of the universe.

Key words: Red shift, dark energy, and dark matter.

Introduction:

Let us behold the mesmerizing expanding beauty of the universe. The Universe is expanding from the time of Big Bang. Hubble provided evidence that the velocity of galaxy increases with distances from the earth, which is known as Hubble's Law and also implies that the

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Universe is expanding. So there must be a force as a balloon expanded giving air pressure inside it. This led to the concept of dark energy and also the dark matter. The galaxies are moving away from each other so this energy must be repulsive. It is invisible. Now the visible matters are baryonic matter (made of proton, neutron) again proton and neutron are made of from quarks. Mass of quarks and electrons from the interaction with the Higg's Bosons. But dark matter is invisible to light. It emits no light and can not seen directly.

Description:

Hubble showed that there is a direct relation between the speed of distant galaxies and the distance from the earth. This relation is known as the Hubble's Law.

Expanding universe theory:

Cosmological theory: This theory based on the Edwin Hubble's work that the galaxies are moving away from each other. This theory explains that the space expands. The increasing expansion of the universe indicates that all the matter visible or invisible were once concentrated at a point which support the Big Bang Theory.

Hubble showed that the galaxies are receding from us with a velocity that is proportional to their distance from us. He draw a curve observed velocity vs. distance for near by galaxies and this shows a liner relation between galaxies velocity (v) and the distance (d) that is $v = H_0 \times d$. This relation is the Hubble Law.

In our Universe only 5% is visible i.e. more is unknown than is known. Einstein said that empty space is not empty. It is full of dark energy and it affects the universe's expansion. It turns out that roughly 68% of the universe is dark energy. Dark matter makes up about 27%. The rest - everything on Earth, everything ever observed with all of our instruments, all normal matter - adds up to less than 5% of the universe.

What is Dark Energy? It is an important mystery.

There are some explanations for dark energy and these are discussed below.

1. Dark Energy is a property of the space. It is one explanation of Dark Energy. Albert Einstein was the first person to realize that empty space is not anything. Space has amazing properties, many of which are just beginning to be understood. The first property that Einstein discovered is that it is possible for more space to come into existence. Because this energy is a property of space itself, it would not be diluted as space expands. As more space comes into existence, more of this energy-of-space would appear. As a result, this form of energy would cause the universe to expand faster and faster.
2. Another explanation is quantum theory of matter. In this theory, "empty space" is actually full of temporary ("virtual") particles that continually form and then disappear. But when physicists tried to calculate how much energy this would give empty space, the answer came out wrong - wrong by a lot. The number came out 10^{120} times too big. That's a 1 with 120 zeros after it. It's hard to get an answer that bad. So the mystery continues.
3. Dark energy is that it is a new kind of dynamical energy fluid or field, something that fills all of space but something whose effect on the expansion of the universe is the opposite of that of matter and normal energy. Some theorists have named this "quintessence," after the fifth element of the Greek philosophers. But, if quintessence is the answer, we still don't know what it is like, what it interacts with, or why it exists. So the mystery continues.
4. A last possibility is that Einstein's theory of gravity is not correct. That would not only affect the expansion of the universe, but it would also affect the way that normal matter in galaxies and clusters of galaxies behaved. This fact would provide a way to decide if the solution to the dark energy problem is a new gravity theory or not: we could observe how galaxies come together in clusters. But if it does turn out that a new theory of gravity is needed, what kind of theory would it be? How could it correctly describe the motion of the bodies in the Solar System, as Einstein's

Now new research explained that if supernova evolution true, then it throws away all the distant measurement. In evolution large amount of energy released and so the expansion of the universe. It is not for Black energy. The result of evolution model and the acceleration model is about same. But the data is only for nearby galaxies. (source: Kang, Yijung, et al." Early-type Host Galaxies of Type Ia Supernovae. II. Evidence for Luminosity Evolution in Supernova Cosmology.")

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3. www.forbes.com.
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theory is known to do, and still give us the different prediction for the universe that we need? So the mystery of dark energy continues.

The known visible universe with stars, planets etc. are made up of protons, neutrons, electron i.e. baryonic particles and these matters are only 5% of the mass of the universe. The other 95% made up of dark matter (27%) and dark energy (68%).

The dark matter is not baryonic matter. It does not interact with the light and so invisible. Dark matter cannot be detected with current instruments. But scientists are confident about the existence of it as the speed of stars at the edge of galaxies are more or less same where as it should be slower than the stars nearer to the center. This means these stars feel a force and this is due to unseen mass.

Now from the Doppler shift (red shift and blue shift) the frequency of coming light can be determined and so the speed of the source as

$$f = [c/(c+v)]f_0$$

f is the observed frequency, f_0 is the actual frequency, c is the velocity of the waves in medium and v_s is the velocity of the source. v_s is positive when source is moving away from the observer and negative when coming towards the observer. And thus the distance of star or galaxy can be determined by the following formula

$v = hxd$, where h is the Hubble Constant. v is the velocity of stars. Hubble determined the distance of stars by observing the Cepheid variable stars. These are stars which brighten and dim periodically and are used to determine the large distance, distance between galaxies or of stars. From that calculation he showed that the galaxies are moving away from each other. So, there must be a force that pushing these and since this force is invisible so, it is called Dark energy.

Conclusion:

Supernova explosion occurs when a white dwarf exceeds a mass of Chandrasekhar Limit (about 1.4 solar mass). So all the Supernova explosion occurs with same mass energy and so the same brightness.

Economic Importance of Weeds found in Paddy Field of Assam

Lily Devi*

Abstract :

Lowland rice ecosystem in Assam is infested with complex weed flora including semi-aquatic and aquatic weeds. Recently weeds having mimics with rice, perennial and other weeds which propagate by vegetative means are emerging as major threat. Weeds cause yield losses from 15 to 76% in rice crop. Besides weeds remove about 21-42 kg N, 10-13.5 kg P and 17-27 kg K/ha in transplanted rice. Research on weed management in lowland rice in India has been reviewed in this paper with respect to weed flora and their impact, biology and ecology of weeds, weed management methods and future thrust areas of research and management. The weed flora in lowland rice is very much diverse and dynamic over times and places. Very limited information is available on biology and ecology of major weeds. Studies have been carried out on cultural, manual, mechanical means of weed management. Shortage of labours, lack of suitable weed control implements and problem of specific weeds have completed the farmers to think for alternative strategies and herbicides have been the obvious choice to the farmers. Many herbicides either alone or in combinations as ready or tank mixed have been recommended in India. Studies on integrated weed management have

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also been undertaken. But majority of researches focused on herbicide.

Key words : Lowland rice, Weed ecology, Weed flora, Weed management

Introduction :

The weeds are some unwanted plants species of cultivated areas.

Mostly the weeds are some herbaceous plants where an annual, biennial or perennial plant with leaves and a stem. Though weeds are unwanted species for the cultivated areas but they are very much nutritive to us.

That stays above ground when the leaves are gone.

Many herbaceous plant used traditionally to several diseases.

Rural areas and tribal scientists are the support of these types of food plants.

Objective :

To see the traditional uses of these weeds by the people of Assam.

To proposed study is that through these food plants wild they use them as leafy vegetables, little known cereal and legumes. Since these type of leafy vegetables are wild but they are also domesticated abundantly. Moreover they involved no cost of nominal cost. Sometimes these types of weeds are available in local market and their price is invariably much lower than those of cultivated vegetables. This is mainly dues to lack of scientific information and awareness about the nutritive values of such plants. A major follow up action needed in this regard is massive public awareness campaign which help to popularize the non-conventional food plants among all people rural and urban.

Weeds in the Paddy Field Showing Traditional uses and parts used

Botanical name	Vern name	Plant parts and use
<i>Amranthus spinouse</i> L,	Kata khutura	Above ground part is used as nutritious food.

Amaranthaceae *Andrographis*

Paniculata Kalmegh Above ground part is used in fever, indigestion and dysentery

Wall ex Ness Family :

Acanthaceae

Cntellaasiatica (L.)

Urban Family : Apiaceae Barmanimuni Leaves are chewed in the morning to check gastric acidity. The leaves are also used to reduce hypertension, wound and ulcerous skin abnormalities

Chenopodiumalbum L. Family :

Chenopodiaceae Jilmilsak Above ground part is used as nutritious food.

Cynodondactylon (L.) Pers,

Family : Dubariban Leaves are used for stopping bleeding from piles and also for blood purifying

Cyperaceae *Cyperus*

Rotandus L. Family :

Cyperaceae Keyaban The roots and rhizome are applied to cure stomach trouble and tonsillitis. The young fronds are used as vegetable.

Diplaziumexcellentum

Falimy : Athyriaceae Rodmukuta Above ground part of the plant is used in cough.

Droseraburmannii Vahl. Family :

Droseraceae

Eleusineindica Gaertn.

Family : Poaceae Babasa ban The seeds are edible. Seeds, roots, leaves and young seedlings are used in Liver

complaint

Euphorbia hirta L. Family :

Euphorbiaceae Dudh ban Above ground part is used in increasing milk of mother

Fimbristylismiliacea (L.) Vahl

Family : Poaceae Hiyal kata The above ground portion is used as fodder.

Hydrocotylesibthorpioides

Lamk. Family : Apiaceae Saru Manimuni The whole plant body is used for treatments of different ailments viz. in fevers, wounds and boils, abscesses, colds, coughs, hepatitis, influenza.

Ipomoea nil L. Family :

Convolvulaceae Kalmou Above ground portion is used as vegetable and also as pain reliever.

Leucasplukenetii (Roth)

Spreng Family :

Lamiaceae Darun Leaves are used in sinus.

Mimosa pudica L.

Family : Mimosaceae Lajukilata Leaf juice is used for diarrhea, root is antiseptic and as blood purifier.

Oxalis debilis H.B.K.

Family : Oxalidaceae Tengesitenga Whole plant body is used as refrigerant, ant scorbutic, liver and digestive disorders, urinary infection.

Phyllanthusfraternus

Webster Family : Bhuiamlakhi Fruit is used in gastric and stomach ache

Euphorbiaceae *Polygonum*

Glabrum L. Family :

Polygonaceae

Bihalangani

Leaves and stems are used in cuts and wound, Piles, jaundice, debility and consumption.

Conclusion :

54.2% of herbaceous plant are used by the local people for treatment of different diseases like minor cuts and wounds, diarrhea, dysentery, gastric and indigestion, high blood pressure, jaundice, skin diseases, toothache, stomach ache etc.

Most important plant species are *Centella asiatica*, *Cynodon dactylon*, *Hydrocotylisibthorpiodes*, *Oxalis debilis*, *Polygonum glabrum*, *Phylethus fraternus*, *Spilanthes paniculata* etc.

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Vitamins: The Immune Booster

Lipika Dey Dutta*

Abstract:

At present the World is going through a critical condition of Covid pandemic. To get rid of this situation we have to boost our immune system. Vitamins play a vital role to boost our immune system. Vitamin B₆, Vit. C and Vit. D act as immunity booster. There are different sources from where we can get these vitamins. Citrus fruits are the main source of Vit. C. Our skin can synthesize Vit. D from the sunshine and also from some food items which come from animals. Similarly we get Vit. B₆ from different food items. Our body requires very little amount of these vitamins. But too little of these vitamins weakens our immune system and thus our body becomes susceptible to different infections.

Key words: Covid pandemic, vitamins. Immune system, citrus fruits.

Methodology:

The article is based on secondary data which is collected from various books, journals, Wikipedia and websites.

Introduction :

Vitamins are complex organic substances found in various foods which are very essential for specific metabolic reactions within the cells. Very little amount of vitamins are necessary to maintain a healthy

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body but too little of any particular vitamin may cause risk to our life.

There are six different types of vitamins such as Vitamin A, Vitamin B, Vitamin C, Vitamin D, Vitamin K and Vitamin E. Depending on their solubility criteria these vitamins are generally divided into two major groups-fat soluble vitamins and water soluble vitamins. Vitamin A, Vitamin E, Vitamin K and Vitamin D are fat soluble vitamins and Vitamin B and Vitamin C are water soluble vitamins.

These vitamins perform different functions in our body. Of these vitamins Vitamin B, Vitamin C and Vitamin D play a vital role in boosting our immune system.

Vitamin B-

Vitamin B is a water soluble vitamin. There are 8 kinds of Vitamin B - Vit. B₁ (Thiamin), Vit B₂ (Riboflavin), Vit B₃ (Niacin), Vit. B₅ (Pantothenic acid), Vit. B₆ (Pyridoxine), Vit. B₁₂ (Cyanacobalamin, Vit B₁₂ (Folic acid) and vitamin B₇ (biotin). Of these eight vitamins B, Vit B₆ plays a vital role in boosting our immune system.

Sources of Vit. B₆ :

The Vitamin B₆ is widely distributed in nature. The useful bacteria that live in our digestive system are also able to produce Vit. B₆.

Table (1) shows the different food sources of vitamin B₆ and the amount of vitamin B₆ available in this food.

Table (1)

Source	Amount/100 gms	source	Amount/100 gm
pork	0.5 mg /100gm	Pea nuts	0.3 mg/100gm
Chicken	0.4 mg/100gm	Soya beans	0.4 mg/100gm
Some fish	2.8 mg/100gm	Wheat gram	0.6 mg/100gm
Oats	0.12 mg/100gm	Banana	0.4 mg/100gm
Some cereals	0.1 mg/100gm		

Functions :

It keeps the immune system strong by making haemoglobin of RBC and transporting O₂ throughout the body. It is also responsible for producing WBC and T cells which are the main components of

our immune system.

Deficiency disorders:

Vitamin B₆ deficiency is associated with microcytic anaemia, dermatitis with cheilosis (scaling on the lips and corners of the mouth), glossitis (swollen tongue), depression and weak immune system.

Vitamin C-

It is also known as ascorbic acid or antiscorbutic vitamin. It is a water soluble vitamin, found in many fruits and vegetables. It is well known for its potent antioxidant as well as for having positive effects on skin health and immune system.

Sources-

Vitamin C is available in all the citrus fruits and in some vegetables.

Table (2) shows the different citrus fruit rich in vitamin C and the amount of vitamin C available in this food.

Table (2)

Name of fruits	Amount of Vitamin C/100gm
Guava	228.3 mg /100gm
Kiwifruit	93 mg/100
Oranges	96mg/100 gm
Straw berry	93mg/100
Lemons	53 mg/100gm
Grape	68.8 mg/100
Limes	29.1mg /gm
Papaya	88 mg/100gm
Tangerines	26.7 /100gm
Goose berry	27.7mg/100gm

Table (3) shows the different vitamin C rich vegetables and also the amount of vitamin C available in this vegetables:

Table (3)

Name of vegetables	Amount/100gm
Broccoli	89 mg/100 gm
Squash	17.9mg/100gm
Brussels sprout	85 mg /100gm

Pea	40mg/100 gm
Cauliflowers	48.2mg/100gm
Kohlrabi	84 mg/cup
Green chillies	109mg/100gm
Red bell peppers	127.7 mg/100gm.
Cabbage	36.6 mg/100
Green Bell peppers	128 mg /100gm
Spinach	28.1 mg/100gm
Red chilies	144 mg /100gm
Turnip	21mg/100gm
Tomato	10mg/100gm
Potato	19.7 mg/100gm

Our Body does not produce or store Vit. C. So we need daily vitamin C to maintain our good health. According to National Health Institute, the daily amounts of Vitamin C essential for a person is-75 mg for women and 90 mg for men. Too much dietary vitamin is harmful for our body.

Functions of vitamin C:

- ♦ Helps in growth, development and repair of all body tissues.
- ♦ Helps to dissolve cholesterol in blood
- ♦ Enhances the absorption of iron from food
- ♦ proper functioning of the immune system
- ♦ Wound healing

Deficiency disorders:

- ♦ Low Vitamin C levels are linked to an increased risk of infection, while severe deficiency can cause death from infectious disease.
- ♦ Vitamin C deficiency may increase the risk of iron deficiency anaemia by reducing iron absorption.
- ♦ Increase body fat.
- ♦ Severe Vitamin C deficiency produces scurvy. The pathological signs of this disease are skin eruption, swollen bleeding gum, loosening of the teeth, haemorrhages, poor healing of wounds, easy fractures of bones and increased susceptibility to infections.

- ♦ Vitamin C deficiency can cause the formation of small acne like bumps on the arm, thighs and buttocks.
- ♦ The blood vessels of hair follicle rupture and appear red spots around the follicle.
- ♦ Fingernails become spoon shaped and red lines or spots appear underneath the nail bed.

Vitamin D:

Vitamin D also referred to as calciferol is a fat soluble vitamin. It is essential for maintaining healthy bones and teeth and also act as immune booster. It is mainly occurs in the animal species.

Sources:

Sunshine is the main source of Vitamin D. Body creates Vitamin D from cholesterol in direct sunlight on the skin. Exposure to sun for about 10 to 30 minutes in three days of the week is sufficient to get the required amount of vitamin D in our body. According to the Indian Council of Medical Research, the average daily intake of 10 to 20 microgram of Vit.D is sufficient to maintain a healthy life.

Vitamin D is also found in a small no. of foods. The foods and the amounts of vitamin D available in this food are shown in the Table (4).

Table(4):

Sources	Amount of vitamin D / unit
Oily fishes	5.4mcg/100gm,
(herring, Sardins, Salmon)	4.4mcg/100gm, 24.2 mcg/100gm)
Egg yolk	.91 mcg/one egg
Mushroom	5.75 mcg /100gm
Cow milk	2.9 to 3.25/one cup
Cereal and oat meal	3.2 -4.8 / one cup
Soya milk	2.67-2.9 mcg /cup
Red meat	0.8 mcg/kg
Liver	1.9 mcg /kg

Functions:

Vitamin D regulates the absorption and utilization of calcium and phosphorus ions in our body. Vitamin D can modulate the innate and acquired immune responses in our body.

Deficiency disorders:

Deficiency of vit. D causes muscle weakness, muscle cramps, bone pain etc. In children deficiency causes the disease known as rickets. Deficiency also causes autoimmunity as well as susceptibility to infection.

Discussion:

So, it is clear that vitamins are available in different foods and we have to take them properly to boost our immune system. To boost our immune system very small amount of vitamins are essential. We can get these vitamins from different food items, sunshine etc. We get vitamin B₆ in pork, chicken, soyabeans, oats, fishes etc. Highest amount of this vitamin is found in some fishes. But there is a limitation of intake of vitamin B₆. A man needs 1.4 mg of vitamin B₆ per day and a woman needs 1.2 mg per day. By eating vitamin B₆ rich food we can get it. But too much Vit. B₆ is also harmful for our health. It causes a disease known as peripheral neuropathy. So we have to take this vitamin within the limit. Vitamin C is one of the biggest immune booster. The citrus fruits are the store house of this vitamin. Table (2) shows that highest amount of vitamin C is found in guava and red chilli. Which are very common and we can easily get it. The main source of vitamin D is sunshine. Our skin can synthesize Vit. D from direct sunlight. From late march to September, most people on exposure to sunshine become able to get the necessary amount of vitamin D essential for a good health. But between October to March we do not get the sufficient amount of Vit. D from sunshine and then we have to depend on some food items which are rich sources of vitamin D (Table 3). However very small amount of Vit. D is necessary for a sound health. According to the National Institute of health, baby (upto 1 year) require 8.5 to 10 mcg, Children (1-18 years) 15 mcg, adults (upto

70 years) 15 mcg and adults (above 70 years) require 20 mcg of Vit. D. It is notable that people with darker skin need more sun exposure than people with light skin to get the same benefit.

Conclusion:

So, in this pandemic situation of Covid 19, it is very necessary to boost our immune system. A person with strong immune system is free of different infectious disease because the immune system gives protection to the body from infection. Vit. B, Vit. C and Vit. D can boost our immune system and fight against the microorganisms, virus, and bacteria and specially in this pandemic situation of covid 19 it can give protection to our body from novel corona virus. So, in this pandemic situation of Covid 19, our food items should be rich in vitamin B₆, C and D and then only we can win the battle by fighting against the virus.

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Visible Light Communication: A System Overview, Applications and Challenges

Jayshri Narzary*

Abstract

Communication system using Radio Frequency (RF) wave suffers interference and requires a separate setup for signal transmitter and receiver. Visible Light Communication (VLC) is a technology that could be used to fulfill the mentioned shortcomings of RF communication system because of its high bandwidth, high energy efficiency, immunity to the interference of radio frequency waves and high speed data communication. VLC uses the visible light spectrum of frequency range from 430 THz to 790 THz. In VLC system, Light Emitting Diodes (LED) use for home illumination purposes and laser diodes are used for the transmission of data. The transmitted data using LED lights are detected by the use of low cost photodiodes and smartphone camera sensor. This paper discusses the VLC system architecture, potential applications and research challenges.

Keywords: Visible Light Communication, optical communication technology, Light Emitting Diode.

Introduction

The invention of light emitting diode (LED) has revolutionized the indoor lighting system and the development of high efficiency

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LED has phased out the use of incandescent bulbs for illumination purposes. LED lights are high powered efficient, emit low carbon, generate low heat, long lifespan, free of mercury and good quality illumination (Ismail & Salih, 2020). Apart from used for illumination purposes, LED lights are used for indoor farming, plantations, and medical applications. The rapid increase in the use of solid state lights such as LED has made it possible to deal with the radio frequency spectrum limitations providing efficient communication systems. Thus, LED lights along with light illumination, provide a data connectivity facility.

Visible Light Communication (VLC) is a wireless optical communication technology that uses the visible light spectrum ranging from 380 nm to 750 nm corresponding to a frequency spectrum of 430 THz to 790 THz. This is an emerging technology for transmission of high speed data and considered to be a technology that could be used for replacement of radio frequency communication system. In VLC system, the transmission of communication data can be done by the use of LED lights used for illumination purposes. Nakagawa Laboratory at Keio University, Japan first coined the term VLC and demonstrated the VLC system using LED (Sklavos et al., 2017)

Objectives

This paper critically analyses the various applications of visible light communications, overview of VLC system and research challenges.

Literature Review

The concept of visible light communication comes from Alexander Gram Bell who developed the photophone in 1880. According to Gram Bell, photophone-a telecommunication device transmits voice data on a beam of sunlight and this idea led to optical fiber communication (Karunatilaka et al., 2015). Visible light communication is a type of optical communication that operates in an open space of nearly two to three meters distances.

VLC system consisting of red-green-blue (RGB) LEDs as a

transmitter and complementary metal-oxide-semiconductor (CMOS) image sensor as a receiver was proposed by (Liang et al., 2016). They observed that the transmission range of VLC can be increased by the use of red, green, blue (RGB) LEDs through wavelength division multiplexing.

(Chow et al., 2015) proposed a visible light communication receiver using Complementary Metal Oxide Semiconductor (CMOS) mobile camera. VLC system using the light panel and mobile camera was also proposed and demonstrated by (Chow et al., 2018).

VLC System Overview

In this section, VLC system that consists of VLC transmitter, VLC receiver, and way of communication has been discussed.

VLC Transmitter. A LED luminaire consisting of LED bulb, ballast, housing and other components is the transmitter of a visible light communication system. Laser diodes are also used as a transmitter. If both illumination and communication are required for single device operation then LEDs are used as VLC transmitters. White light LEDs are mostly used as the transmitter in VLC system. This white light LED can be produced by a blue LED with phosphor and RGB (Red, Green, and Blue) combinations.

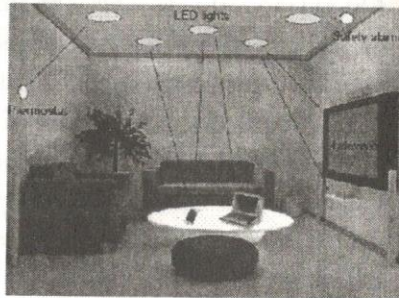


Fig.1: Communication of VLC system (Pathak et al., 2015)

VLC Receiver. Circuit for signal amplification, optical filter and optical concentrators are the main components of VLC receiver. The VLC receiver may be of two types- photodetector and imaging sensor. The photodetector is a semiconductor device that detects the light signal transmitted by LED and converts light to current. The photodetector used in VLC may be photodiode, PIN diode and avalanche photodiode. As the diverging light generated from the LED

gets attenuated, so optical concentrators are required to compensate for this attenuation. An imaging sensor or a camera sensor is also used as VLC receiver because most of today's smartphone has a camera for capturing images and videos.

Way of Communication of VLC: The way of communication of VLC can be classified as Infrastructure-to-Device communication and Device-to-Device communication. A typical communication process of VLC is shown in Fig.1. In the figure, the LED lights are used to illuminate a room. These luminaries have also been used to transmit various data to the devices like Television, Laptop, mobile, safety alarm present inside the room. This type of communication is termed as infrastructure to device communication. The coordination between LEDs can be done and interference that may occur between light sources can be reduced making it possible to transmit data to multiple receivers (Pathak et al., 2015).

Applications of VLC Technology:

The advancement in the field of the Internet of Everything (IOE) has made easy networking connectivity with the intelligent connection of humans, data, processes, things, machines, etc. Due to ease to use, cost-effectiveness, high speed wireless communication facilities of VLC system, it has various applications. Some of the popular application of this technology are discussed as follows-

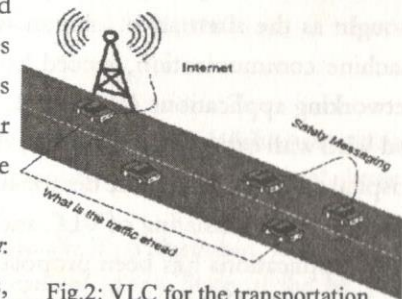


Fig.2: VLC for the transportation system (Khan, 2017)

Intelligent Transportation System. With the use of LEDs street lights, VLC technology can be used for the intelligent transportation system. Traffic light to the vehicle, vehicle to vehicle and vehicle to infrastructure communication for sending location or safety driving information could be some remarkable application of VLC system (Khan, 2017).

Intelligent Lighting System: Intelligent lighting system is a wireless

Sensor Network (WSN) that monitors the intensity of light, color of light and hence controls the illumination by dimming. Due to low energy consumption, color control with multichip LEDs, dimming and VLC, LED offers higher benefits to the intelligent lighting system (Miki et al., 2006), (Jenq et al., 2010). Many proposals can be seen to combine VLC and intelligent lighting such as turning off light at the required area only, low light for watching movies, bright light for reading and video conferencing (Bhardwaj et al., 2010). A device called Hue that can control color and dim the light using the iPhone was made by Philips recently (Philips, 2012).

Underwater Communication: Generally for underwater communication, acoustic devices are used. But these devices are expensive and slow speed. So VLC technology is being looked as the alternative solution due to its high speed communication. In (Schill et al, 2004), an underwater transmission of data using visible LEDs can be found. Penguin ASI developed an underwater communications device for ROVs using visible LEDs with data rates of up to 20 Mb/s (Penguin ASI, 2012), (Vucic et al., 2012).

Hospitals: In hospitals, the areas such as MRI scanning room, in which the radiofrequency (RF) signal radiations are high, VLC can be thought as the alternative solution to monitor patients, machine to machine communication, record keeping of patients and all other networking applications (Ding et al., 2015). A broadband powerline and VLC with orthogonal frequency division multiplexing for wireless hospital communication are demonstrated in (Ding et al., 2015) and a hybrid system consisting of VLC and 60 GHz radio frequency for e-health applications has been proposed by (Abdaoui et al, 2016).

Information Displaying Signboards: In airports, bus stops, railway stations and other places, Signboards made of LED lights are used to display various information. This LED light can be used for transmitting data, the indication of location (Park et al., 2007).

Visible light ID system: Visible light ID system can be applied to identify room numbers, subways, buildings, hospitals, etc.

Music communication system: For the transmission of the sound signal, Red, green and blue LEDs are used (15).

Challenges:

Although rapid development of solid state lighting has made VLC system promising, certain challenges can be seen. Integration of VLC with existing Wi-Fi communication, interference with ambient light sources are some of the challenges. Existing devices do not have VLC transmitter and providing a new one will increase the cost as well as the size of the device. As VLC technology is in the development phase so many researches need to be done before making it commercially available in the market.

Conclusions:

The spectral and bandwidth limitations of radio frequency (RF) communication motivates to use of the visible band for communication purposes. In this article, visible light communication that can be designed LED light, existing literature review, system architecture, potential applications such as intelligent transportation system, lighting system, underwater communication, visible light ID system, etc. and various challenges are discussed. Collaboration with LEDs industry and traffic signal authorities for intelligent transportation system will help in successfully implementation of VLC system.

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